



Java API Reference

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1. Introduction

This manual is intended to be used as a reference for Yoctopuce Java library, in order to interface your code with USB sensors and controllers.

The next chapter is taken from the free USB device Yocto-Demo, in order to provide a concrete examples of how the library is used within a program.

The remaining part of the manual is a function-by-function, class-by-class documentation of the API. The first section describes all general-purpose global function, while the forthcoming sections describe the various classes that you may have to use depending on the Yoctopuce device being used. For more informations regarding the purpose and the usage of a given device attribute, please refer to the extended discussion provided in the device-specific user manual.

2. Using the Yocto-Demo with Java

Java is an object oriented language created by Sun Microsystem. Beside being free, its main strength is its portability. Unfortunately, this portability has an excruciating price. In Java, hardware abstraction is so high that it is almost impossible to work directly with the hardware. Therefore, the Yoctopuce API does not support native mode in regular Java. The Java API needs a Virtual Hub to communicate with Yoctopuce devices.

2.1. Getting ready

Go to the Yoctopuce web site and download the following items:

- The Java programming library¹
- The VirtualHub software² for Windows, Mac OS X or Linux, depending on your OS

The library is available as source files as well as a *jar* file. Decompress the library files in a folder of your choice, connect your modules, run the VirtualHub software, and you are ready to start your first tests. You do not need to install any driver.

In order to keep them simple, all the examples provided in this documentation are console applications. Naturally, the libraries function in a strictly identical manner if you integrate them in an application with a graphical interface.

2.2. Control of the Led function

A few lines of code are enough to use a Yocto-Demo. Here is the skeleton of a Java code snippet to use the Led function.

```
[...]  
  
// Get access to your device, connected locally on USB for instance  
YAPI.RegisterHub("127.0.0.1");  
led = YLed.FindLed("YCTOPOC1-123456.led");  
  
// Hot-plug is easy: just check that the device is online  
if (led.isOnline())  
{ //Use led.set_power()  
    ...  
}
```

¹ www.yoctopuce.com/EN/libraries.php

² www.yoctopuce.com/EN/virtualhub.php

```
[...]
```

Let us look at these lines in more details.

YAPI.RegisterHub

The `yAPI.RegisterHub` function initializes the Yoctopuce API and indicates where the modules should be looked for. The parameter is the address of the Virtual Hub able to see the devices. If the initialization does not succeed, an exception is thrown.

YLed.FindLed

The `YLed.FindLed` function allows you to find a led from the serial number of the module on which it resides and from its function name. You can use logical names as well, as long as you have initialized them. Let us imagine a Yocto-Demo module with serial number `YCTOPOC1-123456` which you have named `"MyModule"`, and for which you have given the `led` function the name `"MyFunction"`. The following five calls are strictly equivalent, as long as `"MyFunction"` is defined only once.

```
led = YLed.FindLed("YCTOPOC1-123456.led")
led = YLed.FindLed("YCTOPOC1-123456.MyFunction")
led = YLed.FindLed("MyModule.led")
led = YLed.FindLed("MyModule.MyFunction")
led = YLed.FindLed("MyFunction")
```

`YLed.FindLed` returns an object which you can then use at will to control the led.

isOnline

The `isOnline()` method of the object returned by `YLed.FindLed` allows you to know if the corresponding module is present and in working order.

set_power

The `set_power()` function of the object returned by `YLed.FindLed` allows you to turn on and off the led. The argument is `YLed.POWER_ON` or `YLed.POWER_OFF`. In the reference on the programming interface, you will find more methods to precisely control the luminosity and make the led blink automatically.

A real example

Launch your Java environment and open the corresponding sample project provided in the directory **Examples/Doc-GettingStarted-Yocto-Demo** of the Yoctopuce library.

In this example, you will recognize the functions explained above, but this time used with all the side materials needed to make it work nicely as a small demo.

```
/*
 * To change this template, choose Tools | Templates
 * and open the template in the editor.
 */
import com.yoctopuce.YoctoAPI.*;

/**
 *
 * @author yocto
 */
public class Demo {
    /**
     * @param args the command line arguments
     */
    public static void main(String[] args) {
        try {
            // setup the API to use local VirtualHub
            YAPI.RegisterHub("127.0.0.1");
        } catch (YAPI_Exception ex) {
            System.out.println("Cannot contact VirtualHub on 127.0.0.1 (" +
                ex.getLocalizedMessage() + ")");
            System.out.println("Ensure that the VirtualHub application is running");
        }
    }
}
```



```

        System.exit(1);
    }

    YLed led;
    if (args.length > 0) {
        led = YLed.FindLed(args[0]);
    } else {
        led = YLed.FirstLed();
        if (led == null) {
            System.out.println("No module connected (check USB cable)");
            System.exit(1);
        }
    }

    try {
        System.out.println("Switch led ON");
        led.set_power(YLed.POWER_ON);
        YAPI.Sleep(1000);
        System.out.println("Switch led OFF");
        led.set_power(YLed.POWER_OFF);
    } catch (YAPI_Exception ex) {
        System.out.println("Module "+led.describe()+" not connected (check
identification and USB cable)");
    }

    YAPI.FreeAPI();
}

```

2.3. Control of the module part

Each module can be controlled in a similar manner, you can find below a simple sample program displaying the main parameters of the module and enabling you to activate the localization beacon.

```

import com.yoctopuce.YoctoAPI.*;
import java.util.logging.Level;
import java.util.logging.Logger;

public class Demo {

    public static void main(String[] args)
    {
        try {
            // setup the API to use local VirtualHub
            YAPI.RegisterHub("127.0.0.1");
        } catch (YAPI_Exception ex) {
            System.out.println("Cannot contact VirtualHub on 127.0.0.1 (" +
ex.getLocalizedMessage() + ")");
            System.out.println("Ensure that the VirtualHub application is running");
            System.exit(1);
        }
        System.out.println("usage: demo [serial or logical name] [ON/OFF]");

        YModule module;
        if (args.length == 0) {
            module = YModule.FirstModule();
            if (module == null) {
                System.out.println("No module connected (check USB cable)");
                System.exit(1);
            }
        } else {
            module = YModule.FindModule(args[0]); // use serial or logical name
        }

        try {
            if (args.length > 1) {
                if (args[1].equalsIgnoreCase("ON")) {
                    module.setBeacon(YModule.BEACON_ON);
                } else {
                    module.setBeacon(YModule.BEACON_OFF);
                }
            }
        }
    }
}

```

```

        System.out.println("serial:      " + module.get_serialNumber());
        System.out.println("logical name: " + module.get_logicalName());
        System.out.println("luminosity:  " + module.get_luminosity());
        if (module.get_beacon() == YModule.BEACON_ON) {
            System.out.println("beacon:      ON");
        } else {
            System.out.println("beacon:      OFF");
        }
        System.out.println("upTime:      " + module.get_upTime() / 1000 + " sec");
        System.out.println("USB current:  " + module.get_usbCurrent() + " mA");
        System.out.println("logs:\n" + module.get_lastLogs());
    } catch (YAPI_Exception ex) {
        System.out.println(args[1] + " not connected (check identification and USB
cable)");
    }
    YAPI.FreeAPI();
}
}

```

Each property `xxx` of the module can be read thanks to a method of type `YModule.get_xxxx()`, and properties which are not read-only can be modified with the help of the `YModule.set_xxx()` method. For more details regarding the used functions, refer to the API chapters.

Changing the module settings

When you want to modify the settings of a module, you only need to call the corresponding `YModule.set_xxx()` function. However, this modification is performed only in the random access memory (RAM) of the module: if the module is restarted, the modifications are lost. To memorize them persistently, it is necessary to ask the module to save its current configuration in its permanent memory. To do so, use the `YModule.saveToFlash()` method. Inversely, it is possible to force the module to forget its current settings by using the `YModule.revertFromFlash()` method. The short example below allows you to modify the logical name of a module.

```

import com.yoctopuce.YoctoAPI.*;

public class Demo {

    public static void main(String[] args)
    {
        try {
            // setup the API to use local VirtualHub
            YAPI.RegisterHub("127.0.0.1");
        } catch (YAPI_Exception ex) {
            System.out.println("Cannot contact VirtualHub on 127.0.0.1 (" +
ex.getLocalizedMessage() + ")");
            System.out.println("Ensure that the VirtualHub application is running");
            System.exit(1);
        }

        if (args.length != 2) {
            System.out.println("usage: demo <serial or logical name> <new logical name>");
            System.exit(1);
        }

        YModule m;
        String newname;

        m = YModule.FindModule(args[0]); // use serial or logical name

        try {
            newname = args[1];
            if (!YAPI.CheckLogicalName(newname))
            {
                System.out.println("Invalid name (" + newname + ")");
                System.exit(1);
            }

            m.set_logicalName(newname);
            m.saveToFlash(); // do not forget this

            System.out.println("Module: serial= " + m.get_serialNumber());
            System.out.println(" / name= " + m.get_logicalName());
        } catch (YAPI_Exception ex) {
            System.out.println("Module " + args[0] + "not connected (check identification

```

```

        and USB cable)");
        System.out.println(ex.getMessage());
        System.exit(1);
    }

    YAPI.FreeAPI();
}

```

Warning: the number of write cycles of the nonvolatile memory of the module is limited. When this limit is reached, nothing guaranties that the saving process is performed correctly. This limit, linked to the technology employed by the module micro-processor, is located at about 100000 cycles. In short, you can use the `YModule.saveToFlash()` function only 100000 times in the life of the module. Make sure you do not call this function within a loop.

Listing the modules

Obtaining the list of the connected modules is performed with the `YModule.yFirstModule()` function which returns the first module found. Then, you only need to call the `nextModule()` function of this object to find the following modules, and this as long as the returned value is not null. Below a short example listing the connected modules.

```

import com.yoctopuce.YoctoAPI.*;

public class Demo {

    public static void main(String[] args)
    {
        try {
            // setup the API to use local VirtualHub
            YAPI.RegisterHub("127.0.0.1");
        } catch (YAPI_Exception ex) {
            System.out.println("Cannot contact VirtualHub on 127.0.0.1 (" +
ex.getLocalizedMessage() + ")");
            System.out.println("Ensure that the VirtualHub application is running");
            System.exit(1);
        }

        System.out.println("Device list");
        YModule module = YModule.FirstModule();
        while (module != null) {
            try {
                System.out.println(module.get_serialNumber() + " (" +
module.get_productName() + ")");
            } catch (YAPI_Exception ex) {
                break;
            }
            module = module.nextModule();
        }

        YAPI.FreeAPI();
    }
}

```

2.4. Error handling

When you implement a program which must interact with USB modules, you cannot disregard error handling. Inevitably, there will be a time when a user will have unplugged the device, either before running the software, or even while the software is running. The Yoctopuce library is designed to help you support this kind of behavior, but your code must nevertheless be conceived to interpret in the best possible way the errors indicated by the library.

The simplest way to work around the problem is the one used in the short examples provided in this chapter: before accessing a module, check that it is online with the `isOnline` function, and then hope that it will stay so during the fraction of a second necessary for the following code lines to run. This method is not perfect, but it can be sufficient in some cases. You must however be aware that

you cannot completely exclude an error which would occur after the call to `isOnline` and which could crash the software.

In the Java API, error handling is implemented with exceptions. Therefore you must catch and handle correctly all exceptions that might be thrown by the API if you do not want your software to crash as soon as you unplug a device.

3. Reference

3.1. General functions

These general functions should be used to initialize and configure the Yoctopuce library. In most cases, a simple call to function `yRegisterHub()` should be enough. The module-specific functions `yFind...()` or `yFirst...()` should then be used to retrieve an object that provides interaction with the module.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_api.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YAPI = yoctolib.YAPI; var YModule = yoctolib.YModule;
php	require_once('yocto_api.php');
c++	#include "yocto_api.h"
m	#import "yocto_api.h"
pas	uses yocto_api;
vb	yocto_api.vb
cs	yocto_api.cs
java	import com.yoctopuce.YoctoAPI.YModule;
py	from yocto_api import *

Global functions

yCheckLogicalName(name)

Checks if a given string is valid as logical name for a module or a function.

yDisableExceptions()

Disables the use of exceptions to report runtime errors.

yEnableExceptions()

Re-enables the use of exceptions for runtime error handling.

yEnableUSBHost(osContext)

This function is used only on Android.

yFreeAPI()

Frees dynamically allocated memory blocks used by the Yoctopuce library.

yGetAPIVersion()

Returns the version identifier for the Yoctopuce library in use.

yGetTickCount()

Returns the current value of a monotone millisecond-based time counter.

yHandleEvents(errmsg)

Maintains the device-to-library communication channel.

yInitAPI(mode, errmsg)

Initializes the Yoctopuce programming library explicitly.

yPreregisterHub(url, errmsg)

Fault-tolerant alternative to `RegisterHub()`.

yRegisterDeviceArrivalCallback(arrivalCallback)

Register a callback function, to be called each time a device is plugged.

yRegisterDeviceRemovalCallback(removalCallback)

Register a callback function, to be called each time a device is unplugged.

yRegisterHub(url, errmsg)

Setup the Yoctopuce library to use modules connected on a given machine.

yRegisterHubDiscoveryCallback(hubDiscoveryCallback)

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Register a callback function, to be called each time an Network Hub send an SSDP message.

yRegisterLogFunction(logfun)

Registers a log callback function.

ySelectArchitecture(arch)

Select the architecture or the library to be loaded to access to USB.

ySetDelegate(object)

(Objective-C only) Register an object that must follow the protocol YDeviceHotPlug.

ySetTimeout(callback, ms_timeout, arguments)

Invoke the specified callback function after a given timeout.

ySleep(ms_duration, errmsg)

Pauses the execution flow for a specified duration.

yTriggerHubDiscovery(errmsg)

Force a hub discovery, if a callback as been registered with yRegisterDeviceRemovalCallback it will be called for each net work hub that will respond to the discovery.

yUnregisterHub(url)

Setup the Yoctopuce library to no more use modules connected on a previously registered machine with RegisterHub.

yUpdateDeviceList(errmsg)

Triggers a (re)detection of connected Yoctopuce modules.

yUpdateDeviceList_async(callback, context)

Triggers a (re)detection of connected Yoctopuce modules.

YAPI.CheckLogicalName()**YAPI****yCheckLogicalName()**`YAPI.CheckLogicalName()`

Checks if a given string is valid as logical name for a module or a function.

js	function yCheckLogicalName (name)
nodejs	function CheckLogicalName (name)
php	function yCheckLogicalName (\$name)
cpp	bool yCheckLogicalName (const string& name)
m	BOOL yCheckLogicalName (NSString * name)
pas	function yCheckLogicalName (name : string): boolean
vb	function yCheckLogicalName (ByVal name As String) As Boolean
cs	bool CheckLogicalName (string name)
java	boolean CheckLogicalName (String name)
py	def CheckLogicalName (name)

A valid logical name has a maximum of 19 characters, all among A . . Z, a . . z, 0 . . 9, _, and -. If you try to configure a logical name with an incorrect string, the invalid characters are ignored.

Parameters :

name a string containing the name to check.

Returns :

true if the name is valid, false otherwise.

YAPI.DisableExceptions() yDisableExceptions()

YAPI

Disables the use of exceptions to report runtime errors.

js	function yDisableExceptions ()
nodejs	function DisableExceptions ()
php	function yDisableExceptions ()
cpp	void yDisableExceptions ()
m	void yDisableExceptions ()
pas	procedure yDisableExceptions ()
vb	procedure yDisableExceptions ()
cs	void DisableExceptions ()
py	def DisableExceptions ()

When exceptions are disabled, every function returns a specific error value which depends on its type and which is documented in this reference manual.

YAPI.EnableExceptions() yEnableExceptions()

YAPI

Re-enables the use of exceptions for runtime error handling.

js	function yEnableExceptions ()
nodejs	function EnableExceptions ()
php	function yEnableExceptions ()
cpp	void yEnableExceptions ()
m	void yEnableExceptions ()
pas	procedure yEnableExceptions ()
vb	procedure yEnableExceptions ()
cs	void EnableExceptions ()
py	def EnableExceptions ()

Be aware that when exceptions are enabled, every function that fails triggers an exception. If the exception is not caught by the user code, it either fires the debugger or aborts (i.e. crash) the program. On failure, throws an exception or returns a negative error code.

YAPI.EnableUSBHost()**YAPI****yEnableUSBHost()**`YAPI.EnableUSBHost ()`

This function is used only on Android.

```
java void EnableUSBHost( Object osContext)
```

Before calling `yRegisterHub("usb")` you need to activate the USB host port of the system. This function takes as argument, an object of class `android.content.Context` (or any subclass). It is not necessary to call this function to reach modules through the network.

Parameters :

osContext an object of class `android.content.Context` (or any subclass).

YAPI.FreeAPI()**YAPI****yFreeAPI()****YAPI.FreeAPI()**

Frees dynamically allocated memory blocks used by the Yoctopuce library.

js	function yFreeAPI ()
nodejs	function FreeAPI ()
php	function yFreeAPI ()
cpp	void yFreeAPI ()
m	void yFreeAPI ()
pas	procedure yFreeAPI ()
vb	procedure yFreeAPI ()
cs	void FreeAPI ()
java	void FreeAPI ()
py	def FreeAPI ()

It is generally not required to call this function, unless you want to free all dynamically allocated memory blocks in order to track a memory leak for instance. You should not call any other library function after calling `yFreeAPI()`, or your program will crash.

YAPI.GetAPIVersion()**YAPI****yGetAPIVersion()****YAPI.GetAPIVersion()**

Returns the version identifier for the Yoctopuce library in use.

js	function yGetAPIVersion ()
nodejs	function GetAPIVersion ()
php	function yGetAPIVersion ()
cpp	string yGetAPIVersion ()
m	NSString* yGetAPIVersion ()
pas	function yGetAPIVersion (): string
vb	function yGetAPIVersion () As String
cs	String GetAPIVersion ()
java	String GetAPIVersion ()
py	def GetAPIVersion ()

The version is a string in the form "Major.Minor.Build", for instance "1.01.5535". For languages using an external DLL (for instance C#, VisualBasic or Delphi), the character string includes as well the DLL version, for instance "1.01.5535 (1.01.5439)".

If you want to verify in your code that the library version is compatible with the version that you have used during development, verify that the major number is strictly equal and that the minor number is greater or equal. The build number is not relevant with respect to the library compatibility.

Returns :

a character string describing the library version.

YAPI.GetTickCount()**YAPI****yGetTickCount()**`YAPI.GetTickCount()`

Returns the current value of a monotone millisecond-based time counter.

js	function yGetTickCount ()
nodejs	function GetTickCount ()
php	function yGetTickCount ()
cpp	u64 yGetTickCount ()
m	u64 yGetTickCount ()
pas	function yGetTickCount (): u64
vb	function yGetTickCount () As Long
cs	ulong GetTickCount ()
java	long GetTickCount ()
py	def GetTickCount ()

This counter can be used to compute delays in relation with Yoctopuce devices, which also uses the millisecond as timebase.

Returns :

a long integer corresponding to the millisecond counter.

YAPI.HandleEvents()

YAPI

yHandleEvents() `YAPI.HandleEvents()`

Maintains the device-to-library communication channel.

js	function yHandleEvents (errmsg)
nodejs	function HandleEvents (errmsg)
php	function yHandleEvents (&\$errmsg)
cpp	YRETCODE yHandleEvents (string& errmsg)
m	YRETCODE yHandleEvents (NSError** errmsg)
pas	function yHandleEvents (var errmsg : string): integer
vb	function yHandleEvents (ByRef errmsg As String) As YRETCODE
cs	YRETCODE HandleEvents (ref string errmsg)
java	int HandleEvents ()
py	def HandleEvents (errmsg =None)

If your program includes significant loops, you may want to include a call to this function to make sure that the library takes care of the information pushed by the modules on the communication channels. This is not strictly necessary, but it may improve the reactivity of the library for the following commands.

This function may signal an error in case there is a communication problem while contacting a module.

Parameters :

errmsg a string passed by reference to receive any error message.

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

YAPI.InitAPI()**YAPI****yInitAPI()** **YAPI.InitAPI()**

Initializes the Yoctopuce programming library explicitly.

js	function yInitAPI (mode , errmsg)
nodejs	function InitAPI (mode , errmsg)
php	function yInitAPI (\$mode , &\$errmsg)
cpp	YRETCODE yInitAPI (int mode , string& errmsg)
m	YRETCODE yInitAPI (int mode , NSError** errmsg)
pas	function yInitAPI (mode : integer, var errmsg : string): integer
vb	function yInitAPI (ByVal mode As Integer, ByRef errmsg As String) As Integer
cs	int InitAPI (int mode , ref string errmsg)
java	int InitAPI (int mode)
py	def InitAPI (mode , errmsg =None)

It is not strictly needed to call `yInitAPI()`, as the library is automatically initialized when calling `yRegisterHub()` for the first time.

When `Y_DETECT_NONE` is used as detection mode, you must explicitly use `yRegisterHub()` to point the API to the VirtualHub on which your devices are connected before trying to access them.

Parameters :

- mode** an integer corresponding to the type of automatic device detection to use. Possible values are `Y_DETECT_NONE`, `Y_DETECT_USB`, `Y_DETECT_NET`, and `Y_DETECT_ALL`.
- errmsg** a string passed by reference to receive any error message.

Returns :

`YAPI_SUCCESS` when the call succeeds. On failure, throws an exception or returns a negative error code.

YAPI.PreregisterHub()**YAPI****yPreregisterHub()** **YAPI.PreregisterHub()**

Fault-tolerant alternative to RegisterHub().

js	function yPreregisterHub (url , errmsg)
nodejs	function PreregisterHub (url , errmsg)
php	function yPreregisterHub (\$url , &\$errmsg)
cpp	YRETCODE yPreregisterHub (const string& url , string& errmsg)
m	YRETCODE yPreregisterHub (NSString * url , NSError** errmsg)
pas	function yPreregisterHub (url : string, var errmsg : string): integer
vb	function yPreregisterHub (ByVal url As String, ByRef errmsg As String) As Integer
cs	int PreregisterHub (string url , ref string errmsg)
java	int PreregisterHub (String url)
py	def PreregisterHub (url , errmsg=None)

This function has the same purpose and same arguments as RegisterHub(), but does not trigger an error when the selected hub is not available at the time of the function call. This makes it possible to register a network hub independently of the current connectivity, and to try to contact it only when a device is actively needed.

Parameters :

url a string containing either "usb", "callback" or the root URL of the hub to monitor
errmsg a string passed by reference to receive any error message.

Returns :

YAPI_SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

YAPI.RegisterDeviceArrivalCallback()**YAPI****yRegisterDeviceArrivalCallback()****YAPI.RegisterDeviceArrivalCallback()**

Register a callback function, to be called each time a device is plugged.

js	function yRegisterDeviceArrivalCallback (arrivalCallback)
nodejs	function RegisterDeviceArrivalCallback (arrivalCallback)
php	function yRegisterDeviceArrivalCallback (\$arrivalCallback)
cpp	void yRegisterDeviceArrivalCallback (yDeviceUpdateCallback arrivalCallback)
m	void yRegisterDeviceArrivalCallback (yDeviceUpdateCallback arrivalCallback)
pas	procedure yRegisterDeviceArrivalCallback (arrivalCallback : yDeviceUpdateFunc)
vb	procedure yRegisterDeviceArrivalCallback (ByVal arrivalCallback As yDeviceUpdateFunc)
cs	void RegisterDeviceArrivalCallback (yDeviceUpdateFunc arrivalCallback)
java	void RegisterDeviceArrivalCallback (DeviceArrivalCallback arrivalCallback)
py	def RegisterDeviceArrivalCallback (arrivalCallback)

This callback will be invoked while `yUpdateDeviceList` is running. You will have to call this function on a regular basis.

Parameters :

arrivalCallback a procedure taking a `YModule` parameter, or null

YAPI.RegisterDeviceRemovalCallback()**YAPI****yRegisterDeviceRemovalCallback()****YAPI.RegisterDeviceRemovalCallback()**

Register a callback function, to be called each time a device is unplugged.

js	function yRegisterDeviceRemovalCallback (removalCallback)
nodejs	function RegisterDeviceRemovalCallback (removalCallback)
php	function yRegisterDeviceRemovalCallback (\$removalCallback)
cpp	void yRegisterDeviceRemovalCallback (yDeviceUpdateCallback removalCallback)
m	void yRegisterDeviceRemovalCallback (yDeviceUpdateCallback removalCallback)
pas	procedure yRegisterDeviceRemovalCallback (removalCallback : yDeviceUpdateFunc)
vb	procedure yRegisterDeviceRemovalCallback (ByVal removalCallback As yDeviceUpdateFunc)
cs	void RegisterDeviceRemovalCallback (yDeviceUpdateFunc removalCallback)
java	void RegisterDeviceRemovalCallback (DeviceRemovalCallback removalCallback)
py	def RegisterDeviceRemovalCallback (removalCallback)

This callback will be invoked while `yUpdateDeviceList` is running. You will have to call this function on a regular basis.

Parameters :

removalCallback a procedure taking a `YModule` parameter, or null

YAPI.RegisterHub()**YAPI****yRegisterHub()** `YAPI.RegisterHub()`

Setup the Yoctopuce library to use modules connected on a given machine.

<code>js</code>	<code>function yRegisterHub(url, errmsg)</code>
<code>nodejs</code>	<code>function RegisterHub(url, errmsg)</code>
<code>php</code>	<code>function yRegisterHub(\$url, &\$errmsg)</code>
<code>cpp</code>	<code>YRETCODE yRegisterHub(const string& url, string& errmsg)</code>
<code>m</code>	<code>YRETCODE yRegisterHub(NSString * url, NSError** errmsg)</code>
<code>pas</code>	<code>function yRegisterHub(url: string, var errmsg: string): integer</code>
<code>vb</code>	<code>function yRegisterHub(ByVal url As String, ByRef errmsg As String) As Integer</code>
<code>cs</code>	<code>int RegisterHub(string url, ref string errmsg)</code>
<code>java</code>	<code>int RegisterHub(String url)</code>
<code>py</code>	<code>def RegisterHub(url, errmsg=None)</code>

The parameter will determine how the API will work. Use the following values:

usb: When the **usb** keyword is used, the API will work with devices connected directly to the USB bus. Some programming languages such as Javascript, PHP, and Java don't provide direct access to USB hardware, so **usb** will not work with these. In this case, use a VirtualHub or a networked YoctoHub (see below).

x.x.x.x or **hostname**: The API will use the devices connected to the host with the given IP address or hostname. That host can be a regular computer running a VirtualHub, or a networked YoctoHub such as YoctoHub-Ethernet or YoctoHub-Wireless. If you want to use the VirtualHub running on your local computer, use the IP address 127.0.0.1.

callback: that keyword makes the API run in "*HTTP Callback*" mode. This is a special mode allowing to take control of Yoctopuce devices through a NAT filter when using a VirtualHub or a networked YoctoHub. You only need to configure your hub to call your server script on a regular basis. This mode is currently available for PHP and Node.JS only.

Be aware that only one application can use direct USB access at a given time on a machine. Multiple access would cause conflicts while trying to access the USB modules. In particular, this means that you must stop the VirtualHub software before starting an application that uses direct USB access. The workaround for this limitation is to setup the library to use the VirtualHub rather than direct USB access.

If access control has been activated on the hub, virtual or not, you want to reach, the URL parameter should look like:

```
http://username:password@adresse:port
```

You can call *RegisterHub* several times to connect to several machines.

Parameters :

url a string containing either "**usb**", "**callback**" or the root URL of the hub to monitor
errmsg a string passed by reference to receive any error message.

Returns :

YAPI_SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

YAPI.RegisterHubDiscoveryCallback()**YAPI****yRegisterHubDiscoveryCallback()****YAPI.RegisterHubDiscoveryCallback()**

Register a callback function, to be called each time an Network Hub send an SSDP message.

cpp	void yRegisterHubDiscoveryCallback (YHubDiscoveryCallback hubDiscoveryCallback)
m	+(void) yRegisterHubDiscoveryCallback : (YHubDiscoveryCallback) hubDiscoveryCallback
pas	procedure yRegisterHubDiscoveryCallback (hubDiscoveryCallback : YHubDiscoveryCallback)
vb	procedure yRegisterHubDiscoveryCallback (ByVal hubDiscoveryCallback As YHubDiscoveryCallback)
cs	void RegisterHubDiscoveryCallback (YHubDiscoveryCallback hubDiscoveryCallback)
java	void RegisterHubDiscoveryCallback (HubDiscoveryCallback hubDiscoveryCallback)
py	def RegisterHubDiscoveryCallback (hubDiscoveryCallback)

The callback has two string parameter, the first one contain the serial number of the hub and the second contain the URL of the network hub (this URL can be passed to RegisterHub). This callback will be invoked while yUpdateDeviceList is running. You will have to call this function on a regular basis.

Parameters :

hubDiscoveryCallback a procedure taking two string parameter, or null

YAPI.RegisterLogFunction() yRegisterLogFunction() YAPI.RegisterLogFunction()

YAPI

Registers a log callback function.

cpp	void yRegisterLogFunction (yLogFunction logfun)
m	void yRegisterLogFunction (yLogCallback logfun)
pas	procedure yRegisterLogFunction (logfun : yLogFunc)
vb	procedure yRegisterLogFunction (ByVal logfun As yLogFunc)
cs	void RegisterLogFunction (yLogFunc logfun)
java	void RegisterLogFunction (LogCallback logfun)
py	def RegisterLogFunction (logfun)

This callback will be called each time the API have something to say. Quite useful to debug the API.

Parameters :

logfun a procedure taking a string parameter, or null

YAPI.SelectArchitecture() ySelectArchitecture()

YAPI

Select the architecture or the library to be loaded to access to USB.

```
py def SelectArchitecture( arch)
```

By default, the Python library automatically detects the appropriate library to use. However, for Linux ARM, it not possible to reliably distinguish between a Hard Float (armhf) and a Soft Float (armel) install. For in this case, it is therefore recommended to manually select the proper architecture by calling `SelectArchitecture()` before any other call to the library.

Parameters :

arch A string containing the architecture to use. Possibles value are: "armhf","armel", "i386","x86_64","32bit", "64bit"

Returns :

nothing.

On failure, throws an exception.

YAPI.SetDelegate() ySetDelegate()

YAPI

(Objective-C only) Register an object that must follow the protocol YDeviceHotPlug.

```
m void ySetDelegate( id object)
```

The methods `yDeviceArrival` and `yDeviceRemoval` will be invoked while `yUpdateDeviceList` is running. You will have to call this function on a regular basis.

Parameters :

object an object that must follow the protocol YAPIDelegate, or nil

YAPI.SetTimeout() ySetTimeout()

YAPI

Invoke the specified callback function after a given timeout.

```
js function ySetTimeout( callback, ms_timeout, arguments)
nodejs function SetTimeout( callback, ms_timeout, arguments)
```

This function behaves more or less like Javascript `setTimeout`, but during the waiting time, it will call `yHandleEvents` and `yUpdateDeviceList` periodically, in order to keep the API up-to-date with current devices.

Parameters :

- callback** the function to call after the timeout occurs. On Microsoft Internet Explorer, the callback must be provided as a string to be evaluated.
- ms_timeout** an integer corresponding to the duration of the timeout, in milliseconds.
- arguments** additional arguments to be passed to the callback function can be provided, if needed (not supported on Microsoft Internet Explorer).

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

YAPI.Sleep()**YAPI****ySleep()****YAPI.Sleep()**

Pauses the execution flow for a specified duration.

<code>js</code>	<code>function ySleep(ms_duration, errmsg)</code>
<code>nodejs</code>	<code>function Sleep(ms_duration, errmsg)</code>
<code>php</code>	<code>function ySleep(\$ms_duration, &\$errmsg)</code>
<code>cpp</code>	<code>YRETCODE ySleep(unsigned ms_duration, string& errmsg)</code>
<code>m</code>	<code>YRETCODE ySleep(unsigned ms_duration, NSError ** errmsg)</code>
<code>pas</code>	<code>function ySleep(ms_duration: integer, var errmsg: string): integer</code>
<code>vb</code>	<code>function ySleep(ByVal ms_duration As Integer, ByRef errmsg As String) As Integer</code>
<code>cs</code>	<code>int Sleep(int ms_duration, ref string errmsg)</code>
<code>java</code>	<code>int Sleep(long ms_duration)</code>
<code>py</code>	<code>def Sleep(ms_duration, errmsg=None)</code>

This function implements a passive waiting loop, meaning that it does not consume CPU cycles significantly. The processor is left available for other threads and processes. During the pause, the library nevertheless reads from time to time information from the Yoctopuce modules by calling `yHandleEvents()`, in order to stay up-to-date.

This function may signal an error in case there is a communication problem while contacting a module.

Parameters :

ms_duration an integer corresponding to the duration of the pause, in milliseconds.

errmsg a string passed by reference to receive any error message.

Returns :

`YAPI_SUCCESS` when the call succeeds. On failure, throws an exception or returns a negative error code.

YAPI.TriggerHubDiscovery()**YAPI****yTriggerHubDiscovery()****YAPI.TriggerHubDiscovery()**

Force a hub discovery, if a callback as been registered with yRegisterDeviceRemovalCallback it will be called for each net work hub that will respond to the discovery.

cpp	YRETCODE yTriggerHubDiscovery(string& errmsg)
m	+(YRETCODE) yTriggerHubDiscovery : (NSError**) errmsg
pas	function yTriggerHubDiscovery(var errmsg: string): integer
vb	function yTriggerHubDiscovery(ByRef errmsg As String) As Integer
cs	int TriggerHubDiscovery(ref string errmsg)
java	int TriggerHubDiscovery()
py	def TriggerHubDiscovery(errmsg=None)

Parameters :

errmsg a string passed by reference to receive any error message.

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

YAPI.UnregisterHub()**YAPI****yUnregisterHub()****YAPI.UnregisterHub()**

Setup the Yoctopuce library to no more use modules connected on a previously registered machine with RegisterHub.

<code>js</code>	<code>function yUnregisterHub(url)</code>
<code>nodejs</code>	<code>function UnregisterHub(url)</code>
<code>php</code>	<code>function yUnregisterHub(\$url)</code>
<code>cpp</code>	<code>void yUnregisterHub(const string& url)</code>
<code>m</code>	<code>void yUnregisterHub(NSString * url)</code>
<code>pas</code>	<code>procedure yUnregisterHub(url: string)</code>
<code>vb</code>	<code>procedure yUnregisterHub(ByVal url As String)</code>
<code>cs</code>	<code>void UnregisterHub(string url)</code>
<code>java</code>	<code>void UnregisterHub(String url)</code>
<code>py</code>	<code>def UnregisterHub(url)</code>

Parameters :

url a string containing either "usb" or the

YAPI.UpdateDeviceList()**YAPI****yUpdateDeviceList()**`YAPI.UpdateDeviceList()`

Triggers a (re)detection of connected Yoctopuce modules.

js	function yUpdateDeviceList (errmsg)
nodejs	function UpdateDeviceList (errmsg)
php	function yUpdateDeviceList (&\$errmsg)
cpp	YRETCODE yUpdateDeviceList (string& errmsg)
m	YRETCODE yUpdateDeviceList (NSError** errmsg)
pas	function yUpdateDeviceList (var errmsg : string): integer
vb	function yUpdateDeviceList (ByRef errmsg As String) As YRETCODE
cs	YRETCODE UpdateDeviceList (ref string errmsg)
java	int UpdateDeviceList ()
py	def UpdateDeviceList (errmsg =None)

The library searches the machines or USB ports previously registered using `yRegisterHub()`, and invokes any user-defined callback function in case a change in the list of connected devices is detected.

This function can be called as frequently as desired to refresh the device list and to make the application aware of hot-plug events.

Parameters :

errmsg a string passed by reference to receive any error message.

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

YAPI.UpdateDeviceList_async() yUpdateDeviceList_async()

YAPI

Triggers a (re)detection of connected Yoctopuce modules.

```
js function yUpdateDeviceList_async( callback, context)
nodejs function UpdateDeviceList_async( callback, context)
```

The library searches the machines or USB ports previously registered using `yRegisterHub()`, and invokes any user-defined callback function in case a change in the list of connected devices is detected.

This function can be called as frequently as desired to refresh the device list and to make the application aware of hot-plug events.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox Javascript VM that does not implement context switching during blocking I/O calls.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the result code (`YAPI_SUCCESS` if the operation completes successfully) and the error message.
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

3.2. Accelerometer function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_accelerometer.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YAccelerometer = yoctolib.YAccelerometer;
php	require_once('yocto_accelerometer.php');
c++	#include "yocto_accelerometer.h"
m	#import "yocto_accelerometer.h"
pas	uses yocto_accelerometer;
vb	yocto_accelerometer.vb
cs	yocto_accelerometer.cs
java	import com.yoctopuce.YoctoAPI.YAccelerometer;
py	from yocto_accelerometer import *

Global functions

yFindAccelerometer(func)

Retrieves an accelerometer for a given identifier.

yFirstAccelerometer()

Starts the enumeration of accelerometers currently accessible.

YAccelerometer methods

accelerometer→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

accelerometer→describe()

Returns a short text that describes unambiguously the instance of the accelerometer in the form TYPE (NAME) = SERIAL . FUNCTIONID.

accelerometer→get_advertisedValue()

Returns the current value of the accelerometer (no more than 6 characters).

accelerometer→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

accelerometer→get_currentValue()

Returns the current value of the acceleration.

accelerometer→get_errorMessage()

Returns the error message of the latest error with the accelerometer.

accelerometer→get_errorType()

Returns the numerical error code of the latest error with the accelerometer.

accelerometer→get_friendlyName()

Returns a global identifier of the accelerometer in the format MODULE_NAME . FUNCTION_NAME.

accelerometer→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

accelerometer→get_functionId()

Returns the hardware identifier of the accelerometer, without reference to the module.

accelerometer→get_hardwareId()

Returns the unique hardware identifier of the accelerometer in the form SERIAL . FUNCTIONID.

accelerometer→get_highestValue()

Returns the maximal value observed for the acceleration since the device was started.

accelerometer→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

accelerometer→get_logicalName()

Returns the logical name of the accelerometer.

accelerometer→get_lowestValue()

Returns the minimal value observed for the acceleration since the device was started.

accelerometer→get_module()

Gets the YModule object for the device on which the function is located.

accelerometer→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

accelerometer→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

accelerometer→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

accelerometer→get_resolution()

Returns the resolution of the measured values.

accelerometer→get_unit()

Returns the measuring unit for the acceleration.

accelerometer→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

accelerometer→get_xValue()

Returns the X component of the acceleration, as a floating point number.

accelerometer→get_yValue()

Returns the Y component of the acceleration, as a floating point number.

accelerometer→get_zValue()

Returns the Z component of the acceleration, as a floating point number.

accelerometer→isOnline()

Checks if the accelerometer is currently reachable, without raising any error.

accelerometer→isOnline_async(callback, context)

Checks if the accelerometer is currently reachable, without raising any error (asynchronous version).

accelerometer→load(msValidity)

Preloads the accelerometer cache with a specified validity duration.

accelerometer→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

accelerometer→load_async(msValidity, callback, context)

Preloads the accelerometer cache with a specified validity duration (asynchronous version).

accelerometer→nextAccelerometer()

Continues the enumeration of accelerometers started using yFirstAccelerometer().

accelerometer→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

accelerometer→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

3. Reference

accelerometer→set_highestValue(newval)

Changes the recorded maximal value observed.

accelerometer→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

accelerometer→set_logicalName(newval)

Changes the logical name of the accelerometer.

accelerometer→set_lowestValue(newval)

Changes the recorded minimal value observed.

accelerometer→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

accelerometer→set_resolution(newval)

Changes the resolution of the measured physical values.

accelerometer→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

accelerometer→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YAccelerometer.FindAccelerometer()**YAccelerometer****yFindAccelerometer()****YAccelerometer.FindAccelerometer()**

Retrieves an accelerometer for a given identifier.

js	function yFindAccelerometer (func)
nodejs	function FindAccelerometer (func)
php	function yFindAccelerometer (\$func)
cpp	YAccelerometer* yFindAccelerometer (const string& func)
m	YAccelerometer* yFindAccelerometer (NSString* func)
pas	function yFindAccelerometer (func : string): TYAccelerometer
vb	function yFindAccelerometer (ByVal func As String) As YAccelerometer
cs	YAccelerometer FindAccelerometer (string func)
java	YAccelerometer FindAccelerometer (String func)
py	def FindAccelerometer (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the accelerometer is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YAccelerometer.isOnline()` to test if the accelerometer is indeed online at a given time. In case of ambiguity when looking for an accelerometer by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the accelerometer

Returns :

a `YAccelerometer` object allowing you to drive the accelerometer.

YAccelerometer.FirstAccelerometer()**YAccelerometer****yFirstAccelerometer()****YAccelerometer.FirstAccelerometer()**

Starts the enumeration of accelerometers currently accessible.

js	function yFirstAccelerometer ()
nodejs	function FirstAccelerometer ()
php	function yFirstAccelerometer ()
cpp	YAccelerometer* yFirstAccelerometer ()
m	YAccelerometer* yFirstAccelerometer ()
pas	function yFirstAccelerometer (): TYAccelerometer
vb	function yFirstAccelerometer () As YAccelerometer
cs	YAccelerometer FirstAccelerometer ()
java	YAccelerometer FirstAccelerometer ()
py	def FirstAccelerometer ()

Use the method `YAccelerometer.nextAccelerometer()` to iterate on next accelerometers.

Returns :

a pointer to a `YAccelerometer` object, corresponding to the first accelerometer currently online, or a null pointer if there are none.

accelerometer→calibrateFromPoints()**YAccelerometer****accelerometer.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

js	function calibrateFromPoints (rawValues , refValues)
nodejs	function calibrateFromPoints (rawValues , refValues)
php	function calibrateFromPoints (\$rawValues , \$refValues)
cpp	int calibrateFromPoints (vector<double> rawValues , vector<double> refValues)
m	-(int) calibrateFromPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues
pas	function calibrateFromPoints (rawValues : TDoubleArray, refValues : TDoubleArray): LongInt
vb	procedure calibrateFromPoints ()
cs	int calibrateFromPoints (List<double> rawValues , List<double> refValues)
java	int calibrateFromPoints (ArrayList<Double> rawValues , ArrayList<Double> refValues)
py	def calibrateFromPoints (rawValues , refValues)
cmd	YAccelerometer target calibrateFromPoints rawValues refValues

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→describe()**YAccelerometer****accelerometer.describe()**

Returns a short text that describes unambiguously the instance of the accelerometer in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the accelerometer (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

accelerometer→get_advertisedValue()**YAccelerometer****accelerometer→advertisedValue()****accelerometer.get_advertisedValue()**

Returns the current value of the accelerometer (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YAccelerometer target get_advertisedValue

Returns :

a string corresponding to the current value of the accelerometer (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

accelerometer→**get_currentRawValue()****YAccelerometer****accelerometer**→**currentRawValue()****accelerometer.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue()
nodejs	function get_currentRawValue()
php	function get_currentRawValue()
cpp	double get_currentRawValue()
m	-(double) currentRawValue
pas	function get_currentRawValue() : double
vb	function get_currentRawValue() As Double
cs	double get_currentRawValue()
java	double get_currentRawValue()
py	def get_currentRawValue()
cmd	YAccelerometer target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

accelerometer→get_currentValue()**YAccelerometer****accelerometer→currentValue()****accelerometer.get_currentValue()**

Returns the current value of the acceleration.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YAccelerometer target get_currentValue

Returns :

a floating point number corresponding to the current value of the acceleration

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

accelerometer→get_errorMessage()**YAccelerometer****accelerometer→errorMessage()****accelerometer.get_errorMessage()**

Returns the error message of the latest error with the accelerometer.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the accelerometer object

accelerometer→get_errorType()**YAccelerometer****accelerometer→errorType()****accelerometer.get_errorType()**

Returns the numerical error code of the latest error with the accelerometer.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the accelerometer object

accelerometer→**get_friendlyName()**
accelerometer→**friendlyName()**
accelerometer.get_friendlyName()

YAccelerometer

Returns a global identifier of the accelerometer in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the accelerometer if they are defined, otherwise the serial number of the module and the hardware identifier of the accelerometer (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the accelerometer using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

accelerometer→get_functionDescriptor()**YAccelerometer****accelerometer→functionDescriptor()****accelerometer.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

accelerometer→**get_functionId()****YAccelerometer****accelerometer**→**functionId()****accelerometer.get_functionId()**

Returns the hardware identifier of the accelerometer, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the accelerometer (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

accelerometer→get_hardwareId()**YAccelerometer****accelerometer→hardwareId()****accelerometer.get_hardwareId()**

Returns the unique hardware identifier of the accelerometer in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the accelerometer. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the accelerometer (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

accelerometer→**get_highestValue()****YAccelerometer****accelerometer**→**highestValue()****accelerometer.get_highestValue()**

Returns the maximal value observed for the acceleration since the device was started.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YAccelerometer target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the acceleration since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

accelerometer→get_logFrequency()**YAccelerometer****accelerometer→logFrequency()****accelerometer.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency ()
nodejs	function get_logFrequency ()
php	function get_logFrequency ()
cpp	string get_logFrequency ()
m	-(NSString*) logFrequency
pas	function get_logFrequency (): string
vb	function get_logFrequency () As String
cs	string get_logFrequency ()
java	String get_logFrequency ()
py	def get_logFrequency ()
cmd	YAccelerometer target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

accelerometer→**get_logicalName()****YAccelerometer****accelerometer**→**logicalName()****accelerometer.get_logicalName()**

Returns the logical name of the accelerometer.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YAccelerometer target get_logicalName

Returns :

a string corresponding to the logical name of the accelerometer. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

accelerometer→get_lowestValue()**YAccelerometer****accelerometer→lowestValue()****accelerometer.get_lowestValue()**

Returns the minimal value observed for the acceleration since the device was started.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YAccelerometer target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the acceleration since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

accelerometer→get_module()**YAccelerometer****accelerometer→module()****accelerometer.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

accelerometer→**get_module_async()****YAccelerometer****accelerometer**→**module_async()**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned `YModule` object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

accelerometer→**get_recordedData()****YAccelerometer****accelerometer**→**recordedData()****accelerometer.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
c++	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YAccelerometer target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

accelerometer→get_reportFrequency()**YAccelerometer****accelerometer→reportFrequency()****accelerometer.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YAccelerometer target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

accelerometer→**get_resolution()****YAccelerometer****accelerometer**→**resolution()****accelerometer.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YAccelerometer target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

accelerometer→**get_unit()****YAccelerometer****accelerometer**→**unit()**`accelerometer.get_unit()`

Returns the measuring unit for the acceleration.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YAccelerometer target get_unit

Returns :

a string corresponding to the measuring unit for the acceleration

On failure, throws an exception or returns Y_UNIT_INVALID.

accelerometer→**get_userData()****YAccelerometer****accelerometer**→**userData()****accelerometer.get_userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

accelerometer→get_xValue()**YAccelerometer****accelerometer→xValue()****accelerometer.get_xValue()**

Returns the X component of the acceleration, as a floating point number.

js	function get_xValue ()
nodejs	function get_xValue ()
php	function get_xValue ()
cpp	double get_xValue ()
m	-(double) xValue
pas	function get_xValue (): double
vb	function get_xValue () As Double
cs	double get_xValue ()
java	double get_xValue ()
py	def get_xValue ()
cmd	YAccelerometer target get_xValue

Returns :

a floating point number corresponding to the X component of the acceleration, as a floating point number

On failure, throws an exception or returns Y_XVALUE_INVALID.

accelerometer→get_yValue()**YAccelerometer****accelerometer→yValue()****accelerometer.get_yValue()**

Returns the Y component of the acceleration, as a floating point number.

js	function get_yValue ()
nodejs	function get_yValue ()
php	function get_yValue ()
cpp	double get_yValue ()
m	-(double) yValue
pas	function get_yValue (): double
vb	function get_yValue () As Double
cs	double get_yValue ()
java	double get_yValue ()
py	def get_yValue ()
cmd	YAccelerometer target get_yValue

Returns :

a floating point number corresponding to the Y component of the acceleration, as a floating point number

On failure, throws an exception or returns Y_YVALUE_INVALID.

accelerometer→get_zValue()**YAccelerometer****accelerometer→zValue()****accelerometer.get_zValue()**

Returns the Z component of the acceleration, as a floating point number.

js	function get_zValue ()
nodejs	function get_zValue ()
php	function get_zValue ()
cpp	double get_zValue ()
m	-(double) zValue
pas	function get_zValue (): double
vb	function get_zValue () As Double
cs	double get_zValue ()
java	double get_zValue ()
py	def get_zValue ()
cmd	YAccelerometer target get_zValue

Returns :

a floating point number corresponding to the Z component of the acceleration, as a floating point number

On failure, throws an exception or returns Y_ZVALUE_INVALID.

accelerometer→isOnline()**YAccelerometer****accelerometer.isOnline()**

Checks if the accelerometer is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the accelerometer in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the accelerometer.

Returns :

`true` if the accelerometer can be reached, and `false` otherwise

accelerometer→isOnline_async()**YAccelerometer**

Checks if the accelerometer is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the accelerometer in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

accelerometer→**load()**`accelerometer.load()`**YAccelerometer**

Preloads the accelerometer cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

accelerometer→loadCalibrationPoints()**YAccelerometer****accelerometer.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php function loadCalibrationPoints( &$rawValues, &$refValues)
cpp int loadCalibrationPoints( vector<double>& rawValues,
                             vector<double>& refValues)

m -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
   : (NSMutableArray*) refValues

pas function loadCalibrationPoints( var rawValues: TDoubleArray,
                                   var refValues: TDoubleArray): LongInt

vb procedure loadCalibrationPoints( )
cs int loadCalibrationPoints( List<double> rawValues,
                             List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                              ArrayList<Double> refValues)

py def loadCalibrationPoints( rawValues, refValues)
cmd YAccelerometer target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→load_async()**YAccelerometer**

Preloads the accelerometer cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

accelerometer→nextAccelerometer()**YAccelerometer****accelerometer.nextAccelerometer()**

Continues the enumeration of accelerometers started using `yFirstAccelerometer()`.

js	function nextAccelerometer ()
nodejs	function nextAccelerometer ()
php	function nextAccelerometer ()
cpp	YAccelerometer * nextAccelerometer ()
m	-(YAccelerometer*) nextAccelerometer
pas	function nextAccelerometer (): TYAccelerometer
vb	function nextAccelerometer () As YAccelerometer
cs	YAccelerometer nextAccelerometer ()
java	YAccelerometer nextAccelerometer ()
py	def nextAccelerometer ()

Returns :

a pointer to a `YAccelerometer` object, corresponding to an accelerometer currently online, or a `null` pointer if there are no more accelerometers to enumerate.

accelerometer→registerTimedReportCallback()**YAccelerometer**

```
accelerometer.registerTimedReportCallback(
)
```

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YAccelerometerTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YAccelerometerTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYAccelerometerTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

accelerometer→registerValueCallback()**YAccelerometer****accelerometer.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YAccelerometerValueCallback callback)
m	-(int) registerValueCallback : (YAccelerometerValueCallback) callback
pas	function registerValueCallback (callback : TYAccelerometerValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

accelerometer→**set_highestValue()****YAccelerometer****accelerometer**→**setHighestValue()****accelerometer.set_highestValue()**

Changes the recorded maximal value observed.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YAccelerometer target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→set_logFrequency()**YAccelerometer****accelerometer→setLogFrequency()****accelerometer.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YAccelerometer target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→set_logicalName()**YAccelerometer****accelerometer→setLogicalName()****accelerometer.set_logicalName()**

Changes the logical name of the accelerometer.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YAccelerometer target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the accelerometer.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

accelerometer→set_lowestValue()**YAccelerometer****accelerometer→setLowestValue()****accelerometer.set_lowestValue()**

Changes the recorded minimal value observed.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YAccelerometer target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→set_reportFrequency()**YAccelerometer****accelerometer→setReportFrequency()****accelerometer.set_reportFrequency()**

Changes the timed value notification frequency for this function.

<code>js</code>	<code>function set_reportFrequency(newval)</code>
<code>nodejs</code>	<code>function set_reportFrequency(newval)</code>
<code>php</code>	<code>function set_reportFrequency(\$newval)</code>
<code>cpp</code>	<code>int set_reportFrequency(const string& newval)</code>
<code>m</code>	<code>-(int) setReportFrequency : (NSString*) newval</code>
<code>pas</code>	<code>function set_reportFrequency(newval: string): integer</code>
<code>vb</code>	<code>function set_reportFrequency(ByVal newval As String) As Integer</code>
<code>cs</code>	<code>int set_reportFrequency(string newval)</code>
<code>java</code>	<code>int set_reportFrequency(String newval)</code>
<code>py</code>	<code>def set_reportFrequency(newval)</code>
<code>cmd</code>	<code>YAccelerometer target set_reportFrequency newval</code>

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→set_resolution()**YAccelerometer****accelerometer→setResolution()****accelerometer.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YAccelerometer target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→**set_userdata()****YAccelerometer****accelerometer**→**setUserData()****accelerometer.set_userdata()**

Stores a user context provided as argument in the `userData` attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

accelerometer→wait_async()**YAccelerometer**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.3. AnButton function interface

Yoctopuce application programming interface allows you to measure the state of a simple button as well as to read an analog potentiometer (variable resistance). This can be use for instance with a continuous rotating knob, a throttle grip or a joystick. The module is capable to calibrate itself on min and max values, in order to compute a calibrated value that varies proportionally with the potentiometer position, regardless of its total resistance.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_anbutton.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YAnButton = yoctolib.YAnButton;
php	require_once('yocto_anbutton.php');
c++	#include "yocto_anbutton.h"
m	#import "yocto_anbutton.h"
pas	uses yocto_anbutton;
vb	yocto_anbutton.vb
cs	yocto_anbutton.cs
java	import com.yoctopuce.YoctoAPI.YAnButton;
py	from yocto_anbutton import *

Global functions

yFindAnButton(func)

Retrieves an analog input for a given identifier.

yFirstAnButton()

Starts the enumeration of analog inputs currently accessible.

YAnButton methods

anbutton→describe()

Returns a short text that describes unambiguously the instance of the analog input in the form TYPE (NAME) = SERIAL . FUNCTIONID.

anbutton→get_advertisedValue()

Returns the current value of the analog input (no more than 6 characters).

anbutton→get_analogCalibration()

Tells if a calibration process is currently ongoing.

anbutton→get_calibratedValue()

Returns the current calibrated input value (between 0 and 1000, included).

anbutton→get_calibrationMax()

Returns the maximal value measured during the calibration (between 0 and 4095, included).

anbutton→get_calibrationMin()

Returns the minimal value measured during the calibration (between 0 and 4095, included).

anbutton→get_errorMessage()

Returns the error message of the latest error with the analog input.

anbutton→get_errorType()

Returns the numerical error code of the latest error with the analog input.

anbutton→get_friendlyName()

Returns a global identifier of the analog input in the format MODULE_NAME . FUNCTION_NAME.

anbutton→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

anbutton→get_functionId()

Returns the hardware identifier of the analog input, without reference to the module.

anbutton→get_hardwareId()

Returns the unique hardware identifier of the analog input in the form `SERIAL.FUNCTIONID`.

anbutton→get_isPressed()

Returns true if the input (considered as binary) is active (closed contact), and false otherwise.

anbutton→get_lastTimePressed()

Returns the number of elapsed milliseconds between the module power on and the last time the input button was pressed (the input contact transitionned from open to closed).

anbutton→get_lastTimeReleased()

Returns the number of elapsed milliseconds between the module power on and the last time the input button was released (the input contact transitionned from closed to open).

anbutton→get_logicalName()

Returns the logical name of the analog input.

anbutton→get_module()

Gets the `YModule` object for the device on which the function is located.

anbutton→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

anbutton→get_pulseCounter()

Returns the pulse counter value

anbutton→get_pulseTimer()

Returns the timer of the pulses counter (ms)

anbutton→get_rawValue()

Returns the current measured input value as-is (between 0 and 4095, included).

anbutton→get_sensitivity()

Returns the sensibility for the input (between 1 and 1000) for triggering user callbacks.

anbutton→get_userData()

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

anbutton→isOnline()

Checks if the analog input is currently reachable, without raising any error.

anbutton→isOnline_async(callback, context)

Checks if the analog input is currently reachable, without raising any error (asynchronous version).

anbutton→load(msValidity)

Preloads the analog input cache with a specified validity duration.

anbutton→load_async(msValidity, callback, context)

Preloads the analog input cache with a specified validity duration (asynchronous version).

anbutton→nextAnButton()

Continues the enumeration of analog inputs started using `yFirstAnButton()`.

anbutton→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

anbutton→resetCounter()

Returns the pulse counter value as well as his timer

anbutton→set_analogCalibration(newval)

Starts or stops the calibration process.

anbutton→set_calibrationMax(newval)

3. Reference

Changes the maximal calibration value for the input (between 0 and 4095, included), without actually starting the automated calibration.

anbutton→**set_calibrationMin**(newval)

Changes the minimal calibration value for the input (between 0 and 4095, included), without actually starting the automated calibration.

anbutton→**set_logicalName**(newval)

Changes the logical name of the analog input.

anbutton→**set_sensitivity**(newval)

Changes the sensibility for the input (between 1 and 1000) for triggering user callbacks.

anbutton→**set_userData**(data)

Stores a user context provided as argument in the userData attribute of the function.

anbutton→**wait_async**(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YAnButton.FindAnButton()**YAnButton****yFindAnButton()** **YAnButton.FindAnButton()**

Retrieves an analog input for a given identifier.

js	function yFindAnButton (func)
nodejs	function FindAnButton (func)
php	function yFindAnButton (\$func)
cpp	YAnButton* yFindAnButton (const string& func)
m	YAnButton* yFindAnButton (NSString* func)
pas	function yFindAnButton (func : string): TYAnButton
vb	function yFindAnButton (ByVal func As String) As YAnButton
cs	YAnButton FindAnButton (string func)
java	YAnButton FindAnButton (String func)
py	def FindAnButton (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the analog input is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YAnButton.isOnline()` to test if the analog input is indeed online at a given time. In case of ambiguity when looking for an analog input by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the analog input

Returns :

a `YAnButton` object allowing you to drive the analog input.

YAnButton.FirstAnButton()**YAnButton****yFirstAnButton()****YAnButton.FirstAnButton()**

Starts the enumeration of analog inputs currently accessible.

js	function yFirstAnButton ()
nodejs	function FirstAnButton ()
php	function yFirstAnButton ()
cpp	YAnButton* yFirstAnButton ()
m	YAnButton* yFirstAnButton ()
pas	function yFirstAnButton (): TYAnButton
vb	function yFirstAnButton () As YAnButton
cs	YAnButton FirstAnButton ()
java	YAnButton FirstAnButton ()
py	def FirstAnButton ()

Use the method `YAnButton.nextAnButton()` to iterate on next analog inputs.

Returns :

a pointer to a `YAnButton` object, corresponding to the first analog input currently online, or a `null` pointer if there are none.

anbutton→describe()`anbutton.describe()`**YAnButton**

Returns a short text that describes unambiguously the instance of the analog input in the form `TYPE (NAME) = SERIAL.FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, `TYPE` is the type of the function, `NAME` it the name used for the first access to the function, `SERIAL` is the serial number of the module if the module is connected or "unresolved", and `FUNCTIONID` is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the analog input (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

anbutton→**get_advertisedValue()****YAnButton****anbutton**→**advertisedValue()****anbutton.get_advertisedValue()**

Returns the current value of the analog input (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YAnButton target get_advertisedValue

Returns :

a string corresponding to the current value of the analog input (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

anbutton→get_analogCalibration()**YAnButton****anbutton→analogCalibration()****anbutton.get_analogCalibration()**

Tells if a calibration process is currently ongoing.

js	function get_analogCalibration ()
nodejs	function get_analogCalibration ()
php	function get_analogCalibration ()
cpp	Y_ANALOGCALIBRATION_enum get_analogCalibration ()
m	-(Y_ANALOGCALIBRATION_enum) analogCalibration
pas	function get_analogCalibration (): Integer
vb	function get_analogCalibration () As Integer
cs	int get_analogCalibration ()
java	int get_analogCalibration ()
py	def get_analogCalibration ()
cmd	YAnButton target get_analogCalibration

Returns :

either Y_ANALOGCALIBRATION_OFF or Y_ANALOGCALIBRATION_ON

On failure, throws an exception or returns Y_ANALOGCALIBRATION_INVALID.

anbutton→**get_calibratedValue()****YAnButton****anbutton**→**calibratedValue()****anbutton.get_calibratedValue()**

Returns the current calibrated input value (between 0 and 1000, included).

js	function get_calibratedValue ()
nodejs	function get_calibratedValue ()
php	function get_calibratedValue ()
cpp	int get_calibratedValue ()
m	-(int) calibratedValue
pas	function get_calibratedValue (): LongInt
vb	function get_calibratedValue () As Integer
cs	int get_calibratedValue ()
java	int get_calibratedValue ()
py	def get_calibratedValue ()
cmd	YAnButton target get_calibratedValue

Returns :

an integer corresponding to the current calibrated input value (between 0 and 1000, included)

On failure, throws an exception or returns Y_CALIBRATEDVALUE_INVALID.

anbutton→**get_calibrationMax()****YAnButton****anbutton**→**calibrationMax()****anbutton.get_calibrationMax()**

Returns the maximal value measured during the calibration (between 0 and 4095, included).

js	function get_calibrationMax ()
nodejs	function get_calibrationMax ()
php	function get_calibrationMax ()
cpp	int get_calibrationMax ()
m	-(int) calibrationMax
pas	function get_calibrationMax (): LongInt
vb	function get_calibrationMax () As Integer
cs	int get_calibrationMax ()
java	int get_calibrationMax ()
py	def get_calibrationMax ()
cmd	YAnButton target get_calibrationMax

Returns :

an integer corresponding to the maximal value measured during the calibration (between 0 and 4095, included)

On failure, throws an exception or returns Y_CALIBRATIONMAX_INVALID.

anbutton→**get_calibrationMin()****YAnButton****anbutton**→**calibrationMin()****anbutton.get_calibrationMin()**

Returns the minimal value measured during the calibration (between 0 and 4095, included).

js	function get_calibrationMin ()
nodejs	function get_calibrationMin ()
php	function get_calibrationMin ()
cpp	int get_calibrationMin ()
m	-(int) calibrationMin
pas	function get_calibrationMin (): LongInt
vb	function get_calibrationMin () As Integer
cs	int get_calibrationMin ()
java	int get_calibrationMin ()
py	def get_calibrationMin ()
cmd	YAnButton target get_calibrationMin

Returns :

an integer corresponding to the minimal value measured during the calibration (between 0 and 4095, included)

On failure, throws an exception or returns Y_CALIBRATIONMIN_INVALID.

anbutton→get_errorMessage()**YAnButton****anbutton→errorMessage()****anbutton.get_errorMessage()**

Returns the error message of the latest error with the analog input.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the analog input object

anbutton→**get_errorType()****YAnButton****anbutton**→**errorType()****anbutton.errorType()**

Returns the numerical error code of the latest error with the analog input.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the analog input object

anbutton→get_friendlyName()**YAnButton****anbutton→friendlyName()****anbutton.get_friendlyName()**

Returns a global identifier of the analog input in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the analog input if they are defined, otherwise the serial number of the module and the hardware identifier of the analog input (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the analog input using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

anbutton→**get_functionDescriptor()****YAnButton****anbutton**→**functionDescriptor()****anbutton.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

anbutton→**get_functionId()****YAnButton****anbutton**→**functionId()****anbutton.get_functionId()**

Returns the hardware identifier of the analog input, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the analog input (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

anbutton→**get_hardwareId()****YAnButton****anbutton**→**hardwareId()****anbutton.hardwareId()**

Returns the unique hardware identifier of the analog input in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the analog input. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the analog input (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

anbutton→get_isPressed()**YAnButton****anbutton→isPressed()****anbutton.get_isPressed()**

Returns true if the input (considered as binary) is active (closed contact), and false otherwise.

js	function get_isPressed ()
nodejs	function get_isPressed ()
php	function get_isPressed ()
cpp	Y_ISPRESSED_enum get_isPressed ()
m	-(Y_ISPRESSED_enum) isPressed
pas	function get_isPressed (): Integer
vb	function get_isPressed () As Integer
cs	int get_isPressed ()
java	int get_isPressed ()
py	def get_isPressed ()
cmd	YAnButton target get_isPressed

Returns :

either Y_ISPRESSED_FALSE or Y_ISPRESSED_TRUE, according to true if the input (considered as binary) is active (closed contact), and false otherwise

On failure, throws an exception or returns Y_ISPRESSED_INVALID.

anbutton→**get_lastTimePressed()****YAnButton****anbutton**→**lastTimePressed()****anbutton.get_lastTimePressed()**

Returns the number of elapsed milliseconds between the module power on and the last time the input button was pressed (the input contact transitionned from open to closed).

js	function get_lastTimePressed ()
nodejs	function get_lastTimePressed ()
php	function get_lastTimePressed ()
cpp	s64 get_lastTimePressed ()
m	-(s64) lastTimePressed
pas	function get_lastTimePressed (): int64
vb	function get_lastTimePressed () As Long
cs	long get_lastTimePressed ()
java	long get_lastTimePressed ()
py	def get_lastTimePressed ()
cmd	YAnButton target get_lastTimePressed

Returns :

an integer corresponding to the number of elapsed milliseconds between the module power on and the last time the input button was pressed (the input contact transitionned from open to closed)

On failure, throws an exception or returns Y_LASTTIMEPRESSED_INVALID.

anbutton→get_lastTimeReleased()**YAnButton****anbutton→lastTimeReleased()****anbutton.get_lastTimeReleased()**

Returns the number of elapsed milliseconds between the module power on and the last time the input button was released (the input contact transitionned from closed to open).

js	function get_lastTimeReleased ()
nodejs	function get_lastTimeReleased ()
php	function get_lastTimeReleased ()
cpp	s64 get_lastTimeReleased ()
m	-(s64) lastTimeReleased
pas	function get_lastTimeReleased (): int64
vb	function get_lastTimeReleased () As Long
cs	long get_lastTimeReleased ()
java	long get_lastTimeReleased ()
py	def get_lastTimeReleased ()
cmd	YAnButton target get_lastTimeReleased

Returns :

an integer corresponding to the number of elapsed milliseconds between the module power on and the last time the input button was released (the input contact transitionned from closed to open)

On failure, throws an exception or returns Y_LASTTIMERELASED_INVALID.

anbutton→get_logicalName()**YAnButton****anbutton→logicalName()****anbutton.get_logicalName()**

Returns the logical name of the analog input.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YAnButton target get_logicalName

Returns :

a string corresponding to the logical name of the analog input. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

anbutton→**get_module()****YAnButton****anbutton**→**module()****anbutton.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

anbutton→**get_module_async()****YAnButton****anbutton**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

anbutton→**get_pulseCounter()**
anbutton→**pulseCounter()**
anbutton.get_pulseCounter()

YAnButton

Returns the pulse counter value

js	function get_pulseCounter ()
nodejs	function get_pulseCounter ()
php	function get_pulseCounter ()
cpp	s64 get_pulseCounter ()
m	-(s64) pulseCounter
pas	function get_pulseCounter (): int64
vb	function get_pulseCounter () As Long
cs	long get_pulseCounter ()
java	long get_pulseCounter ()
py	def get_pulseCounter ()

Returns :

an integer corresponding to the pulse counter value

On failure, throws an exception or returns Y_PULSECOUNTER_INVALID.

anbutton→**get_pulseTimer()****YAnButton****anbutton**→**pulseTimer()****anbutton.get_pulseTimer()**

Returns the timer of the pulses counter (ms)

js	function get_pulseTimer ()
nodejs	function get_pulseTimer ()
php	function get_pulseTimer ()
cpp	s64 get_pulseTimer ()
m	-(s64) pulseTimer
pas	function get_pulseTimer (): int64
vb	function get_pulseTimer () As Long
cs	long get_pulseTimer ()
java	long get_pulseTimer ()
py	def get_pulseTimer ()

Returns :

an integer corresponding to the timer of the pulses counter (ms)

On failure, throws an exception or returns Y_PULSETIMER_INVALID.

anbutton→**get_rawValue()****YAnButton****anbutton**→**rawValue()****anbutton.getRawValue()**

Returns the current measured input value as-is (between 0 and 4095, included).

js	function get_rawValue()
nodejs	function get_rawValue()
php	function get_rawValue()
cpp	int get_rawValue()
m	-(int) rawValue
pas	function get_rawValue() : LongInt
vb	function get_rawValue() As Integer
cs	int get_rawValue()
java	int get_rawValue()
py	def get_rawValue()
cmd	YAnButton target get_rawValue

Returns :

an integer corresponding to the current measured input value as-is (between 0 and 4095, included)

On failure, throws an exception or returns Y_RAWVALUE_INVALID.

anbutton→**get_sensitivity()****YAnButton****anbutton**→**sensitivity()****anbutton.get_sensitivity()**

Returns the sensibility for the input (between 1 and 1000) for triggering user callbacks.

js	function get_sensitivity ()
nodejs	function get_sensitivity ()
php	function get_sensitivity ()
cpp	int get_sensitivity ()
m	-(int) sensitivity
pas	function get_sensitivity (): LongInt
vb	function get_sensitivity () As Integer
cs	int get_sensitivity ()
java	int get_sensitivity ()
py	def get_sensitivity ()
cmd	YAnButton target get_sensitivity

Returns :

an integer corresponding to the sensibility for the input (between 1 and 1000) for triggering user callbacks

On failure, throws an exception or returns Y_SENSITIVITY_INVALID.

anbutton→**get_userData()****YAnButton****anbutton**→**userData()****anbutton.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

anbutton→**isOnline()****anbutton.isOnline()****YAnButton**

Checks if the analog input is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the analog input in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the analog input.

Returns :

true if the analog input can be reached, and false otherwise

anbutton→isOnline_async()**YAnButton**

Checks if the analog input is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the analog input in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

anbutton→**load()****anbutton.load()****YAnButton**

Preloads the analog input cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

anbutton→load_async()**YAnButton**

Preloads the analog input cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

anbutton→**nextAnButton()****YAnButton****anbutton.nextAnButton()**

Continues the enumeration of analog inputs started using `yFirstAnButton()`.

js	function nextAnButton ()
nodejs	function nextAnButton ()
php	function nextAnButton ()
cpp	YAnButton * nextAnButton ()
m	-(YAnButton*) nextAnButton
pas	function nextAnButton (): TYAnButton
vb	function nextAnButton () As YAnButton
cs	YAnButton nextAnButton ()
java	YAnButton nextAnButton ()
py	def nextAnButton ()

Returns :

a pointer to a `YAnButton` object, corresponding to an analog input currently online, or a `null` pointer if there are no more analog inputs to enumerate.

anbutton→registerValueCallback()**YAnButton****anbutton.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YAnButtonValueCallback callback)
m	-(int) registerValueCallback : (YAnButtonValueCallback) callback
pas	function registerValueCallback (callback : TYAnButtonValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

anbutton→resetCounter()**YAnButton****anbutton.resetCounter()**

Returns the pulse counter value as well as his timer

js	function resetCounter ()
nodejs	function resetCounter ()
php	function resetCounter ()
cpp	int resetCounter ()
m	-(int) resetCounter
pas	function resetCounter (): LongInt
vb	function resetCounter () As Integer
cs	int resetCounter ()
java	int resetCounter ()
py	def resetCounter ()

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

anbutton→set_analogCalibration()**YAnButton****anbutton→setAnalogCalibration()****anbutton.set_analogCalibration()**

Starts or stops the calibration process.

js	function set_analogCalibration (newval)
nodejs	function set_analogCalibration (newval)
php	function set_analogCalibration (\$newval)
cpp	int set_analogCalibration (Y_ANALOGCALIBRATION_enum newval)
m	-(int) setAnalogCalibration : (Y_ANALOGCALIBRATION_enum) newval
pas	function set_analogCalibration (newval : Integer): integer
vb	function set_analogCalibration (ByVal newval As Integer) As Integer
cs	int set_analogCalibration (int newval)
java	int set_analogCalibration (int newval)
py	def set_analogCalibration (newval)
cmd	YAnButton target set_analogCalibration newval

Remember to call the `saveToFlash()` method of the module at the end of the calibration if the modification must be kept.

Parameters :

newval either Y_ANALOGCALIBRATION_OFF or Y_ANALOGCALIBRATION_ON

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

anbutton→set_calibrationMax()**YAnButton****anbutton→setCalibrationMax()****anbutton.set_calibrationMax()**

Changes the maximal calibration value for the input (between 0 and 4095, included), without actually starting the automated calibration.

js	function set_calibrationMax (newval)
nodejs	function set_calibrationMax (newval)
php	function set_calibrationMax (\$newval)
cpp	int set_calibrationMax (int newval)
m	-(int) setCalibrationMax : (int) newval
pas	function set_calibrationMax (newval : LongInt): integer
vb	function set_calibrationMax (ByVal newval As Integer) As Integer
cs	int set_calibrationMax (int newval)
java	int set_calibrationMax (int newval)
py	def set_calibrationMax (newval)
cmd	YAnButton target set_calibrationMax newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the maximal calibration value for the input (between 0 and 4095, included), without actually starting the automated calibration

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

anbutton→set_calibrationMin()**YAnButton****anbutton→setCalibrationMin()****anbutton.set_calibrationMin()**

Changes the minimal calibration value for the input (between 0 and 4095, included), without actually starting the automated calibration.

js	function set_calibrationMin (newval)
nodejs	function set_calibrationMin (newval)
php	function set_calibrationMin (\$newval)
cpp	int set_calibrationMin (int newval)
m	-(int) setCalibrationMin : (int) newval
pas	function set_calibrationMin (newval : LongInt): integer
vb	function set_calibrationMin (ByVal newval As Integer) As Integer
cs	int set_calibrationMin (int newval)
java	int set_calibrationMin (int newval)
py	def set_calibrationMin (newval)
cmd	YAnButton target set_calibrationMin newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the minimal calibration value for the input (between 0 and 4095, included), without actually starting the automated calibration

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

anbutton→**set_logicalName()****YAnButton****anbutton**→**setLogicalName()****anbutton.set_logicalName()**

Changes the logical name of the analog input.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YAnButton target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the analog input.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

anbutton→set_sensitivity()**YAnButton****anbutton→setSensitivity()****anbutton.set_sensitivity()**

Changes the sensibility for the input (between 1 and 1000) for triggering user callbacks.

js	function set_sensitivity (newval)
nodejs	function set_sensitivity (newval)
php	function set_sensitivity (\$newval)
cpp	int set_sensitivity (int newval)
m	-(int) setSensitivity : (int) newval
pas	function set_sensitivity (newval : LongInt): integer
vb	function set_sensitivity (ByVal newval As Integer) As Integer
cs	int set_sensitivity (int newval)
java	int set_sensitivity (int newval)
py	def set_sensitivity (newval)
cmd	YAnButton target set_sensitivity newval

The sensibility is used to filter variations around a fixed value, but does not preclude the transmission of events when the input value evolves constantly in the same direction. Special case: when the value 1000 is used, the callback will only be thrown when the logical state of the input switches from pressed to released and back. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the sensibility for the input (between 1 and 1000) for triggering user callbacks

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

anbutton→**set_userData()****YAnButton****anbutton**→**setUserData()****anbutton.set_userData()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userData (data)
nodejs	function set_userData (data)
php	function set_userData (\$data)
cpp	void set_userData (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userData (data : Tobject)
vb	procedure set_userData (ByVal data As Object)
cs	void set_userData (object data)
java	void set_userData (Object data)
py	def set_userData (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

anbutton→wait_async()**YAnButton**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.4. CarbonDioxide function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_carbondioxide.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YCarbonDioxide = yoctolib.YCarbonDioxide;
php	require_once('yocto_carbondioxide.php');
c++	#include "yocto_carbondioxide.h"
m	#import "yocto_carbondioxide.h"
pas	uses yocto_carbondioxide;
vb	yocto_carbondioxide.vb
cs	yocto_carbondioxide.cs
java	import com.yoctopuce.YoctoAPI.YCarbonDioxide;
py	from yocto_carbondioxide import *

Global functions

yFindCarbonDioxide(func)

Retrieves a CO2 sensor for a given identifier.

yFirstCarbonDioxide()

Starts the enumeration of CO2 sensors currently accessible.

YCarbonDioxide methods

carbondioxide→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

carbondioxide→describe()

Returns a short text that describes unambiguously the instance of the CO2 sensor in the form TYPE (NAME) = SERIAL . FUNCTIONID.

carbondioxide→get_advertisedValue()

Returns the current value of the CO2 sensor (no more than 6 characters).

carbondioxide→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

carbondioxide→get_currentValue()

Returns the current value of the CO2 concentration.

carbondioxide→get_errorMessage()

Returns the error message of the latest error with the CO2 sensor.

carbondioxide→get_errorType()

Returns the numerical error code of the latest error with the CO2 sensor.

carbondioxide→get_friendlyName()

Returns a global identifier of the CO2 sensor in the format MODULE_NAME . FUNCTION_NAME.

carbondioxide→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

carbondioxide→get_functionId()

Returns the hardware identifier of the CO2 sensor, without reference to the module.

carbondioxide→get_hardwareId()

Returns the unique hardware identifier of the CO2 sensor in the form SERIAL . FUNCTIONID.

carbondioxide→get_highestValue()

Returns the maximal value observed for the CO2 concentration since the device was started.

carbondioxide→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

carbondioxide→get_logicalName()

Returns the logical name of the CO2 sensor.

carbondioxide→get_lowestValue()

Returns the minimal value observed for the CO2 concentration since the device was started.

carbondioxide→get_module()

Gets the YModule object for the device on which the function is located.

carbondioxide→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

carbondioxide→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

carbondioxide→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

carbondioxide→get_resolution()

Returns the resolution of the measured values.

carbondioxide→get_unit()

Returns the measuring unit for the CO2 concentration.

carbondioxide→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

carbondioxide→isOnline()

Checks if the CO2 sensor is currently reachable, without raising any error.

carbondioxide→isOnline_async(callback, context)

Checks if the CO2 sensor is currently reachable, without raising any error (asynchronous version).

carbondioxide→load(msValidity)

Preloads the CO2 sensor cache with a specified validity duration.

carbondioxide→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

carbondioxide→load_async(msValidity, callback, context)

Preloads the CO2 sensor cache with a specified validity duration (asynchronous version).

carbondioxide→nextCarbonDioxide()

Continues the enumeration of CO2 sensors started using yFirstCarbonDioxide().

carbondioxide→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

carbondioxide→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

carbondioxide→set_highestValue(newval)

Changes the recorded maximal value observed.

carbondioxide→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

carbondioxide→set_logicalName(newval)

Changes the logical name of the CO2 sensor.

3. Reference

carbondioxide→**set_lowestValue**(newval)

Changes the recorded minimal value observed.

carbondioxide→**set_reportFrequency**(newval)

Changes the timed value notification frequency for this function.

carbondioxide→**set_resolution**(newval)

Changes the resolution of the measured physical values.

carbondioxide→**set_userData**(data)

Stores a user context provided as argument in the userData attribute of the function.

carbondioxide→**wait_async**(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YCarbonDioxide.FindCarbonDioxide()**YCarbonDioxide****yFindCarbonDioxide()****YCarbonDioxide.FindCarbonDioxide()**

Retrieves a CO2 sensor for a given identifier.

js	function yFindCarbonDioxide (func)
nodejs	function FindCarbonDioxide (func)
php	function yFindCarbonDioxide (\$func)
cpp	YCarbonDioxide* yFindCarbonDioxide (const string& func)
m	YCarbonDioxide* yFindCarbonDioxide (NSString* func)
pas	function yFindCarbonDioxide (func : string): TYCarbonDioxide
vb	function yFindCarbonDioxide (ByVal func As String) As YCarbonDioxide
cs	YCarbonDioxide FindCarbonDioxide (string func)
java	YCarbonDioxide FindCarbonDioxide (String func)
py	def FindCarbonDioxide (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the CO2 sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YCarbonDioxide.isOnline()` to test if the CO2 sensor is indeed online at a given time. In case of ambiguity when looking for a CO2 sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the CO2 sensor

Returns :

a YCarbonDioxide object allowing you to drive the CO2 sensor.

YCarbonDioxide.FirstCarbonDioxide()

YCarbonDioxide

yFirstCarbonDioxide()

YCarbonDioxide.FirstCarbonDioxide()

Starts the enumeration of CO2 sensors currently accessible.

js	function yFirstCarbonDioxide ()
nodejs	function FirstCarbonDioxide ()
php	function yFirstCarbonDioxide ()
cpp	YCarbonDioxide* yFirstCarbonDioxide ()
m	YCarbonDioxide* yFirstCarbonDioxide ()
pas	function yFirstCarbonDioxide (): TYCarbonDioxide
vb	function yFirstCarbonDioxide () As YCarbonDioxide
cs	YCarbonDioxide FirstCarbonDioxide ()
java	YCarbonDioxide FirstCarbonDioxide ()
py	def FirstCarbonDioxide ()

Use the method `YCarbonDioxide.nextCarbonDioxide()` to iterate on next CO2 sensors.

Returns :

a pointer to a `YCarbonDioxide` object, corresponding to the first CO2 sensor currently online, or a null pointer if there are none.

carbondioxide→calibrateFromPoints()**YCarbonDioxide****carbondioxide.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

js	function calibrateFromPoints (rawValues , refValues)
nodejs	function calibrateFromPoints (rawValues , refValues)
php	function calibrateFromPoints (\$rawValues , \$refValues)
cpp	int calibrateFromPoints (vector<double> rawValues , vector<double> refValues)
m	-(int) calibrateFromPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues
pas	function calibrateFromPoints (rawValues : TDoubleArray, refValues : TDoubleArray): LongInt
vb	procedure calibrateFromPoints ()
cs	int calibrateFromPoints (List<double> rawValues , List<double> refValues)
java	int calibrateFromPoints (ArrayList<Double> rawValues , ArrayList<Double> refValues)
py	def calibrateFromPoints (rawValues , refValues)
cmd	YCarbonDioxide target calibrateFromPoints rawValues refValues

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→describe()**YCarbonDioxide****carbondioxide.describe()**

Returns a short text that describes unambiguously the instance of the CO2 sensor in the form
 TYPE(NAME)=SERIAL.FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the CO2 sensor (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

carbondioxide→get_advertisedValue()
carbondioxide→advertisedValue()
carbondioxide.get_advertisedValue()

YCarbonDioxide

Returns the current value of the CO2 sensor (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YCarbonDioxide target get_advertisedValue

Returns :

a string corresponding to the current value of the CO2 sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

carbondioxide→get_currentRawValue()**YCarbonDioxide****carbondioxide→currentRawValue()****carbondioxide.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue ()
nodejs	function get_currentRawValue ()
php	function get_currentRawValue ()
cpp	double get_currentRawValue ()
m	-(double) currentRawValue
pas	function get_currentRawValue (): double
vb	function get_currentRawValue () As Double
cs	double get_currentRawValue ()
java	double get_currentRawValue ()
py	def get_currentRawValue ()
cmd	YCarbonDioxide target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

carbondioxide→get_currentValue()**YCarbonDioxide****carbondioxide→currentValue()****carbondioxide.get_currentValue()**

Returns the current value of the CO2 concentration.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YCarbonDioxide target get_currentValue

Returns :

a floating point number corresponding to the current value of the CO2 concentration

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

carbondioxide→get_errorMessage()**YCarbonDioxide****carbondioxide→errorMessage()****carbondioxide.get_errorMessage()**

Returns the error message of the latest error with the CO2 sensor.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the CO2 sensor object

carbondioxide→get_errorType()**YCarbonDioxide****carbondioxide→errorType()****carbondioxide.get_errorType()**

Returns the numerical error code of the latest error with the CO2 sensor.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the CO2 sensor object

carbondioxide→**get_friendlyName()**
carbondioxide→**friendlyName()**
carbondioxide.get_friendlyName()

YCarbonDioxide

Returns a global identifier of the CO2 sensor in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the CO2 sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the CO2 sensor (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the CO2 sensor using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

carbondioxide→get_functionDescriptor()**YCarbonDioxide****carbondioxide→functionDescriptor()****carbondioxide.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

carbondioxide→get_functionId()

YCarbonDioxide

carbondioxide→functionId()

carbondioxide.get_functionId()

Returns the hardware identifier of the CO2 sensor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the CO2 sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

carbondioxide→get_hardwareId()**YCarbonDioxide****carbondioxide→hardwareId()****carbondioxide.get_hardwareId()**

Returns the unique hardware identifier of the CO2 sensor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the CO2 sensor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the CO2 sensor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

carbondioxide→**get_highestValue()**
carbondioxide→**highestValue()**
carbondioxide.get_highestValue()

YCarbonDioxide

Returns the maximal value observed for the CO2 concentration since the device was started.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YCarbonDioxide target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the CO2 concentration since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

carbondioxide→get_logFrequency()**YCarbonDioxide****carbondioxide→logFrequency()****carbondioxide.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency ()
nodejs	function get_logFrequency ()
php	function get_logFrequency ()
cpp	string get_logFrequency ()
m	-(NSString*) logFrequency
pas	function get_logFrequency (): string
vb	function get_logFrequency () As String
cs	string get_logFrequency ()
java	String get_logFrequency ()
py	def get_logFrequency ()
cmd	YCarbonDioxide target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

carbondioxide→get_logicalName()**YCarbonDioxide****carbondioxide→logicalName()****carbondioxide.get_logicalName()**

Returns the logical name of the CO2 sensor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YCarbonDioxide target get_logicalName

Returns :

a string corresponding to the logical name of the CO2 sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

carbondioxide→get_lowestValue()**YCarbonDioxide****carbondioxide→lowestValue()****carbondioxide.get_lowestValue()**

Returns the minimal value observed for the CO2 concentration since the device was started.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YCarbonDioxide target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the CO2 concentration since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

carbondioxide→get_module()**YCarbonDioxide****carbondioxide→module()****carbondioxide.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

carbondioxide→get_module_async()**YCarbonDioxide****carbondioxide→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

carbondioxide→get_recordedData()**YCarbonDioxide****carbondioxide→recordedData()****carbondioxide.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
c++	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YCarbonDioxide target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

carbondioxide→get_reportFrequency()**YCarbonDioxide****carbondioxide→reportFrequency()****carbondioxide.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YCarbonDioxide target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

carbondioxide→get_resolution()**YCarbonDioxide****carbondioxide→resolution()****carbondioxide.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YCarbonDioxide target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

carbondioxide→**get_unit()****YCarbonDioxide****carbondioxide**→**unit()**`carbondioxide.get_unit()`

Returns the measuring unit for the CO2 concentration.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YCarbonDioxide target get_unit

Returns :

a string corresponding to the measuring unit for the CO2 concentration

On failure, throws an exception or returns Y_UNIT_INVALID.

carbondioxide→get_userdata()**YCarbonDioxide****carbondioxide→userData()****carbondioxide.get_userdata()**

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

carbondioxide→**isOnline()****YCarbonDioxide****carbondioxide.isOnline()**

Checks if the CO2 sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the CO2 sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the CO2 sensor.

Returns :

`true` if the CO2 sensor can be reached, and `false` otherwise

carbondioxide→isOnline_async()**YCarbonDioxide**

Checks if the CO2 sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the CO2 sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

carbondioxide→**load()****carbondioxide.load()****YCarbonDioxide**

Preloads the CO2 sensor cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

carbondioxide→loadCalibrationPoints()**YCarbonDioxide****carbondioxide.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php function loadCalibrationPoints( &$rawValues, &$refValues)
cpp int loadCalibrationPoints( vector<double>& rawValues,
                             vector<double>& refValues)

m -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
  : (NSMutableArray*) refValues

pas function loadCalibrationPoints( var rawValues: TDoubleArray,
                                   var refValues: TDoubleArray): LongInt

vb procedure loadCalibrationPoints( )
cs int loadCalibrationPoints( List<double> rawValues,
                             List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                               ArrayList<Double> refValues)

py def loadCalibrationPoints( rawValues, refValues)
cmd YCarbonDioxide target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→load_async()**YCarbonDioxide**

Preloads the CO2 sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

carbondioxide→**nextCarbonDioxide()****YCarbonDioxide****carbondioxide.nextCarbonDioxide()**

Continues the enumeration of CO2 sensors started using `yFirstCarbonDioxide()`.

js	function nextCarbonDioxide ()
nodejs	function nextCarbonDioxide ()
php	function nextCarbonDioxide ()
cpp	YCarbonDioxide * nextCarbonDioxide ()
m	-(YCarbonDioxide*) nextCarbonDioxide
pas	function nextCarbonDioxide (): TYCarbonDioxide
vb	function nextCarbonDioxide () As YCarbonDioxide
cs	YCarbonDioxide nextCarbonDioxide ()
java	YCarbonDioxide nextCarbonDioxide ()
py	def nextCarbonDioxide ()

Returns :

a pointer to a YCarbonDioxide object, corresponding to a CO2 sensor currently online, or a null pointer if there are no more CO2 sensors to enumerate.

carbondioxide→registerTimedReportCallback()**YCarbonDioxide**

**carbondioxide.registerTimedReportCallback(
)**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YCarbonDioxideTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YCarbonDioxideTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYCarbonDioxideTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

carbondioxide→registerValueCallback()**YCarbonDioxide****carbondioxide.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YCarbonDioxideValueCallback callback)
m	-(int) registerValueCallback : (YCarbonDioxideValueCallback) callback
pas	function registerValueCallback (callback : TYCarbonDioxideValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

carbondioxide→set_highestValue()**YCarbonDioxide****carbondioxide→setHighestValue()****carbondioxide.set_highestValue()**

Changes the recorded maximal value observed.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YCarbonDioxide target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→set_logFrequency()
 carbondioxide→setLogFrequency()
 carbondioxide.set_logFrequency()

YCarbonDioxide

Changes the datalogger recording frequency for this function.

js	function set_logFrequency(newval)
nodejs	function set_logFrequency(newval)
php	function set_logFrequency(\$newval)
cpp	int set_logFrequency(const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency(newval: string): integer
vb	function set_logFrequency(ByVal newval As String) As Integer
cs	int set_logFrequency(string newval)
java	int set_logFrequency(String newval)
py	def set_logFrequency(newval)
cmd	YCarbonDioxide target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→set_logicalName()**YCarbonDioxide****carbondioxide→setLogicalName()****carbondioxide.set_logicalName()**

Changes the logical name of the CO2 sensor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YCarbonDioxide target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the CO2 sensor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

carbondioxide→set_lowestValue()
carbondioxide→setLowestValue()
carbondioxide.set_lowestValue()

YCarbonDioxide

Changes the recorded minimal value observed.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YCarbonDioxide target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→set_reportFrequency()
 carbondioxide→setReportFrequency()
 carbondioxide.set_reportFrequency()

YCarbonDioxide

Changes the timed value notification frequency for this function.

js	function set_reportFrequency(newval)
nodejs	function set_reportFrequency(newval)
php	function set_reportFrequency(\$newval)
cpp	int set_reportFrequency(const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency(newval: string): integer
vb	function set_reportFrequency(ByVal newval As String) As Integer
cs	int set_reportFrequency(string newval)
java	int set_reportFrequency(String newval)
py	def set_reportFrequency(newval)
cmd	YCarbonDioxide target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→set_resolution()**YCarbonDioxide****carbondioxide→setResolution()****carbondioxide.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YCarbonDioxide target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→set_userdata()**YCarbonDioxide****carbondioxide→setUserData()****carbondioxide.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

carbondioxide→wait_async()**YCarbonDioxide**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.5. ColorLed function interface

Yoctopuce application programming interface allows you to drive a color led using RGB coordinates as well as HSL coordinates. The module performs all conversions from RGB to HSL automatically. It is then self-evident to turn on a led with a given hue and to progressively vary its saturation or lightness. If needed, you can find more information on the difference between RGB and HSL in the section following this one.

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_colorled.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib'); var YColorLed = yoctolib.YColorLed;</code>
php	<code>require_once('yocto_colorled.php');</code>
c++	<code>#include "yocto_colorled.h"</code>
m	<code>#import "yocto_colorled.h"</code>
pas	<code>uses yocto_colorled;</code>
vb	<code>yocto_colorled.vb</code>
cs	<code>yocto_colorled.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YColorLed;</code>
py	<code>from yocto_colorled import *</code>

Global functions

yFindColorLed(func)

Retrieves an RGB led for a given identifier.

yFirstColorLed()

Starts the enumeration of RGB leds currently accessible.

YColorLed methods

colorled→describe()

Returns a short text that describes unambiguously the instance of the RGB led in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

colorled→get_advertisedValue()

Returns the current value of the RGB led (no more than 6 characters).

colorled→get_errorMessage()

Returns the error message of the latest error with the RGB led.

colorled→get_errorType()

Returns the numerical error code of the latest error with the RGB led.

colorled→get_friendlyName()

Returns a global identifier of the RGB led in the format `MODULE_NAME . FUNCTION_NAME`.

colorled→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

colorled→get_functionId()

Returns the hardware identifier of the RGB led, without reference to the module.

colorled→get_hardwareId()

Returns the unique hardware identifier of the RGB led in the form `SERIAL . FUNCTIONID`.

colorled→get_hslColor()

Returns the current HSL color of the led.

colorled→get_logicalName()

Returns the logical name of the RGB led.

colorled→get_module()

Gets the YModule object for the device on which the function is located.

colorled→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

colorled→get_rgbColor()

Returns the current RGB color of the led.

colorled→get_rgbColorAtPowerOn()

Returns the configured color to be displayed when the module is turned on.

colorled→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

colorled→hslMove(hsl_target, ms_duration)

Performs a smooth transition in the HSL color space between the current color and a target color.

colorled→isOnline()

Checks if the RGB led is currently reachable, without raising any error.

colorled→isOnline_async(callback, context)

Checks if the RGB led is currently reachable, without raising any error (asynchronous version).

colorled→load(msValidity)

Preloads the RGB led cache with a specified validity duration.

colorled→load_async(msValidity, callback, context)

Preloads the RGB led cache with a specified validity duration (asynchronous version).

colorled→nextColorLed()

Continues the enumeration of RGB leds started using yFirstColorLed().

colorled→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

colorled→rgbMove(rgb_target, ms_duration)

Performs a smooth transition in the RGB color space between the current color and a target color.

colorled→set_hslColor(newval)

Changes the current color of the led, using a color HSL.

colorled→set_logicalName(newval)

Changes the logical name of the RGB led.

colorled→set_rgbColor(newval)

Changes the current color of the led, using a RGB color.

colorled→set_rgbColorAtPowerOn(newval)

Changes the color that the led will display by default when the module is turned on.

colorled→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

colorled→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YColorLed.FindColorLed()**YColorLed****yFindColorLed()****YColorLed.FindColorLed()**

Retrieves an RGB led for a given identifier.

js	function yFindColorLed (func)
nodejs	function FindColorLed (func)
php	function yFindColorLed (\$func)
cpp	YColorLed* yFindColorLed (const string& func)
m	YColorLed* yFindColorLed (NSString* func)
pas	function yFindColorLed (func : string): TYColorLed
vb	function yFindColorLed (ByVal func As String) As YColorLed
cs	YColorLed FindColorLed (string func)
java	YColorLed FindColorLed (String func)
py	def FindColorLed (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the RGB led is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YColorLed.isOnline()` to test if the RGB led is indeed online at a given time. In case of ambiguity when looking for an RGB led by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the RGB led

Returns :

a `YColorLed` object allowing you to drive the RGB led.

YColorLed.FirstColorLed()**YColorLed****yFirstColorLed()****YColorLed.FirstColorLed()**

Starts the enumeration of RGB leds currently accessible.

js	function yFirstColorLed ()
nodejs	function FirstColorLed ()
php	function yFirstColorLed ()
cpp	YColorLed* yFirstColorLed ()
m	YColorLed* yFirstColorLed ()
pas	function yFirstColorLed (): TYColorLed
vb	function yFirstColorLed () As YColorLed
cs	YColorLed FirstColorLed ()
java	YColorLed FirstColorLed ()
py	def FirstColorLed ()

Use the method `YColorLed.nextColorLed()` to iterate on next RGB leds.

Returns :

a pointer to a `YColorLed` object, corresponding to the first RGB led currently online, or a `null` pointer if there are none.

colorled→describe()`colorled.describe()`**YColorLed**

Returns a short text that describes unambiguously the instance of the RGB led in the form `TYPE (NAME) = SERIAL.FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, `TYPE` is the type of the function, `NAME` it the name used for the first access to the function, `SERIAL` is the serial number of the module if the module is connected or "unresolved", and `FUNCTIONID` is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the RGB led (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

colorled→**get_advertisedValue()****YColorLed****colorled**→**advertisedValue()****colorled.get_advertisedValue()**

Returns the current value of the RGB led (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YColorLed target get_advertisedValue

Returns :

a string corresponding to the current value of the RGB led (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

colorled→**get_errorMessage()****YColorLed****colorled**→**errorMessage()****colorled.errorMessage()**

Returns the error message of the latest error with the RGB led.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the RGB led object

colorled→**get_errorType()****YColorLed****colorled**→**errorType()****colorled.get_errorType()**

Returns the numerical error code of the latest error with the RGB led.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the RGB led object

colorled→**get_friendlyName()****YColorLed****colorled**→**friendlyName()****colorled.get_friendlyName()**

Returns a global identifier of the RGB led in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the RGB led if they are defined, otherwise the serial number of the module and the hardware identifier of the RGB led (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the RGB led using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

colored→**get_functionDescriptor()****YColorLed****colored**→**functionDescriptor()****colored.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

colorled→**get_functionId()****YColorLed****colorled**→**functionId()****colorled.get_functionId()**

Returns the hardware identifier of the RGB led, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the RGB led (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

colorled→**get_hardwareId()****YColorLed****colorled**→**hardwareId()****colorled.get_hardwareId()**

Returns the unique hardware identifier of the RGB led in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the RGB led. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the RGB led (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

colorled→**get_hslColor()****YColorLed****colorled**→**hslColor()****colorled.get_hslColor()**

Returns the current HSL color of the led.

js	function get_hslColor ()
nodejs	function get_hslColor ()
php	function get_hslColor ()
cpp	int get_hslColor ()
m	-(int) hslColor
pas	function get_hslColor (): LongInt
vb	function get_hslColor () As Integer
cs	int get_hslColor ()
java	int get_hslColor ()
py	def get_hslColor ()
cmd	YColorLed target get_hslColor

Returns :

an integer corresponding to the current HSL color of the led

On failure, throws an exception or returns Y_HSLCOLOR_INVALID.

colored→**get_logicalName()****YColorLed****colored**→**logicalName()****colored.get_logicalName()**

Returns the logical name of the RGB led.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YColorLed target get_logicalName

Returns :

a string corresponding to the logical name of the RGB led. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

colorled→**get_module()****YColorLed****colorled**→**module()****colorled.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

colored→**get_module_async()**
colored→**module_async()**

YColorLed

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js function get_module_async( callback, context)
nodejs function get_module_async( callback, context)
```

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

colorled→**get_rgbColor()****YColorLed****colorled**→**rgbColor()****colorled.get_rgbColor()**

Returns the current RGB color of the led.

js	function get_rgbColor ()
nodejs	function get_rgbColor ()
php	function get_rgbColor ()
cpp	int get_rgbColor ()
m	-(int) rgbColor
pas	function get_rgbColor (): LongInt
vb	function get_rgbColor () As Integer
cs	int get_rgbColor ()
java	int get_rgbColor ()
py	def get_rgbColor ()
cmd	YColorLed target get_rgbColor

Returns :

an integer corresponding to the current RGB color of the led

On failure, throws an exception or returns Y_RGBCOLOR_INVALID.

colorled→get_rgbColorAtPowerOn()**YColorLed****colorled→rgbColorAtPowerOn()****colorled.get_rgbColorAtPowerOn()**

Returns the configured color to be displayed when the module is turned on.

js	function get_rgbColorAtPowerOn()
nodejs	function get_rgbColorAtPowerOn()
php	function get_rgbColorAtPowerOn()
cpp	int get_rgbColorAtPowerOn()
m	-(int) rgbColorAtPowerOn
pas	function get_rgbColorAtPowerOn() : LongInt
vb	function get_rgbColorAtPowerOn() As Integer
cs	int get_rgbColorAtPowerOn()
java	int get_rgbColorAtPowerOn()
py	def get_rgbColorAtPowerOn()
cmd	YColorLed target get_rgbColorAtPowerOn

Returns :

an integer corresponding to the configured color to be displayed when the module is turned on

On failure, throws an exception or returns Y_RGBCOLORATPOWERON_INVALID.

colorled→**get_userData()****YColorLed****colorled**→**userData()****colorled.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

colored→**hslMove()****colored.hslMove()****YColorLed**

Performs a smooth transition in the HSL color space between the current color and a target color.

js	function hslMove (hsl_target , ms_duration)
nodejs	function hslMove (hsl_target , ms_duration)
php	function hslMove (\$hsl_target , \$ms_duration)
cpp	int hslMove (int hsl_target , int ms_duration)
m	-(int) hslMove : (int) hsl_target : (int) ms_duration
pas	function hslMove (hsl_target : LongInt, ms_duration : LongInt): integer
vb	function hslMove (ByVal hsl_target As Integer, ByVal ms_duration As Integer) As Integer
cs	int hslMove (int hsl_target , int ms_duration)
java	int hslMove (int hsl_target , int ms_duration)
py	def hslMove (hsl_target , ms_duration)
cmd	YColorLed target hslMove hsl_target ms_duration

Parameters :

hsl_target desired HSL color at the end of the transition

ms_duration duration of the transition, in millisecond

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

colorled→**isOnline()****colorled.isOnline()****YColorLed**

Checks if the RGB led is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the RGB led in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the RGB led.

Returns :

`true` if the RGB led can be reached, and `false` otherwise

colorled→isOnline_async()**YColorLed**

Checks if the RGB led is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the RGB led in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

colored→**load()****colored.load()****YColorLed**

Preloads the RGB led cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

colorled→load_async()**YColorLed**

Preloads the RGB led cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

colorled→**nextColorLed()****YColorLed****colorled.nextColorLed()**

Continues the enumeration of RGB leds started using `yFirstColorLed()`.

js	function nextColorLed ()
nodejs	function nextColorLed ()
php	function nextColorLed ()
cpp	YColorLed * nextColorLed ()
m	-(YColorLed*) nextColorLed
pas	function nextColorLed (): TYColorLed
vb	function nextColorLed () As YColorLed
cs	YColorLed nextColorLed ()
java	YColorLed nextColorLed ()
py	def nextColorLed ()

Returns :

a pointer to a `YColorLed` object, corresponding to an RGB led currently online, or a `null` pointer if there are no more RGB leds to enumerate.

colored→registerValueCallback()**YColorLed****colored.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YColorLedValueCallback callback)
m	-(int) registerValueCallback : (YColorLedValueCallback) callback
pas	function registerValueCallback (callback : TYColorLedValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

colorled→rgbMove()`colorled.rgbMove()`**YColorLed**

Performs a smooth transition in the RGB color space between the current color and a target color.

<code>js</code>	<code>function rgbMove(rgb_target, ms_duration)</code>
<code>nodejs</code>	<code>function rgbMove(rgb_target, ms_duration)</code>
<code>php</code>	<code>function rgbMove(\$rgb_target, \$ms_duration)</code>
<code>cpp</code>	<code>int rgbMove(int rgb_target, int ms_duration)</code>
<code>m</code>	<code>-(int) rgbMove : (int) rgb_target : (int) ms_duration</code>
<code>pas</code>	<code>function rgbMove(rgb_target: LongInt, ms_duration: LongInt): integer</code>
<code>vb</code>	<code>function rgbMove(ByVal rgb_target As Integer, ByVal ms_duration As Integer) As Integer</code>
<code>cs</code>	<code>int rgbMove(int rgb_target, int ms_duration)</code>
<code>java</code>	<code>int rgbMove(int rgb_target, int ms_duration)</code>
<code>py</code>	<code>def rgbMove(rgb_target, ms_duration)</code>
<code>cmd</code>	<code>YColorLed target rgbMove rgb_target ms_duration</code>

Parameters :

rgb_target desired RGB color at the end of the transition

ms_duration duration of the transition, in millisecond

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

colored→**set_hslColor()****YColorLed****colored**→**setHslColor()****colored.set_hslColor()**

Changes the current color of the led, using a color HSL.

js	function set_hslColor (newval)
nodejs	function set_hslColor (newval)
php	function set_hslColor (\$newval)
cpp	int set_hslColor (int newval)
m	-(int) setHslColor : (int) newval
pas	function set_hslColor (newval : LongInt): integer
vb	function set_hslColor (ByVal newval As Integer) As Integer
cs	int set_hslColor (int newval)
java	int set_hslColor (int newval)
py	def set_hslColor (newval)
cmd	YColorLed target set_hslColor newval

Encoding is done as follows: 0xHHSSLL.

Parameters :

newval an integer corresponding to the current color of the led, using a color HSL

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

colorled→**set_logicalName()**
colorled→**setLogicalName()**
colorled.set_logicalName()

YColorLed

Changes the logical name of the RGB led.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YColorLed target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the RGB led.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

colored→**set_rgbColor()****YColorLed****colored**→**setRgbColor()****colored.set_rgbColor()**

Changes the current color of the led, using a RGB color.

js	function set_rgbColor (newval)
nodejs	function set_rgbColor (newval)
php	function set_rgbColor (\$newval)
cpp	int set_rgbColor (int newval)
m	-(int) setRgbColor : (int) newval
pas	function set_rgbColor (newval : LongInt): integer
vb	function set_rgbColor (ByVal newval As Integer) As Integer
cs	int set_rgbColor (int newval)
java	int set_rgbColor (int newval)
py	def set_rgbColor (newval)
cmd	YColorLed target set_rgbColor newval

Encoding is done as follows: 0xRRGGBB.

Parameters :

newval an integer corresponding to the current color of the led, using a RGB color

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

colorled→set_rgbColorAtPowerOn()**YColorLed****colorled→setRgbColorAtPowerOn()****colorled.set_rgbColorAtPowerOn()**

Changes the color that the led will display by default when the module is turned on.

js	function set_rgbColorAtPowerOn (newval)
nodejs	function set_rgbColorAtPowerOn (newval)
php	function set_rgbColorAtPowerOn (\$newval)
cpp	int set_rgbColorAtPowerOn (int newval)
m	-(int) setRgbColorAtPowerOn : (int) newval
pas	function set_rgbColorAtPowerOn (newval : LongInt): integer
vb	function set_rgbColorAtPowerOn (ByVal newval As Integer) As Integer
cs	int set_rgbColorAtPowerOn (int newval)
java	int set_rgbColorAtPowerOn (int newval)
py	def set_rgbColorAtPowerOn (newval)
cmd	YColorLed target set_rgbColorAtPowerOn newval

This color will be displayed as soon as the module is powered on. Remember to call the `saveToFlash()` method of the module if the change should be kept.

Parameters :

newval an integer corresponding to the color that the led will display by default when the module is turned on

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

colored→**set_userdata()****YColorLed****colored**→**setUserData()****colored.set_userdata()**

Stores a user context provided as argument in the `userData` attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

colorled→wait_async()**YColorLed**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.6. Compass function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_compass.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YCompass = yoctolib.YCompass;
php	require_once('yocto_compass.php');
c++	#include "yocto_compass.h"
m	#import "yocto_compass.h"
pas	uses yocto_compass;
vb	yocto_compass.vb
cs	yocto_compass.cs
java	import com.yoctopuce.YoctoAPI.YCompass;
py	from yocto_compass import *

Global functions

yFindCompass(func)

Retrieves a compass for a given identifier.

yFirstCompass()

Starts the enumeration of compasses currently accessible.

YCompass methods

compass→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

compass→describe()

Returns a short text that describes unambiguously the instance of the compass in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

compass→get_advertisedValue()

Returns the current value of the compass (no more than 6 characters).

compass→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

compass→get_currentValue()

Returns the current value of the relative bearing.

compass→get_errorMessage()

Returns the error message of the latest error with the compass.

compass→get_errorType()

Returns the numerical error code of the latest error with the compass.

compass→get_friendlyName()

Returns a global identifier of the compass in the format `MODULE_NAME . FUNCTION_NAME`.

compass→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

compass→get_functionId()

Returns the hardware identifier of the compass, without reference to the module.

compass→get_hardwareId()

Returns the unique hardware identifier of the compass in the form `SERIAL . FUNCTIONID`.

compass→get_highestValue()

Returns the maximal value observed for the relative bearing since the device was started.

compass→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

compass→get_logicalName()

Returns the logical name of the compass.

compass→get_lowestValue()

Returns the minimal value observed for the relative bearing since the device was started.

compass→get_magneticHeading()

Returns the magnetic heading, regardless of the configured bearing.

compass→get_module()

Gets the `YModule` object for the device on which the function is located.

compass→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

compass→get_recordedData(startTime, endTime)

Retrieves a `DataSet` object holding historical data for this sensor, for a specified time interval.

compass→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

compass→get_resolution()

Returns the resolution of the measured values.

compass→get_unit()

Returns the measuring unit for the relative bearing.

compass→get_userData()

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

compass→isOnline()

Checks if the compass is currently reachable, without raising any error.

compass→isOnline_async(callback, context)

Checks if the compass is currently reachable, without raising any error (asynchronous version).

compass→load(msValidity)

Preloads the compass cache with a specified validity duration.

compass→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

compass→load_async(msValidity, callback, context)

Preloads the compass cache with a specified validity duration (asynchronous version).

compass→nextCompass()

Continues the enumeration of compasses started using `yFirstCompass()`.

compass→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

compass→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

compass→set_highestValue(newval)

Changes the recorded maximal value observed.

compass→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

3. Reference

compass→**set_logicalName(newval)**

Changes the logical name of the compass.

compass→**set_lowestValue(newval)**

Changes the recorded minimal value observed.

compass→**set_reportFrequency(newval)**

Changes the timed value notification frequency for this function.

compass→**set_resolution(newval)**

Changes the resolution of the measured physical values.

compass→**set_userData(data)**

Stores a user context provided as argument in the userData attribute of the function.

compass→**wait_async(callback, context)**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YCompass.FindCompass()**YCompass****yFindCompass()**`YCompass.FindCompass()`

Retrieves a compass for a given identifier.

<code>js</code>	<code>function yFindCompass(func)</code>
<code>nodejs</code>	<code>function FindCompass(func)</code>
<code>php</code>	<code>function yFindCompass(\$func)</code>
<code>cpp</code>	<code>YCompass* yFindCompass(const string& func)</code>
<code>m</code>	<code>YCompass* yFindCompass(NSString* func)</code>
<code>pas</code>	<code>function yFindCompass(func: string): TYCompass</code>
<code>vb</code>	<code>function yFindCompass(ByVal func As String) As YCompass</code>
<code>cs</code>	<code>YCompass FindCompass(string func)</code>
<code>java</code>	<code>YCompass FindCompass(String func)</code>
<code>py</code>	<code>def FindCompass(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the compass is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YCompass.isOnline()` to test if the compass is indeed online at a given time. In case of ambiguity when looking for a compass by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the compass

Returns :

a `YCompass` object allowing you to drive the compass.

YCompass.FirstCompass()**YCompass****yFirstCompass()****YCompass.FirstCompass()**

Starts the enumeration of compasses currently accessible.

js	function yFirstCompass ()
nodejs	function FirstCompass ()
php	function yFirstCompass ()
cpp	YCompass* yFirstCompass ()
m	YCompass* yFirstCompass ()
pas	function yFirstCompass (): TYCompass
vb	function yFirstCompass () As YCompass
cs	YCompass FirstCompass ()
java	YCompass FirstCompass ()
py	def FirstCompass ()

Use the method `YCompass.nextCompass()` to iterate on next compasses.

Returns :

a pointer to a `YCompass` object, corresponding to the first compass currently online, or a `null` pointer if there are none.

compass→calibrateFromPoints()**YCompass****compass.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

js	function calibrateFromPoints (rawValues , refValues)
nodejs	function calibrateFromPoints (rawValues , refValues)
php	function calibrateFromPoints (\$rawValues , \$refValues)
cpp	int calibrateFromPoints (vector<double> rawValues , vector<double> refValues)
m	-(int) calibrateFromPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues
pas	function calibrateFromPoints (rawValues : TDoubleArray, refValues : TDoubleArray): LongInt
vb	procedure calibrateFromPoints ()
cs	int calibrateFromPoints (List<double> rawValues , List<double> refValues)
java	int calibrateFromPoints (ArrayList<Double> rawValues , ArrayList<Double> refValues)
py	def calibrateFromPoints (rawValues , refValues)
cmd	YCompass target calibrateFromPoints rawValues refValues

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→**describe()****compass.describe()****YCompass**

Returns a short text that describes unambiguously the instance of the compass in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the compass (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

compass→**get_advertisedValue()****YCompass****compass**→**advertisedValue()****compass.get_advertisedValue()**

Returns the current value of the compass (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YCompass target get_advertisedValue

Returns :

a string corresponding to the current value of the compass (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

compass→**get_currentRawValue()****YCompass****compass**→**currentRawValue()****compass.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue()
nodejs	function get_currentRawValue()
php	function get_currentRawValue()
cpp	double get_currentRawValue()
m	-(double) currentRawValue
pas	function get_currentRawValue() : double
vb	function get_currentRawValue() As Double
cs	double get_currentRawValue()
java	double get_currentRawValue()
py	def get_currentRawValue()
cmd	YCompass target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

compass→**get_currentValue()****YCompass****compass**→**currentValue()****compass.get_currentValue()**

Returns the current value of the relative bearing.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YCompass target get_currentValue

Returns :

a floating point number corresponding to the current value of the relative bearing

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

compass→**get_errorMessage()****compass**→**errorMessage()****compass.errorMessage()**

Returns the error message of the latest error with the compass.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the compass object

compass→**get_errorType()****YCompass****compass**→**errorType()****compass.errorType()**

Returns the numerical error code of the latest error with the compass.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the compass object

compass→**get_friendlyName()****compass**→**friendlyName()****compass.get_friendlyName()**

Returns a global identifier of the compass in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the compass if they are defined, otherwise the serial number of the module and the hardware identifier of the compass (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the compass using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

compass→**get_functionDescriptor()****YCompass****compass**→**functionDescriptor()****compass.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

compass→**get_functionId()****YCompass****compass**→**functionId()**`compass.get_functionId()`

Returns the hardware identifier of the compass, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the compass (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

compass→**get_hardwareId()**
compass→**hardwareId()**
compass.get_hardwareId()

YCompass

Returns the unique hardware identifier of the compass in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the compass. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the compass (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

compass→**get_highestValue()****YCompass****compass**→**highestValue()****compass.get_highestValue()**

Returns the maximal value observed for the relative bearing since the device was started.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YCompass target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the relative bearing since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

compass→**get_logFrequency()****YCompass****compass**→**logFrequency()****compass.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YCompass target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

compass→**get_logicalName()****YCompass****compass**→**logicalName()****compass.get_logicalName()**

Returns the logical name of the compass.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YCompass target get_logicalName

Returns :

a string corresponding to the logical name of the compass. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

compass→**get_lowestValue()****YCompass****compass**→**lowestValue()****compass.get_lowestValue()**

Returns the minimal value observed for the relative bearing since the device was started.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YCompass target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the relative bearing since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

compass→**get_magneticHeading()****YCompass****compass**→**magneticHeading()****compass.get_magneticHeading()**

Returns the magnetic heading, regardless of the configured bearing.

js	function get_magneticHeading ()
nodejs	function get_magneticHeading ()
php	function get_magneticHeading ()
cpp	double get_magneticHeading ()
m	-(double) magneticHeading
pas	function get_magneticHeading (): double
vb	function get_magneticHeading () As Double
cs	double get_magneticHeading ()
java	double get_magneticHeading ()
py	def get_magneticHeading ()
cmd	YCompass target get_magneticHeading

Returns :

a floating point number corresponding to the magnetic heading, regardless of the configured bearing

On failure, throws an exception or returns Y_MAGNETICHEADING_INVALID.

compass→**get_module()****YCompass****compass**→**module()**`compass.get_module()`

Gets the `YModule` object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	<code>YModule *</code> get_module ()
m	<code>-(YModule*)</code> module
pas	function get_module (): <code>TYModule</code>
vb	function get_module () As <code>YModule</code>
cs	<code>YModule</code> get_module ()
java	<code>YModule</code> get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of `YModule` is not shown as on-line.

Returns :

an instance of `YModule`

compass→**get_module_async()****YCompass****compass**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

compass→**get_recordedData()**
compass→**recordedData()**
compass.get_recordedData()

YCompass

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
cpp	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YCompass target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

compass→**get_reportFrequency()****YCompass****compass**→**reportFrequency()****compass.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YCompass target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

compass→**get_resolution()****YCompass****compass**→**resolution()****compass.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YCompass target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

compass→**get_unit()****YCompass****compass**→**unit()**`compass.get_unit()`

Returns the measuring unit for the relative bearing.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YCompass target get_unit

Returns :

a string corresponding to the measuring unit for the relative bearing

On failure, throws an exception or returns Y_UNIT_INVALID.

compass→**get_userData()****YCompass****compass**→**userData()****compass.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

compass→**isOnline()****compass.isOnline()****YCompass**

Checks if the compass is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the compass in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the compass.

Returns :

true if the compass can be reached, and false otherwise

compass→**isOnline_async()****YCompass**

Checks if the compass is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the compass in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

compass→**load()****compass.load()****YCompass**

Preloads the compass cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

compass→loadCalibrationPoints()**YCompass****compass.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

js	<code>function loadCalibrationPoints(rawValues, refValues)</code>
nodejs	<code>function loadCalibrationPoints(rawValues, refValues)</code>
php	<code>function loadCalibrationPoints(&\$rawValues, &\$refValues)</code>
cpp	<code>int loadCalibrationPoints(vector<double>& rawValues, vector<double>& refValues)</code>
m	<code>-(int) loadCalibrationPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues</code>
pas	<code>function loadCalibrationPoints(var rawValues: TDoubleArray, var refValues: TDoubleArray): LongInt</code>
vb	<code>procedure loadCalibrationPoints()</code>
cs	<code>int loadCalibrationPoints(List<double> rawValues, List<double> refValues)</code>
java	<code>int loadCalibrationPoints(ArrayList<Double> rawValues, ArrayList<Double> refValues)</code>
py	<code>def loadCalibrationPoints(rawValues, refValues)</code>
cmd	<code>YCompass target loadCalibrationPoints rawValues refValues</code>

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→**load_async()****YCompass**

Preloads the compass cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

compass→**nextCompass()****compass.nextCompass()****YCompass**

Continues the enumeration of compasses started using `yFirstCompass()`.

js	function nextCompass()
nodejs	function nextCompass()
php	function nextCompass()
cpp	YCompass * nextCompass()
m	-(YCompass*) nextCompass
pas	function nextCompass() : TYCompass
vb	function nextCompass() As YCompass
cs	YCompass nextCompass()
java	YCompass nextCompass()
py	def nextCompass()

Returns :

a pointer to a `YCompass` object, corresponding to a compass currently online, or a `null` pointer if there are no more compasses to enumerate.

compass→registerTimedReportCallback()**YCompass****compass.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
c++	int registerTimedReportCallback (YCompassTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YCompassTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYCompassTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

compass→registerValueCallback()**YCompass****compass.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YCompassValueCallback callback)
m	-(int) registerValueCallback : (YCompassValueCallback) callback
pas	function registerValueCallback (callback : TYCompassValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

compass→**set_highestValue()****YCompass****compass**→**setHighestValue()****compass.set_highestValue()**

Changes the recorded maximal value observed.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YCompass target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→set_logFrequency()**YCompass****compass→setLogFrequency()****compass.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YCompass target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→**set_logicalName()****compass**→**setLogicalName()****compass.set_logicalName()**

Changes the logical name of the compass.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YCompass target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the compass.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

compass→**set_lowestValue()****YCompass****compass**→**setLowestValue()****compass.set_lowestValue()**

Changes the recorded minimal value observed.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YCompass target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→**set_reportFrequency()****compass**→**setReportFrequency()****compass.set_reportFrequency()**

Changes the timed value notification frequency for this function.

js	function set_reportFrequency (newval)
nodejs	function set_reportFrequency (newval)
php	function set_reportFrequency (\$newval)
cpp	int set_reportFrequency (const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency (newval : string): integer
vb	function set_reportFrequency (ByVal newval As String) As Integer
cs	int set_reportFrequency (string newval)
java	int set_reportFrequency (String newval)
py	def set_reportFrequency (newval)
cmd	YCompass target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→**set_resolution()****compass**→**setResolution()****compass.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YCompass target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→**set_userData()****YCompass****compass**→**setUserData()****compass.set_userData()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userData (data)
nodejs	function set_userData (data)
php	function set_userData (\$data)
cpp	void set_userData (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userData (data : Tobject)
vb	procedure set_userData (ByVal data As Object)
cs	void set_userData (object data)
java	void set_userData (Object data)
py	def set_userData (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

compass→**wait_async()****YCompass**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.7. Current function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_current.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib');</code> <code>var YCurrent = yoctolib.YCurrent;</code>
php	<code>require_once('yocto_current.php');</code>
c++	<code>#include "yocto_current.h"</code>
m	<code>#import "yocto_current.h"</code>
pas	<code>uses yocto_current;</code>
vb	<code>yocto_current.vb</code>
cs	<code>yocto_current.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YCurrent;</code>
py	<code>from yocto_current import *</code>

Global functions

yFindCurrent(func)

Retrieves a current sensor for a given identifier.

yFirstCurrent()

Starts the enumeration of current sensors currently accessible.

YCurrent methods

current→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

current→describe()

Returns a short text that describes unambiguously the instance of the current sensor in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

current→get_advertisedValue()

Returns the current value of the current sensor (no more than 6 characters).

current→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

current→get_currentValue()

Returns the current measure for the current.

current→get_errorMessage()

Returns the error message of the latest error with the current sensor.

current→get_errorType()

Returns the numerical error code of the latest error with the current sensor.

current→get_friendlyName()

Returns a global identifier of the current sensor in the format `MODULE_NAME . FUNCTION_NAME`.

current→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

current→get_functionId()

Returns the hardware identifier of the current sensor, without reference to the module.

current→get_hardwareId()

Returns the unique hardware identifier of the current sensor in the form `SERIAL . FUNCTIONID`.

current→get_highestValue()

Returns the maximal value observed for the current.

current→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

current→get_logicalName()

Returns the logical name of the current sensor.

current→get_lowestValue()

Returns the minimal value observed for the current.

current→get_module()

Gets the YModule object for the device on which the function is located.

current→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

current→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

current→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

current→get_resolution()

Returns the resolution of the measured values.

current→get_unit()

Returns the measuring unit for the current.

current→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

current→isOnline()

Checks if the current sensor is currently reachable, without raising any error.

current→isOnline_async(callback, context)

Checks if the current sensor is currently reachable, without raising any error (asynchronous version).

current→load(msValidity)

Preloads the current sensor cache with a specified validity duration.

current→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

current→load_async(msValidity, callback, context)

Preloads the current sensor cache with a specified validity duration (asynchronous version).

current→nextCurrent()

Continues the enumeration of current sensors started using yFirstCurrent ().

current→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

current→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

current→set_highestValue(newval)

Changes the recorded maximal value observed pour the current.

current→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

current→set_logicalName(newval)

Changes the logical name of the current sensor.

3. Reference

current→**set_lowestValue**(newval)

Changes the recorded minimal value observed pour the current.

current→**set_reportFrequency**(newval)

Changes the timed value notification frequency for this function.

current→**set_resolution**(newval)

Changes the resolution of the measured values.

current→**set_userData**(data)

Stores a user context provided as argument in the userData attribute of the function.

current→**wait_async**(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YCurrent.FindCurrent()**YCurrent****yFindCurrent()**`YCurrent.FindCurrent()`

Retrieves a current sensor for a given identifier.

js	function yFindCurrent (func)
nodejs	function FindCurrent (func)
php	function yFindCurrent (\$func)
cpp	YCurrent* yFindCurrent (const string& func)
m	YCurrent* yFindCurrent (NSString* func)
pas	function yFindCurrent (func : string): TYCurrent
vb	function yFindCurrent (ByVal func As String) As YCurrent
cs	YCurrent FindCurrent (string func)
java	YCurrent FindCurrent (String func)
py	def FindCurrent (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the current sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YCurrent.isOnline()` to test if the current sensor is indeed online at a given time. In case of ambiguity when looking for a current sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the current sensor

Returns :

a `YCurrent` object allowing you to drive the current sensor.

YCurrent.FirstCurrent()**YCurrent****yFirstCurrent()****YCurrent.FirstCurrent()**

Starts the enumeration of current sensors currently accessible.

js	function yFirstCurrent ()
nodejs	function FirstCurrent ()
php	function yFirstCurrent ()
cpp	YCurrent* yFirstCurrent ()
m	YCurrent* yFirstCurrent ()
pas	function yFirstCurrent (): TYCurrent
vb	function yFirstCurrent () As YCurrent
cs	YCurrent FirstCurrent ()
java	YCurrent FirstCurrent ()
py	def FirstCurrent ()

Use the method `YCurrent.nextCurrent()` to iterate on next current sensors.

Returns :

a pointer to a `YCurrent` object, corresponding to the first current sensor currently online, or a `null` pointer if there are none.

current→calibrateFromPoints()**YCurrent****current.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

js	function calibrateFromPoints (rawValues , refValues)
nodejs	function calibrateFromPoints (rawValues , refValues)
php	function calibrateFromPoints (\$rawValues , \$refValues)
cpp	int calibrateFromPoints (vector<double> rawValues , vector<double> refValues)
m	-(int) calibrateFromPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues
pas	function calibrateFromPoints (rawValues : TDoubleArray, refValues : TDoubleArray): LongInt
vb	procedure calibrateFromPoints ()
cs	int calibrateFromPoints (List<double> rawValues , List<double> refValues)
java	int calibrateFromPoints (ArrayList<Double> rawValues , ArrayList<Double> refValues)
py	def calibrateFromPoints (rawValues , refValues)
cmd	YCurrent target calibrateFromPoints rawValues refValues

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→describe()`current.describe()`**YCurrent**

Returns a short text that describes unambiguously the instance of the current sensor in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomeName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the current sensor (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

current→**get_advertisedValue()****YCurrent****current**→**advertisedValue()****current.get_advertisedValue()**

Returns the current value of the current sensor (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YCurrent target get_advertisedValue

Returns :

a string corresponding to the current value of the current sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

current→**get_currentRawValue()****YCurrent****current**→**currentRawValue()****current.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue()
nodejs	function get_currentRawValue()
php	function get_currentRawValue()
cpp	double get_currentRawValue()
m	-(double) currentRawValue
pas	function get_currentRawValue() : double
vb	function get_currentRawValue() As Double
cs	double get_currentRawValue()
java	double get_currentRawValue()
py	def get_currentRawValue()
cmd	YCurrent target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

current→**get_currentValue()****YCurrent****current**→**currentValue()****current**.**get_currentValue()**

Returns the current measure for the current.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YCurrent target get_currentValue

Returns :

a floating point number corresponding to the current measure for the current

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

current→**get_errorMessage()****YCurrent****current**→**errorMessage()****current.errorMessage()**

Returns the error message of the latest error with the current sensor.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the current sensor object

current→**get_errorType()****YCurrent****current**→**errorType()****current.errorType()**

Returns the numerical error code of the latest error with the current sensor.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the current sensor object

current→**get_friendlyName()****YCurrent****current**→**friendlyName()****current.get_friendlyName()**

Returns a global identifier of the current sensor in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the current sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the current sensor (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the current sensor using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

current→**get_functionDescriptor()****YCurrent****current**→**functionDescriptor()****current.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

current→**get_functionId()****YCurrent****current**→**functionId()****current.get_functionId()**

Returns the hardware identifier of the current sensor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the current sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

current→**get_hardwareId()****YCurrent****current**→**hardwareId()****current.get_hardwareId()**

Returns the unique hardware identifier of the current sensor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the current sensor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the current sensor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

current→**get_highestValue()****YCurrent****current**→**highestValue()****current.get_highestValue()**

Returns the maximal value observed for the current.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YCurrent target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the current

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

current→**get_logFrequency()****YCurrent****current**→**logFrequency()****current.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YCurrent target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

current→**get_logicalName()****YCurrent****current**→**logicalName()****current.get_logicalName()**

Returns the logical name of the current sensor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YCurrent target get_logicalName

Returns :

a string corresponding to the logical name of the current sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

current→**get_lowestValue()****YCurrent****current**→**lowestValue()****current.get_lowestValue()**

Returns the minimal value observed for the current.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YCurrent target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the current

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

current→**get_module()****YCurrent****current**→**module()****current.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

current→**get_module_async()****YCurrent****current**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

current→**get_recordedData()****YCurrent****current**→**recordedData()****current.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
cpp	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YCurrent target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

current→**get_reportFrequency()****YCurrent****current**→**reportFrequency()****current.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YCurrent target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

current→**get_resolution()****YCurrent****current**→**resolution()****current.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YCurrent target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

current→**get_unit()****YCurrent****current**→**unit()****current.get_unit()**

Returns the measuring unit for the current.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YCurrent target get_unit

Returns :

a string corresponding to the measuring unit for the current

On failure, throws an exception or returns Y_UNIT_INVALID.

current→**get_userdata()****YCurrent****current**→**userData()****current.get_userdata()**

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

current→**isOnline()****current.isOnline()****YCurrent**

Checks if the current sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the current sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the current sensor.

Returns :

`true` if the current sensor can be reached, and `false` otherwise

current→isOnline_async()**YCurrent**

Checks if the current sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the current sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

current→**load()****current.load()****YCurrent**

Preloads the current sensor cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

current→loadCalibrationPoints()**YCurrent****current.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php function loadCalibrationPoints( &$rawValues, &$refValues)
cpp int loadCalibrationPoints( vector<double>& rawValues,
                             vector<double>& refValues)

m -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
   : (NSMutableArray*) refValues

pas function loadCalibrationPoints( var rawValues: TDoubleArray,
                                   var refValues: TDoubleArray): LongInt

vb procedure loadCalibrationPoints( )
cs int loadCalibrationPoints( List<double> rawValues,
                             List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                               ArrayList<Double> refValues)

py def loadCalibrationPoints( rawValues, refValues)
cmd YCurrent target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→load_async()**YCurrent**

Preloads the current sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

current→**nextCurrent()****current.nextCurrent()****YCurrent**

Continues the enumeration of current sensors started using `yFirstCurrent()`.

js	function nextCurrent ()
nodejs	function nextCurrent ()
php	function nextCurrent ()
cpp	YCurrent * nextCurrent ()
m	-(YCurrent*) nextCurrent
pas	function nextCurrent (): TYCurrent
vb	function nextCurrent () As YCurrent
cs	YCurrent nextCurrent ()
java	YCurrent nextCurrent ()
py	def nextCurrent ()

Returns :

a pointer to a `YCurrent` object, corresponding to a current sensor currently online, or a `null` pointer if there are no more current sensors to enumerate.

current→registerTimedReportCallback()**YCurrent****current.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YCurrentTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YCurrentTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYCurrentTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

current→registerValueCallback()**YCurrent****current.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
c++	int registerValueCallback (YCurrentValueCallback callback)
m	-(int) registerValueCallback : (YCurrentValueCallback) callback
pas	function registerValueCallback (callback : TYCurrentValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

current→**set_highestValue()**
current→**setHighestValue()**
current.set_highestValue()

YCurrent

Changes the recorded maximal value observed pour the current.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YCurrent target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed pour the current

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→**set_logFrequency()****YCurrent****current**→**setLogFrequency()****current.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YCurrent target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→**set_logicalName()****YCurrent****current**→**setLogicalName()****current.set_logicalName()**

Changes the logical name of the current sensor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YCurrent target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the current sensor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

current→**set_lowestValue()****YCurrent****current**→**setLowestValue()****current.set_lowestValue()**

Changes the recorded minimal value observed pour the current.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YCurrent target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed pour the current

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→**set_reportFrequency()**
current→**setReportFrequency()**
current.set_reportFrequency()

YCurrent

Changes the timed value notification frequency for this function.

js	function set_reportFrequency (newval)
nodejs	function set_reportFrequency (newval)
php	function set_reportFrequency (\$newval)
cpp	int set_reportFrequency (const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency (newval : string): integer
vb	function set_reportFrequency (ByVal newval As String) As Integer
cs	int set_reportFrequency (string newval)
java	int set_reportFrequency (String newval)
py	def set_reportFrequency (newval)
cmd	YCurrent target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→**set_resolution()****YCurrent****current**→**setResolution()****current.set_resolution()**

Changes the resolution of the measured values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YCurrent target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→**set_userData()****YCurrent****current**→**setUserData()****current.set_userData()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userData (data)
nodejs	function set_userData (data)
php	function set_userData (\$data)
cpp	void set_userData (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userData (data : Tobject)
vb	procedure set_userData (ByVal data As Object)
cs	void set_userData (object data)
java	void set_userData (Object data)
py	def set_userData (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

current→wait_async()**YCurrent**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.8. DataLogger function interface

Yoctopuce sensors include a non-volatile memory capable of storing ongoing measured data automatically, without requiring a permanent connection to a computer. The DataLogger function controls the global parameters of the internal data logger.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_datalogger.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YDataLogger = yoctolib.YDataLogger;
php	require_once('yocto_datalogger.php');
c++	#include "yocto_datalogger.h"
m	#import "yocto_datalogger.h"
pas	uses yocto_datalogger;
vb	yocto_datalogger.vb
cs	yocto_datalogger.cs
java	import com.yoctopuce.YoctoAPI.YDataLogger;
py	from yocto_datalogger import *

Global functions

yFindDataLogger(func)

Retrieves a data logger for a given identifier.

yFirstDataLogger()

Starts the enumeration of data loggers currently accessible.

YDataLogger methods

datalogger→describe()

Returns a short text that describes unambiguously the instance of the data logger in the form TYPE (NAME) = SERIAL . FUNCTIONID.

datalogger→forgetAllDataStreams()

Clears the data logger memory and discards all recorded data streams.

datalogger→get_advertisedValue()

Returns the current value of the data logger (no more than 6 characters).

datalogger→get_autoStart()

Returns the default activation state of the data logger on power up.

datalogger→get_currentRunIndex()

Returns the current run number, corresponding to the number of times the module was powered on with the dataLogger enabled at some point.

datalogger→get_dataSets()

Returns a list of YDataSet objects that can be used to retrieve all measures stored by the data logger.

datalogger→get_dataStreams(v)

Builds a list of all data streams hold by the data logger (legacy method).

datalogger→get_errorMessage()

Returns the error message of the latest error with the data logger.

datalogger→get_errorType()

Returns the numerical error code of the latest error with the data logger.

datalogger→get_friendlyName()

Returns a global identifier of the data logger in the format MODULE_NAME . FUNCTION_NAME.

datalogger→get_functionDescriptor()

	Returns a unique identifier of type <code>YFUN_DESCR</code> corresponding to the function.
<code>datalogger→get_functionId()</code>	Returns the hardware identifier of the data logger, without reference to the module.
<code>datalogger→get_hardwareId()</code>	Returns the unique hardware identifier of the data logger in the form <code>SERIAL . FUNCTIONID</code> .
<code>datalogger→get_logicalName()</code>	Returns the logical name of the data logger.
<code>datalogger→get_module()</code>	Gets the <code>YModule</code> object for the device on which the function is located.
<code>datalogger→get_module_async(callback, context)</code>	Gets the <code>YModule</code> object for the device on which the function is located (asynchronous version).
<code>datalogger→get_recording()</code>	Returns the current activation state of the data logger.
<code>datalogger→get_timeUTC()</code>	Returns the Unix timestamp for current UTC time, if known.
<code>datalogger→get_userData()</code>	Returns the value of the <code>userData</code> attribute, as previously stored using method <code>set_userData</code> .
<code>datalogger→isOnline()</code>	Checks if the data logger is currently reachable, without raising any error.
<code>datalogger→isOnline_async(callback, context)</code>	Checks if the data logger is currently reachable, without raising any error (asynchronous version).
<code>datalogger→load(msValidity)</code>	Preloads the data logger cache with a specified validity duration.
<code>datalogger→load_async(msValidity, callback, context)</code>	Preloads the data logger cache with a specified validity duration (asynchronous version).
<code>datalogger→nextDataLogger()</code>	Continues the enumeration of data loggers started using <code>yFirstDataLogger()</code> .
<code>datalogger→registerValueCallback(callback)</code>	Registers the callback function that is invoked on every change of advertised value.
<code>datalogger→set_autoStart(newval)</code>	Changes the default activation state of the data logger on power up.
<code>datalogger→set_logicalName(newval)</code>	Changes the logical name of the data logger.
<code>datalogger→set_recording(newval)</code>	Changes the activation state of the data logger to start/stop recording data.
<code>datalogger→set_timeUTC(newval)</code>	Changes the current UTC time reference used for recorded data.
<code>datalogger→set_userData(data)</code>	Stores a user context provided as argument in the <code>userData</code> attribute of the function.
<code>datalogger→wait_async(callback, context)</code>	Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YDataLogger.FindDataLogger()**YDataLogger****yFindDataLogger()****YDataLogger.FindDataLogger()**

Retrieves a data logger for a given identifier.

js	function yFindDataLogger (func)
nodejs	function FindDataLogger (func)
php	function yFindDataLogger (\$func)
cpp	YDataLogger* yFindDataLogger (string func)
m	+(YDataLogger*) yFindDataLogger : (NSString*) func
pas	function yFindDataLogger (func : string): TYDataLogger
vb	function yFindDataLogger (ByVal func As String) As YDataLogger
cs	YDataLogger FindDataLogger (string func)
java	YDataLogger FindDataLogger (String func)
py	def FindDataLogger (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the data logger is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YDataLogger.isOnline()` to test if the data logger is indeed online at a given time. In case of ambiguity when looking for a data logger by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the data logger

Returns :

a YDataLogger object allowing you to drive the data logger.

YDataLogger.FirstDataLogger()**YDataLogger****yFirstDataLogger()****YDataLogger.FirstDataLogger()**

Starts the enumeration of data loggers currently accessible.

js	function yFirstDataLogger ()
nodejs	function FirstDataLogger ()
php	function yFirstDataLogger ()
cpp	YDataLogger* yFirstDataLogger ()
m	YDataLogger* yFirstDataLogger ()
pas	function yFirstDataLogger (): TYDataLogger
vb	function yFirstDataLogger () As YDataLogger
cs	YDataLogger FirstDataLogger ()
java	YDataLogger FirstDataLogger ()
py	def FirstDataLogger ()

Use the method `YDataLogger.nextDataLogger()` to iterate on next data loggers.

Returns :

a pointer to a `YDataLogger` object, corresponding to the first data logger currently online, or a `null` pointer if there are none.

datalogger→describe()`datalogger.describe()`**YDataLogger**

Returns a short text that describes unambiguously the instance of the data logger in the form `TYPE (NAME) = SERIAL.FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, `TYPE` is the type of the function, `NAME` it the name used for the first access to the function, `SERIAL` is the serial number of the module if the module is connected or "unresolved", and `FUNCTIONID` is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the data logger (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

datalogger→forgetAllDataStreams()**YDataLogger****datalogger.forgetAllDataStreams()**

Clears the data logger memory and discards all recorded data streams.

js	function forgetAllDataStreams ()
nodejs	function forgetAllDataStreams ()
php	function forgetAllDataStreams ()
cpp	int forgetAllDataStreams ()
m	-(int) forgetAllDataStreams
pas	function forgetAllDataStreams (): LongInt
vb	function forgetAllDataStreams () As Integer
cs	int forgetAllDataStreams ()
java	int forgetAllDataStreams ()
py	def forgetAllDataStreams ()
cmd	YDataLogger target forgetAllDataStreams

This method also resets the current run index to zero.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

datalogger→get_advertisedValue()**YDataLogger****datalogger→advertisedValue()****datalogger.get_advertisedValue()**

Returns the current value of the data logger (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YDataLogger target get_advertisedValue

Returns :

a string corresponding to the current value of the data logger (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

datalogger→**get_autoStart()****YDataLogger****datalogger**→**autoStart()****datalogger.get_autoStart()**

Returns the default activation state of the data logger on power up.

js	function get_autoStart ()
nodejs	function get_autoStart ()
php	function get_autoStart ()
cpp	Y_AUTOSTART_enum get_autoStart ()
m	-(Y_AUTOSTART_enum) autoStart
pas	function get_autoStart (): Integer
vb	function get_autoStart () As Integer
cs	int get_autoStart ()
java	int get_autoStart ()
py	def get_autoStart ()
cmd	YDataLogger target get_autoStart

Returns :

either Y_AUTOSTART_OFF or Y_AUTOSTART_ON, according to the default activation state of the data logger on power up

On failure, throws an exception or returns Y_AUTOSTART_INVALID.

dataLogger→get_currentRunIndex()**YDataLogger****dataLogger→currentRunIndex()****dataLogger.get_currentRunIndex()**

Returns the current run number, corresponding to the number of times the module was powered on with the dataLogger enabled at some point.

js	function get_currentRunIndex ()
nodejs	function get_currentRunIndex ()
php	function get_currentRunIndex ()
cpp	int get_currentRunIndex ()
m	-(int) currentRunIndex
pas	function get_currentRunIndex (): LongInt
vb	function get_currentRunIndex () As Integer
cs	int get_currentRunIndex ()
java	int get_currentRunIndex ()
py	def get_currentRunIndex ()
cmd	YDataLogger target get_currentRunIndex

Returns :

an integer corresponding to the current run number, corresponding to the number of times the module was powered on with the dataLogger enabled at some point

On failure, throws an exception or returns Y_CURRENTRUNINDEX_INVALID.

dataLogger→get_dataSets()**YDataLogger****dataLogger→dataSets()****dataLogger.get_dataSets()**

Returns a list of YDataSet objects that can be used to retrieve all measures stored by the data logger.

js	function get_dataSets ()
nodejs	function get_dataSets ()
php	function get_dataSets ()
cpp	vector<YDataSet> get_dataSets ()
m	-(NSMutableArray*) dataSets
pas	function get_dataSets (): TYDataSetArray
vb	function get_dataSets () As List
cs	List<YDataSet> get_dataSets ()
java	ArrayList<YDataSet> get_dataSets ()
py	def get_dataSets ()
cmd	YDataLogger target get_dataSets

This function only works if the device uses a recent firmware, as YDataSet objects are not supported by firmwares older than version 13000.

Returns :

a list of YDataSet object.

On failure, throws an exception or returns an empty list.

datalogger→get_dataStreams()**YDataLogger****datalogger→dataStreams()****datalogger.get_dataStreams()**

Builds a list of all data streams hold by the data logger (legacy method).

js	function get_dataStreams (v)
nodejs	function get_dataStreams (v)
php	function get_dataStreams (&\$v)
cpp	int get_dataStreams ()
m	-(int) dataStreams : (NSArray**) v
pas	function get_dataStreams (v : Tlist): integer
vb	procedure get_dataStreams (ByVal v As List)
cs	int get_dataStreams (List<YDataStream> v)
java	int get_dataStreams (ArrayList<YDataStream> v)
py	def get_dataStreams (v)

The caller must pass by reference an empty array to hold YDataStream objects, and the function fills it with objects describing available data sequences.

This is the old way to retrieve data from the DataLogger. For new applications, you should rather use `get_dataSets()` method, or call directly `get_recordedData()` on the sensor object.

Parameters :

v an array of YDataStream objects to be filled in

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

datalogger→get_errorMessage()**YDataLogger****datalogger→errorMessage()****datalogger.get_errorMessage()**

Returns the error message of the latest error with the data logger.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the data logger object

datalogger→get_errorType()
datalogger→errorType()
datalogger.get_errorType()

YDataLogger

Returns the numerical error code of the latest error with the data logger.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the data logger object

datalogger→get_friendlyName()**YDataLogger****datalogger→friendlyName()****datalogger.get_friendlyName()**

Returns a global identifier of the data logger in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the data logger if they are defined, otherwise the serial number of the module and the hardware identifier of the data logger (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the data logger using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

datalogger→get_functionDescriptor()**YDataLogger****datalogger→functionDescriptor()****datalogger.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

datalogger→**get_functionId()****YDataLogger****datalogger**→**functionId()****datalogger.get_functionId()**

Returns the hardware identifier of the data logger, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example relay1

Returns :

a string that identifies the data logger (ex: relay1) On failure, throws an exception or returns Y_FUNCTIONID_INVALID.

datalogger→get_hardwareId()**YDataLogger****datalogger→hardwareId()****datalogger.get_hardwareId()**

Returns the unique hardware identifier of the data logger in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the data logger. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the data logger (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

datalogger→get_logicalName()**YDataLogger****datalogger→logicalName()****datalogger.get_logicalName()**

Returns the logical name of the data logger.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YDataLogger target get_logicalName

Returns :

a string corresponding to the logical name of the data logger. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

datalogger→get_module()**YDataLogger****datalogger→module()**`datalogger.get_module()`

Gets the `YModule` object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	<code>YModule *</code> get_module ()
m	<code>-(YModule*)</code> module
pas	function get_module (): <code>TYModule</code>
vb	function get_module () As <code>YModule</code>
cs	<code>YModule</code> get_module ()
java	<code>YModule</code> get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of `YModule` is not shown as on-line.

Returns :

an instance of `YModule`

datalogger→**get_module_async()****YDataLogger****datalogger**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

datalogger→get_recording()
datalogger→recording()
datalogger.get_recording()

YDataLogger

Returns the current activation state of the data logger.

js	function get_recording ()
nodejs	function get_recording ()
php	function get_recording ()
cpp	Y_RECORDING_enum get_recording ()
m	-(Y_RECORDING_enum) recording
pas	function get_recording (): Integer
vb	function get_recording () As Integer
cs	int get_recording ()
java	int get_recording ()
py	def get_recording ()
cmd	YDataLogger target get_recording

Returns :

either Y_RECORDING_OFF or Y_RECORDING_ON, according to the current activation state of the data logger

On failure, throws an exception or returns Y_RECORDING_INVALID.

datalogger→**get_timeUTC()****YDataLogger****datalogger**→**timeUTC()****datalogger.get_timeUTC()**

Returns the Unix timestamp for current UTC time, if known.

js	function get_timeUTC ()
nodejs	function get_timeUTC ()
php	function get_timeUTC ()
cpp	s64 get_timeUTC ()
m	-(s64) timeUTC
pas	function get_timeUTC (): int64
vb	function get_timeUTC () As Long
cs	long get_timeUTC ()
java	long get_timeUTC ()
py	def get_timeUTC ()
cmd	YDataLogger target get_timeUTC

Returns :

an integer corresponding to the Unix timestamp for current UTC time, if known

On failure, throws an exception or returns Y_TIMEUTC_INVALID.

datalogger→**get_userdata()****YDataLogger****datalogger**→**userData()****datalogger.get_userdata()**

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

datalogger→**isOnline()**`datalogger.isOnline()`**YDataLogger**

Checks if the data logger is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the data logger in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the data logger.

Returns :

`true` if the data logger can be reached, and `false` otherwise

datalogger→isOnline_async()**YDataLogger**

Checks if the data logger is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the data logger in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

datalogger→**load()**`datalogger.load()`**YDataLogger**

Preloads the data logger cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

datalogger→load_async()**YDataLogger**

Preloads the data logger cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

dataLogger→**nextDataLogger()****YDataLogger****dataLogger.nextDataLogger()**

Continues the enumeration of data loggers started using `yFirstDataLogger()`.

js	function nextDataLogger ()
nodejs	function nextDataLogger ()
php	function nextDataLogger ()
c++	YDataLogger * nextDataLogger ()
m	-(YDataLogger*) nextDataLogger
pas	function nextDataLogger (): TYDataLogger
vb	function nextDataLogger () As YDataLogger
cs	YDataLogger nextDataLogger ()
java	YDataLogger nextDataLogger ()
py	def nextDataLogger ()

Returns :

a pointer to a `YDataLogger` object, corresponding to a data logger currently online, or a `null` pointer if there are no more data loggers to enumerate.

datalogger→registerValueCallback()**YDataLogger****datalogger.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YDataLoggerValueCallback callback)
m	-(int) registerValueCallback : (YDataLoggerValueCallback) callback
pas	function registerValueCallback (callback : TYDataLoggerValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

datalogger→**set_autoStart()****YDataLogger****datalogger**→**setAutoStart()****datalogger.set_autoStart()**

Changes the default activation state of the data logger on power up.

<code>js</code>	<code>function set_autoStart(newval)</code>
<code>nodejs</code>	<code>function set_autoStart(newval)</code>
<code>php</code>	<code>function set_autoStart(\$newval)</code>
<code>cpp</code>	<code>int set_autoStart(Y_AUTOSTART_enum newval)</code>
<code>m</code>	<code>-(int) setAutoStart : (Y_AUTOSTART_enum) newval</code>
<code>pas</code>	<code>function set_autoStart(newval: Integer): integer</code>
<code>vb</code>	<code>function set_autoStart(ByVal newval As Integer) As Integer</code>
<code>cs</code>	<code>int set_autoStart(int newval)</code>
<code>java</code>	<code>int set_autoStart(int newval)</code>
<code>py</code>	<code>def set_autoStart(newval)</code>
<code>cmd</code>	<code>YDataLogger target set_autoStart newval</code>

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval either `Y_AUTOSTART_OFF` or `Y_AUTOSTART_ON`, according to the default activation state of the data logger on power up

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

datalogger→set_logicalName()**YDataLogger****datalogger→setLogicalName()****datalogger.set_logicalName()**

Changes the logical name of the data logger.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YDataLogger target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the data logger.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

datalogger→set_recording()
datalogger→setRecording()
datalogger.set_recording()

YDataLogger

Changes the activation state of the data logger to start/stop recording data.

js	function set_recording (newval)
nodejs	function set_recording (newval)
php	function set_recording (\$newval)
cpp	int set_recording (Y_RECORDING_enum newval)
m	-(int) setRecording : (Y_RECORDING_enum) newval
pas	function set_recording (newval : Integer): integer
vb	function set_recording (ByVal newval As Integer) As Integer
cs	int set_recording (int newval)
java	int set_recording (int newval)
py	def set_recording (newval)
cmd	YDataLogger target set_recording newval

Parameters :

newval either Y_RECORDING_OFF or Y_RECORDING_ON, according to the activation state of the data logger to start/stop recording data

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

datalogger→**set_timeUTC()****YDataLogger****datalogger**→**setTimeUTC()****datalogger.set_timeUTC()**

Changes the current UTC time reference used for recorded data.

js	function set_timeUTC (newval)
nodejs	function set_timeUTC (newval)
php	function set_timeUTC (\$newval)
cpp	int set_timeUTC (s64 newval)
m	-(int) setTimeUTC : (s64) newval
pas	function set_timeUTC (newval : int64): integer
vb	function set_timeUTC (ByVal newval As Long) As Integer
cs	int set_timeUTC (long newval)
java	int set_timeUTC (long newval)
py	def set_timeUTC (newval)
cmd	YDataLogger target set_timeUTC newval

Parameters :

newval an integer corresponding to the current UTC time reference used for recorded data

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

datalogger→**set_userdata()****YDataLogger****datalogger**→**setUserData()****datalogger.set_userdata()**

Stores a user context provided as argument in the `userData` attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

datalogger→**wait_async()****YDataLogger**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.9. Formatted data sequence

A run is a continuous interval of time during which a module was powered on. A data run provides easy access to all data collected during a given run, providing on-the-fly resampling at the desired reporting rate.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_datalogger.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YDataLogger = yoctolib.YDataLogger;
php	require_once('yocto_datalogger.php');
c++	#include "yocto_datalogger.h"
m	#import "yocto_datalogger.h"
pas	uses yocto_datalogger;
vb	yocto_datalogger.vb
cs	yocto_datalogger.cs
java	import com.yoctopuce.YoctoAPI.YDataLogger;
py	from yocto_datalogger import *

YDataRun methods
datarun→get_averageValue(measureName, pos) Returns the average value of the measure observed at the specified time period.
datarun→get_duration() Returns the duration (in seconds) of the data run.
datarun→get_maxValue(measureName, pos) Returns the maximal value of the measure observed at the specified time period.
datarun→get_measureNames() Returns the names of the measures recorded by the data logger.
datarun→get_minValue(measureName, pos) Returns the minimal value of the measure observed at the specified time period.
datarun→get_startTimeUTC() Returns the start time of the data run, relative to the Jan 1, 1970.
datarun→get_valueCount() Returns the number of values accessible in this run, given the selected data samples interval.
datarun→get_valueInterval() Returns the number of seconds covered by each value in this run.
datarun→set_valueInterval(valueInterval) Changes the number of seconds covered by each value in this run.

datarun→get_averageValue()**YDataRun****datarun→averageValue()****datarun.get_averageValue()**

Returns the average value of the measure observed at the specified time period.

js	function get_averageValue (measureName , pos)
nodejs	function get_averageValue (measureName , pos)
php	function get_averageValue (\$measureName , \$pos)
java	double get_averageValue (String measureName , int pos)
py	def get_averageValue (measureName , pos)

Parameters :

measureName the name of the desired measure (one of the names returned by `get_measureNames`)

pos the position index, between 0 and the value returned by `get_valueCount`

Returns :

a floating point number (the average value)

On failure, throws an exception or returns `Y_AVERAGEVALUE_INVALID`.

datarun→**get_duration()**

YDataRun

datarun→**duration()****datarun.get_duration()**

Returns the duration (in seconds) of the data run.

```
js function get_duration( )
```

```
nodejs function get_duration( )
```

```
php function get_duration( )
```

```
java long get_duration( )
```

```
py def get_duration( )
```

When the datalogger is actively recording and the specified run is the current run, calling this method reloads last sequence(s) from device to make sure it includes the latest recorded data.

Returns :

an unsigned number corresponding to the number of seconds between the beginning of the run (when the module was powered up) and the last recorded measure.

datarun→**get_maxValue()****YDataRun****datarun**→**maxValue()****datarun.get_maxValue()**

Returns the maximal value of the measure observed at the specified time period.

js	function get_maxValue (measureName , pos)
nodejs	function get_maxValue (measureName , pos)
php	function get_maxValue (\$measureName , \$pos)
java	double get_maxValue (String measureName , int pos)
py	def get_maxValue (measureName , pos)

Parameters :

measureName the name of the desired measure (one of the names returned by `get_measureNames`)

pos the position index, between 0 and the value returned by `get_valueCount`

Returns :

a floating point number (the maximal value)

On failure, throws an exception or returns `Y_MAXVALUE_INVALID`.

datarun→**get_measureNames()****YDataRun****datarun**→**measureNames()****datarun.get_measureNames()**

Returns the names of the measures recorded by the data logger.

```
js function get_measureNames( )  
nodejs function get_measureNames( )  
php function get_measureNames( )  
java ArrayList<String> get_measureNames( )  
py def get_measureNames( )
```

In most case, the measure names match the hardware identifier of the sensor that produced the data.

Returns :

a list of strings (the measure names) On failure, throws an exception or returns an empty array.

datarun→**get_minValue()****YDataRun****datarun**→**minValue()****datarun.get_minValue()**

Returns the minimal value of the measure observed at the specified time period.

js	function get_minValue (measureName , pos)
nodejs	function get_minValue (measureName , pos)
php	function get_minValue (\$measureName , \$pos)
java	double get_minValue (String measureName , int pos)
py	def get_minValue (measureName , pos)

Parameters :

measureName the name of the desired measure (one of the names returned by `get_measureNames`)

pos the position index, between 0 and the value returned by `get_valueCount`

Returns :

a floating point number (the minimal value)

On failure, throws an exception or returns `Y_MINVALUE_INVALID`.

datarun→get_startTimeUTC()

YDataRun

datarun→startTimeUTC()

Returns the start time of the data run, relative to the Jan 1, 1970.

If the UTC time was not set in the datalogger at any time during the recording of this data run, and if this is not the current run, this method returns 0.

Returns :

an unsigned number corresponding to the number of seconds between the Jan 1, 1970 and the beginning of this data run (i.e. Unix time representation of the absolute time).

datarun→get_valueCount()**YDataRun****datarun→valueCount()**`datarun.get_valueCount()`

Returns the number of values accessible in this run, given the selected data samples interval.

js	function get_valueCount ()
----	------------------------------------

nodejs	function get_valueCount ()
--------	------------------------------------

php	function get_valueCount ()
-----	------------------------------------

java	int get_valueCount ()
------	-------------------------------

py	def get_valueCount ()
----	-------------------------------

When the datalogger is actively recording and the specified run is the current run, calling this method reloads last sequence(s) from device to make sure it includes the latest recorded data.

Returns :

an unsigned number corresponding to the run duration divided by the samples interval.

datarun→**get_valueInterval()**

YDataRun

datarun→**valueInterval()**

datarun.get_valueInterval()

Returns the number of seconds covered by each value in this run.

```
js function get_valueInterval( )
```

```
nodejs function get_valueInterval( )
```

```
php function get_valueInterval( )
```

```
java int get_valueInterval( )
```

```
py def get_valueInterval( )
```

By default, the value interval is set to the coarsest data rate archived in the data logger flash for this run. The value interval can however be configured at will to a different rate when desired.

Returns :

an unsigned number corresponding to a number of seconds covered by each data sample in the Run.

datarun→set_valueInterval()
datarun→setValueInterval()
datarun.set_valueInterval()

YDataRun

Changes the number of seconds covered by each value in this run.

```
js function set_valueInterval( valueInterval)
nodejs function set_valueInterval( valueInterval)
php function set_valueInterval( $valueInterval)
java void set_valueInterval( int valueInterval)
py def set_valueInterval( valueInterval)
```

By default, the value interval is set to the coarsest data rate archived in the data logger flash for this run. The value interval can however be configured at will to a different rate when desired.

Parameters :

valueInterval an integer number of seconds.

Returns :

nothing

3.10. Recorded data sequence

YDataSet objects make it possible to retrieve a set of recorded measures for a given sensor and a specified time interval. They can be used to load data points with a progress report. When the YDataSet object is instantiated by the `get_recordedData()` function, no data is yet loaded from the module. It is only when the `loadMore()` method is called over and over than data will be effectively loaded from the dataLogger.

A preview of available measures is available using the function `get_preview()` as soon as `loadMore()` has been called once. Measures themselves are available using function `get_measures()` when loaded by subsequent calls to `loadMore()`.

This class can only be used on devices that use a recent firmware, as YDataSet objects are not supported by firmwares older than version 13000.

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_api.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib');</code> <code>var YAPI = yoctolib.YAPI;</code> <code>var YModule = yoctolib.YModule;</code>
php	<code>require_once('yocto_api.php');</code>
cpp	<code>#include "yocto_api.h"</code>
m	<code>#import "yocto_api.h"</code>
pas	<code>uses yocto_api;</code>
vb	<code>yocto_api.vb</code>
cs	<code>yocto_api.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YModule;</code>
py	<code>from yocto_api import *</code>

YDataSet methods

dataset→get_endTimeUTC()

Returns the end time of the dataset, relative to the Jan 1, 1970.

dataset→get_functionId()

Returns the hardware identifier of the function that performed the measure, without reference to the module.

dataset→get_hardwareId()

Returns the unique hardware identifier of the function who performed the measures, in the form `SERIAL.FUNCTIONID`.

dataset→get_measures()

Returns all measured values currently available for this DataSet, as a list of YMeasure objects.

dataset→get_preview()

Returns a condensed version of the measures that can retrieved in this YDataSet, as a list of YMeasure objects.

dataset→get_progress()

Returns the progress of the downloads of the measures from the data logger, on a scale from 0 to 100.

dataset→get_startTimeUTC()

Returns the start time of the dataset, relative to the Jan 1, 1970.

dataset→get_summary()

Returns an YMeasure object which summarizes the whole DataSet.

dataset→get_unit()

Returns the measuring unit for the measured value.

dataset→loadMore()

Loads the the next block of measures from the dataLogger, and updates the progress indicator.

dataset→loadMore_async(callback, context)

Loads the the next block of measures from the dataLogger asynchronously.

dataset→**get_endTimeUTC()****YDataSet****dataset**→**endTimeUTC()****dataset.get_endTimeUTC()**

Returns the end time of the dataset, relative to the Jan 1, 1970.

js	function get_endTimeUTC ()
nodejs	function get_endTimeUTC ()
php	function get_endTimeUTC ()
cpp	s64 get_endTimeUTC ()
m	-(s64) endTimeUTC
pas	function get_endTimeUTC (): int64
vb	function get_endTimeUTC () As Long
cs	long get_endTimeUTC ()
java	long get_endTimeUTC ()
py	def get_endTimeUTC ()

When the YDataSet is created, the end time is the value passed in parameter to the `get_dataSet()` function. After the very first call to `loadMore()`, the end time is updated to reflect the timestamp of the last measure actually found in the dataLogger within the specified range.

Returns :

an unsigned number corresponding to the number of seconds between the Jan 1, 1970 and the end of this data set (i.e. Unix time representation of the absolute time).

dataset→**get_functionId()****YDataSet****dataset**→**functionId()****dataset.get_functionId()**

Returns the hardware identifier of the function that performed the measure, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
pas	function get_functionId (): string
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `temperature1`.

Returns :

a string that identifies the function (ex: `temperature1`)

dataset→**get_hardwareId()****YDataSet****dataset**→**hardwareId()****dataset.get_hardwareId()**

Returns the unique hardware identifier of the function who performed the measures, in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
pas	function get_hardwareId (): string
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the function (for example `THRMCPL1-123456.temperature1`)

Returns :

a string that uniquely identifies the function (ex: `THRMCPL1-123456.temperature1`)

On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

dataset→**get_measures()****YDataSet****dataset**→**measures()****dataset.get_measures()**

Returns all measured values currently available for this DataSet, as a list of YMeasure objects.

js	function get_measures ()
nodejs	function get_measures ()
php	function get_measures ()
cpp	vector<YMeasure> get_measures ()
m	-(NSMutableArray*) measures
pas	function get_measures (): TYMeasureArray
vb	function get_measures () As List
cs	List<YMeasure> get_measures ()
java	ArrayList<YMeasure> get_measures ()
py	def get_measures ()

Each item includes: - the start of the measure time interval - the end of the measure time interval - the minimal value observed during the time interval - the average value observed during the time interval - the maximal value observed during the time interval

Before calling this method, you should call `loadMore()` to load data from the device. You may have to call `loadMore()` several time until all rows are loaded, but you can start looking at available data rows before the load is complete.

The oldest measures are always loaded first, and the most recent measures will be loaded last. As a result, timestamps are normally sorted in ascending order within the measure table, unless there was an unexpected adjustment of the datalogger UTC clock.

Returns :

a table of records, where each record depicts the measured value for a given time interval

On failure, throws an exception or returns an empty array.

dataset→**get_preview()****YDataSet****dataset**→**preview()****dataset.get_preview()**

Returns a condensed version of the measures that can retrieved in this YDataSet, as a list of YMeasure objects.

js	function get_preview ()
nodejs	function get_preview ()
php	function get_preview ()
cpp	vector<YMeasure> get_preview ()
m	-(NSMutableArray*) preview
pas	function get_preview (): TYMeasureArray
vb	function get_preview () As List
cs	List<YMeasure> get_preview ()
java	ArrayList<YMeasure> get_preview ()
py	def get_preview ()

Each item includes: - the start of a time interval - the end of a time interval - the minimal value observed during the time interval - the average value observed during the time interval - the maximal value observed during the time interval

This preview is available as soon as `loadMore()` has been called for the first time.

Returns :

a table of records, where each record depicts the measured values during a time interval

On failure, throws an exception or returns an empty array.

dataset→**get_progress()****YDataSet****dataset**→**progress()**`dataset.get_progress()`

Returns the progress of the downloads of the measures from the data logger, on a scale from 0 to 100.

js	function get_progress()
nodejs	function get_progress()
php	function get_progress()
cpp	int get_progress()
m	-(int) progress
pas	function get_progress() : LongInt
vb	function get_progress() As Integer
cs	int get_progress()
java	int get_progress()
py	def get_progress()

When the object is instantiated by `get_dataSet`, the progress is zero. Each time `loadMore()` is invoked, the progress is updated, to reach the value 100 only once all measures have been loaded.

Returns :

an integer in the range 0 to 100 (percentage of completion).

dataset→**get_startTimeUTC()****YDataSet****dataset**→**startTimeUTC()****dataset.get_startTimeUTC()**

Returns the start time of the dataset, relative to the Jan 1, 1970.

js	function get_startTimeUTC ()
nodejs	function get_startTimeUTC ()
php	function get_startTimeUTC ()
cpp	s64 get_startTimeUTC ()
m	-(s64) startTimeUTC
pas	function get_startTimeUTC (): int64
vb	function get_startTimeUTC () As Long
cs	long get_startTimeUTC ()
java	long get_startTimeUTC ()
py	def get_startTimeUTC ()

When the YDataSet is created, the start time is the value passed in parameter to the `get_dataSet()` function. After the very first call to `loadMore()`, the start time is updated to reflect the timestamp of the first measure actually found in the dataLogger within the specified range.

Returns :

an unsigned number corresponding to the number of seconds between the Jan 1, 1970 and the beginning of this data set (i.e. Unix time representation of the absolute time).

dataset→**get_summary()****YDataSet****dataset**→**summary()****dataset.get_summary()**

Returns an YMeasure object which summarizes the whole DataSet.

js	function get_summary()
nodejs	function get_summary()
php	function get_summary()
cpp	YMeasure get_summary()
m	-(YMeasure*) summary
pas	function get_summary() : TYMeasure
vb	function get_summary() As YMeasure
cs	YMeasure get_summary()
java	YMeasure get_summary()
py	def get_summary()

In includes the following information: - the start of a time interval - the end of a time interval - the minimal value observed during the time interval - the average value observed during the time interval - the maximal value observed during the time interval

This summary is available as soon as `loadMore()` has been called for the first time.

Returns :

an YMeasure object

dataset→**get_unit()****YDataSet****dataset**→**unit()****dataset.get_unit()**

Returns the measuring unit for the measured value.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()

Returns :

a string that represents a physical unit.

On failure, throws an exception or returns Y_UNIT_INVALID.

dataset→**loadMore()****dataset.loadMore()****YDataSet**

Loads the the next block of measures from the dataLogger, and updates the progress indicator.

js	function loadMore ()
nodejs	function loadMore ()
php	function loadMore ()
cpp	int loadMore ()
m	-(int) loadMore
pas	function loadMore (): LongInt
vb	function loadMore () As Integer
cs	int loadMore ()
java	int loadMore ()
py	def loadMore ()

Returns :

an integer in the range 0 to 100 (percentage of completion), or a negative error code in case of failure.

On failure, throws an exception or returns a negative error code.

dataset→loadMore_async()**YDataSet**

Loads the the next block of measures from the dataLogger asynchronously.

```
js function loadMore_async( callback, context)
nodejs function loadMore_async( callback, context)
```

Parameters :

- callback** callback function that is invoked when the w The callback function receives three arguments: - the user-specific context object - the YDataSet object whose loadMore_async was invoked - the load result: either the progress indicator (0...100), or a negative error code in case of failure.
- context** user-specific object that is passed as-is to the callback function

Returns :

nothing.

3.11. Unformatted data sequence

YDataStream objects represent bare recorded measure sequences, exactly as found within the data logger present on Yoctopuce sensors.

In most cases, it is not necessary to use YDataStream objects directly, as the YDataSet objects (returned by the `get_recordedData()` method from sensors and the `get_dataSets()` method from the data logger) provide a more convenient interface.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_api.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YAPI = yoctolib.YAPI; var YModule = yoctolib.YModule;
php	require_once('yocto_api.php');
c++	#include "yocto_api.h"
m	#import "yocto_api.h"
pas	uses yocto_api;
vb	yocto_api.vb
cs	yocto_api.cs
java	import com.yoctopuce.YoctoAPI.YModule;
py	from yocto_api import *

YDataStream methods
datastream→get_averageValue() Returns the average of all measures observed within this stream.
datastream→get_columnCount() Returns the number of data columns present in this stream.
datastream→get_columnNames() Returns the title (or meaning) of each data column present in this stream.
datastream→get_data(row, col) Returns a single measure from the data stream, specified by its row and column index.
datastream→get_dataRows() Returns the whole data set contained in the stream, as a bidimensional table of numbers.
datastream→get_dataSamplesIntervalMs() Returns the number of milliseconds between two consecutive rows of this data stream.
datastream→get_duration() Returns the approximate duration of this stream, in seconds.
datastream→get_maxValue() Returns the largest measure observed within this stream.
datastream→get_minValue() Returns the smallest measure observed within this stream.
datastream→get_rowCount() Returns the number of data rows present in this stream.
datastream→get_runIndex() Returns the run index of the data stream.
datastream→get_startTime() Returns the relative start time of the data stream, measured in seconds.
datastream→get_startTimeUTC()

3. Reference

Returns the start time of the data stream, relative to the Jan 1, 1970.

datastream→get_averageValue()**YDataStream****datastream→averageValue()****datastream.get_averageValue()**

Returns the average of all measures observed within this stream.

js	function get_averageValue ()
nodejs	function get_averageValue ()
php	function get_averageValue ()
cpp	double get_averageValue ()
m	-(double) averageValue
pas	function get_averageValue (): double
vb	function get_averageValue () As Double
cs	double get_averageValue ()
java	double get_averageValue ()
py	def get_averageValue ()

If the device uses a firmware older than version 13000, this method will always return Y_DATA_INVALID.

Returns :

a floating-point number corresponding to the average value, or Y_DATA_INVALID if the stream is not yet complete (still recording).

On failure, throws an exception or returns Y_DATA_INVALID.

datastream→**get_columnCount()****YDataStream****datastream**→**columnCount()****datastream.get_columnCount()**

Returns the number of data columns present in this stream.

js	function get_columnCount ()
nodejs	function get_columnCount ()
php	function get_columnCount ()
cpp	int get_columnCount ()
m	-(int) columnCount
pas	function get_columnCount (): LongInt
vb	function get_columnCount () As Integer
cs	int get_columnCount ()
java	int get_columnCount ()
py	def get_columnCount ()

The meaning of the values present in each column can be obtained using the method `get_columnNames()`.

If the device uses a firmware older than version 13000, this method fetches the whole data stream from the device if not yet done, which can cause a little delay.

Returns :

an unsigned number corresponding to the number of columns.

On failure, throws an exception or returns zero.

datastream→get_columnNames()**YDataStream****datastream→columnNames()****datastream.get_columnNames()**

Returns the title (or meaning) of each data column present in this stream.

js	function get_columnNames()
nodejs	function get_columnNames()
php	function get_columnNames()
cpp	vector<string> get_columnNames()
m	-(NSMutableArray*) columnNames
pas	function get_columnNames() : TStringArray
vb	function get_columnNames() As List
cs	List<string> get_columnNames()
java	ArrayList<String> get_columnNames()
py	def get_columnNames()

In most case, the title of the data column is the hardware identifier of the sensor that produced the data. For streams recorded at a lower recording rate, the dataLogger stores the min, average and max value during each measure interval into three columns with suffixes `_min`, `_avg` and `_max` respectively.

If the device uses a firmware older than version 13000, this method fetches the whole data stream from the device if not yet done, which can cause a little delay.

Returns :

a list containing as many strings as there are columns in the data stream.

On failure, throws an exception or returns an empty array.

datastream→**get_data()****YDataStream****datastream**→**data()****datastream.get_data()**

Returns a single measure from the data stream, specified by its row and column index.

js	function get_data (row , col)
nodejs	function get_data (row , col)
php	function get_data (\$row , \$col)
cpp	double get_data (int row , int col)
m	-(double) data : (int) row : (int) col
pas	function get_data (row : LongInt, col : LongInt): double
vb	function get_data () As Double
cs	double get_data (int row , int col)
java	double get_data (int row , int col)
py	def get_data (row , col)

The meaning of the values present in each column can be obtained using the method `get_columnNames()`.

This method fetches the whole data stream from the device, if not yet done.

Parameters :

row row index
col column index

Returns :

a floating-point number

On failure, throws an exception or returns `Y_DATA_INVALID`.

datastream→get_dataRows()**YDataStream****datastream→dataRows()****datastream.get_dataRows()**

Returns the whole data set contained in the stream, as a bidimensional table of numbers.

js	function get_dataRows ()
nodejs	function get_dataRows ()
php	function get_dataRows ()
cpp	vector< vector<double> > get_dataRows ()
m	-(NSMutableArray*) dataRows
pas	function get_dataRows (): TDoubleArrayArray
vb	function get_dataRows () As List
cs	List<List<double>> get_dataRows ()
java	ArrayList<ArrayList<Double>> get_dataRows ()
py	def get_dataRows ()

The meaning of the values present in each column can be obtained using the method `get_columnNames()`.

This method fetches the whole data stream from the device, if not yet done.

Returns :

a list containing as many elements as there are rows in the data stream. Each row itself is a list of floating-point numbers.

On failure, throws an exception or returns an empty array.

datastream→**get_dataSamplesIntervalMs()****YDataStream****datastream**→**dataSamplesIntervalMs()****datastream.get_dataSamplesIntervalMs()**

Returns the number of milliseconds between two consecutive rows of this data stream.

js	function get_dataSamplesIntervalMs ()
nodejs	function get_dataSamplesIntervalMs ()
php	function get_dataSamplesIntervalMs ()
cpp	int get_dataSamplesIntervalMs ()
m	-(int) dataSamplesIntervalMs
pas	function get_dataSamplesIntervalMs (): LongInt
vb	function get_dataSamplesIntervalMs () As Integer
cs	int get_dataSamplesIntervalMs ()
java	int get_dataSamplesIntervalMs ()
py	def get_dataSamplesIntervalMs ()

By default, the data logger records one row per second, but the recording frequency can be changed for each device function

Returns :

an unsigned number corresponding to a number of milliseconds.

datastream→**get_duration()****YDataStream****datastream**→**duration()****datastream.get_duration()**

Returns the approximate duration of this stream, in seconds.

js	function get_duration ()
nodejs	function get_duration ()
php	function get_duration ()
cpp	int get_duration ()
m	-(int) duration
pas	function get_duration (): LongInt
vb	function get_duration () As Integer
cs	int get_duration ()
java	int get_duration ()
py	def get_duration ()

Returns :

the number of seconds covered by this stream.

On failure, throws an exception or returns Y_DURATION_INVALID.

datastream→**get_maxValue()****YDataStream****datastream**→**maxValue()****datastream.get_maxValue()**

Returns the largest measure observed within this stream.

js	function get_maxValue ()
nodejs	function get_maxValue ()
php	function get_maxValue ()
cpp	double get_maxValue ()
m	-(double) maxValue
pas	function get_maxValue (): double
vb	function get_maxValue () As Double
cs	double get_maxValue ()
java	double get_maxValue ()
py	def get_maxValue ()

If the device uses a firmware older than version 13000, this method will always return Y_DATA_INVALID.

Returns :

a floating-point number corresponding to the largest value, or Y_DATA_INVALID if the stream is not yet complete (still recording).

On failure, throws an exception or returns Y_DATA_INVALID.

datastream→get_minValue()
datastream→minValue()
datastream.get_minValue()

YDataStream

Returns the smallest measure observed within this stream.

js	function get_minValue ()
nodejs	function get_minValue ()
php	function get_minValue ()
cpp	double get_minValue ()
m	-(double) minValue
pas	function get_minValue (): double
vb	function get_minValue () As Double
cs	double get_minValue ()
java	double get_minValue ()
py	def get_minValue ()

If the device uses a firmware older than version 13000, this method will always return Y_DATA_INVALID.

Returns :

a floating-point number corresponding to the smallest value, or Y_DATA_INVALID if the stream is not yet complete (still recording).

On failure, throws an exception or returns Y_DATA_INVALID.

datastream→get_rowCount()**YDataStream****datastream→rowCount()****datastream.get_rowCount()**

Returns the number of data rows present in this stream.

js	function get_rowCount ()
nodejs	function get_rowCount ()
php	function get_rowCount ()
cpp	int get_rowCount ()
m	-(int) rowCount
pas	function get_rowCount (): LongInt
vb	function get_rowCount () As Integer
cs	int get_rowCount ()
java	int get_rowCount ()
py	def get_rowCount ()

If the device uses a firmware older than version 13000, this method fetches the whole data stream from the device if not yet done, which can cause a little delay.

Returns :

an unsigned number corresponding to the number of rows.

On failure, throws an exception or returns zero.

datastream→get_runIndex()**YDataStream****datastream→runIndex()****datastream.get_runIndex()**

Returns the run index of the data stream.

js	function get_runIndex ()
nodejs	function get_runIndex ()
php	function get_runIndex ()
cpp	int get_runIndex ()
m	-(int) runIndex
pas	function get_runIndex (): LongInt
vb	function get_runIndex () As Integer
cs	int get_runIndex ()
java	int get_runIndex ()
py	def get_runIndex ()

A run can be made of multiple datastreams, for different time intervals.

Returns :

an unsigned number corresponding to the run index.

datastream→**get_startTime()****YDataStream****datastream**→**startTime()****datastream.get_startTime()**

Returns the relative start time of the data stream, measured in seconds.

js	function get_startTime ()
nodejs	function get_startTime ()
php	function get_startTime ()
cpp	int get_startTime ()
m	-(int) startTime
pas	function get_startTime (): LongInt
vb	function get_startTime () As Integer
cs	int get_startTime ()
java	int get_startTime ()
py	def get_startTime ()

For recent firmwares, the value is relative to the present time, which means the value is always negative. If the device uses a firmware older than version 13000, value is relative to the start of the time the device was powered on, and is always positive. If you need an absolute UTC timestamp, use `get_startTimeUTC()`.

Returns :

an unsigned number corresponding to the number of seconds between the start of the run and the beginning of this data stream.

datastream→get_startTimeUTC()**YDataStream****datastream→startTimeUTC()****datastream.get_startTimeUTC()**

Returns the start time of the data stream, relative to the Jan 1, 1970.

js	function get_startTimeUTC ()
nodejs	function get_startTimeUTC ()
php	function get_startTimeUTC ()
cpp	s64 get_startTimeUTC ()
m	-(s64) startTimeUTC
pas	function get_startTimeUTC (): int64
vb	function get_startTimeUTC () As Long
cs	long get_startTimeUTC ()
java	long get_startTimeUTC ()
py	def get_startTimeUTC ()

If the UTC time was not set in the datalogger at the time of the recording of this data stream, this method returns 0.

Returns :

an unsigned number corresponding to the number of seconds between the Jan 1, 1970 and the beginning of this data stream (i.e. Unix time representation of the absolute time).

3.12. Digital IO function interface

The Yoctopuce application programming interface allows you to switch the state of each bit of the I/O port. You can switch all bits at once, or one by one. The library can also automatically generate short pulses of a determined duration. Electrical behavior of each I/O can be modified (open drain and reverse polarity).

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_digitalio.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib');</code> <code>var YDigitalIO = yoctolib.YDigitalIO;</code>
php	<code>require_once('yocto_digitalio.php');</code>
c++	<code>#include "yocto_digitalio.h"</code>
m	<code>#import "yocto_digitalio.h"</code>
pas	<code>uses yocto_digitalio;</code>
vb	<code>yocto_digitalio.vb</code>
cs	<code>yocto_digitalio.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YDigitalIO;</code>
py	<code>from yocto_digitalio import *</code>

Global functions

yFindDigitalIO(func)

Retrieves a digital IO port for a given identifier.

yFirstDigitalIO()

Starts the enumeration of digital IO ports currently accessible.

YDigitalIO methods

digitalio→delayedPulse(bitno, ms_delay, ms_duration)

Schedules a pulse on a single bit for a specified duration.

digitalio→describe()

Returns a short text that describes unambiguously the instance of the digital IO port in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

digitalio→get_advertisedValue()

Returns the current value of the digital IO port (no more than 6 characters).

digitalio→get_bitDirection(bitno)

Returns the direction of a single bit from the I/O port (0 means the bit is an input, 1 an output).

digitalio→get_bitOpenDrain(bitno)

Returns the type of electrical interface of a single bit from the I/O port.

digitalio→get_bitPolarity(bitno)

Returns the polarity of a single bit from the I/O port (0 means the I/O works in regular mode, 1 means the I/O works in reverse mode).

digitalio→get_bitState(bitno)

Returns the state of a single bit of the I/O port.

digitalio→get_errorMessage()

Returns the error message of the latest error with the digital IO port.

digitalio→get_errorType()

Returns the numerical error code of the latest error with the digital IO port.

digitalio→get_friendlyName()

Returns a global identifier of the digital IO port in the format `MODULE_NAME . FUNCTION_NAME`.

digitalio→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

digitalio→get_functionId()

Returns the hardware identifier of the digital IO port, without reference to the module.

digitalio→get_hardwareId()

Returns the unique hardware identifier of the digital IO port in the form SERIAL.FUNCTIONID.

digitalio→get_logicalName()

Returns the logical name of the digital IO port.

digitalio→get_module()

Gets the YModule object for the device on which the function is located.

digitalio→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

digitalio→get_outputVoltage()

Returns the voltage source used to drive output bits.

digitalio→get_portDirection()

Returns the IO direction of all bits of the port: 0 makes a bit an input, 1 makes it an output.

digitalio→get_portOpenDrain()

Returns the electrical interface for each bit of the port.

digitalio→get_portPolarity()

Returns the polarity of all the bits of the port.

digitalio→get_portSize()

Returns the number of bits implemented in the I/O port.

digitalio→get_portState()

Returns the digital IO port state: bit 0 represents input 0, and so on.

digitalio→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

digitalio→isOnline()

Checks if the digital IO port is currently reachable, without raising any error.

digitalio→isOnline_async(callback, context)

Checks if the digital IO port is currently reachable, without raising any error (asynchronous version).

digitalio→load(msValidity)

Preloads the digital IO port cache with a specified validity duration.

digitalio→load_async(msValidity, callback, context)

Preloads the digital IO port cache with a specified validity duration (asynchronous version).

digitalio→nextDigitalIO()

Continues the enumeration of digital IO ports started using yFirstDigitalIO().

digitalio→pulse(bitno, ms_duration)

Triggers a pulse on a single bit for a specified duration.

digitalio→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

digitalio→set_bitDirection(bitno, bitdirection)

Changes the direction of a single bit from the I/O port.

digitalio→set_bitOpenDrain(bitno, opendrain)

Changes the electrical interface of a single bit from the I/O port.

digitalio→set_bitPolarity(bitno, bitpolarity)

3. Reference

Changes the polarity of a single bit from the I/O port.

digitalio→**set_bitState**(**bitno**, **bitstate**)

Sets a single bit of the I/O port.

digitalio→**set_logicalName**(**newval**)

Changes the logical name of the digital IO port.

digitalio→**set_outputVoltage**(**newval**)

Changes the voltage source used to drive output bits.

digitalio→**set_portDirection**(**newval**)

Changes the IO direction of all bits of the port: 0 makes a bit an input, 1 makes it an output.

digitalio→**set_portOpenDrain**(**newval**)

Changes the electrical interface for each bit of the port.

digitalio→**set_portPolarity**(**newval**)

Changes the polarity of all the bits of the port: 0 makes a bit an input, 1 makes it an output.

digitalio→**set_portState**(**newval**)

Changes the digital IO port state: bit 0 represents input 0, and so on.

digitalio→**set_userData**(**data**)

Stores a user context provided as argument in the userData attribute of the function.

digitalio→**toggle_bitState**(**bitno**)

Reverts a single bit of the I/O port.

digitalio→**wait_async**(**callback**, **context**)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YDigitalIO.FindDigitalIO()**YDigitalIO****yFindDigitalIO()****YDigitalIO.FindDigitalIO()**

Retrieves a digital IO port for a given identifier.

js	function yFindDigitalIO (func)
nodejs	function FindDigitalIO (func)
php	function yFindDigitalIO (\$func)
cpp	YDigitalIO* yFindDigitalIO (const string& func)
m	YDigitalIO* yFindDigitalIO (NSString* func)
pas	function yFindDigitalIO (func : string): TYDigitalIO
vb	function yFindDigitalIO (ByVal func As String) As YDigitalIO
cs	YDigitalIO FindDigitalIO (string func)
java	YDigitalIO FindDigitalIO (String func)
py	def FindDigitalIO (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the digital IO port is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YDigitalIO.isOnline()` to test if the digital IO port is indeed online at a given time. In case of ambiguity when looking for a digital IO port by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the digital IO port

Returns :

a `YDigitalIO` object allowing you to drive the digital IO port.

YDigitalIO.FirstDigitalIO()**YDigitalIO****yFirstDigitalIO()****YDigitalIO.FirstDigitalIO()**

Starts the enumeration of digital IO ports currently accessible.

js	function yFirstDigitalIO ()
nodejs	function FirstDigitalIO ()
php	function yFirstDigitalIO ()
cpp	YDigitalIO* yFirstDigitalIO ()
m	YDigitalIO* yFirstDigitalIO ()
pas	function yFirstDigitalIO (): TYDigitalIO
vb	function yFirstDigitalIO () As YDigitalIO
cs	YDigitalIO FirstDigitalIO ()
java	YDigitalIO FirstDigitalIO ()
py	def FirstDigitalIO ()

Use the method `YDigitalIO.nextDigitalIO()` to iterate on next digital IO ports.

Returns :

a pointer to a `YDigitalIO` object, corresponding to the first digital IO port currently online, or a `null` pointer if there are none.

digitalio→delayedPulse()**YDigitalIO****digitalio.delayedPulse()**

Schedules a pulse on a single bit for a specified duration.

js	function delayedPulse (bitno , ms_delay , ms_duration)
nodejs	function delayedPulse (bitno , ms_delay , ms_duration)
php	function delayedPulse (\$bitno , \$ms_delay , \$ms_duration)
cpp	int delayedPulse (int bitno , int ms_delay , int ms_duration)
m	-(int) delayedPulse : (int) bitno : (int) ms_delay : (int) ms_duration
pas	function delayedPulse (bitno : LongInt, ms_delay : LongInt, ms_duration : LongInt): LongInt
vb	function delayedPulse () As Integer
cs	int delayedPulse (int bitno , int ms_delay , int ms_duration)
java	int delayedPulse (int bitno , int ms_delay , int ms_duration)
py	def delayedPulse (bitno , ms_delay , ms_duration)
cmd	YDigitalIO target delayedPulse bitno ms_delay ms_duration

The specified bit will be turned to 1, and then back to 0 after the given duration.

Parameters :

- bitno** the bit number; lowest bit has index 0
- ms_delay** waiting time before the pulse, in milliseconds
- ms_duration** desired pulse duration in milliseconds. Be aware that the device time resolution is not guaranteed up to the millisecond.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→**describe()****digitalio.describe()****YDigitalIO**

Returns a short text that describes unambiguously the instance of the digital IO port in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the digital IO port (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

digitalio→**get_advertisedValue()****YDigitalIO****digitalio**→**advertisedValue()****digitalio.get_advertisedValue()**

Returns the current value of the digital IO port (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YDigitalIO target get_advertisedValue

Returns :

a string corresponding to the current value of the digital IO port (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

digitalio→**get_bitDirection()****YDigitalIO****digitalio**→**bitDirection()****digitalio.get_bitDirection()**

Returns the direction of a single bit from the I/O port (0 means the bit is an input, 1 an output).

js	function get_bitDirection (bitno)
nodejs	function get_bitDirection (bitno)
php	function get_bitDirection (\$bitno)
cpp	int get_bitDirection (int bitno)
m	-(int) bitDirection : (int) bitno
pas	function get_bitDirection (bitno : LongInt): LongInt
vb	function get_bitDirection () As Integer
cs	int get_bitDirection (int bitno)
java	int get_bitDirection (int bitno)
py	def get_bitDirection (bitno)
cmd	YDigitalIO target get_bitDirection bitno

Parameters :

bitno the bit number; lowest bit has index 0

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→**get_bitOpenDrain()****YDigitalIO****digitalio**→**bitOpenDrain()****digitalio.get_bitOpenDrain()**

Returns the type of electrical interface of a single bit from the I/O port.

js	function get_bitOpenDrain (bitno)
nodejs	function get_bitOpenDrain (bitno)
php	function get_bitOpenDrain (\$bitno)
cpp	int get_bitOpenDrain (int bitno)
m	-(int) bitOpenDrain : (int) bitno
pas	function get_bitOpenDrain (bitno : LongInt): LongInt
vb	function get_bitOpenDrain () As Integer
cs	int get_bitOpenDrain (int bitno)
java	int get_bitOpenDrain (int bitno)
py	def get_bitOpenDrain (bitno)
cmd	YDigitalIO target get_bitOpenDrain bitno

(0 means the bit is an input, 1 an output).

Parameters :

bitno the bit number; lowest bit has index 0

Returns :

0 means the a bit is a regular input/output, 1 means the bit is an open-drain (open-collector) input/output.

On failure, throws an exception or returns a negative error code.

digitalio→**get_bitPolarity()****YDigitalIO****digitalio**→**bitPolarity()****digitalio.get_bitPolarity()**

Returns the polarity of a single bit from the I/O port (0 means the I/O works in regular mode, 1 means the I/O works in reverse mode).

js	function get_bitPolarity (bitno)
nodejs	function get_bitPolarity (bitno)
php	function get_bitPolarity (\$bitno)
cpp	int get_bitPolarity (int bitno)
m	-(int) bitPolarity : (int) bitno
pas	function get_bitPolarity (bitno : LongInt): LongInt
vb	function get_bitPolarity () As Integer
cs	int get_bitPolarity (int bitno)
java	int get_bitPolarity (int bitno)
py	def get_bitPolarity (bitno)
cmd	YDigitalIO target get_bitPolarity bitno

Parameters :

bitno the bit number; lowest bit has index 0

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→**get_bitState()****YDigitalIO****digitalio**→**bitState()****digitalio.get_bitState()**

Returns the state of a single bit of the I/O port.

js	function get_bitState (bitno)
nodejs	function get_bitState (bitno)
php	function get_bitState (\$bitno)
cpp	int get_bitState (int bitno)
m	-(int) bitState : (int) bitno
pas	function get_bitState (bitno : LongInt): LongInt
vb	function get_bitState () As Integer
cs	int get_bitState (int bitno)
java	int get_bitState (int bitno)
py	def get_bitState (bitno)
cmd	YDigitalIO target get_bitState bitno

Parameters :

bitno the bit number; lowest bit has index 0

Returns :

the bit state (0 or 1)

On failure, throws an exception or returns a negative error code.

digitalio→**get_errorMessage()****YDigitalIO****digitalio**→**errorMessage()****digitalio.errorMessage()**

Returns the error message of the latest error with the digital IO port.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the digital IO port object

digitalio→**get_errorType()****YDigitalIO****digitalio**→**errorType()****digitalio.get_errorType()**

Returns the numerical error code of the latest error with the digital IO port.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the digital IO port object

digitalio→**get_friendlyName()****YDigitalIO****digitalio**→**friendlyName()****digitalio.get_friendlyName()**

Returns a global identifier of the digital IO port in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the digital IO port if they are defined, otherwise the serial number of the module and the hardware identifier of the digital IO port (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the digital IO port using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

digitalio→**get_functionDescriptor()****YDigitalIO****digitalio**→**functionDescriptor()****digitalio.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

digitalio→**get_functionId()****digitalio**→**functionId()****digitalio.get_functionId()**

Returns the hardware identifier of the digital IO port, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the digital IO port (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

digitalio→**get_hardwareId()****YDigitalIO****digitalio**→**hardwareId()****digitalio.get_hardwareId()**

Returns the unique hardware identifier of the digital IO port in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the digital IO port. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the digital IO port (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

digitalio→**get_logicalName()****YDigitalIO****digitalio**→**logicalName()****digitalio.get_logicalName()**

Returns the logical name of the digital IO port.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YDigitalIO target get_logicalName

Returns :

a string corresponding to the logical name of the digital IO port. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

digitalio→**get_module()****YDigitalIO****digitalio**→**module()****digitalio.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

digitalio→**get_module_async()****YDigitalIO****digitalio**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

digitalio→get_outputVoltage()**YDigitalIO****digitalio→outputVoltage()****digitalio.get_outputVoltage()**

Returns the voltage source used to drive output bits.

js	function get_outputVoltage ()
nodejs	function get_outputVoltage ()
php	function get_outputVoltage ()
cpp	Y_OUTPUTVOLTAGE_enum get_outputVoltage ()
m	-(Y_OUTPUTVOLTAGE_enum) outputVoltage
pas	function get_outputVoltage (): Integer
vb	function get_outputVoltage () As Integer
cs	int get_outputVoltage ()
java	int get_outputVoltage ()
py	def get_outputVoltage ()
cmd	YDigitalIO target get_outputVoltage

Returns :

a value among Y_OUTPUTVOLTAGE_USB_5V, Y_OUTPUTVOLTAGE_USB_3V and Y_OUTPUTVOLTAGE_EXT_V corresponding to the voltage source used to drive output bits

On failure, throws an exception or returns Y_OUTPUTVOLTAGE_INVALID.

digitalio→**get_portDirection()****YDigitalIO****digitalio**→**portDirection()****digitalio.get_portDirection()**

Returns the IO direction of all bits of the port: 0 makes a bit an input, 1 makes it an output.

js	function get_portDirection ()
nodejs	function get_portDirection ()
php	function get_portDirection ()
cpp	int get_portDirection ()
m	-(int) portDirection
pas	function get_portDirection (): LongInt
vb	function get_portDirection () As Integer
cs	int get_portDirection ()
java	int get_portDirection ()
py	def get_portDirection ()
cmd	YDigitalIO target get_portDirection

Returns :

an integer corresponding to the IO direction of all bits of the port: 0 makes a bit an input, 1 makes it an output

On failure, throws an exception or returns Y_PORTDIRECTION_INVALID.

digitalio→**get_portOpenDrain()****YDigitalIO****digitalio**→**portOpenDrain()****digitalio.get_portOpenDrain()**

Returns the electrical interface for each bit of the port.

js	function get_portOpenDrain ()
nodejs	function get_portOpenDrain ()
php	function get_portOpenDrain ()
cpp	int get_portOpenDrain ()
m	-(int) portOpenDrain
pas	function get_portOpenDrain (): LongInt
vb	function get_portOpenDrain () As Integer
cs	int get_portOpenDrain ()
java	int get_portOpenDrain ()
py	def get_portOpenDrain ()
cmd	YDigitalIO target get_portOpenDrain

For each bit set to 0 the matching I/O works in the regular, intuitive way, for each bit set to 1, the I/O works in reverse mode.

Returns :

an integer corresponding to the electrical interface for each bit of the port

On failure, throws an exception or returns Y_PORTOPENDRAIN_INVALID.

digitalio→**get_portPolarity()****YDigitalIO****digitalio**→**portPolarity()****digitalio.get_portPolarity()**

Returns the polarity of all the bits of the port.

js	function get_portPolarity ()
nodejs	function get_portPolarity ()
php	function get_portPolarity ()
cpp	int get_portPolarity ()
m	-(int) portPolarity
pas	function get_portPolarity (): LongInt
vb	function get_portPolarity () As Integer
cs	int get_portPolarity ()
java	int get_portPolarity ()
py	def get_portPolarity ()
cmd	YDigitalIO target get_portPolarity

For each bit set to 0, the matching I/O works the regular, intuitive way; for each bit set to 1, the I/O works in reverse mode.

Returns :

an integer corresponding to the polarity of all the bits of the port

On failure, throws an exception or returns Y_PORTPOLARITY_INVALID.

digitalio→**get_portSize()****YDigitalIO****digitalio**→**portSize()****digitalio.get_portSize()**

Returns the number of bits implemented in the I/O port.

js	function get_portSize ()
nodejs	function get_portSize ()
php	function get_portSize ()
cpp	int get_portSize ()
m	-(int) portSize
pas	function get_portSize (): LongInt
vb	function get_portSize () As Integer
cs	int get_portSize ()
java	int get_portSize ()
py	def get_portSize ()
cmd	YDigitalIO target get_portSize

Returns :

an integer corresponding to the number of bits implemented in the I/O port

On failure, throws an exception or returns Y_PORTSIZE_INVALID.

digitalio→**get_portState()****YDigitalIO****digitalio**→**portState()****digitalio.get_portState()**

Returns the digital IO port state: bit 0 represents input 0, and so on.

js	function get_portState ()
nodejs	function get_portState ()
php	function get_portState ()
cpp	int get_portState ()
m	-(int) portState
pas	function get_portState (): LongInt
vb	function get_portState () As Integer
cs	int get_portState ()
java	int get_portState ()
py	def get_portState ()
cmd	YDigitalIO target get_portState

Returns :

an integer corresponding to the digital IO port state: bit 0 represents input 0, and so on

On failure, throws an exception or returns Y_PORTSTATE_INVALID.

digitalio→**get_userData()****YDigitalIO****digitalio**→**userData()****digitalio.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

Checks if the digital IO port is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the digital IO port in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the digital IO port.

Returns :

true if the digital IO port can be reached, and false otherwise

Checks if the digital IO port is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the digital IO port in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

Preloads the digital IO port cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

digitalio→load_async()**YDigitalIO**

Preloads the digital IO port cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

digitalio→**nextDigitalIO()****YDigitalIO****digitalio.nextDigitalIO()**

Continues the enumeration of digital IO ports started using `yFirstDigitalIO()`.

js	function nextDigitalIO ()
nodejs	function nextDigitalIO ()
php	function nextDigitalIO ()
c++	YDigitalIO * nextDigitalIO ()
m	-(YDigitalIO*) nextDigitalIO
pas	function nextDigitalIO (): TYDigitalIO
vb	function nextDigitalIO () As YDigitalIO
cs	YDigitalIO nextDigitalIO ()
java	YDigitalIO nextDigitalIO ()
py	def nextDigitalIO ()

Returns :

a pointer to a `YDigitalIO` object, corresponding to a digital IO port currently online, or a `null` pointer if there are no more digital IO ports to enumerate.

digitalio→pulse()`digitalio.pulse()`**YDigitalIO**

Triggers a pulse on a single bit for a specified duration.

js	function pulse (bitno , ms_duration)
nodejs	function pulse (bitno , ms_duration)
php	function pulse (\$bitno , \$ms_duration)
cpp	int pulse (int bitno , int ms_duration)
m	-(int) pulse : (int) bitno : (int) ms_duration
pas	function pulse (bitno : LongInt, ms_duration : LongInt): LongInt
vb	function pulse () As Integer
cs	int pulse (int bitno , int ms_duration)
java	int pulse (int bitno , int ms_duration)
py	def pulse (bitno , ms_duration)
cmd	YDigitalIO target pulse bitno ms_duration

The specified bit will be turned to 1, and then back to 0 after the given duration.

Parameters :

- bitno** the bit number; lowest bit has index 0
- ms_duration** desired pulse duration in milliseconds. Be aware that the device time resolution is not guaranteed up to the millisecond.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→registerValueCallback()**YDigitalIO****digitalio.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YDigitalIOValueCallback callback)
m	-(int) registerValueCallback : (YDigitalIOValueCallback) callback
pas	function registerValueCallback (callback : TYDigitalIOValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

digitalio→**set_bitDirection()****YDigitalIO****digitalio**→**setBitDirection()****digitalio.set_bitDirection()**

Changes the direction of a single bit from the I/O port.

js	function set_bitDirection (bitno , bitdirection)
nodejs	function set_bitDirection (bitno , bitdirection)
php	function set_bitDirection (\$bitno , \$bitdirection)
cpp	int set_bitDirection (int bitno , int bitdirection)
m	-(int) setBitDirection : (int) bitno : (int) bitdirection
pas	function set_bitDirection (bitno : LongInt, bitdirection : LongInt): LongInt
vb	function set_bitDirection () As Integer
cs	int set_bitDirection (int bitno , int bitdirection)
java	int set_bitDirection (int bitno , int bitdirection)
py	def set_bitDirection (bitno , bitdirection)
cmd	YDigitalIO target set_bitDirection bitno bitdirection

Parameters :

bitno the bit number; lowest bit has index 0

bitdirection direction to set, 0 makes the bit an input, 1 makes it an output. Remember to call the `saveToFlash()` method to make sure the setting is kept after a reboot.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→**set_bitOpenDrain()****digitalio**→**setBitOpenDrain()****digitalio.set_bitOpenDrain()**

Changes the electrical interface of a single bit from the I/O port.

js	function set_bitOpenDrain (bitno , opendrain)
nodejs	function set_bitOpenDrain (bitno , opendrain)
php	function set_bitOpenDrain (\$bitno , \$opendrain)
cpp	int set_bitOpenDrain (int bitno , int opendrain)
m	-(int) setBitOpenDrain : (int) bitno : (int) opendrain
pas	function set_bitOpenDrain (bitno : LongInt, opendrain : LongInt): LongInt
vb	function set_bitOpenDrain () As Integer
cs	int set_bitOpenDrain (int bitno , int opendrain)
java	int set_bitOpenDrain (int bitno , int opendrain)
py	def set_bitOpenDrain (bitno , opendrain)
cmd	YDigitalIO target set_bitOpenDrain bitno opendrain

Parameters :

bitno the bit number; lowest bit has index 0

opendrain 0 makes a bit a regular input/output, 1 makes it an open-drain (open-collector) input/output. Remember to call the `saveToFlash()` method to make sure the setting is kept after a reboot.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→**set_bitPolarity()****digitalio**→**setBitPolarity()****digitalio.set_bitPolarity()**

Changes the polarity of a single bit from the I/O port.

js	function set_bitPolarity (bitno , bitpolarity)
nodejs	function set_bitPolarity (bitno , bitpolarity)
php	function set_bitPolarity (\$bitno , \$bitpolarity)
cpp	int set_bitPolarity (int bitno , int bitpolarity)
m	-(int) setBitPolarity : (int) bitno : (int) bitpolarity
pas	function set_bitPolarity (bitno : LongInt, bitpolarity : LongInt): LongInt
vb	function set_bitPolarity () As Integer
cs	int set_bitPolarity (int bitno , int bitpolarity)
java	int set_bitPolarity (int bitno , int bitpolarity)
py	def set_bitPolarity (bitno , bitpolarity)
cmd	YDigitalIO target set_bitPolarity bitno bitpolarity

Parameters :

bitno the bit number; lowest bit has index 0.

bitpolarity polarity to set, 0 makes the I/O work in regular mode, 1 makes the I/O works in reverse mode. Remember to call the `saveToFlash()` method to make sure the setting is kept after a reboot.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→**set_bitState()****YDigitalIO****digitalio**→**setBitState()****digitalio.set_bitState()**

Sets a single bit of the I/O port.

js	function set_bitState (bitno , bitstate)
nodejs	function set_bitState (bitno , bitstate)
php	function set_bitState (\$bitno , \$bitstate)
cpp	int set_bitState (int bitno , int bitstate)
m	-(int) setBitState : (int) bitno : (int) bitstate
pas	function set_bitState (bitno : LongInt, bitstate : LongInt): LongInt
vb	function set_bitState () As Integer
cs	int set_bitState (int bitno , int bitstate)
java	int set_bitState (int bitno , int bitstate)
py	def set_bitState (bitno , bitstate)
cmd	YDigitalIO target set_bitState bitno bitstate

Parameters :

bitno the bit number; lowest bit has index 0
bitstate the state of the bit (1 or 0)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→**set_logicalName()****YDigitalIO****digitalio**→**setLogicalName()****digitalio.set_logicalName()**

Changes the logical name of the digital IO port.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YDigitalIO target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the digital IO port.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

digitalio→set_outputVoltage()**YDigitalIO****digitalio→setOutputVoltage()****digitalio.set_outputVoltage()**

Changes the voltage source used to drive output bits.

js	function set_outputVoltage (newval)
nodejs	function set_outputVoltage (newval)
php	function set_outputVoltage (\$newval)
cpp	int set_outputVoltage (Y_OUTPUTVOLTAGE_enum newval)
m	-(int) setOutputVoltage : (Y_OUTPUTVOLTAGE_enum) newval
pas	function set_outputVoltage (newval : Integer): integer
vb	function set_outputVoltage (ByVal newval As Integer) As Integer
cs	int set_outputVoltage (int newval)
java	int set_outputVoltage (int newval)
py	def set_outputVoltage (newval)
cmd	YDigitalIO target set_outputVoltage newval

Remember to call the `saveToFlash()` method to make sure the setting is kept after a reboot.

Parameters :

newval a value among Y_OUTPUTVOLTAGE_USB_5V, Y_OUTPUTVOLTAGE_USB_3V and Y_OUTPUTVOLTAGE_EXT_V corresponding to the voltage source used to drive output bits

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→set_portDirection()**YDigitalIO****digitalio→setPortDirection()****digitalio.set_portDirection()**

Changes the IO direction of all bits of the port: 0 makes a bit an input, 1 makes it an output.

js	function set_portDirection (newval)
nodejs	function set_portDirection (newval)
php	function set_portDirection (\$newval)
cpp	int set_portDirection (int newval)
m	-(int) setPortDirection : (int) newval
pas	function set_portDirection (newval : LongInt): integer
vb	function set_portDirection (ByVal newval As Integer) As Integer
cs	int set_portDirection (int newval)
java	int set_portDirection (int newval)
py	def set_portDirection (newval)
cmd	YDigitalIO target set_portDirection newval

Remember to call the `saveToFlash()` method to make sure the setting is kept after a reboot.

Parameters :

newval an integer corresponding to the IO direction of all bits of the port: 0 makes a bit an input, 1 makes it an output

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→**set_portOpenDrain()****YDigitalIO****digitalio**→**setPortOpenDrain()****digitalio.set_portOpenDrain()**

Changes the electrical interface for each bit of the port.

js	function set_portOpenDrain (newval)
nodejs	function set_portOpenDrain (newval)
php	function set_portOpenDrain (\$newval)
cpp	int set_portOpenDrain (int newval)
m	-(int) setPortOpenDrain : (int) newval
pas	function set_portOpenDrain (newval : LongInt): integer
vb	function set_portOpenDrain (ByVal newval As Integer) As Integer
cs	int set_portOpenDrain (int newval)
java	int set_portOpenDrain (int newval)
py	def set_portOpenDrain (newval)
cmd	YDigitalIO target set_portOpenDrain newval

0 makes a bit a regular input/output, 1 makes it an open-drain (open-collector) input/output. Remember to call the `saveToFlash()` method to make sure the setting is kept after a reboot.

Parameters :

newval an integer corresponding to the electrical interface for each bit of the port

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→set_portPolarity()**YDigitalIO****digitalio→setPortPolarity()****digitalio.set_portPolarity()**

Changes the polarity of all the bits of the port: 0 makes a bit an input, 1 makes it an output.

js	function set_portPolarity (newval)
nodejs	function set_portPolarity (newval)
php	function set_portPolarity (\$newval)
cpp	int set_portPolarity (int newval)
m	-(int) setPortPolarity : (int) newval
pas	function set_portPolarity (newval : LongInt): integer
vb	function set_portPolarity (ByVal newval As Integer) As Integer
cs	int set_portPolarity (int newval)
java	int set_portPolarity (int newval)
py	def set_portPolarity (newval)
cmd	YDigitalIO target set_portPolarity newval

Remember to call the `saveToFlash()` method to make sure the setting will be kept after a reboot.

Parameters :

newval an integer corresponding to the polarity of all the bits of the port: 0 makes a bit an input, 1 makes it an output

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→**set_portState()****digitalio**→**setPortState()****digitalio.set_portState()**

Changes the digital IO port state: bit 0 represents input 0, and so on.

js	function set_portState (newval)
nodejs	function set_portState (newval)
php	function set_portState (\$newval)
cpp	int set_portState (int newval)
m	-(int) setPortState : (int) newval
pas	function set_portState (newval : LongInt): integer
vb	function set_portState (ByVal newval As Integer) As Integer
cs	int set_portState (int newval)
java	int set_portState (int newval)
py	def set_portState (newval)
cmd	YDigitalIO target set_portState newval

This function has no effect on bits configured as input in `portDirection`.

Parameters :

newval an integer corresponding to the digital IO port state: bit 0 represents input 0, and so on

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→**set_userdata()****digitalio**→**setUserData()****digitalio.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

digitalio→toggle_bitState() digitalio.toggle_bitState()

YDigitalIO

Reverts a single bit of the I/O port.

js	function toggle_bitState(bitno)
nodejs	function toggle_bitState(bitno)
php	function toggle_bitState(\$bitno)
cpp	int toggle_bitState(int bitno)
m	-(int) toggle_bitState : (int) bitno
pas	function toggle_bitState(bitno: LongInt): LongInt
vb	function toggle_bitState() As Integer
cs	int toggle_bitState(int bitno)
java	int toggle_bitState(int bitno)
py	def toggle_bitState(bitno)
cmd	YDigitalIO target toggle_bitState bitno

Parameters :

bitno the bit number; lowest bit has index 0

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→**wait_async()****YDigitalIO**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.13. Display function interface

Yoctopuce display interface has been designed to easily show information and images. The device provides built-in multi-layer rendering. Layers can be drawn offline, individually, and freely moved on the display. It can also replay recorded sequences (animations).

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_display.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YDisplay = yoctolib.YDisplay;
php	require_once('yocto_display.php');
c++	#include "yocto_display.h"
m	#import "yocto_display.h"
pas	uses yocto_display;
vb	yocto_display.vb
cs	yocto_display.cs
java	import com.yoctopuce.YoctoAPI.YDisplay;
py	from yocto_display import *

Global functions

yFindDisplay(func)

Retrieves a display for a given identifier.

yFirstDisplay()

Starts the enumeration of displays currently accessible.

YDisplay methods

display→copyLayerContent(srcLayerId, dstLayerId)

Copies the whole content of a layer to another layer.

display→describe()

Returns a short text that describes unambiguously the instance of the display in the form
TYPE (NAME) =SERIAL . FUNCTIONID.

display→fade(brightness, duration)

Smoothly changes the brightness of the screen to produce a fade-in or fade-out effect.

display→get_advertisedValue()

Returns the current value of the display (no more than 6 characters).

display→get_brightness()

Returns the luminosity of the module informative leds (from 0 to 100).

display→get_displayHeight()

Returns the display height, in pixels.

display→get_displayLayer(layerId)

Returns a YDisplayLayer object that can be used to draw on the specified layer.

display→get_displayType()

Returns the display type: monochrome, gray levels or full color.

display→get_displayWidth()

Returns the display width, in pixels.

display→get_enabled()

Returns true if the screen is powered, false otherwise.

display→get_errorMessage()

Returns the error message of the latest error with the display.

display→get_errorType()

Returns the numerical error code of the latest error with the display.

display→get_friendlyName()

Returns a global identifier of the display in the format `MODULE_NAME . FUNCTION_NAME`.

display→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

display→get_functionId()

Returns the hardware identifier of the display, without reference to the module.

display→get_hardwareId()

Returns the unique hardware identifier of the display in the form `SERIAL . FUNCTIONID`.

display→get_layerCount()

Returns the number of available layers to draw on.

display→get_layerHeight()

Returns the height of the layers to draw on, in pixels.

display→get_layerWidth()

Returns the width of the layers to draw on, in pixels.

display→get_logicalName()

Returns the logical name of the display.

display→get_module()

Gets the `YModule` object for the device on which the function is located.

display→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

display→get_orientation()

Returns the currently selected display orientation.

display→get_startupSeq()

Returns the name of the sequence to play when the displayed is powered on.

display→get_userData()

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

display→isOnline()

Checks if the display is currently reachable, without raising any error.

display→isOnline_async(callback, context)

Checks if the display is currently reachable, without raising any error (asynchronous version).

display→load(msValidity)

Preloads the display cache with a specified validity duration.

display→load_async(msValidity, callback, context)

Preloads the display cache with a specified validity duration (asynchronous version).

display→newSequence()

Starts to record all display commands into a sequence, for later replay.

display→nextDisplay()

Continues the enumeration of displays started using `yFirstDisplay()`.

display→pauseSequence(delay_ms)

Waits for a specified delay (in milliseconds) before playing next commands in current sequence.

display→playSequence(sequenceName)

Replays a display sequence previously recorded using `newSequence()` and `saveSequence()`.

display→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

display→resetAll()

Clears the display screen and resets all display layers to their default state.

display→saveSequence(sequenceName)

Stops recording display commands and saves the sequence into the specified file on the display internal memory.

display→set_brightness(newval)

Changes the brightness of the display.

display→set_enabled(newval)

Changes the power state of the display.

display→set_logicalName(newval)

Changes the logical name of the display.

display→set_orientation(newval)

Changes the display orientation.

display→set_startupSeq(newval)

Changes the name of the sequence to play when the displayed is powered on.

display→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

display→stopSequence()

Stops immediately any ongoing sequence replay.

display→swapLayerContent(layerIdA, layerIdB)

Swaps the whole content of two layers.

display→upload(pathname, content)

Uploads an arbitrary file (for instance a GIF file) to the display, to the specified full path name.

display→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YDisplay.FindDisplay()**YDisplay****yFindDisplay()**`YDisplay.FindDisplay()`

Retrieves a display for a given identifier.

<code>js</code>	<code>function yFindDisplay(func)</code>
<code>nodejs</code>	<code>function FindDisplay(func)</code>
<code>php</code>	<code>function yFindDisplay(\$func)</code>
<code>cpp</code>	<code>YDisplay* yFindDisplay(string func)</code>
<code>m</code>	<code>+(YDisplay*) yFindDisplay : (NSString*) func</code>
<code>pas</code>	<code>function yFindDisplay(func: string): TYDisplay</code>
<code>vb</code>	<code>function yFindDisplay(ByVal func As String) As YDisplay</code>
<code>cs</code>	<code>YDisplay FindDisplay(string func)</code>
<code>java</code>	<code>YDisplay FindDisplay(String func)</code>
<code>py</code>	<code>def FindDisplay(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the display is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YDisplay.isOnline()` to test if the display is indeed online at a given time. In case of ambiguity when looking for a display by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the display

Returns :

a `YDisplay` object allowing you to drive the display.

YDisplay.FirstDisplay()**YDisplay****yFirstDisplay()****YDisplay.FirstDisplay()**

Starts the enumeration of displays currently accessible.

js	function yFirstDisplay ()
nodejs	function FirstDisplay ()
php	function yFirstDisplay ()
cpp	YDisplay* yFirstDisplay ()
m	YDisplay* yFirstDisplay ()
pas	function yFirstDisplay (): TYDisplay
vb	function yFirstDisplay () As YDisplay
cs	YDisplay FirstDisplay ()
java	YDisplay FirstDisplay ()
py	def FirstDisplay ()

Use the method `YDisplay.nextDisplay()` to iterate on next displays.

Returns :

a pointer to a `YDisplay` object, corresponding to the first display currently online, or a `null` pointer if there are none.

display→copyLayerContent()

```
display.copyLayerContent()
```

Copies the whole content of a layer to another layer.

js	function copyLayerContent (srcLayerId , dstLayerId)
nodejs	function copyLayerContent (srcLayerId , dstLayerId)
php	function copyLayerContent (\$srcLayerId , \$dstLayerId)
c++	int copyLayerContent (int srcLayerId , int dstLayerId)
m	-(int) copyLayerContent : (int) srcLayerId : (int) dstLayerId
pas	function copyLayerContent (srcLayerId : LongInt, dstLayerId : LongInt): LongInt
vb	function copyLayerContent () As Integer
cs	int copyLayerContent (int srcLayerId , int dstLayerId)
java	int copyLayerContent (int srcLayerId , int dstLayerId)
py	def copyLayerContent (srcLayerId , dstLayerId)
cmd	YDisplay target copyLayerContent srcLayerId dstLayerId

The color and transparency of all the pixels from the destination layer are set to match the source pixels. This method only affects the displayed content, but does not change any property of the layer object. Note that layer 0 has no transparency support (it is always completely opaque).

Parameters :

srcLayerId the identifier of the source layer (a number in range 0..layerCount-1)

dstLayerId the identifier of the destination layer (a number in range 0..layerCount-1)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→describe()`display.describe()`**YDisplay**

Returns a short text that describes unambiguously the instance of the display in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the display (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

display→fade()`display.fade()`**YDisplay**

Smoothly changes the brightness of the screen to produce a fade-in or fade-out effect.

js	function fade (brightness , duration)
nodejs	function fade (brightness , duration)
php	function fade (\$brightness , \$duration)
cpp	int fade (int brightness , int duration)
m	-(int) fade : (int) brightness : (int) duration
pas	function fade (brightness : LongInt, duration : LongInt): LongInt
vb	function fade () As Integer
cs	int fade (int brightness , int duration)
java	int fade (int brightness , int duration)
py	def fade (brightness , duration)
cmd	YDisplay target fade brightness duration

Parameters :

- brightness** the new screen brightness
- duration** duration of the brightness transition, in milliseconds.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→**get_advertisedValue()****YDisplay****display**→**advertisedValue()****display.get_advertisedValue()**

Returns the current value of the display (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YDisplay target get_advertisedValue

Returns :

a string corresponding to the current value of the display (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

display→**get_brightness()****YDisplay****display**→**brightness()****display.get_brightness()**

Returns the luminosity of the module informative leds (from 0 to 100).

js	function get_brightness()
nodejs	function get_brightness()
php	function get_brightness()
cpp	int get_brightness()
m	-(int) brightness
pas	function get_brightness() : LongInt
vb	function get_brightness() As Integer
cs	int get_brightness()
java	int get_brightness()
py	def get_brightness()
cmd	YDisplay target get_brightness

Returns :

an integer corresponding to the luminosity of the module informative leds (from 0 to 100)

On failure, throws an exception or returns Y_BRIGHTNESS_INVALID.

display→**get_displayHeight()****YDisplay****display**→**displayHeight()****display.get_displayHeight()**

Returns the display height, in pixels.

js	function get_displayHeight ()
nodejs	function get_displayHeight ()
php	function get_displayHeight ()
cpp	int get_displayHeight ()
m	-(int) displayHeight
pas	function get_displayHeight (): LongInt
vb	function get_displayHeight () As Integer
cs	int get_displayHeight ()
java	int get_displayHeight ()
py	def get_displayHeight ()
cmd	YDisplay target get_displayHeight

Returns :

an integer corresponding to the display height, in pixels

On failure, throws an exception or returns Y_DISPLAYHEIGHT_INVALID.

display→**get_displayLayer()****YDisplay****display**→**displayLayer()****display.get_displayLayer()**

Returns a YDisplayLayer object that can be used to draw on the specified layer.

<code>js</code>	<code>function get_displayLayer(layerId)</code>
<code>nodejs</code>	<code>function get_displayLayer(layerId)</code>
<code>php</code>	<code>function get_displayLayer(\$layerId)</code>
<code>cpp</code>	<code>YDisplayLayer* get_displayLayer(unsigned layerId)</code>
<code>m</code>	<code>-(YDisplayLayer*) displayLayer : (unsigned) layerId</code>
<code>vb</code>	<code>function get_displayLayer() As YDisplayLayer</code>
<code>cs</code>	<code>YDisplayLayer get_displayLayer(int layerId)</code>
<code>java</code>	<code>synchronized YDisplayLayer get_displayLayer(int layerId)</code>
<code>py</code>	<code>def get_displayLayer(layerId)</code>

The content is displayed only when the layer is active on the screen (and not masked by other overlapping layers).

Parameters :

layerId the identifier of the layer (a number in range 0..layerCount-1)

Returns :

an YDisplayLayer object

On failure, throws an exception or returns null.

display→**get_displayType()****YDisplay****display**→**displayType()****display.get_displayType()**

Returns the display type: monochrome, gray levels or full color.

js	function get_displayType ()
nodejs	function get_displayType ()
php	function get_displayType ()
cpp	Y_DISPLAYTYPE_enum get_displayType ()
m	-(Y_DISPLAYTYPE_enum) displayType
pas	function get_displayType (): Integer
vb	function get_displayType () As Integer
cs	int get_displayType ()
java	int get_displayType ()
py	def get_displayType ()
cmd	YDisplay target get_displayType

Returns :

a value among Y_DISPLAYTYPE_MONO, Y_DISPLAYTYPE_GRAY and Y_DISPLAYTYPE_RGB corresponding to the display type: monochrome, gray levels or full color

On failure, throws an exception or returns Y_DISPLAYTYPE_INVALID.

display→**get_displayWidth()**
display→**displayWidth()**
display.get_displayWidth()

YDisplay

Returns the display width, in pixels.

js	function get_displayWidth ()
nodejs	function get_displayWidth ()
php	function get_displayWidth ()
cpp	int get_displayWidth ()
m	-(int) displayWidth
pas	function get_displayWidth (): LongInt
vb	function get_displayWidth () As Integer
cs	int get_displayWidth ()
java	int get_displayWidth ()
py	def get_displayWidth ()
cmd	YDisplay target get_displayWidth

Returns :

an integer corresponding to the display width, in pixels

On failure, throws an exception or returns Y_DISPLAYWIDTH_INVALID.

display→**get_enabled()****YDisplay****display**→**enabled()****display.get_enabled()**

Returns true if the screen is powered, false otherwise.

js	function get_enabled ()
nodejs	function get_enabled ()
php	function get_enabled ()
cpp	Y_ENABLED_enum get_enabled ()
m	-(Y_ENABLED_enum) enabled
pas	function get_enabled (): Integer
vb	function get_enabled () As Integer
cs	int get_enabled ()
java	int get_enabled ()
py	def get_enabled ()
cmd	YDisplay target get_enabled

Returns :

either Y_ENABLED_FALSE or Y_ENABLED_TRUE, according to true if the screen is powered, false otherwise

On failure, throws an exception or returns Y_ENABLED_INVALID.

display→**get_errorMessage()****YDisplay****display**→**errorMessage()****display.errorMessage()**

Returns the error message of the latest error with the display.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the display object

display→**get_errorType()****YDisplay****display**→**errorType()****display.get_errorType()**

Returns the numerical error code of the latest error with the display.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the display object

display→**get_friendlyName()**
display→**friendlyName()**
display.get_friendlyName()

YDisplay

Returns a global identifier of the display in the format `MODULE_NAME . FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the display if they are defined, otherwise the serial number of the module and the hardware identifier of the display (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the display using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

display→**get_functionDescriptor()****YDisplay****display**→**functionDescriptor()****display.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

display→**get_functionId()****YDisplay****display**→**functionId()****display.get_functionId()**

Returns the hardware identifier of the display, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the display (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

display→**get_hardwareId()****YDisplay****display**→**hardwareId()****display.get_hardwareId()**

Returns the unique hardware identifier of the display in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
c++	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the display. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the display (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

display→**get_layerCount()****YDisplay****display**→**layerCount()****display.get_layerCount()**

Returns the number of available layers to draw on.

js	function get_layerCount ()
nodejs	function get_layerCount ()
php	function get_layerCount ()
cpp	int get_layerCount ()
m	-(int) layerCount
pas	function get_layerCount (): LongInt
vb	function get_layerCount () As Integer
cs	int get_layerCount ()
java	int get_layerCount ()
py	def get_layerCount ()
cmd	YDisplay target get_layerCount

Returns :

an integer corresponding to the number of available layers to draw on

On failure, throws an exception or returns Y_LAYERCOUNT_INVALID.

display→**get_layerHeight()****YDisplay****display**→**layerHeight()****display.get_layerHeight()**

Returns the height of the layers to draw on, in pixels.

js	function get_layerHeight ()
nodejs	function get_layerHeight ()
php	function get_layerHeight ()
cpp	int get_layerHeight ()
m	-(int) layerHeight
pas	function get_layerHeight (): LongInt
vb	function get_layerHeight () As Integer
cs	int get_layerHeight ()
java	int get_layerHeight ()
py	def get_layerHeight ()
cmd	YDisplay target get_layerHeight

Returns :

an integer corresponding to the height of the layers to draw on, in pixels

On failure, throws an exception or returns Y_LAYERHEIGHT_INVALID.

display→**get_layerWidth()****YDisplay****display**→**layerWidth()****display.get_layerWidth()**

Returns the width of the layers to draw on, in pixels.

js	function get_layerWidth ()
nodejs	function get_layerWidth ()
php	function get_layerWidth ()
cpp	int get_layerWidth ()
m	-(int) layerWidth
pas	function get_layerWidth (): LongInt
vb	function get_layerWidth () As Integer
cs	int get_layerWidth ()
java	int get_layerWidth ()
py	def get_layerWidth ()
cmd	YDisplay target get_layerWidth

Returns :

an integer corresponding to the width of the layers to draw on, in pixels

On failure, throws an exception or returns Y_LAYERWIDTH_INVALID.

display→**get_logicalName()****YDisplay****display**→**logicalName()****display.get_logicalName()**

Returns the logical name of the display.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YDisplay target get_logicalName

Returns :

a string corresponding to the logical name of the display. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

display→**get_module()****YDisplay****display**→**module()****display.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

display→**get_module_async()****YDisplay****display**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

display→**get_orientation()****YDisplay****display**→**orientation()****display.get_orientation()**

Returns the currently selected display orientation.

js	function get_orientation()
nodejs	function get_orientation()
php	function get_orientation()
cpp	Y_ORIENTATION_enum get_orientation()
m	-(Y_ORIENTATION_enum) orientation
pas	function get_orientation() : Integer
vb	function get_orientation() As Integer
cs	int get_orientation()
java	int get_orientation()
py	def get_orientation()
cmd	YDisplay target get_orientation

Returns :

a value among Y_ORIENTATION_LEFT, Y_ORIENTATION_UP, Y_ORIENTATION_RIGHT and Y_ORIENTATION_DOWN corresponding to the currently selected display orientation

On failure, throws an exception or returns Y_ORIENTATION_INVALID.

display→**get_startupSeq()****YDisplay****display**→**startupSeq()****display.get_startupSeq()**

Returns the name of the sequence to play when the displayed is powered on.

js	function get_startupSeq()
nodejs	function get_startupSeq()
php	function get_startupSeq()
cpp	string get_startupSeq()
m	-(NSString*) startupSeq
pas	function get_startupSeq() : string
vb	function get_startupSeq() As String
cs	string get_startupSeq()
java	String get_startupSeq()
py	def get_startupSeq()
cmd	YDisplay target get_startupSeq

Returns :

a string corresponding to the name of the sequence to play when the displayed is powered on

On failure, throws an exception or returns Y_STARTUPSEQ_INVALID.

display→**get_userData()****YDisplay****display**→**userData()****display.get_userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

display→**isOnline()****display.isOnline()****YDisplay**

Checks if the display is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the display in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the display.

Returns :

`true` if the display can be reached, and `false` otherwise

display→isOnline_async()**YDisplay**

Checks if the display is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the display in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

display→**load()****display.load()****YDisplay**

Preloads the display cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

display→load_async()**YDisplay**

Preloads the display cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

display→**newSequence()****display.newSequence()****YDisplay**

Starts to record all display commands into a sequence, for later replay.

js	function newSequence ()
nodejs	function newSequence ()
php	function newSequence ()
cpp	int newSequence ()
m	-(int) newSequence
pas	function newSequence (): LongInt
vb	function newSequence () As Integer
cs	int newSequence ()
java	int newSequence ()
py	def newSequence ()
cmd	YDisplay target newSequence

The name used to store the sequence is specified when calling `saveSequence()`, once the recording is complete.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→**nextDisplay()****display.nextDisplay()****YDisplay**

Continues the enumeration of displays started using `yFirstDisplay()`.

js	function nextDisplay ()
nodejs	function nextDisplay ()
php	function nextDisplay ()
cpp	YDisplay * nextDisplay ()
m	-(YDisplay*) nextDisplay
pas	function nextDisplay (): TYDisplay
vb	function nextDisplay () As YDisplay
cs	YDisplay nextDisplay ()
java	YDisplay nextDisplay ()
py	def nextDisplay ()

Returns :

a pointer to a `YDisplay` object, corresponding to a display currently online, or a `null` pointer if there are no more displays to enumerate.

display→pauseSequence()**YDisplay****display.pauseSequence()**

Waits for a specified delay (in milliseconds) before playing next commands in current sequence.

js	function pauseSequence (delay_ms)
nodejs	function pauseSequence (delay_ms)
php	function pauseSequence (\$delay_ms)
cpp	int pauseSequence (int delay_ms)
m	-(int) pauseSequence : (int) delay_ms
pas	function pauseSequence (delay_ms : LongInt): LongInt
vb	function pauseSequence () As Integer
cs	int pauseSequence (int delay_ms)
java	int pauseSequence (int delay_ms)
py	def pauseSequence (delay_ms)
cmd	YDisplay target pauseSequence delay_ms

This method can be used while recording a display sequence, to insert a timed wait in the sequence (without any immediate effect). It can also be used dynamically while playing a pre-recorded sequence, to suspend or resume the execution of the sequence. To cancel a delay, call the same method with a zero delay.

Parameters :

delay_ms the duration to wait, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→playSequence()`display.playSequence()`**YDisplay**

Replays a display sequence previously recorded using `newSequence()` and `saveSequence()`.

js	function playSequence (sequenceName)
nodejs	function playSequence (sequenceName)
php	function playSequence (\$sequenceName)
cpp	int playSequence (string sequenceName)
m	-(int) playSequence : (NSString*) sequenceName
pas	function playSequence (sequenceName : string): LongInt
vb	function playSequence () As Integer
cs	int playSequence (string sequenceName)
java	int playSequence (String sequenceName)
py	def playSequence (sequenceName)
cmd	YDisplay target playSequence sequenceName

Parameters :

sequenceName the name of the newly created sequence

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→registerValueCallback()**YDisplay****display.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
c++	int registerValueCallback (YDisplayValueCallback callback)
m	-(int) registerValueCallback : (YDisplayValueCallback) callback
pas	function registerValueCallback (callback : TYDisplayValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

display→resetAll()`display.resetAll()`**YDisplay**

Clears the display screen and resets all display layers to their default state.

js	function resetAll ()
nodejs	function resetAll ()
php	function resetAll ()
cpp	int resetAll ()
m	-(int) resetAll
pas	function resetAll (): LongInt
vb	function resetAll () As Integer
cs	int resetAll ()
java	int resetAll ()
py	def resetAll ()
cmd	YDisplay target resetAll

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→saveSequence()`display.saveSequence()`**YDisplay**

Stops recording display commands and saves the sequence into the specified file on the display internal memory.

js	function saveSequence (sequenceName)
nodejs	function saveSequence (sequenceName)
php	function saveSequence (\$sequenceName)
cpp	int saveSequence (string sequenceName)
m	-(int) saveSequence : (NSString*) sequenceName
pas	function saveSequence (sequenceName : string): LongInt
vb	function saveSequence () As Integer
cs	int saveSequence (string sequenceName)
java	int saveSequence (String sequenceName)
py	def saveSequence (sequenceName)
cmd	YDisplay target saveSequence sequenceName

The sequence can be later replayed using `playSequence()`.

Parameters :

sequenceName the name of the newly created sequence

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→**set_brightness()****YDisplay****display**→**setBrightness()****display.set_brightness()**

Changes the brightness of the display.

js	function set_brightness (newval)
nodejs	function set_brightness (newval)
php	function set_brightness (\$newval)
cpp	int set_brightness (int newval)
m	-(int) setBrightness : (int) newval
pas	function set_brightness (newval : LongInt): integer
vb	function set_brightness (ByVal newval As Integer) As Integer
cs	int set_brightness (int newval)
java	int set_brightness (int newval)
py	def set_brightness (newval)
cmd	YDisplay target set_brightness newval

The parameter is a value between 0 and 100. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the brightness of the display

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→**set_enabled()****YDisplay****display**→**setEnabled()****display.set_enabled()**

Changes the power state of the display.

js	function set_enabled (newval)
nodejs	function set_enabled (newval)
php	function set_enabled (\$newval)
cpp	int set_enabled (Y_ENABLED_enum newval)
m	-(int) setEnabled : (Y_ENABLED_enum) newval
pas	function set_enabled (newval : Integer): integer
vb	function set_enabled (ByVal newval As Integer) As Integer
cs	int set_enabled (int newval)
java	int set_enabled (int newval)
py	def set_enabled (newval)
cmd	YDisplay target set_enabled newval

Parameters :

newval either Y_ENABLED_FALSE or Y_ENABLED_TRUE, according to the power state of the display

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→**set_logicalName()****YDisplay****display**→**setLogicalName()****display.set_logicalName()**

Changes the logical name of the display.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YDisplay target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the display.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

display→**set_orientation()**
display→**setOrientation()**
display.set_orientation()

YDisplay

Changes the display orientation.

js	function set_orientation (newval)
nodejs	function set_orientation (newval)
php	function set_orientation (\$newval)
cpp	int set_orientation (Y_ORIENTATION_enum newval)
m	-(int) setOrientation : (Y_ORIENTATION_enum) newval
pas	function set_orientation (newval : Integer): integer
vb	function set_orientation (ByVal newval As Integer) As Integer
cs	int set_orientation (int newval)
java	int set_orientation (int newval)
py	def set_orientation (newval)
cmd	YDisplay target set_orientation newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a value among Y_ORIENTATION_LEFT, Y_ORIENTATION_UP, Y_ORIENTATION_RIGHT and Y_ORIENTATION_DOWN corresponding to the display orientation

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→**set_startupSeq()****YDisplay****display**→**setStartupSeq()****display.set_startupSeq()**

Changes the name of the sequence to play when the displayed is powered on.

js	function set_startupSeq (newval)
nodejs	function set_startupSeq (newval)
php	function set_startupSeq (\$newval)
cpp	int set_startupSeq (const string& newval)
m	-(int) setStartupSeq : (NSString*) newval
pas	function set_startupSeq (newval : string): integer
vb	function set_startupSeq (ByVal newval As String) As Integer
cs	int set_startupSeq (string newval)
java	int set_startupSeq (String newval)
py	def set_startupSeq (newval)
cmd	YDisplay target set_startupSeq newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the name of the sequence to play when the displayed is powered on

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→**set_userData()****YDisplay****display**→**setUserData()****display.set_userData()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userData (data)
nodejs	function set_userData (data)
php	function set_userData (\$data)
cpp	void set_userData (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userData (data : Tobject)
vb	procedure set_userData (ByVal data As Object)
cs	void set_userData (object data)
java	void set_userData (Object data)
py	def set_userData (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

display→stopSequence()`display.stopSequence()`**YDisplay**

Stops immediately any ongoing sequence replay.

<code>js</code>	<code>function stopSequence()</code>
<code>nodejs</code>	<code>function stopSequence()</code>
<code>php</code>	<code>function stopSequence()</code>
<code>cpp</code>	<code>int stopSequence()</code>
<code>m</code>	<code>-(int) stopSequence</code>
<code>pas</code>	<code>function stopSequence(): LongInt</code>
<code>vb</code>	<code>function stopSequence() As Integer</code>
<code>cs</code>	<code>int stopSequence()</code>
<code>java</code>	<code>int stopSequence()</code>
<code>py</code>	<code>def stopSequence()</code>
<code>cmd</code>	<code>YDisplay target stopSequence</code>

The display is left as is.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

Swaps the whole content of two layers.

js	function swapLayerContent (layerIdA , layerIdB)
nodejs	function swapLayerContent (layerIdA , layerIdB)
php	function swapLayerContent (\$layerIdA , \$layerIdB)
cpp	int swapLayerContent (int layerIdA , int layerIdB)
m	-(int) swapLayerContent : (int) layerIdA : (int) layerIdB
pas	function swapLayerContent (layerIdA : LongInt, layerIdB : LongInt): LongInt
vb	function swapLayerContent () As Integer
cs	int swapLayerContent (int layerIdA , int layerIdB)
java	int swapLayerContent (int layerIdA , int layerIdB)
py	def swapLayerContent (layerIdA , layerIdB)
cmd	YDisplay target swapLayerContent layerIdA layerIdB

The color and transparency of all the pixels from the two layers are swapped. This method only affects the displayed content, but does not change any property of the layer objects. In particular, the visibility of each layer stays unchanged. When used between one hidden layer and a visible layer, this method makes it possible to easily implement double-buffering. Note that layer 0 has no transparency support (it is always completely opaque).

Parameters :

layerIdA the first layer (a number in range 0..layerCount-1)
layerIdB the second layer (a number in range 0..layerCount-1)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→upload()`display.upload()`**YDisplay**

Uploads an arbitrary file (for instance a GIF file) to the display, to the specified full path name.

js	function upload (pathname , content)
nodejs	function upload (pathname , content)
php	function upload (\$pathname , \$content)
c++	int upload (string pathname , string content)
m	-(int) upload : (NSString*) pathname : (NSData*) content
pas	function upload (pathname : string, content : TByteArray): LongInt
vb	procedure upload ()
cs	int upload (string pathname)
java	int upload (String pathname)
py	def upload (pathname , content)
cmd	YDisplay target upload pathname content

If a file already exists with the same path name, its content is overwritten.

Parameters :

- pathname** path and name of the new file to create
- content** binary buffer with the content to set

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→wait_async()**YDisplay**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.14. DisplayLayer object interface

A DisplayLayer is an image layer containing objects to display (bitmaps, text, etc.). The content is displayed only when the layer is active on the screen (and not masked by other overlapping layers).

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_display.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YDisplay = yoctolib.YDisplay;
php	require_once('yocto_display.php');
c++	#include "yocto_display.h"
m	#import "yocto_display.h"
pas	uses yocto_display;
vb	yocto_display.vb
cs	yocto_display.cs
java	import com.yoctopuce.YoctoAPI.YDisplay;
py	from yocto_display import *

YDisplayLayer methods

displaylayer→clear()

Erases the whole content of the layer (makes it fully transparent).

displaylayer→clearConsole()

Blanks the console area within console margins, and resets the console pointer to the upper left corner of the console.

displaylayer→consoleOut(text)

Outputs a message in the console area, and advances the console pointer accordingly.

displaylayer→drawBar(x1, y1, x2, y2)

Draws a filled rectangular bar at a specified position.

displaylayer→drawBitmap(x, y, w, bitmap, bgcolor)

Draws a bitmap at the specified position.

displaylayer→drawCircle(x, y, r)

Draws an empty circle at a specified position.

displaylayer→drawDisc(x, y, r)

Draws a filled disc at a given position.

displaylayer→drawImage(x, y, imagename)

Draws a GIF image at the specified position.

displaylayer→drawPixel(x, y)

Draws a single pixel at the specified position.

displaylayer→drawRect(x1, y1, x2, y2)

Draws an empty rectangle at a specified position.

displaylayer→drawText(x, y, anchor, text)

Draws a text string at the specified position.

displaylayer→get_display()

Gets parent YDisplay.

displaylayer→get_displayHeight()

Returns the display height, in pixels.

displaylayer→get_displayWidth()

Returns the display width, in pixels.

displaylayer→get_layerHeight()

Returns the height of the layers to draw on, in pixels.

displaylayer→get_layerWidth()

Returns the width of the layers to draw on, in pixels.

displaylayer→hide()

Hides the layer.

displaylayer→lineTo(x, y)

Draws a line from current drawing pointer position to the specified position.

displaylayer→moveTo(x, y)

Moves the drawing pointer of this layer to the specified position.

displaylayer→reset()

Reverts the layer to its initial state (fully transparent, default settings).

displaylayer→selectColorPen(color)

Selects the pen color for all subsequent drawing functions, including text drawing.

displaylayer→selectEraser()

Selects an eraser instead of a pen for all subsequent drawing functions, except for text drawing and bitmap copy functions.

displaylayer→selectFont(fontname)

Selects a font to use for the next text drawing functions, by providing the name of the font file.

displaylayer→selectGrayPen(graylevel)

Selects the pen gray level for all subsequent drawing functions, including text drawing.

displaylayer→setAntialiasingMode(mode)

Enables or disables anti-aliasing for drawing oblique lines and circles.

displaylayer→setConsoleBackground(bgcol)

Sets up the background color used by the `clearConsole` function and by the console scrolling feature.

displaylayer→setConsoleMargins(x1, y1, x2, y2)

Sets up display margins for the `consoleOut` function.

displaylayer→setConsoleWordWrap(wordwrap)

Sets up the wrapping behaviour used by the `consoleOut` function.

displaylayer→setLayerPosition(x, y, scrollTime)

Sets the position of the layer relative to the display upper left corner.

displaylayer→unhide()

Shows the layer.

displaylayer→clear()`displaylayer.clear()`**YDisplayLayer**

Erases the whole content of the layer (makes it fully transparent).

js	function clear ()
nodejs	function clear ()
php	function clear ()
cpp	int clear ()
m	-(int) clear
pas	function clear (): LongInt
vb	function clear () As Integer
cs	int clear ()
java	int clear ()
py	def clear ()
cmd	YDisplay target [-layer layerId] clear

This method does not change any other attribute of the layer. To reinitialize the layer attributes to defaults settings, use the method `reset()` instead.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→clearConsole()**YDisplayLayer****displaylayer.clearConsole()**

Blanks the console area within console margins, and resets the console pointer to the upper left corner of the console.

js	function clearConsole ()
nodejs	function clearConsole ()
php	function clearConsole ()
c++	int clearConsole ()
m	-(int) clearConsole
pas	function clearConsole (): LongInt
vb	function clearConsole () As Integer
cs	int clearConsole ()
java	int clearConsole ()
py	def clearConsole ()
cmd	YDisplay target [-layer layerId] clearConsole

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→consoleOut()**YDisplayLayer****displaylayer.consoleOut()**

Outputs a message in the console area, and advances the console pointer accordingly.

js	function consoleOut (text)
nodejs	function consoleOut (text)
php	function consoleOut (\$text)
cpp	int consoleOut (string text)
m	-(int) consoleOut : (NSString*) text
pas	function consoleOut (text : string): LongInt
vb	function consoleOut () As Integer
cs	int consoleOut (string text)
java	int consoleOut (String text)
py	def consoleOut (text)
cmd	YDisplay target [-layer layerId] consoleOut text

The console pointer position is automatically moved to the beginning of the next line when a newline character is met, or when the right margin is hit. When the new text to display extends below the lower margin, the console area is automatically scrolled up.

Parameters :

text the message to display

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→**drawBar()**`displaylayer.drawBar()`**YDisplayLayer**

Draws a filled rectangular bar at a specified position.

js	function drawBar (x1 , y1 , x2 , y2)
nodejs	function drawBar (x1 , y1 , x2 , y2)
php	function drawBar (\$x1 , \$y1 , \$x2 , \$y2)
cpp	int drawBar (int x1 , int y1 , int x2 , int y2)
m	-(int) drawBar : (int) x1 : (int) y1 : (int) x2 : (int) y2
pas	function drawBar (x1 : LongInt, y1 : LongInt, x2 : LongInt, y2 : LongInt): LongInt
vb	function drawBar () As Integer
cs	int drawBar (int x1 , int y1 , int x2 , int y2)
java	int drawBar (int x1 , int y1 , int x2 , int y2)
py	def drawBar (x1 , y1 , x2 , y2)
cmd	YDisplay target [-layer layerId] drawBar x1 y1 x2 y2

Parameters :

- x1** the distance from left of layer to the left border of the rectangle, in pixels
- y1** the distance from top of layer to the top border of the rectangle, in pixels
- x2** the distance from left of layer to the right border of the rectangle, in pixels
- y2** the distance from top of layer to the bottom border of the rectangle, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→drawBitmap()

YDisplayLayer

```
displaylayer.drawBitmap( )
```

Draws a bitmap at the specified position.

js	function drawBitmap (x , y , w , bitmap , bgcol)
nodejs	function drawBitmap (x , y , w , bitmap , bgcol)
php	function drawBitmap (\$x , \$y , \$w , \$bitmap , \$bgcol)
cpp	int drawBitmap (int x , int y , int w , string bitmap , int bgcol)
m	-(int) drawBitmap : (int) x : (int) y : (int) w : (NSData*) bitmap : (int) bgcol
pas	function drawBitmap (x : LongInt, y : LongInt, w : LongInt, bitmap : TByteArray, bgcol : LongInt): LongInt
vb	procedure drawBitmap ()
cs	int drawBitmap (int x , int y , int w , int bgcol)
java	int drawBitmap (int x , int y , int w , int bgcol)
py	def drawBitmap (x , y , w , bitmap , bgcol)
cmd	YDisplay target [-layer layerId] drawBitmap x y w bitmap bgcol

The bitmap is provided as a binary object, where each pixel maps to a bit, from left to right and from top to bottom. The most significant bit of each byte maps to the leftmost pixel, and the least significant bit maps to the rightmost pixel. Bits set to 1 are drawn using the layer selected pen color. Bits set to 0 are drawn using the specified background gray level, unless -1 is specified, in which case they are not drawn at all (as if transparent).

Parameters :

x	the distance from left of layer to the left of the bitmap, in pixels
y	the distance from top of layer to the top of the bitmap, in pixels
w	the width of the bitmap, in pixels
bitmap	a binary object
bgcol	the background gray level to use for zero bits (0 = black, 255 = white), or -1 to leave the pixels unchanged

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

On failure, throws an exception or returns a negative error code.

displaylayer→drawDisc()**YDisplayLayer****displaylayer.drawDisc()**

Draws a filled disc at a given position.

js	function drawDisc (x , y , r)
nodejs	function drawDisc (x , y , r)
php	function drawDisc (\$x , \$y , \$r)
cpp	int drawDisc (int x , int y , int r)
m	-(int) drawDisc : (int) x : (int) y : (int) r
pas	function drawDisc (x : LongInt, y : LongInt, r : LongInt): LongInt
vb	function drawDisc () As Integer
cs	int drawDisc (int x , int y , int r)
java	int drawDisc (int x , int y , int r)
py	def drawDisc (x , y , r)
cmd	YDisplay target [-layer layerId] drawDisc x y r

Parameters :

- x** the distance from left of layer to the center of the disc, in pixels
- y** the distance from top of layer to the center of the disc, in pixels
- r** the radius of the disc, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→drawImage()

YDisplayLayer

```
displaylayer.drawImage()
```

Draws a GIF image at the specified position.

js	function drawImage (x , y , imagename)
nodejs	function drawImage (x , y , imagename)
php	function drawImage (\$x , \$y , \$imagename)
cpp	int drawImage (int x , int y , string imagename)
m	-(int) drawImage : (int) x : (int) y : (NSString*) imagename
pas	function drawImage (x : LongInt, y : LongInt, imagename : string): LongInt
vb	function drawImage () As Integer
cs	int drawImage (int x , int y , string imagename)
java	int drawImage (int x , int y , String imagename)
py	def drawImage (x , y , imagename)
cmd	YDisplay target [-layer layerId] drawImage x y imagename

The GIF image must have been previously uploaded to the device built-in memory. If you experience problems using an image file, check the device logs for any error message such as missing image file or bad image file format.

Parameters :

x	the distance from left of layer to the left of the image, in pixels
y	the distance from top of layer to the top of the image, in pixels
imagename	the GIF file name

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

js	function drawPixel(x, y)
node.js	function drawPixel(x, y)
php	function drawPixel(\$x, \$y)
c++	int drawPixel(int x, int y)
m	-(int) drawPixel : (int) x : (int) y
pas	function drawPixel(x: LongInt, y: LongInt): LongInt
vb	function drawPixel() As Integer
cs	int drawPixel(int x, int y)
java	int drawPixel(int x, int y)
py	def drawPixel(x, y)
cmd	YDisplay target [-layer layerId] drawPixel x y

x the distance from left of layer, in pixels
y the distance from top of layer, in pixels

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→drawRect()**YDisplayLayer****displaylayer.drawRect()**

Draws an empty rectangle at a specified position.

js	function drawRect (x1 , y1 , x2 , y2)
nodejs	function drawRect (x1 , y1 , x2 , y2)
php	function drawRect (\$x1 , \$y1 , \$x2 , \$y2)
cpp	int drawRect (int x1 , int y1 , int x2 , int y2)
m	-(int) drawRect : (int) x1 : (int) y1 : (int) x2 : (int) y2
pas	function drawRect (x1 : LongInt, y1 : LongInt, x2 : LongInt, y2 : LongInt): LongInt
vb	function drawRect () As Integer
cs	int drawRect (int x1 , int y1 , int x2 , int y2)
java	int drawRect (int x1 , int y1 , int x2 , int y2)
py	def drawRect (x1 , y1 , x2 , y2)
cmd	YDisplay target [-layer layerId] drawRect x1 y1 x2 y2

Parameters :

- x1** the distance from left of layer to the left border of the rectangle, in pixels
- y1** the distance from top of layer to the top border of the rectangle, in pixels
- x2** the distance from left of layer to the right border of the rectangle, in pixels
- y2** the distance from top of layer to the bottom border of the rectangle, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→drawText()

YDisplayLayer

```
displaylayer.drawText()
```

Draws a text string at the specified position.

js	function drawText (x, y, anchor, text)
node.js	function drawText (x, y, anchor, text)
php	function drawText (\$x, \$y, \$anchor, \$text)
c++	int drawText (int x, int y, Y_ALIGN anchor, string text) -(int) drawText : (int) x : (int) y : (Y_ALIGN) anchor : (NSString*) text
pascal	function drawText (x: LongInt, y: LongInt, anchor: TYALIGN, text: string): LongInt
vb	function drawText () As Integer
c#	int drawText (int x, int y, ALIGN anchor, string text)
java	int drawText (int x, int y, ALIGN anchor, String text)
python	def drawText (x, y, anchor, text)
cmd	YDisplay target [-layer layerId] drawText x y anchor text

The point of the text that is aligned to the specified pixel position is called the anchor point, and can be chosen among several options. Text is rendered from left to right, without implicit wrapping.

Parameters :

x	the distance from left of layer to the text anchor point, in pixels
y	the distance from top of layer to the text anchor point, in pixels
anchor	the text anchor point, chosen among the Y_ALIGN enumeration: Y_ALIGN_TOP_LEFT, Y_ALIGN_CENTER_LEFT, Y_ALIGN_BASELINE_LEFT, Y_ALIGN_BOTTOM_LEFT, Y_ALIGN_TOP_CENTER, Y_ALIGN_CENTER, Y_ALIGN_BASELINE_CENTER, Y_ALIGN_BOTTOM_CENTER, Y_ALIGN_TOP_DECIMAL, Y_ALIGN_CENTER_DECIMAL, Y_ALIGN_BASELINE_DECIMAL, Y_ALIGN_BOTTOM_DECIMAL, Y_ALIGN_TOP_RIGHT, Y_ALIGN_CENTER_RIGHT, Y_ALIGN_BASELINE_RIGHT, Y_ALIGN_BOTTOM_RIGHT.
text	the text string to draw

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→**get_display()****YDisplayLayer****displaylayer**→**display()****displaylayer.get_display()**

Gets parent YDisplay.

<code>js</code>	<code>function get_display()</code>
<code>nodejs</code>	<code>function get_display()</code>
<code>php</code>	<code>function get_display()</code>
<code>cpp</code>	<code>YDisplay* get_display()</code>
<code>m</code>	<code>-(YDisplay*) display</code>
<code>pas</code>	<code>function get_display(): TYDisplay</code>
<code>vb</code>	<code>function get_display() As YDisplay</code>
<code>cs</code>	<code>YDisplay get_display()</code>
<code>java</code>	<code>YDisplay get_display()</code>
<code>py</code>	<code>def get_display()</code>

Returns the parent YDisplay object of the current YDisplayLayer.

Returns :

an YDisplay object

displaylayer→get_displayHeight()**YDisplayLayer****displaylayer→displayHeight()****displaylayer.get_displayHeight()**

Returns the display height, in pixels.

js	function get_displayHeight ()
nodejs	function get_displayHeight ()
php	function get_displayHeight ()
cpp	int get_displayHeight ()
m	-(int) displayHeight
pas	function get_displayHeight (): LongInt
vb	function get_displayHeight () As Integer
cs	int get_displayHeight ()
java	int get_displayHeight ()
py	def get_displayHeight ()
cmd	YDisplay target [-layer layerId] get_displayHeight

Returns :

an integer corresponding to the display height, in pixels On failure, throws an exception or returns Y_DISPLAYHEIGHT_INVALID.

displaylayer→get_displayWidth()**YDisplayLayer****displaylayer→displayWidth()****displaylayer.get_displayWidth()**

Returns the display width, in pixels.

js	function get_displayWidth ()
nodejs	function get_displayWidth ()
php	function get_displayWidth ()
cpp	int get_displayWidth ()
m	-(int) displayWidth
pas	function get_displayWidth (): LongInt
vb	function get_displayWidth () As Integer
cs	int get_displayWidth ()
java	int get_displayWidth ()
py	def get_displayWidth ()
cmd	YDisplay target [-layer layerId] get_displayWidth

Returns :

an integer corresponding to the display width, in pixels On failure, throws an exception or returns Y_DISPLAYWIDTH_INVALID.

displaylayer→get_layerHeight()**YDisplayLayer****displaylayer→layerHeight()****displaylayer.get_layerHeight()**

Returns the height of the layers to draw on, in pixels.

js	function get_layerHeight ()
nodejs	function get_layerHeight ()
php	function get_layerHeight ()
cpp	int get_layerHeight ()
m	-(int) layerHeight
pas	function get_layerHeight (): LongInt
vb	function get_layerHeight () As Integer
cs	int get_layerHeight ()
java	int get_layerHeight ()
py	def get_layerHeight ()
cmd	YDisplay target [-layer layerId] get_layerHeight

Returns :

an integer corresponding to the height of the layers to draw on, in pixels

On failure, throws an exception or returns Y_LAYERHEIGHT_INVALID.

displaylayer→**get_layerWidth()****YDisplayLayer****displaylayer**→**layerWidth()****displaylayer.get_layerWidth()**

Returns the width of the layers to draw on, in pixels.

js	function get_layerWidth ()
nodejs	function get_layerWidth ()
php	function get_layerWidth ()
cpp	int get_layerWidth ()
m	-(int) layerWidth
pas	function get_layerWidth (): LongInt
vb	function get_layerWidth () As Integer
cs	int get_layerWidth ()
java	int get_layerWidth ()
py	def get_layerWidth ()
cmd	YDisplay target [-layer layerId] get_layerWidth

Returns :

an integer corresponding to the width of the layers to draw on, in pixels

On failure, throws an exception or returns Y_LAYERWIDTH_INVALID.

displaylayer→hide()`displaylayer.hide()`**YDisplayLayer**

Hides the layer.

js	function hide ()
nodejs	function hide ()
php	function hide ()
cpp	int hide ()
m	-(int) hide
pas	function hide (): LongInt
vb	function hide () As Integer
cs	int hide ()
java	int hide ()
py	def hide ()
cmd	YDisplay target [-layer layerId] hide

The state of the layer is perserved but the layer is not displayed on the screen until the next call to `unhide()`. Hiding the layer can positively affect the drawing speed, since it postpones the rendering until all operations are completed (double-buffering).

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→lineTo()`displaylayer.lineTo()`**YDisplayLayer**

Draws a line from current drawing pointer position to the specified position.

<code>js</code>	<code>function lineTo(x, y)</code>
<code>nodejs</code>	<code>function lineTo(x, y)</code>
<code>php</code>	<code>function lineTo(\$x, \$y)</code>
<code>cpp</code>	<code>int lineTo(int x, int y)</code>
<code>m</code>	<code>-(int) lineTo : (int) x : (int) y</code>
<code>pas</code>	<code>function lineTo(x: LongInt, y: LongInt): LongInt</code>
<code>vb</code>	<code>function lineTo() As Integer</code>
<code>cs</code>	<code>int lineTo(int x, int y)</code>
<code>java</code>	<code>int lineTo(int x, int y)</code>
<code>py</code>	<code>def lineTo(x, y)</code>
<code>cmd</code>	<code>YDisplay target [-layer layerId] lineTo x y</code>

The specified destination pixel is included in the line. The pointer position is then moved to the end point of the line.

Parameters :

- x** the distance from left of layer to the end point of the line, in pixels
- y** the distance from top of layer to the end point of the line, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→moveTo()`displaylayer.moveTo()`**YDisplayLayer**

Moves the drawing pointer of this layer to the specified position.

<code>js</code>	<code>function moveTo(x, y)</code>
<code>nodejs</code>	<code>function moveTo(x, y)</code>
<code>php</code>	<code>function moveTo(\$x, \$y)</code>
<code>cpp</code>	<code>int moveTo(int x, int y)</code>
<code>m</code>	<code>-(int) moveTo : (int) x : (int) y</code>
<code>pas</code>	<code>function moveTo(x: LongInt, y: LongInt): LongInt</code>
<code>vb</code>	<code>function moveTo() As Integer</code>
<code>cs</code>	<code>int moveTo(int x, int y)</code>
<code>java</code>	<code>int moveTo(int x, int y)</code>
<code>py</code>	<code>def moveTo(x, y)</code>
<code>cmd</code>	<code>YDisplay target [-layer layerId] moveTo x y</code>

Parameters :

- x** the distance from left of layer, in pixels
- y** the distance from top of layer, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→reset()`displaylayer.reset()`**YDisplayLayer**

Reverts the layer to its initial state (fully transparent, default settings).

js	function reset ()
nodejs	function reset ()
php	function reset ()
cpp	int reset ()
m	-(int) reset
pas	function reset (): LongInt
vb	function reset () As Integer
cs	int reset ()
java	int reset ()
py	def reset ()
cmd	YDisplay target [-layer layerId] reset

Reinitializes the drawing pointer to the upper left position, and selects the most visible pen color. If you only want to erase the layer content, use the method `clear()` instead.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→selectColorPen()**YDisplayLayer****displaylayer.selectColorPen()**

Selects the pen color for all subsequent drawing functions, including text drawing.

js	function selectColorPen (color)
nodejs	function selectColorPen (color)
php	function selectColorPen (\$color)
cpp	int selectColorPen (int color)
m	-(int) selectColorPen : (int) color
pas	function selectColorPen (color : LongInt): LongInt
vb	function selectColorPen () As Integer
cs	int selectColorPen (int color)
java	int selectColorPen (int color)
py	def selectColorPen (color)
cmd	YDisplay target [-layer layerId] selectColorPen color

The pen color is provided as an RGB value. For grayscale or monochrome displays, the value is automatically converted to the proper range.

Parameters :

color the desired pen color, as a 24-bit RGB value

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→selectEraser()**YDisplayLayer****displaylayer.selectEraser()**

Selects an eraser instead of a pen for all subsequent drawing functions, except for text drawing and bitmap copy functions.

js	function selectEraser ()
nodejs	function selectEraser ()
php	function selectEraser ()
cpp	int selectEraser ()
m	-(int) selectEraser
pas	function selectEraser (): LongInt
vb	function selectEraser () As Integer
cs	int selectEraser ()
java	int selectEraser ()
py	def selectEraser ()
cmd	YDisplay target [-layer layerId] selectEraser

Any point drawn using the eraser becomes transparent (as when the layer is empty), showing the other layers beneath it.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→selectFont()**YDisplayLayer****displaylayer.selectFont()**

Selects a font to use for the next text drawing functions, by providing the name of the font file.

js	function selectFont (fontname)
nodejs	function selectFont (fontname)
php	function selectFont (\$fontname)
cpp	int selectFont (string fontname)
m	-(int) selectFont : (NSString*) fontname
pas	function selectFont (fontname : string): LongInt
vb	function selectFont () As Integer
cs	int selectFont (string fontname)
java	int selectFont (String fontname)
py	def selectFont (fontname)
cmd	YDisplay target [-layer layerId] selectFont fontname

You can use a built-in font as well as a font file that you have previously uploaded to the device built-in memory. If you experience problems selecting a font file, check the device logs for any error message such as missing font file or bad font file format.

Parameters :

fontname the font file name

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→selectGrayPen()**YDisplayLayer****displaylayer.selectGrayPen()**

Selects the pen gray level for all subsequent drawing functions, including text drawing.

js	function selectGrayPen (graylevel)
nodejs	function selectGrayPen (graylevel)
php	function selectGrayPen (\$graylevel)
cpp	int selectGrayPen (int graylevel)
m	-(int) selectGrayPen : (int) graylevel
pas	function selectGrayPen (graylevel : LongInt): LongInt
vb	function selectGrayPen () As Integer
cs	int selectGrayPen (int graylevel)
java	int selectGrayPen (int graylevel)
py	def selectGrayPen (graylevel)
cmd	YDisplay target [-layer layerId] selectGrayPen graylevel

The gray level is provided as a number between 0 (black) and 255 (white, or whichever the highest color is). For monochrome displays (without gray levels), any value lower than 128 is rendered as black, and any value equal or above to 128 is non-black.

Parameters :

graylevel the desired gray level, from 0 to 255

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→setAntialiasingMode()**YDisplayLayer****displaylayer.setAntialiasingMode()**

Enables or disables anti-aliasing for drawing oblique lines and circles.

js	function setAntialiasingMode (mode)
nodejs	function setAntialiasingMode (mode)
php	function setAntialiasingMode (\$mode)
cpp	int setAntialiasingMode (bool mode)
m	-(int) setAntialiasingMode : (bool) mode
pas	function setAntialiasingMode (mode : boolean): LongInt
vb	function setAntialiasingMode () As Integer
cs	int setAntialiasingMode (bool mode)
java	int setAntialiasingMode (boolean mode)
py	def setAntialiasingMode (mode)
cmd	YDisplay target [-layer layerId] setAntialiasingMode mode

Anti-aliasing provides a smoother aspect when looked from far enough, but it can add fuzzyness when the display is looked from very close. At the end of the day, it is your personal choice. Anti-aliasing is enabled by default on grayscale and color displays, but you can disable it if you prefer. This setting has no effect on monochrome displays.

Parameters :

mode true to enable antialiasing, false to disable it.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→setConsoleBackground()**YDisplayLayer****displaylayer.setConsoleBackground()**

Sets up the background color used by the `clearConsole` function and by the console scrolling feature.

js	function setConsoleBackground (bgcol)
nodejs	function setConsoleBackground (bgcol)
php	function setConsoleBackground (\$bgcol)
cpp	int setConsoleBackground (int bgcol)
m	-(int) setConsoleBackground : (int) bgcol
pas	function setConsoleBackground (bgcol : LongInt): LongInt
vb	function setConsoleBackground () As Integer
cs	int setConsoleBackground (int bgcol)
java	int setConsoleBackground (int bgcol)
py	def setConsoleBackground (bgcol)
cmd	YDisplay target [-layer layerId] setConsoleBackground bgcol

Parameters :

bgcol the background gray level to use when scrolling (0 = black, 255 = white), or -1 for transparent

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→setConsoleMargins()**YDisplayLayer****displaylayer.setConsoleMargins()**

Sets up display margins for the `consoleOut` function.

js	function setConsoleMargins (x1 , y1 , x2 , y2)
nodejs	function setConsoleMargins (x1 , y1 , x2 , y2)
php	function setConsoleMargins (\$x1 , \$y1 , \$x2 , \$y2)
cpp	int setConsoleMargins (int x1 , int y1 , int x2 , int y2)
m	-(int) setConsoleMargins : (int) x1 : (int) y1 : (int) x2 : (int) y2
pas	function setConsoleMargins (x1 : LongInt, y1 : LongInt, x2 : LongInt, y2 : LongInt): LongInt
vb	function setConsoleMargins () As Integer
cs	int setConsoleMargins (int x1 , int y1 , int x2 , int y2)
java	int setConsoleMargins (int x1 , int y1 , int x2 , int y2)
py	def setConsoleMargins (x1 , y1 , x2 , y2)
cmd	YDisplay target [-layer layerId] setConsoleMargins x1 y1 x2 y2

Parameters :

- x1** the distance from left of layer to the left margin, in pixels
- y1** the distance from top of layer to the top margin, in pixels
- x2** the distance from left of layer to the right margin, in pixels
- y2** the distance from top of layer to the bottom margin, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→setConsoleWordWrap()**YDisplayLayer****displaylayer.setConsoleWordWrap()**

Sets up the wrapping behaviour used by the `consoleOut` function.

js	function setConsoleWordWrap (wordwrap)
nodejs	function setConsoleWordWrap (wordwrap)
php	function setConsoleWordWrap (\$wordwrap)
cpp	int setConsoleWordWrap (bool wordwrap)
m	-(int) setConsoleWordWrap : (bool) wordwrap
pas	function setConsoleWordWrap (wordwrap : boolean): LongInt
vb	function setConsoleWordWrap () As Integer
cs	int setConsoleWordWrap (bool wordwrap)
java	int setConsoleWordWrap (boolean wordwrap)
py	def setConsoleWordWrap (wordwrap)
cmd	YDisplay target [-layer layerId] setConsoleWordWrap wordwrap

Parameters :

wordwrap `true` to wrap only between words, `false` to wrap on the last column anyway.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

js	function setLayerPosition (x , y , scrollTime)
nodejs	function setLayerPosition (x , y , scrollTime)
php	function setLayerPosition (\$x , \$y , \$scrollTime)
c++	int setLayerPosition (int x , int y , int scrollTime)
m	-(int) setLayerPosition : (int) x : (int) y : (int) scrollTime
pas	function setLayerPosition (x : LongInt, : LongInt, : LongInt): LongInt
vb	function setLayerPosition () As Integer
cs	int setLayerPosition (int x , int y , int scrollTime)
java	int setLayerPosition (int x , int y , int scrollTime)
py	def setLayerPosition (x , y , scrollTime)
cmd	YDisplay target [-layer layerId] setLayerPosition x y scrollTime

Parameters :

Returns :

On failure, throws an exception or returns a negative error code.

displaylayer→unhide()`displaylayer.unhide()`**YDisplayLayer**

Shows the layer.

js	function unhide ()
nodejs	function unhide ()
php	function unhide ()
cpp	int unhide ()
m	-(int) unhide
pas	function unhide (): LongInt
vb	function unhide () As Integer
cs	int unhide ()
java	int unhide ()
py	def unhide ()
cmd	YDisplay target [-layer layerId] unhide

Shows the layer again after a hide command.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

3.15. External power supply control interface

Yoctopuce application programming interface allows you to control the power source to use for module functions that require high current. The module can also automatically disconnect the external power when a voltage drop is observed on the external power source (external battery running out of power).

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_dualpower.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YDualPower = yoctolib.YDualPower;
php	require_once('yocto_dualpower.php');
c++	#include "yocto_dualpower.h"
m	#import "yocto_dualpower.h"
pas	uses yocto_dualpower;
vb	yocto_dualpower.vb
cs	yocto_dualpower.cs
java	import com.yoctopuce.YoctoAPI.YDualPower;
py	from yocto_dualpower import *

Global functions

yFindDualPower(func)

Retrieves a dual power control for a given identifier.

yFirstDualPower()

Starts the enumeration of dual power controls currently accessible.

YDualPower methods

dualpower→describe()

Returns a short text that describes unambiguously the instance of the power control in the form TYPE (NAME) = SERIAL . FUNCTIONID.

dualpower→get_advertisedValue()

Returns the current value of the power control (no more than 6 characters).

dualpower→get_errorMessage()

Returns the error message of the latest error with the power control.

dualpower→get_errorType()

Returns the numerical error code of the latest error with the power control.

dualpower→get_extVoltage()

Returns the measured voltage on the external power source, in millivolts.

dualpower→get_friendlyName()

Returns a global identifier of the power control in the format MODULE_NAME . FUNCTION_NAME.

dualpower→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

dualpower→get_functionId()

Returns the hardware identifier of the power control, without reference to the module.

dualpower→get_hardwareId()

Returns the unique hardware identifier of the power control in the form SERIAL . FUNCTIONID.

dualpower→get_logicalName()

Returns the logical name of the power control.

dualpower→get_module()

Gets the `YModule` object for the device on which the function is located.

`dualpower→get_module_async(callback, context)`

Gets the `YModule` object for the device on which the function is located (asynchronous version).

`dualpower→get_powerControl()`

Returns the selected power source for module functions that require lots of current.

`dualpower→get_powerState()`

Returns the current power source for module functions that require lots of current.

`dualpower→get_userData()`

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

`dualpower→isOnline()`

Checks if the power control is currently reachable, without raising any error.

`dualpower→isOnline_async(callback, context)`

Checks if the power control is currently reachable, without raising any error (asynchronous version).

`dualpower→load(msValidity)`

Preloads the power control cache with a specified validity duration.

`dualpower→load_async(msValidity, callback, context)`

Preloads the power control cache with a specified validity duration (asynchronous version).

`dualpower→nextDualPower()`

Continues the enumeration of dual power controls started using `yFirstDualPower()`.

`dualpower→registerValueCallback(callback)`

Registers the callback function that is invoked on every change of advertised value.

`dualpower→set_logicalName(newval)`

Changes the logical name of the power control.

`dualpower→set_powerControl(newval)`

Changes the selected power source for module functions that require lots of current.

`dualpower→set_userData(data)`

Stores a user context provided as argument in the `userData` attribute of the function.

`dualpower→wait_async(callback, context)`

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YDualPower.FindDualPower()**YDualPower****yFindDualPower()**`YDualPower.FindDualPower()`

Retrieves a dual power control for a given identifier.

<code>js</code>	<code>function yFindDualPower(func)</code>
<code>nodejs</code>	<code>function FindDualPower(func)</code>
<code>php</code>	<code>function yFindDualPower(\$func)</code>
<code>cpp</code>	<code>YDualPower* yFindDualPower(const string& func)</code>
<code>m</code>	<code>YDualPower* yFindDualPower(NSString* func)</code>
<code>pas</code>	<code>function yFindDualPower(func: string): TYDualPower</code>
<code>vb</code>	<code>function yFindDualPower(ByVal func As String) As YDualPower</code>
<code>cs</code>	<code>YDualPower FindDualPower(string func)</code>
<code>java</code>	<code>YDualPower FindDualPower(String func)</code>
<code>py</code>	<code>def FindDualPower(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the power control is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YDualPower.isOnline()` to test if the power control is indeed online at a given time. In case of ambiguity when looking for a dual power control by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the power control

Returns :

a `YDualPower` object allowing you to drive the power control.

YDualPower.FirstDualPower()**YDualPower****yFirstDualPower()**`YDualPower.FirstDualPower()`

Starts the enumeration of dual power controls currently accessible.

js	function yFirstDualPower ()
nodejs	function FirstDualPower ()
php	function yFirstDualPower ()
cpp	YDualPower* yFirstDualPower ()
m	YDualPower* yFirstDualPower ()
pas	function yFirstDualPower (): TYDualPower
vb	function yFirstDualPower () As YDualPower
cs	YDualPower FirstDualPower ()
java	YDualPower FirstDualPower ()
py	def FirstDualPower ()

Use the method `YDualPower.nextDualPower()` to iterate on next dual power controls.

Returns :

a pointer to a `YDualPower` object, corresponding to the first dual power control currently online, or a `null` pointer if there are none.

dualpower→describe()`dualpower.describe()`**YDualPower**

Returns a short text that describes unambiguously the instance of the power control in the form
`TYPE (NAME) = SERIAL . FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, `TYPE` is the type of the function, `NAME` it the name used for the first access to the function, `SERIAL` is the serial number of the module if the module is connected or "unresolved", and `FUNCTIONID` is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the power control (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

dualpower→**get_advertisedValue()****YDualPower****dualpower**→**advertisedValue()****dualpower.get_advertisedValue()**

Returns the current value of the power control (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YDualPower target get_advertisedValue

Returns :

a string corresponding to the current value of the power control (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

dualpower→get_errorMessage()**YDualPower****dualpower→errorMessage()****dualpower.get_errorMessage()**

Returns the error message of the latest error with the power control.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the power control object

dualpower→**get_errorType()****YDualPower****dualpower**→**errorType()****dualpower.get_errorType()**

Returns the numerical error code of the latest error with the power control.

<code>js</code>	<code>function get_errorType()</code>
<code>nodejs</code>	<code>function get_errorType()</code>
<code>php</code>	<code>function get_errorType()</code>
<code>cpp</code>	<code>YRETCODE get_errorType()</code>
<code>pas</code>	<code>function get_errorType(): YRETCODE</code>
<code>vb</code>	<code>function get_errorType() As YRETCODE</code>
<code>cs</code>	<code>YRETCODE get_errorType()</code>
<code>java</code>	<code>int get_errorType()</code>
<code>py</code>	<code>def get_errorType()</code>

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the power control object

dualpower→get_extVoltage()**YDualPower****dualpower→extVoltage()****dualpower.get_extVoltage()**

Returns the measured voltage on the external power source, in millivolts.

js	function get_extVoltage ()
nodejs	function get_extVoltage ()
php	function get_extVoltage ()
cpp	int get_extVoltage ()
m	-(int) extVoltage
pas	function get_extVoltage (): LongInt
vb	function get_extVoltage () As Integer
cs	int get_extVoltage ()
java	int get_extVoltage ()
py	def get_extVoltage ()
cmd	YDualPower target get_extVoltage

Returns :

an integer corresponding to the measured voltage on the external power source, in millivolts

On failure, throws an exception or returns Y_EXTVOLTAGE_INVALID.

dualpower→get_friendlyName()**YDualPower****dualpower→friendlyName()****dualpower.get_friendlyName()**

Returns a global identifier of the power control in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the power control if they are defined, otherwise the serial number of the module and the hardware identifier of the power control (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the power control using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

dualpower→get_functionDescriptor()**YDualPower****dualpower→functionDescriptor()****dualpower.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

dualpower→**get_functionId()****dualpower**→**functionId()****dualpower.get_functionId()**

Returns the hardware identifier of the power control, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the power control (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

dualpower→**get_hardwareId()****YDualPower****dualpower**→**hardwareId()****dualpower**.**get_hardwareId()**

Returns the unique hardware identifier of the power control in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the power control. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the power control (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

dualpower→**get_logicalName()****YDualPower****dualpower**→**logicalName()****dualpower.get_logicalName()**

Returns the logical name of the power control.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YDualPower target get_logicalName

Returns :

a string corresponding to the logical name of the power control. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

dualpower→get_module()**YDualPower****dualpower→module()**`dualpower.get_module()`

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

dualpower→get_module_async()
dualpower→module_async()

YDualPower

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

dualpower→get_powerControl()**YDualPower****dualpower→powerControl()****dualpower.get_powerControl()**

Returns the selected power source for module functions that require lots of current.

js	function get_powerControl ()
nodejs	function get_powerControl ()
php	function get_powerControl ()
cpp	Y_POWERCONTROL_enum get_powerControl ()
m	-(Y_POWERCONTROL_enum) powerControl
pas	function get_powerControl (): Integer
vb	function get_powerControl () As Integer
cs	int get_powerControl ()
java	int get_powerControl ()
py	def get_powerControl ()
cmd	YDualPower target get_powerControl

Returns :

a value among Y_POWERCONTROL_AUTO, Y_POWERCONTROL_FROM_USB, Y_POWERCONTROL_FROM_EXT and Y_POWERCONTROL_OFF corresponding to the selected power source for module functions that require lots of current

On failure, throws an exception or returns Y_POWERCONTROL_INVALID.

dualpower→get_powerState()**YDualPower****dualpower→powerState()****dualpower.get_powerState()**

Returns the current power source for module functions that require lots of current.

js	function get_powerState ()
nodejs	function get_powerState ()
php	function get_powerState ()
cpp	Y_POWERSTATE_enum get_powerState ()
m	-(Y_POWERSTATE_enum) powerState
pas	function get_powerState (): Integer
vb	function get_powerState () As Integer
cs	int get_powerState ()
java	int get_powerState ()
py	def get_powerState ()
cmd	YDualPower target get_powerState

Returns :

a value among Y_POWERSTATE_OFF, Y_POWERSTATE_FROM_USB and Y_POWERSTATE_FROM_EXT corresponding to the current power source for module functions that require lots of current

On failure, throws an exception or returns Y_POWERSTATE_INVALID.

dualpower→**get_userData()****YDualPower****dualpower**→**userData()****dualpower.get_userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

dualpower→**isOnline()****dualpower.isOnline()****YDualPower**

Checks if the power control is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the power control in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the power control.

Returns :

`true` if the power control can be reached, and `false` otherwise

dualpower→isOnline_async()**YDualPower**

Checks if the power control is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the power control in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

dualpower→load()`dualpower.load()`**YDualPower**

Preloads the power control cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

dualpower→load_async()**YDualPower**

Preloads the power control cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

dualpower→nextDualPower()**YDualPower****dualpower.nextDualPower()**

Continues the enumeration of dual power controls started using `yFirstDualPower()`.

js	function nextDualPower ()
nodejs	function nextDualPower ()
php	function nextDualPower ()
cpp	YDualPower * nextDualPower ()
m	-(YDualPower*) nextDualPower
pas	function nextDualPower (): TYDualPower
vb	function nextDualPower () As YDualPower
cs	YDualPower nextDualPower ()
java	YDualPower nextDualPower ()
py	def nextDualPower ()

Returns :

a pointer to a `YDualPower` object, corresponding to a dual power control currently online, or a `null` pointer if there are no more dual power controls to enumerate.

dualpower→registerValueCallback()**YDualPower****dualpower.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YDualPowerValueCallback callback)
m	-(int) registerValueCallback : (YDualPowerValueCallback) callback
pas	function registerValueCallback (callback : TYDualPowerValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

dualpower→**set_logicalName()****YDualPower****dualpower**→**setLogicalName()****dualpower.set_logicalName()**

Changes the logical name of the power control.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YDualPower target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the power control.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

dualpower→set_powerControl()**YDualPower****dualpower→setPowerControl()****dualpower.set_powerControl()**

Changes the selected power source for module functions that require lots of current.

js	function set_powerControl (newval)
nodejs	function set_powerControl (newval)
php	function set_powerControl (\$newval)
cpp	int set_powerControl (Y_POWERCONTROL_enum newval)
m	-(int) setPowerControl : (Y_POWERCONTROL_enum) newval
pas	function set_powerControl (newval : Integer): integer
vb	function set_powerControl (ByVal newval As Integer) As Integer
cs	int set_powerControl (int newval)
java	int set_powerControl (int newval)
py	def set_powerControl (newval)
cmd	YDualPower target set_powerControl newval

Parameters :

newval a value among Y_POWERCONTROL_AUTO, Y_POWERCONTROL_FROM_USB, Y_POWERCONTROL_FROM_EXT and Y_POWERCONTROL_OFF corresponding to the selected power source for module functions that require lots of current

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

dualpower→**set_userdata()****dualpower**→**setUserData()****dualpower.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : TObject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

dualpower→wait_async()**YDualPower**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.16. Files function interface

The filesystem interface makes it possible to store files on some devices, for instance to design a custom web UI (for networked devices) or to add fonts (on display devices).

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_files.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YFiles = yoctolib.YFiles;
php	require_once('yocto_files.php');
c++	#include "yocto_files.h"
m	#import "yocto_files.h"
pas	uses yocto_files;
vb	yocto_files.vb
cs	yocto_files.cs
java	import com.yoctopuce.YoctoAPI.YFiles;
py	from yocto_files import *

Global functions

yFindFiles(func)

Retrieves a filesystem for a given identifier.

yFirstFiles()

Starts the enumeration of filesystems currently accessible.

YFiles methods

files→describe()

Returns a short text that describes unambiguously the instance of the filesystem in the form TYPE (NAME) = SERIAL . FUNCTIONID.

files→download(pathname)

Downloads the requested file and returns a binary buffer with its content.

files→download_async(pathname, callback, context)

Downloads the requested file and returns a binary buffer with its content.

files→format_fs()

Reinitializes the filesystem to its clean, unfragmented, empty state.

files→get_advertisedValue()

Returns the current value of the filesystem (no more than 6 characters).

files→get_errorMessage()

Returns the error message of the latest error with the filesystem.

files→get_errorType()

Returns the numerical error code of the latest error with the filesystem.

files→get_filesCount()

Returns the number of files currently loaded in the filesystem.

files→get_freeSpace()

Returns the free space for uploading new files to the filesystem, in bytes.

files→get_friendlyName()

Returns a global identifier of the filesystem in the format MODULE_NAME . FUNCTION_NAME.

files→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

files→get_functionId()

Returns the hardware identifier of the filesystem, without reference to the module.

files→get_hardwareId()

Returns the unique hardware identifier of the filesystem in the form `SERIAL.FUNCTIONID`.

files→get_list(pattern)

Returns a list of `YFileRecord` objects that describe files currently loaded in the filesystem.

files→get_logicalName()

Returns the logical name of the filesystem.

files→get_module()

Gets the `YModule` object for the device on which the function is located.

files→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

files→get_userData()

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

files→isOnline()

Checks if the filesystem is currently reachable, without raising any error.

files→isOnline_async(callback, context)

Checks if the filesystem is currently reachable, without raising any error (asynchronous version).

files→load(msValidity)

Preloads the filesystem cache with a specified validity duration.

files→load_async(msValidity, callback, context)

Preloads the filesystem cache with a specified validity duration (asynchronous version).

files→nextFiles()

Continues the enumeration of filesystems started using `yFirstFiles()`.

files→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

files→remove(pathname)

Deletes a file, given by its full path name, from the filesystem.

files→set_logicalName(newval)

Changes the logical name of the filesystem.

files→set_userData(data)

Stores a user context provided as argument in the `userData` attribute of the function.

files→upload(pathname, content)

Uploads a file to the filesystem, to the specified full path name.

files→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YFiles.FindFiles()**YFiles****yFindFiles()****YFiles.FindFiles()**

Retrieves a filesystem for a given identifier.

js	function yFindFiles (func)
nodejs	function FindFiles (func)
php	function yFindFiles (\$func)
cpp	YFiles* yFindFiles (string func)
m	+(YFiles*) yFindFiles : (NSString*) func
pas	function yFindFiles (func : string): TYFiles
vb	function yFindFiles (ByVal func As String) As YFiles
cs	YFiles FindFiles (string func)
java	YFiles FindFiles (String func)
py	def FindFiles (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the filesystem is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YFiles.isOnline()` to test if the filesystem is indeed online at a given time. In case of ambiguity when looking for a filesystem by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the filesystem

Returns :

a `YFiles` object allowing you to drive the filesystem.

YFiles.FirstFiles()**YFiles****yFirstFiles()****YFiles.FirstFiles()**

Starts the enumeration of filesystems currently accessible.

js	function yFirstFiles ()
nodejs	function FirstFiles ()
php	function yFirstFiles ()
cpp	YFiles* yFirstFiles ()
m	YFiles* yFirstFiles ()
pas	function yFirstFiles (): TYFiles
vb	function yFirstFiles () As YFiles
cs	YFiles FirstFiles ()
java	YFiles FirstFiles ()
py	def FirstFiles ()

Use the method `YFiles.nextFiles()` to iterate on next filesystems.

Returns :

a pointer to a `YFiles` object, corresponding to the first filesystem currently online, or a `null` pointer if there are none.

files→describe()`files.describe()`**YFiles**

Returns a short text that describes unambiguously the instance of the filesystem in the form
`TYPE (NAME) = SERIAL.FUNCTIONID.`

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the filesystem (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

files→**download()****YFiles**

Downloads the requested file and returns a binary buffer with its content.

js	function download (pathname)
node.js	function download (pathname)
php	function download (\$pathname)
cpp	string download (string pathname)
m	-(NSData*) download : (NSString*) pathname
pas	function download (pathname : string): TByteArray
vb	function download () As Byte
py	def download (pathname)
cmd	YFiles target download pathname

Parameters :

pathname path and name of the file to download

Returns :

a binary buffer with the file content

On failure, throws an exception or returns an empty content.

files→download_async()

YFiles

Downloads the requested file and returns a binary buffer with its content.

```
js function download_async( pathname, callback, context)
nodejs function download_async( pathname, callback, context)
```

This is the asynchronous version that uses a callback to pass the result when the download is completed.

Parameters :

- pathname** path and name of the new file to load
- callback** callback function that is invoked when the w The callback function receives three arguments: - the user-specific context object - the YFiles object whose download_async was invoked - a binary buffer with the file content
- context** user-specific object that is passed as-is to the callback function

Returns :

nothing.

files→**format_fs()****files.format_fs()****YFiles**

Reinitializes the filesystem to its clean, unfragmented, empty state.

js	function format_fs ()
nodejs	function format_fs ()
php	function format_fs ()
cpp	int format_fs ()
m	-(int) format_fs
pas	function format_fs (): LongInt
vb	function format_fs () As Integer
cs	int format_fs ()
java	int format_fs ()
py	def format_fs ()
cmd	YFiles target format_fs

All files previously uploaded are permanently lost.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

files→**get_advertisedValue()****files**→**advertisedValue()****files.get_advertisedValue()**

Returns the current value of the filesystem (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YFiles target get_advertisedValue

Returns :

a string corresponding to the current value of the filesystem (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

files→**get_errorMessage()****YFiles****files**→**errorMessage()****files.errorMessage()**

Returns the error message of the latest error with the filesystem.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the filesystem object

files→**get_errorType()****files**→**errorType()****files.get_errorType()**

Returns the numerical error code of the latest error with the filesystem.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the filesystem object

files→**get_filesCount()****YFiles****files**→**filesCount()****files.get_filesCount()**

Returns the number of files currently loaded in the filesystem.

js	function get_filesCount ()
nodejs	function get_filesCount ()
php	function get_filesCount ()
cpp	int get_filesCount ()
m	-(int) filesCount
pas	function get_filesCount (): LongInt
vb	function get_filesCount () As Integer
cs	int get_filesCount ()
java	int get_filesCount ()
py	def get_filesCount ()
cmd	YFiles target get_filesCount

Returns :

an integer corresponding to the number of files currently loaded in the filesystem

On failure, throws an exception or returns Y_FILESCOUNT_INVALID.

files→**get_freeSpace()****files**→**freeSpace()****files.get_freeSpace()**

Returns the free space for uploading new files to the filesystem, in bytes.

js	function get_freeSpace ()
nodejs	function get_freeSpace ()
php	function get_freeSpace ()
cpp	int get_freeSpace ()
m	-(int) freeSpace
pas	function get_freeSpace (): LongInt
vb	function get_freeSpace () As Integer
cs	int get_freeSpace ()
java	int get_freeSpace ()
py	def get_freeSpace ()
cmd	YFiles target get_freeSpace

Returns :

an integer corresponding to the free space for uploading new files to the filesystem, in bytes

On failure, throws an exception or returns Y_FREESPACE_INVALID.

files→**get_friendlyName()****YFiles****files**→**friendlyName()****files.get_friendlyName()**

Returns a global identifier of the filesystem in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the filesystem if they are defined, otherwise the serial number of the module and the hardware identifier of the filesystem (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the filesystem using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

files→**get_functionDescriptor()****files**→**functionDescriptor()****files.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

files→**get_functionId()****YFiles****files**→**functionId()****files.get_functionId()**

Returns the hardware identifier of the filesystem, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the filesystem (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

files→**get_hardwareId()****files**→**hardwareId()****files.get_hardwareId()**

Returns the unique hardware identifier of the filesystem in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
c++	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the filesystem. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the filesystem (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

files→**get_list()****YFiles****files**→**list()****files.get_list()**

Returns a list of YFileRecord objects that describe files currently loaded in the filesystem.

js	function get_list (pattern)
nodejs	function get_list (pattern)
php	function get_list (\$pattern)
cpp	vector<YFileRecord> get_list (string pattern)
m	-(NSMutableArray*) list : (NSString*) pattern
pas	function get_list (pattern : string): TYFileRecordArray
vb	function get_list () As List
cs	List<YFileRecord> get_list (string pattern)
java	ArrayList<YFileRecord> get_list (String pattern)
py	def get_list (pattern)
cmd	YFiles target get_list pattern

Parameters :

pattern an optional filter pattern, using star and question marks as wildcards. When an empty pattern is provided, all file records are returned.

Returns :

a list of YFileRecord objects, containing the file path and name, byte size and 32-bit CRC of the file content.

On failure, throws an exception or returns an empty list.

files→**get_logicalName()****files**→**logicalName()****files.get_logicalName()**

Returns the logical name of the filesystem.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YFiles target get_logicalName

Returns :

a string corresponding to the logical name of the filesystem. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

files→**get_module()****YFiles****files**→**module()****files.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

files→get_module_async()**files→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

files→**get_userData()****YFiles****files**→**userData()****files.get_userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

files→**isOnline()****files.isOnline()****YFiles**

Checks if the filesystem is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the filesystem in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the filesystem.

Returns :

`true` if the filesystem can be reached, and `false` otherwise

files→isOnline_async()**YFiles**

Checks if the filesystem is currently reachable, without raising any error (asynchronous version).

js	function isOnline_async (callback , context)
nodejs	function isOnline_async (callback , context)

If there is a cached value for the filesystem in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

Preloads the filesystem cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

files→load_async()**YFiles**

Preloads the filesystem cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

files→**nextFiles()****files.nextFiles()****YFiles**

Continues the enumeration of filesystems started using `yFirstFiles()`.

js	function nextFiles ()
nodejs	function nextFiles ()
php	function nextFiles ()
cpp	YFiles * nextFiles ()
m	-(YFiles*) nextFiles
pas	function nextFiles (): TYFiles
vb	function nextFiles () As YFiles
cs	YFiles nextFiles ()
java	YFiles nextFiles ()
py	def nextFiles ()

Returns :

a pointer to a `YFiles` object, corresponding to a filesystem currently online, or a `null` pointer if there are no more filesystems to enumerate.

files→registerValueCallback()**YFiles****files.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YFilesValueCallback callback)
m	-(int) registerValueCallback : (YFilesValueCallback) callback
pas	function registerValueCallback (callback : TYFilesValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

files→remove()`files.remove()`**YFiles**

Deletes a file, given by its full path name, from the filesystem.

js	function remove (pathname)
nodejs	function remove (pathname)
php	function remove (\$pathname)
c++	int remove (string pathname)
m	-(int) remove : (NSString*) pathname
pas	function remove (pathname : string): LongInt
vb	function remove () As Integer
cs	int remove (string pathname)
java	int remove (String pathname)
py	def remove (pathname)
cmd	YFiles target remove pathname

Because of filesystem fragmentation, deleting a file may not always free up the whole space used by the file. However, rewriting a file with the same path name will always reuse any space not freed previously. If you need to ensure that no space is taken by previously deleted files, you can use `format_fs` to fully reinitialize the filesystem.

Parameters :

pathname path and name of the file to remove.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

files→**set_logicalName()****YFiles****files**→**setLogicalName()****files.set_logicalName()**

Changes the logical name of the filesystem.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YFiles target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the filesystem.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

files→**set_userData()****files**→**setUserData()****files.set_userData()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userData (data)
nodejs	function set_userData (data)
php	function set_userData (\$data)
cpp	void set_userData (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userData (data : Tobject)
vb	procedure set_userData (ByVal data As Object)
cs	void set_userData (object data)
java	void set_userData (Object data)
py	def set_userData (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

files→**upload()****files.upload()****YFiles**

Uploads a file to the filesystem, to the specified full path name.

js	function upload (pathname , content)
nodejs	function upload (pathname , content)
php	function upload (\$pathname , \$content)
cpp	int upload (string pathname , string content)
m	-(int) upload : (NSString*) pathname : (NSData*) content
pas	function upload (pathname : string, content : TByteArray): LongInt
vb	procedure upload ()
cs	int upload (string pathname)
java	int upload (String pathname)
py	def upload (pathname , content)
cmd	YFiles target upload pathname content

If a file already exists with the same path name, its content is overwritten.

Parameters :

- pathname** path and name of the new file to create
- content** binary buffer with the content to set

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

files→wait_async()**YFiles**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.17. GenericSensor function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_genericsensor.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YGenericSensor = yoctolib.YGenericSensor;
php	require_once('yocto_genericsensor.php');
c++	#include "yocto_genericsensor.h"
m	#import "yocto_genericsensor.h"
pas	uses yocto_genericsensor;
vb	yocto_genericsensor.vb
cs	yocto_genericsensor.cs
java	import com.yoctopuce.YoctoAPI.YGenericSensor;
py	from yocto_genericsensor import *

Global functions

yFindGenericSensor(func)

Retrieves a generic sensor for a given identifier.

yFirstGenericSensor()

Starts the enumeration of generic sensors currently accessible.

YGenericSensor methods

genericsensor→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

genericsensor→describe()

Returns a short text that describes unambiguously the instance of the generic sensor in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

genericsensor→get_advertisedValue()

Returns the current value of the generic sensor (no more than 6 characters).

genericsensor→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

genericsensor→get_currentValue()

Returns the current measured value.

genericsensor→get_errorMessage()

Returns the error message of the latest error with the generic sensor.

genericsensor→get_errorType()

Returns the numerical error code of the latest error with the generic sensor.

genericsensor→get_friendlyName()

Returns a global identifier of the generic sensor in the format `MODULE_NAME . FUNCTION_NAME`.

genericsensor→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

genericsensor→get_functionId()

Returns the hardware identifier of the generic sensor, without reference to the module.

genericsensor→get_hardwareId()

Returns the unique hardware identifier of the generic sensor in the form `SERIAL . FUNCTIONID`.

genericsensor→get_highestValue()

Returns the maximal value observed for the measure since the device was started.

genericsensor→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

genericsensor→get_logicalName()

Returns the logical name of the generic sensor.

genericsensor→get_lowestValue()

Returns the minimal value observed for the measure since the device was started.

genericsensor→get_module()

Gets the YModule object for the device on which the function is located.

genericsensor→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

genericsensor→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

genericsensor→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

genericsensor→get_resolution()

Returns the resolution of the measured values.

genericsensor→get_signalRange()

Returns the electric signal range used by the sensor.

genericsensor→get_signalUnit()

Returns the measuring unit of the electrical signal used by the sensor.

genericsensor→get_signalValue()

Returns the measured value of the electrical signal used by the sensor.

genericsensor→get_unit()

Returns the measuring unit for the measure.

genericsensor→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

genericsensor→get_valueRange()

Returns the physical value range measured by the sensor.

genericsensor→isOnline()

Checks if the generic sensor is currently reachable, without raising any error.

genericsensor→isOnline_async(callback, context)

Checks if the generic sensor is currently reachable, without raising any error (asynchronous version).

genericsensor→load(msValidity)

Preloads the generic sensor cache with a specified validity duration.

genericsensor→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

genericsensor→load_async(msValidity, callback, context)

Preloads the generic sensor cache with a specified validity duration (asynchronous version).

genericsensor→nextGenericSensor()

Continues the enumeration of generic sensors started using yFirstGenericSensor().

genericsensor→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

genericsensor→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

genericsensor→set_highestValue(newval)

Changes the recorded maximal value observed.

genericsensor→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

genericsensor→set_logicalName(newval)

Changes the logical name of the generic sensor.

genericsensor→set_lowestValue(newval)

Changes the recorded minimal value observed.

genericsensor→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

genericsensor→set_resolution(newval)

Changes the resolution of the measured physical values.

genericsensor→set_signalRange(newval)

Changes the electric signal range used by the sensor.

genericsensor→set_unit(newval)

Changes the measuring unit for the measured value.

genericsensor→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

genericsensor→set_valueRange(newval)

Changes the physical value range measured by the sensor.

genericsensor→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YGenericSensor.FindGenericSensor()**YGenericSensor****yFindGenericSensor()****YGenericSensor.FindGenericSensor()**

Retrieves a generic sensor for a given identifier.

<code>js</code>	<code>function yFindGenericSensor(func)</code>
<code>nodejs</code>	<code>function FindGenericSensor(func)</code>
<code>php</code>	<code>function yFindGenericSensor(\$func)</code>
<code>cpp</code>	<code>YGenericSensor* yFindGenericSensor(const string& func)</code>
<code>m</code>	<code>YGenericSensor* yFindGenericSensor(NSString* func)</code>
<code>pas</code>	<code>function yFindGenericSensor(func: string): TGenericSensor</code>
<code>vb</code>	<code>function yFindGenericSensor(ByVal func As String) As YGenericSensor</code>
<code>cs</code>	<code>YGenericSensor FindGenericSensor(string func)</code>
<code>java</code>	<code>YGenericSensor FindGenericSensor(String func)</code>
<code>py</code>	<code>def FindGenericSensor(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the generic sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YGenericSensor.isOnline()` to test if the generic sensor is indeed online at a given time. In case of ambiguity when looking for a generic sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the generic sensor

Returns :

a `YGenericSensor` object allowing you to drive the generic sensor.

YGenericSensor.FirstGenericSensor()**YGenericSensor****yFirstGenericSensor()****YGenericSensor.FirstGenericSensor()**

Starts the enumeration of generic sensors currently accessible.

js	function yFirstGenericSensor ()
nodejs	function FirstGenericSensor ()
php	function yFirstGenericSensor ()
cpp	YGenericSensor* yFirstGenericSensor ()
m	YGenericSensor* yFirstGenericSensor ()
pas	function yFirstGenericSensor (): TYGenericSensor
vb	function yFirstGenericSensor () As YGenericSensor
cs	YGenericSensor FirstGenericSensor ()
java	YGenericSensor FirstGenericSensor ()
py	def FirstGenericSensor ()

Use the method `YGenericSensor.nextGenericSensor()` to iterate on next generic sensors.

Returns :

a pointer to a `YGenericSensor` object, corresponding to the first generic sensor currently online, or a null pointer if there are none.

genericsensor→calibrateFromPoints()**YGenericSensor****genericsensor.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php function calibrateFromPoints( $rawValues, $refValues)
cpp int calibrateFromPoints( vector<double> rawValues,
                             vector<double> refValues)

m -(int) calibrateFromPoints : (NSMutableArray*) rawValues
   : (NSMutableArray*) refValues

pas function calibrateFromPoints( rawValues: TDoubleArray,
                                 refValues: TDoubleArray): LongInt

vb procedure calibrateFromPoints( )
cs int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                             ArrayList<Double> refValues)

py def calibrateFromPoints( rawValues, refValues)
cmd YGenericSensor target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→describe()**YGenericSensor****genericsensor.describe()**

Returns a short text that describes unambiguously the instance of the generic sensor in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the generic sensor (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

genericsensor→**get_advertisedValue()****YGenericSensor****genericsensor**→**advertisedValue()****genericsensor.get_advertisedValue()**

Returns the current value of the generic sensor (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YGenericSensor target get_advertisedValue

Returns :

a string corresponding to the current value of the generic sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

genericsensor→get_currentRawValue()**YGenericSensor****genericsensor→currentRawValue()****genericsensor.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue ()
nodejs	function get_currentRawValue ()
php	function get_currentRawValue ()
cpp	double get_currentRawValue ()
m	-(double) currentRawValue
pas	function get_currentRawValue (): double
vb	function get_currentRawValue () As Double
cs	double get_currentRawValue ()
java	double get_currentRawValue ()
py	def get_currentRawValue ()
cmd	YGenericSensor target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

genericsensor→**get_currentValue()**
genericsensor→**currentValue()**
genericsensor.get_currentValue()

YGenericSensor

Returns the current measured value.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YGenericSensor target get_currentValue

Returns :

a floating point number corresponding to the current measured value

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

genericsensor→get_errorMessage()**YGenericSensor****genericsensor→errorMessage()****genericsensor.get_errorMessage()**

Returns the error message of the latest error with the generic sensor.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the generic sensor object

genericsensor→**get_errorType()****YGenericSensor****genericsensor**→**errorType()****genericsensor.get_errorType()**

Returns the numerical error code of the latest error with the generic sensor.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the generic sensor object

genericsensor→get_friendlyName()**YGenericSensor****genericsensor→friendlyName()****genericsensor.get_friendlyName()**

Returns a global identifier of the generic sensor in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the generic sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the generic sensor (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the generic sensor using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

genericsensor→**get_functionDescriptor()****YGenericSensor****genericsensor**→**functionDescriptor()****genericsensor.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

genericsensor→get_functionId()**YGenericSensor****genericsensor→functionId()****genericsensor.get_functionId()**

Returns the hardware identifier of the generic sensor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the generic sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

genericsensor→**get_hardwareId()**
genericsensor→**hardwareId()**
genericsensor.get_hardwareId()

YGenericSensor

Returns the unique hardware identifier of the generic sensor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the generic sensor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the generic sensor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

genericsensor→get_highestValue()**YGenericSensor****genericsensor→highestValue()****genericsensor.get_highestValue()**

Returns the maximal value observed for the measure since the device was started.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YGenericSensor target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the measure since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

genericsensor→get_logFrequency()**YGenericSensor****genericsensor→logFrequency()****genericsensor.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency ()
nodejs	function get_logFrequency ()
php	function get_logFrequency ()
cpp	string get_logFrequency ()
m	-(NSString*) logFrequency
pas	function get_logFrequency (): string
vb	function get_logFrequency () As String
cs	string get_logFrequency ()
java	String get_logFrequency ()
py	def get_logFrequency ()
cmd	YGenericSensor target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

genericsensor→get_logicalName()**YGenericSensor****genericsensor→logicalName()****genericsensor.get_logicalName()**

Returns the logical name of the generic sensor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YGenericSensor target get_logicalName

Returns :

a string corresponding to the logical name of the generic sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

genericsensor→**get_lowestValue()****YGenericSensor****genericsensor**→**lowestValue()****genericsensor.get_lowestValue()**

Returns the minimal value observed for the measure since the device was started.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YGenericSensor target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the measure since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

genericsensor→get_module()**YGenericSensor****genericsensor→module()****genericsensor.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

genericsensor→get_module_async()
genericsensor→module_async()**YGenericSensor**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

genericsensor→get_recordedData()**YGenericSensor****genericsensor→recordedData()****genericsensor.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
cpp	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YGenericSensor target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

genericsensor→get_reportFrequency()**YGenericSensor****genericsensor→reportFrequency()****genericsensor.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YGenericSensor target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

genericsensor→get_resolution()**YGenericSensor****genericsensor→resolution()****genericsensor.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YGenericSensor target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

genericsensor→**get_signalRange()****YGenericSensor****genericsensor**→**signalRange()****genericsensor.get_signalRange()**

Returns the electric signal range used by the sensor.

js	function get_signalRange ()
nodejs	function get_signalRange ()
php	function get_signalRange ()
cpp	string get_signalRange ()
m	-(NSString*) signalRange
pas	function get_signalRange (): string
vb	function get_signalRange () As String
cs	string get_signalRange ()
java	String get_signalRange ()
py	def get_signalRange ()
cmd	YGenericSensor target get_signalRange

Returns :

a string corresponding to the electric signal range used by the sensor

On failure, throws an exception or returns Y_SIGNALRANGE_INVALID.

genericsensor→get_signalUnit()**YGenericSensor****genericsensor→signalUnit()****genericsensor.get_signalUnit()**

Returns the measuring unit of the electrical signal used by the sensor.

js	function get_signalUnit ()
nodejs	function get_signalUnit ()
php	function get_signalUnit ()
cpp	string get_signalUnit ()
m	-(NSString*) signalUnit
pas	function get_signalUnit (): string
vb	function get_signalUnit () As String
cs	string get_signalUnit ()
java	String get_signalUnit ()
py	def get_signalUnit ()
cmd	YGenericSensor target get_signalUnit

Returns :

a string corresponding to the measuring unit of the electrical signal used by the sensor

On failure, throws an exception or returns Y_SIGNALUNIT_INVALID.

genericsensor→**get_signalValue()****YGenericSensor****genericsensor**→**signalValue()****genericsensor.get_signalValue()**

Returns the measured value of the electrical signal used by the sensor.

js	function get_signalValue ()
nodejs	function get_signalValue ()
php	function get_signalValue ()
cpp	double get_signalValue ()
m	-(double) signalValue
pas	function get_signalValue (): double
vb	function get_signalValue () As Double
cs	double get_signalValue ()
java	double get_signalValue ()
py	def get_signalValue ()
cmd	YGenericSensor target get_signalValue

Returns :

a floating point number corresponding to the measured value of the electrical signal used by the sensor

On failure, throws an exception or returns Y_SIGNALVALUE_INVALID.

genericsensor→**get_unit()****YGenericSensor****genericsensor**→**unit()**`genericsensor.get_unit()`

Returns the measuring unit for the measure.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YGenericSensor target get_unit

Returns :

a string corresponding to the measuring unit for the measure

On failure, throws an exception or returns Y_UNIT_INVALID.

genericsensor→**get_userData()****YGenericSensor****genericsensor**→**userData()****genericsensor.get_userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

genericsensor→get_valueRange()**YGenericSensor****genericsensor→valueRange()****genericsensor.get_valueRange()**

Returns the physical value range measured by the sensor.

js	function get_valueRange ()
nodejs	function get_valueRange ()
php	function get_valueRange ()
cpp	string get_valueRange ()
m	-(NSString*) valueRange
pas	function get_valueRange (): string
vb	function get_valueRange () As String
cs	string get_valueRange ()
java	String get_valueRange ()
py	def get_valueRange ()
cmd	YGenericSensor target get_valueRange

Returns :

a string corresponding to the physical value range measured by the sensor

On failure, throws an exception or returns Y_VALUERANGE_INVALID.

genericsensor→isOnline()**YGenericSensor****genericsensor.isOnline()**

Checks if the generic sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the generic sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the generic sensor.

Returns :

`true` if the generic sensor can be reached, and `false` otherwise

genericsensor→isOnline_async()**YGenericSensor**

Checks if the generic sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the generic sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

genericsensor→**load()**`genericsensor.load()`**YGenericSensor**

Preloads the generic sensor cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

genericsensor→loadCalibrationPoints()**YGenericSensor****genericsensor.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

js	<code>function loadCalibrationPoints(rawValues, refValues)</code>
nodejs	<code>function loadCalibrationPoints(rawValues, refValues)</code>
php	<code>function loadCalibrationPoints(&\$rawValues, &\$refValues)</code>
cpp	<code>int loadCalibrationPoints(vector<double>& rawValues, vector<double>& refValues)</code>
m	<code>-(int) loadCalibrationPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues</code>
pas	<code>function loadCalibrationPoints(var rawValues: TDoubleArray, var refValues: TDoubleArray): LongInt</code>
vb	<code>procedure loadCalibrationPoints()</code>
cs	<code>int loadCalibrationPoints(List<double> rawValues, List<double> refValues)</code>
java	<code>int loadCalibrationPoints(ArrayList<Double> rawValues, ArrayList<Double> refValues)</code>
py	<code>def loadCalibrationPoints(rawValues, refValues)</code>
cmd	<code>YGenericSensor target loadCalibrationPoints rawValues refValues</code>

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→load_async()**YGenericSensor**

Preloads the generic sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

genericSensor→**nextGenericSensor()****YGenericSensor****genericSensor.nextGenericSensor()**

Continues the enumeration of generic sensors started using `yFirstGenericSensor()`.

js	function nextGenericSensor ()
nodejs	function nextGenericSensor ()
php	function nextGenericSensor ()
cpp	YGenericSensor * nextGenericSensor ()
m	-(YGenericSensor*) nextGenericSensor
pas	function nextGenericSensor (): TYGenericSensor
vb	function nextGenericSensor () As YGenericSensor
cs	YGenericSensor nextGenericSensor ()
java	YGenericSensor nextGenericSensor ()
py	def nextGenericSensor ()

Returns :

a pointer to a `YGenericSensor` object, corresponding to a generic sensor currently online, or a `null` pointer if there are no more generic sensors to enumerate.

genericsensor→registerTimedReportCallback()**YGenericSensor**
**genericsensor.registerTimedReportCallback(
)**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YGenericSensorTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YGenericSensorTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYGenericSensorTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

genericsensor→registerValueCallback()**YGenericSensor****genericsensor.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YGenericSensorValueCallback callback)
m	-(int) registerValueCallback : (YGenericSensorValueCallback) callback
pas	function registerValueCallback (callback : TYGenericSensorValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

genericsensor→**set_highestValue()****YGenericSensor****genericsensor**→**setHighestValue()****genericsensor.set_highestValue()**

Changes the recorded maximal value observed.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YGenericSensor target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set_logFrequency()**YGenericSensor****genericsensor→setLogFrequency()****genericsensor.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YGenericSensor target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set_logicalName()**YGenericSensor****genericsensor→setLogicalName()****genericsensor.set_logicalName()**

Changes the logical name of the generic sensor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YGenericSensor target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the generic sensor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

genericsensor→set_lowestValue()**YGenericSensor****genericsensor→setLowestValue()****genericsensor.set_lowestValue()**

Changes the recorded minimal value observed.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YGenericSensor target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set_reportFrequency()**YGenericSensor****genericsensor→setReportFrequency()****genericsensor.set_reportFrequency()**

Changes the timed value notification frequency for this function.

js	function set_reportFrequency (newval)
nodejs	function set_reportFrequency (newval)
php	function set_reportFrequency (\$newval)
cpp	int set_reportFrequency (const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency (newval : string): integer
vb	function set_reportFrequency (ByVal newval As String) As Integer
cs	int set_reportFrequency (string newval)
java	int set_reportFrequency (String newval)
py	def set_reportFrequency (newval)
cmd	YGenericSensor target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set_resolution()**YGenericSensor****genericsensor→setResolution()****genericsensor.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YGenericSensor target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set_signalRange()**YGenericSensor****genericsensor→setSignalRange()****genericsensor.set_signalRange()**

Changes the electric signal range used by the sensor.

js	function set_signalRange (newval)
nodejs	function set_signalRange (newval)
php	function set_signalRange (\$newval)
cpp	int set_signalRange (const string& newval)
m	-(int) setSignalRange : (NSString*) newval
pas	function set_signalRange (newval : string): integer
vb	function set_signalRange (ByVal newval As String) As Integer
cs	int set_signalRange (string newval)
java	int set_signalRange (String newval)
py	def set_signalRange (newval)
cmd	YGenericSensor target set_signalRange newval

Parameters :

newval a string corresponding to the electric signal range used by the sensor

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set_unit()**YGenericSensor****genericsensor→setUnit()****genericsensor.set_unit()**

Changes the measuring unit for the measured value.

js	function set_unit (newval)
nodejs	function set_unit (newval)
php	function set_unit (\$newval)
cpp	int set_unit (const string& newval)
m	-(int) setUnit : (NSString*) newval
pas	function set_unit (newval : string): integer
vb	function set_unit (ByVal newval As String) As Integer
cs	int set_unit (string newval)
java	int set_unit (String newval)
py	def set_unit (newval)
cmd	YGenericSensor target set_unit newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the measuring unit for the measured value

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→**set_userData()****YGenericSensor****genericsensor**→**setUserData()****genericsensor.set_userData()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userData (data)
nodejs	function set_userData (data)
php	function set_userData (\$data)
cpp	void set_userData (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userData (data : Tobject)
vb	procedure set_userData (ByVal data As Object)
cs	void set_userData (object data)
java	void set_userData (Object data)
py	def set_userData (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

genericsensor→set_valueRange()**YGenericSensor****genericsensor→setValueRange()****genericsensor.set_valueRange()**

Changes the physical value range measured by the sensor.

js	function set_valueRange (newval)
nodejs	function set_valueRange (newval)
php	function set_valueRange (\$newval)
cpp	int set_valueRange (const string& newval)
m	-(int) setValueRange : (NSString*) newval
pas	function set_valueRange (newval : string): integer
vb	function set_valueRange (ByVal newval As String) As Integer
cs	int set_valueRange (string newval)
java	int set_valueRange (String newval)
py	def set_valueRange (newval)
cmd	YGenericSensor target set_valueRange newval

The range change may have a side effect on the display resolution, as it may be adapted automatically.

Parameters :

newval a string corresponding to the physical value range measured by the sensor

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→wait_async()**YGenericSensor**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.18. Gyroscope function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_gyro.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib'); var YGyro = yoctolib.YGyro;</code>
php	<code>require_once('yocto_gyro.php');</code>
c++	<code>#include "yocto_gyro.h"</code>
m	<code>#import "yocto_gyro.h"</code>
pas	<code>uses yocto_gyro;</code>
vb	<code>yocto_gyro.vb</code>
cs	<code>yocto_gyro.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YGyro;</code>
py	<code>from yocto_gyro import *</code>

Global functions

yFindGyro(func)

Retrieves a gyroscope for a given identifier.

yFirstGyro()

Starts the enumeration of gyroscopes currently accessible.

YGyro methods

gyro→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

gyro→describe()

Returns a short text that describes unambiguously the instance of the gyroscope in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

gyro→get_advertisedValue()

Returns the current value of the gyroscope (no more than 6 characters).

gyro→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

gyro→get_currentValue()

Returns the current value of the angular velocity.

gyro→get_errorMessage()

Returns the error message of the latest error with the gyroscope.

gyro→get_errorType()

Returns the numerical error code of the latest error with the gyroscope.

gyro→get_friendlyName()

Returns a global identifier of the gyroscope in the format `MODULE_NAME . FUNCTION_NAME`.

gyro→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

gyro→get_functionId()

Returns the hardware identifier of the gyroscope, without reference to the module.

gyro→get_hardwareId()

Returns the unique hardware identifier of the gyroscope in the form `SERIAL . FUNCTIONID`.

gyro→get_heading()

Returns the estimated heading angle, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

gyro→get_highestValue()

Returns the maximal value observed for the angular velocity since the device was started.

gyro→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

gyro→get_logicalName()

Returns the logical name of the gyroscope.

gyro→get_lowestValue()

Returns the minimal value observed for the angular velocity since the device was started.

gyro→get_module()

Gets the YModule object for the device on which the function is located.

gyro→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

gyro→get_pitch()

Returns the estimated pitch angle, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

gyro→get_quaternionW()

Returns the w component (real part) of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

gyro→get_quaternionX()

Returns the x component of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

gyro→get_quaternionY()

Returns the y component of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

gyro→get_quaternionZ()

Returns the z component of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

gyro→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

gyro→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

gyro→get_resolution()

Returns the resolution of the measured values.

gyro→get_roll()

Returns the estimated roll angle, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

gyro→get_unit()

Returns the measuring unit for the angular velocity.

gyro→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

gyro→get_xValue()

Returns the angular velocity around the X axis of the device, as a floating point number.

gyro→get_yValue()

Returns the angular velocity around the Y axis of the device, as a floating point number.

gyro→get_zValue()

Returns the angular velocity around the Z axis of the device, as a floating point number.

gyro→isOnline()

Checks if the gyroscope is currently reachable, without raising any error.

gyro→isOnline_async(callback, context)

Checks if the gyroscope is currently reachable, without raising any error (asynchronous version).

gyro→load(msValidity)

Preloads the gyroscope cache with a specified validity duration.

gyro→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

gyro→load_async(msValidity, callback, context)

Preloads the gyroscope cache with a specified validity duration (asynchronous version).

gyro→nextGyro()

Continues the enumeration of gyroscopes started using `yFirstGyro()`.

gyro→registerAnglesCallback(callback)

Registers a callback function that will be invoked each time that the estimated device orientation has changed.

gyro→registerQuaternionCallback(callback)

Registers a callback function that will be invoked each time that the estimated device orientation has changed.

gyro→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

gyro→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

gyro→set_highestValue(newval)

Changes the recorded maximal value observed.

gyro→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

gyro→set_logicalName(newval)

Changes the logical name of the gyroscope.

gyro→set_lowestValue(newval)

Changes the recorded minimal value observed.

gyro→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

gyro→set_resolution(newval)

Changes the resolution of the measured physical values.

gyro→set_userData(data)

Stores a user context provided as argument in the `userData` attribute of the function.

gyro→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YGyro.FindGyro()

YGyro

yFindGyro()YGyro.FindGyro()

Retrieves a gyroscope for a given identifier.

js	function yFindGyro (func)
nodejs	function FindGyro (func)
php	function yFindGyro (\$func)
cpp	YGyro* yFindGyro (string func)
m	+(YGyro*) yFindGyro : (NSString*) func
pas	function yFindGyro (func : string): TYGyro
vb	function yFindGyro (ByVal func As String) As YGyro
cs	YGyro FindGyro (string func)
java	YGyro FindGyro (String func)
py	def FindGyro (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the gyroscope is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YGyro.isOnline()` to test if the gyroscope is indeed online at a given time. In case of ambiguity when looking for a gyroscope by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the gyroscope

Returns :

a YGyro object allowing you to drive the gyroscope.

YGyro.FirstGyro()**YGyro****yFirstGyro()****YGyro.FirstGyro()**

Starts the enumeration of gyroscopes currently accessible.

<code>js</code>	<code>function yFirstGyro()</code>
<code>nodejs</code>	<code>function FirstGyro()</code>
<code>php</code>	<code>function yFirstGyro()</code>
<code>cpp</code>	<code>YGyro* yFirstGyro()</code>
<code>m</code>	<code>YGyro* yFirstGyro()</code>
<code>pas</code>	<code>function yFirstGyro(): TYGyro</code>
<code>vb</code>	<code>function yFirstGyro() As YGyro</code>
<code>cs</code>	<code>YGyro FirstGyro()</code>
<code>java</code>	<code>YGyro FirstGyro()</code>
<code>py</code>	<code>def FirstGyro()</code>

Use the method `YGyro.nextGyro()` to iterate on next gyroscopes.

Returns :

a pointer to a `YGyro` object, corresponding to the first gyro currently online, or a `null` pointer if there are none.

gyro→calibrateFromPoints()**YGyro****gyro.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

js	function calibrateFromPoints (rawValues , refValues)
nodejs	function calibrateFromPoints (rawValues , refValues)
php	function calibrateFromPoints (\$rawValues , \$refValues)
cpp	int calibrateFromPoints (vector<double> rawValues , vector<double> refValues)
m	-(int) calibrateFromPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues
pas	function calibrateFromPoints (rawValues : TDoubleArray, refValues : TDoubleArray): LongInt
vb	procedure calibrateFromPoints ()
cs	int calibrateFromPoints (List<double> rawValues , List<double> refValues)
java	int calibrateFromPoints (ArrayList<Double> rawValues , ArrayList<Double> refValues)
py	def calibrateFromPoints (rawValues , refValues)
cmd	YGyro target calibrateFromPoints rawValues refValues

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→describe()`gyro.describe()`**YGyro**

Returns a short text that describes unambiguously the instance of the gyroscope in the form `TYPE(NAME)=SERIAL.FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, `TYPE` is the type of the function, `NAME` it the name used for the first access to the function, `SERIAL` is the serial number of the module if the module is connected or "unresolved", and `FUNCTIONID` is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the gyroscope (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

gyro→**get_advertisedValue()****YGyro****gyro**→**advertisedValue()****gyro.get_advertisedValue()**

Returns the current value of the gyroscope (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YGyro target get_advertisedValue

Returns :

a string corresponding to the current value of the gyroscope (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

gyro→**get_currentRawValue()****YGyro****gyro**→**currentRawValue()****gyro.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue ()
nodejs	function get_currentRawValue ()
php	function get_currentRawValue ()
cpp	double get_currentRawValue ()
m	-(double) currentRawValue
pas	function get_currentRawValue (): double
vb	function get_currentRawValue () As Double
cs	double get_currentRawValue ()
java	double get_currentRawValue ()
py	def get_currentRawValue ()
cmd	YGyro target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

gyro→**get_currentValue()****YGyro****gyro**→**currentValue()****gyro.get_currentValue()**

Returns the current value of the angular velocity.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YGyro target get_currentValue

Returns :

a floating point number corresponding to the current value of the angular velocity

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

gyro→get_errorMessage()**YGyro****gyro→errorMessage()**`gyro.errorMessage()`

Returns the error message of the latest error with the gyroscope.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the gyroscope object

gyro→**get_errorType()****YGyro****gyro**→**errorType()****gyro.get_errorType()**

Returns the numerical error code of the latest error with the gyroscope.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the gyroscope object

gyro→get_friendlyName()**YGyro****gyro→friendlyName()**`gyro.get_friendlyName()`

Returns a global identifier of the gyroscope in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the gyroscope if they are defined, otherwise the serial number of the module and the hardware identifier of the gyroscope (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the gyroscope using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

gyro→get_functionDescriptor()**gyro→functionDescriptor()****gyro.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

gyro→**get_functionId()****YGyro****gyro**→**functionId()****gyro.get_functionId()**

Returns the hardware identifier of the gyroscope, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the gyroscope (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

gyro→**get_hardwareId()****YGyro****gyro**→**hardwareId()****gyro.get_hardwareId()**

Returns the unique hardware identifier of the gyroscope in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the gyroscope. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the gyroscope (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

gyro→**get_heading()****YGyro****gyro**→**heading()****gyro.get_heading()**

Returns the estimated heading angle, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

js	function get_heading ()
nodejs	function get_heading ()
php	function get_heading ()
cpp	double get_heading ()
m	-(double) heading
pas	function get_heading (): double
vb	function get_heading () As Double
cs	double get_heading ()
java	double get_heading ()
py	def get_heading ()

The axis corresponding to the heading can be mapped to any of the device X, Y or Z physical directions using methods of the class `YRefFrame`.

Returns :

a floating-point number corresponding to heading in degrees, between 0 and 360.

gyro→**get_highestValue()****YGyro****gyro**→**highestValue()****gyro.get_highestValue()**

Returns the maximal value observed for the angular velocity since the device was started.

js	function get_highestValue()
nodejs	function get_highestValue()
php	function get_highestValue()
cpp	double get_highestValue()
m	-(double) highestValue
pas	function get_highestValue() : double
vb	function get_highestValue() As Double
cs	double get_highestValue()
java	double get_highestValue()
py	def get_highestValue()
cmd	YGyro target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the angular velocity since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

gyro→get_logFrequency()**YGyro****gyro→logFrequency()**`gyro.get_logFrequency()`

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency ()
nodejs	function get_logFrequency ()
php	function get_logFrequency ()
cpp	string get_logFrequency ()
m	-(NSString*) logFrequency
pas	function get_logFrequency (): string
vb	function get_logFrequency () As String
cs	string get_logFrequency ()
java	String get_logFrequency ()
py	def get_logFrequency ()
cmd	YGyro target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

gyro→**get_logicalName()****YGyro****gyro**→**logicalName()**`gyro.get_logicalName()`

Returns the logical name of the gyroscope.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YGyro target get_logicalName

Returns :

a string corresponding to the logical name of the gyroscope. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

gyro→**get_lowestValue()****YGyro****gyro**→**lowestValue()****gyro.get_lowestValue()**

Returns the minimal value observed for the angular velocity since the device was started.

js	function get_lowestValue()
nodejs	function get_lowestValue()
php	function get_lowestValue()
cpp	double get_lowestValue()
m	-(double) lowestValue
pas	function get_lowestValue() : double
vb	function get_lowestValue() As Double
cs	double get_lowestValue()
java	double get_lowestValue()
py	def get_lowestValue()
cmd	YGyro target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the angular velocity since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

gyro→**get_module()****YGyro****gyro**→**module()****gyro.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

gyro→get_module_async()
gyro→module_async()**YGyro**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

gyro→get_pitch()**YGyro****gyro→pitch()**`gyro.get_pitch()`

Returns the estimated pitch angle, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

js	function get_pitch ()
nodejs	function get_pitch ()
php	function get_pitch ()
cpp	double get_pitch ()
m	-(double) pitch
pas	function get_pitch (): double
vb	function get_pitch () As Double
cs	double get_pitch ()
java	double get_pitch ()
py	def get_pitch ()

The axis corresponding to the pitch angle can be mapped to any of the device X, Y or Z physical directions using methods of the class `YRefFrame`.

Returns :

a floating-point number corresponding to pitch angle in degrees, between -90 and +90.

gyro→**get_quaternionW()****YGyro****gyro**→**quaternionW()****gyro.get_quaternionW()**

Returns the w component (real part) of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

js	function get_quaternionW ()
nodejs	function get_quaternionW ()
php	function get_quaternionW ()
cpp	double get_quaternionW ()
m	-(double) quaternionW
pas	function get_quaternionW (): double
vb	function get_quaternionW () As Double
cs	double get_quaternionW ()
java	double get_quaternionW ()
py	def get_quaternionW ()

Returns :

a floating-point number corresponding to the w component of the quaternion.

gyro→**get_quaternionX()****YGyro****gyro**→**quaternionX()****gyro.get_quaternionX()**

Returns the x component of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

js	function get_quaternionX ()
nodejs	function get_quaternionX ()
php	function get_quaternionX ()
cpp	double get_quaternionX ()
m	-(double) quaternionX
pas	function get_quaternionX (): double
vb	function get_quaternionX () As Double
cs	double get_quaternionX ()
java	double get_quaternionX ()
py	def get_quaternionX ()

The x component is mostly correlated with rotations on the roll axis.

Returns :

a floating-point number corresponding to the x component of the quaternion.

gyro→**get_quaternionY()****YGyro****gyro**→**quaternionY()****gyro.get_quaternionY()**

Returns the y component of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

js	function get_quaternionY ()
nodejs	function get_quaternionY ()
php	function get_quaternionY ()
cpp	double get_quaternionY ()
m	-(double) quaternionY
pas	function get_quaternionY (): double
vb	function get_quaternionY () As Double
cs	double get_quaternionY ()
java	double get_quaternionY ()
py	def get_quaternionY ()

The y component is mostly correlated with rotations on the pitch axis.

Returns :

a floating-point number corresponding to the y component of the quaternion.

gyro→**get_quaternionZ()****YGyro****gyro**→**quaternionZ()****gyro.get_quaternionZ()**

Returns the x component of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

js	function get_quaternionZ ()
nodejs	function get_quaternionZ ()
php	function get_quaternionZ ()
cpp	double get_quaternionZ ()
m	-(double) quaternionZ
pas	function get_quaternionZ (): double
vb	function get_quaternionZ () As Double
cs	double get_quaternionZ ()
java	double get_quaternionZ ()
py	def get_quaternionZ ()

The x component is mostly correlated with changes of heading.

Returns :

a floating-point number corresponding to the z component of the quaternion.

gyro→get_recordedData()**YGyro****gyro→recordedData()gyro.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
cpp	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YGyro target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

gyro→get_reportFrequency()**YGyro****gyro→reportFrequency()****gyro.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YGyro target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

gyro→**get_resolution()****YGyro****gyro**→**resolution()****gyro.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YGyro target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

gyro→**get_roll()****YGyro****gyro**→**roll()**`gyro.get_roll()`

Returns the estimated roll angle, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

js	function get_roll ()
nodejs	function get_roll ()
php	function get_roll ()
cpp	double get_roll ()
m	-(double) roll
pas	function get_roll (): double
vb	function get_roll () As Double
cs	double get_roll ()
java	double get_roll ()
py	def get_roll ()

The axis corresponding to the roll angle can be mapped to any of the device X, Y or Z physical directions using methods of the class `YRefFrame`.

Returns :

a floating-point number corresponding to roll angle in degrees, between -180 and +180.

gyro→**get_unit()****YGyro****gyro**→**unit()****gyro.get_unit()**

Returns the measuring unit for the angular velocity.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YGyro target get_unit

Returns :

a string corresponding to the measuring unit for the angular velocity

On failure, throws an exception or returns Y_UNIT_INVALID.

gyro→**get_userData()****gyro**→**userData()****gyro.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

gyro→get_xValue()**YGyro****gyro→xValue()**`gyro.get_xValue()`

Returns the angular velocity around the X axis of the device, as a floating point number.

js	function get_xValue ()
nodejs	function get_xValue ()
php	function get_xValue ()
cpp	double get_xValue ()
m	-(double) xValue
pas	function get_xValue (): double
vb	function get_xValue () As Double
cs	double get_xValue ()
java	double get_xValue ()
py	def get_xValue ()

Returns :

a floating point number corresponding to the angular velocity around the X axis of the device, as a floating point number

On failure, throws an exception or returns Y_XVALUE_INVALID.

gyro→**get_yValue()****YGyro****gyro**→**yValue()****gyro.yValue()**

Returns the angular velocity around the Y axis of the device, as a floating point number.

js	function get_yValue ()
nodejs	function get_yValue ()
php	function get_yValue ()
cpp	double get_yValue ()
m	-(double) yValue
pas	function get_yValue (): double
vb	function get_yValue () As Double
cs	double get_yValue ()
java	double get_yValue ()
py	def get_yValue ()

Returns :

a floating point number corresponding to the angular velocity around the Y axis of the device, as a floating point number

On failure, throws an exception or returns Y_YVALUE_INVALID.

gyro→**get_zValue()****YGyro****gyro**→**zValue()****gyro.get_zValue()**

Returns the angular velocity around the Z axis of the device, as a floating point number.

js	function get_zValue ()
nodejs	function get_zValue ()
php	function get_zValue ()
cpp	double get_zValue ()
m	-(double) zValue
pas	function get_zValue (): double
vb	function get_zValue () As Double
cs	double get_zValue ()
java	double get_zValue ()
py	def get_zValue ()

Returns :

a floating point number corresponding to the angular velocity around the Z axis of the device, as a floating point number

On failure, throws an exception or returns Y_ZVALUE_INVALID.

gyro→**isOnline()****gyro.isOnline()****YGyro**

Checks if the gyroscope is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the gyroscope in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the gyroscope.

Returns :

`true` if the gyroscope can be reached, and `false` otherwise

gyro→isOnline_async()**YGyro**

Checks if the gyroscope is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the gyroscope in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

gyro→load()`gyro.load()`**YGyro**

Preloads the gyroscope cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

gyro→loadCalibrationPoints()**YGyro****gyro.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js      function loadCalibrationPoints( rawValues, refValues)
nodejs  function loadCalibrationPoints( rawValues, refValues)
php     function loadCalibrationPoints( &$rawValues, &$refValues)
cpp     int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m       -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                                : (NSMutableArray*) refValues

pas     function loadCalibrationPoints( var rawValues: TDoubleArray,
                                var refValues: TDoubleArray): LongInt

vb      procedure loadCalibrationPoints( )
cs      int loadCalibrationPoints( List<double> rawValues,
                                List<double> refValues)

java    int loadCalibrationPoints( ArrayList<Double> rawValues,
                                ArrayList<Double> refValues)

py      def loadCalibrationPoints( rawValues, refValues)
cmd     YGyro target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→load_async()**YGyro**

Preloads the gyroscope cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

gyro→**nextGyro()****gyro.nextGyro()****YGyro**

Continues the enumeration of gyroscopes started using `yFirstGyro()`.

js	function nextGyro ()
nodejs	function nextGyro ()
php	function nextGyro ()
cpp	YGyro * nextGyro ()
m	-(YGyro*) nextGyro
pas	function nextGyro (): TYGyro
vb	function nextGyro () As YGyro
cs	YGyro nextGyro ()
java	YGyro nextGyro ()
py	def nextGyro ()

Returns :

a pointer to a `YGyro` object, corresponding to a gyroscope currently online, or a `null` pointer if there are no more gyroscopes to enumerate.

gyro→registerAnglesCallback()**YGyro****gyro.registerAnglesCallback()**

Registers a callback function that will be invoked each time that the estimated device orientation has changed.

js	function registerAnglesCallback (callback)
nodejs	function registerAnglesCallback (callback)
php	function registerAnglesCallback (\$callback)
cpp	int registerAnglesCallback (YAnglesCallback callback)
m	-(int) registerAnglesCallback : (YAnglesCallback) callback
pas	function registerAnglesCallback (callback : TYAnglesCallback): LongInt
vb	function registerAnglesCallback () As Integer
cs	int registerAnglesCallback (YAnglesCallback callback)
java	int registerAnglesCallback (YAnglesCallback callback)
py	def registerAnglesCallback (callback)

The call frequency is typically around 95Hz during a move. The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to invoke, or a null pointer. The callback function should take four arguments: the YGyro object of the turning device, and the floating point values of the three angles roll, pitch and heading in degrees (as floating-point numbers).

gyro→registerQuaternionCallback()**YGyro****gyro.registerQuaternionCallback()**

Registers a callback function that will be invoked each time that the estimated device orientation has changed.

js	function registerQuaternionCallback (callback)
nodejs	function registerQuaternionCallback (callback)
php	function registerQuaternionCallback (\$callback)
cpp	int registerQuaternionCallback (YQuatCallback callback)
m	-(int) registerQuaternionCallback : (YQuatCallback) callback
pas	function registerQuaternionCallback (callback : TYQuatCallback): LongInt
vb	function registerQuaternionCallback () As Integer
cs	int registerQuaternionCallback (YQuatCallback callback)
java	int registerQuaternionCallback (YQuatCallback callback)
py	def registerQuaternionCallback (callback)

The call frequency is typically around 95Hz during a move. The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to invoke, or a null pointer. The callback function should take five arguments: the YGyro object of the turning device, and the floating point values of the four components w, x, y and z (as floating-point numbers).

gyro→registerTimedReportCallback()**YGyro****gyro.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YGyroTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YGyroTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYGyroTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

gyro→registerValueCallback()**YGyro****gyro.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YGyroValueCallback callback)
m	-(int) registerValueCallback : (YGyroValueCallback) callback
pas	function registerValueCallback (callback : TYGyroValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

gyro→**set_highestValue()****gyro**→**setHighestValue()****gyro.set_highestValue()**

Changes the recorded maximal value observed.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YGyro target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→set_logFrequency()**YGyro****gyro→setLogFrequency()****gyro.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YGyro target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→set_logicalName()**YGyro****gyro→setLogicalName()**`gyro.set_logicalName()`

Changes the logical name of the gyroscope.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YGyro target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the gyroscope.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

gyro→**set_lowestValue()****YGyro****gyro**→**setLowestValue()****gyro.set_lowestValue()**

Changes the recorded minimal value observed.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YGyro target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→set_reportFrequency()**gyro→setReportFrequency()****gyro.set_reportFrequency()**

Changes the timed value notification frequency for this function.

<code>js</code>	<code>function set_reportFrequency(newval)</code>
<code>nodejs</code>	<code>function set_reportFrequency(newval)</code>
<code>php</code>	<code>function set_reportFrequency(\$newval)</code>
<code>cpp</code>	<code>int set_reportFrequency(const string& newval)</code>
<code>m</code>	<code>-(int) setReportFrequency : (NSString*) newval</code>
<code>pas</code>	<code>function set_reportFrequency(newval: string): integer</code>
<code>vb</code>	<code>function set_reportFrequency(ByVal newval As String) As Integer</code>
<code>cs</code>	<code>int set_reportFrequency(string newval)</code>
<code>java</code>	<code>int set_reportFrequency(String newval)</code>
<code>py</code>	<code>def set_reportFrequency(newval)</code>
<code>cmd</code>	<code>YGyro target set_reportFrequency newval</code>

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→set_resolution()**YGyro****gyro→setResolution()**`gyro.set_resolution()`

Changes the resolution of the measured physical values.

<code>js</code>	<code>function set_resolution(newval)</code>
<code>nodejs</code>	<code>function set_resolution(newval)</code>
<code>php</code>	<code>function set_resolution(\$newval)</code>
<code>cpp</code>	<code>int set_resolution(double newval)</code>
<code>m</code>	<code>-(int) setResolution : (double) newval</code>
<code>pas</code>	<code>function set_resolution(newval: double): integer</code>
<code>vb</code>	<code>function set_resolution(ByVal newval As Double) As Integer</code>
<code>cs</code>	<code>int set_resolution(double newval)</code>
<code>java</code>	<code>int set_resolution(double newval)</code>
<code>py</code>	<code>def set_resolution(newval)</code>
<code>cmd</code>	<code>YGyro target set_resolution newval</code>

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→**set_userdata()****gyro**→**setUserData()****gyro.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

gyro→wait_async()**YGyro**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.19. Yocto-hub port interface

YHubPort objects provide control over the power supply for every YoctoHub port and provide information about the device connected to it. The logical name of a YHubPort is always automatically set to the unique serial number of the Yoctopuce device connected to it.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_hubport.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YHubPort = yoctolib.YHubPort;
php	require_once('yocto_hubport.php');
c++	#include "yocto_hubport.h"
m	#import "yocto_hubport.h"
pas	uses yocto_hubport;
vb	yocto_hubport.vb
cs	yocto_hubport.cs
java	import com.yoctopuce.YoctoAPI.YHubPort;
py	from yocto_hubport import *

Global functions

yFindHubPort(func)

Retrieves a Yocto-hub port for a given identifier.

yFirstHubPort()

Starts the enumeration of Yocto-hub ports currently accessible.

YHubPort methods

hubport→describe()

Returns a short text that describes unambiguously the instance of the Yocto-hub port in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

hubport→get_advertisedValue()

Returns the current value of the Yocto-hub port (no more than 6 characters).

hubport→get_baudRate()

Returns the current baud rate used by this Yocto-hub port, in kbps.

hubport→get_enabled()

Returns true if the Yocto-hub port is powered, false otherwise.

hubport→get_errorMessage()

Returns the error message of the latest error with the Yocto-hub port.

hubport→get_errorType()

Returns the numerical error code of the latest error with the Yocto-hub port.

hubport→get_friendlyName()

Returns a global identifier of the Yocto-hub port in the format `MODULE_NAME . FUNCTION_NAME`.

hubport→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

hubport→get_functionId()

Returns the hardware identifier of the Yocto-hub port, without reference to the module.

hubport→get_hardwareId()

Returns the unique hardware identifier of the Yocto-hub port in the form `SERIAL . FUNCTIONID`.

hubport→get_logicalName()

Returns the logical name of the Yocto-hub port.

hubport→get_module()

Gets the YModule object for the device on which the function is located.

hubport→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

hubport→get_portState()

Returns the current state of the Yocto-hub port.

hubport→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

hubport→isOnline()

Checks if the Yocto-hub port is currently reachable, without raising any error.

hubport→isOnline_async(callback, context)

Checks if the Yocto-hub port is currently reachable, without raising any error (asynchronous version).

hubport→load(msValidity)

Preloads the Yocto-hub port cache with a specified validity duration.

hubport→load_async(msValidity, callback, context)

Preloads the Yocto-hub port cache with a specified validity duration (asynchronous version).

hubport→nextHubPort()

Continues the enumeration of Yocto-hub ports started using yFirstHubPort().

hubport→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

hubport→set_enabled(newval)

Changes the activation of the Yocto-hub port.

hubport→set_logicalName(newval)

Changes the logical name of the Yocto-hub port.

hubport→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

hubport→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YHubPort.FindHubPort()**YHubPort****yFindHubPort()** `YHubPort.FindHubPort()`

Retrieves a Yocto-hub port for a given identifier.

<code>js</code>	<code>function yFindHubPort(func)</code>
<code>nodejs</code>	<code>function FindHubPort(func)</code>
<code>php</code>	<code>function yFindHubPort(\$func)</code>
<code>cpp</code>	<code>YHubPort* yFindHubPort(const string& func)</code>
<code>m</code>	<code>YHubPort* yFindHubPort(NSString* func)</code>
<code>pas</code>	<code>function yFindHubPort(func: string): TYHubPort</code>
<code>vb</code>	<code>function yFindHubPort(ByVal func As String) As YHubPort</code>
<code>cs</code>	<code>YHubPort FindHubPort(string func)</code>
<code>java</code>	<code>YHubPort FindHubPort(String func)</code>
<code>py</code>	<code>def FindHubPort(func)</code>

The identifier can be specified using several formats:

- `FunctionLogicalName`
- `ModuleSerialNumber.FunctionIdentifier`
- `ModuleSerialNumber.FunctionLogicalName`
- `ModuleLogicalName.FunctionIdentifier`
- `ModuleLogicalName.FunctionLogicalName`

This function does not require that the Yocto-hub port is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YHubPort.isOnline()` to test if the Yocto-hub port is indeed online at a given time. In case of ambiguity when looking for a Yocto-hub port by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the Yocto-hub port

Returns :

a `YHubPort` object allowing you to drive the Yocto-hub port.

YHubPort.FirstHubPort()**YHubPort****yFirstHubPort()**`YHubPort.FirstHubPort()`

Starts the enumeration of Yocto-hub ports currently accessible.

<code>js</code>	<code>function yFirstHubPort()</code>
<code>nodejs</code>	<code>function FirstHubPort()</code>
<code>php</code>	<code>function yFirstHubPort()</code>
<code>cpp</code>	<code>YHubPort* yFirstHubPort()</code>
<code>m</code>	<code>YHubPort* yFirstHubPort()</code>
<code>pas</code>	<code>function yFirstHubPort(): TYHubPort</code>
<code>vb</code>	<code>function yFirstHubPort() As YHubPort</code>
<code>cs</code>	<code>YHubPort FirstHubPort()</code>
<code>java</code>	<code>YHubPort FirstHubPort()</code>
<code>py</code>	<code>def FirstHubPort()</code>

Use the method `YHubPort.nextHubPort()` to iterate on next Yocto-hub ports.

Returns :

a pointer to a `YHubPort` object, corresponding to the first Yocto-hub port currently online, or a `null` pointer if there are none.

hubport→**describe()****hubport.describe()****YHubPort**

Returns a short text that describes unambiguously the instance of the Yocto-hub port in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomeName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the Yocto-hub port (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

hubport→**get_advertisedValue()****YHubPort****hubport**→**advertisedValue()****hubport.get_advertisedValue()**

Returns the current value of the Yocto-hub port (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YHubPort target get_advertisedValue

Returns :

a string corresponding to the current value of the Yocto-hub port (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

hubport→**get_baudRate()****YHubPort****hubport**→**baudRate()**`hubport.get_baudRate()`

Returns the current baud rate used by this Yocto-hub port, in kbps.

js	function get_baudRate ()
nodejs	function get_baudRate ()
php	function get_baudRate ()
cpp	int get_baudRate ()
m	-(int) baudRate
pas	function get_baudRate (): LongInt
vb	function get_baudRate () As Integer
cs	int get_baudRate ()
java	int get_baudRate ()
py	def get_baudRate ()
cmd	YHubPort target get_baudRate

The default value is 1000 kbps, but a slower rate may be used if communication problems are encountered.

Returns :

an integer corresponding to the current baud rate used by this Yocto-hub port, in kbps

On failure, throws an exception or returns Y_BAUDRATE_INVALID.

hubport→**get_enabled()****YHubPort****hubport**→**enabled()****hubport.get_enabled()**

Returns true if the Yocto-hub port is powered, false otherwise.

js	function get_enabled()
nodejs	function get_enabled()
php	function get_enabled()
cpp	Y_ENABLED_enum get_enabled()
m	-(Y_ENABLED_enum) enabled
pas	function get_enabled() : Integer
vb	function get_enabled() As Integer
cs	int get_enabled()
java	int get_enabled()
py	def get_enabled()
cmd	YHubPort target get_enabled

Returns :

either **Y_ENABLED_FALSE** or **Y_ENABLED_TRUE**, according to true if the Yocto-hub port is powered, false otherwise

On failure, throws an exception or returns **Y_ENABLED_INVALID**.

hubport→**get_errorMessage()****YHubPort****hubport**→**errorMessage()****hubport.errorMessage()**

Returns the error message of the latest error with the Yocto-hub port.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the Yocto-hub port object

hubport→**get_errorType()****YHubPort****hubport**→**errorType()**`hubport.get_errorType()`

Returns the numerical error code of the latest error with the Yocto-hub port.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the Yocto-hub port object

hubport→**get_friendlyName()****YHubPort****hubport**→**friendlyName()****hubport.get_friendlyName()**

Returns a global identifier of the Yocto-hub port in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the Yocto-hub port if they are defined, otherwise the serial number of the module and the hardware identifier of the Yocto-hub port (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the Yocto-hub port using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

hubport→**get_functionDescriptor()****YHubPort****hubport**→**functionDescriptor()****hubport.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

hubport→**get_functionId()****YHubPort****hubport**→**functionId()****hubport.get_functionId()**

Returns the hardware identifier of the Yocto-hub port, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the Yocto-hub port (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

hubport→**get_hardwareId()****YHubPort****hubport**→**hardwareId()****hubport.get_hardwareId()**

Returns the unique hardware identifier of the Yocto-hub port in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the Yocto-hub port. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the Yocto-hub port (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

hubport→**get_logicalName()****YHubPort****hubport**→**logicalName()****hubport.get_logicalName()**

Returns the logical name of the Yocto-hub port.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YHubPort target get_logicalName

Returns :

a string corresponding to the logical name of the Yocto-hub port. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

hubport→**get_module()****YHubPort****hubport**→**module()**`hubport.get_module()`

Gets the `YModule` object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	<code>YModule *</code> get_module ()
m	<code>-(YModule*)</code> module
pas	function get_module (): <code>TYModule</code>
vb	function get_module () As <code>YModule</code>
cs	<code>YModule</code> get_module ()
java	<code>YModule</code> get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of `YModule` is not shown as on-line.

Returns :

an instance of `YModule`

hubport→**get_module_async()****YHubPort****hubport**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

hubport→**get_portState()****YHubPort****hubport**→**portState()****hubport.get_portState()**

Returns the current state of the Yocto-hub port.

js	function get_portState ()
nodejs	function get_portState ()
php	function get_portState ()
cpp	Y_PORTSTATE_enum get_portState ()
m	-(Y_PORTSTATE_enum) portState
pas	function get_portState (): Integer
vb	function get_portState () As Integer
cs	int get_portState ()
java	int get_portState ()
py	def get_portState ()
cmd	YHubPort target get_portState

Returns :

a value among Y_PORTSTATE_OFF, Y_PORTSTATE_OVRLD, Y_PORTSTATE_ON, Y_PORTSTATE_RUN and Y_PORTSTATE_PROG corresponding to the current state of the Yocto-hub port

On failure, throws an exception or returns Y_PORTSTATE_INVALID.

hubport→**get_userData()****YHubPort****hubport**→**userData()****hubport.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

hubport→**isOnline()**`hubport.isOnline()`**YHubPort**

Checks if the Yocto-hub port is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the Yocto-hub port in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the Yocto-hub port.

Returns :

`true` if the Yocto-hub port can be reached, and `false` otherwise

hubport→isOnline_async()**YHubPort**

Checks if the Yocto-hub port is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
```

```
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the Yocto-hub port in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

hubport→**load()****hubport.load()****YHubPort**

Preloads the Yocto-hub port cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

hubport→load_async()

YHubPort

Preloads the Yocto-hub port cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

hubport→**nextHubPort()**`hubport.nextHubPort()`
YHubPort

 Continues the enumeration of Yocto-hub ports started using `yFirstHubPort()`.

<code>js</code>	<code>function nextHubPort()</code>
<code>nodejs</code>	<code>function nextHubPort()</code>
<code>php</code>	<code>function nextHubPort()</code>
<code>cpp</code>	<code>YHubPort * nextHubPort()</code>
<code>m</code>	<code>-(YHubPort*) nextHubPort</code>
<code>pas</code>	<code>function nextHubPort(): TYHubPort</code>
<code>vb</code>	<code>function nextHubPort() As YHubPort</code>
<code>cs</code>	<code>YHubPort nextHubPort()</code>
<code>java</code>	<code>YHubPort nextHubPort()</code>
<code>py</code>	<code>def nextHubPort()</code>

Returns :

a pointer to a `YHubPort` object, corresponding to a Yocto-hub port currently online, or a `null` pointer if there are no more Yocto-hub ports to enumerate.

hubport→registerValueCallback()**YHubPort****hubport.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YHubPortValueCallback callback)
m	-(int) registerValueCallback : (YHubPortValueCallback) callback
pas	function registerValueCallback (callback : TYHubPortValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

hubport→**set_enabled()****YHubPort****hubport**→**setEnabled()****hubport.setEnabled()**

Changes the activation of the Yocto-hub port.

js	function set_enabled (newval)
nodejs	function set_enabled (newval)
php	function set_enabled (\$newval)
cpp	int set_enabled (Y_ENABLED_enum newval)
m	-(int) setEnabled : (Y_ENABLED_enum) newval
pas	function set_enabled (newval : Integer): integer
vb	function set_enabled (ByVal newval As Integer) As Integer
cs	int set_enabled (int newval)
java	int set_enabled (int newval)
py	def set_enabled (newval)
cmd	YHubPort target set_enabled newval

If the port is enabled, the connected module is powered. Otherwise, port power is shut down.

Parameters :

newval either Y_ENABLED_FALSE or Y_ENABLED_TRUE, according to the activation of the Yocto-hub port

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

hubport→**set_logicalName()****YHubPort****hubport**→**setLogicalName()****hubport.set_logicalName()**

Changes the logical name of the Yocto-hub port.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YHubPort target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the Yocto-hub port.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

hubport→**set_userdata()****YHubPort****hubport**→**setUserData()****hubport.set_userdata()**

Stores a user context provided as argument in the `userData` attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
c++	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

hubport→**wait_async()****YHubPort**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.20. Humidity function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_humidity.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib');</code> <code>var YHumidity = yoctolib.YHumidity;</code>
php	<code>require_once('yocto_humidity.php');</code>
c++	<code>#include "yocto_humidity.h"</code>
m	<code>#import "yocto_humidity.h"</code>
pas	<code>uses yocto_humidity;</code>
vb	<code>yocto_humidity.vb</code>
cs	<code>yocto_humidity.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YHumidity;</code>
py	<code>from yocto_humidity import *</code>

Global functions

yFindHumidity(func)

Retrieves a humidity sensor for a given identifier.

yFirstHumidity()

Starts the enumeration of humidity sensors currently accessible.

YHumidity methods

humidity→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

humidity→describe()

Returns a short text that describes unambiguously the instance of the humidity sensor in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

humidity→get_advertisedValue()

Returns the current value of the humidity sensor (no more than 6 characters).

humidity→get_currentRawValue()

Returns the unrounded and uncalibrated raw value returned by the sensor.

humidity→get_currentValue()

Returns the current measure for the humidity.

humidity→get_errorMessage()

Returns the error message of the latest error with the humidity sensor.

humidity→get_errorType()

Returns the numerical error code of the latest error with the humidity sensor.

humidity→get_friendlyName()

Returns a global identifier of the humidity sensor in the format `MODULE_NAME . FUNCTION_NAME`.

humidity→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

humidity→get_functionId()

Returns the hardware identifier of the humidity sensor, without reference to the module.

humidity→get_hardwareId()

Returns the unique hardware identifier of the humidity sensor in the form `SERIAL . FUNCTIONID`.

humidity→get_highestValue()

Returns the maximal value observed for the humidity.

humidity→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

humidity→get_logicalName()

Returns the logical name of the humidity sensor.

humidity→get_lowestValue()

Returns the minimal value observed for the humidity.

humidity→get_module()

Gets the YModule object for the device on which the function is located.

humidity→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

humidity→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

humidity→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

humidity→get_resolution()

Returns the resolution of the measured values.

humidity→get_unit()

Returns the measuring unit for the humidity.

humidity→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

humidity→isOnline()

Checks if the humidity sensor is currently reachable, without raising any error.

humidity→isOnline_async(callback, context)

Checks if the humidity sensor is currently reachable, without raising any error (asynchronous version).

humidity→load(msValidity)

Preloads the humidity sensor cache with a specified validity duration.

humidity→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

humidity→load_async(msValidity, callback, context)

Preloads the humidity sensor cache with a specified validity duration (asynchronous version).

humidity→nextHumidity()

Continues the enumeration of humidity sensors started using yFirstHumidity().

humidity→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

humidity→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

humidity→set_highestValue(newval)

Changes the recorded maximal value observed for the humidity.

humidity→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

humidity→set_logicalName(newval)

Changes the logical name of the humidity sensor.

humidity→set_lowestValue(newval)

Changes the recorded minimal value observed for the humidity.

humidity→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

humidity→set_resolution(newval)

Changes the resolution of the measured physical values.

humidity→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

humidity→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YHumidity.FindHumidity()**YHumidity****yFindHumidity()**`YHumidity.FindHumidity()`

Retrieves a humidity sensor for a given identifier.

js	function yFindHumidity (func)
nodejs	function FindHumidity (func)
php	function yFindHumidity (\$func)
cpp	YHumidity* yFindHumidity (const string& func)
m	YHumidity* yFindHumidity (NSString* func)
pas	function yFindHumidity (func : string): TYHumidity
vb	function yFindHumidity (ByVal func As String) As YHumidity
cs	YHumidity FindHumidity (string func)
java	YHumidity FindHumidity (String func)
py	def FindHumidity (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the humidity sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YHumidity.isOnline()` to test if the humidity sensor is indeed online at a given time. In case of ambiguity when looking for a humidity sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the humidity sensor

Returns :

a `YHumidity` object allowing you to drive the humidity sensor.

YHumidity.FirstHumidity()**YHumidity****yFirstHumidity()****YHumidity.FirstHumidity()**

Starts the enumeration of humidity sensors currently accessible.

js	function yFirstHumidity ()
nodejs	function FirstHumidity ()
php	function yFirstHumidity ()
cpp	YHumidity* yFirstHumidity ()
m	YHumidity* yFirstHumidity ()
pas	function yFirstHumidity (): TYHumidity
vb	function yFirstHumidity () As YHumidity
cs	YHumidity FirstHumidity ()
java	YHumidity FirstHumidity ()
py	def FirstHumidity ()

Use the method `YHumidity.nextHumidity()` to iterate on next humidity sensors.

Returns :

a pointer to a `YHumidity` object, corresponding to the first humidity sensor currently online, or a `null` pointer if there are none.

humidity→calibrateFromPoints()**YHumidity****humidity.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php function calibrateFromPoints( $rawValues, $refValues)
cpp int calibrateFromPoints( vector<double> rawValues,
                             vector<double> refValues)

m -(int) calibrateFromPoints : (NSMutableArray*) rawValues
   : (NSMutableArray*) refValues

pas function calibrateFromPoints( rawValues: TDoubleArray,
                                  refValues: TDoubleArray): LongInt

vb procedure calibrateFromPoints( )
cs int calibrateFromPoints( List<double> rawValues,
                             List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                              ArrayList<Double> refValues)

py def calibrateFromPoints( rawValues, refValues)
cmd YHumidity target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→describe()`humidity.describe()`**YHumidity**

Returns a short text that describes unambiguously the instance of the humidity sensor in the form `TYPE (NAME) = SERIAL.FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, `TYPE` is the type of the function, `NAME` it the name used for the first access to the function, `SERIAL` is the serial number of the module if the module is connected or "unresolved", and `FUNCTIONID` is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the humidity sensor (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

humidity→**get_advertisedValue()****YHumidity****humidity**→**advertisedValue()****humidity**.**get_advertisedValue()**

Returns the current value of the humidity sensor (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YHumidity target get_advertisedValue

Returns :

a string corresponding to the current value of the humidity sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

humidity→get_currentRawValue()**YHumidity****humidity→currentRawValue()****humidity.get_currentRawValue()**

Returns the unrounded and uncalibrated raw value returned by the sensor.

js	function get_currentRawValue ()
nodejs	function get_currentRawValue ()
php	function get_currentRawValue ()
cpp	double get_currentRawValue ()
m	-(double) currentRawValue
pas	function get_currentRawValue (): double
vb	function get_currentRawValue () As Double
cs	double get_currentRawValue ()
java	double get_currentRawValue ()
py	def get_currentRawValue ()
cmd	YHumidity target get_currentRawValue

Returns :

a floating point number corresponding to the unrounded and uncalibrated raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

humidity→**get_currentValue()****YHumidity****humidity**→**currentValue()****humidity.get_currentValue()**

Returns the current measure for the humidity.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YHumidity target get_currentValue

Returns :

a floating point number corresponding to the current measure for the humidity

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

humidity→get_errorMessage()**YHumidity****humidity→errorMessage()****humidity.get_errorMessage()**

Returns the error message of the latest error with the humidity sensor.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the humidity sensor object

humidity→**get_errorType()****YHumidity****humidity**→**errorType()****humidity.get_errorType()**

Returns the numerical error code of the latest error with the humidity sensor.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the humidity sensor object

humidity→get_friendlyName()**YHumidity****humidity→friendlyName()****humidity.get_friendlyName()**

Returns a global identifier of the humidity sensor in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the humidity sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the humidity sensor (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the humidity sensor using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

humidity→get_functionDescriptor()**YHumidity****humidity→functionDescriptor()****humidity.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

humidity→get_functionId()**YHumidity****humidity→functionId()****humidity.get_functionId()**

Returns the hardware identifier of the humidity sensor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the humidity sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

humidity→**get_hardwareId()****YHumidity****humidity**→**hardwareId()****humidity**.**get_hardwareId()**

Returns the unique hardware identifier of the humidity sensor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the humidity sensor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the humidity sensor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

humidity→get_highestValue()**YHumidity****humidity→highestValue()****humidity.get_highestValue()**

Returns the maximal value observed for the humidity.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YHumidity target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the humidity

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

humidity→get_logFrequency()

YHumidity

humidity→logFrequency()

humidity.get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency(): string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YHumidity target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

humidity→get_logicalName()**YHumidity****humidity→logicalName()****humidity.get_logicalName()**

Returns the logical name of the humidity sensor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YHumidity target get_logicalName

Returns :

a string corresponding to the logical name of the humidity sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

humidity→**get_lowestValue()****YHumidity****humidity**→**lowestValue()****humidity**.**get_lowestValue()**

Returns the minimal value observed for the humidity.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YHumidity target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the humidity

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

humidity→get_module()**YHumidity****humidity→module()**`humidity.get_module()`

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

humidity→get_module_async()**YHumidity****humidity→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

humidity→get_recordedData()**YHumidity****humidity→recordedData()****humidity.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
cpp	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YHumidity target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

humidity→**get_reportFrequency()****YHumidity****humidity**→**reportFrequency()****humidity.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YHumidity target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

humidity→get_resolution()**YHumidity****humidity→resolution()****humidity.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YHumidity target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

humidity→**get_unit()****YHumidity****humidity**→**unit()****humidity.get_unit()**

Returns the measuring unit for the humidity.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YHumidity target get_unit

Returns :

a string corresponding to the measuring unit for the humidity

On failure, throws an exception or returns Y_UNIT_INVALID.

humidity→**get_userdata()****YHumidity****humidity**→**userData()****humidity.get_userdata()**

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

humidity→**isOnline()****humidity.isOnline()****YHumidity**

Checks if the humidity sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the humidity sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the humidity sensor.

Returns :

`true` if the humidity sensor can be reached, and `false` otherwise

humidity→isOnline_async()**YHumidity**

Checks if the humidity sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the humidity sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

humidity→**load()**`humidity.load()`**YHumidity**

Preloads the humidity sensor cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

humidity→loadCalibrationPoints()**YHumidity****humidity.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php function loadCalibrationPoints( &$rawValues, &$refValues)
cpp int loadCalibrationPoints( vector<double>& rawValues,
                             vector<double>& refValues)

m -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                             : (NSMutableArray*) refValues

pas function loadCalibrationPoints( var rawValues: TDoubleArray,
                                   var refValues: TDoubleArray): LongInt

vb procedure loadCalibrationPoints( )
cs int loadCalibrationPoints( List<double> rawValues,
                             List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                               ArrayList<Double> refValues)

py def loadCalibrationPoints( rawValues, refValues)
cmd YHumidity target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→load_async()**YHumidity**

Preloads the humidity sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

humidity→nextHumidity()**YHumidity****humidity.nextHumidity()**

Continues the enumeration of humidity sensors started using `yFirstHumidity()`.

js	function nextHumidity ()
nodejs	function nextHumidity ()
php	function nextHumidity ()
cpp	YHumidity * nextHumidity ()
m	-(YHumidity*) nextHumidity
pas	function nextHumidity (): TYHumidity
vb	function nextHumidity () As YHumidity
cs	YHumidity nextHumidity ()
java	YHumidity nextHumidity ()
py	def nextHumidity ()

Returns :

a pointer to a `YHumidity` object, corresponding to a humidity sensor currently online, or a `null` pointer if there are no more humidity sensors to enumerate.

humidity→registerTimedReportCallback()**YHumidity****humidity.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YHumidityTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YHumidityTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYHumidityTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

humidity→registerValueCallback()**YHumidity****humidity.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YHumidityValueCallback callback)
m	-(int) registerValueCallback : (YHumidityValueCallback) callback
pas	function registerValueCallback (callback : TYHumidityValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

humidity→**set_highestValue()****YHumidity****humidity**→**setHighestValue()****humidity.set_highestValue()**

Changes the recorded maximal value observed for the humidity.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YHumidity target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed for the humidity

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→set_logFrequency()**YHumidity****humidity→setLogFrequency()****humidity.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YHumidity target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→set_logicalName()**YHumidity****humidity→setLogicalName()****humidity.set_logicalName()**

Changes the logical name of the humidity sensor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YHumidity target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the humidity sensor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

humidity→set_lowestValue()**YHumidity****humidity→setLowestValue()****humidity.set_lowestValue()**

Changes the recorded minimal value observed for the humidity.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YHumidity target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed for the humidity

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→set_reportFrequency()
humidity→setReportFrequency()
humidity.set_reportFrequency()

YHumidity

Changes the timed value notification frequency for this function.

js	function set_reportFrequency (newval)
nodejs	function set_reportFrequency (newval)
php	function set_reportFrequency (\$newval)
cpp	int set_reportFrequency (const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency (newval : string): integer
vb	function set_reportFrequency (ByVal newval As String) As Integer
cs	int set_reportFrequency (string newval)
java	int set_reportFrequency (String newval)
py	def set_reportFrequency (newval)
cmd	YHumidity target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→set_resolution()**YHumidity****humidity→setResolution()****humidity.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YHumidity target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→set_userdata()**YHumidity****humidity→setUserData()****humidity.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

humidity→wait_async()**YHumidity**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.21. Led function interface

Yoctopuce application programming interface allows you not only to drive the intensity of the led, but also to have it blink at various preset frequencies.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_led.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YLed = yoctolib.YLed;
php	require_once('yocto_led.php');
c++	#include "yocto_led.h"
m	#import "yocto_led.h"
pas	uses yocto_led;
vb	yocto_led.vb
cs	yocto_led.cs
java	import com.yoctopuce.YoctoAPI.YLed;
py	from yocto_led import *

Global functions

yFindLed(func)

Retrieves a led for a given identifier.

yFirstLed()

Starts the enumeration of leds currently accessible.

YLed methods

led→describe()

Returns a short text that describes unambiguously the instance of the led in the form TYPE (NAME) = SERIAL . FUNCTIONID.

led→get_advertisedValue()

Returns the current value of the led (no more than 6 characters).

led→get_blinking()

Returns the current led signaling mode.

led→get_errorMessage()

Returns the error message of the latest error with the led.

led→get_errorType()

Returns the numerical error code of the latest error with the led.

led→get_friendlyName()

Returns a global identifier of the led in the format MODULE_NAME . FUNCTION_NAME.

led→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

led→get_functionId()

Returns the hardware identifier of the led, without reference to the module.

led→get_hardwareId()

Returns the unique hardware identifier of the led in the form SERIAL . FUNCTIONID.

led→get_logicalName()

Returns the logical name of the led.

led→get_luminosity()

Returns the current led intensity (in per cent).

led→get_module()

Gets the `YModule` object for the device on which the function is located.

led→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

led→get_power()

Returns the current led state.

led→get_userData()

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

led→isOnline()

Checks if the led is currently reachable, without raising any error.

led→isOnline_async(callback, context)

Checks if the led is currently reachable, without raising any error (asynchronous version).

led→load(msValidity)

Preloads the led cache with a specified validity duration.

led→load_async(msValidity, callback, context)

Preloads the led cache with a specified validity duration (asynchronous version).

led→nextLed()

Continues the enumeration of leds started using `yFirstLed()`.

led→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

led→set_blinking(newval)

Changes the current led signaling mode.

led→set_logicalName(newval)

Changes the logical name of the led.

led→set_luminosity(newval)

Changes the current led intensity (in per cent).

led→set_power(newval)

Changes the state of the led.

led→set_userData(data)

Stores a user context provided as argument in the `userData` attribute of the function.

led→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YLed.FindLed()**YLed****yFindLed()****YLed.FindLed()**

Retrieves a led for a given identifier.

js	function yFindLed (func)
nodejs	function FindLed (func)
php	function yFindLed (\$func)
cpp	YLed* yFindLed (const string& func)
m	YLed* yFindLed (NSString* func)
pas	function yFindLed (func : string): TYLed
vb	function yFindLed (ByVal func As String) As YLed
cs	YLed FindLed (string func)
java	YLed FindLed (String func)
py	def FindLed (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the led is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YLed.isOnline()` to test if the led is indeed online at a given time. In case of ambiguity when looking for a led by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the led

Returns :

a YLed object allowing you to drive the led.

YLed.FirstLed()**YLed****yFirstLed()****YLed.FirstLed()**

Starts the enumeration of leds currently accessible.

js	function yFirstLed ()
nodejs	function FirstLed ()
php	function yFirstLed ()
cpp	YLed* yFirstLed ()
m	YLed* yFirstLed ()
pas	function yFirstLed (): TYLed
vb	function yFirstLed () As YLed
cs	YLed FirstLed ()
java	YLed FirstLed ()
py	def FirstLed ()

Use the method `YLed.nextLed()` to iterate on next leds.

Returns :

a pointer to a YLed object, corresponding to the first led currently online, or a `null` pointer if there are none.

led→describe()`led.describe()`**YLed**

Returns a short text that describes unambiguously the instance of the led in the form
`TYPE (NAME) = SERIAL . FUNCTIONID`.

<code>js</code>	<code>function describe()</code>
<code>nodejs</code>	<code>function describe()</code>
<code>php</code>	<code>function describe()</code>
<code>cpp</code>	<code>string describe()</code>
<code>m</code>	<code>-(NSString*) describe</code>
<code>pas</code>	<code>function describe(): string</code>
<code>vb</code>	<code>function describe() As String</code>
<code>cs</code>	<code>string describe()</code>
<code>java</code>	<code>String describe()</code>
<code>py</code>	<code>def describe()</code>

More precisely, `TYPE` is the type of the function, `NAME` it the name used for the first access to the function, `SERIAL` is the serial number of the module if the module is connected or "unresolved", and `FUNCTIONID` is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the led (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

led→**get_advertisedValue()****YLed****led**→**advertisedValue()****led.get_advertisedValue()**

Returns the current value of the led (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YLed target get_advertisedValue

Returns :

a string corresponding to the current value of the led (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

led→**get_blinking()****YLed****led**→**blinking()****led.get_blinking()**

Returns the current led signaling mode.

js	function get_blinking ()
nodejs	function get_blinking ()
php	function get_blinking ()
cpp	Y_BLINKING_enum get_blinking ()
m	-(Y_BLINKING_enum) blinking
pas	function get_blinking (): Integer
vb	function get_blinking () As Integer
cs	int get_blinking ()
java	int get_blinking ()
py	def get_blinking ()
cmd	YLed target get_blinking

Returns :

a value among Y_BLINKING_STILL, Y_BLINKING_RELAX, Y_BLINKING_AWARE, Y_BLINKING_RUN, Y_BLINKING_CALL and Y_BLINKING_PANIC corresponding to the current led signaling mode

On failure, throws an exception or returns Y_BLINKING_INVALID.

led→**get_errorMessage()****YLed****led**→**errorMessage()****led.errorMessage()**

Returns the error message of the latest error with the led.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the led object

led→**get_errorType()****YLed****led**→**errorType()****led.get_errorType()**

Returns the numerical error code of the latest error with the led.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the led object

led→**get_friendlyName()****YLed****led**→**friendlyName()****led.get_friendlyName()**

Returns a global identifier of the led in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the led if they are defined, otherwise the serial number of the module and the hardware identifier of the led (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the led using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

led→**get_functionDescriptor()****YLed****led**→**functionDescriptor()****led.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

led→**get_functionId()****YLed****led**→**functionId()****led.get_functionId()**

Returns the hardware identifier of the led, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the led (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

led→**get_hardwareId()****YLed****led**→**hardwareId()****led.hardwareId()**

Returns the unique hardware identifier of the led in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
c++	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the led. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the led (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

led→**get_logicalName()****YLed****led**→**logicalName()****led.get_logicalName()**

Returns the logical name of the led.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YLed target get_logicalName

Returns :

a string corresponding to the logical name of the led. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

led→**get_luminosity()****YLed****led**→**luminosity()****led.get_luminosity()**

Returns the current led intensity (in per cent).

js	function get_luminosity ()
nodejs	function get_luminosity ()
php	function get_luminosity ()
cpp	int get_luminosity ()
m	-(int) luminosity
pas	function get_luminosity (): LongInt
vb	function get_luminosity () As Integer
cs	int get_luminosity ()
java	int get_luminosity ()
py	def get_luminosity ()
cmd	YLed target get_luminosity

Returns :

an integer corresponding to the current led intensity (in per cent)

On failure, throws an exception or returns Y_LUMINOSITY_INVALID.

led→**get_module()****YLed****led**→**module()****led.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

led→**get_module_async()****YLed****led**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

led→**get_power()****YLed****led**→**power()****led.get_power()**

Returns the current led state.

js	function get_power ()
nodejs	function get_power ()
php	function get_power ()
cpp	Y_POWER_enum get_power ()
m	-(Y_POWER_enum) power
pas	function get_power (): Integer
vb	function get_power () As Integer
cs	int get_power ()
java	int get_power ()
py	def get_power ()
cmd	YLed target get_power

Returns :

either Y_POWER_OFF or Y_POWER_ON, according to the current led state

On failure, throws an exception or returns Y_POWER_INVALID.

led→**get_userData()****YLed****led**→**userData()****led.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

led→**isOnline()****led.isOnline()****YLed**

Checks if the led is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the led in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the led.

Returns :

`true` if the led can be reached, and `false` otherwise

led→isOnline_async()**YLed**

Checks if the led is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the led in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

led→**load()****led.load()****YLed**

Preloads the led cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

led→load_async()**YLed**

Preloads the led cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

led→**nextLed()****led.nextLed()****YLed**

Continues the enumeration of leds started using `yFirstLed()`.

js	function nextLed ()
nodejs	function nextLed ()
php	function nextLed ()
cpp	YLed * nextLed ()
m	-(YLed*) nextLed
pas	function nextLed (): TYLed
vb	function nextLed () As YLed
cs	YLed nextLed ()
java	YLed nextLed ()
py	def nextLed ()

Returns :

a pointer to a `YLed` object, corresponding to a led currently online, or a `null` pointer if there are no more leds to enumerate.

led→registerValueCallback()**YLed****led.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
c++	int registerValueCallback (YLedValueCallback callback)
m	-(int) registerValueCallback : (YLedValueCallback) callback
pas	function registerValueCallback (callback : TYLedValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

led→set_blinking()**YLed****led→setBlinking()****led.set_blinking()**

Changes the current led signaling mode.

js	function set_blinking (newval)
nodejs	function set_blinking (newval)
php	function set_blinking (\$newval)
cpp	int set_blinking (Y_BLINKING_enum newval)
m	-(int) setBlinking : (Y_BLINKING_enum) newval
pas	function set_blinking (newval : Integer): integer
vb	function set_blinking (ByVal newval As Integer) As Integer
cs	int set_blinking (int newval)
java	int set_blinking (int newval)
py	def set_blinking (newval)
cmd	YLed target set_blinking newval

Parameters :

newval a value among Y_BLINKING_STILL, Y_BLINKING_RELAX, Y_BLINKING_AWARE, Y_BLINKING_RUN, Y_BLINKING_CALL and Y_BLINKING_PANIC corresponding to the current led signaling mode

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

led→**set_logicalName()****YLed****led**→**setLogicalName()****led.set_logicalName()**

Changes the logical name of the led.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YLed target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the led.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

led→**set_luminosity()****YLed****led**→**setLuminosity()****led.set_luminosity()**

Changes the current led intensity (in per cent).

js	function set_luminosity (newval)
nodejs	function set_luminosity (newval)
php	function set_luminosity (\$newval)
cpp	int set_luminosity (int newval)
m	-(int) setLuminosity : (int) newval
pas	function set_luminosity (newval : LongInt): integer
vb	function set_luminosity (ByVal newval As Integer) As Integer
cs	int set_luminosity (int newval)
java	int set_luminosity (int newval)
py	def set_luminosity (newval)
cmd	YLed target set_luminosity newval

Parameters :

newval an integer corresponding to the current led intensity (in per cent)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

led→**set_power()****YLed****led**→**setPower()****led.set_power()**

Changes the state of the led.

js	function set_power (newval)
nodejs	function set_power (newval)
php	function set_power (\$newval)
cpp	int set_power (Y_POWER_enum newval)
m	-(int) setPower : (Y_POWER_enum) newval
pas	function set_power (newval : Integer): integer
vb	function set_power (ByVal newval As Integer) As Integer
cs	int set_power (int newval)
java	int set_power (int newval)
py	def set_power (newval)
cmd	YLed target set_power newval

Parameters :

newval either Y_POWER_OFF or Y_POWER_ON, according to the state of the led

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

led→set_userdata()**YLed****led→setUserData()**`led.set_userdata()`

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
c++	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

led→**wait_async()****YLed**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.22. LightSensor function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_lightsensor.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YLightSensor = yoctolib.YLightSensor;
php	require_once('yocto_lightsensor.php');
c++	#include "yocto_lightsensor.h"
m	#import "yocto_lightsensor.h"
pas	uses yocto_lightsensor;
vb	yocto_lightsensor.vb
cs	yocto_lightsensor.cs
java	import com.yoctopuce.YoctoAPI.YLightSensor;
py	from yocto_lightsensor import *

Global functions

yFindLightSensor(func)

Retrieves a light sensor for a given identifier.

yFirstLightSensor()

Starts the enumeration of light sensors currently accessible.

YLightSensor methods

lightsensor→calibrate(calibratedVal)

Changes the sensor-specific calibration parameter so that the current value matches a desired target (linear scaling).

lightsensor→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

lightsensor→describe()

Returns a short text that describes unambiguously the instance of the light sensor in the form TYPE (NAME) = SERIAL . FUNCTIONID.

lightsensor→get_advertisedValue()

Returns the current value of the light sensor (no more than 6 characters).

lightsensor→get_currentRawValue()

Returns the unrounded and uncalibrated raw value returned by the sensor.

lightsensor→get_currentValue()

Returns the current measure for the ambient light.

lightsensor→get_errorMessage()

Returns the error message of the latest error with the light sensor.

lightsensor→get_errorType()

Returns the numerical error code of the latest error with the light sensor.

lightsensor→get_friendlyName()

Returns a global identifier of the light sensor in the format MODULE_NAME . FUNCTION_NAME.

lightsensor→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

lightsensor→get_functionId()

Returns the hardware identifier of the light sensor, without reference to the module.

lightsensor→**get_hardwareId()**

Returns the unique hardware identifier of the light sensor in the form `SERIAL.FUNCTIONID`.

lightsensor→**get_highestValue()**

Returns the maximal value observed for the ambient light.

lightsensor→**get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

lightsensor→**get_logicalName()**

Returns the logical name of the light sensor.

lightsensor→**get_lowestValue()**

Returns the minimal value observed for the ambient light.

lightsensor→**get_module()**

Gets the `YModule` object for the device on which the function is located.

lightsensor→**get_module_async(callback, context)**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

lightsensor→**get_recordedData(startTime, endTime)**

Retrieves a `DataSet` object holding historical data for this sensor, for a specified time interval.

lightsensor→**get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

lightsensor→**get_resolution()**

Returns the resolution of the measured values.

lightsensor→**get_unit()**

Returns the measuring unit for the ambient light.

lightsensor→**get_userData()**

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

lightsensor→**isOnline()**

Checks if the light sensor is currently reachable, without raising any error.

lightsensor→**isOnline_async(callback, context)**

Checks if the light sensor is currently reachable, without raising any error (asynchronous version).

lightsensor→**load(msValidity)**

Preloads the light sensor cache with a specified validity duration.

lightsensor→**loadCalibrationPoints(rawValues, refValues)**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

lightsensor→**load_async(msValidity, callback, context)**

Preloads the light sensor cache with a specified validity duration (asynchronous version).

lightsensor→**nextLightSensor()**

Continues the enumeration of light sensors started using `yFirstLightSensor()`.

lightsensor→**registerTimedReportCallback(callback)**

Registers the callback function that is invoked on every periodic timed notification.

lightsensor→**registerValueCallback(callback)**

Registers the callback function that is invoked on every change of advertised value.

lightsensor→**set_highestValue(newval)**

Changes the recorded maximal value observed for the ambient light.

lightsensor→**set_logFrequency(newval)**

Changes the datalogger recording frequency for this function.

lightsensor→**set_logicalName**(newval)

Changes the logical name of the light sensor.

lightsensor→**set_lowestValue**(newval)

Changes the recorded minimal value observed for the ambient light.

lightsensor→**set_reportFrequency**(newval)

Changes the timed value notification frequency for this function.

lightsensor→**set_resolution**(newval)

Changes the resolution of the measured physical values.

lightsensor→**set_userData**(data)

Stores a user context provided as argument in the userData attribute of the function.

lightsensor→**wait_async**(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YLightSensor.FindLightSensor()**YLightSensor****yFindLightSensor()****YLightSensor.FindLightSensor()**

Retrieves a light sensor for a given identifier.

js	function yFindLightSensor (func)
nodejs	function FindLightSensor (func)
php	function yFindLightSensor (\$func)
cpp	YLightSensor* yFindLightSensor (const string& func)
m	YLightSensor* yFindLightSensor (NSString* func)
pas	function yFindLightSensor (func : string): TYLightSensor
vb	function yFindLightSensor (ByVal func As String) As YLightSensor
cs	YLightSensor FindLightSensor (string func)
java	YLightSensor FindLightSensor (String func)
py	def FindLightSensor (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the light sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YLightSensor.isOnline()` to test if the light sensor is indeed online at a given time. In case of ambiguity when looking for a light sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the light sensor

Returns :

a `YLightSensor` object allowing you to drive the light sensor.

YLightSensor.FirstLightSensor()**YLightSensor****yFirstLightSensor()****YLightSensor.FirstLightSensor()**

Starts the enumeration of light sensors currently accessible.

js	function yFirstLightSensor ()
nodejs	function FirstLightSensor ()
php	function yFirstLightSensor ()
cpp	YLightSensor* yFirstLightSensor ()
m	YLightSensor* yFirstLightSensor ()
pas	function yFirstLightSensor (): TYLightSensor
vb	function yFirstLightSensor () As YLightSensor
cs	YLightSensor FirstLightSensor ()
java	YLightSensor FirstLightSensor ()
py	def FirstLightSensor ()

Use the method `YLightSensor.nextLightSensor()` to iterate on next light sensors.

Returns :

a pointer to a `YLightSensor` object, corresponding to the first light sensor currently online, or a `null` pointer if there are none.

lightsensor→calibrate()`lightsensor.calibrate()`**YLightSensor**

Changes the sensor-specific calibration parameter so that the current value matches a desired target (linear scaling).

js	function calibrate (calibratedVal)
nodejs	function calibrate (calibratedVal)
php	function calibrate (\$calibratedVal)
cpp	int calibrate (double calibratedVal)
m	-(int) calibrate : (double) calibratedVal
pas	function calibrate (calibratedVal : double): integer
vb	function calibrate (ByVal calibratedVal As Double) As Integer
cs	int calibrate (double calibratedVal)
java	int calibrate (double calibratedVal)
py	def calibrate (calibratedVal)
cmd	YLightSensor target calibrate calibratedVal

Parameters :

calibratedVal the desired target value.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→calibrateFromPoints()**YLightSensor****lightsensor.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

js	function calibrateFromPoints (rawValues , refValues)
nodejs	function calibrateFromPoints (rawValues , refValues)
php	function calibrateFromPoints (\$rawValues , \$refValues)
cpp	int calibrateFromPoints (vector<double> rawValues , vector<double> refValues)
m	-(int) calibrateFromPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues
pas	function calibrateFromPoints (rawValues : TDoubleArray, refValues : TDoubleArray): LongInt
vb	procedure calibrateFromPoints ()
cs	int calibrateFromPoints (List<double> rawValues , List<double> refValues)
java	int calibrateFromPoints (ArrayList<Double> rawValues , ArrayList<Double> refValues)
py	def calibrateFromPoints (rawValues , refValues)
cmd	YLightSensor target calibrateFromPoints rawValues refValues

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→describe()`lightsensor.describe()`**YLightSensor**

Returns a short text that describes unambiguously the instance of the light sensor in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the light sensor (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

lightsensor→**get_advertisedValue()****YLightSensor****lightsensor**→**advertisedValue()****lightsensor.get_advertisedValue()**

Returns the current value of the light sensor (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YLightSensor target get_advertisedValue

Returns :

a string corresponding to the current value of the light sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

lightsensor→get_currentRawValue()**YLightSensor****lightsensor→currentRawValue()****lightsensor.get_currentRawValue()**

Returns the unrounded and uncalibrated raw value returned by the sensor.

js	function get_currentRawValue ()
nodejs	function get_currentRawValue ()
php	function get_currentRawValue ()
cpp	double get_currentRawValue ()
m	-(double) currentRawValue
pas	function get_currentRawValue (): double
vb	function get_currentRawValue () As Double
cs	double get_currentRawValue ()
java	double get_currentRawValue ()
py	def get_currentRawValue ()
cmd	YLightSensor target get_currentRawValue

Returns :

a floating point number corresponding to the unrounded and uncalibrated raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

lightsensor→get_currentValue()**YLightSensor****lightsensor→currentValue()****lightsensor.get_currentValue()**

Returns the current measure for the ambient light.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YLightSensor target get_currentValue

Returns :

a floating point number corresponding to the current measure for the ambient light

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

lightsensor→get_errorMessage()**YLightSensor****lightsensor→errorMessage()****lightsensor.get_errorMessage()**

Returns the error message of the latest error with the light sensor.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the light sensor object

lightsensor→get_errorType()**YLightSensor****lightsensor→errorType()****lightsensor.get_errorType()**

Returns the numerical error code of the latest error with the light sensor.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the light sensor object

lightsensor→get_friendlyName()**YLightSensor****lightsensor→friendlyName()****lightsensor.get_friendlyName()**

Returns a global identifier of the light sensor in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the light sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the light sensor (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the light sensor using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

lightsensor→get_functionDescriptor()**YLightSensor****lightsensor→functionDescriptor()****lightsensor.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

lightsensor→**get_functionId()****YLightSensor****lightsensor**→**functionId()****lightsensor.get_functionId()**

Returns the hardware identifier of the light sensor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the light sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

lightsensor→**get_hardwareId()**
lightsensor→**hardwareId()**
lightsensor.get_hardwareId()

YLightSensor

Returns the unique hardware identifier of the light sensor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the light sensor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the light sensor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

lightsensor→**get_highestValue()****YLightSensor****lightsensor**→**highestValue()****lightsensor.get_highestValue()**

Returns the maximal value observed for the ambient light.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YLightSensor target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the ambient light

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

lightsensor→get_logFrequency()**YLightSensor****lightsensor→logFrequency()****lightsensor.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency ()
nodejs	function get_logFrequency ()
php	function get_logFrequency ()
cpp	string get_logFrequency ()
m	-(NSString*) logFrequency
pas	function get_logFrequency (): string
vb	function get_logFrequency () As String
cs	string get_logFrequency ()
java	String get_logFrequency ()
py	def get_logFrequency ()
cmd	YLightSensor target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

lightsensor→get_logicalName()**YLightSensor****lightsensor→logicalName()****lightsensor.get_logicalName()**

Returns the logical name of the light sensor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YLightSensor target get_logicalName

Returns :

a string corresponding to the logical name of the light sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

lightsensor→get_lowestValue()**YLightSensor****lightsensor→lowestValue()****lightsensor.get_lowestValue()**

Returns the minimal value observed for the ambient light.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YLightSensor target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the ambient light

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

lightsensor→get_module()**YLightSensor****lightsensor→module()lightsensor.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

lightsensor→get_module_async()**YLightSensor****lightsensor→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

lightsensor→get_recordedData()**YLightSensor****lightsensor→recordedData()****lightsensor.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
c++	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YLightSensor target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

lightsensor→get_reportFrequency()**YLightSensor****lightsensor→reportFrequency()****lightsensor.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YLightSensor target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

lightsensor→get_resolution()**YLightSensor****lightsensor→resolution()****lightsensor.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YLightSensor target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

lightsensor→**get_unit()****YLightSensor****lightsensor**→**unit()****lightsensor.get_unit()**

Returns the measuring unit for the ambient light.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YLightSensor target get_unit

Returns :

a string corresponding to the measuring unit for the ambient light

On failure, throws an exception or returns Y_UNIT_INVALID.

lightsensor→get_userdata()**YLightSensor****lightsensor→userData()****lightsensor.getUserData()**

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

lightsensor→**isOnline()****lightsensor.isOnline()****YLightSensor**

Checks if the light sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the light sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the light sensor.

Returns :

`true` if the light sensor can be reached, and `false` otherwise

lightsensor→isOnline_async()**YLightSensor**

Checks if the light sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the light sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

lightsensor→**load()****lightsensor.load()****YLightSensor**

Preloads the light sensor cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

lightsensor→loadCalibrationPoints()**YLightSensor****lightsensor.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js function loadCalibrationPoints( rawValues, refValues)
node.js function loadCalibrationPoints( rawValues, refValues)
php function loadCalibrationPoints( &$rawValues, &$refValues)
cpp int loadCalibrationPoints( vector<double>& rawValues,
                             vector<double>& refValues)

m -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
   : (NSMutableArray*) refValues

pas function loadCalibrationPoints( var rawValues: TDoubleArray,
                                    var refValues: TDoubleArray): LongInt

vb procedure loadCalibrationPoints( )
cs int loadCalibrationPoints( List<double> rawValues,
                             List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                               ArrayList<Double> refValues)

py def loadCalibrationPoints( rawValues, refValues)
cmd YLightSensor target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→load_async()**YLightSensor**

Preloads the light sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

lightsensor→nextLightSensor()**YLightSensor****lightsensor.nextLightSensor()**

Continues the enumeration of light sensors started using `yFirstLightSensor()`.

js	function nextLightSensor ()
nodejs	function nextLightSensor ()
php	function nextLightSensor ()
c++	YLightSensor * nextLightSensor ()
m	-(YLightSensor*) nextLightSensor
pas	function nextLightSensor (): TYLightSensor
vb	function nextLightSensor () As YLightSensor
cs	YLightSensor nextLightSensor ()
java	YLightSensor nextLightSensor ()
py	def nextLightSensor ()

Returns :

a pointer to a `YLightSensor` object, corresponding to a light sensor currently online, or a `null` pointer if there are no more light sensors to enumerate.

lightsensor→registerTimedReportCallback()**YLightSensor****lightsensor.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YLightSensorTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YLightSensorTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYLightSensorTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

lightsensor→registerValueCallback()**YLightSensor****lightsensor.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YLightSensorValueCallback callback)
m	-(int) registerValueCallback : (YLightSensorValueCallback) callback
pas	function registerValueCallback (callback : TYLightSensorValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

lightsensor→**set_highestValue()****YLightSensor****lightsensor**→**setHighestValue()****lightsensor.set_highestValue()**

Changes the recorded maximal value observed for the ambient light.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YLightSensor target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed for the ambient light

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→set_logFrequency()**YLightSensor****lightsensor→setLogFrequency()****lightsensor.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YLightSensor target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→**set_logicalName()****YLightSensor****lightsensor**→**setLogicalName()****lightsensor.set_logicalName()**

Changes the logical name of the light sensor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YLightSensor target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the light sensor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

lightsensor→**set_lowestValue()****YLightSensor****lightsensor**→**setLowestValue()****lightsensor.set_lowestValue()**

Changes the recorded minimal value observed for the ambient light.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YLightSensor target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed for the ambient light

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→set_reportFrequency()**YLightSensor****lightsensor→setReportFrequency()****lightsensor.set_reportFrequency()**

Changes the timed value notification frequency for this function.

js	function set_reportFrequency (newval)
nodejs	function set_reportFrequency (newval)
php	function set_reportFrequency (\$newval)
cpp	int set_reportFrequency (const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency (newval : string): integer
vb	function set_reportFrequency (ByVal newval As String) As Integer
cs	int set_reportFrequency (string newval)
java	int set_reportFrequency (String newval)
py	def set_reportFrequency (newval)
cmd	YLightSensor target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→set_resolution()**YLightSensor****lightsensor→setResolution()****lightsensor.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YLightSensor target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→set_userdata()**YLightSensor****lightsensor→setUserData()****lightsensor.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

lightsensor→wait_async()**YLightSensor**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.23. Magnetometer function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_magnetometer.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib'); var YMagnetometer = yoctolib.YMagnetometer;</code>
php	<code>require_once('yocto_magnetometer.php');</code>
c++	<code>#include "yocto_magnetometer.h"</code>
m	<code>#import "yocto_magnetometer.h"</code>
pas	<code>uses yocto_magnetometer;</code>
vb	<code>yocto_magnetometer.vb</code>
cs	<code>yocto_magnetometer.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YMagnetometer;</code>
py	<code>from yocto_magnetometer import *</code>

Global functions

yFindMagnetometer(func)

Retrieves a magnetometer for a given identifier.

yFirstMagnetometer()

Starts the enumeration of magnetometers currently accessible.

YMagnetometer methods

magnetometer→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

magnetometer→describe()

Returns a short text that describes unambiguously the instance of the magnetometer in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

magnetometer→get_advertisedValue()

Returns the current value of the magnetometer (no more than 6 characters).

magnetometer→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

magnetometer→get_currentValue()

Returns the current value of the magnetic field.

magnetometer→get_errorMessage()

Returns the error message of the latest error with the magnetometer.

magnetometer→get_errorType()

Returns the numerical error code of the latest error with the magnetometer.

magnetometer→get_friendlyName()

Returns a global identifier of the magnetometer in the format `MODULE_NAME . FUNCTION_NAME`.

magnetometer→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

magnetometer→get_functionId()

Returns the hardware identifier of the magnetometer, without reference to the module.

magnetometer→get_hardwareId()

Returns the unique hardware identifier of the magnetometer in the form `SERIAL . FUNCTIONID`.

magnetometer→get_highestValue()

Returns the maximal value observed for the magnetic field since the device was started.

magnetometer→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

magnetometer→get_logicalName()

Returns the logical name of the magnetometer.

magnetometer→get_lowestValue()

Returns the minimal value observed for the magnetic field since the device was started.

magnetometer→get_module()

Gets the YModule object for the device on which the function is located.

magnetometer→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

magnetometer→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

magnetometer→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

magnetometer→get_resolution()

Returns the resolution of the measured values.

magnetometer→get_unit()

Returns the measuring unit for the magnetic field.

magnetometer→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

magnetometer→get_xValue()

Returns the X component of the magnetic field, as a floating point number.

magnetometer→get_yValue()

Returns the Y component of the magnetic field, as a floating point number.

magnetometer→get_zValue()

Returns the Z component of the magnetic field, as a floating point number.

magnetometer→isOnline()

Checks if the magnetometer is currently reachable, without raising any error.

magnetometer→isOnline_async(callback, context)

Checks if the magnetometer is currently reachable, without raising any error (asynchronous version).

magnetometer→load(msValidity)

Preloads the magnetometer cache with a specified validity duration.

magnetometer→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

magnetometer→load_async(msValidity, callback, context)

Preloads the magnetometer cache with a specified validity duration (asynchronous version).

magnetometer→nextMagnetometer()

Continues the enumeration of magnetometers started using yFirstMagnetometer().

magnetometer→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

magnetometer→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

magnetometer→set_highestValue(newval)

Changes the recorded maximal value observed.

magnetometer→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

magnetometer→set_logicalName(newval)

Changes the logical name of the magnetometer.

magnetometer→set_lowestValue(newval)

Changes the recorded minimal value observed.

magnetometer→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

magnetometer→set_resolution(newval)

Changes the resolution of the measured physical values.

magnetometer→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

magnetometer→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YMagnetometer.FindMagnetometer()**YMagnetometer****yFindMagnetometer()****YMagnetometer.FindMagnetometer()**

Retrieves a magnetometer for a given identifier.

js	function yFindMagnetometer (func)
nodejs	function FindMagnetometer (func)
php	function yFindMagnetometer (\$func)
cpp	YMagnetometer* yFindMagnetometer (const string& func)
m	YMagnetometer* yFindMagnetometer (NSString* func)
pas	function yFindMagnetometer (func : string): TYMagnetometer
vb	function yFindMagnetometer (ByVal func As String) As YMagnetometer
cs	YMagnetometer FindMagnetometer (string func)
java	YMagnetometer FindMagnetometer (String func)
py	def FindMagnetometer (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the magnetometer is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YMagnetometer.isOnline()` to test if the magnetometer is indeed online at a given time. In case of ambiguity when looking for a magnetometer by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the magnetometer

Returns :

a `YMagnetometer` object allowing you to drive the magnetometer.

YMagnetometer.FirstMagnetometer()**YMagnetometer****yFirstMagnetometer()****YMagnetometer.FirstMagnetometer()**

Starts the enumeration of magnetometers currently accessible.

js	function yFirstMagnetometer ()
nodejs	function FirstMagnetometer ()
php	function yFirstMagnetometer ()
cpp	YMagnetometer* yFirstMagnetometer ()
m	YMagnetometer* yFirstMagnetometer ()
pas	function yFirstMagnetometer (): TYMagnetometer
vb	function yFirstMagnetometer () As YMagnetometer
cs	YMagnetometer FirstMagnetometer ()
java	YMagnetometer FirstMagnetometer ()
py	def FirstMagnetometer ()

Use the method `YMagnetometer.nextMagnetometer()` to iterate on next magnetometers.

Returns :

a pointer to a `YMagnetometer` object, corresponding to the first magnetometer currently online, or a `null` pointer if there are none.

magnetometer→calibrateFromPoints()**YMagnetometer****magnetometer.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php function calibrateFromPoints( $rawValues, $refValues)
cpp int calibrateFromPoints( vector<double> rawValues,
                             vector<double> refValues)

m -(int) calibrateFromPoints : (NSMutableArray*) rawValues
    : (NSMutableArray*) refValues

pas function calibrateFromPoints( rawValues: TDoubleArray,
                                   refValues: TDoubleArray): LongInt

vb procedure calibrateFromPoints( )
cs int calibrateFromPoints( List<double> rawValues,
                             List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                               ArrayList<Double> refValues)

py def calibrateFromPoints( rawValues, refValues)
cmd YMagnetometer target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→describe()**YMagnetometer****magnetometer.describe()**

Returns a short text that describes unambiguously the instance of the magnetometer in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the magnetometer (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

magnetometer→**get_advertisedValue()****YMagnetometer****magnetometer**→**advertisedValue()****magnetometer.get_advertisedValue()**

Returns the current value of the magnetometer (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YMagnetometer target get_advertisedValue

Returns :

a string corresponding to the current value of the magnetometer (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

magnetometer→get_currentRawValue()**YMagnetometer****magnetometer→currentRawValue()****magnetometer.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue ()
nodejs	function get_currentRawValue ()
php	function get_currentRawValue ()
cpp	double get_currentRawValue ()
m	-(double) currentRawValue
pas	function get_currentRawValue (): double
vb	function get_currentRawValue () As Double
cs	double get_currentRawValue ()
java	double get_currentRawValue ()
py	def get_currentRawValue ()
cmd	YMagnetometer target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

magnetometer→**get_currentValue()****YMagnetometer****magnetometer**→**currentValue()****magnetometer.get_currentValue()**

Returns the current value of the magnetic field.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YMagnetometer target get_currentValue

Returns :

a floating point number corresponding to the current value of the magnetic field

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

magnetometer→get_errorMessage()**YMagnetometer****magnetometer→errorMessage()****magnetometer.get_errorMessage()**

Returns the error message of the latest error with the magnetometer.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the magnetometer object

magnetometer→**get_errorType()****YMagnetometer****magnetometer**→**errorType()****magnetometer.get_errorType()**

Returns the numerical error code of the latest error with the magnetometer.

<code>js</code>	<code>function get_errorType()</code>
<code>nodejs</code>	<code>function get_errorType()</code>
<code>php</code>	<code>function get_errorType()</code>
<code>cpp</code>	<code>YRETCODE get_errorType()</code>
<code>pas</code>	<code>function get_errorType(): YRETCODE</code>
<code>vb</code>	<code>function get_errorType() As YRETCODE</code>
<code>cs</code>	<code>YRETCODE get_errorType()</code>
<code>java</code>	<code>int get_errorType()</code>
<code>py</code>	<code>def get_errorType()</code>

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the magnetometer object

magnetometer→get_friendlyName()**YMagnetometer****magnetometer→friendlyName()****magnetometer.get_friendlyName()**

Returns a global identifier of the magnetometer in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the magnetometer if they are defined, otherwise the serial number of the module and the hardware identifier of the magnetometer (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the magnetometer using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

magnetometer→get_functionDescriptor()**YMagnetometer****magnetometer→functionDescriptor()****magnetometer.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

magnetometer→**get_functionId()****YMagnetometer****magnetometer**→**functionId()****magnetometer.get_functionId()**

Returns the hardware identifier of the magnetometer, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the magnetometer (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

magnetometer→**get_hardwareId()****YMagnetometer****magnetometer**→**hardwareId()****magnetometer.get_hardwareId()**

Returns the unique hardware identifier of the magnetometer in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the magnetometer. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the magnetometer (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

magnetometer→**get_highestValue()****YMagnetometer****magnetometer**→**highestValue()****magnetometer.get_highestValue()**

Returns the maximal value observed for the magnetic field since the device was started.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YMagnetometer target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the magnetic field since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

magnetometer→**get_logFrequency()****YMagnetometer****magnetometer**→**logFrequency()****magnetometer.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YMagnetometer target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

magnetometer→get_logicalName()**YMagnetometer****magnetometer→logicalName()****magnetometer.get_logicalName()**

Returns the logical name of the magnetometer.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YMagnetometer target get_logicalName

Returns :

a string corresponding to the logical name of the magnetometer. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

magnetometer→**get_lowestValue()****YMagnetometer****magnetometer**→**lowestValue()****magnetometer.get_lowestValue()**

Returns the minimal value observed for the magnetic field since the device was started.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YMagnetometer target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the magnetic field since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

magnetometer→get_module()**YMagnetometer****magnetometer→module()****magnetometer.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

magnetometer→get_module_async()
magnetometer→module_async()**YMagnetometer**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

magnetometer→get_recordedData()**YMagnetometer****magnetometer→recordedData()****magnetometer.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
cpp	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YMagnetometer target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

magnetometer→get_reportFrequency()**YMagnetometer****magnetometer→reportFrequency()****magnetometer.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YMagnetometer target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

magnetometer→get_resolution()**YMagnetometer****magnetometer→resolution()****magnetometer.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YMagnetometer target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

magnetometer→**get_unit()****YMagnetometer****magnetometer**→**unit()**`magnetometer.get_unit()`

Returns the measuring unit for the magnetic field.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YMagnetometer target get_unit

Returns :

a string corresponding to the measuring unit for the magnetic field

On failure, throws an exception or returns Y_UNIT_INVALID.

magnetometer→get_userData()**YMagnetometer****magnetometer→userData()****magnetometer.get_userData()**

Returns the value of the userData attribute, as previously stored using method set_userData.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

magnetometer→**get_xValue()****YMagnetometer****magnetometer**→**xValue()****magnetometer.get_xValue()**

Returns the X component of the magnetic field, as a floating point number.

js	function get_xValue ()
nodejs	function get_xValue ()
php	function get_xValue ()
cpp	double get_xValue ()
m	-(double) xValue
pas	function get_xValue (): double
vb	function get_xValue () As Double
cs	double get_xValue ()
java	double get_xValue ()
py	def get_xValue ()
cmd	YMagnetometer target get_xValue

Returns :

a floating point number corresponding to the X component of the magnetic field, as a floating point number

On failure, throws an exception or returns Y_XVALUE_INVALID.

magnetometer→get_yValue()**YMagnetometer****magnetometer→yValue()****magnetometer.get_yValue()**

Returns the Y component of the magnetic field, as a floating point number.

js	function get_yValue ()
nodejs	function get_yValue ()
php	function get_yValue ()
cpp	double get_yValue ()
m	-(double) yValue
pas	function get_yValue (): double
vb	function get_yValue () As Double
cs	double get_yValue ()
java	double get_yValue ()
py	def get_yValue ()
cmd	YMagnetometer target get_yValue

Returns :

a floating point number corresponding to the Y component of the magnetic field, as a floating point number

On failure, throws an exception or returns Y_YVALUE_INVALID.

magnetometer→**get_zValue()****YMagnetometer****magnetometer**→**zValue()****magnetometer.get_zValue()**

Returns the Z component of the magnetic field, as a floating point number.

js	function get_zValue ()
nodejs	function get_zValue ()
php	function get_zValue ()
cpp	double get_zValue ()
m	-(double) zValue
pas	function get_zValue (): double
vb	function get_zValue () As Double
cs	double get_zValue ()
java	double get_zValue ()
py	def get_zValue ()
cmd	YMagnetometer target get_zValue

Returns :

a floating point number corresponding to the Z component of the magnetic field, as a floating point number

On failure, throws an exception or returns Y_ZVALUE_INVALID.

magnetometer→isOnline()**YMagnetometer****magnetometer.isOnline()**

Checks if the magnetometer is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the magnetometer in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the magnetometer.

Returns :

`true` if the magnetometer can be reached, and `false` otherwise

magnetometer→isOnline_async()**YMagnetometer**

Checks if the magnetometer is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the magnetometer in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

magnetometer→**load()****magnetometer.load()****YMagnetometer**

Preloads the magnetometer cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

magnetometer→loadCalibrationPoints()**YMagnetometer****magnetometer.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js function loadCalibrationPoints( rawValues, refValues)
node.js function loadCalibrationPoints( rawValues, refValues)
php function loadCalibrationPoints( &$rawValues, &$refValues)
cpp int loadCalibrationPoints( vector<double>& rawValues,
                             vector<double>& refValues)

m -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                             : (NSMutableArray*) refValues

pas function loadCalibrationPoints( var rawValues: TDoubleArray,
                                   var refValues: TDoubleArray): LongInt

vb procedure loadCalibrationPoints( )
cs int loadCalibrationPoints( List<double> rawValues,
                             List<double> refValues)
java int loadCalibrationPoints( ArrayList<Double> rawValues,
                               ArrayList<Double> refValues)
py def loadCalibrationPoints( rawValues, refValues)
cmd YMagnetometer target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→load_async()**YMagnetometer**

Preloads the magnetometer cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

magnetometer→**nextMagnetometer()****YMagnetometer****magnetometer.nextMagnetometer()**

Continues the enumeration of magnetometers started using `yFirstMagnetometer()`.

js	function nextMagnetometer()
nodejs	function nextMagnetometer()
php	function nextMagnetometer()
cpp	YMagnetometer * nextMagnetometer()
m	-(YMagnetometer*) nextMagnetometer
pas	function nextMagnetometer() : TYMagnetometer
vb	function nextMagnetometer() As YMagnetometer
cs	YMagnetometer nextMagnetometer()
java	YMagnetometer nextMagnetometer()
py	def nextMagnetometer()

Returns :

a pointer to a `YMagnetometer` object, corresponding to a magnetometer currently online, or a `null` pointer if there are no more magnetometers to enumerate.

magnetometer→registerTimedReportCallback()**YMagnetometer****magnetometer.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YMagnetometerTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YMagnetometerTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYMagnetometerTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

magnetometer→registerValueCallback()**YMagnetometer****magnetometer.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YMagnetometerValueCallback callback)
m	-(int) registerValueCallback : (YMagnetometerValueCallback) callback
pas	function registerValueCallback (callback : TYMagnetometerValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

magnetometer→set_highestValue()**YMagnetometer****magnetometer→setHighestValue()****magnetometer.set_highestValue()**

Changes the recorded maximal value observed.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YMagnetometer target set_highestValue newval

Parameters :**newval** a floating point number corresponding to the recorded maximal value observed**Returns :**

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→set_logFrequency()**YMagnetometer****magnetometer→setLogFrequency()****magnetometer.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YMagnetometer target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→set_logicalName()**YMagnetometer****magnetometer→setLogicalName()****magnetometer.set_logicalName()**

Changes the logical name of the magnetometer.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YMagnetometer target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the magnetometer.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

magnetometer→**set_lowestValue()**
magnetometer→**setLowestValue()**
magnetometer.set_lowestValue()

YMagnetometer

Changes the recorded minimal value observed.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YMagnetometer target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→set_reportFrequency()**YMagnetometer****magnetometer→setReportFrequency()****magnetometer.set_reportFrequency()**

Changes the timed value notification frequency for this function.

js	function set_reportFrequency (newval)
nodejs	function set_reportFrequency (newval)
php	function set_reportFrequency (\$newval)
cpp	int set_reportFrequency (const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency (newval : string): integer
vb	function set_reportFrequency (ByVal newval As String) As Integer
cs	int set_reportFrequency (string newval)
java	int set_reportFrequency (String newval)
py	def set_reportFrequency (newval)
cmd	YMagnetometer target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→set_resolution()**YMagnetometer****magnetometer→setResolution()****magnetometer.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YMagnetometer target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→set_userdata()**YMagnetometer****magnetometer→setUserData()****magnetometer.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

magnetometer→wait_async()**YMagnetometer**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.24. Measured value

YMeasure objects are used within the API to represent a value measured at a specified time. These objects are used in particular in conjunction with the YDataSet class.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_api.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YAPI = yoctolib.YAPI; var YModule = yoctolib.YModule;
php	require_once('yocto_api.php');
cpp	#include "yocto_api.h"
m	#import "yocto_api.h"
pas	uses yocto_api;
vb	yocto_api.vb
cs	yocto_api.cs
java	import com.yoctopuce.YoctoAPI.YModule;
py	from yocto_api import *

YMeasure methods

measure→get_averageValue()

Returns the average value observed during the time interval covered by this measure.

measure→get_endTimeUTC()

Returns the end time of the measure, relative to the Jan 1, 1970 UTC (Unix timestamp).

measure→get_maxValue()

Returns the largest value observed during the time interval covered by this measure.

measure→get_minValue()

Returns the smallest value observed during the time interval covered by this measure.

measure→get_startTimeUTC()

Returns the start time of the measure, relative to the Jan 1, 1970 UTC (Unix timestamp).

measure→**get_averageValue()****YMeasure****measure**→**averageValue()****measure.get_averageValue()**

Returns the average value observed during the time interval covered by this measure.

js	function get_averageValue ()
nodejs	function get_averageValue ()
php	function get_averageValue ()
cpp	double get_averageValue ()
m	-(double) averageValue
pas	function get_averageValue (): double
vb	function get_averageValue () As Double
cs	double get_averageValue ()
java	double get_averageValue ()
py	def get_averageValue ()

Returns :

a floating-point number corresponding to the average value observed.

measure→get_endTimeUTC()**YMeasure****measure→endTimeUTC()****measure.get_endTimeUTC()**

Returns the end time of the measure, relative to the Jan 1, 1970 UTC (Unix timestamp).

js	function get_endTimeUTC ()
nodejs	function get_endTimeUTC ()
php	function get_endTimeUTC ()
cpp	double get_endTimeUTC ()
m	-(double) endTimeUTC
pas	function get_endTimeUTC (): double
vb	function get_endTimeUTC () As Double
cs	double get_endTimeUTC ()
java	double get_endTimeUTC ()
py	def get_endTimeUTC ()

When the recording rate is higher than 1 sample per second, the timestamp may have a fractional part.

Returns :

an floating point number corresponding to the number of seconds between the Jan 1, 1970 UTC and the end of this measure.

measure→**get_maxValue()****YMeasure****measure**→**maxValue()****measure.get_maxValue()**

Returns the largest value observed during the time interval covered by this measure.

js	function get_maxValue ()
nodejs	function get_maxValue ()
php	function get_maxValue ()
cpp	double get_maxValue ()
m	-(double) maxValue
pas	function get_maxValue (): double
vb	function get_maxValue () As Double
cs	double get_maxValue ()
java	double get_maxValue ()
py	def get_maxValue ()

Returns :

a floating-point number corresponding to the largest value observed.

measure→**get_minValue()****YMeasure****measure**→**minValue()****measure.get_minValue()**

Returns the smallest value observed during the time interval covered by this measure.

js	function get_minValue ()
nodejs	function get_minValue ()
php	function get_minValue ()
cpp	double get_minValue ()
m	-(double) minValue
pas	function get_minValue (): double
vb	function get_minValue () As Double
cs	double get_minValue ()
java	double get_minValue ()
py	def get_minValue ()

Returns :

a floating-point number corresponding to the smallest value observed.

measure→**get_startTimeUTC()****YMeasure****measure**→**startTimeUTC()****measure.get_startTimeUTC()**

Returns the start time of the measure, relative to the Jan 1, 1970 UTC (Unix timestamp).

js	function get_startTimeUTC ()
nodejs	function get_startTimeUTC ()
php	function get_startTimeUTC ()
cpp	double get_startTimeUTC ()
m	-(double) startTimeUTC
pas	function get_startTimeUTC (): double
vb	function get_startTimeUTC () As Double
cs	double get_startTimeUTC ()
java	double get_startTimeUTC ()
py	def get_startTimeUTC ()

When the recording rate is higher than 1 sample per second, the timestamp may have a fractional part.

Returns :

an floating point number corresponding to the number of seconds between the Jan 1, 1970 UTC and the beginning of this measure.

3.25. Module control interface

This interface is identical for all Yoctopuce USB modules. It can be used to control the module global parameters, and to enumerate the functions provided by each module.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_api.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YAPI = yoctolib.YAPI; var YModule = yoctolib.YModule;
php	require_once('yocto_api.php');
c++	#include "yocto_api.h"
m	#import "yocto_api.h"
pas	uses yocto_api;
vb	yocto_api.vb
cs	yocto_api.cs
java	import com.yoctopuce.YoctoAPI.YModule;
py	from yocto_api import *

Global functions

yFindModule(func)

Allows you to find a module from its serial number or from its logical name.

yFirstModule()

Starts the enumeration of modules currently accessible.

YModule methods

module→describe()

Returns a descriptive text that identifies the module.

module→download(pathname)

Downloads the specified built-in file and returns a binary buffer with its content.

module→functionCount()

Returns the number of functions (beside the "module" interface) available on the module.

module→functionId(functionIndex)

Retrieves the hardware identifier of the *n*th function on the module.

module→functionName(functionIndex)

Retrieves the logical name of the *n*th function on the module.

module→functionValue(functionIndex)

Retrieves the advertised value of the *n*th function on the module.

module→get_beacon()

Returns the state of the localization beacon.

module→get_errorMessage()

Returns the error message of the latest error with this module object.

module→get_errorType()

Returns the numerical error code of the latest error with this module object.

module→get_firmwareRelease()

Returns the version of the firmware embedded in the module.

module→get_hardwareId()

Returns the unique hardware identifier of the module.

module→get_icon2d()

3. Reference

	Returns the icon of the module.
module → get_lastLogs()	Returns a string with last logs of the module.
module → get_logicalName()	Returns the logical name of the module.
module → get_luminosity()	Returns the luminosity of the module informative leds (from 0 to 100).
module → get_persistentSettings()	Returns the current state of persistent module settings.
module → get_productId()	Returns the USB device identifier of the module.
module → get_productName()	Returns the commercial name of the module, as set by the factory.
module → get_productRelease()	Returns the hardware release version of the module.
module → get_rebootCountdown()	Returns the remaining number of seconds before the module restarts, or zero when no reboot has been scheduled.
module → get_serialNumber()	Returns the serial number of the module, as set by the factory.
module → get_upTime()	Returns the number of milliseconds spent since the module was powered on.
module → get_usbBandwidth()	Returns the number of USB interfaces used by the module.
module → get_usbCurrent()	Returns the current consumed by the module on the USB bus, in milli-amps.
module → get_userData()	Returns the value of the userData attribute, as previously stored using method <code>set_userData</code> .
module → isOnline()	Checks if the module is currently reachable, without raising any error.
module → isOnline_async(callback, context)	Checks if the module is currently reachable, without raising any error.
module → load(msValidity)	Preloads the module cache with a specified validity duration.
module → load_async(msValidity, callback, context)	Preloads the module cache with a specified validity duration (asynchronous version).
module → nextModule()	Continues the module enumeration started using <code>yFirstModule()</code> .
module → reboot(secBeforeReboot)	Schedules a simple module reboot after the given number of seconds.
module → registerLogCallback(callback)	todo
module → revertFromFlash()	Reloads the settings stored in the nonvolatile memory, as when the module is powered on.
module → saveToFlash()	Saves current settings in the nonvolatile memory of the module.

module→**set_beacon**(**newval**)

Turns on or off the module localization beacon.

module→**set_logicalName**(**newval**)

Changes the logical name of the module.

module→**set_luminosity**(**newval**)

Changes the luminosity of the module informative leds.

module→**set_usbBandwidth**(**newval**)

Changes the number of USB interfaces used by the module.

module→**set_userData**(**data**)

Stores a user context provided as argument in the userData attribute of the function.

module→**triggerFirmwareUpdate**(**secBeforeReboot**)

Schedules a module reboot into special firmware update mode.

module→**wait_async**(**callback**, **context**)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YModule.FindModule()**YModule****yFindModule()**`YModule.FindModule()`

Allows you to find a module from its serial number or from its logical name.

js	function yFindModule (func)
nodejs	function FindModule (func)
php	function yFindModule (\$func)
cpp	YModule* yFindModule (string func)
m	+(YModule*) yFindModule : (NSString*) func
pas	function yFindModule (func : string): TYModule
vb	function yFindModule (ByVal func As String) As YModule
cs	YModule FindModule (string func)
java	YModule FindModule (String func)
py	def FindModule (func)

This function does not require that the module is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YModule.isOnline()` to test if the module is indeed online at a given time. In case of ambiguity when looking for a module by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string containing either the serial number or the logical name of the desired module

Returns :

a `YModule` object allowing you to drive the module or get additional information on the module.

YModule.FirstModule()**YModule****yFirstModule()**`YModule.FirstModule()`

Starts the enumeration of modules currently accessible.

js	function yFirstModule ()
nodejs	function FirstModule ()
php	function yFirstModule ()
cpp	YModule* yFirstModule ()
m	YModule* yFirstModule ()
pas	function yFirstModule (): TYModule
vb	function yFirstModule () As YModule
cs	YModule FirstModule ()
java	YModule FirstModule ()
py	def FirstModule ()

Use the method `YModule.nextModule()` to iterate on the next modules.

Returns :

a pointer to a `YModule` object, corresponding to the first module currently online, or a `null` pointer if there are none.

module→**describe()****module.describe()****YModule**

Returns a descriptive text that identifies the module.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

The text may include either the logical name or the serial number of the module.

Returns :

a string that describes the module

module→download()**YModule**

Downloads the specified built-in file and returns a binary buffer with its content.

js	function download (pathname)
nodejs	function download (pathname)
php	function download (\$pathname)
cpp	string download (string pathname)
m	-(NSData*) download : (NSString*) pathname
pas	function download (pathname : string): TByteArray
vb	function download () As Byte
py	def download (pathname)
cmd	YModule target download pathname

Parameters :

pathname name of the new file to load

Returns :

a binary buffer with the file content

On failure, throws an exception or returns an empty content.

module→**functionCount()****YModule**

Returns the number of functions (beside the "module" interface) available on the module.

js	function functionCount ()
nodejs	function functionCount ()
php	function functionCount ()
cpp	int functionCount ()
m	-(int) functionCount
pas	function functionCount (): integer
vb	function functionCount () As Integer
cs	int functionCount ()
py	def functionCount ()

Returns :

the number of functions on the module

On failure, throws an exception or returns a negative error code.

module→**functionId()****YModule**

Retrieves the hardware identifier of the *n*th function on the module.

js	function functionId (functionIndex)
nodejs	function functionId (functionIndex)
php	function functionId (\$functionIndex)
cpp	string functionId (int functionIndex)
m	-(NSString*) functionId : (int) functionIndex
pas	function functionId (functionIndex : integer): string
vb	function functionId (ByVal functionIndex As Integer) As String
cs	string functionId (int functionIndex)
py	def functionId (functionIndex)

Parameters :

functionIndex the index of the function for which the information is desired, starting at 0 for the first function.

Returns :

a string corresponding to the unambiguous hardware identifier of the requested module function

On failure, throws an exception or returns an empty string.

module→**functionName()****YModule**

Retrieves the logical name of the n th function on the module.

js	function functionName (functionIndex)
nodejs	function functionName (functionIndex)
php	function functionName (\$functionIndex)
cpp	string functionName (int functionIndex)
m	-(NSString*) functionName : (int) functionIndex
pas	function functionName (functionIndex : integer): string
vb	function functionName (ByVal functionIndex As Integer) As String
cs	string functionName (int functionIndex)
py	def functionName (functionIndex)

Parameters :

functionIndex the index of the function for which the information is desired, starting at 0 for the first function.

Returns :

a string corresponding to the logical name of the requested module function

On failure, throws an exception or returns an empty string.

module→functionValue()**YModule**

Retrieves the advertised value of the *n*th function on the module.

js	function functionValue (functionIndex)
nodejs	function functionValue (functionIndex)
php	function functionValue (\$functionIndex)
cpp	string functionValue (int functionIndex)
m	-(NSString*) functionValue : (int) functionIndex
pas	function functionValue (functionIndex : integer): string
vb	function functionValue (ByVal functionIndex As Integer) As String
cs	string functionValue (int functionIndex)
py	def functionValue (functionIndex)

Parameters :

functionIndex the index of the function for which the information is desired, starting at 0 for the first function.

Returns :

a short string (up to 6 characters) corresponding to the advertised value of the requested module function

On failure, throws an exception or returns an empty string.

module→**get_beacon()****YModule****module**→**beacon()**`module.get_beacon()`

Returns the state of the localization beacon.

js	function get_beacon ()
nodejs	function get_beacon ()
php	function get_beacon ()
cpp	Y_BEACON_enum get_beacon ()
m	-(Y_BEACON_enum) beacon
pas	function get_beacon (): Integer
vb	function get_beacon () As Integer
cs	int get_beacon ()
java	int get_beacon ()
py	def get_beacon ()
cmd	YModule target get_beacon

Returns :

either Y_BEACON_OFF or Y_BEACON_ON, according to the state of the localization beacon

On failure, throws an exception or returns Y_BEACON_INVALID.

module→**get_errorMessage()****YModule****module**→**errorMessage()****module.errorMessage()**

Returns the error message of the latest error with this module object.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage() : string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using this module object

module→**get_errorType()****YModule****module**→**errorType()****module.get_errorType()**

Returns the numerical error code of the latest error with this module object.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using this module object

module→**get_firmwareRelease()****YModule****module**→**firmwareRelease()****module.get_firmwareRelease()**

Returns the version of the firmware embedded in the module.

js	function get_firmwareRelease()
nodejs	function get_firmwareRelease()
php	function get_firmwareRelease()
cpp	string get_firmwareRelease()
m	-(NSString*) firmwareRelease
pas	function get_firmwareRelease() : string
vb	function get_firmwareRelease() As String
cs	string get_firmwareRelease()
java	String get_firmwareRelease()
py	def get_firmwareRelease()
cmd	YModule target get_firmwareRelease

Returns :

a string corresponding to the version of the firmware embedded in the module

On failure, throws an exception or returns Y_FIRMWARERELEASE_INVALID.

module→**get_hardwareId()****YModule****module**→**hardwareId()****module.hardwareId()**

Returns the unique hardware identifier of the module.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is made of the device serial number followed by string ".module".

Returns :

a string that uniquely identifies the module

module→**get_icon2d()****YModule****module**→**icon2d()**

Returns the icon of the module.

js	function get_icon2d ()
nodejs	function get_icon2d ()
php	function get_icon2d ()
cpp	string get_icon2d ()
m	-(NSData*) icon2d
pas	function get_icon2d (): TByteArray
vb	function get_icon2d () As Byte
py	def get_icon2d ()
cmd	YModule target get_icon2d

The icon is a PNG image and does not exceeds 1536 bytes.

Returns :

a binary buffer with module icon, in png format.

module→**get_lastLogs()****YModule****module**→**lastLogs()**`module.get_lastLogs()`

Returns a string with last logs of the module.

js	function get_lastLogs ()
nodejs	function get_lastLogs ()
php	function get_lastLogs ()
cpp	string get_lastLogs ()
m	-(NSString*) lastLogs
pas	function get_lastLogs (): string
vb	function get_lastLogs () As String
cs	string get_lastLogs ()
java	String get_lastLogs ()
py	def get_lastLogs ()
cmd	YModule target get_lastLogs

This method return only logs that are still in the module.

Returns :

a string with last logs of the module.

module→**get_logicalName()****YModule****module**→**logicalName()****module.get_logicalName()**

Returns the logical name of the module.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YModule target get_logicalName

Returns :

a string corresponding to the logical name of the module

On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

module→**get_luminosity()****YModule****module**→**luminosity()**`module.get_luminosity()`

Returns the luminosity of the module informative leds (from 0 to 100).

js	function get_luminosity ()
nodejs	function get_luminosity ()
php	function get_luminosity ()
cpp	int get_luminosity ()
m	-(int) luminosity
pas	function get_luminosity (): LongInt
vb	function get_luminosity () As Integer
cs	int get_luminosity ()
java	int get_luminosity ()
py	def get_luminosity ()
cmd	YModule target get_luminosity

Returns :

an integer corresponding to the luminosity of the module informative leds (from 0 to 100)

On failure, throws an exception or returns Y_LUMINOSITY_INVALID.

module→**get_persistentSettings()****YModule****module**→**persistentSettings()****module.get_persistentSettings()**

Returns the current state of persistent module settings.

js	function get_persistentSettings ()
nodejs	function get_persistentSettings ()
php	function get_persistentSettings ()
cpp	Y_PERSISTENTSETTINGS_enum get_persistentSettings ()
m	-(Y_PERSISTENTSETTINGS_enum) persistentSettings
pas	function get_persistentSettings (): Integer
vb	function get_persistentSettings () As Integer
cs	int get_persistentSettings ()
java	int get_persistentSettings ()
py	def get_persistentSettings ()
cmd	YModule target get_persistentSettings

Returns :

a value among Y_PERSISTENTSETTINGS_LOADED, Y_PERSISTENTSETTINGS_SAVED and Y_PERSISTENTSETTINGS_MODIFIED corresponding to the current state of persistent module settings

On failure, throws an exception or returns Y_PERSISTENTSETTINGS_INVALID.

module→**get_productId()****YModule****module**→**productId()**`module.productId()`

Returns the USB device identifier of the module.

js	function get_productId ()
nodejs	function get_productId ()
php	function get_productId ()
cpp	int get_productId ()
m	-(int) productId
pas	function get_productId (): LongInt
vb	function get_productId () As Integer
cs	int get_productId ()
java	int get_productId ()
py	def get_productId ()
cmd	YModule target get_productId

Returns :

an integer corresponding to the USB device identifier of the module

On failure, throws an exception or returns Y_PRODUCTID_INVALID.

module→**get_productName()****YModule****module**→**productName()****module.get_productName()**

Returns the commercial name of the module, as set by the factory.

js	function get_productName()
nodejs	function get_productName()
php	function get_productName()
cpp	string get_productName()
m	-(NSString*) productName
pas	function get_productName() : string
vb	function get_productName() As String
cs	string get_productName()
java	String get_productName()
py	def get_productName()
cmd	YModule target get_productName

Returns :

a string corresponding to the commercial name of the module, as set by the factory

On failure, throws an exception or returns Y_PRODUCTNAME_INVALID.

module→**get_productRelease()****YModule****module**→**productRelease()****module.get_productRelease()**

Returns the hardware release version of the module.

js	function get_productRelease ()
nodejs	function get_productRelease ()
php	function get_productRelease ()
cpp	int get_productRelease ()
m	-(int) productRelease
pas	function get_productRelease (): LongInt
vb	function get_productRelease () As Integer
cs	int get_productRelease ()
java	int get_productRelease ()
py	def get_productRelease ()
cmd	YModule target get_productRelease

Returns :

an integer corresponding to the hardware release version of the module

On failure, throws an exception or returns Y_PRODUCTRELEASE_INVALID.

module→**get_rebootCountdown()****YModule****module**→**rebootCountdown()****module.get_rebootCountdown()**

Returns the remaining number of seconds before the module restarts, or zero when no reboot has been scheduled.

js	function get_rebootCountdown()
nodejs	function get_rebootCountdown()
php	function get_rebootCountdown()
cpp	int get_rebootCountdown()
m	-(int) rebootCountdown
pas	function get_rebootCountdown() : LongInt
vb	function get_rebootCountdown() As Integer
cs	int get_rebootCountdown()
java	int get_rebootCountdown()
py	def get_rebootCountdown()
cmd	YModule target get_rebootCountdown

Returns :

an integer corresponding to the remaining number of seconds before the module restarts, or zero when no reboot has been scheduled

On failure, throws an exception or returns Y_REBOOTCOUNTDOWN_INVALID.

module→**get_serialNumber()****YModule****module**→**serialNumber()****module.get_serialNumber()**

Returns the serial number of the module, as set by the factory.

js	function get_serialNumber ()
nodejs	function get_serialNumber ()
php	function get_serialNumber ()
cpp	string get_serialNumber ()
m	-(NSString*) serialNumber
pas	function get_serialNumber (): string
vb	function get_serialNumber () As String
cs	string get_serialNumber ()
java	String get_serialNumber ()
py	def get_serialNumber ()
cmd	YModule target get_serialNumber

Returns :

a string corresponding to the serial number of the module, as set by the factory

On failure, throws an exception or returns Y_SERIALNUMBER_INVALID.

module→**get_upTime()****YModule****module**→**upTime()****module.get_upTime()**

Returns the number of milliseconds spent since the module was powered on.

js	function get_upTime()
nodejs	function get_upTime()
php	function get_upTime()
cpp	s64 get_upTime()
m	-(s64) upTime
pas	function get_upTime() : int64
vb	function get_upTime() As Long
cs	long get_upTime()
java	long get_upTime()
py	def get_upTime()
cmd	YModule target get_upTime

Returns :

an integer corresponding to the number of milliseconds spent since the module was powered on

On failure, throws an exception or returns Y_UPTIME_INVALID.

module→**get_usbBandwidth()****YModule****module**→**usbBandwidth()****module.get_usbBandwidth()**

Returns the number of USB interfaces used by the module.

js	function get_usbBandwidth ()
nodejs	function get_usbBandwidth ()
php	function get_usbBandwidth ()
cpp	Y_USBBANDWIDTH_enum get_usbBandwidth ()
m	-(Y_USBBANDWIDTH_enum) usbBandwidth
pas	function get_usbBandwidth (): Integer
vb	function get_usbBandwidth () As Integer
cs	int get_usbBandwidth ()
java	int get_usbBandwidth ()
py	def get_usbBandwidth ()
cmd	YModule target get_usbBandwidth

Returns :

either Y_USBBANDWIDTH_SIMPLE or Y_USBBANDWIDTH_DOUBLE, according to the number of USB interfaces used by the module

On failure, throws an exception or returns Y_USBBANDWIDTH_INVALID.

module→**get_usbCurrent()****YModule****module**→**usbCurrent()**`module.get_usbCurrent()`

Returns the current consumed by the module on the USB bus, in milli-amps.

js	function get_usbCurrent ()
nodejs	function get_usbCurrent ()
php	function get_usbCurrent ()
cpp	int get_usbCurrent ()
m	-(int) usbCurrent
pas	function get_usbCurrent (): LongInt
vb	function get_usbCurrent () As Integer
cs	int get_usbCurrent ()
java	int get_usbCurrent ()
py	def get_usbCurrent ()
cmd	YModule target get_usbCurrent

Returns :

an integer corresponding to the current consumed by the module on the USB bus, in milli-amps

On failure, throws an exception or returns Y_USBCURRENT_INVALID.

module→**get_userdata()****YModule****module**→**userData()****module.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

module→**isOnline()****module.isOnline()****YModule**

Checks if the module is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there are valid cached values for the module, that have not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the requested module.

Returns :

`true` if the module can be reached, and `false` otherwise

module→**isOnline_async()****YModule**

Checks if the module is currently reachable, without raising any error.

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there are valid cached values for the module, that have not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the requested module.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox Javascript VM that does not implement context switching during blocking I/O calls.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving module object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

module→**load()****module.load()****YModule**

Preloads the module cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all module attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded module parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

module→load_async()**YModule**

Preloads the module cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all module attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded module parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving module object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

module→**nextModule()****module.nextModule()****YModule**

Continues the module enumeration started using `yFirstModule()`.

js	function nextModule ()
nodejs	function nextModule ()
php	function nextModule ()
cpp	YModule * nextModule ()
m	-(YModule*) nextModule
pas	function nextModule (): TYModule
vb	function nextModule () As YModule
cs	YModule nextModule ()
java	YModule nextModule ()
py	def nextModule ()

Returns :

a pointer to a `YModule` object, corresponding to the next module found, or a `null` pointer if there are no more modules to enumerate.

module→reboot()`module.reboot ()`**YModule**

Schedules a simple module reboot after the given number of seconds.

js	function reboot (secBeforeReboot)
nodejs	function reboot (secBeforeReboot)
php	function reboot (\$secBeforeReboot)
cpp	int reboot (int secBeforeReboot)
m	-(int) reboot : (int) secBeforeReboot
pas	function reboot (secBeforeReboot : LongInt): LongInt
vb	function reboot () As Integer
cs	int reboot (int secBeforeReboot)
java	int reboot (int secBeforeReboot)
py	def reboot (secBeforeReboot)
cmd	YModule target reboot secBeforeReboot

Parameters :

secBeforeReboot number of seconds before rebooting

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

module→**registerLogCallback()**

YModule

todo

cpp	void registerLogCallback (YModuleLogCallback callback)
m	-(void) registerLogCallback : (YModuleLogCallback) callback
vb	function registerLogCallback (ByVal callback As YModuleLogCallback) As Integer
cs	int registerLogCallback (LogCallback callback)
py	def registerLogCallback (callback)

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

module→revertFromFlash()**YModule****module.revertFromFlash()**

Reloads the settings stored in the nonvolatile memory, as when the module is powered on.

js	function revertFromFlash ()
nodejs	function revertFromFlash ()
php	function revertFromFlash ()
cpp	int revertFromFlash ()
m	-(int) revertFromFlash
pas	function revertFromFlash (): LongInt
vb	function revertFromFlash () As Integer
cs	int revertFromFlash ()
java	int revertFromFlash ()
py	def revertFromFlash ()
cmd	YModule target revertFromFlash

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

module→**saveToFlash()**`module.saveToFlash()`
YModule

Saves current settings in the nonvolatile memory of the module.

js	function saveToFlash ()
nodejs	function saveToFlash ()
php	function saveToFlash ()
cpp	int saveToFlash ()
m	-(int) saveToFlash
pas	function saveToFlash (): LongInt
vb	function saveToFlash () As Integer
cs	int saveToFlash ()
java	int saveToFlash ()
py	def saveToFlash ()
cmd	YModule target saveToFlash

Warning: the number of allowed save operations during a module life is limited (about 100000 cycles). Do not call this function within a loop.

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

module→**set_beacon()****YModule****module**→**setBeacon()****module.set_beacon()**

Turns on or off the module localization beacon.

js	function set_beacon (newval)
nodejs	function set_beacon (newval)
php	function set_beacon (\$newval)
cpp	int set_beacon (Y_BEACON_enum newval)
m	-(int) setBeacon : (Y_BEACON_enum) newval
pas	function set_beacon (newval : Integer): integer
vb	function set_beacon (ByVal newval As Integer) As Integer
cs	int set_beacon (int newval)
java	int set_beacon (int newval)
py	def set_beacon (newval)
cmd	YModule target set_beacon newval

Parameters :

newval either Y_BEACON_OFF or Y_BEACON_ON

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

module→**set_logicalName()****YModule****module**→**setLogicalName()****module.set_logicalName()**

Changes the logical name of the module.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YModule target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the module

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

module→**set_luminosity()****YModule****module**→**setLuminosity()****module.set_luminosity()**

Changes the luminosity of the module informative leds.

js	function set_luminosity (newval)
nodejs	function set_luminosity (newval)
php	function set_luminosity (\$newval)
cpp	int set_luminosity (int newval)
m	-(int) setLuminosity : (int) newval
pas	function set_luminosity (newval : LongInt): integer
vb	function set_luminosity (ByVal newval As Integer) As Integer
cs	int set_luminosity (int newval)
java	int set_luminosity (int newval)
py	def set_luminosity (newval)
cmd	YModule target set_luminosity newval

The parameter is a value between 0 and 100. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the luminosity of the module informative leds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

module→**set_usbBandwidth()****YModule****module**→**setUsbBandwidth()****module.set_usbBandwidth()**

Changes the number of USB interfaces used by the module.

js	function set_usbBandwidth (newval)
nodejs	function set_usbBandwidth (newval)
php	function set_usbBandwidth (\$newval)
cpp	int set_usbBandwidth (Y_USBBANDWIDTH_enum newval)
m	-(int) setUsbBandwidth : (Y_USBBANDWIDTH_enum) newval
pas	function set_usbBandwidth (newval : Integer): integer
vb	function set_usbBandwidth (ByVal newval As Integer) As Integer
cs	int set_usbBandwidth (int newval)
java	int set_usbBandwidth (int newval)
py	def set_usbBandwidth (newval)
cmd	YModule target set_usbBandwidth newval

You must reboot the module after changing this setting.

Parameters :

newval either Y_USBBANDWIDTH_SIMPLE or Y_USBBANDWIDTH_DOUBLE, according to the number of USB interfaces used by the module

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

module→**set_userData()****YModule****module**→**setUserData()****module.set_userData()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userData (data)
nodejs	function set_userData (data)
php	function set_userData (\$data)
cpp	void set_userData (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userData (data : Tobject)
vb	procedure set_userData (ByVal data As Object)
cs	void set_userData (object data)
java	void set_userData (Object data)
py	def set_userData (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

module→triggerFirmwareUpdate()**YModule****module.triggerFirmwareUpdate()**

Schedules a module reboot into special firmware update mode.

js	function triggerFirmwareUpdate (secBeforeReboot)
nodejs	function triggerFirmwareUpdate (secBeforeReboot)
php	function triggerFirmwareUpdate (\$secBeforeReboot)
cpp	int triggerFirmwareUpdate (int secBeforeReboot)
m	-(int) triggerFirmwareUpdate : (int) secBeforeReboot
pas	function triggerFirmwareUpdate (secBeforeReboot : LongInt): LongInt
vb	function triggerFirmwareUpdate () As Integer
cs	int triggerFirmwareUpdate (int secBeforeReboot)
java	int triggerFirmwareUpdate (int secBeforeReboot)
py	def triggerFirmwareUpdate (secBeforeReboot)
cmd	YModule target triggerFirmwareUpdate secBeforeReboot

Parameters :

secBeforeReboot number of seconds before rebooting

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

module→**wait_async()****YModule**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.26. Network function interface

YNetwork objects provide access to TCP/IP parameters of Yoctopuce modules that include a built-in network interface.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_network.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YNetwork = yoctolib.YNetwork;
php	require_once('yocto_network.php');
c++	#include "yocto_network.h"
m	#import "yocto_network.h"
pas	uses yocto_network;
vb	yocto_network.vb
cs	yocto_network.cs
java	import com.yoctopuce.YoctoAPI.YNetwork;
py	from yocto_network import *

Global functions

yFindNetwork(func)

Retrieves a network interface for a given identifier.

yFirstNetwork()

Starts the enumeration of network interfaces currently accessible.

YNetwork methods

network→callbackLogin(username, password)

Connects to the notification callback and saves the credentials required to log into it.

network→describe()

Returns a short text that describes unambiguously the instance of the network interface in the form TYPE (NAME) = SERIAL . FUNCTIONID.

network→get_adminPassword()

Returns a hash string if a password has been set for user "admin", or an empty string otherwise.

network→get_advertisedValue()

Returns the current value of the network interface (no more than 6 characters).

network→get_callbackCredentials()

Returns a hashed version of the notification callback credentials if set, or an empty string otherwise.

network→get_callbackEncoding()

Returns the encoding standard to use for representing notification values.

network→get_callbackMaxDelay()

Returns the maximum waiting time between two callback notifications, in seconds.

network→get_callbackMethod()

Returns the HTTP method used to notify callbacks for significant state changes.

network→get_callbackMinDelay()

Returns the minimum waiting time between two callback notifications, in seconds.

network→get_callbackUrl()

Returns the callback URL to notify of significant state changes.

network→get_discoverable()

Returns the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

network→get_errorMessage()

Returns the error message of the latest error with the network interface.

network→get_errorType()

Returns the numerical error code of the latest error with the network interface.

network→get_friendlyName()

Returns a global identifier of the network interface in the format `MODULE_NAME . FUNCTION_NAME`.

network→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

network→get_functionId()

Returns the hardware identifier of the network interface, without reference to the module.

network→get_hardwareId()

Returns the unique hardware identifier of the network interface in the form `SERIAL . FUNCTIONID`.

network→get_ipAddress()

Returns the IP address currently in use by the device.

network→get_logicalName()

Returns the logical name of the network interface.

network→get_macAddress()

Returns the MAC address of the network interface.

network→get_module()

Gets the `YModule` object for the device on which the function is located.

network→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

network→get_poeCurrent()

Returns the current consumed by the module from Power-over-Ethernet (PoE), in milli-amps.

network→get_primaryDNS()

Returns the IP address of the primary name server to be used by the module.

network→get_readiness()

Returns the current established working mode of the network interface.

network→get_router()

Returns the IP address of the router on the device subnet (default gateway).

network→get_secondaryDNS()

Returns the IP address of the secondary name server to be used by the module.

network→get_subnetMask()

Returns the subnet mask currently used by the device.

network→get_userData()

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

network→get_userPassword()

Returns a hash string if a password has been set for "user" user, or an empty string otherwise.

network→get_wwwWatchdogDelay()

Returns the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

network→isOnline()

Checks if the network interface is currently reachable, without raising any error.

network→isOnline_async(callback, context)

Checks if the network interface is currently reachable, without raising any error (asynchronous version).

network→load(msValidity)

Preloads the network interface cache with a specified validity duration.

network→load_async(msValidity, callback, context)

Preloads the network interface cache with a specified validity duration (asynchronous version).

network→nextNetwork()

Continues the enumeration of network interfaces started using `yFirstNetwork()`.

network→ping(host)

Pings `str_host` to test the network connectivity.

network→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

network→set_adminPassword(newval)

Changes the password for the "admin" user.

network→set_callbackCredentials(newval)

Changes the credentials required to connect to the callback address.

network→set_callbackEncoding(newval)

Changes the encoding standard to use for representing notification values.

network→set_callbackMaxDelay(newval)

Changes the maximum waiting time between two callback notifications, in seconds.

network→set_callbackMethod(newval)

Changes the HTTP method used to notify callbacks for significant state changes.

network→set_callbackMinDelay(newval)

Changes the minimum waiting time between two callback notifications, in seconds.

network→set_callbackUrl(newval)

Changes the callback URL to notify significant state changes.

network→set_discoverable(newval)

Changes the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

network→set_logicalName(newval)

Changes the logical name of the network interface.

network→set_primaryDNS(newval)

Changes the IP address of the primary name server to be used by the module.

network→set_secondaryDNS(newval)

Changes the IP address of the secondary name server to be used by the module.

network→set_userData(data)

Stores a user context provided as argument in the `userData` attribute of the function.

network→set_userPassword(newval)

Changes the password for the "user" user.

network→set_wwwWatchdogDelay(newval)

Changes the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

network→useDHCP(fallbackIpAddr, fallbackSubnetMaskLen, fallbackRouter)

Changes the configuration of the network interface to enable the use of an IP address received from a DHCP server.

network→useStaticIP(ipAddress, subnetMaskLen, router)

Changes the configuration of the network interface to use a static IP address.

network→wait_async(callback, context)

3. Reference

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YNetwork.FindNetwork()**YNetwork****yFindNetwork()**`YNetwork.FindNetwork()`

Retrieves a network interface for a given identifier.

js	function yFindNetwork (func)
nodejs	function FindNetwork (func)
php	function yFindNetwork (\$func)
cpp	YNetwork* yFindNetwork (const string& func)
m	YNetwork* yFindNetwork (NSString* func)
pas	function yFindNetwork (func : string): TYNetwork
vb	function yFindNetwork (ByVal func As String) As YNetwork
cs	YNetwork FindNetwork (string func)
java	YNetwork FindNetwork (String func)
py	def FindNetwork (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the network interface is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YNetwork.IsOnline()` to test if the network interface is indeed online at a given time. In case of ambiguity when looking for a network interface by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the network interface

Returns :

a `YNetwork` object allowing you to drive the network interface.

YNetwork.FirstNetwork()**YNetwork****yFirstNetwork()**`YNetwork.FirstNetwork()`

Starts the enumeration of network interfaces currently accessible.

<code>js</code>	<code>function yFirstNetwork()</code>
<code>nodejs</code>	<code>function FirstNetwork()</code>
<code>php</code>	<code>function yFirstNetwork()</code>
<code>cpp</code>	<code>YNetwork* yFirstNetwork()</code>
<code>m</code>	<code>YNetwork* yFirstNetwork()</code>
<code>pas</code>	<code>function yFirstNetwork(): TYNetwork</code>
<code>vb</code>	<code>function yFirstNetwork() As YNetwork</code>
<code>cs</code>	<code>YNetwork FirstNetwork()</code>
<code>java</code>	<code>YNetwork FirstNetwork()</code>
<code>py</code>	<code>def FirstNetwork()</code>

Use the method `YNetwork.nextNetwork()` to iterate on next network interfaces.

Returns :

a pointer to a `YNetwork` object, corresponding to the first network interface currently online, or a `null` pointer if there are none.

network→callbackLogin()**YNetwork****network.callbackLogin()**

Connects to the notification callback and saves the credentials required to log into it.

js	function callbackLogin (username , password)
nodejs	function callbackLogin (username , password)
php	function callbackLogin (\$username , \$password)
cpp	int callbackLogin (string username , string password)
m	-(int) callbackLogin : (NSString*) username : (NSString*) password
pas	function callbackLogin (username : string, password : string): integer
vb	function callbackLogin (ByVal username As String, ByVal password As String) As Integer
cs	int callbackLogin (string username , string password)
java	int callbackLogin (String username , String password)
py	def callbackLogin (username , password)
cmd	YNetwork target callbackLogin username password

The password is not stored into the module, only a hashed copy of the credentials are saved. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

username username required to log to the callback
password password required to log to the callback

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→describe()**network.describe()****YNetwork**

Returns a short text that describes unambiguously the instance of the network interface in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the network interface (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

network→get_adminPassword()**YNetwork****network→adminPassword()****network.get_adminPassword()**

Returns a hash string if a password has been set for user "admin", or an empty string otherwise.

js	function get_adminPassword ()
nodejs	function get_adminPassword ()
php	function get_adminPassword ()
cpp	string get_adminPassword ()
m	-(NSString*) adminPassword
pas	function get_adminPassword (): string
vb	function get_adminPassword () As String
cs	string get_adminPassword ()
java	String get_adminPassword ()
py	def get_adminPassword ()
cmd	YNetwork target get_adminPassword

Returns :

a string corresponding to a hash string if a password has been set for user "admin", or an empty string otherwise

On failure, throws an exception or returns Y_ADMINPASSWORD_INVALID.

network→**get_advertisedValue()****network**→**advertisedValue()****network.get_advertisedValue()**

Returns the current value of the network interface (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YNetwork target get_advertisedValue

Returns :

a string corresponding to the current value of the network interface (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

network→get_callbackCredentials()**YNetwork****network→callbackCredentials()****network.get_callbackCredentials()**

Returns a hashed version of the notification callback credentials if set, or an empty string otherwise.

js	function get_callbackCredentials ()
nodejs	function get_callbackCredentials ()
php	function get_callbackCredentials ()
cpp	string get_callbackCredentials ()
m	-(NSString*) callbackCredentials
pas	function get_callbackCredentials (): string
vb	function get_callbackCredentials () As String
cs	string get_callbackCredentials ()
java	String get_callbackCredentials ()
py	def get_callbackCredentials ()
cmd	YNetwork target get_callbackCredentials

Returns :

a string corresponding to a hashed version of the notification callback credentials if set, or an empty string otherwise

On failure, throws an exception or returns Y_CALLBACKCREDENTIALS_INVALID.

network→get_callbackEncoding()**YNetwork****network→callbackEncoding()****network.get_callbackEncoding()**

Returns the encoding standard to use for representing notification values.

js	function get_callbackEncoding ()
nodejs	function get_callbackEncoding ()
php	function get_callbackEncoding ()
cpp	Y_CALLBACKENCODING_enum get_callbackEncoding ()
m	-(Y_CALLBACKENCODING_enum) callbackEncoding
pas	function get_callbackEncoding (): Integer
vb	function get_callbackEncoding () As Integer
cs	int get_callbackEncoding ()
java	int get_callbackEncoding ()
py	def get_callbackEncoding ()
cmd	YNetwork target get_callbackEncoding

Returns :

a value among Y_CALLBACKENCODING_FORM, Y_CALLBACKENCODING_JSON, Y_CALLBACKENCODING_JSON_ARRAY, Y_CALLBACKENCODING_CSV and Y_CALLBACKENCODING_YOCTO_API corresponding to the encoding standard to use for representing notification values

On failure, throws an exception or returns Y_CALLBACKENCODING_INVALID.

network→get_callbackMaxDelay()**YNetwork****network→callbackMaxDelay()****network.get_callbackMaxDelay()**

Returns the maximum waiting time between two callback notifications, in seconds.

js	function get_callbackMaxDelay ()
nodejs	function get_callbackMaxDelay ()
php	function get_callbackMaxDelay ()
cpp	int get_callbackMaxDelay ()
m	-(int) callbackMaxDelay
pas	function get_callbackMaxDelay (): LongInt
vb	function get_callbackMaxDelay () As Integer
cs	int get_callbackMaxDelay ()
java	int get_callbackMaxDelay ()
py	def get_callbackMaxDelay ()
cmd	YNetwork target get_callbackMaxDelay

Returns :

an integer corresponding to the maximum waiting time between two callback notifications, in seconds

On failure, throws an exception or returns Y_CALLBACKMAXDELAY_INVALID.

network→**get_callbackMethod()****YNetwork****network**→**callbackMethod()****network.get_callbackMethod()**

Returns the HTTP method used to notify callbacks for significant state changes.

js	function get_callbackMethod ()
nodejs	function get_callbackMethod ()
php	function get_callbackMethod ()
cpp	Y_CALLBACKMETHOD_enum get_callbackMethod ()
m	-(Y_CALLBACKMETHOD_enum) callbackMethod
pas	function get_callbackMethod (): Integer
vb	function get_callbackMethod () As Integer
cs	int get_callbackMethod ()
java	int get_callbackMethod ()
py	def get_callbackMethod ()
cmd	YNetwork target get_callbackMethod

Returns :

a value among Y_CALLBACKMETHOD_POST, Y_CALLBACKMETHOD_GET and Y_CALLBACKMETHOD_PUT corresponding to the HTTP method used to notify callbacks for significant state changes

On failure, throws an exception or returns Y_CALLBACKMETHOD_INVALID.

network→get_callbackMinDelay()**YNetwork****network→callbackMinDelay()****network.get_callbackMinDelay()**

Returns the minimum waiting time between two callback notifications, in seconds.

js	function get_callbackMinDelay ()
nodejs	function get_callbackMinDelay ()
php	function get_callbackMinDelay ()
cpp	int get_callbackMinDelay ()
m	-(int) callbackMinDelay
pas	function get_callbackMinDelay (): LongInt
vb	function get_callbackMinDelay () As Integer
cs	int get_callbackMinDelay ()
java	int get_callbackMinDelay ()
py	def get_callbackMinDelay ()
cmd	YNetwork target get_callbackMinDelay

Returns :

an integer corresponding to the minimum waiting time between two callback notifications, in seconds

On failure, throws an exception or returns Y_CALLBACKMINDELAY_INVALID.

network→**get_callbackUrl()****network**→**callbackUrl()****network.get_callbackUrl()**

Returns the callback URL to notify of significant state changes.

js	function get_callbackUrl ()
nodejs	function get_callbackUrl ()
php	function get_callbackUrl ()
cpp	string get_callbackUrl ()
m	-(NSString*) callbackUrl
pas	function get_callbackUrl (): string
vb	function get_callbackUrl () As String
cs	string get_callbackUrl ()
java	String get_callbackUrl ()
py	def get_callbackUrl ()
cmd	YNetwork target get_callbackUrl

Returns :

a string corresponding to the callback URL to notify of significant state changes

On failure, throws an exception or returns Y_CALLBACKURL_INVALID.

network→get_discoverable()**YNetwork****network→discoverable()****network.get_discoverable()**

Returns the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

js	function get_discoverable ()
nodejs	function get_discoverable ()
php	function get_discoverable ()
cpp	Y_DISCOVERABLE_enum get_discoverable ()
m	-(Y_DISCOVERABLE_enum) discoverable
pas	function get_discoverable (): Integer
vb	function get_discoverable () As Integer
cs	int get_discoverable ()
java	int get_discoverable ()
py	def get_discoverable ()
cmd	YNetwork target get_discoverable

Returns :

either Y_DISCOVERABLE_FALSE or Y_DISCOVERABLE_TRUE, according to the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol)

On failure, throws an exception or returns Y_DISCOVERABLE_INVALID.

network→**get_errorMessage()****network**→**errorMessage()****network.get_errorMessage()**

Returns the error message of the latest error with the network interface.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the network interface object

network→**get_errorType()****YNetwork****network**→**errorType()****network.get_errorType()**

Returns the numerical error code of the latest error with the network interface.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the network interface object

network→**get_friendlyName()****YNetwork****network**→**friendlyName()****network.get_friendlyName()**

Returns a global identifier of the network interface in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the network interface if they are defined, otherwise the serial number of the module and the hardware identifier of the network interface (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the network interface using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

network→get_functionDescriptor()**YNetwork****network→functionDescriptor()****network.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

network→**get_functionId()****YNetwork****network**→**functionId()****network.get_functionId()**

Returns the hardware identifier of the network interface, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the network interface (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

network→**get_hardwareId()****YNetwork****network**→**hardwareId()****network.get_hardwareId()**

Returns the unique hardware identifier of the network interface in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the network interface. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the network interface (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

network→**get_ipAddress()****YNetwork****network**→**ipAddress()****network.get_ipAddress()**

Returns the IP address currently in use by the device.

js	function get_ipAddress ()
nodejs	function get_ipAddress ()
php	function get_ipAddress ()
cpp	string get_ipAddress ()
m	-(NSString*) ipAddress
pas	function get_ipAddress (): string
vb	function get_ipAddress () As String
cs	string get_ipAddress ()
java	String get_ipAddress ()
py	def get_ipAddress ()
cmd	YNetwork target get_ipAddress

The address may have been configured statically, or provided by a DHCP server.

Returns :

a string corresponding to the IP address currently in use by the device

On failure, throws an exception or returns Y_IPADDRESS_INVALID.

network→get_logicalName()
network→logicalName()
network.get_logicalName()

YNetwork

Returns the logical name of the network interface.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YNetwork target get_logicalName

Returns :

a string corresponding to the logical name of the network interface. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

network→**get_macAddress()****YNetwork****network**→**macAddress()****network.get_macAddress()**

Returns the MAC address of the network interface.

js	function get_macAddress ()
nodejs	function get_macAddress ()
php	function get_macAddress ()
cpp	string get_macAddress ()
m	-(NSString*) macAddress
pas	function get_macAddress (): string
vb	function get_macAddress () As String
cs	string get_macAddress ()
java	String get_macAddress ()
py	def get_macAddress ()
cmd	YNetwork target get_macAddress

The MAC address is also available on a sticker on the module, in both numeric and barcode forms.

Returns :

a string corresponding to the MAC address of the network interface

On failure, throws an exception or returns Y_MACADDRESS_INVALID.

network→get_module()**YNetwork****network→module()**`network.get_module()`

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

network→**get_module_async()****network**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

network→get_poeCurrent()**YNetwork****network→poeCurrent()**`network.get_poeCurrent()`

Returns the current consumed by the module from Power-over-Ethernet (PoE), in milli-amps.

js	function get_poeCurrent ()
nodejs	function get_poeCurrent ()
php	function get_poeCurrent ()
cpp	int get_poeCurrent ()
m	-(int) poeCurrent
pas	function get_poeCurrent (): LongInt
vb	function get_poeCurrent () As Integer
cs	int get_poeCurrent ()
java	int get_poeCurrent ()
py	def get_poeCurrent ()
cmd	YNetwork target get_poeCurrent

The current consumption is measured after converting PoE source to 5 Volt, and should never exceed 1800 mA.

Returns :

an integer corresponding to the current consumed by the module from Power-over-Ethernet (PoE), in milli-amps

On failure, throws an exception or returns Y_POECURRENT_INVALID.

network→**get_primaryDNS()****network**→**primaryDNS()****network.get_primaryDNS()**

Returns the IP address of the primary name server to be used by the module.

js	function get_primaryDNS ()
nodejs	function get_primaryDNS ()
php	function get_primaryDNS ()
cpp	string get_primaryDNS ()
m	-(NSString*) primaryDNS
pas	function get_primaryDNS (): string
vb	function get_primaryDNS () As String
cs	string get_primaryDNS ()
java	String get_primaryDNS ()
py	def get_primaryDNS ()
cmd	YNetwork target get_primaryDNS

Returns :

a string corresponding to the IP address of the primary name server to be used by the module

On failure, throws an exception or returns Y_PRIMARYDNS_INVALID.

network→get_readiness()**YNetwork****network→readiness()**`network.get_readiness()`

Returns the current established working mode of the network interface.

js	function get_readiness ()
nodejs	function get_readiness ()
php	function get_readiness ()
cpp	Y_READINESS_enum get_readiness ()
m	-(Y_READINESS_enum) readiness
pas	function get_readiness (): Integer
vb	function get_readiness () As Integer
cs	int get_readiness ()
java	int get_readiness ()
py	def get_readiness ()
cmd	YNetwork target get_readiness

Level zero (DOWN_0) means that no hardware link has been detected. Either there is no signal on the network cable, or the selected wireless access point cannot be detected. Level 1 (LIVE_1) is reached when the network is detected, but is not yet connected. For a wireless network, this shows that the requested SSID is present. Level 2 (LINK_2) is reached when the hardware connection is established. For a wired network connection, level 2 means that the cable is attached at both ends. For a connection to a wireless access point, it shows that the security parameters are properly configured. For an ad-hoc wireless connection, it means that there is at least one other device connected on the ad-hoc network. Level 3 (DHCP_3) is reached when an IP address has been obtained using DHCP. Level 4 (DNS_4) is reached when the DNS server is reachable on the network. Level 5 (WWW_5) is reached when global connectivity is demonstrated by properly loading the current time from an NTP server.

Returns :

a value among Y_READINESS_DOWN, Y_READINESS_EXISTS, Y_READINESS_LINKED, Y_READINESS_LAN_OK and Y_READINESS_WWW_OK corresponding to the current established working mode of the network interface

On failure, throws an exception or returns Y_READINESS_INVALID.

network→**get_router()****network**→**router()****network.get_router()**

Returns the IP address of the router on the device subnet (default gateway).

js	function get_router ()
nodejs	function get_router ()
php	function get_router ()
cpp	string get_router ()
m	-(NSString*) router
pas	function get_router (): string
vb	function get_router () As String
cs	string get_router ()
java	String get_router ()
py	def get_router ()
cmd	YNetwork target get_router

Returns :

a string corresponding to the IP address of the router on the device subnet (default gateway)

On failure, throws an exception or returns Y_ROUTER_INVALID.

network→get_secondaryDNS()**YNetwork****network→secondaryDNS()****network.get_secondaryDNS()**

Returns the IP address of the secondary name server to be used by the module.

js	function get_secondaryDNS ()
nodejs	function get_secondaryDNS ()
php	function get_secondaryDNS ()
cpp	string get_secondaryDNS ()
m	-(NSString*) secondaryDNS
pas	function get_secondaryDNS (): string
vb	function get_secondaryDNS () As String
cs	string get_secondaryDNS ()
java	String get_secondaryDNS ()
py	def get_secondaryDNS ()
cmd	YNetwork target get_secondaryDNS

Returns :

a string corresponding to the IP address of the secondary name server to be used by the module

On failure, throws an exception or returns Y_SECONDARYDNS_INVALID.

network→**get_subnetMask()****network**→**subnetMask()****network.get_subnetMask()**

Returns the subnet mask currently used by the device.

js	function get_subnetMask ()
nodejs	function get_subnetMask ()
php	function get_subnetMask ()
cpp	string get_subnetMask ()
m	-(NSString*) subnetMask
pas	function get_subnetMask (): string
vb	function get_subnetMask () As String
cs	string get_subnetMask ()
java	String get_subnetMask ()
py	def get_subnetMask ()
cmd	YNetwork target get_subnetMask

Returns :

a string corresponding to the subnet mask currently used by the device

On failure, throws an exception or returns Y_SUBNETMASK_INVALID.

network→**get_userData()****YNetwork****network**→**userData()****network.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

network→**get_userPassword()****network**→**userPassword()****network.get_userPassword()**

Returns a hash string if a password has been set for "user" user, or an empty string otherwise.

js	function get_userPassword ()
nodejs	function get_userPassword ()
php	function get_userPassword ()
cpp	string get_userPassword ()
m	-(NSString*) userPassword
pas	function get_userPassword (): string
vb	function get_userPassword () As String
cs	string get_userPassword ()
java	String get_userPassword ()
py	def get_userPassword ()
cmd	YNetwork target get_userPassword

Returns :

a string corresponding to a hash string if a password has been set for "user" user, or an empty string otherwise

On failure, throws an exception or returns Y_USERPASSWORD_INVALID.

network→get_wwwWatchdogDelay()**YNetwork****network→wwwWatchdogDelay()****network.get_wwwWatchdogDelay()**

Returns the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

js	function get_wwwWatchdogDelay ()
nodejs	function get_wwwWatchdogDelay ()
php	function get_wwwWatchdogDelay ()
cpp	int get_wwwWatchdogDelay ()
m	-(int) wwwWatchdogDelay
pas	function get_wwwWatchdogDelay (): LongInt
vb	function get_wwwWatchdogDelay () As Integer
cs	int get_wwwWatchdogDelay ()
java	int get_wwwWatchdogDelay ()
py	def get_wwwWatchdogDelay ()
cmd	YNetwork target get_wwwWatchdogDelay

A zero value disables automated reboot in case of Internet connectivity loss.

Returns :

an integer corresponding to the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity

On failure, throws an exception or returns Y_WWWWATCHDOGDELAY_INVALID.

network→**isOnline()****network.isOnline()****YNetwork**

Checks if the network interface is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the network interface in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the network interface.

Returns :

`true` if the network interface can be reached, and `false` otherwise

network→isOnline_async()**YNetwork**

Checks if the network interface is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the network interface in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

network→**load()****network.load()****YNetwork**

Preloads the network interface cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

network→load_async()**YNetwork**

Preloads the network interface cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

network→**nextNetwork()****network.nextNetwork()****YNetwork**

Continues the enumeration of network interfaces started using `yFirstNetwork()`.

js	function nextNetwork ()
nodejs	function nextNetwork ()
php	function nextNetwork ()
cpp	YNetwork * nextNetwork ()
m	-(YNetwork*) nextNetwork
pas	function nextNetwork (): TYNetwork
vb	function nextNetwork () As YNetwork
cs	YNetwork nextNetwork ()
java	YNetwork nextNetwork ()
py	def nextNetwork ()

Returns :

a pointer to a `YNetwork` object, corresponding to a network interface currently online, or a `null` pointer if there are no more network interfaces to enumerate.

network→ping()`network.ping()`**YNetwork**

Pings str_host to test the network connectivity.

js	function ping(host)
nodejs	function ping(host)
php	function ping(\$host)
cpp	string ping(string host)
m	-(NSString*) ping : (NSString*) host
pas	function ping(host: string): string
vb	function ping() As String
cs	string ping(string host)
java	String ping(String host)
py	def ping(host)
cmd	YNetwork target ping host

Sends four ICMP ECHO_REQUEST requests from the module to the target str_host. This method returns a string with the result of the 4 ICMP ECHO_REQUEST requests.

Parameters :

host the hostname or the IP address of the target

Returns :

a string with the result of the ping.

network→registerValueCallback()**YNetwork****network.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YNetworkValueCallback callback)
m	-(int) registerValueCallback : (YNetworkValueCallback) callback
pas	function registerValueCallback (callback : TYNetworkValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

network→set_adminPassword()**YNetwork****network→setAdminPassword()****network.set_adminPassword()**

Changes the password for the "admin" user.

js	function set_adminPassword (newval)
nodejs	function set_adminPassword (newval)
php	function set_adminPassword (\$newval)
cpp	int set_adminPassword (const string& newval)
m	-(int) setAdminPassword : (NSString*) newval
pas	function set_adminPassword (newval : string): integer
vb	function set_adminPassword (ByVal newval As String) As Integer
cs	int set_adminPassword (string newval)
java	int set_adminPassword (String newval)
py	def set_adminPassword (newval)
cmd	YNetwork target set_adminPassword newval

This password becomes instantly required to perform any change of the module state. If the specified value is an empty string, a password is not required anymore. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the password for the "admin" user

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackCredentials()**network→setCallbackCredentials()****network.set_callbackCredentials()**

Changes the credentials required to connect to the callback address.

js	function set_callbackCredentials (newval)
nodejs	function set_callbackCredentials (newval)
php	function set_callbackCredentials (\$newval)
cpp	int set_callbackCredentials (const string& newval)
m	-(int) setCallbackCredentials : (NSString*) newval
pas	function set_callbackCredentials (newval : string): integer
vb	function set_callbackCredentials (ByVal newval As String) As Integer
cs	int set_callbackCredentials (string newval)
java	int set_callbackCredentials (String newval)
py	def set_callbackCredentials (newval)
cmd	YNetwork target set_callbackCredentials newval

The credentials must be provided as returned by function `get_callbackCredentials`, in the form `username:hash`. The method used to compute the hash varies according to the authentication scheme implemented by the callback, For Basic authentication, the hash is the MD5 of the string `username:password`. For Digest authentication, the hash is the MD5 of the string `username:realm:password`. For a simpler way to configure callback credentials, use function `callbackLogin` instead. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the credentials required to connect to the callback address

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackEncoding()**YNetwork****network→setCallbackEncoding()****network.set_callbackEncoding()**

Changes the encoding standard to use for representing notification values.

js	function set_callbackEncoding (newval)
nodejs	function set_callbackEncoding (newval)
php	function set_callbackEncoding (\$newval)
cpp	int set_callbackEncoding (Y_CALLBACKENCODING_enum newval)
m	-(int) setCallbackEncoding : (Y_CALLBACKENCODING_enum) newval
pas	function set_callbackEncoding (newval : Integer): integer
vb	function set_callbackEncoding (ByVal newval As Integer) As Integer
cs	int set_callbackEncoding (int newval)
java	int set_callbackEncoding (int newval)
py	def set_callbackEncoding (newval)
cmd	YNetwork target set_callbackEncoding newval

Parameters :

newval a value among Y_CALLBACKENCODING_FORM, Y_CALLBACKENCODING_JSON, Y_CALLBACKENCODING_JSON_ARRAY, Y_CALLBACKENCODING_CSV and Y_CALLBACKENCODING_YOCTO_API corresponding to the encoding standard to use for representing notification values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→**set_callbackMaxDelay()****network**→**setCallbackMaxDelay()****network.set_callbackMaxDelay()**

Changes the maximum waiting time between two callback notifications, in seconds.

js	function set_callbackMaxDelay (newval)
nodejs	function set_callbackMaxDelay (newval)
php	function set_callbackMaxDelay (\$newval)
cpp	int set_callbackMaxDelay (int newval)
m	-(int) setCallbackMaxDelay : (int) newval
pas	function set_callbackMaxDelay (newval : LongInt): integer
vb	function set_callbackMaxDelay (ByVal newval As Integer) As Integer
cs	int set_callbackMaxDelay (int newval)
java	int set_callbackMaxDelay (int newval)
py	def set_callbackMaxDelay (newval)
cmd	YNetwork target set_callbackMaxDelay newval

Parameters :

newval an integer corresponding to the maximum waiting time between two callback notifications, in seconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackMethod()**YNetwork****network→setCallbackMethod()****network.set_callbackMethod()**

Changes the HTTP method used to notify callbacks for significant state changes.

js	function set_callbackMethod (newval)
nodejs	function set_callbackMethod (newval)
php	function set_callbackMethod (\$newval)
cpp	int set_callbackMethod (Y_CALLBACKMETHOD_enum newval)
m	-(int) setCallbackMethod : (Y_CALLBACKMETHOD_enum) newval
pas	function set_callbackMethod (newval : Integer): integer
vb	function set_callbackMethod (ByVal newval As Integer) As Integer
cs	int set_callbackMethod (int newval)
java	int set_callbackMethod (int newval)
py	def set_callbackMethod (newval)
cmd	YNetwork target set_callbackMethod newval

Parameters :

newval a value among Y_CALLBACKMETHOD_POST, Y_CALLBACKMETHOD_GET and Y_CALLBACKMETHOD_PUT corresponding to the HTTP method used to notify callbacks for significant state changes

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→**set_callbackMinDelay()**
network→**setCallbackMinDelay()**
network.set_callbackMinDelay()

YNetwork

Changes the minimum waiting time between two callback notifications, in seconds.

js	function set_callbackMinDelay (newval)
nodejs	function set_callbackMinDelay (newval)
php	function set_callbackMinDelay (\$newval)
cpp	int set_callbackMinDelay (int newval)
m	-(int) setCallbackMinDelay : (int) newval
pas	function set_callbackMinDelay (newval : LongInt): integer
vb	function set_callbackMinDelay (ByVal newval As Integer) As Integer
cs	int set_callbackMinDelay (int newval)
java	int set_callbackMinDelay (int newval)
py	def set_callbackMinDelay (newval)
cmd	YNetwork target set_callbackMinDelay newval

Parameters :

newval an integer corresponding to the minimum waiting time between two callback notifications, in seconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackUrl()**YNetwork****network→setCallbackUrl()****network.set_callbackUrl()**

Changes the callback URL to notify significant state changes.

js	function set_callbackUrl (newval)
nodejs	function set_callbackUrl (newval)
php	function set_callbackUrl (\$newval)
cpp	int set_callbackUrl (const string& newval)
m	-(int) setCallbackUrl : (NSString*) newval
pas	function set_callbackUrl (newval : string): integer
vb	function set_callbackUrl (ByVal newval As String) As Integer
cs	int set_callbackUrl (string newval)
java	int set_callbackUrl (String newval)
py	def set_callbackUrl (newval)
cmd	YNetwork target set_callbackUrl newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the callback URL to notify significant state changes

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→**set_discoverable()****network**→**setDiscoverable()****network.set_discoverable()**

Changes the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

js	function set_discoverable (newval)
nodejs	function set_discoverable (newval)
php	function set_discoverable (\$newval)
cpp	int set_discoverable (Y_DISCOVERABLE_enum newval)
m	-(int) setDiscoverable : (Y_DISCOVERABLE_enum) newval
pas	function set_discoverable (newval : Integer): integer
vb	function set_discoverable (ByVal newval As Integer) As Integer
cs	int set_discoverable (int newval)
java	int set_discoverable (int newval)
py	def set_discoverable (newval)
cmd	YNetwork target set_discoverable newval

Parameters :

newval either Y_DISCOVERABLE_FALSE or Y_DISCOVERABLE_TRUE, according to the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_logicalName()**YNetwork****network→setLogicalName()****network.set_logicalName()**

Changes the logical name of the network interface.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YNetwork target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the network interface.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

network→**set_primaryDNS()****network**→**setPrimaryDNS()****network.set_primaryDNS()**

Changes the IP address of the primary name server to be used by the module.

js	function set_primaryDNS (newval)
nodejs	function set_primaryDNS (newval)
php	function set_primaryDNS (\$newval)
cpp	int set_primaryDNS (const string& newval)
m	-(int) setPrimaryDNS : (NSString*) newval
pas	function set_primaryDNS (newval : string): integer
vb	function set_primaryDNS (ByVal newval As String) As Integer
cs	int set_primaryDNS (string newval)
java	int set_primaryDNS (String newval)
py	def set_primaryDNS (newval)
cmd	YNetwork target set_primaryDNS newval

When using DHCP, if a value is specified, it overrides the value received from the DHCP server. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

newval a string corresponding to the IP address of the primary name server to be used by the module

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_secondaryDNS()**YNetwork****network→setSecondaryDNS()****network.set_secondaryDNS()**

Changes the IP address of the secondary name server to be used by the module.

js	function set_secondaryDNS (newval)
nodejs	function set_secondaryDNS (newval)
php	function set_secondaryDNS (\$newval)
cpp	int set_secondaryDNS (const string& newval)
m	-(int) setSecondaryDNS : (NSString*) newval
pas	function set_secondaryDNS (newval : string): integer
vb	function set_secondaryDNS (ByVal newval As String) As Integer
cs	int set_secondaryDNS (string newval)
java	int set_secondaryDNS (String newval)
py	def set_secondaryDNS (newval)
cmd	YNetwork target set_secondaryDNS newval

When using DHCP, if a value is specified, it overrides the value received from the DHCP server. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

newval a string corresponding to the IP address of the secondary name server to be used by the module

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→**set_userdata()****network**→**setUserData()****network.set_userdata()**

Stores a user context provided as argument in the `userData` attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

network→set_userPassword()**YNetwork****network→setUserPassword()****network.set_userPassword()**

Changes the password for the "user" user.

js	function set_userPassword (newval)
nodejs	function set_userPassword (newval)
php	function set_userPassword (\$newval)
cpp	int set_userPassword (const string& newval)
m	-(int) setUserPassword : (NSString*) newval
pas	function set_userPassword (newval : string): integer
vb	function set_userPassword (ByVal newval As String) As Integer
cs	int set_userPassword (string newval)
java	int set_userPassword (String newval)
py	def set_userPassword (newval)
cmd	YNetwork target set_userPassword newval

This password becomes instantly required to perform any use of the module. If the specified value is an empty string, a password is not required anymore. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the password for the "user" user

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→**set_wwwWatchdogDelay()****YNetwork****network**→**setWwwWatchdogDelay()****network.set_wwwWatchdogDelay()**

Changes the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

js	function set_wwwWatchdogDelay (newval)
nodejs	function set_wwwWatchdogDelay (newval)
php	function set_wwwWatchdogDelay (\$newval)
cpp	int set_wwwWatchdogDelay (int newval)
m	-(int) setWwwWatchdogDelay : (int) newval
pas	function set_wwwWatchdogDelay (newval : LongInt): integer
vb	function set_wwwWatchdogDelay (ByVal newval As Integer) As Integer
cs	int set_wwwWatchdogDelay (int newval)
java	int set_wwwWatchdogDelay (int newval)
py	def set_wwwWatchdogDelay (newval)
cmd	YNetwork target set_wwwWatchdogDelay newval

A zero value disables automated reboot in case of Internet connectivity loss. The smallest valid non-zero timeout is 90 seconds.

Parameters :

newval an integer corresponding to the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→useDHCP()**network.useDHCP ()****YNetwork**

Changes the configuration of the network interface to enable the use of an IP address received from a DHCP server.

```

js function useDHCP( fallbackIpAddr, fallbackSubnetMaskLen, fallbackRouter)
nodejs function useDHCP( fallbackIpAddr, fallbackSubnetMaskLen, fallbackRouter)
php function useDHCP( $fallbackIpAddr, $fallbackSubnetMaskLen, $fallbackRouter)
cpp int useDHCP( string fallbackIpAddr,
                int fallbackSubnetMaskLen,
                string fallbackRouter)

m -(int) useDHCP : (NSString*) fallbackIpAddr
    : (int) fallbackSubnetMaskLen
    : (NSString*) fallbackRouter

pas function useDHCP( fallbackIpAddr: string,
                    fallbackSubnetMaskLen: LongInt,
                    fallbackRouter: string): integer

vb function useDHCP( ByVal fallbackIpAddr As String,
                    ByVal fallbackSubnetMaskLen As Integer,
                    ByVal fallbackRouter As String) As Integer

cs int useDHCP( string fallbackIpAddr,
                int fallbackSubnetMaskLen,
                string fallbackRouter)

java int useDHCP( String fallbackIpAddr,
                 int fallbackSubnetMaskLen,
                 String fallbackRouter)

py def useDHCP( fallbackIpAddr, fallbackSubnetMaskLen, fallbackRouter)
cmd YNetwork target useDHCP fallbackIpAddr fallbackSubnetMaskLen fallbackRouter

```

Until an address is received from a DHCP server, the module uses the IP parameters specified to this function. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

fallbackIpAddr fallback IP address, to be used when no DHCP reply is received

fallbackSubnetMaskLen fallback subnet mask length when no DHCP reply is received, as an integer (eg. 24 means 255.255.255.0)

fallbackRouter fallback router IP address, to be used when no DHCP reply is received

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→useStaticIP()`network.useStaticIP()`**YNetwork**

Changes the configuration of the network interface to use a static IP address.

```

js function useStaticIP( ipAddress, subnetMaskLen, router)
nodejs function useStaticIP( ipAddress, subnetMaskLen, router)
php function useStaticIP( $ipAddress, $subnetMaskLen, $router)
cpp int useStaticIP( string ipAddress,
                    int subnetMaskLen,
                    string router)

m -(int) useStaticIP : (NSString*) ipAddress
    : (int) subnetMaskLen
    : (NSString*) router

pas function useStaticIP( ipAddress: string,
                        subnetMaskLen: LongInt,
                        router: string): integer

vb function useStaticIP( ByVal ipAddress As String,
                        ByVal subnetMaskLen As Integer,
                        ByVal router As String) As Integer

cs int useStaticIP( string ipAddress,
                    int subnetMaskLen,
                    string router)

java int useStaticIP( String ipAddress,
                     int subnetMaskLen,
                     String router)

py def useStaticIP( ipAddress, subnetMaskLen, router)
cmd YNetwork target useStaticIP ipAddress subnetMaskLen router

```

Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

ipAddress device IP address
subnetMaskLen subnet mask length, as an integer (eg. 24 means 255.255.255.0)
router router IP address (default gateway)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→wait_async()**YNetwork**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.27. OS control

The OScontrol object allows some control over the operating system running a VirtualHub. OsControl is available on the VirtualHub software only. This feature must be activated at the VirtualHub start up with -o option.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_oscontrol.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YOsControl = yoctolib.YOsControl;
php	require_once('yocto_oscontrol.php');
c++	#include "yocto_oscontrol.h"
m	#import "yocto_oscontrol.h"
pas	uses yocto_oscontrol;
vb	yocto_oscontrol.vb
cs	yocto_oscontrol.cs
java	import com.yoctopuce.YoctoAPI.YOsControl;
py	from yocto_oscontrol import *

Global functions

yFindOsControl(func)

Retrieves OS control for a given identifier.

yFirstOsControl()

Starts the enumeration of OS control currently accessible.

YOsControl methods

oscontrol→describe()

Returns a short text that describes unambiguously the instance of the OS control in the form TYPE (NAME) = SERIAL . FUNCTIONID.

oscontrol→get_advertisedValue()

Returns the current value of the OS control (no more than 6 characters).

oscontrol→get_errorMessage()

Returns the error message of the latest error with the OS control.

oscontrol→get_errorType()

Returns the numerical error code of the latest error with the OS control.

oscontrol→get_friendlyName()

Returns a global identifier of the OS control in the format MODULE_NAME . FUNCTION_NAME.

oscontrol→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

oscontrol→get_functionId()

Returns the hardware identifier of the OS control, without reference to the module.

oscontrol→get_hardwareId()

Returns the unique hardware identifier of the OS control in the form SERIAL . FUNCTIONID.

oscontrol→get_logicalName()

Returns the logical name of the OS control.

oscontrol→get_module()

Gets the YModule object for the device on which the function is located.

oscontrol→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

`oscontrol→get_shutdownCountdown()`

Returns the remaining number of seconds before the OS shutdown, or zero when no shutdown has been scheduled.

`oscontrol→get_userData()`

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

`oscontrol→isOnline()`

Checks if the OS control is currently reachable, without raising any error.

`oscontrol→isOnline_async(callback, context)`

Checks if the OS control is currently reachable, without raising any error (asynchronous version).

`oscontrol→load(msValidity)`

Preloads the OS control cache with a specified validity duration.

`oscontrol→load_async(msValidity, callback, context)`

Preloads the OS control cache with a specified validity duration (asynchronous version).

`oscontrol→nextOsControl()`

Continues the enumeration of OS control started using `yFirstOsControl()`.

`oscontrol→registerValueCallback(callback)`

Registers the callback function that is invoked on every change of advertised value.

`oscontrol→set_logicalName(newval)`

Changes the logical name of the OS control.

`oscontrol→set_userData(data)`

Stores a user context provided as argument in the `userData` attribute of the function.

`oscontrol→shutdown(secBeforeShutDown)`

Schedules an OS shutdown after a given number of seconds.

`oscontrol→wait_async(callback, context)`

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YOsControl.FindOsControl()**YOsControl****yFindOsControl()**`YOsControl.FindOsControl()`

Retrieves OS control for a given identifier.

js	function yFindOsControl (func)
nodejs	function FindOsControl (func)
php	function yFindOsControl (\$func)
cpp	YOsControl* yFindOsControl (const string& func)
m	YOsControl* yFindOsControl (NSString* func)
pas	function yFindOsControl (func : string): TYOsControl
vb	function yFindOsControl (ByVal func As String) As YOsControl
cs	YOsControl FindOsControl (string func)
java	YOsControl FindOsControl (String func)
py	def FindOsControl (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the OS control is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YOsControl.isOnline()` to test if the OS control is indeed online at a given time. In case of ambiguity when looking for OS control by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the OS control

Returns :

a `YOsControl` object allowing you to drive the OS control.

YOsControl.FirstOsControl()**YOsControl****yFirstOsControl()**`YOsControl.FirstOsControl()`

Starts the enumeration of OS control currently accessible.

<code>js</code>	<code>function yFirstOsControl()</code>
<code>nodejs</code>	<code>function FirstOsControl()</code>
<code>php</code>	<code>function yFirstOsControl()</code>
<code>cpp</code>	<code>YOsControl* yFirstOsControl()</code>
<code>m</code>	<code>YOsControl* yFirstOsControl()</code>
<code>pas</code>	<code>function yFirstOsControl(): TYOsControl</code>
<code>vb</code>	<code>function yFirstOsControl() As YOsControl</code>
<code>cs</code>	<code>YOsControl FirstOsControl()</code>
<code>java</code>	<code>YOsControl FirstOsControl()</code>
<code>py</code>	<code>def FirstOsControl()</code>

Use the method `YOsControl.nextOsControl()` to iterate on next OS control.

Returns :

a pointer to a `YOsControl` object, corresponding to the first OS control currently online, or a null pointer if there are none.

oscontrol→describe()`oscontrol.describe()`**YOsControl**

Returns a short text that describes unambiguously the instance of the OS control in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the OS control (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

oscontrol→get_advertisedValue()**YOsControl****oscontrol→advertisedValue()****oscontrol.get_advertisedValue()**

Returns the current value of the OS control (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YOsControl target get_advertisedValue

Returns :

a string corresponding to the current value of the OS control (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

oscontrol→get_errorMessage()**YOsControl****oscontrol→errorMessage()****oscontrol.get_errorMessage()**

Returns the error message of the latest error with the OS control.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the OS control object

oscontrol→**get_errorType()****YOsControl****oscontrol**→**errorType()****oscontrol.get_errorType()**

Returns the numerical error code of the latest error with the OS control.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the OS control object

oscontrol→get_friendlyName()**YOsControl****oscontrol→friendlyName()****oscontrol.get_friendlyName()**

Returns a global identifier of the OS control in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the OS control if they are defined, otherwise the serial number of the module and the hardware identifier of the OS control (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the OS control using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

oscontrol→get_functionDescriptor()**YOsControl****oscontrol→functionDescriptor()****oscontrol.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

oscontrol→**get_functionId()****YOsControl****oscontrol**→**functionId()****oscontrol.get_functionId()**

Returns the hardware identifier of the OS control, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the OS control (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

oscontrol→get_hardwareId()**YOsControl****oscontrol→hardwareId()****oscontrol.get_hardwareId()**

Returns the unique hardware identifier of the OS control in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the OS control. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the OS control (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

oscontrol→get_logicalName()**YOsControl****oscontrol→logicalName()****oscontrol.get_logicalName()**

Returns the logical name of the OS control.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YOsControl target get_logicalName

Returns :

a string corresponding to the logical name of the OS control. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

oscontrol→get_module()**YOsControl****oscontrol→module()**`oscontrol.get_module()`

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

oscontrol→get_module_async()**YOsControl****oscontrol→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

oscontrol→get_shutdownCountdown()**YOsControl****oscontrol→shutdownCountdown()****oscontrol.get_shutdownCountdown()**

Returns the remaining number of seconds before the OS shutdown, or zero when no shutdown has been scheduled.

js	function get_shutdownCountdown ()
nodejs	function get_shutdownCountdown ()
php	function get_shutdownCountdown ()
cpp	int get_shutdownCountdown ()
m	-(int) shutdownCountdown
pas	function get_shutdownCountdown (): LongInt
vb	function get_shutdownCountdown () As Integer
cs	int get_shutdownCountdown ()
java	int get_shutdownCountdown ()
py	def get_shutdownCountdown ()
cmd	YOsControl target get_shutdownCountdown

Returns :

an integer corresponding to the remaining number of seconds before the OS shutdown, or zero when no shutdown has been scheduled

On failure, throws an exception or returns Y_SHUTDOWNCOUNTDOWN_INVALID.

oscontrol→**get_userdata()****YOsControl****oscontrol**→**userData()****oscontrol.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

oscontrol→**isOnline()**`oscontrol.isOnline()`**YOsControl**

Checks if the OS control is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the OS control in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the OS control.

Returns :

`true` if the OS control can be reached, and `false` otherwise

Checks if the OS control is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the OS control in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

oscontrol→load()`oscontrol.load()`**YOsControl**

Preloads the OS control cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

Preloads the OS control cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

oscontrol→nextOsControl()**YOsControl****oscontrol.nextOsControl()**

Continues the enumeration of OS control started using `yFirstOsControl()`.

js	function nextOsControl ()
nodejs	function nextOsControl ()
php	function nextOsControl ()
cpp	YOsControl * nextOsControl ()
m	-(YOsControl*) nextOsControl
pas	function nextOsControl (): TYOsControl
vb	function nextOsControl () As YOsControl
cs	YOsControl nextOsControl ()
java	YOsControl nextOsControl ()
py	def nextOsControl ()

Returns :

a pointer to a `YOsControl` object, corresponding to OS control currently online, or a `null` pointer if there are no more OS control to enumerate.

oscontrol→registerValueCallback()**YOsControl****oscontrol.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YOsControlValueCallback callback)
m	-(int) registerValueCallback : (YOsControlValueCallback) callback
pas	function registerValueCallback (callback : TYOsControlValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

oscontrol→set_logicalName()**YOsControl****oscontrol→setLogicalName()****oscontrol.set_logicalName()**

Changes the logical name of the OS control.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YOsControl target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the OS control.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

oscontrol→**set_userdata()****YOsControl****oscontrol**→**setUserData()****oscontrol.set_userdata()**

Stores a user context provided as argument in the `userData` attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

oscontrol→shutdown()`oscontrol.shutdown()`**YOsControl**

Schedules an OS shutdown after a given number of seconds.

js	function shutdown (secBeforeShutDown)
nodejs	function shutdown (secBeforeShutDown)
php	function shutdown (\$secBeforeShutDown)
cpp	int shutdown (int secBeforeShutDown)
m	-(int) shutdown : (int) secBeforeShutDown
pas	function shutdown (secBeforeShutDown : LongInt): LongInt
vb	function shutdown () As Integer
cs	int shutdown (int secBeforeShutDown)
java	int shutdown (int secBeforeShutDown)
py	def shutdown (secBeforeShutDown)
cmd	YOsControl target shutdown secBeforeShutDown

Parameters :

secBeforeShutDown number of seconds before shutdown

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

oscontrol→wait_async()**YOsControl**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.28. Power function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_power.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib');</code> <code>var YPower = yoctolib.YPower;</code>
php	<code>require_once('yocto_power.php');</code>
c++	<code>#include "yocto_power.h"</code>
m	<code>#import "yocto_power.h"</code>
pas	<code>uses yocto_power;</code>
vb	<code>yocto_power.vb</code>
cs	<code>yocto_power.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YPower;</code>
py	<code>from yocto_power import *</code>

Global functions

yFindPower(func)

Retrieves a electrical power sensor for a given identifier.

yFirstPower()

Starts the enumeration of electrical power sensors currently accessible.

YPower methods

power→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

power→describe()

Returns a short text that describes unambiguously the instance of the electrical power sensor in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

power→get_advertisedValue()

Returns the current value of the electrical power sensor (no more than 6 characters).

power→get_cosPhi()

Returns the power factor (the ratio between the real power consumed, measured in W, and the apparent power provided, measured in VA).

power→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

power→get_currentValue()

Returns the current measure for the electrical power.

power→get_errorMessage()

Returns the error message of the latest error with the electrical power sensor.

power→get_errorType()

Returns the numerical error code of the latest error with the electrical power sensor.

power→get_friendlyName()

Returns a global identifier of the electrical power sensor in the format `MODULE_NAME . FUNCTION_NAME`.

power→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

power→get_functionId()

Returns the hardware identifier of the electrical power sensor, without reference to the module.

power→get_hardwareId()

Returns the unique hardware identifier of the electrical power sensor in the form `SERIAL.FUNCTIONID`.

power→get_highestValue()

Returns the maximal value observed for the electrical power.

power→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

power→get_logicalName()

Returns the logical name of the electrical power sensor.

power→get_lowestValue()

Returns the minimal value observed for the electrical power.

power→get_meter()

Returns the energy counter, maintained by the wattmeter by integrating the power consumption over time.

power→get_meterTimer()

Returns the elapsed time since last energy counter reset, in seconds.

power→get_module()

Gets the `YModule` object for the device on which the function is located.

power→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

power→get_recordedData(startTime, endTime)

Retrieves a `DataSet` object holding historical data for this sensor, for a specified time interval.

power→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

power→get_resolution()

Returns the resolution of the measured values.

power→get_unit()

Returns the measuring unit for the electrical power.

power→get_userData()

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

power→isOnline()

Checks if the electrical power sensor is currently reachable, without raising any error.

power→isOnline_async(callback, context)

Checks if the electrical power sensor is currently reachable, without raising any error (asynchronous version).

power→load(msValidity)

Preloads the electrical power sensor cache with a specified validity duration.

power→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

power→load_async(msValidity, callback, context)

Preloads the electrical power sensor cache with a specified validity duration (asynchronous version).

power→nextPower()

Continues the enumeration of electrical power sensors started using `yFirstPower()`.

power→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

power→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

power→reset()

Resets the energy counter.

power→set_highestValue(newval)

Changes the recorded maximal value observed pour the electrical power.

power→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

power→set_logicalName(newval)

Changes the logical name of the electrical power sensor.

power→set_lowestValue(newval)

Changes the recorded minimal value observed pour the electrical power.

power→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

power→set_resolution(newval)

Changes the resolution of the measured values.

power→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

power→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YPower.FindPower()**YPower****yFindPower()**`YPower.FindPower()`

Retrieves a electrical power sensor for a given identifier.

js	function yFindPower (func)
nodejs	function FindPower (func)
php	function yFindPower (\$func)
cpp	YPower* yFindPower (const string& func)
m	YPower* yFindPower (NSString* func)
pas	function yFindPower (func : string): TYPower
vb	function yFindPower (ByVal func As String) As YPower
cs	YPower FindPower (string func)
java	YPower FindPower (String func)
py	def FindPower (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the electrical power sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YPower.isOnline()` to test if the electrical power sensor is indeed online at a given time. In case of ambiguity when looking for a electrical power sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the electrical power sensor

Returns :

a YPower object allowing you to drive the electrical power sensor.

YPower.FirstPower()**YPower****yFirstPower()**`YPower.FirstPower()`

Starts the enumeration of electrical power sensors currently accessible.

js	function yFirstPower ()
nodejs	function FirstPower ()
php	function yFirstPower ()
cpp	YPower* yFirstPower ()
m	YPower* yFirstPower ()
pas	function yFirstPower (): TYPower
vb	function yFirstPower () As YPower
cs	YPower FirstPower ()
java	YPower FirstPower ()
py	def FirstPower ()

Use the method `YPower.nextPower()` to iterate on next electrical power sensors.

Returns :

a pointer to a `YPower` object, corresponding to the first electrical power sensor currently online, or a `null` pointer if there are none.

power→calibrateFromPoints()**YPower****power.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

js	function calibrateFromPoints (rawValues , refValues)
nodejs	function calibrateFromPoints (rawValues , refValues)
php	function calibrateFromPoints (\$rawValues , \$refValues)
cpp	int calibrateFromPoints (vector<double> rawValues , vector<double> refValues)
m	-(int) calibrateFromPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues
pas	function calibrateFromPoints (rawValues : TDoubleArray, refValues : TDoubleArray): LongInt
vb	procedure calibrateFromPoints ()
cs	int calibrateFromPoints (List<double> rawValues , List<double> refValues)
java	int calibrateFromPoints (ArrayList<Double> rawValues , ArrayList<Double> refValues)
py	def calibrateFromPoints (rawValues , refValues)
cmd	YPower target calibrateFromPoints rawValues refValues

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→describe()`power.describe()`**YPower**

Returns a short text that describes unambiguously the instance of the electrical power sensor in the form `TYPE (NAME) = SERIAL.FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, `TYPE` is the type of the function, `NAME` it the name used for the first access to the function, `SERIAL` is the serial number of the module if the module is connected or "unresolved", and `FUNCTIONID` is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the electrical power sensor (ex:
`Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

power→**get_advertisedValue()****YPower****power**→**advertisedValue()****power.get_advertisedValue()**

Returns the current value of the electrical power sensor (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YPower target get_advertisedValue

Returns :

a string corresponding to the current value of the electrical power sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

power→**get_cosPhi()****YPower****power**→**cosPhi()**`power.get_cosPhi()`

Returns the power factor (the ratio between the real power consumed, measured in W, and the apparent power provided, measured in VA).

js	function get_cosPhi ()
nodejs	function get_cosPhi ()
php	function get_cosPhi ()
cpp	double get_cosPhi ()
m	-(double) cosPhi
pas	function get_cosPhi (): double
vb	function get_cosPhi () As Double
cs	double get_cosPhi ()
java	double get_cosPhi ()
py	def get_cosPhi ()
cmd	YPower target get_cosPhi

Returns :

a floating point number corresponding to the power factor (the ratio between the real power consumed, measured in W, and the apparent power provided, measured in VA)

On failure, throws an exception or returns Y_COSPHI_INVALID.

power→**get_currentRawValue()****YPower****power**→**currentRawValue()****power.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue()
nodejs	function get_currentRawValue()
php	function get_currentRawValue()
cpp	double get_currentRawValue()
m	-(double) currentRawValue
pas	function get_currentRawValue() : double
vb	function get_currentRawValue() As Double
cs	double get_currentRawValue()
java	double get_currentRawValue()
py	def get_currentRawValue()
cmd	YPower target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

power→**get_currentValue()****YPower****power**→**currentValue()****power.get_currentValue()**

Returns the current measure for the electrical power.

js	function get_currentValue()
nodejs	function get_currentValue()
php	function get_currentValue()
cpp	double get_currentValue()
m	-(double) currentValue
pas	function get_currentValue() : double
vb	function get_currentValue() As Double
cs	double get_currentValue()
java	double get_currentValue()
py	def get_currentValue()
cmd	YPower target get_currentValue

Returns :

a floating point number corresponding to the current measure for the electrical power

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

power→**get_errorMessage()****YPower****power**→**errorMessage()****power**.**get_errorMessage()**

Returns the error message of the latest error with the electrical power sensor.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the electrical power sensor object

power→**get_errorType()****YPower****power**→**errorType()****power.get_errorType()**

Returns the numerical error code of the latest error with the electrical power sensor.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the electrical power sensor object

power→**get_friendlyName()****YPower****power**→**friendlyName()**`power.get_friendlyName()`

Returns a global identifier of the electrical power sensor in the format `MODULE_NAME.FUNCTION_NAME`.

<code>js</code>	<code>function get_friendlyName()</code>
<code>nodejs</code>	<code>function get_friendlyName()</code>
<code>php</code>	<code>function get_friendlyName()</code>
<code>cpp</code>	<code>string get_friendlyName()</code>
<code>m</code>	<code>-(NSString*) friendlyName</code>
<code>cs</code>	<code>string get_friendlyName()</code>
<code>java</code>	<code>String get_friendlyName()</code>
<code>py</code>	<code>def get_friendlyName()</code>

The returned string uses the logical names of the module and of the electrical power sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the electrical power sensor (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the electrical power sensor using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

power→**get_functionDescriptor()****YPower****power**→**functionDescriptor()****power.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

power→**get_functionId()****YPower****power**→**functionId()**`power.get_functionId()`

Returns the hardware identifier of the electrical power sensor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the electrical power sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

power→**get_hardwareId()****YPower****power**→**hardwareId()****power.get_hardwareId()**

Returns the unique hardware identifier of the electrical power sensor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the electrical power sensor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the electrical power sensor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

power→**get_highestValue()****YPower****power**→**highestValue()**`power.get_highestValue()`

Returns the maximal value observed for the electrical power.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YPower target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the electrical power

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

power→**get_logFrequency()****YPower****power**→**logFrequency()****power**.**get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YPower target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

power→**get_logicalName()****YPower****power**→**logicalName()****power.get_logicalName()**

Returns the logical name of the electrical power sensor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YPower target get_logicalName

Returns :

a string corresponding to the logical name of the electrical power sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

power→**get_lowestValue()****YPower****power**→**lowestValue()**`power.get_lowestValue()`

Returns the minimal value observed for the electrical power.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YPower target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the electrical power

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

power→**get_meter()****YPower****power**→**meter()**`power.get_meter()`

Returns the energy counter, maintained by the wattmeter by integrating the power consumption over time.

js	function get_meter ()
nodejs	function get_meter ()
php	function get_meter ()
cpp	double get_meter ()
m	-(double) meter
pas	function get_meter (): double
vb	function get_meter () As Double
cs	double get_meter ()
java	double get_meter ()
py	def get_meter ()
cmd	YPower target get_meter

Note that this counter is reset at each start of the device.

Returns :

a floating point number corresponding to the energy counter, maintained by the wattmeter by integrating the power consumption over time

On failure, throws an exception or returns Y_METER_INVALID.

power→**get_meterTimer()****YPower****power**→**meterTimer()**`power.get_meterTimer()`

Returns the elapsed time since last energy counter reset, in seconds.

js	function get_meterTimer ()
nodejs	function get_meterTimer ()
php	function get_meterTimer ()
cpp	int get_meterTimer ()
m	-(int) meterTimer
pas	function get_meterTimer (): LongInt
vb	function get_meterTimer () As Integer
cs	int get_meterTimer ()
java	int get_meterTimer ()
py	def get_meterTimer ()
cmd	YPower target get_meterTimer

Returns :

an integer corresponding to the elapsed time since last energy counter reset, in seconds

On failure, throws an exception or returns Y_METERTIMER_INVALID.

power→**get_module()****YPower****power**→**module()**`power.get_module()`

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

power→get_module_async()**YPower****power→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

power→**get_recordedData()****YPower****power**→**recordedData()****power.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
cpp	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YPower target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

power→**get_reportFrequency()****YPower****power**→**reportFrequency()****power.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency()
nodejs	function get_reportFrequency()
php	function get_reportFrequency()
cpp	string get_reportFrequency()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency() : string
vb	function get_reportFrequency() As String
cs	string get_reportFrequency()
java	String get_reportFrequency()
py	def get_reportFrequency()
cmd	YPower target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

power→**get_resolution()****YPower****power**→**resolution()**`power.get_resolution()`

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YPower target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

power→**get_unit()****YPower****power**→**unit()**`power.get_unit()`

Returns the measuring unit for the electrical power.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YPower target get_unit

Returns :

a string corresponding to the measuring unit for the electrical power

On failure, throws an exception or returns Y_UNIT_INVALID.

power→**get_userdata()****YPower****power**→**userData()****power.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

power→**isOnline()****power.isOnline()****YPower**

Checks if the electrical power sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the electrical power sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the electrical power sensor.

Returns :

`true` if the electrical power sensor can be reached, and `false` otherwise

power→isOnline_async()**YPower**

Checks if the electrical power sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
```

```
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the electrical power sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

power→**load()****power . load ()****YPower**

Preloads the electrical power sensor cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

power→loadCalibrationPoints()**YPower****power.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php function loadCalibrationPoints( &$rawValues, &$refValues)
cpp int loadCalibrationPoints( vector<double>& rawValues,
                             vector<double>& refValues)

m -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
   : (NSMutableArray*) refValues

pas function loadCalibrationPoints( var rawValues: TDoubleArray,
                                   var refValues: TDoubleArray): LongInt

vb procedure loadCalibrationPoints( )
cs int loadCalibrationPoints( List<double> rawValues,
                             List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                               ArrayList<Double> refValues)

py def loadCalibrationPoints( rawValues, refValues)
cmd YPower target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→load_async()**YPower**

Preloads the electrical power sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

power→**nextPower()****power . nextPower ()****YPower**

Continues the enumeration of electrical power sensors started using `yFirstPower ()`.

js	function nextPower ()
nodejs	function nextPower ()
php	function nextPower ()
cpp	YPower * nextPower ()
m	-(YPower*) nextPower
pas	function nextPower (): TYPower
vb	function nextPower () As YPower
cs	YPower nextPower ()
java	YPower nextPower ()
py	def nextPower ()

Returns :

a pointer to a `YPower` object, corresponding to a electrical power sensor currently online, or a `null` pointer if there are no more electrical power sensors to enumerate.

power→registerTimedReportCallback()**YPower****power.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YPowerTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YPowerTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYPowerTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

power→registerValueCallback()**YPower****power.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YPowerValueCallback callback)
m	-(int) registerValueCallback : (YPowerValueCallback) callback
pas	function registerValueCallback (callback : TYPowerValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

power→reset()`power.reset()`**YPower**

Resets the energy counter.

js	function reset ()
nodejs	function reset ()
php	function reset ()
cpp	int reset ()
m	-(int) reset
pas	function reset (): LongInt
vb	function reset () As Integer
cs	int reset ()
java	int reset ()
py	def reset ()
cmd	YPower target reset

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→**set_highestValue()****YPower****power**→**setHighestValue()****power.set_highestValue()**

Changes the recorded maximal value observed pour the electrical power.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YPower target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed pour the electrical power

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→**set_logFrequency()****YPower****power**→**setLogFrequency()****power.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YPower target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→**set_logicalName()****YPower****power**→**setLogicalName()****power.set_logicalName()**

Changes the logical name of the electrical power sensor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YPower target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the electrical power sensor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

power→**set_lowestValue()****YPower****power**→**setLowestValue()****power.set_lowestValue()**

Changes the recorded minimal value observed pour the electrical power.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YPower target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed pour the electrical power

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→**set_reportFrequency()****YPower****power**→**setReportFrequency()****power.set_reportFrequency()**

Changes the timed value notification frequency for this function.

<code>js</code>	<code>function set_reportFrequency(newval)</code>
<code>nodejs</code>	<code>function set_reportFrequency(newval)</code>
<code>php</code>	<code>function set_reportFrequency(\$newval)</code>
<code>cpp</code>	<code>int set_reportFrequency(const string& newval)</code>
<code>m</code>	<code>-(int) setReportFrequency : (NSString*) newval</code>
<code>pas</code>	<code>function set_reportFrequency(newval: string): integer</code>
<code>vb</code>	<code>function set_reportFrequency(ByVal newval As String) As Integer</code>
<code>cs</code>	<code>int set_reportFrequency(string newval)</code>
<code>java</code>	<code>int set_reportFrequency(String newval)</code>
<code>py</code>	<code>def set_reportFrequency(newval)</code>
<code>cmd</code>	<code>YPower target set_reportFrequency newval</code>

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→**set_resolution()****YPower****power**→**setResolution()****power.set_resolution()**

Changes the resolution of the measured values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YPower target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→**set_userData()****power**→**setUserData()****power.set_userData()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userData (data)
nodejs	function set_userData (data)
php	function set_userData (\$data)
cpp	void set_userData (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userData (data : Tobject)
vb	procedure set_userData (ByVal data As Object)
cs	void set_userData (object data)
java	void set_userData (Object data)
py	def set_userData (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

power→wait_async()**YPower**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.29. Pressure function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_pressure.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YPressure = yoctolib.YPressure;
php	require_once('yocto_pressure.php');
c++	#include "yocto_pressure.h"
m	#import "yocto_pressure.h"
pas	uses yocto_pressure;
vb	yocto_pressure.vb
cs	yocto_pressure.cs
java	import com.yoctopuce.YoctoAPI.YPressure;
py	from yocto_pressure import *

Global functions

yFindPressure(func)

Retrieves a pressure sensor for a given identifier.

yFirstPressure()

Starts the enumeration of pressure sensors currently accessible.

YPressure methods

pressure→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

pressure→describe()

Returns a short text that describes unambiguously the instance of the pressure sensor in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

pressure→get_advertisedValue()

Returns the current value of the pressure sensor (no more than 6 characters).

pressure→get_currentRawValue()

Returns the unrounded and uncalibrated raw value returned by the sensor.

pressure→get_currentValue()

Returns the current measure for the pressure.

pressure→get_errorMessage()

Returns the error message of the latest error with the pressure sensor.

pressure→get_errorType()

Returns the numerical error code of the latest error with the pressure sensor.

pressure→get_friendlyName()

Returns a global identifier of the pressure sensor in the format `MODULE_NAME . FUNCTION_NAME`.

pressure→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

pressure→get_functionId()

Returns the hardware identifier of the pressure sensor, without reference to the module.

pressure→get_hardwareId()

Returns the unique hardware identifier of the pressure sensor in the form `SERIAL . FUNCTIONID`.

pressure→get_highestValue()

Returns the maximal value observed for the pressure.

pressure→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

pressure→get_logicalName()

Returns the logical name of the pressure sensor.

pressure→get_lowestValue()

Returns the minimal value observed for the pressure.

pressure→get_module()

Gets the YModule object for the device on which the function is located.

pressure→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

pressure→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

pressure→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

pressure→get_resolution()

Returns the resolution of the measured values.

pressure→get_unit()

Returns the measuring unit for the pressure.

pressure→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

pressure→isOnline()

Checks if the pressure sensor is currently reachable, without raising any error.

pressure→isOnline_async(callback, context)

Checks if the pressure sensor is currently reachable, without raising any error (asynchronous version).

pressure→load(msValidity)

Preloads the pressure sensor cache with a specified validity duration.

pressure→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

pressure→load_async(msValidity, callback, context)

Preloads the pressure sensor cache with a specified validity duration (asynchronous version).

pressure→nextPressure()

Continues the enumeration of pressure sensors started using yFirstPressure().

pressure→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

pressure→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

pressure→set_highestValue(newval)

Changes the recorded maximal value observed for the pressure.

pressure→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

pressure→set_logicalName(newval)

Changes the logical name of the pressure sensor.

3. Reference

pressure→**set_lowestValue**(newval)

Changes the recorded minimal value observed for the pressure.

pressure→**set_reportFrequency**(newval)

Changes the timed value notification frequency for this function.

pressure→**set_resolution**(newval)

Changes the resolution of the measured physical values.

pressure→**set_userData**(data)

Stores a user context provided as argument in the userData attribute of the function.

pressure→**wait_async**(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YPressure.FindPressure()**YPressure****yFindPressure()**`YPressure.FindPressure()`

Retrieves a pressure sensor for a given identifier.

js	function yFindPressure (func)
nodejs	function FindPressure (func)
php	function yFindPressure (\$func)
cpp	YPressure* yFindPressure (const string& func)
m	YPressure* yFindPressure (NSString* func)
pas	function yFindPressure (func : string): TYPressure
vb	function yFindPressure (ByVal func As String) As YPressure
cs	YPressure FindPressure (string func)
java	YPressure FindPressure (String func)
py	def FindPressure (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the pressure sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YPressure.isOnline()` to test if the pressure sensor is indeed online at a given time. In case of ambiguity when looking for a pressure sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the pressure sensor

Returns :

a YPressure object allowing you to drive the pressure sensor.

YPressure.FirstPressure()**YPressure****yFirstPressure()****YPressure.FirstPressure()**

Starts the enumeration of pressure sensors currently accessible.

js	function yFirstPressure ()
nodejs	function FirstPressure ()
php	function yFirstPressure ()
cpp	YPressure* yFirstPressure ()
m	YPressure* yFirstPressure ()
pas	function yFirstPressure (): TYPresure
vb	function yFirstPressure () As YPressure
cs	YPressure FirstPressure ()
java	YPressure FirstPressure ()
py	def FirstPressure ()

Use the method `YPressure.nextPressure()` to iterate on next pressure sensors.

Returns :

a pointer to a YPressure object, corresponding to the first pressure sensor currently online, or a `null` pointer if there are none.

pressure→calibrateFromPoints()**YPressure****pressure.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

js	function calibrateFromPoints (rawValues , refValues)
nodejs	function calibrateFromPoints (rawValues , refValues)
php	function calibrateFromPoints (\$rawValues , \$refValues)
cpp	int calibrateFromPoints (vector<double> rawValues , vector<double> refValues)
m	-(int) calibrateFromPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues
pas	function calibrateFromPoints (rawValues : TDoubleArray, refValues : TDoubleArray): LongInt
vb	procedure calibrateFromPoints ()
cs	int calibrateFromPoints (List<double> rawValues , List<double> refValues)
java	int calibrateFromPoints (ArrayList<Double> rawValues , ArrayList<Double> refValues)
py	def calibrateFromPoints (rawValues , refValues)
cmd	YPressure target calibrateFromPoints rawValues refValues

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→**describe()****pressure.describe()****YPressure**

Returns a short text that describes unambiguously the instance of the pressure sensor in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the pressure sensor (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

pressure→**get_advertisedValue()****YPressure****pressure**→**advertisedValue()****pressure.get_advertisedValue()**

Returns the current value of the pressure sensor (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YPressure target get_advertisedValue

Returns :

a string corresponding to the current value of the pressure sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

pressure→**get_currentRawValue()****YPressure****pressure**→**currentRawValue()****pressure.get_currentRawValue()**

Returns the unrounded and uncalibrated raw value returned by the sensor.

js	function get_currentRawValue()
nodejs	function get_currentRawValue()
php	function get_currentRawValue()
cpp	double get_currentRawValue()
m	-(double) currentRawValue
pas	function get_currentRawValue() : double
vb	function get_currentRawValue() As Double
cs	double get_currentRawValue()
java	double get_currentRawValue()
py	def get_currentRawValue()
cmd	YPressure target get_currentRawValue

Returns :

a floating point number corresponding to the unrounded and uncalibrated raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

pressure→**get_currentValue()****YPressure****pressure**→**currentValue()****pressure.get_currentValue()**

Returns the current measure for the pressure.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YPressure target get_currentValue

Returns :

a floating point number corresponding to the current measure for the pressure

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

pressure→**get_errorMessage()****YPressure****pressure**→**errorMessage()****pressure.get_errorMessage()**

Returns the error message of the latest error with the pressure sensor.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the pressure sensor object

pressure→**get_errorType()****YPressure****pressure**→**errorType()**`pressure.get_errorType()`

Returns the numerical error code of the latest error with the pressure sensor.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the pressure sensor object

pressure→**get_friendlyName()****YPressure****pressure**→**friendlyName()****pressure.get_friendlyName()**

Returns a global identifier of the pressure sensor in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the pressure sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the pressure sensor (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the pressure sensor using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

pressure→**get_functionDescriptor()****YPressure****pressure**→**functionDescriptor()****pressure.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

pressure→**get_functionId()****YPressure****pressure**→**functionId()****pressure.get_functionId()**

Returns the hardware identifier of the pressure sensor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the pressure sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

pressure→**get_hardwareId()****YPressure****pressure**→**hardwareId()****pressure.get_hardwareId()**

Returns the unique hardware identifier of the pressure sensor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the pressure sensor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the pressure sensor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

pressure→**get_highestValue()****YPressure****pressure**→**highestValue()****pressure.get_highestValue()**

Returns the maximal value observed for the pressure.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YPressure target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the pressure

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

pressure→**get_logFrequency()****YPressure****pressure**→**logFrequency()****pressure.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YPressure target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

pressure→**get_logicalName()****YPressure****pressure**→**logicalName()****pressure.get_logicalName()**

Returns the logical name of the pressure sensor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YPressure target get_logicalName

Returns :

a string corresponding to the logical name of the pressure sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

pressure→**get_lowestValue()****YPressure****pressure**→**lowestValue()****pressure.get_lowestValue()**

Returns the minimal value observed for the pressure.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YPressure target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the pressure

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

pressure→**get_module()****YPressure****pressure**→**module()**`pressure.get_module()`

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

pressure→get_module_async()**YPressure****pressure→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pressure→**get_recordedData()****YPressure****pressure**→**recordedData()****pressure.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
c++	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YPressure target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

pressure→get_reportFrequency()**YPressure****pressure→reportFrequency()****pressure.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YPressure target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

pressure→**get_resolution()****YPressure****pressure**→**resolution()****pressure.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YPressure target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

pressure→**get_unit()****YPressure****pressure**→**unit()****pressure.get_unit()**

Returns the measuring unit for the pressure.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YPressure target get_unit

Returns :

a string corresponding to the measuring unit for the pressure

On failure, throws an exception or returns Y_UNIT_INVALID.

pressure→**get_userData()****YPressure****pressure**→**userData()****pressure.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

pressure→**isOnline()****pressure.isOnline()****YPressure**

Checks if the pressure sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the pressure sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the pressure sensor.

Returns :

`true` if the pressure sensor can be reached, and `false` otherwise

pressure→isOnline_async()**YPressure**

Checks if the pressure sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
```

```
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the pressure sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pressure→load()`pressure.load()`**YPressure**

Preloads the pressure sensor cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

pressure→loadCalibrationPoints()**YPressure****pressure.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php function loadCalibrationPoints( &$rawValues, &$refValues)
cpp int loadCalibrationPoints( vector<double>& rawValues,
                             vector<double>& refValues)

m -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
  : (NSMutableArray*) refValues

pas function loadCalibrationPoints( var rawValues: TDoubleArray,
                                   var refValues: TDoubleArray): LongInt

vb procedure loadCalibrationPoints( )
cs int loadCalibrationPoints( List<double> rawValues,
                             List<double> refValues)
java int loadCalibrationPoints( ArrayList<Double> rawValues,
                               ArrayList<Double> refValues)
py def loadCalibrationPoints( rawValues, refValues)
cmd YPressure target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→load_async()**YPressure**

Preloads the pressure sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pressure→**nextPressure()****YPressure****pressure.nextPressure()**

Continues the enumeration of pressure sensors started using `yFirstPressure()`.

js	function nextPressure()
nodejs	function nextPressure()
php	function nextPressure()
cpp	YPressure * nextPressure()
m	-(YPressure*) nextPressure
pas	function nextPressure() : TYPressure
vb	function nextPressure() As YPressure
cs	YPressure nextPressure()
java	YPressure nextPressure()
py	def nextPressure()

Returns :

a pointer to a YPressure object, corresponding to a pressure sensor currently online, or a null pointer if there are no more pressure sensors to enumerate.

pressure→registerTimedReportCallback()**YPressure****pressure.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YPressureTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YPressureTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYPressureTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

pressure→registerValueCallback()**YPressure****pressure.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YPressureValueCallback callback)
m	-(int) registerValueCallback : (YPressureValueCallback) callback
pas	function registerValueCallback (callback : TYPressureValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

pressure→**set_highestValue()****YPressure****pressure**→**setHighestValue()****pressure.set_highestValue()**

Changes the recorded maximal value observed for the pressure.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YPressure target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed for the pressure

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→**set_logFrequency()****YPressure****pressure**→**setLogFrequency()****pressure.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YPressure target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→**set_logicalName()****YPressure****pressure**→**setLogicalName()****pressure.set_logicalName()**

Changes the logical name of the pressure sensor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YPressure target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the pressure sensor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

pressure→**set_lowestValue()****YPressure****pressure**→**setLowestValue()****pressure.set_lowestValue()**

Changes the recorded minimal value observed for the pressure.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YPressure target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed for the pressure

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→set_reportFrequency()**YPressure****pressure→setReportFrequency()****pressure.set_reportFrequency()**

Changes the timed value notification frequency for this function.

js	function set_reportFrequency (newval)
nodejs	function set_reportFrequency (newval)
php	function set_reportFrequency (\$newval)
cpp	int set_reportFrequency (const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency (newval : string): integer
vb	function set_reportFrequency (ByVal newval As String) As Integer
cs	int set_reportFrequency (string newval)
java	int set_reportFrequency (String newval)
py	def set_reportFrequency (newval)
cmd	YPressure target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→**set_resolution()****YPressure****pressure**→**setResolution()****pressure.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YPressure target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→**set_userdata()****YPressure****pressure**→**setUserData()****pressure.set_userdata()**

Stores a user context provided as argument in the `userData` attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

pressure→**wait_async()****YPressure**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.30. Pwm function interface

The Yoctopuce application programming interface allows you to configure, start, and stop the PWM.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_pwmoutput.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YPwmOutput = yoctolib.YPwmOutput;
php	require_once('yocto_pwmoutput.php');
c++	#include "yocto_pwmoutput.h"
m	#import "yocto_pwmoutput.h"
pas	uses yocto_pwmoutput;
vb	yocto_pwmoutput.vb
cs	yocto_pwmoutput.cs
java	import com.yoctopuce.YoctoAPI.YPwmOutput;
py	from yocto_pwmoutput import *

Global functions

yFindPwmOutput(func)

Retrieves a PWM for a given identifier.

yFirstPwmOutput()

Starts the enumeration of PWMs currently accessible.

YPwmOutput methods

pwmoutput→describe()

Returns a short text that describes unambiguously the instance of the PWM in the form TYPE (NAME) = SERIAL . FUNCTIONID.

pwmoutput→dutyCycleMove(target, ms_duration)

Performs a smooth change of the pulse duration toward a given value.

pwmoutput→get_advertisedValue()

Returns the current value of the PWM (no more than 6 characters).

pwmoutput→get_dutyCycle()

Returns the PWMs duty cycle as a floating point number between 0 and 1.

pwmoutput→get_dutyCycleAtPowerOn()

Returns the PWMs duty cycle at device power up as a floating point number between 0.0 and 100.

pwmoutput→get_enabled()

Returns the state of the PWMs.

pwmoutput→get_enabledAtPowerOn()

Returns the state of the PWMs at device power up.

pwmoutput→get_errorMessage()

Returns the error message of the latest error with the PWM.

pwmoutput→get_errorType()

Returns the numerical error code of the latest error with the PWM.

pwmoutput→get_frequency()

Returns the PWM frequency in Hz.

pwmoutput→get_friendlyName()

Returns a global identifier of the PWM in the format MODULE_NAME . FUNCTION_NAME.

pwmoutput→get_functionDescriptor()

	Returns a unique identifier of type <code>YFUN_DESCR</code> corresponding to the function.
<code>pwmoutput→get_functionId()</code>	Returns the hardware identifier of the PWM, without reference to the module.
<code>pwmoutput→get_hardwareId()</code>	Returns the unique hardware identifier of the PWM in the form <code>SERIAL . FUNCTIONID</code> .
<code>pwmoutput→get_logicalName()</code>	Returns the logical name of the PWM.
<code>pwmoutput→get_module()</code>	Gets the <code>YModule</code> object for the device on which the function is located.
<code>pwmoutput→get_module_async(callback, context)</code>	Gets the <code>YModule</code> object for the device on which the function is located (asynchronous version).
<code>pwmoutput→get_period()</code>	Returns the PWM period in nanoseconds.
<code>pwmoutput→get_pulseDuration()</code>	Returns the PWM pulse length in milliseconds.
<code>pwmoutput→get_userData()</code>	Returns the value of the <code>userData</code> attribute, as previously stored using method <code>set_userData</code> .
<code>pwmoutput→isOnline()</code>	Checks if the PWM is currently reachable, without raising any error.
<code>pwmoutput→isOnline_async(callback, context)</code>	Checks if the PWM is currently reachable, without raising any error (asynchronous version).
<code>pwmoutput→load(msValidity)</code>	Preloads the PWM cache with a specified validity duration.
<code>pwmoutput→load_async(msValidity, callback, context)</code>	Preloads the PWM cache with a specified validity duration (asynchronous version).
<code>pwmoutput→nextPwmOutput()</code>	Continues the enumeration of PWMs started using <code>yFirstPwmOutput()</code> .
<code>pwmoutput→pulseDurationMove(ms_target, ms_duration)</code>	Performs a smooth change of the pulse duration toward a given value.
<code>pwmoutput→registerValueCallback(callback)</code>	Registers the callback function that is invoked on every change of advertised value.
<code>pwmoutput→set_dutyCycle(newval)</code>	Configures the PWMs duty cycle.
<code>pwmoutput→set_dutyCycleAtPowerOn(newval)</code>	Configures the PWMs duty cycle at device power up.
<code>pwmoutput→set_enabled(newval)</code>	Stops or starts the PWM.
<code>pwmoutput→set_enabledAtPowerOn(newval)</code>	Configures the state of PWM at device power up.
<code>pwmoutput→set_frequency(newval)</code>	Configures the PWM frequency.
<code>pwmoutput→set_logicalName(newval)</code>	Changes the logical name of the PWM.
<code>pwmoutput→set_period(newval)</code>	Configures the PWM period.

pwmoutput→set_pulseDuration(newval)

Configures the PWM pluses length.

pwmoutput→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

pwmoutput→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YPwmOutput.FindPwmOutput()**YPwmOutput****yFindPwmOutput()**`YPwmOutput.FindPwmOutput()`

Retrieves a PWM for a given identifier.

js	function yFindPwmOutput (func)
nodejs	function FindPwmOutput (func)
php	function yFindPwmOutput (\$func)
cpp	YPwmOutput* yFindPwmOutput (const string& func)
m	YPwmOutput* yFindPwmOutput (NSString* func)
pas	function yFindPwmOutput (func : string): TYPwmOutput
vb	function yFindPwmOutput (ByVal func As String) As YPwmOutput
cs	YPwmOutput FindPwmOutput (string func)
java	YPwmOutput FindPwmOutput (String func)
py	def FindPwmOutput (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the PWM is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YPwmOutput.isOnline()` to test if the PWM is indeed online at a given time. In case of ambiguity when looking for a PWM by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :**func** a string that uniquely characterizes the PWM**Returns :**a `YPwmOutput` object allowing you to drive the PWM.

YPwmOutput.FirstPwmOutput()**YPwmOutput****yFirstPwmOutput()**`YPwmOutput.FirstPwmOutput()`

Starts the enumeration of PWMs currently accessible.

<code>js</code>	<code>function yFirstPwmOutput()</code>
<code>nodejs</code>	<code>function FirstPwmOutput()</code>
<code>php</code>	<code>function yFirstPwmOutput()</code>
<code>cpp</code>	<code>YPwmOutput* yFirstPwmOutput()</code>
<code>m</code>	<code>YPwmOutput* yFirstPwmOutput()</code>
<code>pas</code>	<code>function yFirstPwmOutput(): TYPwmOutput</code>
<code>vb</code>	<code>function yFirstPwmOutput() As YPwmOutput</code>
<code>cs</code>	<code>YPwmOutput FirstPwmOutput()</code>
<code>java</code>	<code>YPwmOutput FirstPwmOutput()</code>
<code>py</code>	<code>def FirstPwmOutput()</code>

Use the method `YPwmOutput.nextPwmOutput()` to iterate on next PWMs.

Returns :

a pointer to a `YPwmOutput` object, corresponding to the first PWM currently online, or a `null` pointer if there are none.

pwmoutput→describe()`pwmoutput.describe()`**YPwmOutput**

Returns a short text that describes unambiguously the instance of the PWM in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the PWM (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

pwmoutput→dutyCycleMove()**YPwmOutput****pwmoutput.dutyCycleMove()**

Performs a smooth change of the pulse duration toward a given value.

js	function dutyCycleMove (target , ms_duration)
nodejs	function dutyCycleMove (target , ms_duration)
php	function dutyCycleMove (\$target , \$ms_duration)
cpp	int dutyCycleMove (double target , int ms_duration)
m	-(int) dutyCycleMove : (double) target : (int) ms_duration
pas	function dutyCycleMove (target : double, ms_duration : LongInt): LongInt
vb	function dutyCycleMove () As Integer
cs	int dutyCycleMove (double target , int ms_duration)
java	int dutyCycleMove (double target , int ms_duration)
py	def dutyCycleMove (target , ms_duration)
cmd	YPwmOutput target dutyCycleMove target ms_duration

Parameters :

- target** new duty cycle at the end of the transition (floating-point number, between 0 and 1)
- ms_duration** total duration of the transition, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

pwmoutput→get_advertisedValue()**YPwmOutput****pwmoutput→advertisedValue()****pwmoutput.get_advertisedValue()**

Returns the current value of the PWM (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YPwmOutput target get_advertisedValue

Returns :

a string corresponding to the current value of the PWM (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

pwmoutput→get_dutyCycle()**YPwmOutput****pwmoutput→dutyCycle()****pwmoutput.get_dutyCycle()**

Returns the PWMs dutty cyle as a floating point number between 0 an 1.

js	function get_dutyCycle ()
nodejs	function get_dutyCycle ()
php	function get_dutyCycle ()
cpp	double get_dutyCycle ()
m	-(double) dutyCycle
pas	function get_dutyCycle (): double
vb	function get_dutyCycle () As Double
cs	double get_dutyCycle ()
java	double get_dutyCycle ()
py	def get_dutyCycle ()
cmd	YPwmOutput target get_dutyCycle

Returns :

a floating point number corresponding to the PWMs dutty cyle as a floating point number between 0 an 1

On failure, throws an exception or returns Y_DUTYCYCLE_INVALID.

pwmoutput→get_dutyCycleAtPowerOn()**YPwmOutput****pwmoutput→dutyCycleAtPowerOn()****pwmoutput.get_dutyCycleAtPowerOn()**

Returns the PWMs duty cycle at device power up as a floating point number between 0.0 and 100.

js	function get_dutyCycleAtPowerOn ()
nodejs	function get_dutyCycleAtPowerOn ()
php	function get_dutyCycleAtPowerOn ()
cpp	double get_dutyCycleAtPowerOn ()
m	-(double) dutyCycleAtPowerOn
pas	function get_dutyCycleAtPowerOn (): double
vb	function get_dutyCycleAtPowerOn () As Double
cs	double get_dutyCycleAtPowerOn ()
java	double get_dutyCycleAtPowerOn ()
py	def get_dutyCycleAtPowerOn ()
cmd	YPwmOutput target get_dutyCycleAtPowerOn

0%

Returns :

a floating point number corresponding to the PWMs duty cycle at device power up as a floating point number between 0.0 and 100

On failure, throws an exception or returns Y_DUTYCYCLEATPOWERON_INVALID.

pwmoutput→get_enabled()**YPwmOutput****pwmoutput→enabled()**`pwmoutput.get_enabled()`

Returns the state of the PWMs.

js	function get_enabled ()
nodejs	function get_enabled ()
php	function get_enabled ()
cpp	Y_ENABLED_enum get_enabled ()
m	-(Y_ENABLED_enum) enabled
pas	function get_enabled (): Integer
vb	function get_enabled () As Integer
cs	int get_enabled ()
java	int get_enabled ()
py	def get_enabled ()
cmd	YPwmOutput target get_enabled

Returns :either **Y_ENABLED_FALSE** or **Y_ENABLED_TRUE**, according to the state of the PWMsOn failure, throws an exception or returns **Y_ENABLED_INVALID**.

pwmoutput→get_enabledAtPowerOn()

YPwmOutput

pwmoutput→enabledAtPowerOn()

pwmoutput.get_enabledAtPowerOn()

Returns the state of the PWMs at device power up.

js	function get_enabledAtPowerOn ()
nodejs	function get_enabledAtPowerOn ()
php	function get_enabledAtPowerOn ()
cpp	Y_ENABLEDATPOWERON_enum get_enabledAtPowerOn ()
m	-(Y_ENABLEDATPOWERON_enum) enabledAtPowerOn
pas	function get_enabledAtPowerOn (): Integer
vb	function get_enabledAtPowerOn () As Integer
cs	int get_enabledAtPowerOn ()
java	int get_enabledAtPowerOn ()
py	def get_enabledAtPowerOn ()
cmd	YPwmOutput target get_enabledAtPowerOn

Returns :

either Y_ENABLEDATPOWERON_FALSE or Y_ENABLEDATPOWERON_TRUE, according to the state of the PWMs at device power up

On failure, throws an exception or returns Y_ENABLEDATPOWERON_INVALID.

pwmoutput→get_errorMessage()**YPwmOutput****pwmoutput→errorMessage()****pwmoutput.get_errorMessage()**

Returns the error message of the latest error with the PWM.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the PWM object

pwmoutput→get_errorType()**YPwmOutput****pwmoutput→errorType()****pwmoutput.get_errorType()**

Returns the numerical error code of the latest error with the PWM.

<code>js</code>	<code>function get_errorType()</code>
<code>nodejs</code>	<code>function get_errorType()</code>
<code>php</code>	<code>function get_errorType()</code>
<code>cpp</code>	<code>YRETCODE get_errorType()</code>
<code>pas</code>	<code>function get_errorType(): YRETCODE</code>
<code>vb</code>	<code>function get_errorType() As YRETCODE</code>
<code>cs</code>	<code>YRETCODE get_errorType()</code>
<code>java</code>	<code>int get_errorType()</code>
<code>py</code>	<code>def get_errorType()</code>

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the PWM object

pwmoutput→get_frequency()**YPwmOutput****pwmoutput→frequency()****pwmoutput.get_frequency()**

Returns the PWM frequency in Hz.

js	function get_frequency ()
nodejs	function get_frequency ()
php	function get_frequency ()
cpp	int get_frequency ()
m	-(int) frequency
pas	function get_frequency (): LongInt
vb	function get_frequency () As Integer
cs	int get_frequency ()
java	int get_frequency ()
py	def get_frequency ()
cmd	YPwmOutput target get_frequency

Returns :

an integer corresponding to the PWM frequency in Hz

On failure, throws an exception or returns Y_FREQUENCY_INVALID.

pwmoutput→get_friendlyName()**YPwmOutput****pwmoutput→friendlyName()****pwmoutput.get_friendlyName()**

Returns a global identifier of the PWM in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the PWM if they are defined, otherwise the serial number of the module and the hardware identifier of the PWM (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the PWM using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

pwmoutput→get_functionDescriptor()**YPwmOutput****pwmoutput→functionDescriptor()****pwmoutput.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

pwmoutput→get_functionId()**YPwmOutput****pwmoutput→functionId()****pwmoutput.get_functionId()**

Returns the hardware identifier of the PWM, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the PWM (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

pwmoutput→get_hardwareId()**YPwmOutput****pwmoutput→hardwareId()****pwmoutput.get_hardwareId()**

Returns the unique hardware identifier of the PWM in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the PWM. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the PWM (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

pwmoutput→get_logicalName()**YPwmOutput****pwmoutput→logicalName()****pwmoutput.get_logicalName()**

Returns the logical name of the PWM.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YPwmOutput target get_logicalName

Returns :

a string corresponding to the logical name of the PWM. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

pwmoutput→get_module()**YPwmOutput****pwmoutput→module()**`pwmoutput.get_module()`

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

pwmoutput→get_module_async()
pwmoutput→module_async()**YPwmOutput**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pwmoutput→get_period()**YPwmOutput****pwmoutput→period()**`pwmoutput.get_period()`

Returns the PWM period in nonaseconde.

js	function get_period ()
nodejs	function get_period ()
php	function get_period ()
cpp	double get_period ()
m	-(double) period
pas	function get_period (): double
vb	function get_period () As Double
cs	double get_period ()
java	double get_period ()
py	def get_period ()
cmd	YPwmOutput target get_period

Returns :

a floating point number corresponding to the PWM period in nonaseconde

On failure, throws an exception or returns Y_PERIOD_INVALID.

pwmoutput→get_pulseDuration()**YPwmOutput****pwmoutput→pulseDuration()****pwmoutput.get_pulseDuration()**

Returns the PWM pulse length in milliseconds.

js	function get_pulseDuration ()
nodejs	function get_pulseDuration ()
php	function get_pulseDuration ()
cpp	double get_pulseDuration ()
m	-(double) pulseDuration
pas	function get_pulseDuration (): double
vb	function get_pulseDuration () As Double
cs	double get_pulseDuration ()
java	double get_pulseDuration ()
py	def get_pulseDuration ()
cmd	YPwmOutput target get_pulseDuration

Returns :

a floating point number corresponding to the PWM pulse length in milliseconds

On failure, throws an exception or returns Y_PULSEDURATION_INVALID.

pwmoutput→get_userdata()**YPwmOutput****pwmoutput→userData()****pwmoutput.get_userdata()**

Returns the value of the userData attribute, as previously stored using method set_userdata.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

pwmoutput→**isOnline()**`pwmoutput.isOnline()`**YPwmOutput**

Checks if the PWM is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the PWM in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the PWM.

Returns :

`true` if the PWM can be reached, and `false` otherwise

pwmoutput→isOnline_async()**YPwmOutput**

Checks if the PWM is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the PWM in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pwmoutput→load()`pwmoutput.load()`**YPwmOutput**

Preloads the PWM cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

pwmoutput→load_async()**YPwmOutput**

Preloads the PWM cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pwmoutput→nextPwmOutput()**YPwmOutput****pwmoutput.nextPwmOutput()**

Continues the enumeration of PWMs started using `yFirstPwmOutput()`.

js	function nextPwmOutput ()
nodejs	function nextPwmOutput ()
php	function nextPwmOutput ()
cpp	YPwmOutput * nextPwmOutput ()
m	-(YPwmOutput*) nextPwmOutput
pas	function nextPwmOutput (): TYPwmOutput
vb	function nextPwmOutput () As YPwmOutput
cs	YPwmOutput nextPwmOutput ()
java	YPwmOutput nextPwmOutput ()
py	def nextPwmOutput ()

Returns :

a pointer to a `YPwmOutput` object, corresponding to a PWM currently online, or a `null` pointer if there are no more PWMs to enumerate.

pwmoutput→pulseDurationMove()**YPwmOutput****pwmoutput.pulseDurationMove()**

Performs a smooth change of the pulse duration toward a given value.

js	function pulseDurationMove (ms_target , ms_duration)
nodejs	function pulseDurationMove (ms_target , ms_duration)
php	function pulseDurationMove (\$ms_target , \$ms_duration)
cpp	int pulseDurationMove (double ms_target , int ms_duration)
m	-(int) pulseDurationMove : (double) ms_target : (int) ms_duration
pas	function pulseDurationMove (ms_target : double, ms_duration : LongInt): LongInt
vb	function pulseDurationMove () As Integer
cs	int pulseDurationMove (double ms_target , int ms_duration)
java	int pulseDurationMove (double ms_target , int ms_duration)
py	def pulseDurationMove (ms_target , ms_duration)
cmd	YPwmOutput target pulseDurationMove ms_target ms_duration

Parameters :

- ms_target** new pulse duration at the end of the transition (floating-point number, representing the pulse duration in milliseconds)
- ms_duration** total duration of the transition, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

pwmoutput→registerValueCallback()**YPwmOutput****pwmoutput.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YPwmOutputValueCallback callback)
m	-(int) registerValueCallback : (YPwmOutputValueCallback) callback
pas	function registerValueCallback (callback : TYPwmOutputValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

pwmoutput→set_dutyCycle()**YPwmOutput****pwmoutput→setDutyCycle()****pwmoutput.set_dutyCycle()**

Configures the PWMs duty cyle.

js	function set_dutyCycle (newval)
nodejs	function set_dutyCycle (newval)
php	function set_dutyCycle (\$newval)
cpp	int set_dutyCycle (double newval)
m	-(int) setDutyCycle : (double) newval
pas	function set_dutyCycle (newval : double): integer
vb	function set_dutyCycle (ByVal newval As Double) As Integer
cs	int set_dutyCycle (double newval)
java	int set_dutyCycle (double newval)
py	def set_dutyCycle (newval)
cmd	YPwmOutput target set_dutyCycle newval

Parameters :**newval** a floating point number**Returns :**

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_dutyCycleAtPowerOn()**YPwmOutput****pwmoutput→setDutyCycleAtPowerOn()****pwmoutput.set_dutyCycleAtPowerOn()**

Configures the PWMs duty cycle at device power up.

js	function set_dutyCycleAtPowerOn (newval)
nodejs	function set_dutyCycleAtPowerOn (newval)
php	function set_dutyCycleAtPowerOn (\$newval)
cpp	int set_dutyCycleAtPowerOn (double newval)
m	-(int) setDutyCycleAtPowerOn : (double) newval
pas	function set_dutyCycleAtPowerOn (newval : double): integer
vb	function set_dutyCycleAtPowerOn (ByVal newval As Double) As Integer
cs	int set_dutyCycleAtPowerOn (double newval)
java	int set_dutyCycleAtPowerOn (double newval)
py	def set_dutyCycleAtPowerOn (newval)
cmd	YPwmOutput target set_dutyCycleAtPowerOn newval

Remember to call the matching module `saveToFlash()` method, otherwise this call will have no effect.

Parameters :

newval a floating point number

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_enabled()**YPwmOutput****pwmoutput→setEnabled()****pwmoutput.set_enabled()**

Stops or starts the PWM.

js	function set_enabled (newval)
nodejs	function set_enabled (newval)
php	function set_enabled (\$newval)
cpp	int set_enabled (Y_ENABLED_enum newval)
m	-(int) setEnabled : (Y_ENABLED_enum) newval
pas	function set_enabled (newval : Integer): integer
vb	function set_enabled (ByVal newval As Integer) As Integer
cs	int set_enabled (int newval)
java	int set_enabled (int newval)
py	def set_enabled (newval)
cmd	YPwmOutput target set_enabled newval

Parameters :**newval** either Y_ENABLED_FALSE or Y_ENABLED_TRUE**Returns :**

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_enabledAtPowerOn()**YPwmOutput****pwmoutput→setEnabledAtPowerOn()****pwmoutput.set_enabledAtPowerOn()**

Configures the state of PWM at device power up.

js	function set_enabledAtPowerOn (newval)
nodejs	function set_enabledAtPowerOn (newval)
php	function set_enabledAtPowerOn (\$newval)
cpp	int set_enabledAtPowerOn (Y_ENABLEDATPOWERON_enum newval)
m	-(int) setEnabledAtPowerOn : (Y_ENABLEDATPOWERON_enum) newval
pas	function set_enabledAtPowerOn (newval : Integer): integer
vb	function set_enabledAtPowerOn (ByVal newval As Integer) As Integer
cs	int set_enabledAtPowerOn (int newval)
java	int set_enabledAtPowerOn (int newval)
py	def set_enabledAtPowerOn (newval)
cmd	YPwmOutput target set_enabledAtPowerOn newval

Remember to call the matching module `saveToFlash()` method, otherwise this call will have no effect.

Parameters :

newval either Y_ENABLEDATPOWERON_FALSE or Y_ENABLEDATPOWERON_TRUE

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_frequency()
pwmoutput→setFrequency()
pwmoutput.set_frequency()

YPwmOutput

Configures the PWM frequency.

js	function set_frequency (newval)
nodejs	function set_frequency (newval)
php	function set_frequency (\$newval)
cpp	int set_frequency (int newval)
m	-(int) setFrequency : (int) newval
pas	function set_frequency (newval : LongInt): integer
vb	function set_frequency (ByVal newval As Integer) As Integer
cs	int set_frequency (int newval)
java	int set_frequency (int newval)
py	def set_frequency (newval)
cmd	YPwmOutput target set_frequency newval

The duty cycle is kept unchanged thanks to an automatic pulse width change.

Parameters :

newval an integer

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_logicalName()**YPwmOutput****pwmoutput→setLogicalName()****pwmoutput.set_logicalName()**

Changes the logical name of the PWM.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YPwmOutput target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the PWM.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

pwmoutput→set_period()**YPwmOutput****pwmoutput→setPeriod()**`pwmoutput.set_period()`

Configures the PWM period.

js	function set_period (newval)
nodejs	function set_period (newval)
php	function set_period (\$newval)
cpp	int set_period (double newval)
m	-(int) setPeriod : (double) newval
pas	function set_period (newval : double): integer
vb	function set_period (ByVal newval As Double) As Integer
cs	int set_period (double newval)
java	int set_period (double newval)
py	def set_period (newval)
cmd	YPwmOutput target set_period newval

Parameters :**newval** a floating point number**Returns :**

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_pulseDuration()
pwmoutput→setPulseDuration()
pwmoutput.set_pulseDuration()

YPwmOutput

Configures the PWM pluses length.

js	function set_pulseDuration (newval)
nodejs	function set_pulseDuration (newval)
php	function set_pulseDuration (\$newval)
cpp	int set_pulseDuration (double newval)
m	-(int) setPulseDuration : (double) newval
pas	function set_pulseDuration (newval : double): integer
vb	function set_pulseDuration (ByVal newval As Double) As Integer
cs	int set_pulseDuration (double newval)
java	int set_pulseDuration (double newval)
py	def set_pulseDuration (newval)
cmd	YPwmOutput target set_pulseDuration newval

A pulse length cannot be longer than period, otherwise it is truncated.

Parameters :

newval a floating point number

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_userdata()**YPwmOutput****pwmoutput→setUserData()****pwmoutput.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

pwmoutput→wait_async()**YPwmOutput**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.31. PwmPowerSource function interface

The Yoctopuce application programming interface allows you to configure the voltage source used by all PWM on the same device.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_pwmpowersource.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YPwmPowerSource = yoctolib.YPwmPowerSource;
php	require_once('yocto_pwmpowersource.php');
c++	#include "yocto_pwmpowersource.h"
m	#import "yocto_pwmpowersource.h"
pas	uses yocto_pwmpowersource;
vb	yocto_pwmpowersource.vb
cs	yocto_pwmpowersource.cs
java	import com.yoctopuce.YoctoAPI.YPwmPowerSource;
py	from yocto_pwmpowersource import *

Global functions

yFindPwmPowerSource(func)

Retrieves a voltage source for a given identifier.

yFirstPwmPowerSource()

Starts the enumeration of Voltage sources currently accessible.

YPwmPowerSource methods

pwmpowersource→describe()

Returns a short text that describes unambiguously the instance of the voltage source in the form TYPE (NAME) = SERIAL . FUNCTIONID.

pwmpowersource→get_advertisedValue()

Returns the current value of the voltage source (no more than 6 characters).

pwmpowersource→get_errorMessage()

Returns the error message of the latest error with the voltage source.

pwmpowersource→get_errorType()

Returns the numerical error code of the latest error with the voltage source.

pwmpowersource→get_friendlyName()

Returns a global identifier of the voltage source in the format MODULE_NAME . FUNCTION_NAME.

pwmpowersource→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

pwmpowersource→get_functionId()

Returns the hardware identifier of the voltage source, without reference to the module.

pwmpowersource→get_hardwareId()

Returns the unique hardware identifier of the voltage source in the form SERIAL . FUNCTIONID.

pwmpowersource→get_logicalName()

Returns the logical name of the voltage source.

pwmpowersource→get_module()

Gets the YModule object for the device on which the function is located.

pwmpowersource→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

pwmpowersource→get_powerMode()

Returns the selected power source for the PWM on the same device

pwmpowersource→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

pwmpowersource→isOnline()

Checks if the voltage source is currently reachable, without raising any error.

pwmpowersource→isOnline_async(callback, context)

Checks if the voltage source is currently reachable, without raising any error (asynchronous version).

pwmpowersource→load(msValidity)

Preloads the voltage source cache with a specified validity duration.

pwmpowersource→load_async(msValidity, callback, context)

Preloads the voltage source cache with a specified validity duration (asynchronous version).

pwmpowersource→nextPwmPowerSource()

Continues the enumeration of Voltage sources started using yFirstPwmPowerSource().

pwmpowersource→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

pwmpowersource→set_logicalName(newval)

Changes the logical name of the voltage source.

pwmpowersource→set_powerMode(newval)

Changes the PWM power source.

pwmpowersource→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

pwmpowersource→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YPwmPowerSource.FindPwmPowerSource() yFindPwmPowerSource() YPwmPowerSource.FindPwmPowerSource()

YPwmPowerSource

Retrieves a voltage source for a given identifier.

js	function yFindPwmPowerSource (func)
nodejs	function FindPwmPowerSource (func)
php	function yFindPwmPowerSource (\$func)
cpp	YPwmPowerSource* yFindPwmPowerSource (const string& func)
m	YPwmPowerSource* yFindPwmPowerSource (NSString* func)
pas	function yFindPwmPowerSource (func : string): TYPwmPowerSource
vb	function yFindPwmPowerSource (ByVal func As String) As YPwmPowerSource
cs	YPwmPowerSource FindPwmPowerSource (string func)
java	YPwmPowerSource FindPwmPowerSource (String func)
py	def FindPwmPowerSource (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the voltage source is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YPwmPowerSource.isOnline()` to test if the voltage source is indeed online at a given time. In case of ambiguity when looking for a voltage source by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the voltage source

Returns :

a YPwmPowerSource object allowing you to drive the voltage source.

YPwmPowerSource.FirstPwmPowerSource() yFirstPwmPowerSource()

YPwmPowerSource

YPwmPowerSource.FirstPwmPowerSource()

Starts the enumeration of Voltage sources currently accessible.

js	function yFirstPwmPowerSource ()
nodejs	function FirstPwmPowerSource ()
php	function yFirstPwmPowerSource ()
cpp	YPwmPowerSource* yFirstPwmPowerSource ()
m	YPwmPowerSource* yFirstPwmPowerSource ()
pas	function yFirstPwmPowerSource (): TYPwmPowerSource
vb	function yFirstPwmPowerSource () As YPwmPowerSource
cs	YPwmPowerSource FirstPwmPowerSource ()
java	YPwmPowerSource FirstPwmPowerSource ()
py	def FirstPwmPowerSource ()

Use the method `YPwmPowerSource.nextPwmPowerSource()` to iterate on next Voltage sources.

Returns :

a pointer to a `YPwmPowerSource` object, corresponding to the first source currently online, or a `null` pointer if there are none.

pwpowersource→describe()**YPwmPowerSource****pwpowersource.describe()**

Returns a short text that describes unambiguously the instance of the voltage source in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the voltage source (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

pwmpowersource→**get_advertisedValue()****YPwmPowerSource****pwmpowersource**→**advertisedValue()****pwmpowersource.get_advertisedValue()**

Returns the current value of the voltage source (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YPwmPowerSource target get_advertisedValue

Returns :

a string corresponding to the current value of the voltage source (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

pwmpowersource→get_errorMessage()**YPwmPowerSource****pwmpowersource→errorMessage()****pwmpowersource.get_errorMessage()**

Returns the error message of the latest error with the voltage source.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the voltage source object

pwmpowersource→**get_errorType()****YPwmPowerSource****pwmpowersource**→**errorType()****pwmpowersource.get_errorType()**

Returns the numerical error code of the latest error with the voltage source.

<code>js</code>	<code>function get_errorType()</code>
<code>nodejs</code>	<code>function get_errorType()</code>
<code>php</code>	<code>function get_errorType()</code>
<code>cpp</code>	<code>YRETCODE get_errorType()</code>
<code>pas</code>	<code>function get_errorType(): YRETCODE</code>
<code>vb</code>	<code>function get_errorType() As YRETCODE</code>
<code>cs</code>	<code>YRETCODE get_errorType()</code>
<code>java</code>	<code>int get_errorType()</code>
<code>py</code>	<code>def get_errorType()</code>

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the voltage source object

pwmpowersource→get_friendlyName()**YPwmPowerSource****pwmpowersource→friendlyName()****pwmpowersource.get_friendlyName()**

Returns a global identifier of the voltage source in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the voltage source if they are defined, otherwise the serial number of the module and the hardware identifier of the voltage source (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the voltage source using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

pwmpowersource→get_functionDescriptor()

YPwmPowerSource

pwmpowersource→functionDescriptor()

pwmpowersource.get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

pwmpowersource→get_functionId()**YPwmPowerSource****pwmpowersource→functionId()****pwmpowersource.get_functionId()**

Returns the hardware identifier of the voltage source, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the voltage source (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

pwmpowersource→**get_hardwareId()****YPwmPowerSource****pwmpowersource**→**hardwareId()****pwmpowersource.get_hardwareId()**

Returns the unique hardware identifier of the voltage source in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the voltage source. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the voltage source (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

pwmpowersource→get_logicalName()
pwmpowersource→logicalName()
pwmpowersource.get_logicalName()

YPwmPowerSource

Returns the logical name of the voltage source.

js	function get_logicalName()
nodejs	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	-(NSString*) logicalName
pas	function get_logicalName() : string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YPwmPowerSource target get_logicalName

Returns :

a string corresponding to the logical name of the voltage source. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

pwmpowersource→get_module()
pwmpowersource→module()
pwmpowersource.get_module()

YPwmPowerSource

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

pwmpowersource→get_module_async()
pwmpowersource→module_async()

YPwmPowerSource

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pwmpowersource→**get_powerMode()****YPwmPowerSource****pwmpowersource**→**powerMode()****pwmpowersource.get_powerMode()**

Returns the selected power source for the PWM on the same device

js	function get_powerMode ()
nodejs	function get_powerMode ()
php	function get_powerMode ()
cpp	Y_POWERMODE_enum get_powerMode ()
m	-(Y_POWERMODE_enum) powerMode
pas	function get_powerMode (): Integer
vb	function get_powerMode () As Integer
cs	int get_powerMode ()
java	int get_powerMode ()
py	def get_powerMode ()

Returns :

a value among Y_POWERMODE_USB_5V, Y_POWERMODE_USB_3V, Y_POWERMODE_EXT_V and Y_POWERMODE_OPNDRN corresponding to the selected power source for the PWM on the same device

On failure, throws an exception or returns Y_POWERMODE_INVALID.

pwmpowersource→get_userdata()**YPwmPowerSource****pwmpowersource→userData()****pwmpowersource.get_userdata()**

Returns the value of the userData attribute, as previously stored using method set_userdata.

js	function get_userdata()
nodejs	function get_userdata()
php	function get_userdata()
cpp	void * get_userdata()
m	-(void*) userData
pas	function get_userdata() : Tobject
vb	function get_userdata() As Object
cs	object get_userdata()
java	Object get_userdata()
py	def get_userdata()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

pwmpowersource→isOnline()**YPwmPowerSource****pwmpowersource.isOnline()**

Checks if the voltage source is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the voltage source in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the voltage source.

Returns :

`true` if the voltage source can be reached, and `false` otherwise

pwmpowersource→isOnline_async()**YPwmPowerSource**

Checks if the voltage source is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the voltage source in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pwmpowersource→**load()**`pwmpowersource.load()`**YPwmPowerSource**

Preloads the voltage source cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

pwmpowersource→load_async()**YPwmPowerSource**

Preloads the voltage source cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pwmpowersource→**nextPwmPowerSource()****YPwmPowerSource****pwmpowersource.nextPwmPowerSource()**

Continues the enumeration of Voltage sources started using `yFirstPwmPowerSource()`.

js	function nextPwmPowerSource ()
nodejs	function nextPwmPowerSource ()
php	function nextPwmPowerSource ()
c++	YPwmPowerSource * nextPwmPowerSource ()
m	-(YPwmPowerSource*) nextPwmPowerSource
pas	function nextPwmPowerSource (): TYPwmPowerSource
vb	function nextPwmPowerSource () As YPwmPowerSource
cs	YPwmPowerSource nextPwmPowerSource ()
java	YPwmPowerSource nextPwmPowerSource ()
py	def nextPwmPowerSource ()

Returns :

a pointer to a `YPwmPowerSource` object, corresponding to a voltage source currently online, or a `null` pointer if there are no more Voltage sources to enumerate.

pwmpowersource→registerValueCallback()**YPwmPowerSource****pwmpowersource.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YPwmPowerSourceValueCallback callback)
m	-(int) registerValueCallback : (YPwmPowerSourceValueCallback) callback
pas	function registerValueCallback (callback : TYPwmPowerSourceValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

pwmpowersource→**set_logicalName()****YPwmPowerSource****pwmpowersource**→**setLogicalName()****pwmpowersource.set_logicalName()**

Changes the logical name of the voltage source.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YPwmPowerSource target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the voltage source.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

pwmpowersource→set_powerMode()
pwmpowersource→setPowerMode()
pwmpowersource.set_powerMode()

YPwmPowerSource

Changes the PWM power source.

js	function set_powerMode (newval)
nodejs	function set_powerMode (newval)
php	function set_powerMode (\$newval)
cpp	int set_powerMode (Y_POWERMODE_enum newval)
m	-(int) setPowerMode : (Y_POWERMODE_enum) newval
pas	function set_powerMode (newval : Integer): integer
vb	function set_powerMode (ByVal newval As Integer) As Integer
cs	int set_powerMode (int newval)
java	int set_powerMode (int newval)
py	def set_powerMode (newval)
cmd	YPwmPowerSource target set_powerMode newval

PWM can use isolated 5V from USB, isolated 3V from USB or voltage from an external power source. The PWM can also work in open drain mode. In that mode, the PWM actively pulls the line down. Warning: this setting is common to all PWM on the same device. If you change that parameter, all PWM located on the same device are affected. If you want the change to be kept after a device reboot, make sure to call the matching module `saveToFlash()`.

Parameters :

newval a value among Y_POWERMODE_USB_5V, Y_POWERMODE_USB_3V, Y_POWERMODE_EXT_V and Y_POWERMODE_OPNDRN corresponding to the PWM power source

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmpowersource→**set_userdata()****YPwmPowerSource****pwmpowersource**→**setUserData()****pwmpowersource.set_userdata()**

Stores a user context provided as argument in the `userData` attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

pwmpowersource→wait_async()**YPwmPowerSource**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.32. Quaternion interface

The Yoctopuce API YQt class provides direct access to the Yocto3D attitude estimation using a quaternion. It is usually not needed to use the YQt class directly, as the YGyro class provides a more convenient higher-level interface.

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_gyro.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib');</code> <code>var YGyro = yoctolib.YGyro;</code>
php	<code>require_once('yocto_gyro.php');</code>
c++	<code>#include "yocto_gyro.h"</code>
m	<code>#import "yocto_gyro.h"</code>
pas	<code>uses yocto_gyro;</code>
vb	<code>yocto_gyro.vb</code>
cs	<code>yocto_gyro.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YGyro;</code>
py	<code>from yocto_gyro import *</code>

Global functions

yFindQt(func)

Retrieves a quaternion component for a given identifier.

yFirstQt()

Starts the enumeration of quaternion components currently accessible.

YQt methods

qt→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

qt→describe()

Returns a short text that describes unambiguously the instance of the quaternion component in the form TYPE (NAME) =SERIAL . FUNCTIONID.

qt→get_advertisedValue()

Returns the current value of the quaternion component (no more than 6 characters).

qt→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

qt→get_currentValue()

Returns the current value of the value.

qt→get_errorMessage()

Returns the error message of the latest error with the quaternion component.

qt→get_errorType()

Returns the numerical error code of the latest error with the quaternion component.

qt→get_friendlyName()

Returns a global identifier of the quaternion component in the format MODULE_NAME . FUNCTION_NAME.

qt→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

qt→get_functionId()

Returns the hardware identifier of the quaternion component, without reference to the module.

qt→get_hardwareId()

Returns the unique hardware identifier of the quaternion component in the form `SERIAL.FUNCTIONID`.

qt→get_highestValue()

Returns the maximal value observed for the value since the device was started.

qt→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

qt→get_logicalName()

Returns the logical name of the quaternion component.

qt→get_lowestValue()

Returns the minimal value observed for the value since the device was started.

qt→get_module()

Gets the `YModule` object for the device on which the function is located.

qt→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

qt→get_recordedData(startTime, endTime)

Retrieves a `DataSet` object holding historical data for this sensor, for a specified time interval.

qt→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

qt→get_resolution()

Returns the resolution of the measured values.

qt→get_unit()

Returns the measuring unit for the value.

qt→get_userData()

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

qt→isOnline()

Checks if the quaternion component is currently reachable, without raising any error.

qt→isOnline_async(callback, context)

Checks if the quaternion component is currently reachable, without raising any error (asynchronous version).

qt→load(msValidity)

Preloads the quaternion component cache with a specified validity duration.

qt→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

qt→load_async(msValidity, callback, context)

Preloads the quaternion component cache with a specified validity duration (asynchronous version).

qt→nextQt()

Continues the enumeration of quaternion components started using `yFirstQt()`.

qt→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

qt→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

qt→set_highestValue(newval)

Changes the recorded maximal value observed.

qt→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

qt→set_logicalName(newval)

3. Reference

Changes the logical name of the quaternion component.

qt→set_lowestValue(newval)

Changes the recorded minimal value observed.

qt→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

qt→set_resolution(newval)

Changes the resolution of the measured physical values.

qt→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

qt→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YQt.FindQt()**YQt****yFindQt()****YQt.FindQt()**

Retrieves a quaternion component for a given identifier.

js	function yFindQt (func)
nodejs	function FindQt (func)
php	function yFindQt (\$func)
cpp	YQt* yFindQt (string func)
m	+(YQt*) yFindQt : (NSString*) func
pas	function yFindQt (func : string): TYQt
vb	function yFindQt (ByVal func As String) As YQt
cs	YQt FindQt (string func)
java	YQt FindQt (String func)
py	def FindQt (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the quaternion component is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YQt.isOnline()` to test if the quaternion component is indeed online at a given time. In case of ambiguity when looking for a quaternion component by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the quaternion component

Returns :

a `YQt` object allowing you to drive the quaternion component.

YQt.FirstQt()**YQt****yFirstQt()**`YQt.FirstQt()`

Starts the enumeration of quaternion components currently accessible.

js	function yFirstQt ()
nodejs	function FirstQt ()
php	function yFirstQt ()
cpp	YQt* yFirstQt ()
m	YQt* yFirstQt ()
pas	function yFirstQt (): TYQt
vb	function yFirstQt () As YQt
cs	YQt FirstQt ()
java	YQt FirstQt ()
py	def FirstQt ()

Use the method `YQt.nextQt()` to iterate on next quaternion components.

Returns :

a pointer to a **YQt** object, corresponding to the first quaternion component currently online, or a `null` pointer if there are none.

qt→calibrateFromPoints()**YQt****qt.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js    function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php    function calibrateFromPoints( $rawValues, $refValues)
cpp    int calibrateFromPoints( vector<double> rawValues,
                                vector<double> refValues)

m      -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                                : (NSMutableArray*) refValues

pas    function calibrateFromPoints( rawValues: TDoubleArray,
                                refValues: TDoubleArray): LongInt

vb      procedure calibrateFromPoints( )
cs      int calibrateFromPoints( List<double> rawValues,
                                List<double> refValues)

java    int calibrateFromPoints( ArrayList<Double> rawValues,
                                ArrayList<Double> refValues)

py      def calibrateFromPoints( rawValues, refValues)
cmd      YSensor target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→describe()`qt.describe()`

YQt

Returns a short text that describes unambiguously the instance of the quaternion component in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

<code>js</code>	<code>function describe()</code>
<code>nodejs</code>	<code>function describe()</code>
<code>php</code>	<code>function describe()</code>
<code>cpp</code>	<code>string describe()</code>
<code>m</code>	<code>-(NSString*) describe</code>
<code>pas</code>	<code>function describe(): string</code>
<code>vb</code>	<code>function describe() As String</code>
<code>cs</code>	<code>string describe()</code>
<code>java</code>	<code>String describe()</code>
<code>py</code>	<code>def describe()</code>

More precisely, `TYPE` is the type of the function, `NAME` it the name used for the first access to the function, `SERIAL` is the serial number of the module if the module is connected or "unresolved", and `FUNCTIONID` is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the quaternion component (ex:
`Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

qt→get_advertisedValue()**YQt****qt→advertisedValue()**`qt.get_advertisedValue()`

Returns the current value of the quaternion component (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YSensor target get_advertisedValue

Returns :

a string corresponding to the current value of the quaternion component (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

qt→get_currentRawValue()**YQt****qt→currentRawValue()****qt.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue ()
nodejs	function get_currentRawValue ()
php	function get_currentRawValue ()
cpp	double get_currentRawValue ()
m	-(double) currentRawValue
pas	function get_currentRawValue (): double
vb	function get_currentRawValue () As Double
cs	double get_currentRawValue ()
java	double get_currentRawValue ()
py	def get_currentRawValue ()
cmd	YSensor target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

qt→get_currentValue()**YQt****qt→currentValue()**`qt.get_currentValue()`

Returns the current value of the value.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YSensor target get_currentValue

Returns :

a floating point number corresponding to the current value of the value

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

qt→get_errorMessage()**YQt****qt→errorMessage()**`qt.get_errorMessage()`

Returns the error message of the latest error with the quaternion component.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the quaternion component object

qt→get_errorType()**YQt****qt→errorType()**`qt.get_errorType()`

Returns the numerical error code of the latest error with the quaternion component.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the quaternion component object

qt→get_friendlyName()**YQt****qt→friendlyName()**`qt.get_friendlyName()`

Returns a global identifier of the quaternion component in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the quaternion component if they are defined, otherwise the serial number of the module and the hardware identifier of the quaternion component (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the quaternion component using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

qt→get_functionDescriptor()**YQt****qt→functionDescriptor()****qt.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

qt→get_functionId()**YQt****qt→functionId()**`qt.get_functionId()`

Returns the hardware identifier of the quaternion component, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the quaternion component (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

qt→get_hardwareId()**YQt****qt→hardwareId()**`qt.get_hardwareId()`

Returns the unique hardware identifier of the quaternion component in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the quaternion component. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the quaternion component (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

qt→get_highestValue()**YQt****qt→highestValue()**`qt.get_highestValue()`

Returns the maximal value observed for the value since the device was started.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YSensor target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the value since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

qt→get_logFrequency()**YQt****qt→logFrequency()**`qt.get_logFrequency()`

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency ()
nodejs	function get_logFrequency ()
php	function get_logFrequency ()
cpp	string get_logFrequency ()
m	-(NSString*) logFrequency
pas	function get_logFrequency (): string
vb	function get_logFrequency () As String
cs	string get_logFrequency ()
java	String get_logFrequency ()
py	def get_logFrequency ()
cmd	YSensor target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

qt→get_logicalName()**YQt****qt→logicalName()**`qt.get_logicalName()`

Returns the logical name of the quaternion component.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YSensor target get_logicalName

Returns :

a string corresponding to the logical name of the quaternion component. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

qt→get_lowestValue()**YQt****qt→lowestValue()**`qt.get_lowestValue()`

Returns the minimal value observed for the value since the device was started.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YSensor target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the value since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

qt→get_module()**YQt****qt→module()**`qt.get_module()`

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

qt→get_module_async()**YQt****qt→module_async()**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned `YModule` object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

qt→get_recordedData()**qt→recordedData()**`qt.get_recordedData()`

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
cpp	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YSensor target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

qt→get_reportFrequency()**YQt****qt→reportFrequency()**`qt.get_reportFrequency()`

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YSensor target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

qt→get_resolution()**qt→resolution()**`qt.get_resolution()`

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YSensor target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

qt→get_unit()**YQt****qt→unit()**`qt.get_unit()`

Returns the measuring unit for the value.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YSensor target get_unit

Returns :

a string corresponding to the measuring unit for the value

On failure, throws an exception or returns Y_UNIT_INVALID.

qt→get_userdata()**YQt****qt→userData()**`qt.get_userdata()`

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

qt→isOnline()**qt.isOnline()****YQt**

Checks if the quaternion component is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the quaternion component in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the quaternion component.

Returns :

`true` if the quaternion component can be reached, and `false` otherwise

qt→isOnline_async()**YQt**

Checks if the quaternion component is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
```

```
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the quaternion component in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

qt→load()`qt.load()`**YQt**

Preloads the quaternion component cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

`YAPI_SUCCESS` when the call succeeds. On failure, throws an exception or returns a negative error code.

qt→loadCalibrationPoints()

YQt

qt.loadCalibrationPoints()

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js function loadCalibrationPoints( rawValues, refValues)
node.js function loadCalibrationPoints( rawValues, refValues)
php function loadCalibrationPoints( &$rawValues, &$refValues)
cpp int loadCalibrationPoints( vector<double>& rawValues,
                             vector<double>& refValues)

m -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
  : (NSMutableArray*) refValues

pas function loadCalibrationPoints( var rawValues: TDoubleArray,
                                   var refValues: TDoubleArray): LongInt

vb procedure loadCalibrationPoints( )
cs int loadCalibrationPoints( List<double> rawValues,
                             List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                               ArrayList<Double> refValues)

py def loadCalibrationPoints( rawValues, refValues)
cmd YSensor target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→load_async()**YQt**

Preloads the quaternion component cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

qt→**nextQt()****qt.nextQt()****YQt**

Continues the enumeration of quaternion components started using `yFirstQt()`.

js	function nextQt ()
nodejs	function nextQt ()
php	function nextQt ()
cpp	YQt * nextQt ()
m	-(YQt*) nextQt
pas	function nextQt (): TYQt
vb	function nextQt () As YQt
cs	YQt nextQt ()
java	YQt nextQt ()
py	def nextQt ()

Returns :

a pointer to a `YQt` object, corresponding to a quaternion component currently online, or a `null` pointer if there are no more quaternion components to enumerate.

qt→registerTimedReportCallback()**YQt****qt.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YQtTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YQtTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYQtTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

qt→registerValueCallback()**YQt****qt.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YQtValueCallback callback)
m	-(int) registerValueCallback : (YQtValueCallback) callback
pas	function registerValueCallback (callback : TYQtValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

qt→set_highestValue()**YQt****qt→setHighestValue()**`qt.set_highestValue()`

Changes the recorded maximal value observed.

<code>js</code>	<code>function set_highestValue(newval)</code>
<code>nodejs</code>	<code>function set_highestValue(newval)</code>
<code>php</code>	<code>function set_highestValue(\$newval)</code>
<code>cpp</code>	<code>int set_highestValue(double newval)</code>
<code>m</code>	<code>-(int) setHighestValue : (double) newval</code>
<code>pas</code>	<code>function set_highestValue(newval: double): integer</code>
<code>vb</code>	<code>function set_highestValue(ByVal newval As Double) As Integer</code>
<code>cs</code>	<code>int set_highestValue(double newval)</code>
<code>java</code>	<code>int set_highestValue(double newval)</code>
<code>py</code>	<code>def set_highestValue(newval)</code>
<code>cmd</code>	<code>YSensor target set_highestValue newval</code>

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→set_logFrequency()**YQt****qt→setLogFrequency()**`qt.set_logFrequency()`

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YSensor target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→set_logicalName()**YQt****qt→setLogicalName()**`qt.set_logicalName()`

Changes the logical name of the quaternion component.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YSensor target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the quaternion component.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

qt→set_lowestValue()**YQt****qt→setLowestValue()**`qt.set_lowestValue()`

Changes the recorded minimal value observed.

<code>js</code>	<code>function set_lowestValue(newval)</code>
<code>nodejs</code>	<code>function set_lowestValue(newval)</code>
<code>php</code>	<code>function set_lowestValue(\$newval)</code>
<code>cpp</code>	<code>int set_lowestValue(double newval)</code>
<code>m</code>	<code>-(int) setLowestValue : (double) newval</code>
<code>pas</code>	<code>function set_lowestValue(newval: double): integer</code>
<code>vb</code>	<code>function set_lowestValue(ByVal newval As Double) As Integer</code>
<code>cs</code>	<code>int set_lowestValue(double newval)</code>
<code>java</code>	<code>int set_lowestValue(double newval)</code>
<code>py</code>	<code>def set_lowestValue(newval)</code>
<code>cmd</code>	<code>YSensor target set_lowestValue newval</code>

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→set_reportFrequency()**qt→setReportFrequency()****qt.set_reportFrequency()**

Changes the timed value notification frequency for this function.

js	function set_reportFrequency (newval)
nodejs	function set_reportFrequency (newval)
php	function set_reportFrequency (\$newval)
cpp	int set_reportFrequency (const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency (newval : string): integer
vb	function set_reportFrequency (ByVal newval As String) As Integer
cs	int set_reportFrequency (string newval)
java	int set_reportFrequency (String newval)
py	def set_reportFrequency (newval)
cmd	YSensor target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→set_resolution()**YQt****qt→setResolution()**`qt.set_resolution()`

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YSensor target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→set_userdata()**YQt****qt→setUserData()**`qt.set_userdata()`

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

qt→wait_async()**YQt**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.33. Real Time Clock function interface

The RealTimeClock function maintains and provides current date and time, even accross power cut lasting several days. It is the base for automated wake-up functions provided by the WakeUpScheduler. The current time may represent a local time as well as an UTC time, but no automatic time change will occur to account for daylight saving time.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_realtimeclock.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YRealTimeClock = yoctolib.YRealTimeClock;
php	require_once('yocto_realtimeclock.php');
c++	#include "yocto_realtimeclock.h"
m	#import "yocto_realtimeclock.h"
pas	uses yocto_realtimeclock;
vb	yocto_realtimeclock.vb
cs	yocto_realtimeclock.cs
java	import com.yoctopuce.YoctoAPI.YRealTimeClock;
py	from yocto_realtimeclock import *

Global functions

yFindRealTimeClock(func)

Retrieves a clock for a given identifier.

yFirstRealTimeClock()

Starts the enumeration of clocks currently accessible.

YRealTimeClock methods

realtimeclock→describe()

Returns a short text that describes unambiguously the instance of the clock in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

realtimeclock→get_advertisedValue()

Returns the current value of the clock (no more than 6 characters).

realtimeclock→get_dateTime()

Returns the current time in the form "YYYY/MM/DD hh:mm:ss"

realtimeclock→get_errorMessage()

Returns the error message of the latest error with the clock.

realtimeclock→get_errorType()

Returns the numerical error code of the latest error with the clock.

realtimeclock→get_friendlyName()

Returns a global identifier of the clock in the format `MODULE_NAME . FUNCTION_NAME`.

realtimeclock→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

realtimeclock→get_functionId()

Returns the hardware identifier of the clock, without reference to the module.

realtimeclock→get_hardwareId()

Returns the unique hardware identifier of the clock in the form `SERIAL . FUNCTIONID`.

realtimeclock→get_logicalName()

Returns the logical name of the clock.

realtimeclock→get_module()

	Gets the <code>YModule</code> object for the device on which the function is located.
<code>realtimeclock→get_module_async(callback, context)</code>	Gets the <code>YModule</code> object for the device on which the function is located (asynchronous version).
<code>realtimeclock→get_timeSet()</code>	Returns true if the clock has been set, and false otherwise.
<code>realtimeclock→get_unixTime()</code>	Returns the current time in Unix format (number of elapsed seconds since Jan 1st, 1970).
<code>realtimeclock→get_userData()</code>	Returns the value of the <code>userData</code> attribute, as previously stored using method <code>set_userData</code> .
<code>realtimeclock→get_utcOffset()</code>	Returns the number of seconds between current time and UTC time (time zone).
<code>realtimeclock→isOnline()</code>	Checks if the clock is currently reachable, without raising any error.
<code>realtimeclock→isOnline_async(callback, context)</code>	Checks if the clock is currently reachable, without raising any error (asynchronous version).
<code>realtimeclock→load(msValidity)</code>	Preloads the clock cache with a specified validity duration.
<code>realtimeclock→load_async(msValidity, callback, context)</code>	Preloads the clock cache with a specified validity duration (asynchronous version).
<code>realtimeclock→nextRealTimeClock()</code>	Continues the enumeration of clocks started using <code>yFirstRealTimeClock()</code> .
<code>realtimeclock→registerValueCallback(callback)</code>	Registers the callback function that is invoked on every change of advertised value.
<code>realtimeclock→set_logicalName(newval)</code>	Changes the logical name of the clock.
<code>realtimeclock→set_unixTime(newval)</code>	Changes the current time.
<code>realtimeclock→set_userData(data)</code>	Stores a user context provided as argument in the <code>userData</code> attribute of the function.
<code>realtimeclock→set_utcOffset(newval)</code>	Changes the number of seconds between current time and UTC time (time zone).
<code>realtimeclock→wait_async(callback, context)</code>	Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YRealTimeClock.FindRealTimeClock()**YRealTimeClock****yFindRealTimeClock()****YRealTimeClock.FindRealTimeClock()**

Retrieves a clock for a given identifier.

js	function yFindRealTimeClock (func)
nodejs	function FindRealTimeClock (func)
php	function yFindRealTimeClock (\$func)
cpp	YRealTimeClock* yFindRealTimeClock (const string& func)
m	YRealTimeClock* yFindRealTimeClock (NSString* func)
pas	function yFindRealTimeClock (func : string): TYRealTimeClock
vb	function yFindRealTimeClock (ByVal func As String) As YRealTimeClock
cs	YRealTimeClock FindRealTimeClock (string func)
java	YRealTimeClock FindRealTimeClock (String func)
py	def FindRealTimeClock (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the clock is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YRealTimeClock.isOnline()` to test if the clock is indeed online at a given time. In case of ambiguity when looking for a clock by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the clock

Returns :

a YRealTimeClock object allowing you to drive the clock.

**YRealTimeClock.FirstRealTimeClock()
yFirstRealTimeClock()****YRealTimeClock****YRealTimeClock.FirstRealTimeClock()**

Starts the enumeration of clocks currently accessible.

js	function yFirstRealTimeClock ()
nodejs	function FirstRealTimeClock ()
php	function yFirstRealTimeClock ()
cpp	YRealTimeClock* yFirstRealTimeClock ()
m	YRealTimeClock* yFirstRealTimeClock ()
pas	function yFirstRealTimeClock (): TYRealTimeClock
vb	function yFirstRealTimeClock () As YRealTimeClock
cs	YRealTimeClock FirstRealTimeClock ()
java	YRealTimeClock FirstRealTimeClock ()
py	def FirstRealTimeClock ()

Use the method `YRealTimeClock.nextRealTimeClock()` to iterate on next clocks.

Returns :

a pointer to a `YRealTimeClock` object, corresponding to the first clock currently online, or a `null` pointer if there are none.

realtimeclock→describe()**YRealTimeClock****realtimeclock.describe()**

Returns a short text that describes unambiguously the instance of the clock in the form
 TYPE(NAME)=SERIAL.FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the clock (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

realtimeclock→get_advertisedValue()**YRealTimeClock****realtimeclock→advertisedValue()****realtimeclock.get_advertisedValue()**

Returns the current value of the clock (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YRealTimeClock target get_advertisedValue

Returns :

a string corresponding to the current value of the clock (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

realtimeclock→get_dateTime()**YRealTimeClock****realtimeclock→dateTime()****realtimeclock.get_dateTime()**

Returns the current time in the form "YYYY/MM/DD hh:mm:ss"

js	function get_dateTime ()
nodejs	function get_dateTime ()
php	function get_dateTime ()
cpp	string get_dateTime ()
m	-(NSString*) dateTime
pas	function get_dateTime (): string
vb	function get_dateTime () As String
cs	string get_dateTime ()
java	String get_dateTime ()
py	def get_dateTime ()

Returns :

a string corresponding to the current time in the form "YYYY/MM/DD hh:mm:ss"

On failure, throws an exception or returns Y_DATETIME_INVALID.

realtimeclock→get_errorMessage()**YRealTimeClock****realtimeclock→errorMessage()****realtimeclock.get_errorMessage()**

Returns the error message of the latest error with the clock.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the clock object

realtimeclock→get_errorType()**YRealTimeClock****realtimeclock→errorType()****realtimeclock.get_errorType()**

Returns the numerical error code of the latest error with the clock.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the clock object

realtimeclock→get_friendlyName()**YRealTimeClock****realtimeclock→friendlyName()****realtimeclock.get_friendlyName()**

Returns a global identifier of the clock in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the clock if they are defined, otherwise the serial number of the module and the hardware identifier of the clock (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the clock using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

realtimeclock→get_functionDescriptor()**YRealTimeClock****realtimeclock→functionDescriptor()****realtimeclock.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

realtimeclock→get_functionId()**YRealTimeClock****realtimeclock→functionId()****realtimeclock.get_functionId()**

Returns the hardware identifier of the clock, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the clock (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

realtimeclock→get_hardwareId()**YRealTimeClock****realtimeclock→hardwareId()****realtimeclock.get_hardwareId()**

Returns the unique hardware identifier of the clock in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the clock. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the clock (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

realtimeclock→get_logicalName()**YRealTimeClock****realtimeclock→logicalName()****realtimeclock.get_logicalName()**

Returns the logical name of the clock.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YRealTimeClock target get_logicalName

Returns :

a string corresponding to the logical name of the clock. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

realtimeclock→get_module()**YRealTimeClock****realtimeclock→module()****realtimeclock.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

realtimeclock→get_module_async()**YRealTimeClock****realtimeclock→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

realtimeclock→get_timeSet()**YRealTimeClock****realtimeclock→timeSet()****realtimeclock.get_timeSet()**

Returns true if the clock has been set, and false otherwise.

js	function get_timeSet ()
nodejs	function get_timeSet ()
php	function get_timeSet ()
cpp	Y_TIMESET_enum get_timeSet ()
m	-(Y_TIMESET_enum) timeSet
pas	function get_timeSet (): Integer
vb	function get_timeSet () As Integer
cs	int get_timeSet ()
java	int get_timeSet ()
py	def get_timeSet ()
cmd	YRealTimeClock target get_timeSet

Returns :

either Y_TIMESET_FALSE or Y_TIMESET_TRUE, according to true if the clock has been set, and false otherwise

On failure, throws an exception or returns Y_TIMESET_INVALID.

realtimeclock→get_unixTime()**YRealTimeClock****realtimeclock→unixTime()****realtimeclock.get_unixTime()**

Returns the current time in Unix format (number of elapsed seconds since Jan 1st, 1970).

js	function get_unixTime ()
nodejs	function get_unixTime ()
php	function get_unixTime ()
cpp	s64 get_unixTime ()
m	-(s64) unixTime
pas	function get_unixTime (): int64
vb	function get_unixTime () As Long
cs	long get_unixTime ()
java	long get_unixTime ()
py	def get_unixTime ()
cmd	YRealTimeClock target get_unixTime

Returns :

an integer corresponding to the current time in Unix format (number of elapsed seconds since Jan 1st, 1970)

On failure, throws an exception or returns Y_UNIXTIME_INVALID.

realtimeclock→get_userdata()**YRealTimeClock****realtimeclock→userdata()****realtimeclock.get_userdata()**

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

realtimeclock→get_utcOffset()**YRealTimeClock****realtimeclock→utcOffset()****realtimeclock.get_utcOffset()**

Returns the number of seconds between current time and UTC time (time zone).

js	function get_utcOffset ()
nodejs	function get_utcOffset ()
php	function get_utcOffset ()
cpp	int get_utcOffset ()
m	-(int) utcOffset
pas	function get_utcOffset (): LongInt
vb	function get_utcOffset () As Integer
cs	int get_utcOffset ()
java	int get_utcOffset ()
py	def get_utcOffset ()
cmd	YRealTimeClock target get_utcOffset

Returns :

an integer corresponding to the number of seconds between current time and UTC time (time zone)

On failure, throws an exception or returns Y_UTCOffset_INVALID.

realtimeclock→isOnline()**YRealTimeClock****realtimeclock.isOnline()**

Checks if the clock is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the clock in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the clock.

Returns :

true if the clock can be reached, and false otherwise

realtimeclock→isOnline_async()**YRealTimeClock**

Checks if the clock is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the clock in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

realtimeclock→load()`realtimeclock.load()`**YRealTimeClock**

Preloads the clock cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

realtimeclock→load_async()**YRealTimeClock**

Preloads the clock cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

realtimeclock→nextRealTimeClock()**YRealTimeClock****realtimeclock.nextRealTimeClock()**

Continues the enumeration of clocks started using `yFirstRealTimeClock()`.

js	function nextRealTimeClock ()
nodejs	function nextRealTimeClock ()
php	function nextRealTimeClock ()
cpp	YRealTimeClock * nextRealTimeClock ()
m	-(YRealTimeClock*) nextRealTimeClock
pas	function nextRealTimeClock (): TYRealTimeClock
vb	function nextRealTimeClock () As YRealTimeClock
cs	YRealTimeClock nextRealTimeClock ()
java	YRealTimeClock nextRealTimeClock ()
py	def nextRealTimeClock ()

Returns :

a pointer to a `YRealTimeClock` object, corresponding to a clock currently online, or a `null` pointer if there are no more clocks to enumerate.

realtimeclock→registerValueCallback()**YRealTimeClock****realtimeclock.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YRealTimeClockValueCallback callback)
m	-(int) registerValueCallback : (YRealTimeClockValueCallback) callback
pas	function registerValueCallback (callback : TYRealTimeClockValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

realtimeclock→set_logicalName()**YRealTimeClock****realtimeclock→setLogicalName()****realtimeclock.set_logicalName()**

Changes the logical name of the clock.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YRealTimeClock target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the clock.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

realtimeclock→set_unixTime()**YRealTimeClock****realtimeclock→setUnixTime()****realtimeclock.set_unixTime()**

Changes the current time.

js	function set_unixTime (newval)
nodejs	function set_unixTime (newval)
php	function set_unixTime (\$newval)
cpp	int set_unixTime (s64 newval)
m	-(int) setUnixTime : (s64) newval
pas	function set_unixTime (newval : int64): integer
vb	function set_unixTime (ByVal newval As Long) As Integer
cs	int set_unixTime (long newval)
java	int set_unixTime (long newval)
py	def set_unixTime (newval)
cmd	YRealTimeClock target set_unixTime newval

Time is specifid in Unix format (number of elapsed seconds since Jan 1st, 1970). If current UTC time is known, utcOffset will be automatically adjusted for the new specified time.

Parameters :

newval an integer corresponding to the current time

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

realtimeclock→set_userdata()**YRealTimeClock****realtimeclock→setUserData()****realtimeclock.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

realtimeclock→set_utcOffset()**YRealTimeClock****realtimeclock→setUtcOffset()****realtimeclock.set_utcOffset()**

Changes the number of seconds between current time and UTC time (time zone).

js	function set_utcOffset (newval)
nodejs	function set_utcOffset (newval)
php	function set_utcOffset (\$newval)
cpp	int set_utcOffset (int newval)
m	-(int) setUtcOffset : (int) newval
pas	function set_utcOffset (newval : LongInt): integer
vb	function set_utcOffset (ByVal newval As Integer) As Integer
cs	int set_utcOffset (int newval)
java	int set_utcOffset (int newval)
py	def set_utcOffset (newval)
cmd	YRealTimeClock target set_utcOffset newval

The timezone is automatically rounded to the nearest multiple of 15 minutes. If current UTC time is known, the current time will automatically be updated according to the selected time zone.

Parameters :

newval an integer corresponding to the number of seconds between current time and UTC time (time zone)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

realtimeclock→wait_async()**YRealTimeClock**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.34. Reference frame configuration

This class is used to setup the base orientation of the Yocto-3D, so that the orientation functions, relative to the earth surface plane, use the proper reference frame. The class also implements a tridimensional sensor calibration process, which can compensate for local variations of standard gravity and improve the precision of the tilt sensors.

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_refframe.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib'); var YRefFrame = yoctolib.YRefFrame;</code>
php	<code>require_once('yocto_refframe.php');</code>
c++	<code>#include "yocto_refframe.h"</code>
m	<code>#import "yocto_refframe.h"</code>
pas	<code>uses yocto_refframe;</code>
vb	<code>yocto_refframe.vb</code>
cs	<code>yocto_refframe.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YRefFrame;</code>
py	<code>from yocto_refframe import *</code>

Global functions

yFindRefFrame(func)

Retrieves a reference frame for a given identifier.

yFirstRefFrame()

Starts the enumeration of reference frames currently accessible.

YRefFrame methods

refframe→cancel3DCalibration()

Aborts the sensors tridimensional calibration process et restores normal settings.

refframe→describe()

Returns a short text that describes unambiguously the instance of the reference frame in the form `TYPE (NAME) = SERIAL.FUNCTIONID`.

refframe→get_3DCalibrationHint()

Returns instructions to proceed to the tridimensional calibration initiated with method `start3DCalibration`.

refframe→get_3DCalibrationLogMsg()

Returns the latest log message from the calibration process.

refframe→get_3DCalibrationProgress()

Returns the global process indicator for the tridimensional calibration initiated with method `start3DCalibration`.

refframe→get_3DCalibrationStage()

Returns index of the current stage of the calibration initiated with method `start3DCalibration`.

refframe→get_3DCalibrationStageProgress()

Returns the process indicator for the current stage of the calibration initiated with method `start3DCalibration`.

refframe→get_advertisedValue()

Returns the current value of the reference frame (no more than 6 characters).

refframe→get_bearing()

Returns the reference bearing used by the compass.

refframe→get_errorMessage()

Returns the error message of the latest error with the reference frame.

refframe→get_errorType()

Returns the numerical error code of the latest error with the reference frame.

refframe→get_friendlyName()

Returns a global identifier of the reference frame in the format `MODULE_NAME . FUNCTION_NAME`.

refframe→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

refframe→get_functionId()

Returns the hardware identifier of the reference frame, without reference to the module.

refframe→get_hardwareId()

Returns the unique hardware identifier of the reference frame in the form `SERIAL . FUNCTIONID`.

refframe→get_logicalName()

Returns the logical name of the reference frame.

refframe→get_module()

Gets the `YModule` object for the device on which the function is located.

refframe→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

refframe→get_mountOrientation()

Returns the installation orientation of the device, as configured in order to define the reference frame for the compass and the pitch/roll tilt sensors.

refframe→get_mountPosition()

Returns the installation position of the device, as configured in order to define the reference frame for the compass and the pitch/roll tilt sensors.

refframe→get_userData()

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

refframe→isOnline()

Checks if the reference frame is currently reachable, without raising any error.

refframe→isOnline_async(callback, context)

Checks if the reference frame is currently reachable, without raising any error (asynchronous version).

refframe→load(msValidity)

Preloads the reference frame cache with a specified validity duration.

refframe→load_async(msValidity, callback, context)

Preloads the reference frame cache with a specified validity duration (asynchronous version).

refframe→more3DCalibration()

Continues the sensors tridimensional calibration process previously initiated using method `start3DCalibration`.

refframe→nextRefFrame()

Continues the enumeration of reference frames started using `yFirstRefFrame()`.

refframe→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

refframe→save3DCalibration()

Applies the sensors tridimensional calibration parameters that have just been computed.

refframe→set_bearing(newval)

Changes the reference bearing used by the compass.

refframe→set_logicalName(newval)

3. Reference

Changes the logical name of the reference frame.

refframe→**set_mountPosition**(**position**, **orientation**)

Changes the compass and tilt sensor frame of reference.

refframe→**set_userData**(**data**)

Stores a user context provided as argument in the userData attribute of the function.

refframe→**start3DCalibration**()

Initiates the sensors tridimensional calibration process.

refframe→**wait_async**(**callback**, **context**)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YRefFrame.FindRefFrame()**YRefFrame****yFindRefFrame()**`YRefFrame.FindRefFrame()`

Retrieves a reference frame for a given identifier.

js	function yFindRefFrame (func)
nodejs	function FindRefFrame (func)
php	function yFindRefFrame (\$func)
cpp	YRefFrame* yFindRefFrame (const string& func)
m	YRefFrame* yFindRefFrame (NSString* func)
pas	function yFindRefFrame (func : string): TYRefFrame
vb	function yFindRefFrame (ByVal func As String) As YRefFrame
cs	YRefFrame FindRefFrame (string func)
java	YRefFrame FindRefFrame (String func)
py	def FindRefFrame (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the reference frame is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YRefFrame.isOnline()` to test if the reference frame is indeed online at a given time. In case of ambiguity when looking for a reference frame by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the reference frame

Returns :

a `YRefFrame` object allowing you to drive the reference frame.

YRefFrame.FirstRefFrame()**YRefFrame****yFirstRefFrame()**`YRefFrame.FirstRefFrame()`

Starts the enumeration of reference frames currently accessible.

js	function yFirstRefFrame ()
nodejs	function FirstRefFrame ()
php	function yFirstRefFrame ()
cpp	YRefFrame* yFirstRefFrame ()
m	YRefFrame* yFirstRefFrame ()
pas	function yFirstRefFrame (): TYRefFrame
vb	function yFirstRefFrame () As YRefFrame
cs	YRefFrame FirstRefFrame ()
java	YRefFrame FirstRefFrame ()
py	def FirstRefFrame ()

Use the method `YRefFrame.nextRefFrame()` to iterate on next reference frames.

Returns :

a pointer to a `YRefFrame` object, corresponding to the first reference frame currently online, or a `null` pointer if there are none.

refframe→cancel3DCalibration()**YRefFrame****refframe.cancel3DCalibration()**

Aborts the sensors tridimensional calibration process et restores normal settings.

js	function cancel3DCalibration ()
nodejs	function cancel3DCalibration ()
php	function cancel3DCalibration ()
cpp	int cancel3DCalibration ()
m	-(int) cancel3DCalibration
pas	function cancel3DCalibration (): LongInt
vb	function cancel3DCalibration () As Integer
cs	int cancel3DCalibration ()
java	int cancel3DCalibration ()
py	def cancel3DCalibration ()
cmd	YRefFrame target cancel3DCalibration

On failure, throws an exception or returns a negative error code.

refframe→describe()`refframe.describe()`**YRefFrame**

Returns a short text that describes unambiguously the instance of the reference frame in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the reference frame (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

refframe→get_3DCalibrationHint()**YRefFrame****refframe→3DCalibrationHint()****refframe.get_3DCalibrationHint()**

Returns instructions to proceed to the tridimensional calibration initiated with method `start3DCalibration`.

js	function get_3DCalibrationHint ()
nodejs	function get_3DCalibrationHint ()
php	function get_3DCalibrationHint ()
cpp	string get_3DCalibrationHint ()
m	-(NSString*) 3DCalibrationHint
pas	function get_3DCalibrationHint (): string
vb	function get_3DCalibrationHint () As String
cs	string get_3DCalibrationHint ()
java	String get_3DCalibrationHint ()
py	def get_3DCalibrationHint ()
cmd	YRefFrame target get_3DCalibrationHint

Returns :

a character string.

refframe→get_3DCalibrationLogMsg()**YRefFrame****refframe→3DCalibrationLogMsg()****refframe.get_3DCalibrationLogMsg()**

Returns the latest log message from the calibration process.

js	function get_3DCalibrationLogMsg ()
nodejs	function get_3DCalibrationLogMsg ()
php	function get_3DCalibrationLogMsg ()
cpp	string get_3DCalibrationLogMsg ()
m	-(NSString*) 3DCalibrationLogMsg
pas	function get_3DCalibrationLogMsg (): string
vb	function get_3DCalibrationLogMsg () As String
cs	string get_3DCalibrationLogMsg ()
java	String get_3DCalibrationLogMsg ()
py	def get_3DCalibrationLogMsg ()
cmd	YRefFrame target get_3DCalibrationLogMsg

When no new message is available, returns an empty string.

Returns :

a character string.

refframe→get_3DCalibrationProgress()**YRefFrame****refframe→3DCalibrationProgress()****refframe.get_3DCalibrationProgress()**

Returns the global process indicator for the tridimensional calibration initiated with method `start3DCalibration`.

js	function get_3DCalibrationProgress ()
nodejs	function get_3DCalibrationProgress ()
php	function get_3DCalibrationProgress ()
cpp	int get_3DCalibrationProgress ()
m	-(int) 3DCalibrationProgress
pas	function get_3DCalibrationProgress (): LongInt
vb	function get_3DCalibrationProgress () As Integer
cs	int get_3DCalibrationProgress ()
java	int get_3DCalibrationProgress ()
py	def get_3DCalibrationProgress ()
cmd	YRefFrame target get_3DCalibrationProgress

Returns :

an integer between 0 (not started) and 100 (stage completed).

refframe→**get_3DCalibrationStage()****YRefFrame****refframe**→**3DCalibrationStage()****refframe.get_3DCalibrationStage()**

Returns index of the current stage of the calibration initiated with method `start3DCalibration`.

js	function get_3DCalibrationStage ()
nodejs	function get_3DCalibrationStage ()
php	function get_3DCalibrationStage ()
cpp	int get_3DCalibrationStage ()
m	-(int) 3DCalibrationStage
pas	function get_3DCalibrationStage (): LongInt
vb	function get_3DCalibrationStage () As Integer
cs	int get_3DCalibrationStage ()
java	int get_3DCalibrationStage ()
py	def get_3DCalibrationStage ()
cmd	YRefFrame target get_3DCalibrationStage

Returns :

an integer, growing each time a calibration stage is completed.

refframe→get_3DCalibrationStageProgress()**YRefFrame****refframe→3DCalibrationStageProgress()****refframe.get_3DCalibrationStageProgress()**

Returns the process indicator for the current stage of the calibration initiated with method `start3DCalibration`.

js	function get_3DCalibrationStageProgress ()
nodejs	function get_3DCalibrationStageProgress ()
php	function get_3DCalibrationStageProgress ()
cpp	int get_3DCalibrationStageProgress ()
m	-(int) 3DCalibrationStageProgress
pas	function get_3DCalibrationStageProgress (): LongInt
vb	function get_3DCalibrationStageProgress () As Integer
cs	int get_3DCalibrationStageProgress ()
java	int get_3DCalibrationStageProgress ()
py	def get_3DCalibrationStageProgress ()
cmd	YRefFrame target get_3DCalibrationStageProgress

Returns :

an integer between 0 (not started) and 100 (stage completed).

refframe→get_advertisedValue()

YRefFrame

refframe→advertisedValue()

refframe.get_advertisedValue()

Returns the current value of the reference frame (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YRefFrame target get_advertisedValue

Returns :

a string corresponding to the current value of the reference frame (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

refframe→**get_bearing()****YRefFrame****refframe**→**bearing()****refframe.get_bearing()**

Returns the reference bearing used by the compass.

js	function get_bearing ()
nodejs	function get_bearing ()
php	function get_bearing ()
cpp	double get_bearing ()
m	-(double) bearing
pas	function get_bearing (): double
vb	function get_bearing () As Double
cs	double get_bearing ()
java	double get_bearing ()
py	def get_bearing ()
cmd	YRefFrame target get_bearing

The relative bearing indicated by the compass is the difference between the measured magnetic heading and the reference bearing indicated here.

Returns :

a floating point number corresponding to the reference bearing used by the compass

On failure, throws an exception or returns Y_BEARING_INVALID.

refframe→**get_errorMessage()****YRefFrame****refframe**→**errorMessage()****refframe.errorMessage()**

Returns the error message of the latest error with the reference frame.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the reference frame object

refframe→**get_errorType()****YRefFrame****refframe**→**errorType()****refframe.errorType()**

Returns the numerical error code of the latest error with the reference frame.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the reference frame object

refframe→**get_friendlyName()****YRefFrame****refframe**→**friendlyName()****refframe.get_friendlyName()**

Returns a global identifier of the reference frame in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the reference frame if they are defined, otherwise the serial number of the module and the hardware identifier of the reference frame (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the reference frame using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

refframe→get_functionDescriptor()**YRefFrame****refframe→functionDescriptor()****refframe.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

refframe→**get_functionId()****YRefFrame****refframe**→**functionId()****refframe.get_functionId()**

Returns the hardware identifier of the reference frame, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the reference frame (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

refframe→get_hardwareId()**YRefFrame****refframe→hardwareId()****refframe.get_hardwareId()**

Returns the unique hardware identifier of the reference frame in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the reference frame. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the reference frame (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

refframe→get_logicalName()**YRefFrame****refframe→logicalName()****refframe.get_logicalName()**

Returns the logical name of the reference frame.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YRefFrame target get_logicalName

Returns :

a string corresponding to the logical name of the reference frame. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

refframe→get_module()**YRefFrame****refframe→module()**`refframe.get_module()`

Gets the `YModule` object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	<code>YModule *</code> get_module ()
m	<code>-(YModule*)</code> module
pas	function get_module (): <code>TYModule</code>
vb	function get_module () As <code>YModule</code>
cs	<code>YModule</code> get_module ()
java	<code>YModule</code> get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of `YModule` is not shown as on-line.

Returns :

an instance of `YModule`

refframe→get_module_async()**YRefFrame****refframe→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

refframe→get_mountOrientation()**YRefFrame****refframe→mountOrientation()****refframe.get_mountOrientation()**

Returns the installation orientation of the device, as configured in order to define the reference frame for the compass and the pitch/roll tilt sensors.

js	function get_mountOrientation ()
nodejs	function get_mountOrientation ()
php	function get_mountOrientation ()
cpp	Y_MOUNTORIENTATION get_mountOrientation ()
m	-(Y_MOUNTORIENTATION) mountOrientation
pas	function get_mountOrientation (): TY_MOUNTORIENTATION
vb	function get_mountOrientation () As Y_MOUNTORIENTATION
cs	MOUNTORIENTATION get_mountOrientation ()
java	MOUNTORIENTATION get_mountOrientation ()
py	def get_mountOrientation ()
cmd	YRefFrame target get_mountOrientation

Returns :

a value among the enumeration **Y_MOUNTORIENTATION** (**Y_MOUNTORIENTATION_TWELVE**, **Y_MOUNTORIENTATION_THREE**, **Y_MOUNTORIENTATION_SIX**, **Y_MOUNTORIENTATION_NINE**) corresponding to the orientation of the "X" arrow on the device, as on a clock dial seen from an observer in the center of the box. On the bottom face, the 12H orientation points to the front, while on the top face, the 12H orientation points to the rear.

On failure, throws an exception or returns a negative error code.

refframe→get_mountPosition()

YRefFrame

refframe→mountPosition()

refframe.get_mountPosition()

Returns the installation position of the device, as configured in order to define the reference frame for the compass and the pitch/roll tilt sensors.

js	function get_mountPosition()
nodejs	function get_mountPosition()
php	function get_mountPosition()
cpp	Y_MOUNTPOSITION get_mountPosition()
m	-(Y_MOUNTPOSITION) mountPosition
pas	function get_mountPosition(): TYMOUNTPOSITION
vb	function get_mountPosition() As Y_MOUNTPOSITION
cs	MOUNTPOSITION get_mountPosition()
java	MOUNTPOSITION get_mountPosition()
py	def get_mountPosition()
cmd	YRefFrame target get_mountPosition

Returns :

a value among the Y_MOUNTPOSITION enumeration (Y_MOUNTPOSITION_BOTTOM, Y_MOUNTPOSITION_TOP, Y_MOUNTPOSITION_FRONT, Y_MOUNTPOSITION_RIGHT, Y_MOUNTPOSITION_REAR, Y_MOUNTPOSITION_LEFT), corresponding to the installation in a box, on one of the six faces.

On failure, throws an exception or returns a negative error code.

refframe→get_userdata()**YRefFrame****refframe→userdata()**`refframe.get_userdata()`

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata()
nodejs	function get_userdata()
php	function get_userdata()
cpp	void * get_userdata()
m	-(void*) userData
pas	function get_userdata() : Tobject
vb	function get_userdata() As Object
cs	object get_userdata()
java	Object get_userdata()
py	def get_userdata()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

refframe→**isOnline()**`refframe.isOnline()`**YRefFrame**

Checks if the reference frame is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the reference frame in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the reference frame.

Returns :

`true` if the reference frame can be reached, and `false` otherwise

refframe→isOnline_async()**YRefFrame**

Checks if the reference frame is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the reference frame in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

refframe→load()`refframe.load()`**YRefFrame**

Preloads the reference frame cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

`YAPI_SUCCESS` when the call succeeds. On failure, throws an exception or returns a negative error code.

refframe→load_async()**YRefFrame**

Preloads the reference frame cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

reframe→more3DCalibration()**YRefFrame****reframe.more3DCalibration()**

Continues the sensors tridimensional calibration process previously initiated using method `start3DCalibration`.

js	function more3DCalibration ()
nodejs	function more3DCalibration ()
php	function more3DCalibration ()
cpp	int more3DCalibration ()
m	-(int) more3DCalibration
pas	function more3DCalibration (): LongInt
vb	function more3DCalibration () As Integer
cs	int more3DCalibration ()
java	int more3DCalibration ()
py	def more3DCalibration ()
cmd	YRefFrame target more3DCalibration

This method should be called approximately 5 times per second, while positioning the device according to the instructions provided by method `get_3DCalibrationHint`. Note that the instructions change during the calibration process. On failure, throws an exception or returns a negative error code.

refframe→**nextRefFrame()****YRefFrame****refframe.nextRefFrame()**

Continues the enumeration of reference frames started using `yFirstRefFrame()`.

js	function nextRefFrame()
nodejs	function nextRefFrame()
php	function nextRefFrame()
cpp	YRefFrame * nextRefFrame()
m	-(YRefFrame*) nextRefFrame
pas	function nextRefFrame() : TYRefFrame
vb	function nextRefFrame() As YRefFrame
cs	YRefFrame nextRefFrame()
java	YRefFrame nextRefFrame()
py	def nextRefFrame()

Returns :

a pointer to a **YRefFrame** object, corresponding to a reference frame currently online, or a `null` pointer if there are no more reference frames to enumerate.

reframe→registerValueCallback()**YRefFrame****reframe.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YRefFrameValueCallback callback)
m	-(int) registerValueCallback : (YRefFrameValueCallback) callback
pas	function registerValueCallback (callback : TYRefFrameValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

refframe→save3DCalibration()**YRefFrame****refframe.save3DCalibration()**

Applies the sensors tridimensional calibration parameters that have just been computed.

js	function save3DCalibration ()
nodejs	function save3DCalibration ()
php	function save3DCalibration ()
cpp	int save3DCalibration ()
m	-(int) save3DCalibration
pas	function save3DCalibration (): LongInt
vb	function save3DCalibration () As Integer
cs	int save3DCalibration ()
java	int save3DCalibration ()
py	def save3DCalibration ()
cmd	YRefFrame target save3DCalibration

Remember to call the `saveToFlash()` method of the module if the changes must be kept when the device is restarted. On failure, throws an exception or returns a negative error code.

refframe→set_bearing()**YRefFrame****refframe→setBearing()**`refframe.set_bearing()`

Changes the reference bearing used by the compass.

js	function set_bearing (newval)
nodejs	function set_bearing (newval)
php	function set_bearing (\$newval)
cpp	int set_bearing (double newval)
m	-(int) setBearing : (double) newval
pas	function set_bearing (newval : double): integer
vb	function set_bearing (ByVal newval As Double) As Integer
cs	int set_bearing (double newval)
java	int set_bearing (double newval)
py	def set_bearing (newval)
cmd	YRefFrame target set_bearing newval

The relative bearing indicated by the compass is the difference between the measured magnetic heading and the reference bearing indicated here. For instance, if you setup as reference bearing the value of the earth magnetic declination, the compass will provide the orientation relative to the geographic North. Similarly, when the sensor is not mounted along the standard directions because it has an additional yaw angle, you can set this angle in the reference bearing so that the compass provides the expected natural direction. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a floating point number corresponding to the reference bearing used by the compass

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

refframe→set_logicalName()**YRefFrame****refframe→setLogicalName()****refframe.set_logicalName()**

Changes the logical name of the reference frame.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YRefFrame target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the reference frame.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

refframe→set_mountPosition()

YRefFrame

refframe→setMountPosition()

refframe.set_mountPosition()

Changes the compass and tilt sensor frame of reference.

```

js function set_mountPosition( position, orientation)
nodejs function set_mountPosition( position, orientation)
php function set_mountPosition( $position, $orientation)
cpp int set_mountPosition( Y_MOUNTPOSITION position,
                           Y_MOUNTORIENTATION orientation)

m -(int) setMountPosition : (Y_MOUNTPOSITION) position
                           : (Y_MOUNTORIENTATION) orientation

pas function set_mountPosition( position: TYMOUNTPOSITION,
                               orientation: TYMOUNTORIENTATION): LongInt

vb function set_mountPosition( ) As Integer
cs int set_mountPosition( MOUNTPOSITION position,
                           MOUNTORIENTATION orientation)
java int set_mountPosition( MOUNTPOSITION position,
                             MOUNTORIENTATION orientation)
py def set_mountPosition( position, orientation)
cmd YRefFrame target set_mountPosition position orientation

```

The magnetic compass and the tilt sensors (pitch and roll) naturally work in the plane parallel to the earth surface. In case the device is not installed upright and horizontally, you must select its reference orientation (parallel to the earth surface) so that the measures are made relative to this position.

Parameters :

- position** a value among the Y_MOUNTPOSITION enumeration (Y_MOUNTPOSITION_BOTTOM, Y_MOUNTPOSITION_TOP, Y_MOUNTPOSITION_FRONT, Y_MOUNTPOSITION_RIGHT, Y_MOUNTPOSITION_REAR, Y_MOUNTPOSITION_LEFT), corresponding to the installation in a box, on one of the six faces.
- orientation** a value among the enumeration Y_MOUNTORIENTATION (Y_MOUNTORIENTATION_TWELVE, Y_MOUNTORIENTATION_THREE, Y_MOUNTORIENTATION_SIX, Y_MOUNTORIENTATION_NINE) corresponding to the orientation of the "X" arrow on the device, as on a clock dial seen from an observer in the center of the box. On the bottom face, the 12H orientation points to the front, while on the top face, the 12H orientation points to the rear. Remember to call the saveToFlash() method of the module if the modification must be kept.

refframe→set_userdata()**YRefFrame****refframe→setUserData()****refframe.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
c++	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

refframe→start3DCalibration()**YRefFrame****refframe.start3DCalibration()**

Initiates the sensors tridimensional calibration process.

js	function start3DCalibration ()
nodejs	function start3DCalibration ()
php	function start3DCalibration ()
cpp	int start3DCalibration ()
m	-(int) start3DCalibration
pas	function start3DCalibration (): LongInt
vb	function start3DCalibration () As Integer
cs	int start3DCalibration ()
java	int start3DCalibration ()
py	def start3DCalibration ()
cmd	YRefFrame target start3DCalibration

This calibration is used at low level for inertial position estimation and to enhance the precision of the tilt sensors. After calling this method, the device should be moved according to the instructions provided by method `get_3DCalibrationHint`, and `more3DCalibration` should be invoked about 5 times per second. The calibration procedure is completed when the method `get_3DCalibrationProgress` returns 100. At this point, the computed calibration parameters can be applied using method `save3DCalibration`. The calibration process can be canceled at any time using method `cancel3DCalibration`. On failure, throws an exception or returns a negative error code.

refframe→wait_async()**YRefFrame**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.35. Relay function interface

The Yoctopuce application programming interface allows you to switch the relay state. This change is not persistent: the relay will automatically return to its idle position whenever power is lost or if the module is restarted. The library can also generate automatically short pulses of determined duration. On devices with two output for each relay (double throw), the two outputs are named A and B, with output A corresponding to the idle position (at power off) and the output B corresponding to the active state. If you prefer the alternate default state, simply switch your cables on the board.

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_relay.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib');</code> <code>var YRelay = yoctolib.YRelay;</code>
php	<code>require_once('yocto_relay.php');</code>
c++	<code>#include "yocto_relay.h"</code>
m	<code>#import "yocto_relay.h"</code>
pas	<code>uses yocto_relay;</code>
vb	<code>yocto_relay.vb</code>
cs	<code>yocto_relay.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YRelay;</code>
py	<code>from yocto_relay import *</code>

Global functions

yFindRelay(func)

Retrieves a relay for a given identifier.

yFirstRelay()

Starts the enumeration of relays currently accessible.

YRelay methods

relay→delayedPulse(ms_delay, ms_duration)

Schedules a pulse.

relay→describe()

Returns a short text that describes unambiguously the instance of the relay in the form
TYPE (NAME) = SERIAL . FUNCTIONID.

relay→get_advertisedValue()

Returns the current value of the relay (no more than 6 characters).

relay→get_countdown()

Returns the number of milliseconds remaining before a pulse (delayedPulse() call) When there is no scheduled pulse, returns zero.

relay→get_errorMessage()

Returns the error message of the latest error with the relay.

relay→get_errorType()

Returns the numerical error code of the latest error with the relay.

relay→get_friendlyName()

Returns a global identifier of the relay in the format MODULE_NAME . FUNCTION_NAME.

relay→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

relay→get_functionId()

Returns the hardware identifier of the relay, without reference to the module.

relay→get_hardwareId()

Returns the unique hardware identifier of the relay in the form `SERIAL.FUNCTIONID`.

relay→get_logicalName()

Returns the logical name of the relay.

relay→get_maxTimeOnStateA()

Retourne the maximum time (ms) allowed for `$THEFUNCTIONS$` to stay in state A before automatically switching back in to B state.

relay→get_maxTimeOnStateB()

Retourne the maximum time (ms) allowed for `$THEFUNCTIONS$` to stay in state B before automatically switching back in to A state.

relay→get_module()

Gets the `YModule` object for the device on which the function is located.

relay→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

relay→get_output()

Returns the output state of the relays, when used as a simple switch (single throw).

relay→get_pulseTimer()

Returns the number of milliseconds remaining before the relays is returned to idle position (state A), during a measured pulse generation.

relay→get_state()

Returns the state of the relays (A for the idle position, B for the active position).

relay→get_stateAtPowerOn()

Returns the state of the relays at device startup (A for the idle position, B for the active position, UNCHANGED for no change).

relay→get_userData()

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

relay→isOnline()

Checks if the relay is currently reachable, without raising any error.

relay→isOnline_async(callback, context)

Checks if the relay is currently reachable, without raising any error (asynchronous version).

relay→load(msValidity)

Preloads the relay cache with a specified validity duration.

relay→load_async(msValidity, callback, context)

Preloads the relay cache with a specified validity duration (asynchronous version).

relay→nextRelay()

Continues the enumeration of relays started using `yFirstRelay()`.

relay→pulse(ms_duration)

Sets the relay to output B (active) for a specified duration, then brings it automatically back to output A (idle state).

relay→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

relay→set_logicalName(newval)

Changes the logical name of the relay.

relay→set_maxTimeOnStateA(newval)

Sets the maximum time (ms) allowed for `$THEFUNCTIONS$` to stay in state A before automatically switching back in to B state.

relay→set_maxTimeOnStateB(newval)

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Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

relay→set_output(newval)

Changes the output state of the relays, when used as a simple switch (single throw).

relay→set_state(newval)

Changes the state of the relays (A for the idle position, B for the active position).

relay→set_stateAtPowerOn(newval)

Preset the state of the relays at device startup (A for the idle position, B for the active position, UNCHANGED for no modification).

relay→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

relay→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YRelay.FindRelay()**YRelay****yFindRelay()** `YRelay.FindRelay()`

Retrieves a relay for a given identifier.

<code>js</code>	<code>function yFindRelay(func)</code>
<code>nodejs</code>	<code>function FindRelay(func)</code>
<code>php</code>	<code>function yFindRelay(\$func)</code>
<code>cpp</code>	<code>YRelay* yFindRelay(const string& func)</code>
<code>m</code>	<code>YRelay* yFindRelay(NSString* func)</code>
<code>pas</code>	<code>function yFindRelay(func: string): TYRelay</code>
<code>vb</code>	<code>function yFindRelay(ByVal func As String) As YRelay</code>
<code>cs</code>	<code>YRelay FindRelay(string func)</code>
<code>java</code>	<code>YRelay FindRelay(String func)</code>
<code>py</code>	<code>def FindRelay(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the relay is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YRelay.isOnline()` to test if the relay is indeed online at a given time. In case of ambiguity when looking for a relay by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the relay

Returns :

a `YRelay` object allowing you to drive the relay.

YRelay.FirstRelay()**YRelay****yFirstRelay()****YRelay.FirstRelay()**

Starts the enumeration of relays currently accessible.

js	function yFirstRelay ()
nodejs	function FirstRelay ()
php	function yFirstRelay ()
cpp	YRelay* yFirstRelay ()
m	YRelay* yFirstRelay ()
pas	function yFirstRelay (): TYRelay
vb	function yFirstRelay () As YRelay
cs	YRelay FirstRelay ()
java	YRelay FirstRelay ()
py	def FirstRelay ()

Use the method `YRelay.nextRelay()` to iterate on next relays.

Returns :

a pointer to a YRelay object, corresponding to the first relay currently online, or a `null` pointer if there are none.

relay→delayedPulse()`relay.delayedPulse()`**YRelay**

Schedules a pulse.

<code>js</code>	<code>function delayedPulse(ms_delay, ms_duration)</code>
<code>nodejs</code>	<code>function delayedPulse(ms_delay, ms_duration)</code>
<code>php</code>	<code>function delayedPulse(\$ms_delay, \$ms_duration)</code>
<code>cpp</code>	<code>int delayedPulse(int ms_delay, int ms_duration)</code>
<code>m</code>	<code>-(int) delayedPulse : (int) ms_delay : (int) ms_duration</code>
<code>pas</code>	<code>function delayedPulse(ms_delay: LongInt, ms_duration: LongInt): integer</code>
<code>vb</code>	<code>function delayedPulse(ByVal ms_delay As Integer, ByVal ms_duration As Integer) As Integer</code>
<code>cs</code>	<code>int delayedPulse(int ms_delay, int ms_duration)</code>
<code>java</code>	<code>int delayedPulse(int ms_delay, int ms_duration)</code>
<code>py</code>	<code>def delayedPulse(ms_delay, ms_duration)</code>
<code>cmd</code>	<code>YRelay target delayedPulse ms_delay ms_duration</code>

Parameters :**ms_delay** waiting time before the pulse, in milliseconds**ms_duration** pulse duration, in milliseconds**Returns :**

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay→describe()**relay.describe()****YRelay**

Returns a short text that describes unambiguously the instance of the relay in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the relay (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

relay→**get_advertisedValue()****YRelay****relay**→**advertisedValue()****relay.get_advertisedValue()**

Returns the current value of the relay (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YRelay target get_advertisedValue

Returns :

a string corresponding to the current value of the relay (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

relay→**get_countdown()****YRelay****relay**→**countdown()****relay.get_countdown()**

Returns the number of milliseconds remaining before a pulse (delayedPulse() call) When there is no scheduled pulse, returns zero.

js	function get_countdown ()
nodejs	function get_countdown ()
php	function get_countdown ()
cpp	s64 get_countdown ()
m	-(s64) countdown
pas	function get_countdown (): int64
vb	function get_countdown () As Long
cs	long get_countdown ()
java	long get_countdown ()
py	def get_countdown ()
cmd	YRelay target get_countdown

Returns :

an integer corresponding to the number of milliseconds remaining before a pulse (delayedPulse() call) When there is no scheduled pulse, returns zero

On failure, throws an exception or returns Y_COUNTDOWN_INVALID.

relay→**get_errorMessage()****YRelay****relay**→**errorMessage()****relay.errorMessage()**

Returns the error message of the latest error with the relay.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the relay object

relay→**get_errorType()****YRelay****relay**→**errorType()****relay.get_errorType()**

Returns the numerical error code of the latest error with the relay.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the relay object

relay→**get_friendlyName()****YRelay****relay**→**friendlyName()****relay.get_friendlyName()**

Returns a global identifier of the relay in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the relay if they are defined, otherwise the serial number of the module and the hardware identifier of the relay (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the relay using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

relay→**get_functionDescriptor()****YRelay****relay**→**functionDescriptor()****relay.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

relay→**get_functionId()****YRelay****relay**→**functionId()****relay.get_functionId()**

Returns the hardware identifier of the relay, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the relay (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

relay→**get_hardwareId()****YRelay****relay**→**hardwareId()****relay.get_hardwareId()**

Returns the unique hardware identifier of the relay in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
c++	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the relay. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the relay (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

relay→**get_logicalName()****YRelay****relay**→**logicalName()****relay.get_logicalName()**

Returns the logical name of the relay.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YRelay target get_logicalName

Returns :

a string corresponding to the logical name of the relay. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

relay→**get_maxTimeOnStateA()****YRelay****relay**→**maxTimeOnStateA()****relay.get_maxTimeOnStateA()**

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

js	function get_maxTimeOnStateA ()
nodejs	function get_maxTimeOnStateA ()
php	function get_maxTimeOnStateA ()
cpp	s64 get_maxTimeOnStateA ()
m	-(s64) maxTimeOnStateA
pas	function get_maxTimeOnStateA (): int64
vb	function get_maxTimeOnStateA () As Long
cs	long get_maxTimeOnStateA ()
java	long get_maxTimeOnStateA ()
py	def get_maxTimeOnStateA ()
cmd	YRelay target get_maxTimeOnStateA

Zero means no maximum time.

Returns :

an integer

On failure, throws an exception or returns Y_MAXTIMEONSTATEA_INVALID.

relay→**get_maxTimeOnStateB()****YRelay****relay**→**maxTimeOnStateB()****relay.get_maxTimeOnStateB()**

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

js	function get_maxTimeOnStateB ()
nodejs	function get_maxTimeOnStateB ()
php	function get_maxTimeOnStateB ()
cpp	s64 get_maxTimeOnStateB ()
m	-(s64) maxTimeOnStateB
pas	function get_maxTimeOnStateB (): int64
vb	function get_maxTimeOnStateB () As Long
cs	long get_maxTimeOnStateB ()
java	long get_maxTimeOnStateB ()
py	def get_maxTimeOnStateB ()
cmd	YRelay target get_maxTimeOnStateB

Zero means no maximum time.

Returns :

an integer

On failure, throws an exception or returns Y_MAXTIMEONSTATEB_INVALID.

relay→**get_module()****YRelay****relay**→**module()****relay.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

relay→get_module_async()**YRelay****relay→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

relay→**get_output()****YRelay****relay**→**output()****relay.get_output()**

Returns the output state of the relays, when used as a simple switch (single throw).

js	function get_output ()
nodejs	function get_output ()
php	function get_output ()
cpp	Y_OUTPUT_enum get_output ()
m	-(Y_OUTPUT_enum) output
pas	function get_output (): Integer
vb	function get_output () As Integer
cs	int get_output ()
java	int get_output ()
py	def get_output ()
cmd	YRelay target get_output

Returns :

either Y_OUTPUT_OFF or Y_OUTPUT_ON, according to the output state of the relays, when used as a simple switch (single throw)

On failure, throws an exception or returns Y_OUTPUT_INVALID.

relay→**get_pulseTimer()****YRelay****relay**→**pulseTimer()****relay.get_pulseTimer()**

Returns the number of milliseconds remaining before the relays is returned to idle position (state A), during a measured pulse generation.

js	function get_pulseTimer ()
nodejs	function get_pulseTimer ()
php	function get_pulseTimer ()
cpp	s64 get_pulseTimer ()
m	-(s64) pulseTimer
pas	function get_pulseTimer (): int64
vb	function get_pulseTimer () As Long
cs	long get_pulseTimer ()
java	long get_pulseTimer ()
py	def get_pulseTimer ()
cmd	YRelay target get_pulseTimer

When there is no ongoing pulse, returns zero.

Returns :

an integer corresponding to the number of milliseconds remaining before the relays is returned to idle position (state A), during a measured pulse generation

On failure, throws an exception or returns Y_PULSETIMER_INVALID.

relay→**get_state()****YRelay****relay**→**state()****relay.get_state()**

Returns the state of the relays (A for the idle position, B for the active position).

js	function get_state ()
nodejs	function get_state ()
php	function get_state ()
cpp	Y_STATE_enum get_state ()
m	-(Y_STATE_enum) state
pas	function get_state (): Integer
vb	function get_state () As Integer
cs	int get_state ()
java	int get_state ()
py	def get_state ()
cmd	YRelay target get_state

Returns :

either Y_STATE_A or Y_STATE_B, according to the state of the relays (A for the idle position, B for the active position)

On failure, throws an exception or returns Y_STATE_INVALID.

relay→get_stateAtPowerOn()**YRelay****relay→stateAtPowerOn()****relay.get_stateAtPowerOn()**

Returns the state of the relays at device startup (A for the idle position, B for the active position, UNCHANGED for no change).

js	function get_stateAtPowerOn ()
nodejs	function get_stateAtPowerOn ()
php	function get_stateAtPowerOn ()
cpp	Y_STATEATPOWERON_enum get_stateAtPowerOn ()
m	-(Y_STATEATPOWERON_enum) stateAtPowerOn
pas	function get_stateAtPowerOn (): Integer
vb	function get_stateAtPowerOn () As Integer
cs	int get_stateAtPowerOn ()
java	int get_stateAtPowerOn ()
py	def get_stateAtPowerOn ()
cmd	YRelay target get_stateAtPowerOn

Returns :

a value among Y_STATEATPOWERON_UNCHANGED, Y_STATEATPOWERON_A and Y_STATEATPOWERON_B corresponding to the state of the relays at device startup (A for the idle position, B for the active position, UNCHANGED for no change)

On failure, throws an exception or returns Y_STATEATPOWERON_INVALID.

relay→**get_userData()****YRelay****relay**→**userData()****relay.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

relay→**isOnline()****relay.isOnline()****YRelay**

Checks if the relay is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the relay in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the relay.

Returns :

`true` if the relay can be reached, and `false` otherwise

relay→isOnline_async()**YRelay**

Checks if the relay is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the relay in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

relay→load()**relay.load()****YRelay**

Preloads the relay cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

`YAPI_SUCCESS` when the call succeeds. On failure, throws an exception or returns a negative error code.

relay→load_async()**YRelay**

Preloads the relay cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

relay→**nextRelay()****relay.nextRelay()****YRelay**

Continues the enumeration of relays started using `yFirstRelay()`.

<code>js</code>	<code>function nextRelay()</code>
<code>nodejs</code>	<code>function nextRelay()</code>
<code>php</code>	<code>function nextRelay()</code>
<code>cpp</code>	<code>YRelay * nextRelay()</code>
<code>m</code>	<code>-(YRelay*) nextRelay</code>
<code>pas</code>	<code>function nextRelay(): TYRelay</code>
<code>vb</code>	<code>function nextRelay() As YRelay</code>
<code>cs</code>	<code>YRelay nextRelay()</code>
<code>java</code>	<code>YRelay nextRelay()</code>
<code>py</code>	<code>def nextRelay()</code>

Returns :

a pointer to a `YRelay` object, corresponding to a relay currently online, or a `null` pointer if there are no more relays to enumerate.

relay→**pulse()****relay.pulse()****YRelay**

Sets the relay to output B (active) for a specified duration, then brings it automatically back to output A (idle state).

js	function pulse (ms_duration)
nodejs	function pulse (ms_duration)
php	function pulse (\$ms_duration)
cpp	int pulse (int ms_duration)
m	-(int) pulse : (int) ms_duration
pas	function pulse (ms_duration : LongInt): integer
vb	function pulse (ByVal ms_duration As Integer) As Integer
cs	int pulse (int ms_duration)
java	int pulse (int ms_duration)
py	def pulse (ms_duration)
cmd	YRelay target pulse ms_duration

Parameters :

ms_duration pulse duration, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay→registerValueCallback()**YRelay****relay.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YRelayValueCallback callback)
m	-(int) registerValueCallback : (YRelayValueCallback) callback
pas	function registerValueCallback (callback : TYRelayValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

relay→**set_logicalName()****YRelay****relay**→**setLogicalName()****relay.set_logicalName()**

Changes the logical name of the relay.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YRelay target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the relay.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

relay→**set_maxTimeOnStateA()****YRelay****relay**→**setMaxTimeOnStateA()****relay.set_maxTimeOnStateA()**

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

js	function set_maxTimeOnStateA (newval)
nodejs	function set_maxTimeOnStateA (newval)
php	function set_maxTimeOnStateA (\$newval)
cpp	int set_maxTimeOnStateA (s64 newval)
m	-(int) setMaxTimeOnStateA : (s64) newval
pas	function set_maxTimeOnStateA (newval : int64): integer
vb	function set_maxTimeOnStateA (ByVal newval As Long) As Integer
cs	int set_maxTimeOnStateA (long newval)
java	int set_maxTimeOnStateA (long newval)
py	def set_maxTimeOnStateA (newval)
cmd	YRelay target set_maxTimeOnStateA newval

Use zero for no maximum time.

Parameters :

newval an integer

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay→**set_maxTimeOnStateB()****YRelay****relay**→**setMaxTimeOnStateB()****relay.set_maxTimeOnStateB()**

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

js	function set_maxTimeOnStateB (newval)
nodejs	function set_maxTimeOnStateB (newval)
php	function set_maxTimeOnStateB (\$newval)
cpp	int set_maxTimeOnStateB (s64 newval)
m	-(int) setMaxTimeOnStateB : (s64) newval
pas	function set_maxTimeOnStateB (newval : int64): integer
vb	function set_maxTimeOnStateB (ByVal newval As Long) As Integer
cs	int set_maxTimeOnStateB (long newval)
java	int set_maxTimeOnStateB (long newval)
py	def set_maxTimeOnStateB (newval)
cmd	YRelay target set_maxTimeOnStateB newval

Use zero for no maximum time.

Parameters :

newval an integer

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay→**set_output()****YRelay****relay**→**setOutput()****relay.set_output ()**

Changes the output state of the relays, when used as a simple switch (single throw).

js	function set_output (newval)
nodejs	function set_output (newval)
php	function set_output (\$newval)
cpp	int set_output (Y_OUTPUT_enum newval)
m	-(int) setOutput : (Y_OUTPUT_enum) newval
pas	function set_output (newval : Integer): integer
vb	function set_output (ByVal newval As Integer) As Integer
cs	int set_output (int newval)
java	int set_output (int newval)
py	def set_output (newval)
cmd	YRelay target set_output newval

Parameters :

newval either Y_OUTPUT_OFF or Y_OUTPUT_ON, according to the output state of the relays, when used as a simple switch (single throw)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay→**set_state()****YRelay****relay**→**setState()****relay.set_state()**

Changes the state of the relays (A for the idle position, B for the active position).

js	function set_state (newval)
nodejs	function set_state (newval)
php	function set_state (\$newval)
cpp	int set_state (Y_STATE_enum newval)
m	-(int) setState : (Y_STATE_enum) newval
pas	function set_state (newval : Integer): integer
vb	function set_state (ByVal newval As Integer) As Integer
cs	int set_state (int newval)
java	int set_state (int newval)
py	def set_state (newval)
cmd	YRelay target set_state newval

Parameters :

newval either Y_STATE_A or Y_STATE_B, according to the state of the relays (A for the idle position, B for the active position)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay→set_stateAtPowerOn()**YRelay****relay→setStateAtPowerOn()****relay.set_stateAtPowerOn()**

Preset the state of the relays at device startup (A for the idle position, B for the active position, UNCHANGED for no modification).

js	function set_stateAtPowerOn (newval)
nodejs	function set_stateAtPowerOn (newval)
php	function set_stateAtPowerOn (\$newval)
cpp	int set_stateAtPowerOn (Y_STATEATPOWERON_enum newval)
m	-(int) setStateAtPowerOn : (Y_STATEATPOWERON_enum) newval
pas	function set_stateAtPowerOn (newval : Integer): integer
vb	function set_stateAtPowerOn (ByVal newval As Integer) As Integer
cs	int set_stateAtPowerOn (int newval)
java	int set_stateAtPowerOn (int newval)
py	def set_stateAtPowerOn (newval)
cmd	YRelay target set_stateAtPowerOn newval

Remember to call the matching module `saveToFlash()` method, otherwise this call will have no effect.

Parameters :

newval a value among Y_STATEATPOWERON_UNCHANGED, Y_STATEATPOWERON_A and Y_STATEATPOWERON_B

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay→**set_userData()****YRelay****relay**→**setUserData()****relay.set_userData()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userData (data)
nodejs	function set_userData (data)
php	function set_userData (\$data)
cpp	void set_userData (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userData (data : Tobject)
vb	procedure set_userData (ByVal data As Object)
cs	void set_userData (object data)
java	void set_userData (Object data)
py	def set_userData (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

relay→wait_async()**YRelay**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.36. Sensor function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_api.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YAPI = yoctolib.YAPI; var YModule = yoctolib.YModule;
php	require_once('yocto_api.php');
c++	#include "yocto_api.h"
m	#import "yocto_api.h"
pas	uses yocto_api;
vb	yocto_api.vb
cs	yocto_api.cs
java	import com.yoctopuce.YoctoAPI.YModule;
py	from yocto_api import *

Global functions

yFindSensor(**func**)

Retrieves a sensor for a given identifier.

yFirstSensor()

Starts the enumeration of sensors currently accessible.

YSensor methods

sensor→calibrateFromPoints(**rawValues**, **refValues**)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

sensor→describe()

Returns a short text that describes unambiguously the instance of the sensor in the form
TYPE (NAME) = SERIAL . FUNCTIONID.

sensor→get_advertisedValue()

Returns the current value of the sensor (no more than 6 characters).

sensor→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

sensor→get_currentValue()

Returns the current value of the measure.

sensor→get_errorMessage()

Returns the error message of the latest error with the sensor.

sensor→get_errorType()

Returns the numerical error code of the latest error with the sensor.

sensor→get_friendlyName()

Returns a global identifier of the sensor in the format MODULE_NAME . FUNCTION_NAME.

sensor→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

sensor→get_functionId()

Returns the hardware identifier of the sensor, without reference to the module.

sensor→get_hardwareId()

Returns the unique hardware identifier of the sensor in the form `SERIAL . FUNCTIONID`.

sensor→get_highestValue()

Returns the maximal value observed for the measure since the device was started.

sensor→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

sensor→get_logicalName()

Returns the logical name of the sensor.

sensor→get_lowestValue()

Returns the minimal value observed for the measure since the device was started.

sensor→get_module()

Gets the `YModule` object for the device on which the function is located.

sensor→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

sensor→get_recordedData(startTime, endTime)

Retrieves a `DataSet` object holding historical data for this sensor, for a specified time interval.

sensor→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

sensor→get_resolution()

Returns the resolution of the measured values.

sensor→get_unit()

Returns the measuring unit for the measure.

sensor→get_userData()

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

sensor→isOnline()

Checks if the sensor is currently reachable, without raising any error.

sensor→isOnline_async(callback, context)

Checks if the sensor is currently reachable, without raising any error (asynchronous version).

sensor→load(msValidity)

Preloads the sensor cache with a specified validity duration.

sensor→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

sensor→load_async(msValidity, callback, context)

Preloads the sensor cache with a specified validity duration (asynchronous version).

sensor→nextSensor()

Continues the enumeration of sensors started using `yFirstSensor()`.

sensor→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

sensor→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

sensor→set_highestValue(newval)

Changes the recorded maximal value observed.

sensor→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

sensor→set_logicalName(newval)

3. Reference

Changes the logical name of the sensor.

sensor→**set_lowestValue**(**newval**)

Changes the recorded minimal value observed.

sensor→**set_reportFrequency**(**newval**)

Changes the timed value notification frequency for this function.

sensor→**set_resolution**(**newval**)

Changes the resolution of the measured physical values.

sensor→**set_userData**(**data**)

Stores a user context provided as argument in the userData attribute of the function.

sensor→**wait_async**(**callback**, **context**)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YSensor.FindSensor()**YSensor****yFindSensor()****YSensor.FindSensor()**

Retrieves a sensor for a given identifier.

js	function yFindSensor (func)
nodejs	function FindSensor (func)
php	function yFindSensor (\$func)
cpp	YSensor* yFindSensor (string func)
m	+(YSensor*) yFindSensor : (NSString*) func
pas	function yFindSensor (func : string): TYSensor
vb	function yFindSensor (ByVal func As String) As YSensor
cs	YSensor FindSensor (string func)
java	YSensor FindSensor (String func)
py	def FindSensor (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YSensor.isOnline()` to test if the sensor is indeed online at a given time. In case of ambiguity when looking for a sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the sensor

Returns :

a YSensor object allowing you to drive the sensor.

YSensor.FirstSensor()**YSensor****yFirstSensor()****YSensor.FirstSensor()**

Starts the enumeration of sensors currently accessible.

js	function yFirstSensor ()
nodejs	function FirstSensor ()
php	function yFirstSensor ()
cpp	YSensor* yFirstSensor ()
m	YSensor* yFirstSensor ()
pas	function yFirstSensor (): TYSensor
vb	function yFirstSensor () As YSensor
cs	YSensor FirstSensor ()
java	YSensor FirstSensor ()
py	def FirstSensor ()

Use the method `YSensor.nextSensor()` to iterate on next sensors.

Returns :

a pointer to a `YSensor` object, corresponding to the first sensor currently online, or a `null` pointer if there are none.

sensor→calibrateFromPoints()**YSensor****sensor.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

js	function calibrateFromPoints (rawValues , refValues)
nodejs	function calibrateFromPoints (rawValues , refValues)
php	function calibrateFromPoints (\$rawValues , \$refValues)
cpp	int calibrateFromPoints (vector<double> rawValues , vector<double> refValues)
m	-(int) calibrateFromPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues
pas	function calibrateFromPoints (rawValues : TDoubleArray, refValues : TDoubleArray): LongInt
vb	procedure calibrateFromPoints ()
cs	int calibrateFromPoints (List<double> rawValues , List<double> refValues)
java	int calibrateFromPoints (ArrayList<Double> rawValues , ArrayList<Double> refValues)
py	def calibrateFromPoints (rawValues , refValues)
cmd	YSensor target calibrateFromPoints rawValues refValues

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→**describe()****sensor.describe()****YSensor**

Returns a short text that describes unambiguously the instance of the sensor in the form
 TYPE (NAME) =SERIAL.FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the sensor (ex: Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

sensor→**get_advertisedValue()****YSensor****sensor**→**advertisedValue()****sensor.get_advertisedValue()**

Returns the current value of the sensor (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YSensor target get_advertisedValue

Returns :

a string corresponding to the current value of the sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

sensor→**get_currentRawValue()****YSensor****sensor**→**currentRawValue()****sensor.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue ()
nodejs	function get_currentRawValue ()
php	function get_currentRawValue ()
cpp	double get_currentRawValue ()
m	-(double) currentRawValue
pas	function get_currentRawValue (): double
vb	function get_currentRawValue () As Double
cs	double get_currentRawValue ()
java	double get_currentRawValue ()
py	def get_currentRawValue ()
cmd	YSensor target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

sensor→**get_currentValue()****YSensor****sensor**→**currentValue()****sensor.get_currentValue()**

Returns the current value of the measure.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YSensor target get_currentValue

Returns :

a floating point number corresponding to the current value of the measure

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

sensor→**get_errorMessage()****YSensor****sensor**→**errorMessage()****sensor.errorMessage()**

Returns the error message of the latest error with the sensor.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage() : string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the sensor object

sensor→**get_errorType()****YSensor****sensor**→**errorType()****sensor.get_errorType()**

Returns the numerical error code of the latest error with the sensor.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the sensor object

sensor→**get_friendlyName()****YSensor****sensor**→**friendlyName()****sensor.get_friendlyName()**

Returns a global identifier of the sensor in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the sensor (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the sensor using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

sensor→**get_functionDescriptor()****YSensor****sensor**→**functionDescriptor()****sensor.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

sensor→**get_functionId()****YSensor****sensor**→**functionId()****sensor.get_functionId()**

Returns the hardware identifier of the sensor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

sensor→**get_hardwareId()****YSensor****sensor**→**hardwareId()****sensor.get_hardwareId()**

Returns the unique hardware identifier of the sensor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the sensor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the sensor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

sensor→**get_highestValue()****YSensor****sensor**→**highestValue()****sensor.get_highestValue()**

Returns the maximal value observed for the measure since the device was started.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YSensor target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the measure since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

sensor→**get_logFrequency()****YSensor****sensor**→**logFrequency()****sensor.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YSensor target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

sensor→**get_logicalName()****YSensor****sensor**→**logicalName()**`sensor.get_logicalName()`

Returns the logical name of the sensor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YSensor target get_logicalName

Returns :

a string corresponding to the logical name of the sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

sensor→**get_lowestValue()****YSensor****sensor**→**lowestValue()****sensor.get_lowestValue()**

Returns the minimal value observed for the measure since the device was started.

js	function get_lowestValue()
nodejs	function get_lowestValue()
php	function get_lowestValue()
cpp	double get_lowestValue()
m	-(double) lowestValue
pas	function get_lowestValue() : double
vb	function get_lowestValue() As Double
cs	double get_lowestValue()
java	double get_lowestValue()
py	def get_lowestValue()
cmd	YSensor target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the measure since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

sensor→**get_module()****YSensor****sensor**→**module()**`sensor.get_module()`

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

sensor→**get_module_async()****YSensor****sensor**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

sensor→**get_recordedData()****YSensor****sensor**→**recordedData()****sensor.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
c++	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YSensor target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

sensor→get_reportFrequency()**YSensor****sensor→reportFrequency()****sensor.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YSensor target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

sensor→**get_resolution()****YSensor****sensor**→**resolution()****sensor.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YSensor target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

sensor→**get_unit()****YSensor****sensor**→**unit()****sensor.get_unit()**

Returns the measuring unit for the measure.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YSensor target get_unit

Returns :

a string corresponding to the measuring unit for the measure

On failure, throws an exception or returns Y_UNIT_INVALID.

sensor→**get_userData()****YSensor****sensor**→**userData()****sensor.get_userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

sensor→**isOnline()****sensor.isOnline()****YSensor**

Checks if the sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the sensor.

Returns :

`true` if the sensor can be reached, and `false` otherwise

sensor→**isOnline_async()****YSensor**

Checks if the sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

sensor→**load()****sensor.load()****YSensor**

Preloads the sensor cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

sensor→loadCalibrationPoints()**YSensor****sensor.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php function loadCalibrationPoints( &$rawValues, &$refValues)
cpp int loadCalibrationPoints( vector<double>& rawValues,
                             vector<double>& refValues)

m -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
   : (NSMutableArray*) refValues

pas function loadCalibrationPoints( var rawValues: TDoubleArray,
                                   var refValues: TDoubleArray): LongInt

vb procedure loadCalibrationPoints( )
cs int loadCalibrationPoints( List<double> rawValues,
                             List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                               ArrayList<Double> refValues)

py def loadCalibrationPoints( rawValues, refValues)
cmd YSensor target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→load_async()**YSensor**

Preloads the sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

sensor→**nextSensor()****sensor.nextSensor()****YSensor**

Continues the enumeration of sensors started using `yFirstSensor()`.

js	function nextSensor ()
nodejs	function nextSensor ()
php	function nextSensor ()
cpp	YSensor * nextSensor ()
m	-(YSensor*) nextSensor
pas	function nextSensor (): TYSensor
vb	function nextSensor () As YSensor
cs	YSensor nextSensor ()
java	YSensor nextSensor ()
py	def nextSensor ()

Returns :

a pointer to a `YSensor` object, corresponding to a sensor currently online, or a `null` pointer if there are no more sensors to enumerate.

sensor→registerTimedReportCallback()**YSensor****sensor.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YSensorTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YSensorTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYSensorTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

sensor→registerValueCallback()**YSensor****sensor.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YSensorValueCallback callback)
m	-(int) registerValueCallback : (YSensorValueCallback) callback
pas	function registerValueCallback (callback : TYSensorValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

sensor→**set_highestValue()****YSensor****sensor**→**setHighestValue()****sensor.set_highestValue()**

Changes the recorded maximal value observed.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YSensor target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→**set_logFrequency()****YSensor****sensor**→**setLogFrequency()****sensor.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YSensor target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→**set_logicalName()****YSensor****sensor**→**setLogicalName()****sensor.set_logicalName()**

Changes the logical name of the sensor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YSensor target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the sensor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

sensor→**set_lowestValue()****YSensor****sensor**→**setLowestValue()****sensor.set_lowestValue()**

Changes the recorded minimal value observed.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YSensor target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→set_reportFrequency()**YSensor****sensor→setReportFrequency()****sensor.set_reportFrequency()**

Changes the timed value notification frequency for this function.

js	function set_reportFrequency (newval)
nodejs	function set_reportFrequency (newval)
php	function set_reportFrequency (\$newval)
cpp	int set_reportFrequency (const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency (newval : string): integer
vb	function set_reportFrequency (ByVal newval As String) As Integer
cs	int set_reportFrequency (string newval)
java	int set_reportFrequency (String newval)
py	def set_reportFrequency (newval)
cmd	YSensor target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→**set_resolution()****YSensor****sensor**→**setResolution()****sensor.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YSensor target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→**set_userdata()****YSensor****sensor**→**setUserData()****sensor.set_userdata ()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
c++	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

sensor→**wait_async()****YSensor**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.37. Servo function interface

Yoctopuce application programming interface allows you not only to move a servo to a given position, but also to specify the time interval in which the move should be performed. This makes it possible to synchronize two servos involved in a same move.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_servo.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YServo = yoctolib.YServo;
php	require_once('yocto_servo.php');
c++	#include "yocto_servo.h"
m	#import "yocto_servo.h"
pas	uses yocto_servo;
vb	yocto_servo.vb
cs	yocto_servo.cs
java	import com.yoctopuce.YoctoAPI.YServo;
py	from yocto_servo import *

Global functions

yFindServo(func)

Retrieves a servo for a given identifier.

yFirstServo()

Starts the enumeration of servos currently accessible.

YServo methods

servo→describe()

Returns a short text that describes unambiguously the instance of the servo in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

servo→get_advertisedValue()

Returns the current value of the servo (no more than 6 characters).

servo→get_enabled()

Returns the state of the servos.

servo→get_enabledAtPowerOn()

Returns the servo signal generator state at power up.

servo→get_errorMessage()

Returns the error message of the latest error with the servo.

servo→get_errorType()

Returns the numerical error code of the latest error with the servo.

servo→get_friendlyName()

Returns a global identifier of the servo in the format `MODULE_NAME . FUNCTION_NAME`.

servo→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

servo→get_functionId()

Returns the hardware identifier of the servo, without reference to the module.

servo→get_hardwareId()

Returns the unique hardware identifier of the servo in the form `SERIAL . FUNCTIONID`.

servo→get_logicalName()

Returns the logical name of the servo.

3. Reference

servo→get_module()

Gets the YModule object for the device on which the function is located.

servo→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

servo→get_neutral()

Returns the duration in microseconds of a neutral pulse for the servo.

servo→get_position()

Returns the current servo position.

servo→get_positionAtPowerOn()

Returns the servo position at device power up.

servo→get_range()

Returns the current range of use of the servo.

servo→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

servo→isOnline()

Checks if the servo is currently reachable, without raising any error.

servo→isOnline_async(callback, context)

Checks if the servo is currently reachable, without raising any error (asynchronous version).

servo→load(msValidity)

Preloads the servo cache with a specified validity duration.

servo→load_async(msValidity, callback, context)

Preloads the servo cache with a specified validity duration (asynchronous version).

servo→move(target, ms_duration)

Performs a smooth move at constant speed toward a given position.

servo→nextServo()

Continues the enumeration of servos started using yFirstServo().

servo→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

servo→set_enabled(newval)

Stops or starts the servo.

servo→set_enabledAtPowerOn(newval)

Configure the servo signal generator state at power up.

servo→set_logicalName(newval)

Changes the logical name of the servo.

servo→set_neutral(newval)

Changes the duration of the pulse corresponding to the neutral position of the servo.

servo→set_position(newval)

Changes immediately the servo driving position.

servo→set_positionAtPowerOn(newval)

Configure the servo position at device power up.

servo→set_range(newval)

Changes the range of use of the servo, specified in per cents.

servo→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

servo→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YServo.FindServo()**YServo****yFindServo()****YServo.FindServo()**

Retrieves a servo for a given identifier.

js	function yFindServo (func)
nodejs	function FindServo (func)
php	function yFindServo (\$func)
cpp	YServo* yFindServo (const string& func)
m	YServo* yFindServo (NSString* func)
pas	function yFindServo (func : string): TYServo
vb	function yFindServo (ByVal func As String) As YServo
cs	YServo FindServo (string func)
java	YServo FindServo (String func)
py	def FindServo (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the servo is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YServo.isOnline()` to test if the servo is indeed online at a given time. In case of ambiguity when looking for a servo by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the servo

Returns :

a YServo object allowing you to drive the servo.

YServo.FirstServo()**YServo****yFirstServo()****YServo.FirstServo()**

Starts the enumeration of servos currently accessible.

js	function yFirstServo ()
nodejs	function FirstServo ()
php	function yFirstServo ()
cpp	YServo* yFirstServo ()
m	YServo* yFirstServo ()
pas	function yFirstServo (): TYServo
vb	function yFirstServo () As YServo
cs	YServo FirstServo ()
java	YServo FirstServo ()
py	def FirstServo ()

Use the method `YServo.nextServo()` to iterate on next servos.

Returns :

a pointer to a YServo object, corresponding to the first servo currently online, or a null pointer if there are none.

servo→describe()`servo.describe()`**YServo**

Returns a short text that describes unambiguously the instance of the servo in the form
`TYPE (NAME) = SERIAL . FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the servo (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

servo→get_advertisedValue()**YServo****servo→advertisedValue()****servo.get_advertisedValue()**

Returns the current value of the servo (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YServo target get_advertisedValue

Returns :

a string corresponding to the current value of the servo (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

servo→**get_enabled()****servo**→**enabled()****servo.get_enabled()**

Returns the state of the servos.

js	function get_enabled ()
nodejs	function get_enabled ()
php	function get_enabled ()
cpp	Y_ENABLED_enum get_enabled ()
m	-(Y_ENABLED_enum) enabled
pas	function get_enabled (): Integer
vb	function get_enabled () As Integer
cs	int get_enabled ()
java	int get_enabled ()
py	def get_enabled ()
cmd	YServo target get_enabled

Returns :

either Y_ENABLED_FALSE or Y_ENABLED_TRUE, according to the state of the servos

On failure, throws an exception or returns Y_ENABLED_INVALID.

servo→get_enabledAtPowerOn()**YServo****servo→enabledAtPowerOn()****servo.get_enabledAtPowerOn()**

Returns the servo signal generator state at power up.

js	function get_enabledAtPowerOn ()
nodejs	function get_enabledAtPowerOn ()
php	function get_enabledAtPowerOn ()
cpp	Y_ENABLEDATPOWERON_enum get_enabledAtPowerOn ()
m	-(Y_ENABLEDATPOWERON_enum) enabledAtPowerOn
pas	function get_enabledAtPowerOn (): Integer
vb	function get_enabledAtPowerOn () As Integer
cs	int get_enabledAtPowerOn ()
java	int get_enabledAtPowerOn ()
py	def get_enabledAtPowerOn ()
cmd	YServo target get_enabledAtPowerOn

Returns :

either Y_ENABLEDATPOWERON_FALSE or Y_ENABLEDATPOWERON_TRUE, according to the servo signal generator state at power up

On failure, throws an exception or returns Y_ENABLEDATPOWERON_INVALID.

servo→**get_errorMessage()****YServo****servo**→**errorMessage()****servo.errorMessage()**

Returns the error message of the latest error with the servo.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the servo object

servo→**get_errorType()****YServo****servo**→**errorType()****servo.errorType()**

Returns the numerical error code of the latest error with the servo.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the servo object

servo→**get_friendlyName()****YServo****servo**→**friendlyName()****servo.get_friendlyName()**

Returns a global identifier of the servo in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the servo if they are defined, otherwise the serial number of the module and the hardware identifier of the servo (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the servo using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

servo→get_functionDescriptor()**YServo****servo→functionDescriptor()****servo.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

servo→**get_functionId()****YServo****servo**→**functionId()****servo.get_functionId()**

Returns the hardware identifier of the servo, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the servo (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

servo→**get_hardwareId()****YServo****servo**→**hardwareId()****servo.get_hardwareId()**

Returns the unique hardware identifier of the servo in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the servo. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the servo (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

servo→**get_logicalName()****YServo****servo**→**logicalName()****servo.get_logicalName()**

Returns the logical name of the servo.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YServo target get_logicalName

Returns :

a string corresponding to the logical name of the servo. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

servo→**get_module()****YServo****servo**→**module()****servo.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

servo→get_module_async()**YServo****servo→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

servo→**get_neutral()****YServo****servo**→**neutral()****servo.get_neutral()**

Returns the duration in microseconds of a neutral pulse for the servo.

js	function get_neutral ()
nodejs	function get_neutral ()
php	function get_neutral ()
cpp	int get_neutral ()
m	-(int) neutral
pas	function get_neutral (): LongInt
vb	function get_neutral () As Integer
cs	int get_neutral ()
java	int get_neutral ()
py	def get_neutral ()
cmd	YServo target get_neutral

Returns :

an integer corresponding to the duration in microseconds of a neutral pulse for the servo

On failure, throws an exception or returns Y_NEUTRAL_INVALID.

servo→**get_position()****YServo****servo**→**position()****servo.get_position()**

Returns the current servo position.

js	function get_position ()
nodejs	function get_position ()
php	function get_position ()
cpp	int get_position ()
m	-(int) position
pas	function get_position (): LongInt
vb	function get_position () As Integer
cs	int get_position ()
java	int get_position ()
py	def get_position ()
cmd	YServo target get_position

Returns :

an integer corresponding to the current servo position

On failure, throws an exception or returns Y_POSITION_INVALID.

servo→get_positionAtPowerOn()**YServo****servo→positionAtPowerOn()****servo.get_positionAtPowerOn()**

Returns the servo position at device power up.

js	function get_positionAtPowerOn ()
nodejs	function get_positionAtPowerOn ()
php	function get_positionAtPowerOn ()
cpp	int get_positionAtPowerOn ()
m	-(int) positionAtPowerOn
pas	function get_positionAtPowerOn (): LongInt
vb	function get_positionAtPowerOn () As Integer
cs	int get_positionAtPowerOn ()
java	int get_positionAtPowerOn ()
py	def get_positionAtPowerOn ()
cmd	YServo target get_positionAtPowerOn

Returns :

an integer corresponding to the servo position at device power up

On failure, throws an exception or returns Y_POSITIONATPOWERON_INVALID.

servo→**get_range()****servo**→**range()****servo.get_range()**

Returns the current range of use of the servo.

js	function get_range ()
nodejs	function get_range ()
php	function get_range ()
cpp	int get_range ()
m	-(int) range
pas	function get_range (): LongInt
vb	function get_range () As Integer
cs	int get_range ()
java	int get_range ()
py	def get_range ()
cmd	YServo target get_range

Returns :

an integer corresponding to the current range of use of the servo

On failure, throws an exception or returns Y_RANGE_INVALID.

servo→**get_userData()****YServo****servo**→**userData()****servo.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

servo→**isOnline()****servo.isOnline()****YServo**

Checks if the servo is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the servo in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the servo.

Returns :

`true` if the servo can be reached, and `false` otherwise

servo→isOnline_async()**YServo**

Checks if the servo is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the servo in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

servo→**load()****servo.load()****YServo**

Preloads the servo cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

servo→load_async()**YServo**

Preloads the servo cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

servo→**move()****servo.move()****YServo**

Performs a smooth move at constant speed toward a given position.

js	function move (target , ms_duration)
nodejs	function move (target , ms_duration)
php	function move (\$target , \$ms_duration)
cpp	int move (int target , int ms_duration)
m	-(int) move : (int) target : (int) ms_duration
pas	function move (target : LongInt, ms_duration : LongInt): integer
vb	function move (ByVal target As Integer, ByVal ms_duration As Integer) As Integer
cs	int move (int target , int ms_duration)
java	int move (int target , int ms_duration)
py	def move (target , ms_duration)
cmd	YServo target move target ms_duration

Parameters :

target new position at the end of the move
ms_duration total duration of the move, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→nextServo()`servo.nextServo()`**YServo**

Continues the enumeration of servos started using `yFirstServo()`.

js	function nextServo ()
nodejs	function nextServo ()
php	function nextServo ()
cpp	YServo * nextServo ()
m	-(YServo*) nextServo
pas	function nextServo (): TYServo
vb	function nextServo () As YServo
cs	YServo nextServo ()
java	YServo nextServo ()
py	def nextServo ()

Returns :

a pointer to a `YServo` object, corresponding to a servo currently online, or a `null` pointer if there are no more servos to enumerate.

servo→registerValueCallback()**YServo****servo.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YServoValueCallback callback)
m	-(int) registerValueCallback : (YServoValueCallback) callback
pas	function registerValueCallback (callback : TYServoValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

servo→**set_enabled()****YServo****servo**→**setEnabled()****servo.setEnabled()**

Stops or starts the servo.

js	function set_enabled (newval)
nodejs	function set_enabled (newval)
php	function set_enabled (\$newval)
cpp	int set_enabled (Y_ENABLED_enum newval)
m	-(int) setEnabled : (Y_ENABLED_enum) newval
pas	function set_enabled (newval : Integer): integer
vb	function set_enabled (ByVal newval As Integer) As Integer
cs	int set_enabled (int newval)
java	int set_enabled (int newval)
py	def set_enabled (newval)
cmd	YServo target set_enabled newval

Parameters :**newval** either Y_ENABLED_FALSE or Y_ENABLED_TRUE**Returns :**

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→**set_enabledAtPowerOn()****YServo****servo**→**setEnabledAtPowerOn()****servo.set_enabledAtPowerOn()**

Configure the servo signal generator state at power up.

js	function set_enabledAtPowerOn (newval)
nodejs	function set_enabledAtPowerOn (newval)
php	function set_enabledAtPowerOn (\$newval)
cpp	int set_enabledAtPowerOn (Y_ENABLEDATPOWERON_enum newval)
m	-(int) setEnabledAtPowerOn : (Y_ENABLEDATPOWERON_enum) newval
pas	function set_enabledAtPowerOn (newval : Integer): integer
vb	function set_enabledAtPowerOn (ByVal newval As Integer) As Integer
cs	int set_enabledAtPowerOn (int newval)
java	int set_enabledAtPowerOn (int newval)
py	def set_enabledAtPowerOn (newval)
cmd	YServo target set_enabledAtPowerOn newval

Remember to call the matching module `saveToFlash()` method, otherwise this call will have no effect.

Parameters :

newval either Y_ENABLEDATPOWERON_FALSE or Y_ENABLEDATPOWERON_TRUE

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→set_logicalName()**YServo****servo→setLogicalName()****servo.set_logicalName()**

Changes the logical name of the servo.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YServo target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the servo.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

servo→**set_neutral()****servo**→**setNeutral()****servo.set_neutral ()**

Changes the duration of the pulse corresponding to the neutral position of the servo.

js	function set_neutral (newval)
nodejs	function set_neutral (newval)
php	function set_neutral (\$newval)
cpp	int set_neutral (int newval)
m	-(int) setNeutral : (int) newval
pas	function set_neutral (newval : LongInt): integer
vb	function set_neutral (ByVal newval As Integer) As Integer
cs	int set_neutral (int newval)
java	int set_neutral (int newval)
py	def set_neutral (newval)
cmd	YServo target set_neutral newval

The duration is specified in microseconds, and the standard value is 1500 [us]. This setting makes it possible to shift the range of use of the servo. Be aware that using a range higher than what is supported by the servo is likely to damage the servo.

Parameters :

newval an integer corresponding to the duration of the pulse corresponding to the neutral position of the servo

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→set_position()**YServo****servo→setPosition()**`servo.set_position()`

Changes immediately the servo driving position.

js	function set_position (newval)
nodejs	function set_position (newval)
php	function set_position (\$newval)
cpp	int set_position (int newval)
m	-(int) setPosition : (int) newval
pas	function set_position (newval : LongInt): integer
vb	function set_position (ByVal newval As Integer) As Integer
cs	int set_position (int newval)
java	int set_position (int newval)
py	def set_position (newval)
cmd	YServo target set_position newval

Parameters :

newval an integer corresponding to immediately the servo driving position

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→**set_positionAtPowerOn()****YServo****servo**→**setPositionAtPowerOn()****servo.set_positionAtPowerOn()**

Configure the servo position at device power up.

js	function set_positionAtPowerOn (newval)
nodejs	function set_positionAtPowerOn (newval)
php	function set_positionAtPowerOn (\$newval)
cpp	int set_positionAtPowerOn (int newval)
m	-(int) setPositionAtPowerOn : (int) newval
pas	function set_positionAtPowerOn (newval : LongInt): integer
vb	function set_positionAtPowerOn (ByVal newval As Integer) As Integer
cs	int set_positionAtPowerOn (int newval)
java	int set_positionAtPowerOn (int newval)
py	def set_positionAtPowerOn (newval)
cmd	YServo target set_positionAtPowerOn newval

Remember to call the matching module `saveToFlash()` method, otherwise this call will have no effect.

Parameters :

newval an integer

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→set_range()**YServo****servo→setRange()**`servo.set_range()`

Changes the range of use of the servo, specified in per cents.

js	function set_range (newval)
nodejs	function set_range (newval)
php	function set_range (\$newval)
cpp	int set_range (int newval)
m	-(int) setRange : (int) newval
pas	function set_range (newval : LongInt): integer
vb	function set_range (ByVal newval As Integer) As Integer
cs	int set_range (int newval)
java	int set_range (int newval)
py	def set_range (newval)
cmd	YServo target set_range newval

A range of 100% corresponds to a standard control signal, that varies from 1 [ms] to 2 [ms], When using a servo that supports a double range, from 0.5 [ms] to 2.5 [ms], you can select a range of 200%. Be aware that using a range higher than what is supported by the servo is likely to damage the servo.

Parameters :

newval an integer corresponding to the range of use of the servo, specified in per cents

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→**set_userData()****YServo****servo**→**setUserData()****servo.set_userData()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userData (data)
nodejs	function set_userData (data)
php	function set_userData (\$data)
cpp	void set_userData (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userData (data : Tobject)
vb	procedure set_userData (ByVal data As Object)
cs	void set_userData (object data)
java	void set_userData (Object data)
py	def set_userData (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

servo→wait_async()**YServo**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.38. Temperature function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_temperature.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YTemperature = yoctolib.YTemperature;
php	require_once('yocto_temperature.php');
c++	#include "yocto_temperature.h"
m	#import "yocto_temperature.h"
pas	uses yocto_temperature;
vb	yocto_temperature.vb
cs	yocto_temperature.cs
java	import com.yoctopuce.YoctoAPI.YTemperature;
py	from yocto_temperature import *

Global functions

yFindTemperature(func)

Retrieves a temperature sensor for a given identifier.

yFirstTemperature()

Starts the enumeration of temperature sensors currently accessible.

YTemperature methods

temperature→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

temperature→describe()

Returns a short text that describes unambiguously the instance of the temperature sensor in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

temperature→get_advertisedValue()

Returns the current value of the temperature sensor (no more than 6 characters).

temperature→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

temperature→get_currentValue()

Returns the current value of the temperature.

temperature→get_errorMessage()

Returns the error message of the latest error with the temperature sensor.

temperature→get_errorType()

Returns the numerical error code of the latest error with the temperature sensor.

temperature→get_friendlyName()

Returns a global identifier of the temperature sensor in the format `MODULE_NAME . FUNCTION_NAME`.

temperature→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

temperature→get_functionId()

Returns the hardware identifier of the temperature sensor, without reference to the module.

temperature→get_hardwareId()

Returns the unique hardware identifier of the temperature sensor in the form `SERIAL . FUNCTIONID`.

temperature→get_highestValue()

Returns the maximal value observed for the temperature since the device was started.

temperature→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

temperature→get_logicalName()

Returns the logical name of the temperature sensor.

temperature→get_lowestValue()

Returns the minimal value observed for the temperature since the device was started.

temperature→get_module()

Gets the `YModule` object for the device on which the function is located.

temperature→get_module_async(callback, context)

Gets the `YModule` object for the device on which the function is located (asynchronous version).

temperature→get_recordedData(startTime, endTime)

Retrieves a `DataSet` object holding historical data for this sensor, for a specified time interval.

temperature→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

temperature→get_resolution()

Returns the resolution of the measured values.

temperature→get_sensorType()

Returns the temperature sensor type.

temperature→get_unit()

Returns the measuring unit for the temperature.

temperature→get_userData()

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

temperature→isOnline()

Checks if the temperature sensor is currently reachable, without raising any error.

temperature→isOnline_async(callback, context)

Checks if the temperature sensor is currently reachable, without raising any error (asynchronous version).

temperature→load(msValidity)

Preloads the temperature sensor cache with a specified validity duration.

temperature→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

temperature→load_async(msValidity, callback, context)

Preloads the temperature sensor cache with a specified validity duration (asynchronous version).

temperature→nextTemperature()

Continues the enumeration of temperature sensors started using `yFirstTemperature()`.

temperature→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

temperature→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

temperature→set_highestValue(newval)

Changes the recorded maximal value observed.

temperature→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

3. Reference

temperature→set_logicalName(newval)

Changes the logical name of the temperature sensor.

temperature→set_lowestValue(newval)

Changes the recorded minimal value observed.

temperature→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

temperature→set_resolution(newval)

Changes the resolution of the measured physical values.

temperature→set_sensorType(newval)

Modify the temperature sensor type.

temperature→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

temperature→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YTemperature.FindTemperature()**YTemperature****yFindTemperature()****YTemperature.FindTemperature()**

Retrieves a temperature sensor for a given identifier.

js	function yFindTemperature (func)
nodejs	function FindTemperature (func)
php	function yFindTemperature (\$func)
cpp	YTemperature* yFindTemperature (const string& func)
m	YTemperature* yFindTemperature (NSString* func)
pas	function yFindTemperature (func : string): TYTemperature
vb	function yFindTemperature (ByVal func As String) As YTemperature
cs	YTemperature FindTemperature (string func)
java	YTemperature FindTemperature (String func)
py	def FindTemperature (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the temperature sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YTemperature.isOnline()` to test if the temperature sensor is indeed online at a given time. In case of ambiguity when looking for a temperature sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the temperature sensor

Returns :

a `YTemperature` object allowing you to drive the temperature sensor.

YTemperature.FirstTemperature()**YTemperature****yFirstTemperature()****YTemperature.FirstTemperature()**

Starts the enumeration of temperature sensors currently accessible.

js	function yFirstTemperature ()
nodejs	function FirstTemperature ()
php	function yFirstTemperature ()
cpp	YTemperature* yFirstTemperature ()
m	YTemperature* yFirstTemperature ()
pas	function yFirstTemperature (): TYTemperature
vb	function yFirstTemperature () As YTemperature
cs	YTemperature FirstTemperature ()
java	YTemperature FirstTemperature ()
py	def FirstTemperature ()

Use the method `YTemperature.nextTemperature()` to iterate on next temperature sensors.

Returns :

a pointer to a `YTemperature` object, corresponding to the first temperature sensor currently online, or a null pointer if there are none.

temperature→calibrateFromPoints()**YTemperature****temperature.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js      function calibrateFromPoints( rawValues, refValues)
node.js function calibrateFromPoints( rawValues, refValues)
php     function calibrateFromPoints( $rawValues, $refValues)
cpp     int calibrateFromPoints( vector<double> rawValues,
                                vector<double> refValues)

m       -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                                : (NSMutableArray*) refValues

pas     function calibrateFromPoints( rawValues: TDoubleArray,
                                refValues: TDoubleArray): LongInt

vb      procedure calibrateFromPoints( )
cs      int calibrateFromPoints( List<double> rawValues,
                                List<double> refValues)

java    int calibrateFromPoints( ArrayList<Double> rawValues,
                                ArrayList<Double> refValues)

py      def calibrateFromPoints( rawValues, refValues)
cmd     YTemperature target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→describe()`temperature.describe()`**YTemperature**

Returns a short text that describes unambiguously the instance of the temperature sensor in the form `TYPE (NAME) =SERIAL.FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the temperature sensor (ex:
`Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

temperature→**get_advertisedValue()****YTemperature****temperature**→**advertisedValue()****temperature.get_advertisedValue()**

Returns the current value of the temperature sensor (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YTemperature target get_advertisedValue

Returns :

a string corresponding to the current value of the temperature sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

temperature→**get_currentRawValue()****YTemperature****temperature**→**currentRawValue()****temperature.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue()
nodejs	function get_currentRawValue()
php	function get_currentRawValue()
cpp	double get_currentRawValue()
m	-(double) currentRawValue
pas	function get_currentRawValue() : double
vb	function get_currentRawValue() As Double
cs	double get_currentRawValue()
java	double get_currentRawValue()
py	def get_currentRawValue()
cmd	YTemperature target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

temperature→**get_currentValue()****YTemperature****temperature**→**currentValue()****temperature.get_currentValue()**

Returns the current value of the temperature.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YTemperature target get_currentValue

Returns :

a floating point number corresponding to the current value of the temperature

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

temperature→**get_errorMessage()****YTemperature****temperature**→**errorMessage()****temperature.errorMessage()**

Returns the error message of the latest error with the temperature sensor.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the temperature sensor object

temperature→**get_errorType()****YTemperature****temperature**→**errorType()****temperature.get_errorType()**

Returns the numerical error code of the latest error with the temperature sensor.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the temperature sensor object

temperature→get_friendlyName()
temperature→friendlyName()
temperature.get_friendlyName()

YTemperature

Returns a global identifier of the temperature sensor in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the temperature sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the temperature sensor (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the temperature sensor using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

temperature→**get_functionDescriptor()****YTemperature****temperature**→**functionDescriptor()****temperature.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

temperature→**get_functionId()****YTemperature****temperature**→**functionId()****temperature.get_functionId()**

Returns the hardware identifier of the temperature sensor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the temperature sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

temperature→**get_hardwareId()****YTemperature****temperature**→**hardwareId()****temperature.get_hardwareId()**

Returns the unique hardware identifier of the temperature sensor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the temperature sensor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the temperature sensor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

temperature→**get_highestValue()****YTemperature****temperature**→**highestValue()****temperature.get_highestValue()**

Returns the maximal value observed for the temperature since the device was started.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YTemperature target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the temperature since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

temperature→**get_logFrequency()****YTemperature****temperature**→**logFrequency()****temperature.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YTemperature target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

temperature→**get_logicalName()****YTemperature****temperature**→**logicalName()****temperature.get_logicalName()**

Returns the logical name of the temperature sensor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YTemperature target get_logicalName

Returns :

a string corresponding to the logical name of the temperature sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

temperature→**get_lowestValue()****YTemperature****temperature**→**lowestValue()****temperature.get_lowestValue()**

Returns the minimal value observed for the temperature since the device was started.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YTemperature target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the temperature since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

temperature→get_module()**YTemperature****temperature→module()****temperature.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

temperature→**get_module_async()****YTemperature****temperature**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

temperature→**get_recordedData()****YTemperature****temperature**→**recordedData()****temperature.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
c++	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YTemperature target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

temperature→**get_reportFrequency()****YTemperature****temperature**→**reportFrequency()****temperature.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency()
nodejs	function get_reportFrequency()
php	function get_reportFrequency()
cpp	string get_reportFrequency()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency() : string
vb	function get_reportFrequency() As String
cs	string get_reportFrequency()
java	String get_reportFrequency()
py	def get_reportFrequency()
cmd	YTemperature target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

temperature→**get_resolution()****YTemperature****temperature**→**resolution()****temperature.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YTemperature target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

temperature→**get_sensorType()****YTemperature****temperature**→**sensorType()****temperature.get_sensorType()**

Returns the temperature sensor type.

js	function get_sensorType ()
nodejs	function get_sensorType ()
php	function get_sensorType ()
cpp	Y_SENSORTYPE_enum get_sensorType ()
m	-(Y_SENSORTYPE_enum) sensorType
pas	function get_sensorType (): Integer
vb	function get_sensorType () As Integer
cs	int get_sensorType ()
java	int get_sensorType ()
py	def get_sensorType ()
cmd	YTemperature target get_sensorType

Returns :

a value among Y_SENSORTYPE_DIGITAL, Y_SENSORTYPE_TYPE_K, Y_SENSORTYPE_TYPE_E, Y_SENSORTYPE_TYPE_J, Y_SENSORTYPE_TYPE_N, Y_SENSORTYPE_TYPE_R, Y_SENSORTYPE_TYPE_S, Y_SENSORTYPE_TYPE_T, Y_SENSORTYPE_PT100_4WIRES, Y_SENSORTYPE_PT100_3WIRES and Y_SENSORTYPE_PT100_2WIRES corresponding to the temperature sensor type

On failure, throws an exception or returns Y_SENSORTYPE_INVALID.

temperature→**get_unit()****YTemperature****temperature**→**unit()**`temperature.get_unit()`

Returns the measuring unit for the temperature.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YTemperature target get_unit

Returns :

a string corresponding to the measuring unit for the temperature

On failure, throws an exception or returns Y_UNIT_INVALID.

temperature→**get_userData()****YTemperature****temperature**→**userData()****temperature.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

temperature→**isOnline()****temperature.isOnline()****YTemperature**

Checks if the temperature sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the temperature sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the temperature sensor.

Returns :

`true` if the temperature sensor can be reached, and `false` otherwise

temperature→isOnline_async()**YTemperature**

Checks if the temperature sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
```

```
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the temperature sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

temperature→**load()**`temperature.load()`**YTemperature**

Preloads the temperature sensor cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

temperature→loadCalibrationPoints()**YTemperature****temperature.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js      function loadCalibrationPoints( rawValues, refValues)
nodejs  function loadCalibrationPoints( rawValues, refValues)
php     function loadCalibrationPoints( &$amp;rawValues, &$amp;refValues)
cpp     int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m       -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                                : (NSMutableArray*) refValues

pas     function loadCalibrationPoints( var rawValues: TDoubleArray,
                                var refValues: TDoubleArray): LongInt

vb      procedure loadCalibrationPoints( )

cs      int loadCalibrationPoints( List<double> rawValues,
                                List<double> refValues)

java    int loadCalibrationPoints( ArrayList<Double> rawValues,
                                ArrayList<Double> refValues)

py      def loadCalibrationPoints( rawValues, refValues)

cmd     YTemperature target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→load_async()**YTemperature**

Preloads the temperature sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

temperature→**nextTemperature()****YTemperature****temperature.nextTemperature()**

Continues the enumeration of temperature sensors started using `yFirstTemperature()`.

js	function nextTemperature()
nodejs	function nextTemperature()
php	function nextTemperature()
cpp	YTemperature * nextTemperature()
m	-(YTemperature*) nextTemperature
pas	function nextTemperature() : TYTemperature
vb	function nextTemperature() As YTemperature
cs	YTemperature nextTemperature()
java	YTemperature nextTemperature()
py	def nextTemperature()

Returns :

a pointer to a YTemperature object, corresponding to a temperature sensor currently online, or a null pointer if there are no more temperature sensors to enumerate.

temperature→registerTimedReportCallback()**YTemperature****temperature.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YTemperatureTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YTemperatureTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYTemperatureTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

temperature→registerValueCallback()**YTemperature****temperature.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YTemperatureValueCallback callback)
m	-(int) registerValueCallback : (YTemperatureValueCallback) callback
pas	function registerValueCallback (callback : TYTemperatureValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

temperature→**set_highestValue()****YTemperature****temperature**→**setHighestValue()****temperature.set_highestValue()**

Changes the recorded maximal value observed.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YTemperature target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→**set_logFrequency()****YTemperature****temperature**→**setLogFrequency()****temperature.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YTemperature target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→set_logicalName()**YTemperature****temperature→setLogicalName()****temperature.set_logicalName()**

Changes the logical name of the temperature sensor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YTemperature target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the temperature sensor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

temperature→**set_lowestValue()****YTemperature****temperature**→**setLowestValue()****temperature.set_lowestValue()**

Changes the recorded minimal value observed.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YTemperature target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→set_reportFrequency()**YTemperature****temperature→setReportFrequency()****temperature.set_reportFrequency()**

Changes the timed value notification frequency for this function.

<code>js</code>	<code>function set_reportFrequency(newval)</code>
<code>nodejs</code>	<code>function set_reportFrequency(newval)</code>
<code>php</code>	<code>function set_reportFrequency(\$newval)</code>
<code>cpp</code>	<code>int set_reportFrequency(const string& newval)</code>
<code>m</code>	<code>-(int) setReportFrequency : (NSString*) newval</code>
<code>pas</code>	<code>function set_reportFrequency(newval: string): integer</code>
<code>vb</code>	<code>function set_reportFrequency(ByVal newval As String) As Integer</code>
<code>cs</code>	<code>int set_reportFrequency(string newval)</code>
<code>java</code>	<code>int set_reportFrequency(String newval)</code>
<code>py</code>	<code>def set_reportFrequency(newval)</code>
<code>cmd</code>	<code>YTemperature target set_reportFrequency newval</code>

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→**set_resolution()****YTemperature****temperature**→**setResolution()****temperature.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YTemperature target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→set_sensorType()**YTemperature****temperature→setSensorType()****temperature.set_sensorType()**

Modify the temperature sensor type.

js	function set_sensorType (newval)
nodejs	function set_sensorType (newval)
php	function set_sensorType (\$newval)
cpp	int set_sensorType (Y_SENSORTYPE_enum newval)
m	-(int) setSensorType : (Y_SENSORTYPE_enum) newval
pas	function set_sensorType (newval : Integer): integer
vb	function set_sensorType (ByVal newval As Integer) As Integer
cs	int set_sensorType (int newval)
java	int set_sensorType (int newval)
py	def set_sensorType (newval)
cmd	YTemperature target set_sensorType newval

This function is used to to define the type of thermocouple (K,E...) used with the device. This will have no effect if module is using a digital sensor. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a value among Y_SENSORTYPE_DIGITAL, Y_SENSORTYPE_TYPE_K, Y_SENSORTYPE_TYPE_E, Y_SENSORTYPE_TYPE_J, Y_SENSORTYPE_TYPE_N, Y_SENSORTYPE_TYPE_R, Y_SENSORTYPE_TYPE_S, Y_SENSORTYPE_TYPE_T, Y_SENSORTYPE_PT100_4WIRES, Y_SENSORTYPE_PT100_3WIRES and Y_SENSORTYPE_PT100_2WIRES

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→**set_userdata()****YTemperature****temperature**→**setUserData()****temperature.set_userdata()**

Stores a user context provided as argument in the `userData` attribute of the function.

<code>js</code>	<code>function set_userdata(data)</code>
<code>nodejs</code>	<code>function set_userdata(data)</code>
<code>php</code>	<code>function set_userdata(\$data)</code>
<code>cpp</code>	<code>void set_userdata(void* data)</code>
<code>m</code>	<code>-(void) setUserData : (void*) data</code>
<code>pas</code>	<code>procedure set_userdata(data: Tobject)</code>
<code>vb</code>	<code>procedure set_userdata(ByVal data As Object)</code>
<code>cs</code>	<code>void set_userdata(object data)</code>
<code>java</code>	<code>void set_userdata(Object data)</code>
<code>py</code>	<code>def set_userdata(data)</code>

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

temperature→wait_async()**YTemperature**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.39. Tilt function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_tilt.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib'); var YTilt = yoctolib.YTilt;</code>
php	<code>require_once('yocto_tilt.php');</code>
c++	<code>#include "yocto_tilt.h"</code>
m	<code>#import "yocto_tilt.h"</code>
pas	<code>uses yocto_tilt;</code>
vb	<code>yocto_tilt.vb</code>
cs	<code>yocto_tilt.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YTilt;</code>
py	<code>from yocto_tilt import *</code>

Global functions

yFindTilt(func)

Retrieves a tilt sensor for a given identifier.

yFirstTilt()

Starts the enumeration of tilt sensors currently accessible.

YTilt methods

tilt→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

tilt→describe()

Returns a short text that describes unambiguously the instance of the tilt sensor in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

tilt→get_advertisedValue()

Returns the current value of the tilt sensor (no more than 6 characters).

tilt→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

tilt→get_currentValue()

Returns the current value of the inclination.

tilt→get_errorMessage()

Returns the error message of the latest error with the tilt sensor.

tilt→get_errorType()

Returns the numerical error code of the latest error with the tilt sensor.

tilt→get_friendlyName()

Returns a global identifier of the tilt sensor in the format `MODULE_NAME . FUNCTION_NAME`.

tilt→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

tilt→get_functionId()

Returns the hardware identifier of the tilt sensor, without reference to the module.

tilt→get_hardwareId()

Returns the unique hardware identifier of the tilt sensor in the form `SERIAL . FUNCTIONID`.

tilt→get_highestValue()

Returns the maximal value observed for the inclination since the device was started.

tilt→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

tilt→get_logicalName()

Returns the logical name of the tilt sensor.

tilt→get_lowestValue()

Returns the minimal value observed for the inclination since the device was started.

tilt→get_module()

Gets the YModule object for the device on which the function is located.

tilt→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

tilt→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

tilt→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

tilt→get_resolution()

Returns the resolution of the measured values.

tilt→get_unit()

Returns the measuring unit for the inclination.

tilt→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

tilt→isOnline()

Checks if the tilt sensor is currently reachable, without raising any error.

tilt→isOnline_async(callback, context)

Checks if the tilt sensor is currently reachable, without raising any error (asynchronous version).

tilt→load(msValidity)

Preloads the tilt sensor cache with a specified validity duration.

tilt→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

tilt→load_async(msValidity, callback, context)

Preloads the tilt sensor cache with a specified validity duration (asynchronous version).

tilt→nextTilt()

Continues the enumeration of tilt sensors started using yFirstTilt().

tilt→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

tilt→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

tilt→set_highestValue(newval)

Changes the recorded maximal value observed.

tilt→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

tilt→set_logicalName(newval)

Changes the logical name of the tilt sensor.

tilt→**set_lowestValue**(newval)

Changes the recorded minimal value observed.

tilt→**set_reportFrequency**(newval)

Changes the timed value notification frequency for this function.

tilt→**set_resolution**(newval)

Changes the resolution of the measured physical values.

tilt→**set_userData**(data)

Stores a user context provided as argument in the userData attribute of the function.

tilt→**wait_async**(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YTilt.FindTilt()

YTilt

yFindTilt()YTilt.FindTilt()

Retrieves a tilt sensor for a given identifier.

js	function yFindTilt (func)
nodejs	function FindTilt (func)
php	function yFindTilt (\$func)
cpp	YTilt* yFindTilt (const string& func)
m	YTilt* yFindTilt (NSString* func)
pas	function yFindTilt (func : string): TYTilt
vb	function yFindTilt (ByVal func As String) As YTilt
cs	YTilt FindTilt (string func)
java	YTilt FindTilt (String func)
py	def FindTilt (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the tilt sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YTilt.isOnline()` to test if the tilt sensor is indeed online at a given time. In case of ambiguity when looking for a tilt sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the tilt sensor

Returns :

a `YTilt` object allowing you to drive the tilt sensor.

YTilt.FirstTilt()**YTilt****yFirstTilt()****YTilt.FirstTilt()**

Starts the enumeration of tilt sensors currently accessible.

js	function yFirstTilt ()
nodejs	function FirstTilt ()
php	function yFirstTilt ()
cpp	YTilt* yFirstTilt ()
m	YTilt* yFirstTilt ()
pas	function yFirstTilt (): TYTilt
vb	function yFirstTilt () As YTilt
cs	YTilt FirstTilt ()
java	YTilt FirstTilt ()
py	def FirstTilt ()

Use the method `YTilt.nextTilt()` to iterate on next tilt sensors.

Returns :

a pointer to a `YTilt` object, corresponding to the first tilt sensor currently online, or a `null` pointer if there are none.

tilt→calibrateFromPoints()**YTilt****tilt.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

js	function calibrateFromPoints (rawValues , refValues)
nodejs	function calibrateFromPoints (rawValues , refValues)
php	function calibrateFromPoints (\$rawValues , \$refValues)
cpp	int calibrateFromPoints (vector<double> rawValues , vector<double> refValues)
m	-(int) calibrateFromPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues
pas	function calibrateFromPoints (rawValues : TDoubleArray, refValues : TDoubleArray): LongInt
vb	procedure calibrateFromPoints ()
cs	int calibrateFromPoints (List<double> rawValues , List<double> refValues)
java	int calibrateFromPoints (ArrayList<Double> rawValues , ArrayList<Double> refValues)
py	def calibrateFromPoints (rawValues , refValues)
cmd	YTilt target calibrateFromPoints rawValues refValues

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→describe()`tilt.describe()`**YTilt**

Returns a short text that describes unambiguously the instance of the tilt sensor in the form `TYPE (NAME) = SERIAL.FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, `TYPE` is the type of the function, `NAME` it the name used for the first access to the function, `SERIAL` is the serial number of the module if the module is connected or "unresolved", and `FUNCTIONID` is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the tilt sensor (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

tilt→**get_advertisedValue()****tilt**→**advertisedValue()****tilt.get_advertisedValue()**

Returns the current value of the tilt sensor (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YTilt target get_advertisedValue

Returns :

a string corresponding to the current value of the tilt sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

tilt→**get_currentRawValue()****YTilt****tilt**→**currentRawValue()****tilt.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue ()
nodejs	function get_currentRawValue ()
php	function get_currentRawValue ()
cpp	double get_currentRawValue ()
m	-(double) currentRawValue
pas	function get_currentRawValue (): double
vb	function get_currentRawValue () As Double
cs	double get_currentRawValue ()
java	double get_currentRawValue ()
py	def get_currentRawValue ()
cmd	YTilt target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

tilt→**get_currentValue()****YTilt****tilt**→**currentValue()****tilt.get_currentValue()**

Returns the current value of the inclination.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YTilt target get_currentValue

Returns :

a floating point number corresponding to the current value of the inclination

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

tilt→**get_errorMessage()****YTilt****tilt**→**errorMessage()****tilt.errorMessage()**

Returns the error message of the latest error with the tilt sensor.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the tilt sensor object

tilt→**get_errorType()****YTilt****tilt**→**errorType()****tilt.get_errorType()**

Returns the numerical error code of the latest error with the tilt sensor.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the tilt sensor object

tilt→get_friendlyName()**YTilt****tilt→friendlyName()**`tilt.get_friendlyName()`

Returns a global identifier of the tilt sensor in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the tilt sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the tilt sensor (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the tilt sensor using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

tilt→**get_functionDescriptor()****tilt**→**functionDescriptor()****tilt.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

tilt→get_functionId()**YTilt****tilt→functionId()**`tilt.get_functionId()`

Returns the hardware identifier of the tilt sensor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the tilt sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

tilt→**get_hardwareId()****tilt**→**hardwareId()****tilt.get_hardwareId()**

Returns the unique hardware identifier of the tilt sensor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
c++	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the tilt sensor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the tilt sensor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

tilt→**get_highestValue()****YTilt****tilt**→**highestValue()****tilt.get_highestValue()**

Returns the maximal value observed for the inclination since the device was started.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YTilt target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the inclination since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

tilt→**get_logFrequency()****YTilt****tilt**→**logFrequency()****tilt.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency ()
nodejs	function get_logFrequency ()
php	function get_logFrequency ()
cpp	string get_logFrequency ()
m	-(NSString*) logFrequency
pas	function get_logFrequency (): string
vb	function get_logFrequency () As String
cs	string get_logFrequency ()
java	String get_logFrequency ()
py	def get_logFrequency ()
cmd	YTilt target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

tilt→get_logicalName()**YTilt****tilt→logicalName()**`tilt.get_logicalName()`

Returns the logical name of the tilt sensor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YTilt target get_logicalName

Returns :

a string corresponding to the logical name of the tilt sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

tilt→**get_lowestValue()****YTilt****tilt**→**lowestValue()****tilt.get_lowestValue()**

Returns the minimal value observed for the inclination since the device was started.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YTilt target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the inclination since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

tilt→get_module()**YTilt****tilt→module()**`tilt.get_module()`

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

tilt→get_module_async()**tilt→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

tilt→get_recordedData()**YTilt****tilt→recordedData()**`tilt.get_recordedData()`

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
cpp	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YTilt target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

tilt→get_reportFrequency()**YTilt****tilt→reportFrequency()****tilt.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YTilt target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

tilt→**get_resolution()****YTilt****tilt**→**resolution()****tilt.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YTilt target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

tilt→**get_unit()****tilt**→**unit()****tilt.get_unit()**

Returns the measuring unit for the inclination.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YTilt target get_unit

Returns :

a string corresponding to the measuring unit for the inclination

On failure, throws an exception or returns Y_UNIT_INVALID.

tilt→**get_userData()****YTilt****tilt**→**userData()****tilt.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

tilt→**isOnline()****tilt.isOnline()****YTilt**

Checks if the tilt sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the tilt sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the tilt sensor.

Returns :

true if the tilt sensor can be reached, and false otherwise

tilt→isOnline_async()**YTilt**

Checks if the tilt sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the tilt sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

tilt→**load()****tilt.load()**

YTilt

Preloads the tilt sensor cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

tilt→loadCalibrationPoints()**YTilt****tilt.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js      function loadCalibrationPoints( rawValues, refValues)
nodejs  function loadCalibrationPoints( rawValues, refValues)
php     function loadCalibrationPoints( &$rawValues, &$refValues)
cpp     int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m       -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                                : (NSMutableArray*) refValues

pas     function loadCalibrationPoints( var rawValues: TDoubleArray,
                                var refValues: TDoubleArray): LongInt

vb      procedure loadCalibrationPoints( )

cs      int loadCalibrationPoints( List<double> rawValues,
                                List<double> refValues)

java    int loadCalibrationPoints( ArrayList<Double> rawValues,
                                ArrayList<Double> refValues)

py      def loadCalibrationPoints( rawValues, refValues)

cmd     YTilt target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

Preloads the tilt sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

tilt→**nextTilt()****tilt.nextTilt()****YTilt**

Continues the enumeration of tilt sensors started using `yFirstTilt()`.

js	function nextTilt ()
nodejs	function nextTilt ()
php	function nextTilt ()
cpp	YTilt * nextTilt ()
m	-(YTilt*) nextTilt
pas	function nextTilt (): TYTilt
vb	function nextTilt () As YTilt
cs	YTilt nextTilt ()
java	YTilt nextTilt ()
py	def nextTilt ()

Returns :

a pointer to a `YTilt` object, corresponding to a tilt sensor currently online, or a `null` pointer if there are no more tilt sensors to enumerate.

tilt→registerTimedReportCallback()**YTilt****tilt.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YTiltTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YTiltTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYTiltTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

tilt→registerValueCallback()**YTilt****tilt.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YTiltValueCallback callback)
m	-(int) registerValueCallback : (YTiltValueCallback) callback
pas	function registerValueCallback (callback : TYTiltValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

tilt→**set_highestValue()****tilt**→**setHighestValue()****tilt.set_highestValue()**

Changes the recorded maximal value observed.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YTilt target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→set_logFrequency()**YTilt****tilt→setLogFrequency()**`tilt.set_logFrequency()`

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YTilt target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→**set_logicalName()****YTilt****tilt**→**setLogicalName()****tilt.set_logicalName()**

Changes the logical name of the tilt sensor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YTilt target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the tilt sensor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

tilt→**set_lowestValue()****YTilt****tilt**→**setLowestValue()****tilt.set_lowestValue()**

Changes the recorded minimal value observed.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YTilt target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→set_reportFrequency()**tilt→setReportFrequency()****tilt.set_reportFrequency()**

Changes the timed value notification frequency for this function.

js	function set_reportFrequency (newval)
nodejs	function set_reportFrequency (newval)
php	function set_reportFrequency (\$newval)
cpp	int set_reportFrequency (const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency (newval : string): integer
vb	function set_reportFrequency (ByVal newval As String) As Integer
cs	int set_reportFrequency (string newval)
java	int set_reportFrequency (String newval)
py	def set_reportFrequency (newval)
cmd	YTilt target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→set_resolution()**YTilt****tilt→setResolution()****tilt.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YTilt target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→**set_userData()****tilt**→**setUserData()****tilt.set_userData()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userData (data)
nodejs	function set_userData (data)
php	function set_userData (\$data)
cpp	void set_userData (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userData (data : Tobject)
vb	procedure set_userData (ByVal data As Object)
cs	void set_userData (object data)
java	void set_userData (Object data)
py	def set_userData (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

tilt→wait_async()**YTilt**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.40. Voc function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<code><script type='text/javascript' src='yocto_voc.js'></script></code>
nodejs	<code>var yoctolib = require('yoctolib');</code> <code>var YVoc = yoctolib.YVoc;</code>
php	<code>require_once('yocto_voc.php');</code>
c++	<code>#include "yocto_voc.h"</code>
m	<code>#import "yocto_voc.h"</code>
pas	<code>uses yocto_voc;</code>
vb	<code>yocto_voc.vb</code>
cs	<code>yocto_voc.cs</code>
java	<code>import com.yoctopuce.YoctoAPI.YVoc;</code>
py	<code>from yocto_voc import *</code>

Global functions

yFindVoc(func)

Retrieves a Volatile Organic Compound sensor for a given identifier.

yFirstVoc()

Starts the enumeration of Volatile Organic Compound sensors currently accessible.

YVoc methods

voc→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

voc→describe()

Returns a short text that describes unambiguously the instance of the Volatile Organic Compound sensor in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

voc→get_advertisedValue()

Returns the current value of the Volatile Organic Compound sensor (no more than 6 characters).

voc→get_currentRawValue()

Returns the unrounded and uncalibrated raw value returned by the sensor.

voc→get_currentValue()

Returns the current measure for the estimated VOC concentration.

voc→get_errorMessage()

Returns the error message of the latest error with the Volatile Organic Compound sensor.

voc→get_errorType()

Returns the numerical error code of the latest error with the Volatile Organic Compound sensor.

voc→get_friendlyName()

Returns a global identifier of the Volatile Organic Compound sensor in the format `MODULE_NAME . FUNCTION_NAME`.

voc→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

voc→get_functionId()

Returns the hardware identifier of the Volatile Organic Compound sensor, without reference to the module.

voc→get_hardwareId()

Returns the unique hardware identifier of the Volatile Organic Compound sensor in the form `SERIAL.FUNCTIONID`.

`voc→get_highestValue()`

Returns the maximal value observed for the estimated VOC concentration.

`voc→get_logFrequency()`

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

`voc→get_logicalName()`

Returns the logical name of the Volatile Organic Compound sensor.

`voc→get_lowestValue()`

Returns the minimal value observed for the estimated VOC concentration.

`voc→get_module()`

Gets the `YModule` object for the device on which the function is located.

`voc→get_module_async(callback, context)`

Gets the `YModule` object for the device on which the function is located (asynchronous version).

`voc→get_recordedData(startTime, endTime)`

Retrieves a `DataSet` object holding historical data for this sensor, for a specified time interval.

`voc→get_reportFrequency()`

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

`voc→get_resolution()`

Returns the resolution of the measured values.

`voc→get_unit()`

Returns the measuring unit for the estimated VOC concentration.

`voc→get_userData()`

Returns the value of the `userData` attribute, as previously stored using method `set_userData`.

`voc→isOnline()`

Checks if the Volatile Organic Compound sensor is currently reachable, without raising any error.

`voc→isOnline_async(callback, context)`

Checks if the Volatile Organic Compound sensor is currently reachable, without raising any error (asynchronous version).

`voc→load(msValidity)`

Preloads the Volatile Organic Compound sensor cache with a specified validity duration.

`voc→loadCalibrationPoints(rawValues, refValues)`

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

`voc→load_async(msValidity, callback, context)`

Preloads the Volatile Organic Compound sensor cache with a specified validity duration (asynchronous version).

`voc→nextVoc()`

Continues the enumeration of Volatile Organic Compound sensors started using `yFirstVoc()`.

`voc→registerTimedReportCallback(callback)`

Registers the callback function that is invoked on every periodic timed notification.

`voc→registerValueCallback(callback)`

Registers the callback function that is invoked on every change of advertised value.

`voc→set_highestValue(newval)`

Changes the recorded maximal value observed for the estimated VOC concentration.

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voc→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

voc→set_logicalName(newval)

Changes the logical name of the Volatile Organic Compound sensor.

voc→set_lowestValue(newval)

Changes the recorded minimal value observed for the estimated VOC concentration.

voc→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

voc→set_resolution(newval)

Changes the resolution of the measured physical values.

voc→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

voc→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YVoc.FindVoc()**YVoc****yFindVoc()****YVoc.FindVoc()**

Retrieves a Volatile Organic Compound sensor for a given identifier.

js	function yFindVoc (func)
nodejs	function FindVoc (func)
php	function yFindVoc (\$func)
cpp	YVoc* yFindVoc (const string& func)
m	YVoc* yFindVoc (NSString* func)
pas	function yFindVoc (func : string): TYVoc
vb	function yFindVoc (ByVal func As String) As YVoc
cs	YVoc FindVoc (string func)
java	YVoc FindVoc (String func)
py	def FindVoc (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the Volatile Organic Compound sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YVoc.isOnline()` to test if the Volatile Organic Compound sensor is indeed online at a given time. In case of ambiguity when looking for a Volatile Organic Compound sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the Volatile Organic Compound sensor

Returns :

a YVoc object allowing you to drive the Volatile Organic Compound sensor.

YVoc.FirstVoc()**YVoc****yFirstVoc()****YVoc.FirstVoc()**

Starts the enumeration of Volatile Organic Compound sensors currently accessible.

js	function yFirstVoc ()
nodejs	function FirstVoc ()
php	function yFirstVoc ()
cpp	YVoc* yFirstVoc ()
m	YVoc* yFirstVoc ()
pas	function yFirstVoc (): TYVoc
vb	function yFirstVoc () As YVoc
cs	YVoc FirstVoc ()
java	YVoc FirstVoc ()
py	def FirstVoc ()

Use the method `YVoc.nextVoc()` to iterate on next Volatile Organic Compound sensors.

Returns :

a pointer to a YVoc object, corresponding to the first Volatile Organic Compound sensor currently online, or a null pointer if there are none.

voc→calibrateFromPoints()**YVoc****voc.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js      function calibrateFromPoints( rawValues, refValues)
nodejs  function calibrateFromPoints( rawValues, refValues)
php     function calibrateFromPoints( $rawValues, $refValues)
cpp     int calibrateFromPoints( vector<double> rawValues,
                                vector<double> refValues)

m       -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                                : (NSMutableArray*) refValues

pas     function calibrateFromPoints( rawValues: TDoubleArray,
                                refValues: TDoubleArray): LongInt

vb      procedure calibrateFromPoints( )

cs      int calibrateFromPoints( List<double> rawValues,
                                List<double> refValues)

java    int calibrateFromPoints( ArrayList<Double> rawValues,
                                ArrayList<Double> refValues)

py      def calibrateFromPoints( rawValues, refValues)

cmd     YVoc target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc→**describe()****voc.describe()****YVoc**

Returns a short text that describes unambiguously the instance of the Volatile Organic Compound sensor in the form `TYPE (NAME)=SERIAL.FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, `TYPE` is the type of the function, `NAME` it the name used for the first access to the function, `SERIAL` is the serial number of the module if the module is connected or "unresolved", and `FUNCTIONID` is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomeName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the Volatile Organic Compound sensor (ex:
`Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

voc→get_advertisedValue()**YVoc****voc→advertisedValue()****voc.get_advertisedValue()**

Returns the current value of the Volatile Organic Compound sensor (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YVoc target get_advertisedValue

Returns :

a string corresponding to the current value of the Volatile Organic Compound sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

voc→**get_currentRawValue()****YVoc****voc**→**currentRawValue()****voc.get_currentRawValue()**

Returns the unrounded and uncalibrated raw value returned by the sensor.

js	function get_currentRawValue()
nodejs	function get_currentRawValue()
php	function get_currentRawValue()
cpp	double get_currentRawValue()
m	-(double) currentRawValue
pas	function get_currentRawValue() : double
vb	function get_currentRawValue() As Double
cs	double get_currentRawValue()
java	double get_currentRawValue()
py	def get_currentRawValue()
cmd	YVoc target get_currentRawValue

Returns :

a floating point number corresponding to the unrounded and uncalibrated raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

voc→**get_currentValue()****YVoc****voc**→**currentValue()****voc.get_currentValue()**

Returns the current measure for the estimated VOC concentration.

js	function get_currentValue()
nodejs	function get_currentValue()
php	function get_currentValue()
cpp	double get_currentValue()
m	-(double) currentValue
pas	function get_currentValue() : double
vb	function get_currentValue() As Double
cs	double get_currentValue()
java	double get_currentValue()
py	def get_currentValue()
cmd	YVoc target get_currentValue

Returns :

a floating point number corresponding to the current measure for the estimated VOC concentration

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

voc→**get_errorMessage()****YVoc****voc**→**errorMessage()****voc.errorMessage()**

Returns the error message of the latest error with the Volatile Organic Compound sensor.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the Volatile Organic Compound sensor object

voc→**get_errorType()****YVoc****voc**→**errorType()****voc.get_errorType()**

Returns the numerical error code of the latest error with the Volatile Organic Compound sensor.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the Volatile Organic Compound sensor object

voc→**get_friendlyName()****YVoc****voc**→**friendlyName()****voc.get_friendlyName()**

Returns a global identifier of the Volatile Organic Compound sensor in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the Volatile Organic Compound sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the Volatile Organic Compound sensor (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the Volatile Organic Compound sensor using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

voc→get_functionDescriptor()**YVoc****voc→functionDescriptor()****voc.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

voc→**get_functionId()****YVoc****voc**→**functionId()****voc.get_functionId()**

Returns the hardware identifier of the Volatile Organic Compound sensor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the Volatile Organic Compound sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

voc→**get_hardwareId()****YVoc****voc**→**hardwareId()****voc.get_hardwareId()**

Returns the unique hardware identifier of the Volatile Organic Compound sensor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the Volatile Organic Compound sensor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the Volatile Organic Compound sensor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

voc→**get_highestValue()****YVoc****voc**→**highestValue()****voc.get_highestValue()**

Returns the maximal value observed for the estimated VOC concentration.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YVoc target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the estimated VOC concentration

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

voc→get_logFrequency()**YVoc****voc→logFrequency()**`voc.get_logFrequency()`

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency ()
nodejs	function get_logFrequency ()
php	function get_logFrequency ()
cpp	string get_logFrequency ()
m	-(NSString*) logFrequency
pas	function get_logFrequency (): string
vb	function get_logFrequency () As String
cs	string get_logFrequency ()
java	String get_logFrequency ()
py	def get_logFrequency ()
cmd	YVoc target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

voc→**get_logicalName()****YVoc****voc**→**logicalName()****voc.get_logicalName()**

Returns the logical name of the Volatile Organic Compound sensor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YVoc target get_logicalName

Returns :

a string corresponding to the logical name of the Volatile Organic Compound sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

voc→**get_lowestValue()****YVoc****voc**→**lowestValue()****voc.get_lowestValue()**

Returns the minimal value observed for the estimated VOC concentration.

js	function get_lowestValue()
nodejs	function get_lowestValue()
php	function get_lowestValue()
cpp	double get_lowestValue()
m	-(double) lowestValue
pas	function get_lowestValue() : double
vb	function get_lowestValue() As Double
cs	double get_lowestValue()
java	double get_lowestValue()
py	def get_lowestValue()
cmd	YVoc target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the estimated VOC concentration

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

voc→**get_module()****YVoc****voc**→**module()****voc.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

voc→get_module_async()
voc→module_async()

YVoc

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

voc→**get_recordedData()****YVoc****voc**→**recordedData()****voc.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
cpp	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YVoc target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

voc→get_reportFrequency()**YVoc****voc→reportFrequency()****voc.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YVoc target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

voc→**get_resolution()****YVoc****voc**→**resolution()****voc.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YVoc target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

voc→**get_unit()****YVoc****voc**→**unit()****voc.get_unit()**

Returns the measuring unit for the estimated VOC concentration.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YVoc target get_unit

Returns :

a string corresponding to the measuring unit for the estimated VOC concentration

On failure, throws an exception or returns Y_UNIT_INVALID.

voc→**get_userData()****YVoc****voc**→**userData()****voc.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

voc→isOnline()`voc.isOnline()`**YVoc**

Checks if the Volatile Organic Compound sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the Volatile Organic Compound sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the Volatile Organic Compound sensor.

Returns :

`true` if the Volatile Organic Compound sensor can be reached, and `false` otherwise

voc→**isOnline_async()****YVoc**

Checks if the Volatile Organic Compound sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
```

```
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the Volatile Organic Compound sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

voc→load()**voc.load()****YVoc**

Preloads the Volatile Organic Compound sensor cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

voc→loadCalibrationPoints()**YVoc****voc.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php function loadCalibrationPoints( &$rawValues, &$refValues)
cpp int loadCalibrationPoints( vector<double>& rawValues,
                             vector<double>& refValues)

m -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
   : (NSMutableArray*) refValues

pas function loadCalibrationPoints( var rawValues: TDoubleArray,
                                   var refValues: TDoubleArray): LongInt

vb procedure loadCalibrationPoints( )
cs int loadCalibrationPoints( List<double> rawValues,
                             List<double> refValues)
java int loadCalibrationPoints( ArrayList<Double> rawValues,
                               ArrayList<Double> refValues)
py def loadCalibrationPoints( rawValues, refValues)
cmd YVoc target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc→load_async()**YVoc**

Preloads the Volatile Organic Compound sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

voc→**nextVoc()****voc.nextVoc()****YVoc**

Continues the enumeration of Volatile Organic Compound sensors started using `yFirstVoc()`.

js	function nextVoc ()
nodejs	function nextVoc ()
php	function nextVoc ()
cpp	YVoc * nextVoc ()
m	-(YVoc*) nextVoc
pas	function nextVoc (): TYVoc
vb	function nextVoc () As YVoc
cs	YVoc nextVoc ()
java	YVoc nextVoc ()
py	def nextVoc ()

Returns :

a pointer to a `YVoc` object, corresponding to a Volatile Organic Compound sensor currently online, or a `null` pointer if there are no more Volatile Organic Compound sensors to enumerate.

voc→registerTimedReportCallback()**YVoc****voc.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YVocTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YVocTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYVocTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

voc→registerValueCallback()**YVoc****voc.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YVocValueCallback callback)
m	-(int) registerValueCallback : (YVocValueCallback) callback
pas	function registerValueCallback (callback : TYVocValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

voc→**set_highestValue()****YVoc****voc**→**setHighestValue()****voc.set_highestValue()**

Changes the recorded maximal value observed for the estimated VOC concentration.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YVoc target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed for the estimated VOC concentration

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc→**set_logFrequency()****YVoc****voc**→**setLogFrequency()****voc.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YVoc target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc→**set_logicalName()****YVoc****voc**→**setLogicalName()****voc.set_logicalName()**

Changes the logical name of the Volatile Organic Compound sensor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YVoc target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the Volatile Organic Compound sensor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

voc→**set_lowestValue()****YVoc****voc**→**setLowestValue()****voc.set_lowestValue()**

Changes the recorded minimal value observed for the estimated VOC concentration.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YVoc target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed for the estimated VOC concentration

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

YVoc
voc→set_reportFrequency()**voc→setReportFrequency()****voc.set_reportFrequency()**

Changes the timed value notification frequency for this function.

js	function set_reportFrequency (newval)
nodejs	function set_reportFrequency (newval)
php	function set_reportFrequency (\$newval)
cpp	int set_reportFrequency (const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency (newval : string): integer
vb	function set_reportFrequency (ByVal newval As String) As Integer
cs	int set_reportFrequency (string newval)
java	int set_reportFrequency (String newval)
py	def set_reportFrequency (newval)
cmd	YVoc target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc→**set_resolution()****YVoc****voc**→**setResolution()****voc.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YVoc target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc→**set_userData()****YVoc****voc**→**setUserData()****voc.set_userData()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userData (data)
nodejs	function set_userData (data)
php	function set_userData (\$data)
cpp	void set_userData (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userData (data : Tobject)
vb	procedure set_userData (ByVal data As Object)
cs	void set_userData (object data)
java	void set_userData (Object data)
py	def set_userData (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

voc→**wait_async()****YVoc**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.41. Voltage function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_voltage.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YVoltage = yoctolib.YVoltage;
php	require_once('yocto_voltage.php');
c++	#include "yocto_voltage.h"
m	#import "yocto_voltage.h"
pas	uses yocto_voltage;
vb	yocto_voltage.vb
cs	yocto_voltage.cs
java	import com.yoctopuce.YoctoAPI.YVoltage;
py	from yocto_voltage import *

Global functions

yFindVoltage(func)

Retrieves a voltage sensor for a given identifier.

yFirstVoltage()

Starts the enumeration of voltage sensors currently accessible.

YVoltage methods

voltage→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

voltage→describe()

Returns a short text that describes unambiguously the instance of the voltage sensor in the form `TYPE (NAME) = SERIAL . FUNCTIONID`.

voltage→get_advertisedValue()

Returns the current value of the voltage sensor (no more than 6 characters).

voltage→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

voltage→get_currentValue()

Returns the current measure for the voltage.

voltage→get_errorMessage()

Returns the error message of the latest error with the voltage sensor.

voltage→get_errorType()

Returns the numerical error code of the latest error with the voltage sensor.

voltage→get_friendlyName()

Returns a global identifier of the voltage sensor in the format `MODULE_NAME . FUNCTION_NAME`.

voltage→get_functionDescriptor()

Returns a unique identifier of type `YFUN_DESCR` corresponding to the function.

voltage→get_functionId()

Returns the hardware identifier of the voltage sensor, without reference to the module.

voltage→get_hardwareId()

Returns the unique hardware identifier of the voltage sensor in the form `SERIAL . FUNCTIONID`.

voltage→get_highestValue()

Returns the maximal value observed for the voltage.

voltage→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

voltage→get_logicalName()

Returns the logical name of the voltage sensor.

voltage→get_lowestValue()

Returns the minimal value observed for the voltage.

voltage→get_module()

Gets the YModule object for the device on which the function is located.

voltage→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

voltage→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

voltage→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

voltage→get_resolution()

Returns the resolution of the measured values.

voltage→get_unit()

Returns the measuring unit for the voltage.

voltage→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

voltage→isOnline()

Checks if the voltage sensor is currently reachable, without raising any error.

voltage→isOnline_async(callback, context)

Checks if the voltage sensor is currently reachable, without raising any error (asynchronous version).

voltage→load(msValidity)

Preloads the voltage sensor cache with a specified validity duration.

voltage→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

voltage→load_async(msValidity, callback, context)

Preloads the voltage sensor cache with a specified validity duration (asynchronous version).

voltage→nextVoltage()

Continues the enumeration of voltage sensors started using yFirstVoltage().

voltage→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

voltage→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

voltage→set_highestValue(newval)

Changes the recorded maximal value observed pour the voltage.

voltage→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

voltage→set_logicalName(newval)

Changes the logical name of the voltage sensor.

voltage→set_lowestValue(newval)

Changes the recorded minimal value observed pour the voltage.

voltage→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

voltage→set_resolution(newval)

Changes the resolution of the measured values.

voltage→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

voltage→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YVoltage.FindVoltage()**YVoltage****yFindVoltage()****YVoltage.FindVoltage()**

Retrieves a voltage sensor for a given identifier.

js	function yFindVoltage (func)
nodejs	function FindVoltage (func)
php	function yFindVoltage (\$func)
cpp	YVoltage* yFindVoltage (const string& func)
m	YVoltage* yFindVoltage (NSString* func)
pas	function yFindVoltage (func : string): TYVoltage
vb	function yFindVoltage (ByVal func As String) As YVoltage
cs	YVoltage FindVoltage (string func)
java	YVoltage FindVoltage (String func)
py	def FindVoltage (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the voltage sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YVoltage.IsOnline()` to test if the voltage sensor is indeed online at a given time. In case of ambiguity when looking for a voltage sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the voltage sensor

Returns :

a `YVoltage` object allowing you to drive the voltage sensor.

YVoltage.FirstVoltage()**YVoltage****yFirstVoltage()****YVoltage.FirstVoltage()**

Starts the enumeration of voltage sensors currently accessible.

js	function yFirstVoltage ()
nodejs	function FirstVoltage ()
php	function yFirstVoltage ()
cpp	YVoltage* yFirstVoltage ()
m	YVoltage* yFirstVoltage ()
pas	function yFirstVoltage (): TYVoltage
vb	function yFirstVoltage () As YVoltage
cs	YVoltage FirstVoltage ()
java	YVoltage FirstVoltage ()
py	def FirstVoltage ()

Use the method `YVoltage.nextVoltage()` to iterate on next voltage sensors.

Returns :

a pointer to a `YVoltage` object, corresponding to the first voltage sensor currently online, or a `null` pointer if there are none.

voltage→calibrateFromPoints()**YVoltage****voltage.calibrateFromPoints()**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

js	function calibrateFromPoints (rawValues , refValues)
nodejs	function calibrateFromPoints (rawValues , refValues)
php	function calibrateFromPoints (\$rawValues , \$refValues)
cpp	int calibrateFromPoints (vector<double> rawValues , vector<double> refValues)
m	-(int) calibrateFromPoints : (NSMutableArray*) rawValues : (NSMutableArray*) refValues
pas	function calibrateFromPoints (rawValues : TDoubleArray, refValues : TDoubleArray): LongInt
vb	procedure calibrateFromPoints ()
cs	int calibrateFromPoints (List<double> rawValues , List<double> refValues)
java	int calibrateFromPoints (ArrayList<Double> rawValues , ArrayList<Double> refValues)
py	def calibrateFromPoints (rawValues , refValues)
cmd	YVoltage target calibrateFromPoints rawValues refValues

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→describe()`voltage.describe()`**YVoltage**

Returns a short text that describes unambiguously the instance of the voltage sensor in the form `TYPE (NAME) =SERIAL.FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, `TYPE` is the type of the function, `NAME` it the name used for the first access to the function, `SERIAL` is the serial number of the module if the module is connected or "unresolved", and `FUNCTIONID` is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the voltage sensor (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

voltage→**get_advertisedValue()****YVoltage****voltage**→**advertisedValue()****voltage.get_advertisedValue()**

Returns the current value of the voltage sensor (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YVoltage target get_advertisedValue

Returns :

a string corresponding to the current value of the voltage sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

voltage→**get_currentRawValue()****YVoltage****voltage**→**currentRawValue()****voltage.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue ()
nodejs	function get_currentRawValue ()
php	function get_currentRawValue ()
cpp	double get_currentRawValue ()
m	-(double) currentRawValue
pas	function get_currentRawValue (): double
vb	function get_currentRawValue () As Double
cs	double get_currentRawValue ()
java	double get_currentRawValue ()
py	def get_currentRawValue ()
cmd	YVoltage target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

voltage→**get_currentValue()****YVoltage****voltage**→**currentValue()****voltage**.**get_currentValue()**

Returns the current measure for the voltage.

js	function get_currentValue ()
nodejs	function get_currentValue ()
php	function get_currentValue ()
cpp	double get_currentValue ()
m	-(double) currentValue
pas	function get_currentValue (): double
vb	function get_currentValue () As Double
cs	double get_currentValue ()
java	double get_currentValue ()
py	def get_currentValue ()
cmd	YVoltage target get_currentValue

Returns :

a floating point number corresponding to the current measure for the voltage

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

voltage→**get_errorMessage()****YVoltage****voltage**→**errorMessage()****voltage.errorMessage()**

Returns the error message of the latest error with the voltage sensor.

<code>js</code>	<code>function get_errorMessage()</code>
<code>nodejs</code>	<code>function get_errorMessage()</code>
<code>php</code>	<code>function get_errorMessage()</code>
<code>cpp</code>	<code>string get_errorMessage()</code>
<code>m</code>	<code>-(NSString*) errorMessage</code>
<code>pas</code>	<code>function get_errorMessage(): string</code>
<code>vb</code>	<code>function get_errorMessage() As String</code>
<code>cs</code>	<code>string get_errorMessage()</code>
<code>java</code>	<code>String get_errorMessage()</code>
<code>py</code>	<code>def get_errorMessage()</code>

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the voltage sensor object

voltage→**get_errorType()****YVoltage****voltage**→**errorType()****voltage.get_errorType()**

Returns the numerical error code of the latest error with the voltage sensor.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the voltage sensor object

voltage→**get_friendlyName()****YVoltage****voltage**→**friendlyName()****voltage.get_friendlyName()**

Returns a global identifier of the voltage sensor in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the voltage sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the voltage sensor (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the voltage sensor using logical names (ex: `MyCustomName.relay1`)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

voltage→**get_functionDescriptor()****YVoltage****voltage**→**functionDescriptor()****voltage.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

voltage→**get_functionId()****YVoltage****voltage**→**functionId()****voltage.get_functionId()**

Returns the hardware identifier of the voltage sensor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the voltage sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

voltage→**get_hardwareId()****YVoltage****voltage**→**hardwareId()****voltage.get_hardwareId()**

Returns the unique hardware identifier of the voltage sensor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the voltage sensor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the voltage sensor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

voltage→**get_highestValue()**
voltage→**highestValue()**
voltage.get_highestValue()

YVoltage

Returns the maximal value observed for the voltage.

js	function get_highestValue ()
nodejs	function get_highestValue ()
php	function get_highestValue ()
cpp	double get_highestValue ()
m	-(double) highestValue
pas	function get_highestValue (): double
vb	function get_highestValue () As Double
cs	double get_highestValue ()
java	double get_highestValue ()
py	def get_highestValue ()
cmd	YVoltage target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the voltage

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

voltage→get_logFrequency()**YVoltage****voltage→logFrequency()****voltage.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency ()
nodejs	function get_logFrequency ()
php	function get_logFrequency ()
cpp	string get_logFrequency ()
m	-(NSString*) logFrequency
pas	function get_logFrequency (): string
vb	function get_logFrequency () As String
cs	string get_logFrequency ()
java	String get_logFrequency ()
py	def get_logFrequency ()
cmd	YVoltage target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

voltage→**get_logicalName()****YVoltage****voltage**→**logicalName()****voltage.get_logicalName()**

Returns the logical name of the voltage sensor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YVoltage target get_logicalName

Returns :

a string corresponding to the logical name of the voltage sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

voltage→**get_lowestValue()****YVoltage****voltage**→**lowestValue()****voltage**.**get_lowestValue()**

Returns the minimal value observed for the voltage.

js	function get_lowestValue ()
nodejs	function get_lowestValue ()
php	function get_lowestValue ()
cpp	double get_lowestValue ()
m	-(double) lowestValue
pas	function get_lowestValue (): double
vb	function get_lowestValue () As Double
cs	double get_lowestValue ()
java	double get_lowestValue ()
py	def get_lowestValue ()
cmd	YVoltage target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the voltage

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

voltage→**get_module()****YVoltage****voltage**→**module()****voltage.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TYModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

voltage→**get_module_async()****YVoltage****voltage**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

voltage→**get_recordedData()****YVoltage****voltage**→**recordedData()****voltage.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData (startTime , endTime)
nodejs	function get_recordedData (startTime , endTime)
php	function get_recordedData (\$startTime , \$endTime)
cpp	YDataSet get_recordedData (s64 startTime , s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData (startTime : int64, endTime : int64): TYDataSet
vb	function get_recordedData () As YDataSet
cs	YDataSet get_recordedData (long startTime , long endTime)
java	YDataSet get_recordedData (long startTime , long endTime)
py	def get_recordedData (startTime , endTime)
cmd	YVoltage target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

- startTime** the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.
- endTime** the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

voltage→**get_reportFrequency()****YVoltage****voltage**→**reportFrequency()****voltage.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency ()
nodejs	function get_reportFrequency ()
php	function get_reportFrequency ()
cpp	string get_reportFrequency ()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency (): string
vb	function get_reportFrequency () As String
cs	string get_reportFrequency ()
java	String get_reportFrequency ()
py	def get_reportFrequency ()
cmd	YVoltage target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

voltage→**get_resolution()****YVoltage****voltage**→**resolution()****voltage.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution ()
nodejs	function get_resolution ()
php	function get_resolution ()
cpp	double get_resolution ()
m	-(double) resolution
pas	function get_resolution (): double
vb	function get_resolution () As Double
cs	double get_resolution ()
java	double get_resolution ()
py	def get_resolution ()
cmd	YVoltage target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

voltage→**get_unit()****YVoltage****voltage**→**unit()****voltage.get_unit()**

Returns the measuring unit for the voltage.

js	function get_unit ()
nodejs	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YVoltage target get_unit

Returns :

a string corresponding to the measuring unit for the voltage

On failure, throws an exception or returns Y_UNIT_INVALID.

voltage→**get_userdata()****YVoltage****voltage**→**userData()****voltage.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

voltage→**isOnline()****voltage.isOnline()****YVoltage**

Checks if the voltage sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the voltage sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the voltage sensor.

Returns :

`true` if the voltage sensor can be reached, and `false` otherwise

voltage→isOnline_async()**YVoltage**

Checks if the voltage sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
```

```
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the voltage sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

voltage→**load()**`voltage.load()`**YVoltage**

Preloads the voltage sensor cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

voltage→loadCalibrationPoints()**YVoltage****voltage.loadCalibrationPoints()**

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js      function loadCalibrationPoints( rawValues, refValues)
nodejs  function loadCalibrationPoints( rawValues, refValues)
php     function loadCalibrationPoints( &$rawValues, &$refValues)
cpp     int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m       -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                                : (NSMutableArray*) refValues

pas     function loadCalibrationPoints( var rawValues: TDoubleArray,
                                var refValues: TDoubleArray): LongInt

vb      procedure loadCalibrationPoints( )

cs      int loadCalibrationPoints( List<double> rawValues,
                                List<double> refValues)

java    int loadCalibrationPoints( ArrayList<Double> rawValues,
                                ArrayList<Double> refValues)

py      def loadCalibrationPoints( rawValues, refValues)

cmd     YVoltage target loadCalibrationPoints rawValues refValues

```

Parameters :

- rawValues** array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.
- refValues** array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→load_async()**YVoltage**

Preloads the voltage sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

voltage→**nextVoltage()****voltage.nextVoltage()****YVoltage**

Continues the enumeration of voltage sensors started using `yFirstVoltage()`.

<code>js</code>	<code>function nextVoltage()</code>
<code>nodejs</code>	<code>function nextVoltage()</code>
<code>php</code>	<code>function nextVoltage()</code>
<code>cpp</code>	<code>YVoltage * nextVoltage()</code>
<code>m</code>	<code>-(YVoltage*) nextVoltage</code>
<code>pas</code>	<code>function nextVoltage(): TYVoltage</code>
<code>vb</code>	<code>function nextVoltage() As YVoltage</code>
<code>cs</code>	<code>YVoltage nextVoltage()</code>
<code>java</code>	<code>YVoltage nextVoltage()</code>
<code>py</code>	<code>def nextVoltage()</code>

Returns :

a pointer to a `YVoltage` object, corresponding to a voltage sensor currently online, or a `null` pointer if there are no more voltage sensors to enumerate.

voltage→registerTimedReportCallback()**YVoltage****voltage.registerTimedReportCallback()**

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback (callback)
nodejs	function registerTimedReportCallback (callback)
php	function registerTimedReportCallback (\$callback)
cpp	int registerTimedReportCallback (YVoltageTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YVoltageTimedReportCallback) callback
pas	function registerTimedReportCallback (callback : TYVoltageTimedReportCallback): LongInt
vb	function registerTimedReportCallback () As Integer
cs	int registerTimedReportCallback (TimedReportCallback callback)
java	int registerTimedReportCallback (TimedReportCallback callback)
py	def registerTimedReportCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an YMeasure object describing the new advertised value.

voltage→registerValueCallback()**YVoltage****voltage.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YVoltageValueCallback callback)
m	-(int) registerValueCallback : (YVoltageValueCallback) callback
pas	function registerValueCallback (callback : TYVoltageValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

voltage→**set_highestValue()****YVoltage****voltage**→**setHighestValue()****voltage.set_highestValue()**

Changes the recorded maximal value observed pour the voltage.

js	function set_highestValue (newval)
nodejs	function set_highestValue (newval)
php	function set_highestValue (\$newval)
cpp	int set_highestValue (double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue (newval : double): integer
vb	function set_highestValue (ByVal newval As Double) As Integer
cs	int set_highestValue (double newval)
java	int set_highestValue (double newval)
py	def set_highestValue (newval)
cmd	YVoltage target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed pour the voltage

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→**set_logFrequency()****YVoltage****voltage**→**setLogFrequency()****voltage.set_logFrequency()**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency (newval)
nodejs	function set_logFrequency (newval)
php	function set_logFrequency (\$newval)
cpp	int set_logFrequency (const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency (newval : string): integer
vb	function set_logFrequency (ByVal newval As String) As Integer
cs	int set_logFrequency (string newval)
java	int set_logFrequency (String newval)
py	def set_logFrequency (newval)
cmd	YVoltage target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→**set_logicalName()****YVoltage****voltage**→**setLogicalName()****voltage.set_logicalName()**

Changes the logical name of the voltage sensor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YVoltage target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the voltage sensor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

voltage→**set_lowestValue()****YVoltage****voltage**→**setLowestValue()****voltage.set_lowestValue()**

Changes the recorded minimal value observed pour the voltage.

js	function set_lowestValue (newval)
nodejs	function set_lowestValue (newval)
php	function set_lowestValue (\$newval)
cpp	int set_lowestValue (double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue (newval : double): integer
vb	function set_lowestValue (ByVal newval As Double) As Integer
cs	int set_lowestValue (double newval)
java	int set_lowestValue (double newval)
py	def set_lowestValue (newval)
cmd	YVoltage target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed pour the voltage

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→**set_reportFrequency()****YVoltage****voltage**→**setReportFrequency()****voltage.set_reportFrequency()**

Changes the timed value notification frequency for this function.

<code>js</code>	<code>function set_reportFrequency(newval)</code>
<code>nodejs</code>	<code>function set_reportFrequency(newval)</code>
<code>php</code>	<code>function set_reportFrequency(\$newval)</code>
<code>cpp</code>	<code>int set_reportFrequency(const string& newval)</code>
<code>m</code>	<code>-(int) setReportFrequency : (NSString*) newval</code>
<code>pas</code>	<code>function set_reportFrequency(newval: string): integer</code>
<code>vb</code>	<code>function set_reportFrequency(ByVal newval As String) As Integer</code>
<code>cs</code>	<code>int set_reportFrequency(string newval)</code>
<code>java</code>	<code>int set_reportFrequency(String newval)</code>
<code>py</code>	<code>def set_reportFrequency(newval)</code>
<code>cmd</code>	<code>YVoltage target set_reportFrequency newval</code>

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→**set_resolution()****YVoltage****voltage**→**setResolution()****voltage.set_resolution()**

Changes the resolution of the measured values.

js	function set_resolution (newval)
nodejs	function set_resolution (newval)
php	function set_resolution (\$newval)
cpp	int set_resolution (double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution (newval : double): integer
vb	function set_resolution (ByVal newval As Double) As Integer
cs	int set_resolution (double newval)
java	int set_resolution (double newval)
py	def set_resolution (newval)
cmd	YVoltage target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→**set_userdata()****YVoltage****voltage**→**setUserData()****voltage.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

voltage→wait_async()**YVoltage**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.42. Voltage source function interface

Yoctopuce application programming interface allows you to control the module voltage output. You affect absolute output values or make transitions

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_vsource.js'></script>
php	require_once('yocto_vsource.php');
c++	#include "yocto_vsource.h"
m	#import "yocto_vsource.h"
pas	uses yocto_vsource;
vb	yocto_vsource.vb
cs	yocto_vsource.cs
java	import com.yoctopuce.YoctoAPI.YVSource;
py	from yocto_vsource import *

Global functions
yFindVSource(func) Retrieves a voltage source for a given identifier.
yFirstVSource() Starts the enumeration of voltage sources currently accessible.
YVSource methods
vsource→describe() Returns a short text that describes the function in the form TYPE (NAME) = SERIAL . FUNCTIONID.
vsource→get_advertisedValue() Returns the current value of the voltage source (no more than 6 characters).
vsource→get_errorMessage() Returns the error message of the latest error with this function.
vsource→get_errorType() Returns the numerical error code of the latest error with this function.
vsource→get_extPowerFailure() Returns true if external power supply voltage is too low.
vsource→get_failure() Returns true if the module is in failure mode.
vsource→get_friendlyName() Returns a global identifier of the function in the format MODULE_NAME . FUNCTION_NAME.
vsource→get_functionDescriptor() Returns a unique identifier of type YFUN_DESCR corresponding to the function.
vsource→get_functionId() Returns the hardware identifier of the function, without reference to the module.
vsource→get_hardwareId() Returns the unique hardware identifier of the function in the form SERIAL . FUNCTIONID.
vsource→get_logicalName() Returns the logical name of the voltage source.
vsource→get_module() Gets the YModule object for the device on which the function is located.
vsource→get_module_async(callback, context)

	Gets the <code>YModule</code> object for the device on which the function is located (asynchronous version).
<code>vsource→get_overCurrent()</code>	Returns true if the appliance connected to the device is too greedy .
<code>vsource→get_overHeat()</code>	Returns TRUE if the module is overheating.
<code>vsource→get_overLoad()</code>	Returns true if the device is not able to maintaint the requested voltage output .
<code>vsource→get_regulationFailure()</code>	Returns true if the voltage output is too high regarding the requested voltage .
<code>vsource→get_unit()</code>	Returns the measuring unit for the voltage.
<code>vsource→get_userData()</code>	Returns the value of the <code>userData</code> attribute, as previously stored using method <code>set_userData</code> .
<code>vsource→get_voltage()</code>	Returns the voltage output command (mV)
<code>vsource→isOnline()</code>	Checks if the function is currently reachable, without raising any error.
<code>vsource→isOnline_async(callback, context)</code>	Checks if the function is currently reachable, without raising any error (asynchronous version).
<code>vsource→load(msValidity)</code>	Preloads the function cache with a specified validity duration.
<code>vsource→load_async(msValidity, callback, context)</code>	Preloads the function cache with a specified validity duration (asynchronous version).
<code>vsource→nextVSource()</code>	Continues the enumeration of voltage sources started using <code>yFirstVSource()</code> .
<code>vsource→pulse(voltage, ms_duration)</code>	Sets device output to a specific volatage, for a specified duration, then brings it automatically to 0V.
<code>vsource→registerValueCallback(callback)</code>	Registers the callback function that is invoked on every change of advertised value.
<code>vsource→set_logicalName(newval)</code>	Changes the logical name of the voltage source.
<code>vsource→set_userData(data)</code>	Stores a user context provided as argument in the <code>userData</code> attribute of the function.
<code>vsource→set_voltage(newval)</code>	Tunes the device output voltage (milliVolts).
<code>vsource→voltageMove(target, ms_duration)</code>	Performs a smooth move at constant speed toward a given value.
<code>vsource→wait_async(callback, context)</code>	Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

yFindVSource() —**YVSource****YVSource.FindVSource()****YVSource.FindVSource()**

Retrieves a voltage source for a given identifier.

js	function yFindVSource (func)
php	function yFindVSource (\$func)
cpp	YVSource* yFindVSource (const string& func)
m	YVSource* yFindVSource (NSString* func)
pas	function yFindVSource (func : string): TYVSource
vb	function yFindVSource (ByVal func As String) As YVSource
cs	YVSource FindVSource (string func)
java	YVSource FindVSource (String func)
py	def FindVSource (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the voltage source is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YVSource.isOnline()` to test if the voltage source is indeed online at a given time. In case of ambiguity when looking for a voltage source by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the voltage source

Returns :

a YVSource object allowing you to drive the voltage source.

yFirstVSource() —**YVSource****YVSource.FirstVSource()****YVSource.FirstVSource()**

Starts the enumeration of voltage sources currently accessible.

js	function yFirstVSource ()
php	function yFirstVSource ()
cpp	YVSource* yFirstVSource ()
m	YVSource* yFirstVSource ()
pas	function yFirstVSource (): TYVSource
vb	function yFirstVSource () As YVSource
cs	YVSource FirstVSource ()
java	YVSource FirstVSource ()
py	def FirstVSource ()

Use the method `YVSource.nextVSource()` to iterate on next voltage sources.

Returns :

a pointer to a `YVSource` object, corresponding to the first voltage source currently online, or a `null` pointer if there are none.

vsource→**describe()****vsource.describe()****YVSource**

Returns a short text that describes the function in the form `TYPE (NAME) =SERIAL.FUNCTIONID`.

js	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the function (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

vsource→**get_advertisedValue()****YVSource****vsource**→**advertisedValue()****vsource.get_advertisedValue()**

Returns the current value of the voltage source (no more than 6 characters).

js	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YVSource target get_advertisedValue

Returns :

a string corresponding to the current value of the voltage source (no more than 6 characters)

On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

vsource→**get_errorMessage()****YVSource****vsource**→**errorMessage()****vsource.errorMessage()**

Returns the error message of the latest error with this function.

js	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using this function object

vsource→**get_errorType()****YVSource****vsource**→**errorType()****vsource.get_errorType()**

Returns the numerical error code of the latest error with this function.

js	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using this function object

vsourc→**get_extPowerFailure()****YVSource****vsourc**→**extPowerFailure()****vsourc.get_extPowerFailure()**

Returns true if external power supply voltage is too low.

js	function get_extPowerFailure ()
php	function get_extPowerFailure ()
cpp	Y_EXTPOWERFAILURE_enum get_extPowerFailure ()
m	-(Y_EXTPOWERFAILURE_enum) extPowerFailure
pas	function get_extPowerFailure (): Integer
vb	function get_extPowerFailure () As Integer
cs	int get_extPowerFailure ()
java	int get_extPowerFailure ()
py	def get_extPowerFailure ()
cmd	YVSource target get_extPowerFailure

Returns :

either Y_EXTPOWERFAILURE_FALSE or Y_EXTPOWERFAILURE_TRUE, according to true if external power supply voltage is too low

On failure, throws an exception or returns Y_EXTPOWERFAILURE_INVALID.

vsource→**get_failure()****YVSource****vsource**→**failure()**`vsource.get_failure()`

Returns true if the module is in failure mode.

js	function get_failure ()
php	function get_failure ()
cpp	Y_FAILURE_enum get_failure ()
m	-(Y_FAILURE_enum) failure
pas	function get_failure (): Integer
vb	function get_failure () As Integer
cs	int get_failure ()
java	int get_failure ()
py	def get_failure ()
cmd	YVSource target get_failure

More information can be obtained by testing `get_overheat`, `get_overcurrent` etc... When a error condition is met, the output voltage is set to zéro and cannot be changed until the `reset()` function is called.

Returns :

either `Y_FAILURE_FALSE` or `Y_FAILURE_TRUE`, according to true if the module is in failure mode

On failure, throws an exception or returns `Y_FAILURE_INVALID`.

vsSource→**get_friendlyName()****YVSource****vsSource**→**friendlyName()****vsSource.get_friendlyName()**

Returns a global identifier of the function in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
php	function get_friendlyName ()
cpp	virtual string get_friendlyName ()
m	-(NSString*) friendlyName
cs	override string get_friendlyName ()
java	String get_friendlyName ()

The returned string uses the logical names of the module and of the function if they are defined, otherwise the serial number of the module and the hardware identifier of the function (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the function using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

vsource→**get_functionDescriptor()****YVSource****vsource**→**functionDescriptor()****vsource.get_vsourceDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

vsource→**get_functionId()****YVSource****vsource**→**functionId()****vsource.get_vsourceId()**

Returns the hardware identifier of the function, without reference to the module.

js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()

For example `relay1`

Returns :

a string that identifies the function (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

vsource→**get_hardwareId()****YVSource****vsource**→**hardwareId()****vsource.get_hardwareId()**

Returns the unique hardware identifier of the function in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the function. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the function (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

vsource→**get_logicalName()****YVSource****vsource**→**logicalName()****vsource.get_logicalName()**

Returns the logical name of the voltage source.

js	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YVSource target get_logicalName

Returns :

a string corresponding to the logical name of the voltage source

On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

vsourcesrc→get_module()**YVSource****vsourcesrc→module()**`vsourcesrc.get_module()`

Gets the `YModule` object for the device on which the function is located.

js	function get_module ()
php	function get_module ()
cpp	<code>YModule *</code> get_module ()
m	<code>-(YModule*)</code> module
pas	function get_module (): <code>TYModule</code>
vb	function get_module () As <code>YModule</code>
cs	<code>YModule</code> get_module ()
java	<code>YModule</code> get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of `YModule` is not shown as on-line.

Returns :

an instance of `YModule`

vsources→get_module_async()**YVSource****vsources→module_async()**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js function get_module_async( callback, context)
```

If the function cannot be located on any module, the returned `YModule` object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

vsource→**get_overCurrent()****YVSource****vsource**→**overCurrent()****vsource.get_overCurrent()**

Returns true if the appliance connected to the device is too greedy .

js	function get_overCurrent ()
php	function get_overCurrent ()
cpp	Y_OVERCURRENT_enum get_overCurrent ()
m	-(Y_OVERCURRENT_enum) overCurrent
pas	function get_overCurrent (): Integer
vb	function get_overCurrent () As Integer
cs	int get_overCurrent ()
java	int get_overCurrent ()
py	def get_overCurrent ()
cmd	YVSource target get_overCurrent

Returns :

either Y_OVERCURRENT_FALSE or Y_OVERCURRENT_TRUE, according to true if the appliance connected to the device is too greedy

On failure, throws an exception or returns Y_OVERCURRENT_INVALID.

vsSource→**get_overHeat()****YVSource****vsSource**→**overHeat()**`vsSource.get_overHeat()`

Returns TRUE if the module is overheating.

js	function get_overHeat ()
php	function get_overHeat ()
cpp	Y_OVERHEAT_enum get_overHeat ()
m	-(Y_OVERHEAT_enum) overHeat
pas	function get_overHeat (): Integer
vb	function get_overHeat () As Integer
cs	int get_overHeat ()
java	int get_overHeat ()
py	def get_overHeat ()
cmd	YVSource target get_overHeat

Returns :

either Y_OVERHEAT_FALSE or Y_OVERHEAT_TRUE, according to TRUE if the module is overheating

On failure, throws an exception or returns Y_OVERHEAT_INVALID.

vsource→**get_overLoad()****YVSource****vsource**→**overLoad()****vsource.get_overLoad()**

Returns true if the device is not able to maintaint the requested voltage output .

js	function get_overLoad()
php	function get_overLoad()
cpp	Y_OVERLOAD_enum get_overLoad()
m	-(Y_OVERLOAD_enum) overLoad
pas	function get_overLoad() : Integer
vb	function get_overLoad() As Integer
cs	int get_overLoad()
java	int get_overLoad()
py	def get_overLoad()
cmd	YVSource target get_overLoad

Returns :

either **Y_OVERLOAD_FALSE** or **Y_OVERLOAD_TRUE**, according to true if the device is not able to maintaint the requested voltage output

On failure, throws an exception or returns **Y_OVERLOAD_INVALID**.

vsource→**get_regulationFailure()****YVSource****vsource**→**regulationFailure()****vsource.get_regulationFailure()**

Returns true if the voltage output is too high regarding the requested voltage .

js	function get_regulationFailure ()
php	function get_regulationFailure ()
cpp	Y_REGULATIONFAILURE_enum get_regulationFailure ()
m	-(Y_REGULATIONFAILURE_enum) regulationFailure
pas	function get_regulationFailure (): Integer
vb	function get_regulationFailure () As Integer
cs	int get_regulationFailure ()
java	int get_regulationFailure ()
py	def get_regulationFailure ()
cmd	YVSource target get_regulationFailure

Returns :

either Y_REGULATIONFAILURE_FALSE or Y_REGULATIONFAILURE_TRUE, according to true if the voltage output is too high regarding the requested voltage

On failure, throws an exception or returns Y_REGULATIONFAILURE_INVALID.

vsource→**get_unit()****YVSource****vsource**→**unit()****vsource.get_unit()**

Returns the measuring unit for the voltage.

js	function get_unit ()
php	function get_unit ()
cpp	string get_unit ()
m	-(NSString*) unit
pas	function get_unit (): string
vb	function get_unit () As String
cs	string get_unit ()
java	String get_unit ()
py	def get_unit ()
cmd	YVSource target get_unit

Returns :

a string corresponding to the measuring unit for the voltage

On failure, throws an exception or returns Y_UNIT_INVALID.

vsource→**get_userData()****YVSource****vsource**→**userData()****vsource.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

vsource→**get_voltage()****YVSource****vsource**→**voltage()****vsource.get_voltage()**

Returns the voltage output command (mV)

js	function get_voltage ()
php	function get_voltage ()
cpp	int get_voltage ()
m	-(int) voltage
pas	function get_voltage (): LongInt
vb	function get_voltage () As Integer
cs	int get_voltage ()
java	int get_voltage ()
py	def get_voltage ()

Returns :

an integer corresponding to the voltage output command (mV)

On failure, throws an exception or returns Y_VOLTAGE_INVALID.

vsource→**isOnline()****vsource.isOnline()****YVSource**

Checks if the function is currently reachable, without raising any error.

js	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the function in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

Returns :

`true` if the function can be reached, and `false` otherwise

vsource→isOnline_async()**YVSource**

Checks if the function is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
```

If there is a cached value for the function in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox Javascript VM that does not implement context switching during blocking I/O calls.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

Preloads the function cache with a specified validity duration.

js	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

vsource→load_async()**YVSource**

Preloads the function cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

vsSource→**nextVSource()****vsSource.nextVSource()****YVSource**

Continues the enumeration of voltage sources started using `yFirstVSource()`.

js	function nextVSource ()
php	function nextVSource ()
cpp	YVSource * nextVSource ()
m	-(YVSource*) nextVSource
pas	function nextVSource (): TYVSource
vb	function nextVSource () As YVSource
cs	YVSource nextVSource ()
java	YVSource nextVSource ()
py	def nextVSource ()

Returns :

a pointer to a `YVSource` object, corresponding to a voltage source currently online, or a `null` pointer if there are no more voltage sources to enumerate.

vsource→**pulse()****vsource.pulse()****YVSource**

Sets device output to a specific volatage, for a specified duration, then brings it automatically to 0V.

js	function pulse (voltage , ms_duration)
php	function pulse (\$voltage , \$ms_duration)
cpp	int pulse (int voltage , int ms_duration)
m	-(int) pulse : (int) voltage : (int) ms_duration
pas	function pulse (voltage : integer, ms_duration : integer): integer
vb	function pulse (ByVal voltage As Integer, ByVal ms_duration As Integer) As Integer
cs	int pulse (int voltage , int ms_duration)
java	int pulse (int voltage , int ms_duration)
py	def pulse (voltage , ms_duration)
cmd	YVSource target pulse voltage ms_duration

Parameters :

voltage pulse voltage, in millivolts
ms_duration pulse duration, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

vsources.registerValueCallback()**YVSource****vsources.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	void registerValueCallback (YDisplayUpdateCallback callback)
pas	procedure registerValueCallback (callback : TGenericUpdateCallback)
vb	procedure registerValueCallback (ByVal callback As GenericUpdateCallback)
cs	void registerValueCallback (UpdateCallback callback)
java	void registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)
m	-(void) registerValueCallback : (YFunctionUpdateCallback) callback

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

vsource→**set_logicalName()**
vsource→**setLogicalName()**
vsource.set_logicalName()

YVSource

Changes the logical name of the voltage source.

js	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YVSource target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the voltage source

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

vsourceset_userdata()**YVSource****vsourcesetUserData()****vsourceset_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : TObject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

vsource→**set_voltage()****YVSource****vsource**→**setVoltage()****vsource.set_voltage()**

Tunes the device output voltage (milliVolts).

js	function set_voltage (newval)
php	function set_voltage (\$newval)
cpp	int set_voltage (int newval)
m	-(int) setVoltage : (int) newval
pas	function set_voltage (newval : LongInt): integer
vb	function set_voltage (ByVal newval As Integer) As Integer
cs	int set_voltage (int newval)
java	int set_voltage (int newval)
py	def set_voltage (newval)
cmd	YVSource target set_voltage newval

Parameters :

newval an integer

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

vsource→**voltageMove()****vsource.voltageMove()****YVSource**

Performs a smooth move at constant speed toward a given value.

js	function voltageMove (target , ms_duration)
php	function voltageMove (\$target , \$ms_duration)
cpp	int voltageMove (int target , int ms_duration)
m	-(int) voltageMove : (int) target : (int) ms_duration
pas	function voltageMove (target : integer, ms_duration : integer): integer
vb	function voltageMove (ByVal target As Integer, ByVal ms_duration As Integer) As Integer
cs	int voltageMove (int target , int ms_duration)
java	int voltageMove (int target , int ms_duration)
py	def voltageMove (target , ms_duration)
cmd	YVSource target voltageMove target ms_duration

Parameters :

target new output value at end of transition, in milliVolts.
ms_duration transition duration, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

vsource→**wait_async()****YVSource**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing :

3.43. WakeUpMonitor function interface

The WakeUpMonitor function handles globally all wake-up sources, as well as automated sleep mode.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_wakeupmonitor.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YWakeUpMonitor = yoctolib.YWakeUpMonitor;
php	require_once('yocto_wakeupmonitor.php');
c++	#include "yocto_wakeupmonitor.h"
m	#import "yocto_wakeupmonitor.h"
pas	uses yocto_wakeupmonitor;
vb	yocto_wakeupmonitor.vb
cs	yocto_wakeupmonitor.cs
java	import com.yoctopuce.YoctoAPI.YWakeUpMonitor;
py	from yocto_wakeupmonitor import *

Global functions
yFindWakeUpMonitor(func) Retrieves a monitor for a given identifier.
yFirstWakeUpMonitor() Starts the enumeration of monitors currently accessible.
YWakeupMonitor methods
wakeupmonitor→describe() Returns a short text that describes unambiguously the instance of the monitor in the form TYPE (NAME) =SERIAL . FUNCTIONID.
wakeupmonitor→get_advertisedValue() Returns the current value of the monitor (no more than 6 characters).
wakeupmonitor→get_errorMessage() Returns the error message of the latest error with the monitor.
wakeupmonitor→get_errorType() Returns the numerical error code of the latest error with the monitor.
wakeupmonitor→get_friendlyName() Returns a global identifier of the monitor in the format MODULE_NAME . FUNCTION_NAME.
wakeupmonitor→get_functionDescriptor() Returns a unique identifier of type YFUN_DESCR corresponding to the function.
wakeupmonitor→get_functionId() Returns the hardware identifier of the monitor, without reference to the module.
wakeupmonitor→get_hardwareId() Returns the unique hardware identifier of the monitor in the form SERIAL . FUNCTIONID.
wakeupmonitor→get_logicalName() Returns the logical name of the monitor.
wakeupmonitor→get_module() Gets the YModule object for the device on which the function is located.
wakeupmonitor→get_module_async(callback, context) Gets the YModule object for the device on which the function is located (asynchronous version).
wakeupmonitor→get_nextWakeUp()

Returns the next scheduled wake up date/time (UNIX format)
wakeupmonitor→get_powerDuration() Returns the maximal wake up time (in seconds) before automatically going to sleep.
wakeupmonitor→get_sleepCountdown() Returns the delay before the next sleep period.
wakeupmonitor→get_userData() Returns the value of the userData attribute, as previously stored using method set_userData.
wakeupmonitor→get_wakeUpReason() Returns the latest wake up reason.
wakeupmonitor→get_wakeUpState() Returns the current state of the monitor
wakeupmonitor→isOnline() Checks if the monitor is currently reachable, without raising any error.
wakeupmonitor→isOnline_async(callback, context) Checks if the monitor is currently reachable, without raising any error (asynchronous version).
wakeupmonitor→load(msValidity) Preloads the monitor cache with a specified validity duration.
wakeupmonitor→load_async(msValidity, callback, context) Preloads the monitor cache with a specified validity duration (asynchronous version).
wakeupmonitor→nextWakeUpMonitor() Continues the enumeration of monitors started using yFirstWakeUpMonitor().
wakeupmonitor→registerValueCallback(callback) Registers the callback function that is invoked on every change of advertised value.
wakeupmonitor→resetSleepCountDown() Resets the sleep countdown.
wakeupmonitor→set_logicalName(newval) Changes the logical name of the monitor.
wakeupmonitor→set_nextWakeUp(newval) Changes the days of the week when a wake up must take place.
wakeupmonitor→set_powerDuration(newval) Changes the maximal wake up time (seconds) before automatically going to sleep.
wakeupmonitor→set_sleepCountdown(newval) Changes the delay before the next sleep period.
wakeupmonitor→set_userData(data) Stores a user context provided as argument in the userData attribute of the function.
wakeupmonitor→sleep(secBeforeSleep) Goes to sleep until the next wake up condition is met, the RTC time must have been set before calling this function.
wakeupmonitor→sleepFor(secUntilWakeUp, secBeforeSleep) Goes to sleep for a specific duration or until the next wake up condition is met, the RTC time must have been set before calling this function.
wakeupmonitor→sleepUntil(wakeUpTime, secBeforeSleep) Go to sleep until a specific date is reached or until the next wake up condition is met, the RTC time must have been set before calling this function.
wakeupmonitor→wait_async(callback, context)

3. Reference

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

wakeupmonitor→**wakeUp()**

Forces a wake up.

YWakeUpMonitor.FindWakeUpMonitor()**YWakeUpMonitor****yFindWakeUpMonitor()****YWakeupMonitor.FindWakeUpMonitor()**

Retrieves a monitor for a given identifier.

js	function yFindWakeUpMonitor (func)
nodejs	function FindWakeUpMonitor (func)
php	function yFindWakeUpMonitor (\$func)
cpp	YWakeupMonitor* yFindWakeUpMonitor (const string& func)
m	YWakeupMonitor* yFindWakeUpMonitor (NSString* func)
pas	function yFindWakeUpMonitor (func : string): TYWakeUpMonitor
vb	function yFindWakeUpMonitor (ByVal func As String) As YWakeUpMonitor
cs	YWakeupMonitor FindWakeUpMonitor (string func)
java	YWakeupMonitor FindWakeUpMonitor (String func)
py	def FindWakeUpMonitor (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the monitor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YWakeupMonitor.isOnline()` to test if the monitor is indeed online at a given time. In case of ambiguity when looking for a monitor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the monitor

Returns :

a `YWakeupMonitor` object allowing you to drive the monitor.

YWakeUpMonitor.FirstWakeUpMonitor()**YWakeUpMonitor****yFirstWakeUpMonitor()****YWakeUpMonitor.FirstWakeUpMonitor()**

Starts the enumeration of monitors currently accessible.

js	function yFirstWakeUpMonitor ()
nodejs	function FirstWakeUpMonitor ()
php	function yFirstWakeUpMonitor ()
cpp	YWakeUpMonitor* yFirstWakeUpMonitor ()
m	YWakeUpMonitor* yFirstWakeUpMonitor ()
pas	function yFirstWakeUpMonitor (): TYWakeUpMonitor
vb	function yFirstWakeUpMonitor () As YWakeUpMonitor
cs	YWakeUpMonitor FirstWakeUpMonitor ()
java	YWakeUpMonitor FirstWakeUpMonitor ()
py	def FirstWakeUpMonitor ()

Use the method `YWakeUpMonitor.nextWakeUpMonitor()` to iterate on next monitors.

Returns :

a pointer to a `YWakeUpMonitor` object, corresponding to the first monitor currently online, or a `null` pointer if there are none.

wakeupmonitor→describe()**YWakeUpMonitor****wakeupmonitor.describe()**

Returns a short text that describes unambiguously the instance of the monitor in the form
 TYPE(NAME)=SERIAL.FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the monitor (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

wakeupmonitor→**get_advertisedValue()****YWakeUpMonitor****wakeupmonitor**→**advertisedValue()****wakeupmonitor.get_advertisedValue()**

Returns the current value of the monitor (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YWakeUpMonitor target get_advertisedValue

Returns :

a string corresponding to the current value of the monitor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

wakeupmonitor→get_errorMessage()**YWakeUpMonitor****wakeupmonitor→errorMessage()****wakeupmonitor.get_errorMessage()**

Returns the error message of the latest error with the monitor.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the monitor object

wakeupmonitor→get_errorType()
wakeupmonitor→errorType()
wakeupmonitor.get_errorType()

YWakeUpMonitor

Returns the numerical error code of the latest error with the monitor.

<code>js</code>	<code>function get_errorType()</code>
<code>nodejs</code>	<code>function get_errorType()</code>
<code>php</code>	<code>function get_errorType()</code>
<code>cpp</code>	<code>YRETCODE get_errorType()</code>
<code>pas</code>	<code>function get_errorType(): YRETCODE</code>
<code>vb</code>	<code>function get_errorType() As YRETCODE</code>
<code>cs</code>	<code>YRETCODE get_errorType()</code>
<code>java</code>	<code>int get_errorType()</code>
<code>py</code>	<code>def get_errorType()</code>

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the monitor object

wakeupmonitor→get_friendlyName()**YWakeUpMonitor****wakeupmonitor→friendlyName()****wakeupmonitor.get_friendlyName()**

Returns a global identifier of the monitor in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the monitor if they are defined, otherwise the serial number of the module and the hardware identifier of the monitor (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the monitor using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

wakeupmonitor→get_functionDescriptor()**YWakeUpMonitor****wakeupmonitor→functionDescriptor()****wakeupmonitor.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

wakeupmonitor→**get_functionId()****YWakeUpMonitor****wakeupmonitor**→**functionId()****wakeupmonitor.get_functionId()**

Returns the hardware identifier of the monitor, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the monitor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

wakeupmonitor→**get_hardwareId()****YWakeUpMonitor****wakeupmonitor**→**hardwareId()****wakeupmonitor.get_hardwareId()**

Returns the unique hardware identifier of the monitor in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the monitor. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the monitor (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

wakeupmonitor→**get_logicalName()****YWakeUpMonitor****wakeupmonitor**→**logicalName()****wakeupmonitor.get_logicalName()**

Returns the logical name of the monitor.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YWakeUpMonitor target get_logicalName

Returns :

a string corresponding to the logical name of the monitor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

wakeupmonitor→**get_module()****YWakeUpMonitor****wakeupmonitor**→**module()****wakeupmonitor.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

wakeupmonitor→**get_module_async()**
wakeupmonitor→**module_async()**

YWakeUpMonitor

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupmonitor→**get_nextWakeUp()****YWakeUpMonitor****wakeupmonitor**→**nextWakeUp()****wakeupmonitor.get_nextWakeUp()**

Returns the next scheduled wake up date/time (UNIX format)

js	function get_nextWakeUp ()
nodejs	function get_nextWakeUp ()
php	function get_nextWakeUp ()
cpp	s64 get_nextWakeUp ()
m	-(s64) nextWakeUp
pas	function get_nextWakeUp (): int64
vb	function get_nextWakeUp () As Long
cs	long get_nextWakeUp ()
java	long get_nextWakeUp ()
py	def get_nextWakeUp ()

Returns :

an integer corresponding to the next scheduled wake up date/time (UNIX format)

On failure, throws an exception or returns Y_NEXTWAKEUP_INVALID.

wakeupmonitor→get_powerDuration()**YWakeUpMonitor****wakeupmonitor→powerDuration()****wakeupmonitor.get_powerDuration()**

Returns the maximal wake up time (in seconds) before automatically going to sleep.

js	function get_powerDuration ()
nodejs	function get_powerDuration ()
php	function get_powerDuration ()
cpp	int get_powerDuration ()
m	-(int) powerDuration
pas	function get_powerDuration (): LongInt
vb	function get_powerDuration () As Integer
cs	int get_powerDuration ()
java	int get_powerDuration ()
py	def get_powerDuration ()
cmd	YWakeUpMonitor target get_powerDuration

Returns :

an integer corresponding to the maximal wake up time (in seconds) before automatically going to sleep

On failure, throws an exception or returns Y_POWERDURATION_INVALID.

wakeupmonitor→**get_sleepCountdown()****YWakeUpMonitor****wakeupmonitor**→**sleepCountdown()****wakeupmonitor.get_sleepCountdown()**

Returns the delay before the next sleep period.

js	function get_sleepCountdown()
nodejs	function get_sleepCountdown()
php	function get_sleepCountdown()
cpp	int get_sleepCountdown()
m	-(int) sleepCountdown
pas	function get_sleepCountdown() : LongInt
vb	function get_sleepCountdown() As Integer
cs	int get_sleepCountdown()
java	int get_sleepCountdown()
py	def get_sleepCountdown()
cmd	YWakeUpMonitor target get_sleepCountdown

Returns :

an integer corresponding to the delay before the next sleep period

On failure, throws an exception or returns Y_SLEEPDOWNDOWN_INVALID.

wakeupmonitor→get_userdata()**YWakeUpMonitor****wakeupmonitor→userData()****wakeupmonitor.get_userdata()**

Returns the value of the userData attribute, as previously stored using method `set_userdata`.

js	function get_userdata ()
nodejs	function get_userdata ()
php	function get_userdata ()
cpp	void * get_userdata ()
m	-(void*) userData
pas	function get_userdata (): Tobject
vb	function get_userdata () As Object
cs	object get_userdata ()
java	Object get_userdata ()
py	def get_userdata ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

wakeupmonitor→**get_wakeUpReason()****YWakeUpMonitor****wakeupmonitor**→**wakeUpReason()****wakeupmonitor.get_wakeUpReason()**

Returns the latest wake up reason.

js	function get_wakeUpReason()
nodejs	function get_wakeUpReason()
php	function get_wakeUpReason()
cpp	Y_WAKEUPREASON_enum get_wakeUpReason()
m	-(Y_WAKEUPREASON_enum) wakeUpReason
pas	function get_wakeUpReason() : Integer
vb	function get_wakeUpReason() As Integer
cs	int get_wakeUpReason()
java	int get_wakeUpReason()
py	def get_wakeUpReason()
cmd	YWakeUpMonitor target get_wakeUpReason

Returns :

a value among Y_WAKEUPREASON_USBPOWER, Y_WAKEUPREASON_EXTPOWER, Y_WAKEUPREASON_ENDOFSLEEP, Y_WAKEUPREASON_EXTSIG1, Y_WAKEUPREASON_EXTSIG2, Y_WAKEUPREASON_EXTSIG3, Y_WAKEUPREASON_EXTSIG4, Y_WAKEUPREASON_SCHEDULE1, Y_WAKEUPREASON_SCHEDULE2, Y_WAKEUPREASON_SCHEDULE3, Y_WAKEUPREASON_SCHEDULE4, Y_WAKEUPREASON_SCHEDULE5 and Y_WAKEUPREASON_SCHEDULE6 corresponding to the latest wake up reason

On failure, throws an exception or returns Y_WAKEUPREASON_INVALID.

wakeupmonitor→**get_wakeUpState()****YWakeUpMonitor****wakeupmonitor**→**wakeUpState()****wakeupmonitor.get_wakeUpState()**

Returns the current state of the monitor

js	function get_wakeUpState ()
nodejs	function get_wakeUpState ()
php	function get_wakeUpState ()
cpp	Y_WAKEUPSTATE_enum get_wakeUpState ()
m	-(Y_WAKEUPSTATE_enum) wakeUpState
pas	function get_wakeUpState (): Integer
vb	function get_wakeUpState () As Integer
cs	int get_wakeUpState ()
java	int get_wakeUpState ()
py	def get_wakeUpState ()

Returns :

either Y_WAKEUPSTATE_SLEEPING or Y_WAKEUPSTATE_AWAKE, according to the current state of the monitor

On failure, throws an exception or returns Y_WAKEUPSTATE_INVALID.

wakeupmonitor→isOnline()**YWakeUpMonitor****wakeupmonitor.isOnline()**

Checks if the monitor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the monitor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the monitor.

Returns :

true if the monitor can be reached, and false otherwise

wakeupmonitor→**isOnline_async()****YWakeUpMonitor**

Checks if the monitor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the monitor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupmonitor→**load()**`wakeupmonitor.load()`**YWakeUpMonitor**

Preloads the monitor cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→load_async()**YWakeUpMonitor**

Preloads the monitor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupmonitor→**nextWakeUpMonitor()**
wakeupmonitor.nextWakeUpMonitor()

YWakeUpMonitor

Continues the enumeration of monitors started using `yFirstWakeUpMonitor()`.

js	function nextWakeUpMonitor ()
nodejs	function nextWakeUpMonitor ()
php	function nextWakeUpMonitor ()
cpp	YWakeUpMonitor * nextWakeUpMonitor ()
m	-(YWakeUpMonitor*) nextWakeUpMonitor
pas	function nextWakeUpMonitor (): TYWakeUpMonitor
vb	function nextWakeUpMonitor () As YWakeUpMonitor
cs	YWakeUpMonitor nextWakeUpMonitor ()
java	YWakeUpMonitor nextWakeUpMonitor ()
py	def nextWakeUpMonitor ()

Returns :

a pointer to a `YWakeUpMonitor` object, corresponding to a monitor currently online, or a `null` pointer if there are no more monitors to enumerate.

wakeupmonitor→registerValueCallback()**YWakeUpMonitor****wakeupmonitor.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YWakeUpMonitorValueCallback callback)
m	-(int) registerValueCallback : (YWakeUpMonitorValueCallback) callback
pas	function registerValueCallback (callback : TYWakeUpMonitorValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

wakeupmonitor→resetSleepCountDown()**YWakeUpMonitor****wakeupmonitor.resetSleepCountDown()**

Resets the sleep countdown.

js	function resetSleepCountDown ()
nodejs	function resetSleepCountDown ()
php	function resetSleepCountDown ()
cpp	int resetSleepCountDown ()
m	-(int) resetSleepCountDown
pas	function resetSleepCountDown (): LongInt
vb	function resetSleepCountDown () As Integer
cs	int resetSleepCountDown ()
java	int resetSleepCountDown ()
py	def resetSleepCountDown ()
cmd	YWakeUpMonitor target resetSleepCountDown

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→set_logicalName()**YWakeUpMonitor****wakeupmonitor→setLogicalName()****wakeupmonitor.set_logicalName()**

Changes the logical name of the monitor.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YWakeUpMonitor target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the monitor.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→**set_nextWakeUp()****YWakeUpMonitor****wakeupmonitor**→**setNextWakeUp()****wakeupmonitor.set_nextWakeUp()**

Changes the days of the week when a wake up must take place.

js	function set_nextWakeUp (newval)
nodejs	function set_nextWakeUp (newval)
php	function set_nextWakeUp (\$newval)
cpp	int set_nextWakeUp (s64 newval)
m	-(int) setNextWakeUp : (s64) newval
pas	function set_nextWakeUp (newval : int64): integer
vb	function set_nextWakeUp (ByVal newval As Long) As Integer
cs	int set_nextWakeUp (long newval)
java	int set_nextWakeUp (long newval)
py	def set_nextWakeUp (newval)
cmd	YWakeUpMonitor target set_nextWakeUp newval

Parameters :

newval an integer corresponding to the days of the week when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→set_powerDuration()**YWakeUpMonitor****wakeupmonitor→setPowerDuration()****wakeupmonitor.set_powerDuration()**

Changes the maximal wake up time (seconds) before automatically going to sleep.

js	function set_powerDuration (newval)
nodejs	function set_powerDuration (newval)
php	function set_powerDuration (\$newval)
cpp	int set_powerDuration (int newval)
m	-(int) setPowerDuration : (int) newval
pas	function set_powerDuration (newval : LongInt): integer
vb	function set_powerDuration (ByVal newval As Integer) As Integer
cs	int set_powerDuration (int newval)
java	int set_powerDuration (int newval)
py	def set_powerDuration (newval)
cmd	YWakeUpMonitor target set_powerDuration newval

Parameters :

newval an integer corresponding to the maximal wake up time (seconds) before automatically going to sleep

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→**set_sleepCountdown()**
wakeupmonitor→**setSleepCountdown()**
wakeupmonitor.set_sleepCountdown()

YWakeUpMonitor

Changes the delay before the next sleep period.

js	function set_sleepCountdown (newval)
nodejs	function set_sleepCountdown (newval)
php	function set_sleepCountdown (\$newval)
cpp	int set_sleepCountdown (int newval)
m	-(int) setSleepCountdown : (int) newval
pas	function set_sleepCountdown (newval : LongInt): integer
vb	function set_sleepCountdown (ByVal newval As Integer) As Integer
cs	int set_sleepCountdown (int newval)
java	int set_sleepCountdown (int newval)
py	def set_sleepCountdown (newval)
cmd	YWakeUpMonitor target set_sleepCountdown newval

Parameters :

newval an integer corresponding to the delay before the next sleep period

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→set_userdata()**YWakeUpMonitor****wakeupmonitor→setUserData()****wakeupmonitor.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

wakeupmonitor→**sleep()**`wakeupmonitor.sleep()`**YWakeUpMonitor**

Goes to sleep until the next wake up condition is met, the RTC time must have been set before calling this function.

<code>js</code>	<code>function sleep(secBeforeSleep)</code>
<code>nodejs</code>	<code>function sleep(secBeforeSleep)</code>
<code>php</code>	<code>function sleep(\$secBeforeSleep)</code>
<code>cpp</code>	<code>int sleep(int secBeforeSleep)</code>
<code>m</code>	<code>-(int) sleep : (int) secBeforeSleep</code>
<code>pas</code>	<code>function sleep(secBeforeSleep: LongInt): LongInt</code>
<code>vb</code>	<code>function sleep() As Integer</code>
<code>cs</code>	<code>int sleep(int secBeforeSleep)</code>
<code>java</code>	<code>int sleep(int secBeforeSleep)</code>
<code>py</code>	<code>def sleep(secBeforeSleep)</code>
<code>cmd</code>	<code>YWakeUpMonitor target sleep secBeforeSleep</code>

Parameters :

secBeforeSleep number of seconds before going into sleep mode,

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→sleepFor()**YWakeUpMonitor****wakeupmonitor.sleepFor()**

Goes to sleep for a specific duration or until the next wake up condition is met, the RTC time must have been set before calling this function.

js	function sleepFor (secUntilWakeUp , secBeforeSleep)
nodejs	function sleepFor (secUntilWakeUp , secBeforeSleep)
php	function sleepFor (\$secUntilWakeUp , \$secBeforeSleep)
cpp	int sleepFor (int secUntilWakeUp , int secBeforeSleep)
m	-(int) sleepFor : (int) secUntilWakeUp : (int) secBeforeSleep
pas	function sleepFor (secUntilWakeUp : LongInt, secBeforeSleep : LongInt): LongInt
vb	function sleepFor () As Integer
cs	int sleepFor (int secUntilWakeUp , int secBeforeSleep)
java	int sleepFor (int secUntilWakeUp , int secBeforeSleep)
py	def sleepFor (secUntilWakeUp , secBeforeSleep)
cmd	YWakeUpMonitor target sleepFor secUntilWakeUp secBeforeSleep

The count down before sleep can be canceled with resetSleepCountDown.

Parameters :

secUntilWakeUp sleep duration, in secondes

secBeforeSleep number of seconds before going into sleep mode

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→sleepUntil()**YWakeUpMonitor****wakeupmonitor.sleepUntil()**

Go to sleep until a specific date is reached or until the next wake up condition is met, the RTC time must have been set before calling this function.

js	function sleepUntil (wakeUpTime , secBeforeSleep)
nodejs	function sleepUntil (wakeUpTime , secBeforeSleep)
php	function sleepUntil (\$wakeUpTime , \$secBeforeSleep)
c++	int sleepUntil (int wakeUpTime , int secBeforeSleep)
m	-(int) sleepUntil : (int) wakeUpTime : (int) secBeforeSleep
pas	function sleepUntil (wakeUpTime : LongInt, secBeforeSleep : LongInt): LongInt
vb	function sleepUntil () As Integer
cs	int sleepUntil (int wakeUpTime , int secBeforeSleep)
java	int sleepUntil (int wakeUpTime , int secBeforeSleep)
py	def sleepUntil (wakeUpTime , secBeforeSleep)
cmd	YWakeUpMonitor target sleepUntil wakeUpTime secBeforeSleep

The count down before sleep can be canceled with resetSleepCountDown.

Parameters :

wakeUpTime wake-up datetime (UNIX format)
secBeforeSleep number of seconds before going into sleep mode

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→wait_async()**YWakeUpMonitor**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

wakeupmonitor→**wakeUp()**
wakeupmonitor.wakeUp()

YWakeUpMonitor

Forces a wake up.

js	function wakeUp ()
nodejs	function wakeUp ()
php	function wakeUp ()
cpp	int wakeUp ()
m	-(int) wakeUp
pas	function wakeUp (): LongInt
vb	function wakeUp () As Integer
cs	int wakeUp ()
java	int wakeUp ()
py	def wakeUp ()
cmd	YWakeUpMonitor target wakeUp

3.44. WakeUpSchedule function interface

The WakeUpSchedule function implements a wake up condition. The wake up time is specified as a set of months and/or days and/or hours and/or minutes when the wake up should happen.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_wakeupschedule.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YWakeUpSchedule = yoctolib.YWakeUpSchedule;
php	require_once('yocto_wakeupschedule.php');
c++	#include "yocto_wakeupschedule.h"
m	#import "yocto_wakeupschedule.h"
pas	uses yocto_wakeupschedule;
vb	yocto_wakeupschedule.vb
cs	yocto_wakeupschedule.cs
java	import com.yoctopuce.YoctoAPI.YWakeUpSchedule;
py	from yocto_wakeupschedule import *

Global functions

yFindWakeUpSchedule(func)

Retrieves a wake up schedule for a given identifier.

yFirstWakeUpSchedule()

Starts the enumeration of wake up schedules currently accessible.

YWakeUpSchedule methods

wakeupschedule→describe()

Returns a short text that describes unambiguously the instance of the wake up schedule in the form TYPE (NAME) = SERIAL . FUNCTIONID.

wakeupschedule→get_advertisedValue()

Returns the current value of the wake up schedule (no more than 6 characters).

wakeupschedule→get_errorMessage()

Returns the error message of the latest error with the wake up schedule.

wakeupschedule→get_errorType()

Returns the numerical error code of the latest error with the wake up schedule.

wakeupschedule→get_friendlyName()

Returns a global identifier of the wake up schedule in the format MODULE_NAME . FUNCTION_NAME.

wakeupschedule→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

wakeupschedule→get_functionId()

Returns the hardware identifier of the wake up schedule, without reference to the module.

wakeupschedule→get_hardwareId()

Returns the unique hardware identifier of the wake up schedule in the form SERIAL . FUNCTIONID.

wakeupschedule→get_hours()

Returns the hours scheduled for wake up.

wakeupschedule→get_logicalName()

Returns the logical name of the wake up schedule.

wakeupschedule→get_minutes()

Returns all the minutes of each hour that are scheduled for wake up.

wakeupschedule→get_minutesA()

	Returns the minutes in the 00-29 interval of each hour scheduled for wake up.
wakeupschedule→get_minutesB()	Returns the minutes in the 30-59 interval of each hour scheduled for wake up.
wakeupschedule→get_module()	Gets the YModule object for the device on which the function is located.
wakeupschedule→get_module_async(callback, context)	Gets the YModule object for the device on which the function is located (asynchronous version).
wakeupschedule→get_monthDays()	Returns the days of the month scheduled for wake up.
wakeupschedule→get_months()	Returns the months scheduled for wake up.
wakeupschedule→get_nextOccurence()	Returns the date/time (seconds) of the next wake up occurrence
wakeupschedule→get_userData()	Returns the value of the userData attribute, as previously stored using method set_userData.
wakeupschedule→get_weekDays()	Returns the days of the week scheduled for wake up.
wakeupschedule→isOnline()	Checks if the wake up schedule is currently reachable, without raising any error.
wakeupschedule→isOnline_async(callback, context)	Checks if the wake up schedule is currently reachable, without raising any error (asynchronous version).
wakeupschedule→load(msValidity)	Preloads the wake up schedule cache with a specified validity duration.
wakeupschedule→load_async(msValidity, callback, context)	Preloads the wake up schedule cache with a specified validity duration (asynchronous version).
wakeupschedule→nextWakeUpSchedule()	Continues the enumeration of wake up schedules started using yFirstWakeUpSchedule().
wakeupschedule→registerValueCallback(callback)	Registers the callback function that is invoked on every change of advertised value.
wakeupschedule→set_hours(newval)	Changes the hours when a wake up must take place.
wakeupschedule→set_logicalName(newval)	Changes the logical name of the wake up schedule.
wakeupschedule→set_minutes(bitmap)	Changes all the minutes where a wake up must take place.
wakeupschedule→set_minutesA(newval)	Changes the minutes in the 00-29 interval when a wake up must take place.
wakeupschedule→set_minutesB(newval)	Changes the minutes in the 30-59 interval when a wake up must take place.
wakeupschedule→set_monthDays(newval)	Changes the days of the month when a wake up must take place.
wakeupschedule→set_months(newval)	Changes the months when a wake up must take place.
wakeupschedule→set_userData(data)	Stores a user context provided as argument in the userData attribute of the function.

wakeupschedule→**set_weekDays**(**newval**)

Changes the days of the week when a wake up must take place.

wakeupschedule→**wait_async**(**callback**, **context**)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YWakeUpSchedule.FindWakeUpSchedule() yFindWakeUpSchedule()

YWakeUpSchedule

YWakeUpSchedule.FindWakeUpSchedule()

Retrieves a wake up schedule for a given identifier.

js	function yFindWakeUpSchedule (func)
nodejs	function FindWakeUpSchedule (func)
php	function yFindWakeUpSchedule (\$func)
cpp	YWakeupSchedule* yFindWakeUpSchedule (const string& func)
m	YWakeupSchedule* yFindWakeUpSchedule (NSString* func)
pas	function yFindWakeUpSchedule (func : string): TYWakeUpSchedule
vb	function yFindWakeUpSchedule (ByVal func As String) As YWakeUpSchedule
cs	YWakeupSchedule FindWakeUpSchedule (string func)
java	YWakeupSchedule FindWakeUpSchedule (String func)
py	def FindWakeUpSchedule (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the wake up schedule is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YWakeupSchedule.isOnline()` to test if the wake up schedule is indeed online at a given time. In case of ambiguity when looking for a wake up schedule by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the wake up schedule

Returns :

a YWakeUpSchedule object allowing you to drive the wake up schedule.

YWakeUpSchedule.FirstWakeUpSchedule()**YWakeUpSchedule****yFirstWakeUpSchedule()****YWakeUpSchedule.FirstWakeUpSchedule()**

Starts the enumeration of wake up schedules currently accessible.

<code>js</code>	<code>function yFirstWakeUpSchedule()</code>
<code>nodejs</code>	<code>function FirstWakeUpSchedule()</code>
<code>php</code>	<code>function yFirstWakeUpSchedule()</code>
<code>cpp</code>	<code>YWakeUpSchedule* yFirstWakeUpSchedule()</code>
<code>m</code>	<code>YWakeUpSchedule* yFirstWakeUpSchedule()</code>
<code>pas</code>	<code>function yFirstWakeUpSchedule(): TYWakeUpSchedule</code>
<code>vb</code>	<code>function yFirstWakeUpSchedule() As YWakeUpSchedule</code>
<code>cs</code>	<code>YWakeUpSchedule FirstWakeUpSchedule()</code>
<code>java</code>	<code>YWakeUpSchedule FirstWakeUpSchedule()</code>
<code>py</code>	<code>def FirstWakeUpSchedule()</code>

Use the method `YWakeUpSchedule.nextWakeUpSchedule()` to iterate on next wake up schedules.

Returns :

a pointer to a `YWakeUpSchedule` object, corresponding to the first wake up schedule currently online, or a `null` pointer if there are none.

wakeupschedule→describe()**YWakeUpSchedule****wakeupschedule.describe()**

Returns a short text that describes unambiguously the instance of the wake up schedule in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the wake up schedule (ex:
 Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1)

wakeupschedule→get_advertisedValue()

YWakeUpSchedule

wakeupschedule→advertisedValue()

wakeupschedule.get_advertisedValue()

Returns the current value of the wake up schedule (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue(): string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YWakeUpSchedule target get_advertisedValue

Returns :

a string corresponding to the current value of the wake up schedule (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

wakeupschedule→**get_errorMessage()****YWakeUpSchedule****wakeupschedule**→**errorMessage()****wakeupschedule.get_errorMessage()**

Returns the error message of the latest error with the wake up schedule.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the wake up schedule object

wakeupschedule→get_errorType()**YWakeUpSchedule****wakeupschedule→errorType()****wakeupschedule.get_errorType()**

Returns the numerical error code of the latest error with the wake up schedule.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the wake up schedule object

wakeupschedule→get_friendlyName()**YWakeUpSchedule****wakeupschedule→friendlyName()****wakeupschedule.get_friendlyName()**

Returns a global identifier of the wake up schedule in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the wake up schedule if they are defined, otherwise the serial number of the module and the hardware identifier of the wake up schedule (for example: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the wake up schedule using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

wakeupschedule→get_functionDescriptor()**YWakeUpSchedule****wakeupschedule→functionDescriptor()****wakeupschedule.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

wakeupschedule→**get_functionId()****YWakeUpSchedule****wakeupschedule**→**functionId()****wakeupschedule.get_functionId()**

Returns the hardware identifier of the wake up schedule, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the wake up schedule (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

wakeupschedule→get_hardwareId()**YWakeUpSchedule****wakeupschedule→hardwareId()****wakeupschedule.get_hardwareId()**

Returns the unique hardware identifier of the wake up schedule in the form SERIAL.FUNCTIONID.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the wake up schedule. (for example RELAYLO1-123456.relay1)

Returns :

a string that uniquely identifies the wake up schedule (ex: RELAYLO1-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

wakeupschedule→**get_hours()****YWakeUpSchedule****wakeupschedule**→**hours()****wakeupschedule.get_hours()**

Returns the hours scheduled for wake up.

js	function get_hours ()
nodejs	function get_hours ()
php	function get_hours ()
cpp	int get_hours ()
m	-(int) hours
pas	function get_hours (): LongInt
vb	function get_hours () As Integer
cs	int get_hours ()
java	int get_hours ()
py	def get_hours ()
cmd	YWakeUpSchedule target get_hours

Returns :

an integer corresponding to the hours scheduled for wake up

On failure, throws an exception or returns Y_HOURS_INVALID.

wakeupschedule→get_logicalName()**YWakeUpSchedule****wakeupschedule→logicalName()****wakeupschedule.get_logicalName()**

Returns the logical name of the wake up schedule.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YWakeUpSchedule target get_logicalName

Returns :

a string corresponding to the logical name of the wake up schedule. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

wakeupschedule→**get_minutes()****YWakeUpSchedule****wakeupschedule**→**minutes()****wakeupschedule.get_minutes()**

Returns all the minutes of each hour that are scheduled for wake up.

js	function get_minutes ()
nodejs	function get_minutes ()
php	function get_minutes ()
cpp	s64 get_minutes ()
m	-(s64) minutes
pas	function get_minutes (): int64
vb	function get_minutes () As Long
cs	long get_minutes ()
java	long get_minutes ()
py	def get_minutes ()
cmd	YWakeUpSchedule target get_minutes

wakeupschedule→get_minutesA()**YWakeUpSchedule****wakeupschedule→minutesA()****wakeupschedule.get_minutesA()**

Returns the minutes in the 00-29 interval of each hour scheduled for wake up.

js	function get_minutesA ()
nodejs	function get_minutesA ()
php	function get_minutesA ()
cpp	int get_minutesA ()
m	-(int) minutesA
pas	function get_minutesA (): LongInt
vb	function get_minutesA () As Integer
cs	int get_minutesA ()
java	int get_minutesA ()
py	def get_minutesA ()
cmd	YWakeUpSchedule target get_minutesA

Returns :

an integer corresponding to the minutes in the 00-29 interval of each hour scheduled for wake up

On failure, throws an exception or returns Y_MINUTESA_INVALID.

wakeupschedule→**get_minutesB()****YWakeUpSchedule****wakeupschedule**→**minutesB()****wakeupschedule.get_minutesB()**

Returns the minutes in the 30-59 intervalof each hour scheduled for wake up.

js	function get_minutesB ()
nodejs	function get_minutesB ()
php	function get_minutesB ()
cpp	int get_minutesB ()
m	-(int) minutesB
pas	function get_minutesB (): LongInt
vb	function get_minutesB () As Integer
cs	int get_minutesB ()
java	int get_minutesB ()
py	def get_minutesB ()
cmd	YWakeUpSchedule target get_minutesB

Returns :

an integer corresponding to the minutes in the 30-59 intervalof each hour scheduled for wake up

On failure, throws an exception or returns Y_MINUTESB_INVALID.

wakeupschedule→get_module()**YWakeUpSchedule****wakeupschedule→module()****wakeupschedule.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
cpp	YModule * get_module ()
m	-(YModule*) module
pas	function get_module (): TModule
vb	function get_module () As YModule
cs	YModule get_module ()
java	YModule get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

wakeupschedule→**get_module_async()****YWakeUpSchedule****wakeupschedule**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupschedule→get_monthDays()**YWakeUpSchedule****wakeupschedule→monthDays()****wakeupschedule.get_monthDays()**

Returns the days of the month scheduled for wake up.

js	function get_monthDays ()
nodejs	function get_monthDays ()
php	function get_monthDays ()
cpp	int get_monthDays ()
m	-(int) monthDays
pas	function get_monthDays (): LongInt
vb	function get_monthDays () As Integer
cs	int get_monthDays ()
java	int get_monthDays ()
py	def get_monthDays ()
cmd	YWakeUpSchedule target get_monthDays

Returns :

an integer corresponding to the days of the month scheduled for wake up

On failure, throws an exception or returns Y_MONTHDAYS_INVALID.

wakeupschedule→**get_months()****YWakeUpSchedule****wakeupschedule**→**months()****wakeupschedule.get_months()**

Returns the months scheduled for wake up.

js	function get_months ()
nodejs	function get_months ()
php	function get_months ()
cpp	int get_months ()
m	-(int) months
pas	function get_months (): LongInt
vb	function get_months () As Integer
cs	int get_months ()
java	int get_months ()
py	def get_months ()
cmd	YWakeUpSchedule target get_months

Returns :

an integer corresponding to the months scheduled for wake up

On failure, throws an exception or returns Y_MONTHS_INVALID.

wakeupschedule→get_nextOccurence()**YWakeUpSchedule****wakeupschedule→nextOccurence()****wakeupschedule.get_nextOccurence()**

Returns the date/time (seconds) of the next wake up occurrence

js	function get_nextOccurence ()
nodejs	function get_nextOccurence ()
php	function get_nextOccurence ()
cpp	s64 get_nextOccurence ()
m	-(s64) nextOccurence
pas	function get_nextOccurence (): int64
vb	function get_nextOccurence () As Long
cs	long get_nextOccurence ()
java	long get_nextOccurence ()
py	def get_nextOccurence ()

Returns :

an integer corresponding to the date/time (seconds) of the next wake up occurrence

On failure, throws an exception or returns Y_NEXTOCCURENCE_INVALID.

wakeupschedule→**get_userData()****YWakeUpSchedule****wakeupschedule**→**userData()****wakeupschedule.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

wakeupschedule→get_weekDays()**YWakeUpSchedule****wakeupschedule→weekDays()****wakeupschedule.get_weekDays()**

Returns the days of the week scheduled for wake up.

js	function get_weekDays ()
nodejs	function get_weekDays ()
php	function get_weekDays ()
cpp	int get_weekDays ()
m	-(int) weekDays
pas	function get_weekDays (): LongInt
vb	function get_weekDays () As Integer
cs	int get_weekDays ()
java	int get_weekDays ()
py	def get_weekDays ()
cmd	YWakeUpSchedule target get_weekDays

Returns :

an integer corresponding to the days of the week scheduled for wake up

On failure, throws an exception or returns Y_WEEKDAYS_INVALID.

wakeupschedule→isOnline()**YWakeUpSchedule****wakeupschedule.isOnline()**

Checks if the wake up schedule is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the wake up schedule in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the wake up schedule.

Returns :

`true` if the wake up schedule can be reached, and `false` otherwise

wakeupschedule→isOnline_async()**YWakeUpSchedule**

Checks if the wake up schedule is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the wake up schedule in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupschedule→**load()**`wakeupschedule.load()`**YWakeUpSchedule**

Preloads the wake up schedule cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupschedule→load_async()**YWakeUpSchedule**

Preloads the wake up schedule cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupschedule→**nextWakeUpSchedule()****YWakeUpSchedule****wakeupschedule.nextWakeUpSchedule()**

Continues the enumeration of wake up schedules started using `yFirstWakeUpSchedule()`.

js	function nextWakeUpSchedule ()
nodejs	function nextWakeUpSchedule ()
php	function nextWakeUpSchedule ()
cpp	YWakeupSchedule * nextWakeUpSchedule ()
m	-(YWakeupSchedule*) nextWakeUpSchedule
pas	function nextWakeUpSchedule (): TYWakeUpSchedule
vb	function nextWakeUpSchedule () As YWakeUpSchedule
cs	YWakeupSchedule nextWakeUpSchedule ()
java	YWakeupSchedule nextWakeUpSchedule ()
py	def nextWakeUpSchedule ()

Returns :

a pointer to a `YWakeupSchedule` object, corresponding to a wake up schedule currently online, or a `null` pointer if there are no more wake up schedules to enumerate.

wakeupschedule→registerValueCallback()**YWakeUpSchedule****wakeupschedule.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YWakeUpScheduleValueCallback callback)
m	-(int) registerValueCallback : (YWakeUpScheduleValueCallback) callback
pas	function registerValueCallback (callback : TYWakeUpScheduleValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

wakeupschedule→**set_hours()****YWakeUpSchedule****wakeupschedule**→**setHours()****wakeupschedule.set_hours()**

Changes the hours when a wake up must take place.

js	function set_hours (newval)
nodejs	function set_hours (newval)
php	function set_hours (\$newval)
cpp	int set_hours (int newval)
m	-(int) setHours : (int) newval
pas	function set_hours (newval : LongInt): integer
vb	function set_hours (ByVal newval As Integer) As Integer
cs	int set_hours (int newval)
java	int set_hours (int newval)
py	def set_hours (newval)
cmd	YWakeUpSchedule target set_hours newval

Parameters :

newval an integer corresponding to the hours when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_logicalName()**YWakeUpSchedule****wakeupschedule→setLogicalName()****wakeupschedule.set_logicalName()**

Changes the logical name of the wake up schedule.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YWakeUpSchedule target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the wake up schedule.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupschedule→set_minutes()

YWakeUpSchedule

wakeupschedule→setMinutes()

wakeupschedule.set_minutes()

Changes all the minutes where a wake up must take place.

js	function set_minutes (bitmap)
nodejs	function set_minutes (bitmap)
php	function set_minutes (\$bitmap)
cpp	int set_minutes (s64 bitmap)
m	-(int) setMinutes : (s64) bitmap
pas	function set_minutes (bitmap : int64): LongInt
vb	function set_minutes () As Integer
cs	int set_minutes (long bitmap)
java	int set_minutes (long bitmap)
py	def set_minutes (bitmap)
cmd	YWakeUpSchedule target set_minutes bitmap

Parameters :

bitmap Minutes 00-59 of each hour scheduled for wake up.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupschedule→set_minutesA()**YWakeUpSchedule****wakeupschedule→setMinutesA()****wakeupschedule.set_minutesA()**

Changes the minutes in the 00-29 interval when a wake up must take place.

js	function set_minutesA (newval)
nodejs	function set_minutesA (newval)
php	function set_minutesA (\$newval)
cpp	int set_minutesA (int newval)
m	-(int) setMinutesA : (int) newval
pas	function set_minutesA (newval : LongInt): integer
vb	function set_minutesA (ByVal newval As Integer) As Integer
cs	int set_minutesA (int newval)
java	int set_minutesA (int newval)
py	def set_minutesA (newval)
cmd	YWakeUpSchedule target set_minutesA newval

Parameters :

newval an integer corresponding to the minutes in the 00-29 interval when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→**set_minutesB()****YWakeUpSchedule****wakeupschedule**→**setMinutesB()****wakeupschedule.set_minutesB()**

Changes the minutes in the 30-59 interval when a wake up must take place.

<code>js</code>	<code>function set_minutesB(newval)</code>
<code>nodejs</code>	<code>function set_minutesB(newval)</code>
<code>php</code>	<code>function set_minutesB(\$newval)</code>
<code>cpp</code>	<code>int set_minutesB(int newval)</code>
<code>m</code>	<code>-(int) setMinutesB : (int) newval</code>
<code>pas</code>	<code>function set_minutesB(newval: LongInt): integer</code>
<code>vb</code>	<code>function set_minutesB(ByVal newval As Integer) As Integer</code>
<code>cs</code>	<code>int set_minutesB(int newval)</code>
<code>java</code>	<code>int set_minutesB(int newval)</code>
<code>py</code>	<code>def set_minutesB(newval)</code>
<code>cmd</code>	<code>YWakeUpSchedule target set_minutesB newval</code>

Parameters :

newval an integer corresponding to the minutes in the 30-59 interval when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_monthDays()**YWakeUpSchedule****wakeupschedule→setMonthDays()****wakeupschedule.set_monthDays ()**

Changes the days of the month when a wake up must take place.

js	function set_monthDays (newval)
nodejs	function set_monthDays (newval)
php	function set_monthDays (\$newval)
cpp	int set_monthDays (int newval)
m	-(int) setMonthDays : (int) newval
pas	function set_monthDays (newval : LongInt): integer
vb	function set_monthDays (ByVal newval As Integer) As Integer
cs	int set_monthDays (int newval)
java	int set_monthDays (int newval)
py	def set_monthDays (newval)
cmd	YWakeUpSchedule target set_monthDays newval

Parameters :

newval an integer corresponding to the days of the month when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→**set_months()****YWakeUpSchedule****wakeupschedule**→**setMonths()****wakeupschedule.set_months()**

Changes the months when a wake up must take place.

js	function set_months (newval)
nodejs	function set_months (newval)
php	function set_months (\$newval)
cpp	int set_months (int newval)
m	-(int) setMonths : (int) newval
pas	function set_months (newval : LongInt): integer
vb	function set_months (ByVal newval As Integer) As Integer
cs	int set_months (int newval)
java	int set_months (int newval)
py	def set_months (newval)
cmd	YWakeUpSchedule target set_months newval

Parameters :

newval an integer corresponding to the months when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_userdata()**YWakeUpSchedule****wakeupschedule→setUserData()****wakeupschedule.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

wakeupschedule→**set_weekDays()****YWakeUpSchedule****wakeupschedule**→**setWeekDays()****wakeupschedule.set_weekDays ()**

Changes the days of the week when a wake up must take place.

js	function set_weekDays (newval)
nodejs	function set_weekDays (newval)
php	function set_weekDays (\$newval)
cpp	int set_weekDays (int newval)
m	-(int) setWeekDays : (int) newval
pas	function set_weekDays (newval : LongInt): integer
vb	function set_weekDays (ByVal newval As Integer) As Integer
cs	int set_weekDays (int newval)
java	int set_weekDays (int newval)
py	def set_weekDays (newval)
cmd	YWakeUpSchedule target set_weekDays newval

Parameters :

newval an integer corresponding to the days of the week when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→wait_async()**YWakeUpSchedule**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.45. Watchdog function interface

The watchdog function works like a relay and can cause a brief power cut to an appliance after a preset delay to force this appliance to reset. The Watchdog must be called from time to time to reset the timer and prevent the appliance reset. The watchdog can be driven directly with *pulse* and *delayedpulse* methods to switch off an appliance for a given duration.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_watchdog.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YWatchdog = yoctolib.YWatchdog;
php	require_once('yocto_watchdog.php');
c++	#include "yocto_watchdog.h"
m	#import "yocto_watchdog.h"
pas	uses yocto_watchdog;
vb	yocto_watchdog.vb
cs	yocto_watchdog.cs
java	import com.yoctopuce.YoctoAPI.YWatchdog;
py	from yocto_watchdog import *

Global functions

yFindWatchdog(func)

Retrieves a watchdog for a given identifier.

yFirstWatchdog()

Starts the enumeration of watchdog currently accessible.

YWatchdog methods

watchdog→delayedPulse(ms_delay, ms_duration)

Schedules a pulse.

watchdog→describe()

Returns a short text that describes unambiguously the instance of the watchdog in the form TYPE (NAME) =SERIAL . FUNCTIONID.

watchdog→get_advertisedValue()

Returns the current value of the watchdog (no more than 6 characters).

watchdog→get_autoStart()

Returns the watchdog running state at module power up.

watchdog→get_countdown()

Returns the number of milliseconds remaining before a pulse (delayedPulse() call) When there is no scheduled pulse, returns zero.

watchdog→get_errorMessage()

Returns the error message of the latest error with the watchdog.

watchdog→get_errorType()

Returns the numerical error code of the latest error with the watchdog.

watchdog→get_friendlyName()

Returns a global identifier of the watchdog in the format MODULE_NAME . FUNCTION_NAME.

watchdog→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

watchdog→get_functionId()

Returns the hardware identifier of the watchdog, without reference to the module.

watchdog→get_hardwareId()

Returns the unique hardware identifier of the watchdog in the form SERIAL . FUNCTIONID.

watchdog→get_logicalName()

Returns the logical name of the watchdog.

watchdog→get_maxTimeOnStateA()

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

watchdog→get_maxTimeOnStateB()

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

watchdog→get_module()

Gets the YModule object for the device on which the function is located.

watchdog→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

watchdog→get_output()

Returns the output state of the watchdog, when used as a simple switch (single throw).

watchdog→get_pulseTimer()

Returns the number of milliseconds remaining before the watchdog is returned to idle position (state A), during a measured pulse generation.

watchdog→get_running()

Returns the watchdog running state.

watchdog→get_state()

Returns the state of the watchdog (A for the idle position, B for the active position).

watchdog→get_stateAtPowerOn()

Returns the state of the watchdog at device startup (A for the idle position, B for the active position, UNCHANGED for no change).

watchdog→get_triggerDelay()

Returns the waiting duration before a reset is automatically triggered by the watchdog, in milliseconds.

watchdog→get_triggerDuration()

Returns the duration of resets caused by the watchdog, in milliseconds.

watchdog→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

watchdog→isOnline()

Checks if the watchdog is currently reachable, without raising any error.

watchdog→isOnline_async(callback, context)

Checks if the watchdog is currently reachable, without raising any error (asynchronous version).

watchdog→load(msValidity)

Preloads the watchdog cache with a specified validity duration.

watchdog→load_async(msValidity, callback, context)

Preloads the watchdog cache with a specified validity duration (asynchronous version).

watchdog→nextWatchdog()

Continues the enumeration of watchdog started using yFirstWatchdog().

watchdog→pulse(ms_duration)

Sets the relay to output B (active) for a specified duration, then brings it automatically back to output A (idle state).

watchdog→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

watchdog→resetWatchdog()

Resets the watchdog.

watchdog→set_autoStart(newval)

Changes the watchdog running state at module power up.

watchdog→set_logicalName(newval)

Changes the logical name of the watchdog.

watchdog→set_maxTimeOnStateA(newval)

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

watchdog→set_maxTimeOnStateB(newval)

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

watchdog→set_output(newval)

Changes the output state of the watchdog, when used as a simple switch (single throw).

watchdog→set_running(newval)

Changes the running state of the watchdog.

watchdog→set_state(newval)

Changes the state of the watchdog (A for the idle position, B for the active position).

watchdog→set_stateAtPowerOn(newval)

Preset the state of the watchdog at device startup (A for the idle position, B for the active position, UNCHANGED for no modification).

watchdog→set_triggerDelay(newval)

Changes the waiting delay before a reset is triggered by the watchdog, in milliseconds.

watchdog→set_triggerDuration(newval)

Changes the duration of resets caused by the watchdog, in milliseconds.

watchdog→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

watchdog→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YWatchdog.FindWatchdog()**YWatchdog****yFindWatchdog()**`YWatchdog.FindWatchdog()`

Retrieves a watchdog for a given identifier.

js	function yFindWatchdog (func)
nodejs	function FindWatchdog (func)
php	function yFindWatchdog (\$func)
cpp	YWatchdog* yFindWatchdog (const string& func)
m	YWatchdog* yFindWatchdog (NSString* func)
pas	function yFindWatchdog (func : string): TYWatchdog
vb	function yFindWatchdog (ByVal func As String) As YWatchdog
cs	YWatchdog FindWatchdog (string func)
java	YWatchdog FindWatchdog (String func)
py	def FindWatchdog (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the watchdog is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YWatchdog.isOnline()` to test if the watchdog is indeed online at a given time. In case of ambiguity when looking for a watchdog by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the watchdog

Returns :

a `YWatchdog` object allowing you to drive the watchdog.

YWatchdog.FirstWatchdog()**YWatchdog****yFirstWatchdog()****YWatchdog.FirstWatchdog()**

Starts the enumeration of watchdog currently accessible.

js	function yFirstWatchdog ()
nodejs	function FirstWatchdog ()
php	function yFirstWatchdog ()
cpp	YWatchdog* yFirstWatchdog ()
m	YWatchdog* yFirstWatchdog ()
pas	function yFirstWatchdog (): TYWatchdog
vb	function yFirstWatchdog () As YWatchdog
cs	YWatchdog FirstWatchdog ()
java	YWatchdog FirstWatchdog ()
py	def FirstWatchdog ()

Use the method `YWatchdog.nextWatchdog()` to iterate on next watchdog.

Returns :

a pointer to a `YWatchdog` object, corresponding to the first watchdog currently online, or a `null` pointer if there are none.

watchdog→delayedPulse()**YWatchdog****watchdog.delayedPulse()**

Schedules a pulse.

js	function delayedPulse (ms_delay , ms_duration)
nodejs	function delayedPulse (ms_delay , ms_duration)
php	function delayedPulse (\$ms_delay , \$ms_duration)
cpp	int delayedPulse (int ms_delay , int ms_duration)
m	-(int) delayedPulse : (int) ms_delay : (int) ms_duration
pas	function delayedPulse (ms_delay : LongInt, ms_duration : LongInt): integer
vb	function delayedPulse (ByVal ms_delay As Integer, ByVal ms_duration As Integer) As Integer
cs	int delayedPulse (int ms_delay , int ms_duration)
java	int delayedPulse (int ms_delay , int ms_duration)
py	def delayedPulse (ms_delay , ms_duration)
cmd	YWatchdog target delayedPulse ms_delay ms_duration

Parameters :

ms_delay waiting time before the pulse, in milliseconds
ms_duration pulse duration, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→describe()`watchdog.describe()`**YWatchdog**

Returns a short text that describes unambiguously the instance of the watchdog in the form
 TYPE (NAME) = SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the watchdog (ex: `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

watchdog→get_advertisedValue()**YWatchdog****watchdog→advertisedValue()****watchdog.get_advertisedValue()**

Returns the current value of the watchdog (no more than 6 characters).

js	function get_advertisedValue ()
nodejs	function get_advertisedValue ()
php	function get_advertisedValue ()
cpp	string get_advertisedValue ()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue (): string
vb	function get_advertisedValue () As String
cs	string get_advertisedValue ()
java	String get_advertisedValue ()
py	def get_advertisedValue ()
cmd	YWatchdog target get_advertisedValue

Returns :

a string corresponding to the current value of the watchdog (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

watchdog→**get_autoStart()****YWatchdog****watchdog**→**autoStart()****watchdog.get_autoStart()**

Returns the watchdog runing state at module power up.

js	function get_autoStart ()
nodejs	function get_autoStart ()
php	function get_autoStart ()
cpp	Y_AUTOSTART_enum get_autoStart ()
m	-(Y_AUTOSTART_enum) autoStart
pas	function get_autoStart (): Integer
vb	function get_autoStart () As Integer
cs	int get_autoStart ()
java	int get_autoStart ()
py	def get_autoStart ()
cmd	YWatchdog target get_autoStart

Returns :

either Y_AUTOSTART_OFF or Y_AUTOSTART_ON, according to the watchdog runing state at module power up

On failure, throws an exception or returns Y_AUTOSTART_INVALID.

watchdog→get_countdown()**YWatchdog****watchdog→countdown()****watchdog.get_countdown()**

Returns the number of milliseconds remaining before a pulse (delayedPulse() call) When there is no scheduled pulse, returns zero.

js	function get_countdown ()
nodejs	function get_countdown ()
php	function get_countdown ()
c++	s64 get_countdown ()
m	-(s64) countdown
pas	function get_countdown (): int64
vb	function get_countdown () As Long
cs	long get_countdown ()
java	long get_countdown ()
py	def get_countdown ()
cmd	YWatchdog target get_countdown

Returns :

an integer corresponding to the number of milliseconds remaining before a pulse (delayedPulse() call) When there is no scheduled pulse, returns zero

On failure, throws an exception or returns Y_COUNTDOWN_INVALID.

watchdog→**get_errorMessage()****YWatchdog****watchdog**→**errorMessage()****watchdog.get_errorMessage()**

Returns the error message of the latest error with the watchdog.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the watchdog object

watchdog→get_errorType()**YWatchdog****watchdog→errorType()****watchdog.get_errorType()**

Returns the numerical error code of the latest error with the watchdog.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the watchdog object

watchdog→**get_friendlyName()****YWatchdog****watchdog**→**friendlyName()****watchdog.get_friendlyName()**

Returns a global identifier of the watchdog in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the watchdog if they are defined, otherwise the serial number of the module and the hardware identifier of the watchdog (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the watchdog using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

watchdog→get_functionDescriptor()**YWatchdog****watchdog→functionDescriptor()****watchdog.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

watchdog→**get_functionId()****YWatchdog****watchdog**→**functionId()****watchdog.get_functionId()**

Returns the hardware identifier of the watchdog, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the watchdog (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

watchdog→get_hardwareId()**YWatchdog****watchdog→hardwareId()****watchdog.get_hardwareId()**

Returns the unique hardware identifier of the watchdog in the form `SERIAL.FUNCTIONID`.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the watchdog. (for example `RELAYLO1-123456.relay1`)

Returns :

a string that uniquely identifies the watchdog (ex: `RELAYLO1-123456.relay1`) On failure, throws an exception or returns `Y_HARDWAREID_INVALID`.

watchdog→**get_logicalName()****YWatchdog****watchdog**→**logicalName()****watchdog.get_logicalName()**

Returns the logical name of the watchdog.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YWatchdog target get_logicalName

Returns :

a string corresponding to the logical name of the watchdog. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

watchdog→get_maxTimeOnStateA()**YWatchdog****watchdog→maxTimeOnStateA()****watchdog.get_maxTimeOnStateA()**

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

js	function get_maxTimeOnStateA ()
nodejs	function get_maxTimeOnStateA ()
php	function get_maxTimeOnStateA ()
cpp	s64 get_maxTimeOnStateA ()
m	-(s64) maxTimeOnStateA
pas	function get_maxTimeOnStateA (): int64
vb	function get_maxTimeOnStateA () As Long
cs	long get_maxTimeOnStateA ()
java	long get_maxTimeOnStateA ()
py	def get_maxTimeOnStateA ()
cmd	YWatchdog target get_maxTimeOnStateA

Zero means no maximum time.

Returns :

an integer

On failure, throws an exception or returns Y_MAXTIMEONSTATEA_INVALID.

watchdog→**get_maxTimeOnStateB()****YWatchdog****watchdog**→**maxTimeOnStateB()****watchdog.get_maxTimeOnStateB()**

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

js	function get_maxTimeOnStateB ()
nodejs	function get_maxTimeOnStateB ()
php	function get_maxTimeOnStateB ()
cpp	s64 get_maxTimeOnStateB ()
m	-(s64) maxTimeOnStateB
pas	function get_maxTimeOnStateB (): int64
vb	function get_maxTimeOnStateB () As Long
cs	long get_maxTimeOnStateB ()
java	long get_maxTimeOnStateB ()
py	def get_maxTimeOnStateB ()
cmd	YWatchdog target get_maxTimeOnStateB

Zero means no maximum time.

Returns :

an integer

On failure, throws an exception or returns Y_MAXTIMEONSTATEB_INVALID.

watchdog→get_module()**YWatchdog****watchdog→module()**`watchdog.get_module()`

Gets the `YModule` object for the device on which the function is located.

js	function get_module ()
nodejs	function get_module ()
php	function get_module ()
c++	<code>YModule *</code> get_module ()
m	<code>-(YModule*)</code> module
pas	function get_module (): <code>TYModule</code>
vb	function get_module () As <code>YModule</code>
cs	<code>YModule</code> get_module ()
java	<code>YModule</code> get_module ()
py	def get_module ()

If the function cannot be located on any module, the returned instance of `YModule` is not shown as on-line.

Returns :

an instance of `YModule`

watchdog→**get_module_async()****YWatchdog****watchdog**→**module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

watchdog→get_output()**YWatchdog****watchdog→output()**`watchdog.get_output()`

Returns the output state of the watchdog, when used as a simple switch (single throw).

js	function get_output()
nodejs	function get_output()
php	function get_output()
cpp	Y_OUTPUT_enum get_output()
m	-(Y_OUTPUT_enum) output
pas	function get_output() : Integer
vb	function get_output() As Integer
cs	int get_output()
java	int get_output()
py	def get_output()
cmd	YWatchdog target get_output

Returns :

either Y_OUTPUT_OFF or Y_OUTPUT_ON, according to the output state of the watchdog, when used as a simple switch (single throw)

On failure, throws an exception or returns Y_OUTPUT_INVALID.

watchdog→get_pulseTimer()**YWatchdog****watchdog→pulseTimer()****watchdog.get_pulseTimer()**

Returns the number of milliseconds remaining before the watchdog is returned to idle position (state A), during a measured pulse generation.

js	function get_pulseTimer ()
nodejs	function get_pulseTimer ()
php	function get_pulseTimer ()
cpp	s64 get_pulseTimer ()
m	-(s64) pulseTimer
pas	function get_pulseTimer (): int64
vb	function get_pulseTimer () As Long
cs	long get_pulseTimer ()
java	long get_pulseTimer ()
py	def get_pulseTimer ()
cmd	YWatchdog target get_pulseTimer

When there is no ongoing pulse, returns zero.

Returns :

an integer corresponding to the number of milliseconds remaining before the watchdog is returned to idle position (state A), during a measured pulse generation

On failure, throws an exception or returns Y_PULSETIMER_INVALID.

watchdog→get_running()**YWatchdog****watchdog→running()**`watchdog.get_running()`

Returns the watchdog running state.

js	function get_running()
nodejs	function get_running()
php	function get_running()
cpp	Y_RUNNING_enum get_running()
m	-(Y_RUNNING_enum) running
pas	function get_running() : Integer
vb	function get_running() As Integer
cs	int get_running()
java	int get_running()
py	def get_running()
cmd	YWatchdog target get_running

Returns :

either Y_RUNNING_OFF or Y_RUNNING_ON, according to the watchdog running state

On failure, throws an exception or returns Y_RUNNING_INVALID.

watchdog→**get_state()****YWatchdog****watchdog**→**state()****watchdog.get_state()**

Returns the state of the watchdog (A for the idle position, B for the active position).

js	function get_state ()
nodejs	function get_state ()
php	function get_state ()
cpp	Y_STATE_enum get_state ()
m	-(Y_STATE_enum) state
pas	function get_state (): Integer
vb	function get_state () As Integer
cs	int get_state ()
java	int get_state ()
py	def get_state ()
cmd	YWatchdog target get_state

Returns :

either Y_STATE_A or Y_STATE_B, according to the state of the watchdog (A for the idle position, B for the active position)

On failure, throws an exception or returns Y_STATE_INVALID.

watchdog→get_stateAtPowerOn()**YWatchdog****watchdog→stateAtPowerOn()****watchdog.get_stateAtPowerOn()**

Returns the state of the watchdog at device startup (A for the idle position, B for the active position, UNCHANGED for no change).

js	function get_stateAtPowerOn ()
nodejs	function get_stateAtPowerOn ()
php	function get_stateAtPowerOn ()
cpp	Y_STATEATPOWERON_enum get_stateAtPowerOn ()
m	-(Y_STATEATPOWERON_enum) stateAtPowerOn
pas	function get_stateAtPowerOn (): Integer
vb	function get_stateAtPowerOn () As Integer
cs	int get_stateAtPowerOn ()
java	int get_stateAtPowerOn ()
py	def get_stateAtPowerOn ()
cmd	YWatchdog target get_stateAtPowerOn

Returns :

a value among Y_STATEATPOWERON_UNCHANGED, Y_STATEATPOWERON_A and Y_STATEATPOWERON_B corresponding to the state of the watchdog at device startup (A for the idle position, B for the active position, UNCHANGED for no change)

On failure, throws an exception or returns Y_STATEATPOWERON_INVALID.

watchdog→get_triggerDelay()**YWatchdog****watchdog→triggerDelay()****watchdog.get_triggerDelay()**

Returns the waiting duration before a reset is automatically triggered by the watchdog, in milliseconds.

js	function get_triggerDelay ()
nodejs	function get_triggerDelay ()
php	function get_triggerDelay ()
cpp	s64 get_triggerDelay ()
m	-(s64) triggerDelay
pas	function get_triggerDelay (): int64
vb	function get_triggerDelay () As Long
cs	long get_triggerDelay ()
java	long get_triggerDelay ()
py	def get_triggerDelay ()
cmd	YWatchdog target get_triggerDelay

Returns :

an integer corresponding to the waiting duration before a reset is automatically triggered by the watchdog, in milliseconds

On failure, throws an exception or returns Y_TRIGGERDELAY_INVALID.

watchdog→get_triggerDuration()**YWatchdog****watchdog→triggerDuration()****watchdog.get_triggerDuration()**

Returns the duration of resets caused by the watchdog, in milliseconds.

js	function get_triggerDuration ()
nodejs	function get_triggerDuration ()
php	function get_triggerDuration ()
cpp	s64 get_triggerDuration ()
m	-(s64) triggerDuration
pas	function get_triggerDuration (): int64
vb	function get_triggerDuration () As Long
cs	long get_triggerDuration ()
java	long get_triggerDuration ()
py	def get_triggerDuration ()
cmd	YWatchdog target get_triggerDuration

Returns :

an integer corresponding to the duration of resets caused by the watchdog, in milliseconds

On failure, throws an exception or returns Y_TRIGGERDURATION_INVALID.

watchdog→**get_userData()****YWatchdog****watchdog**→**userData()****watchdog.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

watchdog→isOnline()`watchdog.isOnline()`**YWatchdog**

Checks if the watchdog is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the watchdog in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the watchdog.

Returns :

`true` if the watchdog can be reached, and `false` otherwise

watchdog→isOnline_async()**YWatchdog**

Checks if the watchdog is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the watchdog in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

watchdog→load()`watchdog.load()`**YWatchdog**

Preloads the watchdog cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

watchdog→load_async()**YWatchdog**

Preloads the watchdog cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

watchdog→nextWatchdog()**YWatchdog****watchdog.nextWatchdog()**

Continues the enumeration of watchdog started using `yFirstWatchdog()`.

js	function nextWatchdog()
nodejs	function nextWatchdog()
php	function nextWatchdog()
cpp	YWatchdog * nextWatchdog()
m	-(YWatchdog*) nextWatchdog
pas	function nextWatchdog() : TYWatchdog
vb	function nextWatchdog() As YWatchdog
cs	YWatchdog nextWatchdog()
java	YWatchdog nextWatchdog()
py	def nextWatchdog()

Returns :

a pointer to a `YWatchdog` object, corresponding to a watchdog currently online, or a `null` pointer if there are no more watchdog to enumerate.

watchdog→pulse()`watchdog.pulse()`**YWatchdog**

Sets the relay to output B (active) for a specified duration, then brings it automatically back to output A (idle state).

js	function pulse (ms_duration)
nodejs	function pulse (ms_duration)
php	function pulse (\$ms_duration)
cpp	int pulse (int ms_duration)
m	-(int) pulse : (int) ms_duration
pas	function pulse (ms_duration : LongInt): integer
vb	function pulse (ByVal ms_duration As Integer) As Integer
cs	int pulse (int ms_duration)
java	int pulse (int ms_duration)
py	def pulse (ms_duration)
cmd	YWatchdog target pulse ms_duration

Parameters :

ms_duration pulse duration, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→registerValueCallback()**YWatchdog****watchdog.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YWatchdogValueCallback callback)
m	-(int) registerValueCallback : (YWatchdogValueCallback) callback
pas	function registerValueCallback (callback : TYWatchdogValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

watchdog→resetWatchdog()**YWatchdog****watchdog.resetWatchdog()**

Resets the watchdog.

js	function resetWatchdog ()
nodejs	function resetWatchdog ()
php	function resetWatchdog ()
cpp	int resetWatchdog ()
m	-(int) resetWatchdog
pas	function resetWatchdog (): integer
vb	function resetWatchdog () As Integer
cs	int resetWatchdog ()
java	int resetWatchdog ()
py	def resetWatchdog ()
cmd	YWatchdog target resetWatchdog

When the watchdog is running, this function must be called on a regular basis to prevent the watchdog to trigger

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_autoStart()**YWatchdog****watchdog→setAutoStart()****watchdog.set_autoStart()**

Changes the watchdog runningsttae at module power up.

js	function set_autoStart (newval)
nodejs	function set_autoStart (newval)
php	function set_autoStart (\$newval)
cpp	int set_autoStart (Y_AUTOSTART_enum newval)
m	-(int) setAutoStart : (Y_AUTOSTART_enum) newval
pas	function set_autoStart (newval : Integer): integer
vb	function set_autoStart (ByVal newval As Integer) As Integer
cs	int set_autoStart (int newval)
java	int set_autoStart (int newval)
py	def set_autoStart (newval)
cmd	YWatchdog target set_autoStart newval

Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

newval either Y_AUTOSTART_OFF or Y_AUTOSTART_ON, according to the watchdog runningsttae at module power up

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→**set_logicalName()****YWatchdog****watchdog**→**setLogicalName()****watchdog.set_logicalName()**

Changes the logical name of the watchdog.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YWatchdog target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the watchdog.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

watchdog→set_maxTimeOnStateA()**YWatchdog****watchdog→setMaxTimeOnStateA()****watchdog.set_maxTimeOnStateA()**

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

js	function set_maxTimeOnStateA (newval)
nodejs	function set_maxTimeOnStateA (newval)
php	function set_maxTimeOnStateA (\$newval)
cpp	int set_maxTimeOnStateA (s64 newval)
m	-(int) setMaxTimeOnStateA : (s64) newval
pas	function set_maxTimeOnStateA (newval : int64): integer
vb	function set_maxTimeOnStateA (ByVal newval As Long) As Integer
cs	int set_maxTimeOnStateA (long newval)
java	int set_maxTimeOnStateA (long newval)
py	def set_maxTimeOnStateA (newval)
cmd	YWatchdog target set_maxTimeOnStateA newval

Use zero for no maximum time.

Parameters :

newval an integer

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→**set_maxTimeOnStateB()****YWatchdog****watchdog**→**setMaxTimeOnStateB()****watchdog.set_maxTimeOnStateB()**

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

js	function set_maxTimeOnStateB (newval)
nodejs	function set_maxTimeOnStateB (newval)
php	function set_maxTimeOnStateB (\$newval)
cpp	int set_maxTimeOnStateB (s64 newval)
m	-(int) setMaxTimeOnStateB : (s64) newval
pas	function set_maxTimeOnStateB (newval : int64): integer
vb	function set_maxTimeOnStateB (ByVal newval As Long) As Integer
cs	int set_maxTimeOnStateB (long newval)
java	int set_maxTimeOnStateB (long newval)
py	def set_maxTimeOnStateB (newval)
cmd	YWatchdog target set_maxTimeOnStateB newval

Use zero for no maximum time.

Parameters :

newval an integer

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_output()**YWatchdog****watchdog→setOutput()**`watchdog.set_output ()`

Changes the output state of the watchdog, when used as a simple switch (single throw).

js	function set_output (newval)
nodejs	function set_output (newval)
php	function set_output (\$newval)
cpp	int set_output (Y_OUTPUT_enum newval)
m	-(int) setOutput : (Y_OUTPUT_enum) newval
pas	function set_output (newval : Integer): integer
vb	function set_output (ByVal newval As Integer) As Integer
cs	int set_output (int newval)
java	int set_output (int newval)
py	def set_output (newval)
cmd	YWatchdog target set_output newval

Parameters :

newval either Y_OUTPUT_OFF or Y_OUTPUT_ON, according to the output state of the watchdog, when used as a simple switch (single throw)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→**set_running()****YWatchdog****watchdog**→**setRunning()****watchdog.set_running()**

Changes the running state of the watchdog.

js	function set_running (newval)
nodejs	function set_running (newval)
php	function set_running (\$newval)
cpp	int set_running (Y_RUNNING_enum newval)
m	-(int) setRunning : (Y_RUNNING_enum) newval
pas	function set_running (newval : Integer): integer
vb	function set_running (ByVal newval As Integer) As Integer
cs	int set_running (int newval)
java	int set_running (int newval)
py	def set_running (newval)
cmd	YWatchdog target set_running newval

Parameters :

newval either Y_RUNNING_OFF or Y_RUNNING_ON, according to the running state of the watchdog

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_state()**YWatchdog****watchdog→setState()**`watchdog.set_state()`

Changes the state of the watchdog (A for the idle position, B for the active position).

js	function set_state (newval)
nodejs	function set_state (newval)
php	function set_state (\$newval)
cpp	int set_state (Y_STATE_enum newval)
m	-(int) setState : (Y_STATE_enum) newval
pas	function set_state (newval : Integer): integer
vb	function set_state (ByVal newval As Integer) As Integer
cs	int set_state (int newval)
java	int set_state (int newval)
py	def set_state (newval)
cmd	YWatchdog target set_state newval

Parameters :

newval either Y_STATE_A or Y_STATE_B, according to the state of the watchdog (A for the idle position, B for the active position)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_stateAtPowerOn()**YWatchdog****watchdog→setStateAtPowerOn()****watchdog.set_stateAtPowerOn()**

Preset the state of the watchdog at device startup (A for the idle position, B for the active position, UNCHANGED for no modification).

js	function set_stateAtPowerOn (newval)
nodejs	function set_stateAtPowerOn (newval)
php	function set_stateAtPowerOn (\$newval)
cpp	int set_stateAtPowerOn (Y_STATEATPOWERON_enum newval)
m	-(int) setStateAtPowerOn : (Y_STATEATPOWERON_enum) newval
pas	function set_stateAtPowerOn (newval : Integer): integer
vb	function set_stateAtPowerOn (ByVal newval As Integer) As Integer
cs	int set_stateAtPowerOn (int newval)
java	int set_stateAtPowerOn (int newval)
py	def set_stateAtPowerOn (newval)
cmd	YWatchdog target set_stateAtPowerOn newval

Remember to call the matching module `saveToFlash()` method, otherwise this call will have no effect.

Parameters :

newval a value among Y_STATEATPOWERON_UNCHANGED, Y_STATEATPOWERON_A and Y_STATEATPOWERON_B

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_triggerDelay()**YWatchdog****watchdog→setTriggerDelay()****watchdog.set_triggerDelay()**

Changes the waiting delay before a reset is triggered by the watchdog, in milliseconds.

js	function set_triggerDelay (newval)
nodejs	function set_triggerDelay (newval)
php	function set_triggerDelay (\$newval)
cpp	int set_triggerDelay (s64 newval)
m	-(int) setTriggerDelay : (s64) newval
pas	function set_triggerDelay (newval : int64): integer
vb	function set_triggerDelay (ByVal newval As Long) As Integer
cs	int set_triggerDelay (long newval)
java	int set_triggerDelay (long newval)
py	def set_triggerDelay (newval)
cmd	YWatchdog target set_triggerDelay newval

Parameters :

newval an integer corresponding to the waiting delay before a reset is triggered by the watchdog, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→**set_triggerDuration()****YWatchdog****watchdog**→**setTriggerDuration()****watchdog.set_triggerDuration()**

Changes the duration of resets caused by the watchdog, in milliseconds.

js	function set_triggerDuration (newval)
nodejs	function set_triggerDuration (newval)
php	function set_triggerDuration (\$newval)
cpp	int set_triggerDuration (s64 newval)
m	-(int) setTriggerDuration : (s64) newval
pas	function set_triggerDuration (newval : int64): integer
vb	function set_triggerDuration (ByVal newval As Long) As Integer
cs	int set_triggerDuration (long newval)
java	int set_triggerDuration (long newval)
py	def set_triggerDuration (newval)
cmd	YWatchdog target set_triggerDuration newval

Parameters :

newval an integer corresponding to the duration of resets caused by the watchdog, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_userdata()**YWatchdog****watchdog→setUserData()****watchdog.set_userdata()**

Stores a user context provided as argument in the userData attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

watchdog→**wait_async()****YWatchdog**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.46. Wireless function interface

YWireless functions provides control over wireless network parameters and status for devices that are wireless-enabled.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_wireless.js'></script>
nodejs	var yoctolib = require('yoctolib'); var YWireless = yoctolib.YWireless;
php	require_once('yocto_wireless.php');
c++	#include "yocto_wireless.h"
m	#import "yocto_wireless.h"
pas	uses yocto_wireless;
vb	yocto_wireless.vb
cs	yocto_wireless.cs
java	import com.yoctopuce.YoctoAPI.YWireless;
py	from yocto_wireless import *

Global functions

yFindWireless(func)

Retrieves a wireless lan interface for a given identifier.

yFirstWireless()

Starts the enumeration of wireless lan interfaces currently accessible.

YWireless methods

wireless→adhocNetwork(ssid, securityKey)

Changes the configuration of the wireless lan interface to create an ad-hoc wireless network, without using an access point.

wireless→describe()

Returns a short text that describes unambiguously the instance of the wireless lan interface in the form TYPE (NAME) = SERIAL . FUNCTIONID.

wireless→get_advertisedValue()

Returns the current value of the wireless lan interface (no more than 6 characters).

wireless→get_channel()

Returns the 802.11 channel currently used, or 0 when the selected network has not been found.

wireless→get_detectedWlans()

Returns a list of YWlanRecord objects that describe detected Wireless networks.

wireless→get_errorMessage()

Returns the error message of the latest error with the wireless lan interface.

wireless→get_errorType()

Returns the numerical error code of the latest error with the wireless lan interface.

wireless→get_friendlyName()

Returns a global identifier of the wireless lan interface in the format MODULE_NAME . FUNCTION_NAME.

wireless→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

wireless→get_functionId()

Returns the hardware identifier of the wireless lan interface, without reference to the module.

wireless→get_hardwareId()

Returns the unique hardware identifier of the wireless lan interface in the form SERIAL . FUNCTIONID.

wireless→get_linkQuality()

Returns the link quality, expressed in percent.

wireless→get_logicalName()

Returns the logical name of the wireless lan interface.

wireless→get_message()

Returns the latest status message from the wireless interface.

wireless→get_module()

Gets the YModule object for the device on which the function is located.

wireless→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

wireless→get_security()

Returns the security algorithm used by the selected wireless network.

wireless→get_ssid()

Returns the wireless network name (SSID).

wireless→get_userData()

Returns the value of the userData attribute, as previously stored using method set_userData.

wireless→isOnline()

Checks if the wireless lan interface is currently reachable, without raising any error.

wireless→isOnline_async(callback, context)

Checks if the wireless lan interface is currently reachable, without raising any error (asynchronous version).

wireless→joinNetwork(ssid, securityKey)

Changes the configuration of the wireless lan interface to connect to an existing access point (infrastructure mode).

wireless→load(msValidity)

Preloads the wireless lan interface cache with a specified validity duration.

wireless→load_async(msValidity, callback, context)

Preloads the wireless lan interface cache with a specified validity duration (asynchronous version).

wireless→nextWireless()

Continues the enumeration of wireless lan interfaces started using yFirstWireless().

wireless→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

wireless→set_logicalName(newval)

Changes the logical name of the wireless lan interface.

wireless→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

wireless→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YWireless.FindWireless()**YWireless****yFindWireless()**`ywireless.FindWireless()`

Retrieves a wireless lan interface for a given identifier.

js	function yFindWireless (func)
nodejs	function FindWireless (func)
php	function yFindWireless (\$func)
cpp	YWireless* yFindWireless (string func)
m	+(YWireless*) yFindWireless : (NSString*) func
pas	function yFindWireless (func : string): TYWireless
vb	function yFindWireless (ByVal func As String) As YWireless
cs	YWireless FindWireless (string func)
java	YWireless FindWireless (String func)
py	def FindWireless (func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the wireless lan interface is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YWireless.isOnline()` to test if the wireless lan interface is indeed online at a given time. In case of ambiguity when looking for a wireless lan interface by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the wireless lan interface

Returns :

a `YWireless` object allowing you to drive the wireless lan interface.

YWireless.FirstWireless()**YWireless****yFirstWireless()****YWireless.FirstWireless()**

Starts the enumeration of wireless lan interfaces currently accessible.

js	function yFirstWireless ()
nodejs	function FirstWireless ()
php	function yFirstWireless ()
cpp	YWireless* yFirstWireless ()
m	YWireless* yFirstWireless ()
pas	function yFirstWireless (): TYWireless
vb	function yFirstWireless () As YWireless
cs	YWireless FirstWireless ()
java	YWireless FirstWireless ()
py	def FirstWireless ()

Use the method `YWireless.nextWireless()` to iterate on next wireless lan interfaces.

Returns :

a pointer to a `YWireless` object, corresponding to the first wireless lan interface currently online, or a `null` pointer if there are none.

wireless→adhocNetwork()**YWireless****wireless.adhocNetwork()**

Changes the configuration of the wireless lan interface to create an ad-hoc wireless network, without using an access point.

js	function adhocNetwork (ssid , securityKey)
nodejs	function adhocNetwork (ssid , securityKey)
php	function adhocNetwork (\$ssid , \$securityKey)
c++	int adhocNetwork (string ssid , string securityKey)
m	-(int) adhocNetwork : (NSString*) ssid : (NSString*) securityKey
pas	function adhocNetwork (ssid : string, securityKey : string): integer
vb	function adhocNetwork (ByVal ssid As String, ByVal securityKey As String) As Integer
cs	int adhocNetwork (string ssid , string securityKey)
java	int adhocNetwork (String ssid , String securityKey)
py	def adhocNetwork (ssid , securityKey)
cmd	YWireless target adhocNetwork ssid securityKey

If a security key is specified, the network is protected by WEP128, since WPA is not standardized for ad-hoc networks. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

- ssid** the name of the network to connect to
- securityKey** the network key, as a character string

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wireless→describe()`wireless.describe()`**YWireless**

Returns a short text that describes unambiguously the instance of the wireless lan interface in the form `TYPE (NAME) =SERIAL.FUNCTIONID`.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1` if the module is already connected or `Relay(BadCustomeName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the wireless lan interface (ex:
`Relay(MyCustomName.relay1)=RELAYLO1-123456.relay1`)

wireless→**get_advertisedValue()****YWireless****wireless**→**advertisedValue()****wireless.get_advertisedValue()**

Returns the current value of the wireless lan interface (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YWireless target get_advertisedValue

Returns :

a string corresponding to the current value of the wireless lan interface (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

wireless→**get_channel()****YWireless****wireless**→**channel()****wireless.get_channel()**

Returns the 802.11 channel currently used, or 0 when the selected network has not been found.

js	function get_channel ()
nodejs	function get_channel ()
php	function get_channel ()
cpp	int get_channel ()
m	-(int) channel
pas	function get_channel (): LongInt
vb	function get_channel () As Integer
cs	int get_channel ()
java	int get_channel ()
py	def get_channel ()
cmd	YWireless target get_channel

Returns :

an integer corresponding to the 802.11 channel currently used, or 0 when the selected network has not been found

On failure, throws an exception or returns Y_CHANNEL_INVALID.

wireless→get_detectedWlans()**YWireless****wireless→detectedWlans()****wireless.get_detectedWlans()**

Returns a list of YWlanRecord objects that describe detected Wireless networks.

js	function get_detectedWlans ()
nodejs	function get_detectedWlans ()
php	function get_detectedWlans ()
cpp	vector<YWlanRecord> get_detectedWlans ()
m	-(NSMutableArray*) detectedWlans
pas	function get_detectedWlans (): TYWlanRecordArray
vb	function get_detectedWlans () As List
cs	List<YWlanRecord> get_detectedWlans ()
java	ArrayList<YWlanRecord> get_detectedWlans ()
py	def get_detectedWlans ()
cmd	YWireless target get_detectedWlans

This list is not updated when the module is already connected to an access point (infrastructure mode). To force an update of this list, `adhocNetwork()` must be called to disconnect the module from the current network. The returned list must be unallocated by the caller.

Returns :

a list of YWlanRecord objects, containing the SSID, channel, link quality and the type of security of the wireless network.

On failure, throws an exception or returns an empty list.

wireless→**get_errorMessage()****YWireless****wireless**→**errorMessage()****wireless.errorMessage()**

Returns the error message of the latest error with the wireless lan interface.

js	function get_errorMessage ()
nodejs	function get_errorMessage ()
php	function get_errorMessage ()
cpp	string get_errorMessage ()
m	-(NSString*) errorMessage
pas	function get_errorMessage (): string
vb	function get_errorMessage () As String
cs	string get_errorMessage ()
java	String get_errorMessage ()
py	def get_errorMessage ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the wireless lan interface object

wireless→**get_errorType()****YWireless****wireless**→**errorType()****wireless.get_errorType()**

Returns the numerical error code of the latest error with the wireless lan interface.

js	function get_errorType ()
nodejs	function get_errorType ()
php	function get_errorType ()
cpp	YRETCODE get_errorType ()
pas	function get_errorType (): YRETCODE
vb	function get_errorType () As YRETCODE
cs	YRETCODE get_errorType ()
java	int get_errorType ()
py	def get_errorType ()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the wireless lan interface object

wireless→**get_friendlyName()****YWireless****wireless**→**friendlyName()****wireless.get_friendlyName()**

Returns a global identifier of the wireless lan interface in the format `MODULE_NAME.FUNCTION_NAME`.

js	function get_friendlyName ()
nodejs	function get_friendlyName ()
php	function get_friendlyName ()
cpp	string get_friendlyName ()
m	-(NSString*) friendlyName
cs	string get_friendlyName ()
java	String get_friendlyName ()
py	def get_friendlyName ()

The returned string uses the logical names of the module and of the wireless lan interface if they are defined, otherwise the serial number of the module and the hardware identifier of the wireless lan interface (for exemple: `MyCustomName.relay1`)

Returns :

a string that uniquely identifies the wireless lan interface using logical names (ex: `MyCustomName.relay1`) On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

wireless→get_functionDescriptor()**YWireless****wireless→functionDescriptor()****wireless.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor ()
nodejs	function get_functionDescriptor ()
php	function get_functionDescriptor ()
cpp	YFUN_DESCR get_functionDescriptor ()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor (): YFUN_DESCR
vb	function get_functionDescriptor () As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor ()
java	String get_functionDescriptor ()
py	def get_functionDescriptor ()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

wireless→**get_functionId()****YWireless****wireless**→**functionId()****wireless.get_functionId()**

Returns the hardware identifier of the wireless lan interface, without reference to the module.

js	function get_functionId ()
nodejs	function get_functionId ()
php	function get_functionId ()
cpp	string get_functionId ()
m	-(NSString*) functionId
vb	function get_functionId () As String
cs	string get_functionId ()
java	String get_functionId ()
py	def get_functionId ()

For example `relay1`

Returns :

a string that identifies the wireless lan interface (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

wireless→get_hardwareId()**YWireless****wireless→hardwareId()****wireless.get_hardwareId()**

Returns the unique hardware identifier of the wireless lan interface in the form SERIAL.FUNCTIONID.

js	function get_hardwareId ()
nodejs	function get_hardwareId ()
php	function get_hardwareId ()
cpp	string get_hardwareId ()
m	-(NSString*) hardwareId
vb	function get_hardwareId () As String
cs	string get_hardwareId ()
java	String get_hardwareId ()
py	def get_hardwareId ()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the wireless lan interface. (for example RELAYLO1-123456.relay1)

Returns :

a string that uniquely identifies the wireless lan interface (ex: RELAYLO1-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

wireless→**get_linkQuality()****YWireless****wireless**→**linkQuality()****wireless.get_linkQuality()**

Returns the link quality, expressed in percent.

js	function get_linkQuality ()
nodejs	function get_linkQuality ()
php	function get_linkQuality ()
cpp	int get_linkQuality ()
m	-(int) linkQuality
pas	function get_linkQuality (): LongInt
vb	function get_linkQuality () As Integer
cs	int get_linkQuality ()
java	int get_linkQuality ()
py	def get_linkQuality ()
cmd	YWireless target get_linkQuality

Returns :

an integer corresponding to the link quality, expressed in percent

On failure, throws an exception or returns Y_LINKQUALITY_INVALID.

wireless→**get_logicalName()****YWireless****wireless**→**logicalName()****wireless.get_logicalName()**

Returns the logical name of the wireless lan interface.

js	function get_logicalName ()
nodejs	function get_logicalName ()
php	function get_logicalName ()
cpp	string get_logicalName ()
m	-(NSString*) logicalName
pas	function get_logicalName (): string
vb	function get_logicalName () As String
cs	string get_logicalName ()
java	String get_logicalName ()
py	def get_logicalName ()
cmd	YWireless target get_logicalName

Returns :

a string corresponding to the logical name of the wireless lan interface. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

wireless→**get_message()****YWireless****wireless**→**message()****wireless.get_message()**

Returns the latest status message from the wireless interface.

js	function get_message()
nodejs	function get_message()
php	function get_message()
cpp	string get_message()
m	-(NSString*) message
pas	function get_message() : string
vb	function get_message() As String
cs	string get_message()
java	String get_message()
py	def get_message()
cmd	YWireless target get_message

Returns :

a string corresponding to the latest status message from the wireless interface

On failure, throws an exception or returns Y_MESSAGE_INVALID.

wireless→get_module()**YWireless****wireless→module()**`wireless.get_module()`

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

wireless→get_module_async()
wireless→module_async()**YWireless**

Gets the YModule object for the device on which the function is located (asynchronous version).

js	function get_module_async (callback , context)
nodejs	function get_module_async (callback , context)

If the function cannot be located on any module, the returned YModule object does not show as on-line. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wireless→**get_security()****YWireless****wireless**→**security()****wireless.get_security()**

Returns the security algorithm used by the selected wireless network.

js	function get_security ()
nodejs	function get_security ()
php	function get_security ()
cpp	Y_SECURITY_enum get_security ()
m	-(Y_SECURITY_enum) security
pas	function get_security (): Integer
vb	function get_security () As Integer
cs	int get_security ()
java	int get_security ()
py	def get_security ()
cmd	YWireless target get_security

Returns :

a value among Y_SECURITY_UNKNOWN, Y_SECURITY_OPEN, Y_SECURITY_WEP, Y_SECURITY_WPA and Y_SECURITY_WPA2 corresponding to the security algorithm used by the selected wireless network

On failure, throws an exception or returns Y_SECURITY_INVALID.

wireless→**get_ssid()****YWireless****wireless**→**ssid()****wireless.get_ssid()**

Returns the wireless network name (SSID).

js	function get_ssid ()
nodejs	function get_ssid ()
php	function get_ssid ()
cpp	string get_ssid ()
m	-(NSString*) ssid
pas	function get_ssid (): string
vb	function get_ssid () As String
cs	string get_ssid ()
java	String get_ssid ()
py	def get_ssid ()
cmd	YWireless target get_ssid

Returns :

a string corresponding to the wireless network name (SSID)

On failure, throws an exception or returns Y_SSID_INVALID.

wireless→**get_userData()****YWireless****wireless**→**userData()****wireless.userData()**

Returns the value of the userData attribute, as previously stored using method `set_userData`.

js	function get_userData ()
nodejs	function get_userData ()
php	function get_userData ()
cpp	void * get_userData ()
m	-(void*) userData
pas	function get_userData (): Tobject
vb	function get_userData () As Object
cs	object get_userData ()
java	Object get_userData ()
py	def get_userData ()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

wireless→**isOnline()****wireless.isOnline()****YWireless**

Checks if the wireless lan interface is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the wireless lan interface in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the wireless lan interface.

Returns :

true if the wireless lan interface can be reached, and false otherwise

wireless→**isOnline_async()****YWireless**

Checks if the wireless lan interface is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the wireless lan interface in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wireless→**joinNetwork()****wireless.joinNetwork()****YWireless**

Changes the configuration of the wireless lan interface to connect to an existing access point (infrastructure mode).

js	function joinNetwork (ssid , securityKey)
nodejs	function joinNetwork (ssid , securityKey)
php	function joinNetwork (\$ssid , \$securityKey)
cpp	int joinNetwork (string ssid , string securityKey)
m	-(int) joinNetwork : (NSString*) ssid : (NSString*) securityKey
pas	function joinNetwork (ssid : string, securityKey : string): integer
vb	function joinNetwork (ByVal ssid As String, ByVal securityKey As String) As Integer
cs	int joinNetwork (string ssid , string securityKey)
java	int joinNetwork (String ssid , String securityKey)
py	def joinNetwork (ssid , securityKey)
cmd	YWireless target joinNetwork ssid securityKey

Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

ssid the name of the network to connect to
securityKey the network key, as a character string

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wireless→**load()****wireless.load()****YWireless**

Preloads the wireless lan interface cache with a specified validity duration.

js	function load (msValidity)
nodejs	function load (msValidity)
php	function load (\$msValidity)
cpp	YRETCODE load (int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load (msValidity : integer): YRETCODE
vb	function load (ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load (int msValidity)
java	int load (long msValidity)
py	def load (msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

wireless→load_async()**YWireless**

Preloads the wireless lan interface cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

- msValidity** an integer corresponding to the validity of the loaded function parameters, in milliseconds
- callback** callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)
- context** caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wireless→nextWireless()**YWireless****wireless.nextWireless()**

Continues the enumeration of wireless lan interfaces started using `yFirstWireless()`.

js	function nextWireless ()
nodejs	function nextWireless ()
php	function nextWireless ()
c++	YWireless * nextWireless ()
m	-(YWireless*) nextWireless
pas	function nextWireless (): TYWireless
vb	function nextWireless () As YWireless
cs	YWireless nextWireless ()
java	YWireless nextWireless ()
py	def nextWireless ()

Returns :

a pointer to a `YWireless` object, corresponding to a wireless lan interface currently online, or a `null` pointer if there are no more wireless lan interfaces to enumerate.

wireless→registerValueCallback()**YWireless****wireless.registerValueCallback()**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback (callback)
nodejs	function registerValueCallback (callback)
php	function registerValueCallback (\$callback)
cpp	int registerValueCallback (YWirelessValueCallback callback)
m	-(int) registerValueCallback : (YWirelessValueCallback) callback
pas	function registerValueCallback (callback : TYWirelessValueCallback): LongInt
vb	function registerValueCallback () As Integer
cs	int registerValueCallback (ValueCallback callback)
java	int registerValueCallback (UpdateCallback callback)
py	def registerValueCallback (callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

wireless→set_logicalName()**YWireless****wireless→setLogicalName()****wireless.set_logicalName()**

Changes the logical name of the wireless lan interface.

js	function set_logicalName (newval)
nodejs	function set_logicalName (newval)
php	function set_logicalName (\$newval)
cpp	int set_logicalName (const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName (newval : string): integer
vb	function set_logicalName (ByVal newval As String) As Integer
cs	int set_logicalName (string newval)
java	int set_logicalName (String newval)
py	def set_logicalName (newval)
cmd	YWireless target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the wireless lan interface.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wireless→**set_userdata()****YWireless****wireless**→**setUserData()****wireless.set_userdata()**

Stores a user context provided as argument in the `userData` attribute of the function.

js	function set_userdata (data)
nodejs	function set_userdata (data)
php	function set_userdata (\$data)
cpp	void set_userdata (void* data)
m	-(void) setUserData : (void*) data
pas	procedure set_userdata (data : Tobject)
vb	procedure set_userdata (ByVal data As Object)
cs	void set_userdata (object data)
java	void set_userdata (Object data)
py	def set_userdata (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

wireless→wait_async()**YWireless**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

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