

Wireless IO-Link Master – innovative way of working with IO-Link

- Simply operate, configure and present your IO-Link devices with your tablet
- Benefit from the convenient and clearly structured app
- Work mobile thanks to integrated WLAN, Bluetooth Smart and built-in battery



SensControl

Wireless IO-Link Master – Applications



Presentation of IO-Link devices

Sales employees from the manufacturers of IO-Link devices present their products quickly and easily with *SensControl*. You have direct access to all functions of the IO-Link devices and benefit from the easy, wireless operation.



Development of IO-Link devices

SensControl is the perfect tool for engineers developing IO-Link devices. You can test IODD files and easily edit the settings of IO-Link devices.



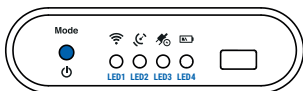
System development and maintenance

For development and maintenance work on systems, IO-Link devices can be parameterized and calibrated directly on site using *SensControl*. This allows errors to be diagnosed quickly and redressed in the system immediately.

Package contents

- 1 *SensControl*
- 1 Quick start guide (in English and German)

Controls



The only control on the *SensControl* is the button on the front of the device. It is used for the following actions:

Switching on and off the *SensControl*

Briefly press the button to switch the *SensControl* on. The LEDs start to light up and the device starts up. LED1 and LED2 flash during the boot process (about 1 second). To switch off the *SensControl*, keep the button pressed for about 1.5 seconds and then release it – all LEDs go out.

Switching mode

To switch between the “Master” and “Sniffing” modes, press the button 3 times within 3 seconds (triple click). LED2 indicates the mode accordingly (refer to Section “LED indicators”).

Resetting to the default settings

Keep the button pressed until all LEDs light up, and then go out in sequence from right to left (approx. 10 seconds). The *SensControl* is now back in the state as delivered and bears the name and WLAN SSID as on the sticker on the underside of the device.

Quick start

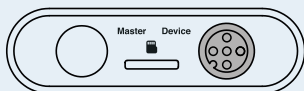
1



Switch the *SensControl* on by briefly pressing the button on the front.

The device is starting up when LEDs 1 and 2 are flashing blue. Once started, the *SensControl* makes available in its status on delivery a WLAN in Soft AP mode.

2



Connect an IO-Link device to the device port on the rear of the *SensControl*.

3



Start the *SensControl* app (from your iPad for example).

4

Select from the connection view the *SensControl* located.

SensControl works best with a Bluetooth Smart (Bluetooth LE) connection. Your tablet or smartphone must support Bluetooth Smart. The technology is part of the Bluetooth specification from Version 4.0.

As an alternative, you can connect your device with the WLAN provided by *SensControl*, and then select the *SensControl* in the "WLAN" panel of the connection view.

The name of the *SensControl* is on the sticker on the underside.

SensControl

Serial: 008041AEFD7E

Device name: sc-008041AEFD7E

Default WiFi SSID: sc-wifi-008041AEFD7E

5

The *SensControl* app sources IODDs from online memory and stores them to the mobile device (for use without Internet connection).

6

Finished. Now you can see the process data, and view and change parameter values of the IO-Link device.

How it works



SensControl

SensControl is a device enabling IO-Link devices to be configured and analyzed. The serial number and other information are on the sticker on the underside.

SensControl app

The *SensControl* app is available in Apple AppStore and Google PlayStore. From your device, open the store and enter „SensControl“ into the search box.

Refer to the product website for more information:

www.baumer.com/SensControl

Online database with device definitions

The *SensControl* app sources definitions for IO-Link devices (IODD) from online memory. The app currently accesses <https://www.ioddhub.com>, where it searches for device definition files for IO-Link devices.

Other portals and storages can be integrated into the app as soon as they are available.

The *SensControl* app stores IODD files downloaded previously, and associated images, in an offline cache. If the files required have been downloaded before, the app can also be used without an Internet connection.

Power supply

The *SensControl* is fitted with batteries, which operate for about 3 hours when the IO-Link device draws an average power of 2 W. In Battery mode, the *SensControl* makes available up to 350 mA for the IO-Link device.

If the IO-Link device to be used needs more power, a 24 V PSU can be connected to the port for the IO-Link master to power the IO-Link device directly.

Charging the batteries

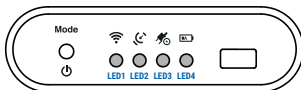
A conventional Mini USB cable can be used to charge the *SensControl*. The USB cable can be connected to a conventional charger for mobiles or to a PC/laptop.

Whilst a PSU or other power supply is connected to the USB port, IO-Link devices with a power consumption up to 200 mA can be run.

The fastest charging times are attained using a powerful charger delivering a charge current of 2000 mA. According to the manufacturer, the batteries support about 500 charge cycles.

Refer to the website (www.baumer.com/SensControl) for more information.

LED indicators



LED1 indicates the WLAN mode of the device

- Lights red = *SensControl* is providing an Access Point (Soft AP)
- Lights green = *SensControl* is connected to another WLAN in Infrastructure mode
- Flashing blue together with LED2 = *SensControl* being started or is in Firmware update mode
- Off = *SensControl* neither making a WLAN available nor been able to connect to the potentially configured WLAN

LED2 provides information on the IO-Link communication status

- Lights green = *SensControl* working in Master mode and the IO-Link device currently in status "OPERATE"
- Lights red = No IO-Link device connected, or unable to switch to the "OPERATE" status. No communication is possible with the device connected to the IO-Link jack.
- Flashing blue together with LED1 = *SensControl* being started or is in Firmware update mode
- Flashing blue = *SensControl* working in Sniffing mode
- Lights blue = *SensControl* working in Sniffing mode and waiting for a STARTUP command from the IO-Link master connected
- Lights yellow = *SensControl* unable to start Sniffing mode because the SD card cannot be used (an SD card is not inserted, no memory is available on the SD card or the first partition does not have FAT32 formatting)

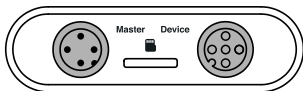
LED3 provides information on the power supply being used

- Lights red = *SensControl* working in Battery mode
- Lights green = USB being used to work the *SensControl* and the batteries are being charged
- Lights blue = The master port is being used to power the IO-Link device connected

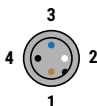
LED4 shows the charge status of the batterie

- Lights red = Battery is almost flat
- Lights green = Battery is fully charged

Connectors

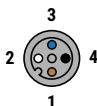


Connector for IO-Link master



- Pin 1 (+) Brown
- Pin 2 (DI/DQ) White
- Pin 3 (GND) Blue
- Pin 4 (C/Q) Black

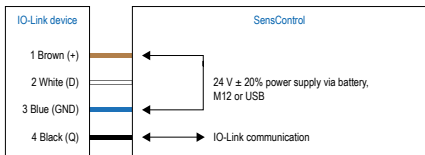
Connector for IO-Link device



- Pin 1 (+) Brown
- Pin 2 (DI/DQ) White
- Pin 3 (GND) Blue
- Pin 4 (C/Q) Black
- Pin 5 (NC)

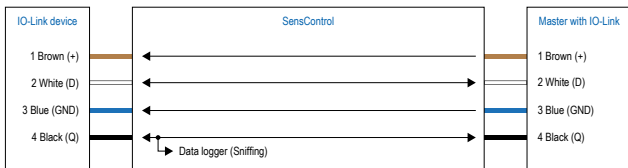
Modes

Master mode



In Master mode, the *SensControl* communicates directly with the IO-Link device connected, performs cyclic reads and writes of its process data, and sends them to the *SensControl* app for displaying. In the opposite direction, parameter changes made in the *SensControl* app, and control commands, are relayed to the IO-Link device. Master mode is the mode in which the *SensControl* starts up. Once an IO-Link device is connected to the relevant connector on the rear, the *SensControl* establishes communication with the IO-Link device and maintains it for as long as it is connected.

Sniffing mode

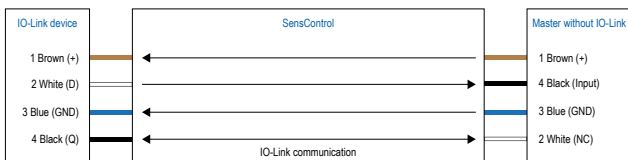


In Sniffing mode, the *SensControl* is switched between the IO-Link device and the IO-Link master. Without affecting the existing connection between the IO-Link device and IO-Link master, the *SensControl* tracks their communication and saves it to an SD card (which can be plugged into the *SensControl*). The data can be read and analyzed later from there. To use the *SensControl* in Sniffing mode, an SD card first needs to be plugged into the slot at the rear of the *SensControl*. The first partition on the SD card must have FAT32 formatting.

To switch the *SensControl* to Sniffing mode, press the button on the front 3 times in quick succession. The device now switches to Sniffing mode, indicated by LED2 lighting blue. Now connect an IO-Link master and an IO-Link device to the relevant connectors on the rear of the device. Data recording starts automatically. A new file is created for every Sniffing session.

To exit Sniffing mode, press the button on the front again 3 times in quick succession. This is the recommended way to exit Sniffing mode, so that all data can be written to the SD card.

Direct mode




If modern, IO-Link capable, 4-wire devices are used on older systems, *SensControl* makes available the full IO-Link functionality of the devices. For this, the device must be configured such that connector Q2 is switched as an output, and it makes available the original function of a conventional device. *SensControl* connects output Q2 to the master and permits in parallel communication to the IO-Link device.

Firmware update

The *SensControl* firmware can be updated using the “*SensControl Updater*” software tool.

Please download the tool from website www.baumer.com/SensControl.
More information on installing and using the tool is also on this website.

Technical specification

Dimensions	70 × 20 × 95 mm (B×H×D)
Weight	154 g
Interfaces	1 × M12 5-pin connector for IO-Link device (Class A), 1 × M12 4-pin connector for IO-Link master (Class A), 1 × Micro SD card, 1 × Mini USB, Bluetooth Smart, WLAN
Standards supported	IO-Link versions: 1.0 and 1.1, IODD versions: 1.0.1 and 1.1
Power supply	Either over the USB port integrated, the IO-Link master or the battery fitted In Battery mode: Max. current of IO-Link device: 350 mA, operating time > 3 h at 2 W, voltage of IO-Link device: 24 V 20 %
Maximum transmit power	WLAN: 18 dBm Bluetooth Smart: 2 dBm
Standards	 EN 55022 /2010 Class A, EN 55024 /2010 + A1 /2015 Contains FCC ID: W7OMRF24WG0MAMB Contains FCC ID: PVH0950 IC: 5325A-0950



SensControl is not intended for permanent installation in automation systems.

Warning. This is Class A equipment and it can cause radio interference in residential areas. The operator can be requested to take appropriate measures in such cases.

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