

SiLink2 Master IOLA2US-01101

IO-Link USB Master

EN





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1 General

1.1 Information on the Operating Instructions

These operating instructions supplement the supplied Quickstart guide and include additional information and more detailed descriptions of working with the IO-Link USB Master SiLink2 Master.

The operating instructions are intended to be used by qualified personnel and electrical specialists.

1.2 Explanation of Symbols

Physical Damage

Warnings in these operating instructions are labeled with symbols.

The notes must be complied with and careful actions must be taken in order to avoid physical damage.



WARNING!

... indicates a possible hazardous situation which may lead to physical damage if it is not avoided.

Tips and Recommendations



NOTE!

... highlights useful tips and recommendations as well as information for efficient and hassle-free operation.

1.3 Scope of Delivery

Included with delivery:

- SiLink2 Master IOLA2US
- 1 USB cable
- 1 wall plug

Supplied documentation:

- Quickstart

General

1.4 Customer Service

If you require any technical information, our customer service department will be happy to help.

See the back page for your representative.



NOTE!

In order to allow us to deal with the matter quickly, please note down the type designation and order number before calling. You can find the type designation and order number on the type label. → See Page 9, Chapter 3.1.

1.5 EC Declaration of Conformity

→ You can download the EC declaration of conformity online at "www.mysick.com/de/silink".

2 Safety

2.1 Correct Use

The SiLink2 Master IOLA2US is used as an adapter between an IO-Link device and a Windows PC. IO-Link devices can be configured via the SiLink2 Master and a configuration program such as SOPAS ET or an FDT-based configuration program.

SICK AG accepts no liability for direct or indirect losses or damage which result from the use of the product. This applies in particular for a different use of the product which does not comply with the intended purpose and is not described or mentioned in this document.

2.2 Incorrect Use

The SiLink2 Master IOLA2US must not be used in explosion areas.

All uses not described under correct use are prohibited.

No accessories may be connected which have not been explicitly stipulated, in terms of quantity and properties, and approved by SICK AG.

Safety

2.3 Requirements for Qualified Personnel

**WARNING!****Damage to the device in the event of improper handling!**

Improper handling may lead to physical damage.

Therefore:

- All work must only ever be carried out by the stipulated persons.

The operating instructions state the following qualification requirements for the various areas of work:

- **Qualified personnel**
are able to carry out the work assigned to them and independently recognize potential risks due to their specialist training, knowledge and experience, as well as knowledge of the relevant regulations.
- **Electrical specialists**
are able to carry out work on electrical systems and independently recognize potential risks due to their specialist training, knowledge and experience, as well as knowledge of the relevant standards and regulations.
In Germany, the electrical specialist must satisfy the regulations of the work safety regulation BGV A3 (e.g., master electrician). Corresponding regulations, which must be observed, apply in other countries.

3 Identification

3.1 Type Label

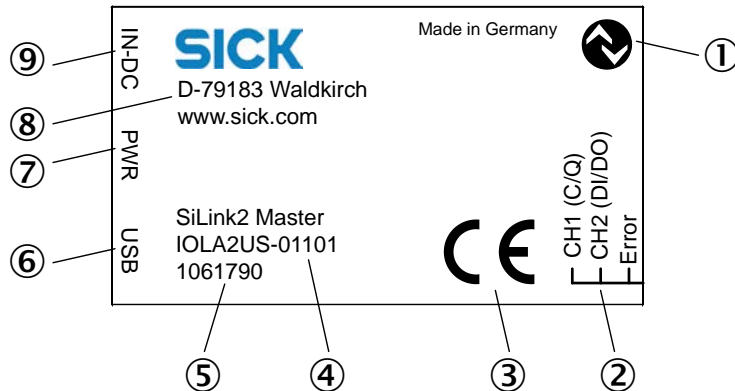


Fig. 1: Type Label

- | | | | |
|---|---------------------|---|---|
| 1 | IO-Link symbol | 6 | Labeling
Mini USB B interface (side) |
| 2 | LED labeling (side) | 7 | LED labeling (side) |
| 3 | CE mark | 8 | Manufacturer address |
| 4 | Device type | 9 | Labeling of the connection of an
external wall plug (side) |
| 5 | Order number | | |

4 Structure and Function

4.1 Structure

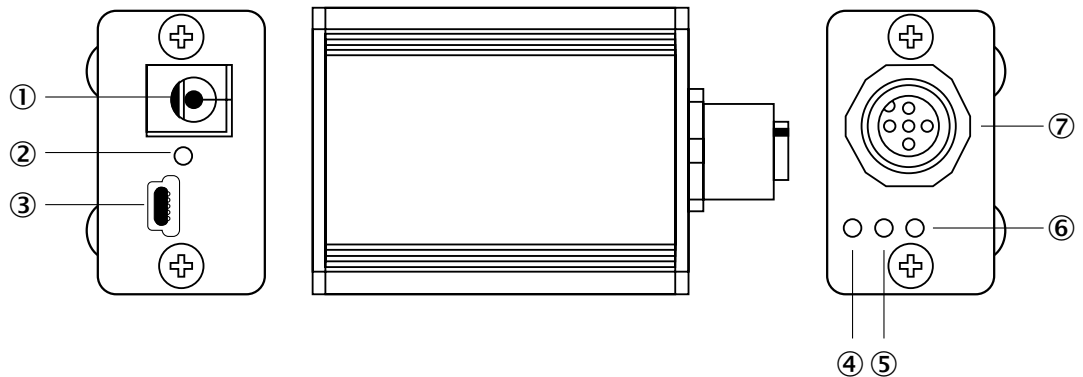


Fig. 2: Structure of SiLink2 Master

- 1 Supply voltage DC 24 V connection of supplied power supply
- 2 Function display LED (yellow) 'PWR'
- 3 Mini USB B, connection of PC via supplied USB cable
- 4 Function display LED (green) 'C1 (C/Q)'
- 5 Function display LED (yellow) 'C2 (DI/DO)'
- 6 Function display LED (red) 'Error'
- 7 M12 male connector, connection IO-Link device

Structure and Function

4.2 Function

The SiLink2 Master is used as an adapter between an IO-Link device and a PC with a Windows operating system. IO-Link devices can be configured via the SiLink2 Master and a configuration program such as SOPAS ET or an FDT-based configuration program.

4.3 Status Indicators

Function Displays (LEDs)

Function Display	Description
PWR	<ul style="list-style-type: none"> • LED yellow: supply via the USB port. • LED off: no operation
CH1 (C/Q)	Display IO-Link and SIO mode <ul style="list-style-type: none"> • LED green <ul style="list-style-type: none"> – Slow flashing: no IO-Link connection present – Quick flashing: IO-Link connection is in the 'Preoperate' mode – Illuminated: a data exchange (operate) is taking place via the IO-Link connection. • LED yellow: SIO mode
CH2 (DI/DO)	<ul style="list-style-type: none"> • LED yellow display SIO mode
Error	<ul style="list-style-type: none"> • LED red display of error: short-circuit or data transmission error

Table 1: Function displays (LEDs)

5 Electrical Connection

5.1 Safety

Incorrect Supply Voltage



WARNING!

Device damage due to incorrect supply voltage!

Incorrect supply voltage can cause damage to the device.

Therefore:

- If necessary, only operate the SiLink2 Master using the supplied wall plug.

5.2 Electrical Connection of SiLink2 Master

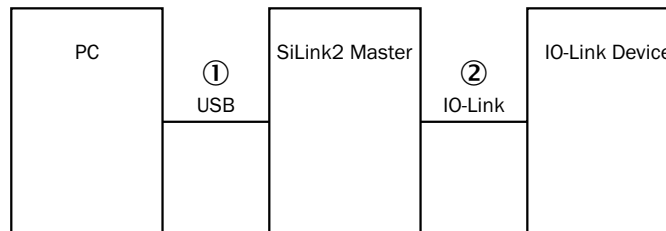


Fig. 3: Electrical Connection of SiLink2 Master

- 1 USB cable
- 2 Sensor cable

1. Ensure power supply is not connected.
2. Connect the PC to the USB Mini B female connector of the SiLink2 Master using the supplied USB cable.
3. Connect IO-Link device to the M12 male connector of the SiLink Master using a sensor cable. A 3-pole or 4-pole cable may be used as the sensor cable.



NOTE!

If the power requirement of the IO-Link device is > 80 mA, connect the supplied wall plug to the DC 24 V female connector of the SiLink Master and connect the wall plug to the supply voltage.

Electrical Connection

Wall Plug Usage

As standard, a USB port provides 500 mA at 5 V. Without a wall plug, the SiLink2 Master IOLA2US supplies approx. 80 mA at 24 V. For lots of IO-Link devices, a power supply of 80 mA is sufficient.

If the IO-Link device needs more power, e.g., when starting up, then you will need to use the supplied wall plug.



Fig. 4: Wall plug pin assignment

5.3 Connection Diagram

5.3.1 USB Connection Diagram

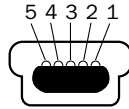


Fig. 5: Mini USB B connection diagram

Contact	Signal	Description
1	+5 V	VBUS +5 V DC/500 mA
2	D-	Data-
3	D+	Data+
4	ID	nc: not assigned
5	GND	Ground (0 V)

Table 2: Description Mini USB B

5.3.2 IO-Link Connection Diagram

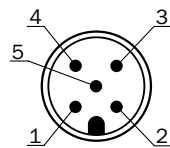


Fig. 6: IO-Link connection diagram, M12 male connector, 5-pole, A-coding

Contact	Signal	Description
1	+24 V	Supply voltage: DC +24 V
2	SIO	SIO: CH2 (DI/DO)
3	GND	Supply voltage: 0 V
4	IO-Link	IO-Link: CH1 (C/Q)
5	-	nc: not assigned

Table 3: Description IO-Link, M12 male connector, 5-pole, A-coding

6 Installing Software

6.1 Required Software

In order to be able to configure the IO-Link device via the SiLink2 Master, you will either need the SOPAS ET configuration program from SICK or a configuration program based on FDT/DTM technology.



NOTE!

For additional information and for configuration programs, go to 'www.mysick.com/de/silink'.

6.2 Installation with SOPAS ET Configuration Program

You can use the SOPAS ET configuration program from version 2.83 upwards.

1. Start installation of the SOPAS ET configuration program using the 'setup.exe' file. The following window will appear:

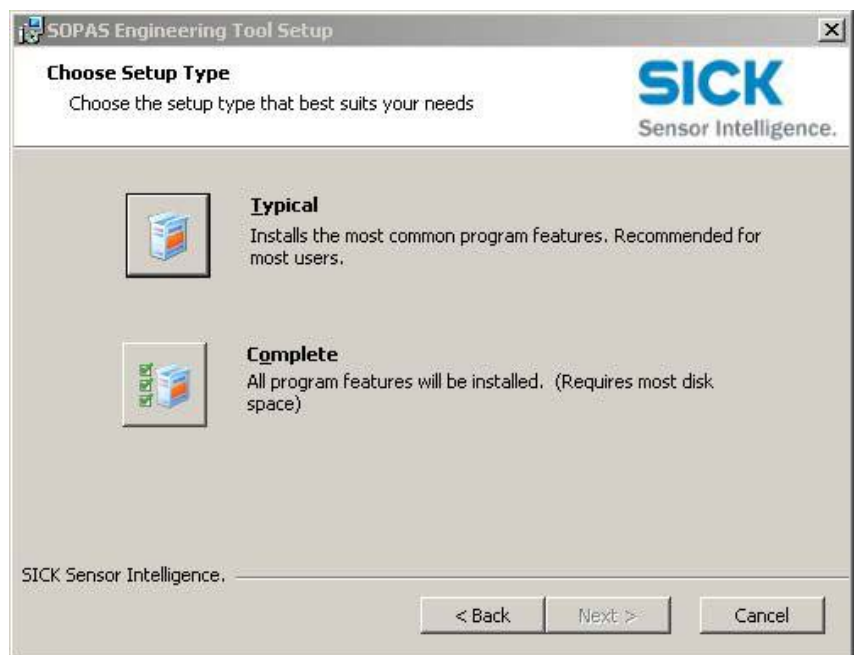


Fig. 7: SOPAS Engineering Tool Setup

Installing Software

2. Install SOPAS ET configuration program according to the installation wizard.
3. Install SDD file of the IO-Link device.
4. Connect SiLink2 Master to the PC and to the IO-Link device.
→ See Page 11, Chapter 5.
5. Connect IO-Link device according to the Connection Wizard for IO-Link.

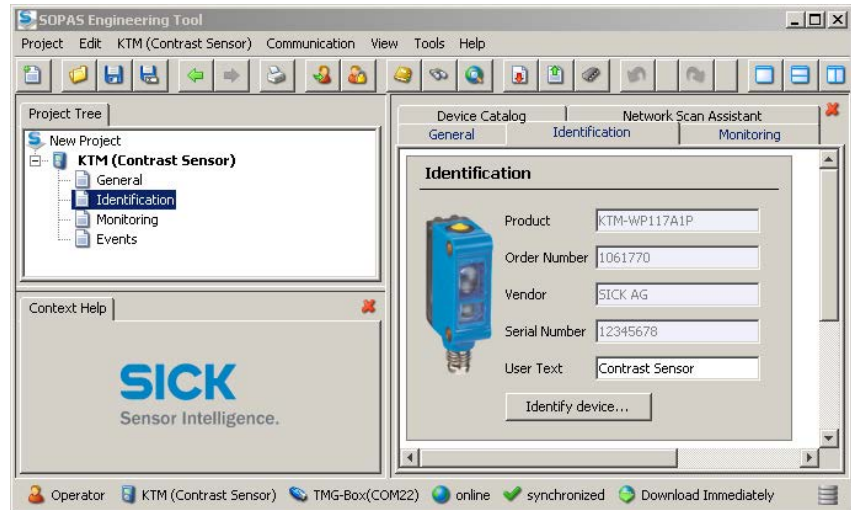


Fig. 8: IO-Link device in SOPAS ET

6.3 Installation with FDT Container

You can use the gateway DTM from version 2.00 upwards.

1. Start installation of the gateway using the 'setup.exe' file.
2. Install DTM of the IO-Link device or IODD interpreter. In order to do this, start installation using the 'setup.exe' file.
3. Update device catalog via the FDT-based configuration program.
In order to do this, click the 'Update' button.

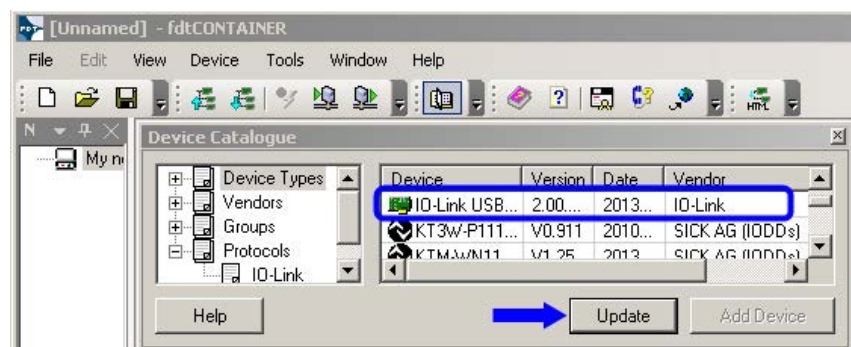


Fig. 9: Update device catalog



NOTE!

The SiLink2 Master IOLA2US appears in the device catalog as 'IO-Link USB' of the manufacturer 'IO-Link'.

4. Set up network in the configuration program.
5. Connect SiLink2 Master to the PC and IO-Link device. → See Page 11, Chapter 5.
6. Set up connection in the configuration program.
7. Open user interface of the IO-Link device by double-clicking on the IO-Link device or via the context menu in the configuration program.

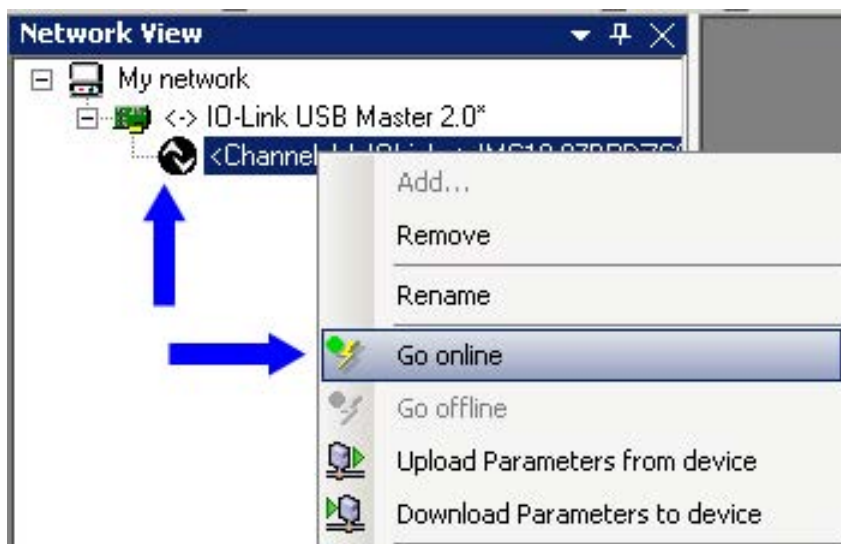


Fig. 10: Open user interface of the IO-Link device

Cleaning and Maintenance

7 Cleaning and Maintenance

SICK devices are maintenance-free. We do recommend checking the screw and plug connections and cleaning the device at regular intervals.

8 Troubleshooting

Indication	Possible Cause	Troubleshooting
Red LED 'Error' illuminated.	Data transmission error	Transmit data again
	Short-circuit	Change SiLink2 Master.

Table 4: Troubleshooting

9 Disposal

Observe the following points for disposal:

- Do not dispose of the device in domestic refuse.
- Dispose of the device according to the relevant country-specific regulations.

10 Technical Data



NOTE!

You can download, save and print the relevant online data sheet with technical data, dimensions, and connection diagram for your IO-Link USB Master online at 'www.mysick.com/de/silink'.

10.1 Dimensions

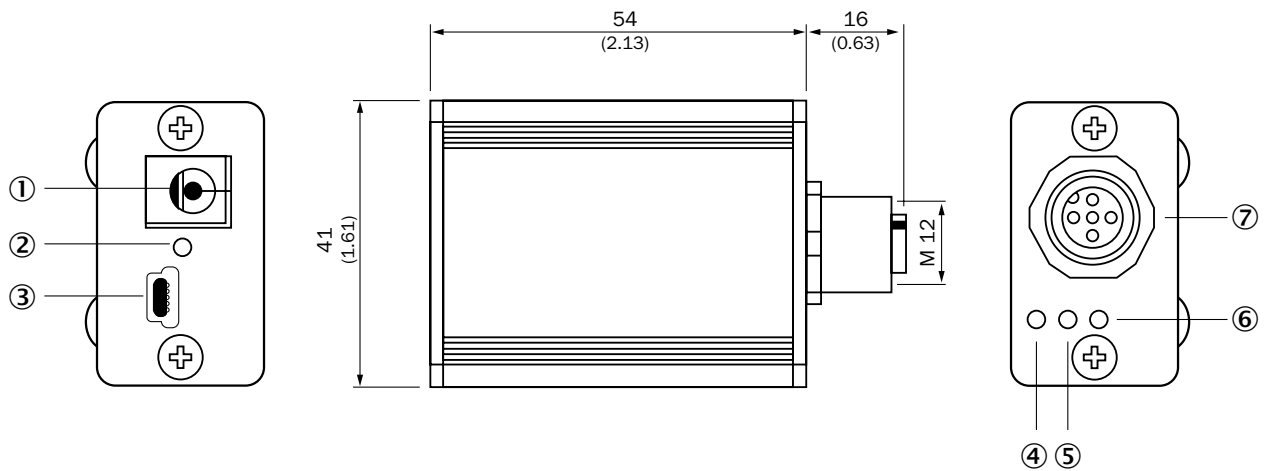


Fig. 11: Dimensions of IO-Link USB Master SiLink2
Dimensions with no brackets in mm. Dimensions with brackets in inches.

- 1 Supply voltage DC 24 V connection of supplied power supply
- 2 Function display LED (yellow) 'PWR'
- 3 Mini USB B, connection of PC via supplied USB cable
- 4 Function display LED (green) 'C1 (C/Q)'
- 5 Function display LED (yellow) 'C2 (DI/DO)'
- 6 Function display LED (red) 'Error'
- 7 M12 male connector, connection IO-Link device

Technical Data

10.2 Supply and Interface

USB	USB 2.0 (Mini USB B)
Power requirement from USB	≤ 500 mA
Supply of the IO-Link device via USB	DC 24 V / 80 mA
External supply via supplied wall plug	DC 24 V / 1 A
Pole safety	Yes
IO-Link communication	IO-Link specification 1.1
IO-Link port	Class A

Table 5: Supply

10.3 Ambient Conditions

Mark of conformity	CE
Protection class	III
Ambient temperature range	<ul style="list-style-type: none"> • Operation: 0 °C ... +45 °C • Storage: -40 °C ... +80 °C
Enclosure rating	IP 20

Table 6: Ambient conditions

10.4 Design Configuration

Dimensions	→ See Page 17, Chapter 10.1.
Connections	<ul style="list-style-type: none"> • 1 female connector: connection of external wall plug • 1 Mini USB B: PC connection • 1 male connector M12, 5-pole, A-coding: sensor cable connection, 5-pole or 4-pole

Table 7: Design Configuration

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