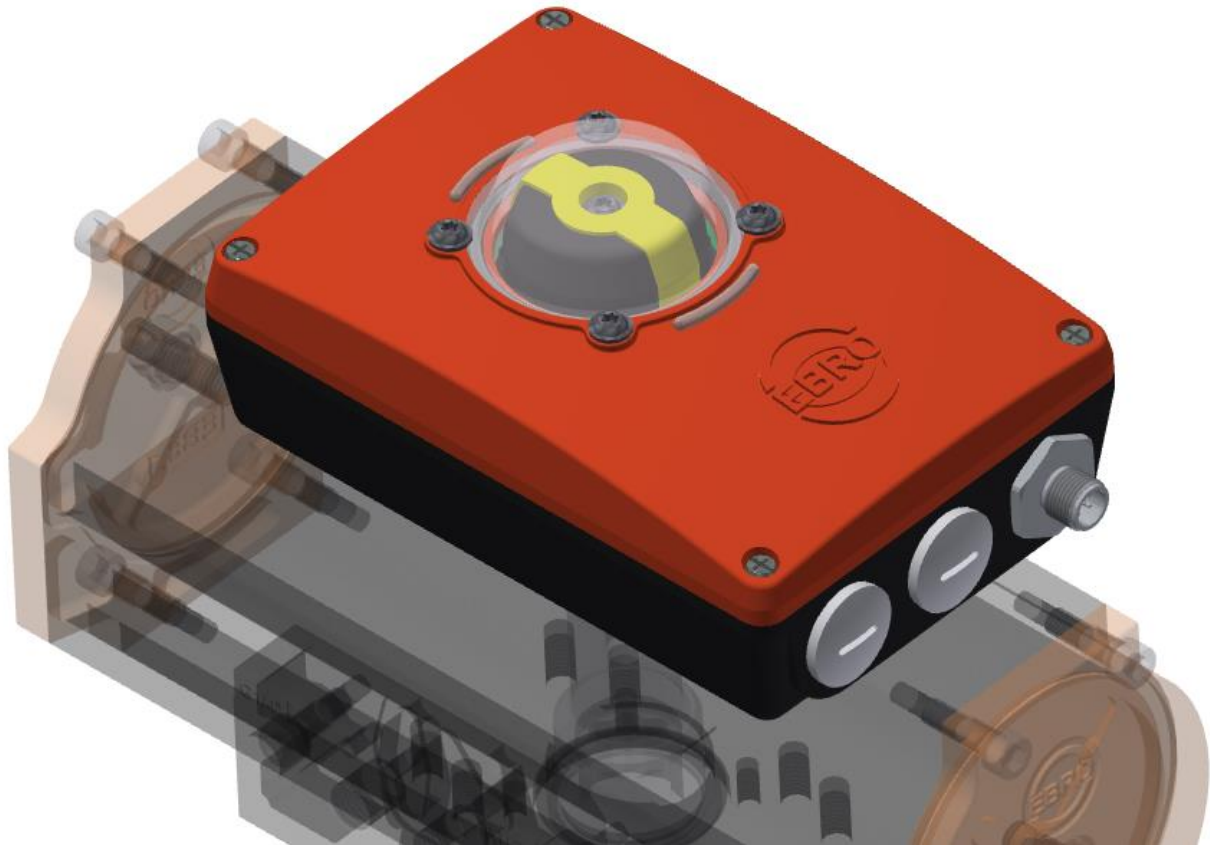


SBU IO-Link



Example illustrations, not all possible type variants are shown!

Quick Guide

in accordance with the EU RED Directive 2014/53/EU
in accordance with the EC Machinery Directive 2006/42/EC

English language version

Revision: 00-05.21

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A) General information

A01 Information about these Quick Guide

These Quick Guide provide important information on handling the SBU IO-Link and assist with the fast commissioning of the SBU IO-Link.




All information in these operating instructions are based on the information on the properties of the product described here and the corresponding safety regulations available at the time of going to press.

The manufacturer reserves the right to make changes and modifications within the scope of the legal regulations and in the interests of improving the properties of the product.

These Quick Guide are intended as a package leaflet for the purchased product SBU IO-Link and are not a replacement for the original assembly instructions. The original assembly instructions can be downloaded from our website www.ebro-armaturen.com. These original assembly instructions as well as all other information necessary for safe use must be available to all persons who use the SBU IO-Link at the time of mounting/dismounting and during operation. The SBU IO-Link may neither be mounted nor used without these short operating instructions and the original assembly instructions having been read and understood and being ready to hand at the place of use.

A02 Explanation of symbols

Information is marked in these instructions by symbols:

 xxxxx	Danger / Caution / Warning ... indicates a dangerous situation that can lead to the death of, or serious injuries to persons and/or damage to the piping system.
	Note ... indicates an instruction that must be observed without fail.
	Information ... provides useful hints and recommendations

If these information, caution and warning notes are not heeded, this can lead to dangerous situations and render the manufacturer's warranty void.

A03 Use for the intended purpose

The SBU IO-Link serves to acquire the signals for the 0°/90° or closed/open position detection of a valve. The SBU IO-Link is mounted on a pneumatic quarter turn actuator with a VDE/VDI 3845 AA2 interface. Quarter turn actuators not having these interfaces require an additional attachment kit for adaptation. The SBU IO-Link can also optionally be used as a detached unit with linear actuators.

The additional interface for two 24 V DC proximity switches allows the two end position sensors of the linear actuator to be electrically connected there and their signals processed by the microprocessor-assisted SBU IO-Link. Further input signals and output signals that are available are described in the following chapters. The SBU IO-Link is suitable only for the non-explosive zone and may be operated only with a 24 V DC power supply. The SBU IO-Link is used only in an area that is not potentially explosive.

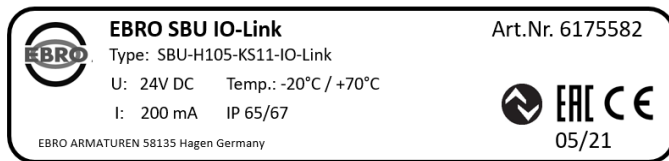
The SBU IO-Link may only be put into operation after the following documents have been read:

- <Explanation of the EU directives>
- Original assembly instructions

Failure to observe this <intended purpose of use> represents gross negligence and relieves the manufacturer EBRO-Armaturen of its product liability.

A04 Marking of the SBU IO-Link

Each SBU IO-Link is marked with the following data on the housing or on the type plate:



Example of an SBU IO-Link standard version
(outside of a potentially explosive zone)

The type plate describes the temperature range, electrical data, EBRO article no. and IP protection class applying to the SBU IO-Link. In addition, the date of manufacture and the CE mark are also printed on it. So that the installed SBU IO-Link remains identifiable, it should not be covered.

B) Mounting and commissioning



Observe the safety information in the original assembly instructions regarding foreseeable risks in the mounting / connection / dismantling of the SBU IO-Link in a control system.

It is the responsibility of the user to supplement this information to cover other, especially local risks. Compliance with all requirements for this system is a prerequisite

B01 General safety information

Please read the safety information in the original assembly instructions carefully when handling the SBU IO-Link . It is the responsibility of the operating company to supplement this information to cover other, specifically local or process-related risks.

Please contact EBRO ARMATUREN Gebr. Bröer GmbH in case of questions or problems.

The SBU IO-Link conforms to the state of the art at the time of delivery and is deemed to be an incomplete machine within the meaning of the Machinery Directive.

B02 Mounting the SBU IO-Link on the quarter turn actuator

The SBU IO-Link is suitable for direct mounting on quarter turn actuators with the mounting interface according to VDI/VDE 3845 AA2 80 mm x 30 mm, shaft height 30 mm (max. dia. 30 mm).

Adapters are required for all other interfaces. The SBU IO-Link may only be operated with the accessories foreseen and approved by EBRO ARMATUREN Gebr. Bröer GmbH.

DANGER

Risk of injury in case of improper mounting.



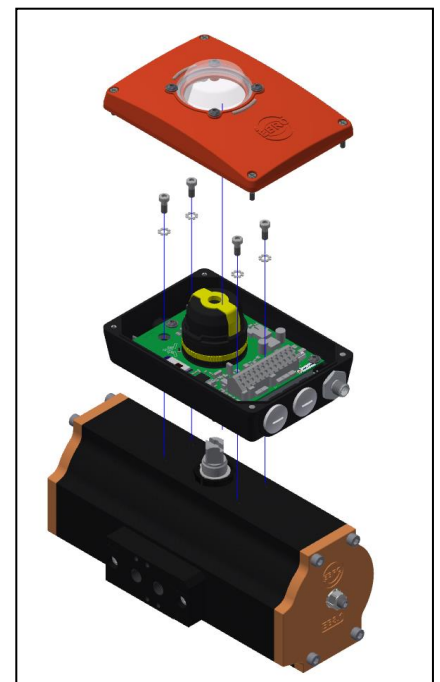
Mounting may only be carried out by authorised technical personnel using suitable tools!

Risk of injury due to inadvertently switching on the plant and uncontrolled restarting.

Secure the plant against inadvertent actuation. Ensure controlled restarting after mounting.

The SBU IO-Link should be mounted as follows:

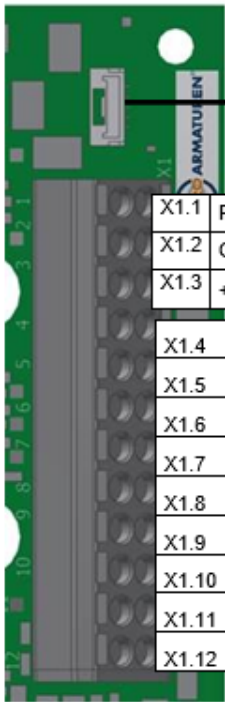
- Unpack the SBU IO-Link from the factory packaging at the installation location.
- Check the SBU IO-Link for transport damage.
- Check the SBU IO-Link for damage.
- In case of outdoor installation of SBU IO-Link units, measures may need to be taken to ensure operation as intended. These include the "Diaphragm element" option for switch box ventilation or rain roofs and possibly enclosures of an adequate protection class.
- Determine the mounting position of the device (parallel to the actuator).
- Open the switch box cover.
- Align the drive shafts (groove) and switch box shaft (tongue).
- Check the flush fitting of the insert seals on the underside of the switch box housing.
- Push the switch box onto the drive shaft.
- Fasten the switch box to the actuator with 4 cheesehead screws and spring washers.
- Close the switch box cover again if the electrical connection is not to be made immediately.



B03 Electrical connection

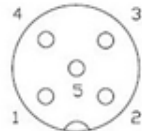
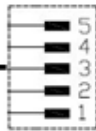
- The associated circuit diagram is affixed inside the inner housing cover.
- Connect the SBU IO-Link in accordance with the permissible voltage.
- All electrical connections to the user-side controller are to be checked by an electrician before the initial commissioning.

Terminal assignment



X1.1	PE
X1.2	GND
X1.3	+24 V DC ±10%

X1.4	Collective error
X1.5	Valve is OPEN
X1.6	Valve is CLOSED (Q) / IO-Link (C)
X1.7	PE
X1.8	PE
X1.9	Solenoid valve GND
X1.10	Solenoid valve GND
X1.11	Solenoid valve 1 +24 V DC (max. 2,1 W)
X1.12	Solenoid valve 2 +24 V DC (max. 2,1 W)

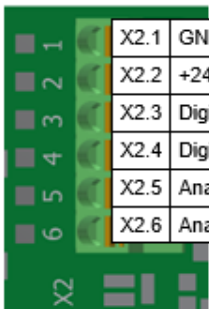


¹⁾ M12-Class A Plug

X3.1	+24VDC
X3.2	Output Valve is OPEN
X3.3	0V
X3.4	Output Valve is CLOSED (Q) / IO-Link (C)
X3.5	N.C.

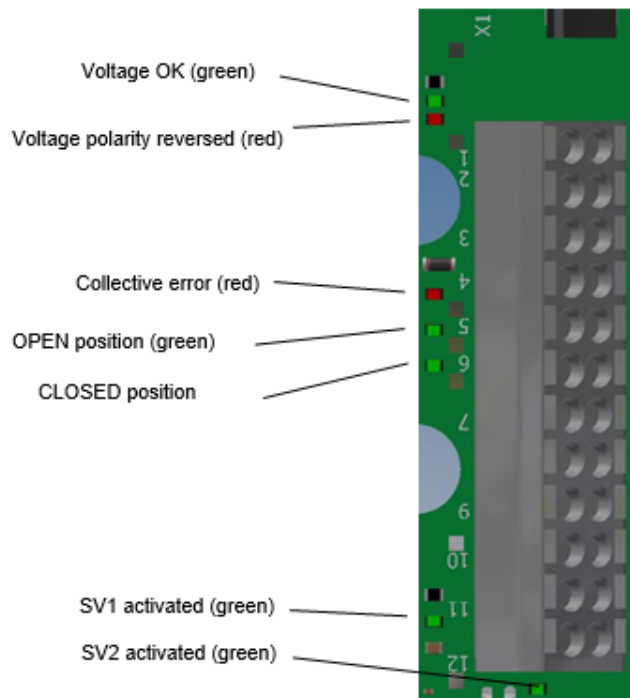
Note:

¹⁾ Voltage supply and output signals for the valve position are identical as for X1. Parallel use of these interfaces is not necessary and also not permitted.

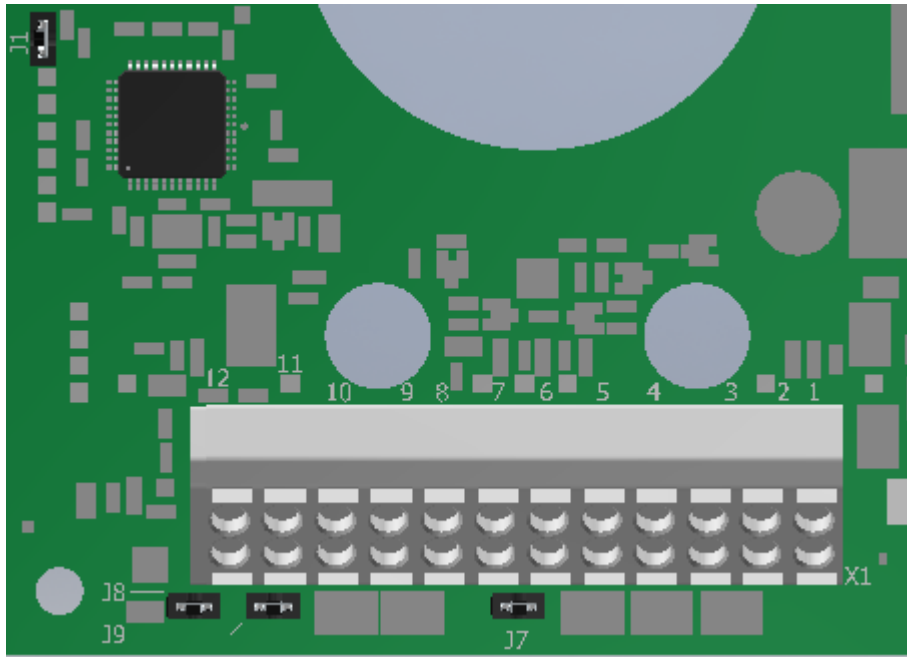


X2.1	GND
X2.2	+24 V DC
X2.3	Digital input 1
X2.4	Digital input 2
X2.5	Analog input 1
X2.6	Analog input 2

LED signalling



Jumper



J1	+3.3 V reference for	Set	Not set
	Power supply for Bluetooth module	Bluetooth module active	Bluetooth module inactive
J7	GND reference for	Set	Not set
	Power supply solenoid valves GND	GND related to operating voltage GND	0V potential for the SV connections must be applied separately to the respective terminal (see wiring diagram)
J8	Control SV1	Set	Not set
	Control via IO-Link / external	Control via IO-Link	Control by external signal
J9	Control SV2	Set	Not set
	Control via IO-Link / external	Control via IO-Link	Control by external signal

CAUTION



Danger due to incorrect operation.

Malfunctions of, or damage to components.

The SBU IO-Link may only be connected by an electrician.

For external control signals for the solenoid valves, the jumpers J7, J8 and J9 **must** be removed and the wiring diagram must be observed.

B04 Commissioning

Once the SBU IO-Link has been connected to the controller on the user side in accordance with section B03, no further actions are necessary. The operating states of the SBU IO-Link can be determined and parametrised with the aid of the EBRO Connect App.

- Make sure that the SBU IO-Link is firmly mounted as intended on the quarter turn actuator and is electrically connected.
- Switch the SBU IO-Link on only when the switch box is closed.
- The input and output states are additionally signalled by LEDs on the PCB.
- Two light elements on the housing cover serve as visual feedback of the valve's position status (CLOSED/OPEN)

B05 Errors in general

If the SBU IO-Link does not work after connecting the power supply, make sure that the power supply is taken through to the terminal point and has been connected properly. If the red LED lights up, the power supply polarity is reversed. Correct polarity of the power supply is signalled by the green LED.

B06 Collective error

Errors are signalled by the flashing of the red Error LED and the switching of the Collective Error output X1.6. No error messages have any effect on the current program sequence. The error is reset once the cause of the error has been rectified.

B07 Errors – Cause – Remedial action

Errors that can be signalled by the SBU IO-Link are:

Error	Cause	Remedial action
Collective error	Runtime monitoring: The set running time is exceeded. Default value: 0 s (deactivated)	Check the following components: - Valve switched - Actuator function Check compressed air supply Check the position of the cam plate. Check for jamming in the pipeline. The fault is automatically reset as soon as the repeated ride is within the time tolerance.
	Max. switching cycles: Max. set switching cycles reached. Default value: 0 n (deactivated)	Check the number of switching cycles performed. Reset or increase the counter.

D) Storage, packaging and transport

D01 Storage

If you do not install the SBU IO-Link immediately, ensure suitable storage conditions in dry, dust-free, frost-free indoor rooms protected against sunlight. Wrap the SBU IO-Link in cardboard, plastic or film packaging.

In order to keep the unused SBU IO-Link in a functional condition even over a maximum period of six months, please observe the following storage conditions:

- the storage room should be dry and free from dust.
- the storage temperature should be between + 5 °C and + 40 °C.
- the SBU IO-Link should be stored on a level floor.
- the SBU IO-Link should be protected against inadvertent movements and damage.
- the SBU IO-Link should be protected against static discharge.

D02 Packaging

The complete SBU IO-Link from EBRO ARMATUREN Gebr. Bröer GmbH is packed safely and fit for purpose in accordance with the transport route and destination.

INFO



On arrival at the destination the completeness of the shipment must be checked immediately against the shipping documents and packing lists; the intactness of the shipment must also be checked.

EBRO ARMATUREN Gebr. Bröer GmbH is to be notified immediately in case of complaints.

D03 Transport in general

Unless agreed otherwise, the SBU IO-Link will be delivered fully factory-preassembled by EBRO ARMATUREN Gebr. Bröer GmbH.

For the transport, observe the specified weights and dimensions in the delivery documents of the SBU IO-Link. The SBU IO-Link should be kept in the factory packaging until use or installation. The specified storage conditions must be adhered to.

