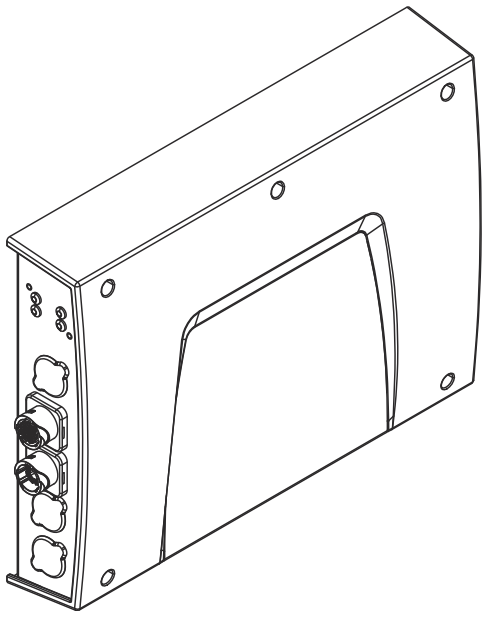
Operating Instructions

RI FB PRO/i



EN-US | Operating instructions

42,0426,0217,EA 012-08022023

Table of contents

General

Safety

⚠ WARNING!

Danger from incorrect operation and work that is not carried out properly.
This can result in serious personal injury and damage to property.
- ▶ All the work and functions described in this document must only be carried out by technically trained and qualified personnel.
- ▶ Read and understand this document in full.
- ▶ Read and understand all safety rules and user documentation for this equipment and all system components.

⚠ WARNING!

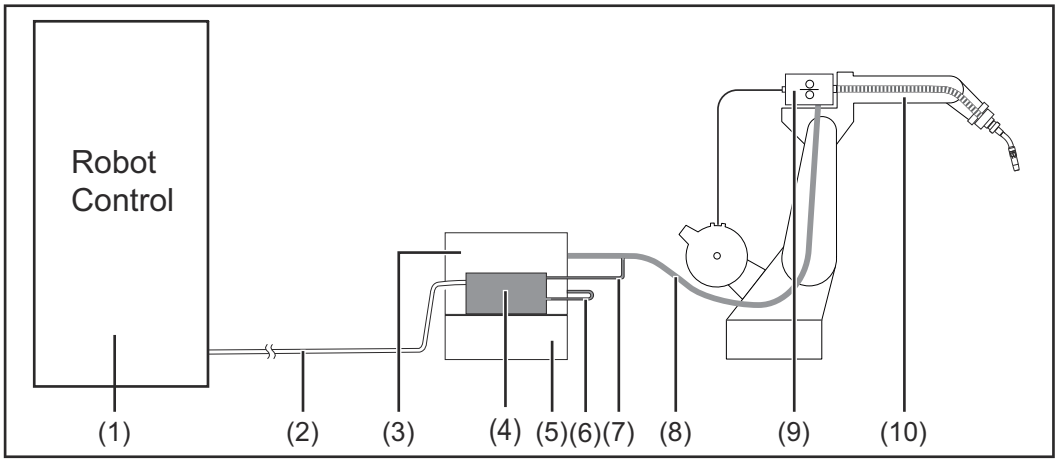
Danger from electrical current.
This can result in serious personal injury and damage to property.
- ▶ Before starting work, switch off all the devices and components involved and disconnect them from the grid.
- ▶ Secure all devices and components involved so they cannot be switched back on.

⚠ WARNING!

Danger from unplanned signal transmission.
This can result in serious personal injury and damage to property.
- ▶ Do not transfer safety signals via the interface.

Device concept

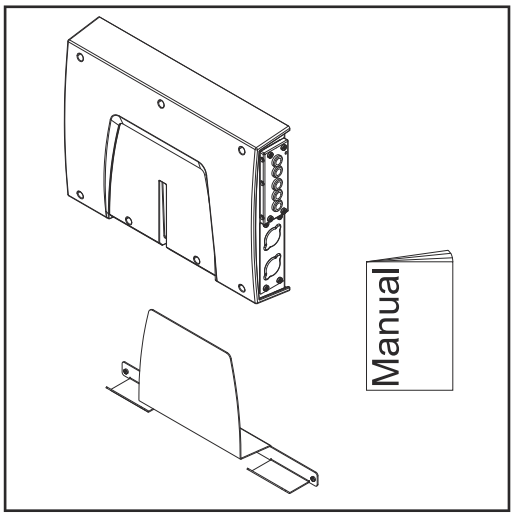
The RI FB PRO/i robot interface serves as an interface between the power source and standardized bus modules for a wide variety of communication protocols (e.g., Profibus, ProfiNet IO, DeviceNet, CANopen, etc.).
The robot interface can be mounted on the power source either at the factory by the manufacturer or subsequently by appropriately trained and qualified personnel.



(1)	Robot control	(6)	SpeedNet connection cable

(2)	Data cable of the robot control	(7)	SpeedNet cable from the interconnecting hosepack
(3)	Power source	(8)	Interconnecting hosepack
(4)	RI FB PRO/i robot interface	(9)	Wirefeeder
(5)	Cooling unit	(10)	Robot

Scope of supply



Environmental Conditions

⚠ CAUTION!

A risk is posed by prohibited environmental conditions.
This can result in severe damage to equipment.
▶ Only store and operate the device under the following environmental conditions.

Temperature range of ambient air: - During operation: -10 °C to +40 °C (14 °F to 104 °F) - During transport and storage: -20 °C to +55 °C (-4 °F to 131 °F)
Relative humidity: - Up to 50% at 40 °C (104 °F) - Up to 90% at 20 °C (68 °F)
Ambient air: free of dust, acids, corrosive gases or substances, etc.
Altitude above sea level: up to 2000 m (6500 ft).

Technical Data

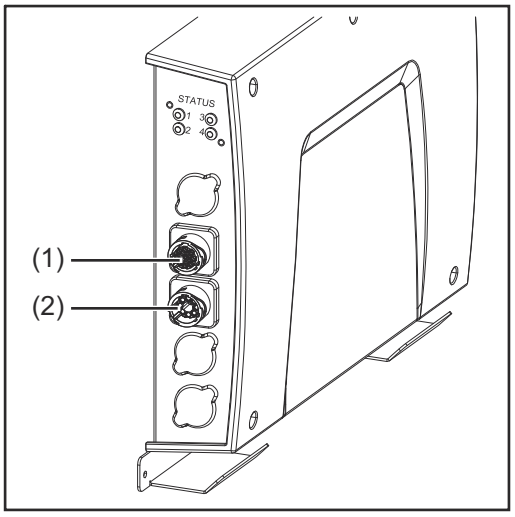
Power supply	internally (24 V)
Protection class	IP 20

Connection Sockets and Indicators on the Robot Interface

General

As a result of customer-specific requirements, you may find that your device has certain connection sockets that are not described in these Operating Instructions, or vice versa.
However, this does not affect the basic functions of the device.

Connection sockets for the power source and system components



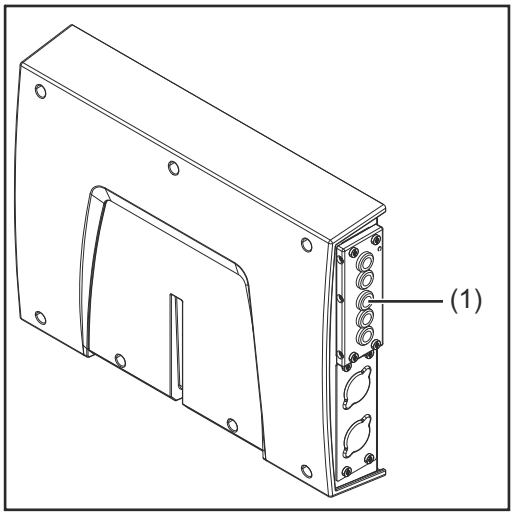
(1) **SpeedNet connection**
To connect the SpeedNet connection cable – to connect the power source to the robot interface.

(2) **SpeedNet connection**
To connect the SpeedNet cable from the interconnecting hosepack – to connect to other system components, such as wirefeeders.

Connection sockets for the robot control

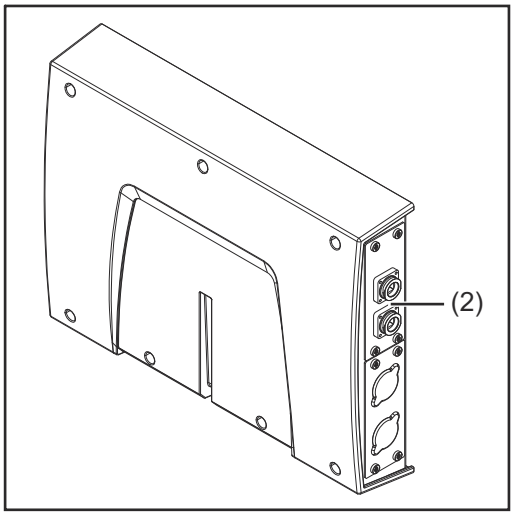
The robot interface is supplied with one of the following connection configurations depending on the requirement.

Basic configuration example:



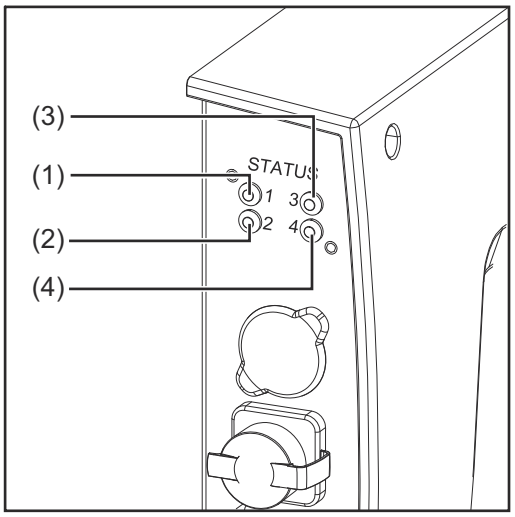
(1) **Strain-relief device**
The robot control cable harness must be guided through the strain-relief device inside the robot interface and connected directly to the bus module.

ProfiNet IO, Ethernet/IP 2P, etc. configuration example:



(2) **Connection sockets for the relevant bus module**
The connection sockets for the bus module are routed to the outside of the robot interface at the factory. The robot control cable harness can be connected directly to the outside of the robot interface.

Indicators on the interface



(1)	Heartbeat LED	
	Heartbeat LED status	Heartbeat LED meaning
	Off	Offline; no supply voltage
	Flashes green	The PC board operating system is working properly
(2)	No function	-
(3) + (4)	See description of the respective bus module	-

Installation variant 1: Installing the bus module, installing the robot interface

Safety

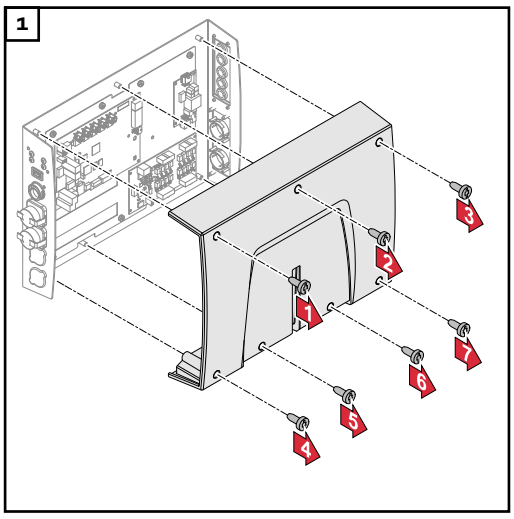
⚠ WARNING!

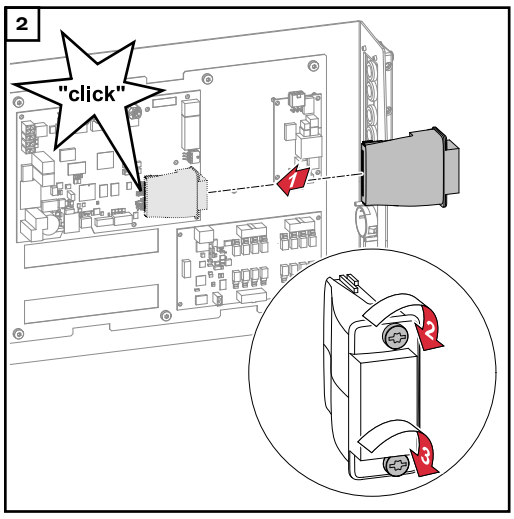
Electrical current hazard.
This can result in serious injuries or death.
- ▶ Before starting work, switch off all the devices and components involved and disconnect them from the grid.
- ▶ Secure all the devices and components involved to prevent unintentional re-starting.
- ▶ After opening the device, use a suitable measuring instrument to check that electrically charged components (such as capacitors) have been discharged.

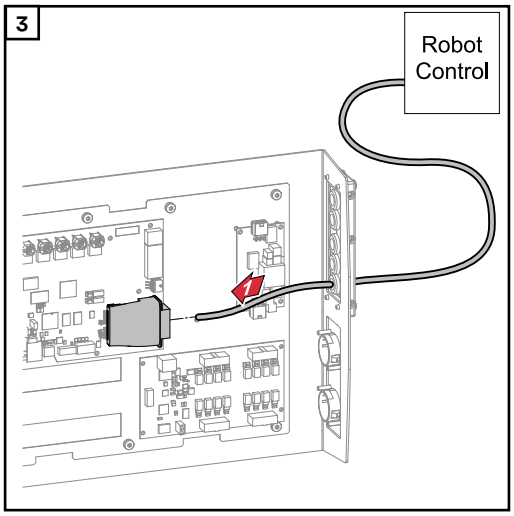
⚠ WARNING!

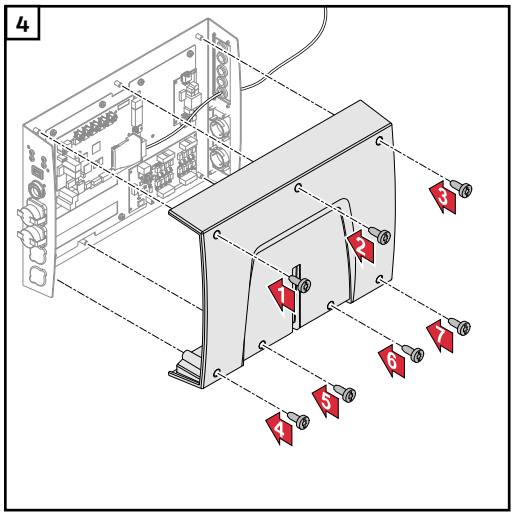
Electrical current hazard caused by an inadequate ground conductor connection.
This can result in severe personal injury and damage to property.
- ▶ Always use the original housing screws in the original quantity.

Inserting the bus module into the robot interface and connecting it to the robot control

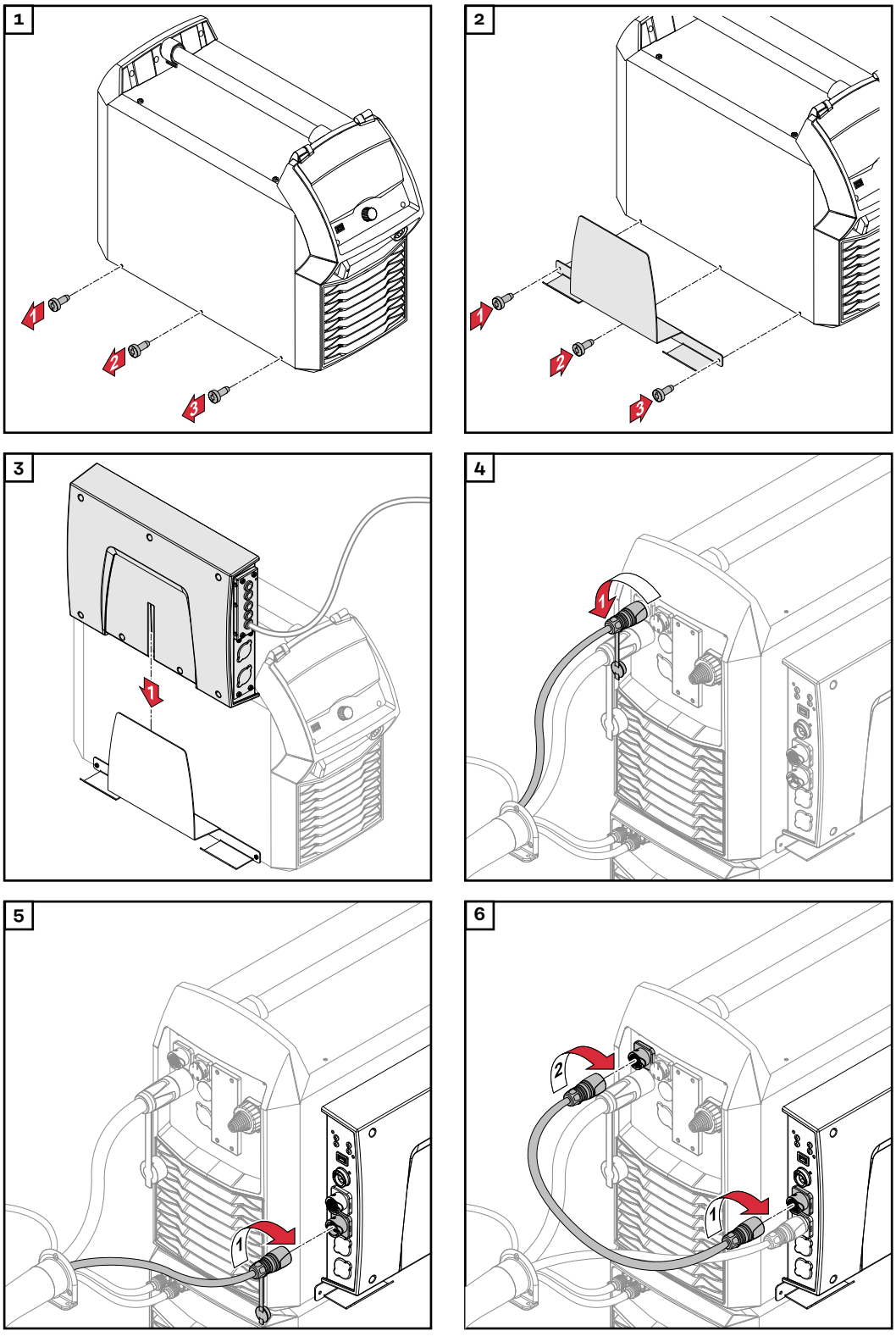








Fitting the robot interface and connecting it to the power source



Installation variant 2: Installing the robot interface with built-in bus module

Safety

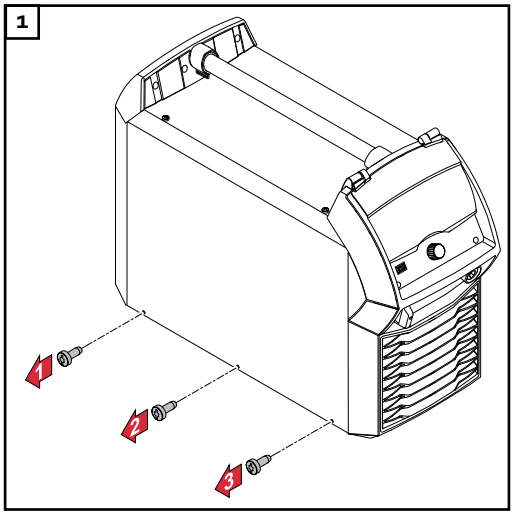
⚠ WARNING!

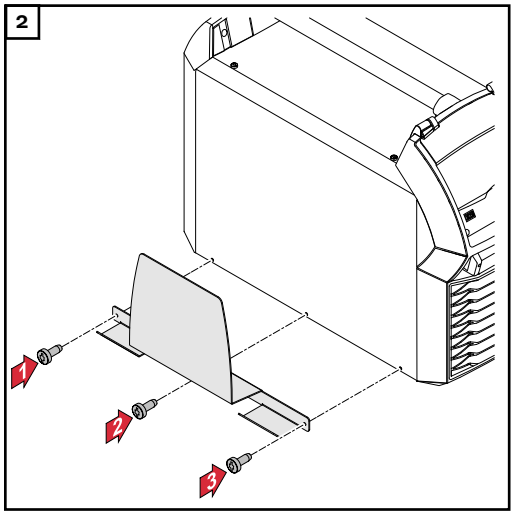
Electrical current hazard.
This can result in serious injuries or death.
- ▶ Before starting work, switch off all the devices and components involved and disconnect them from the grid.
- ▶ Secure all the devices and components involved to prevent unintentional restarting.
- ▶ After opening the device, use a suitable measuring instrument to check that electrically charged components (such as capacitors) have been discharged.

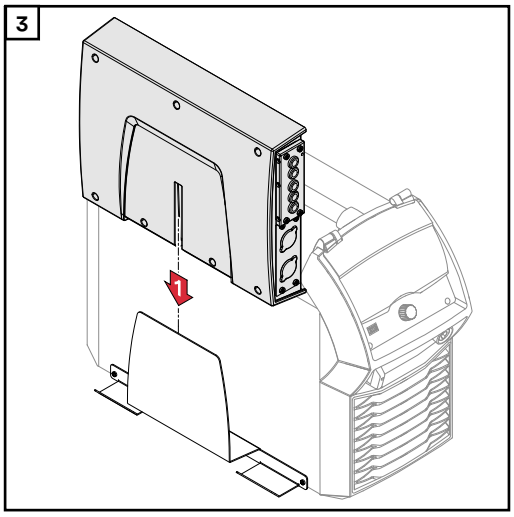
⚠ WARNING!

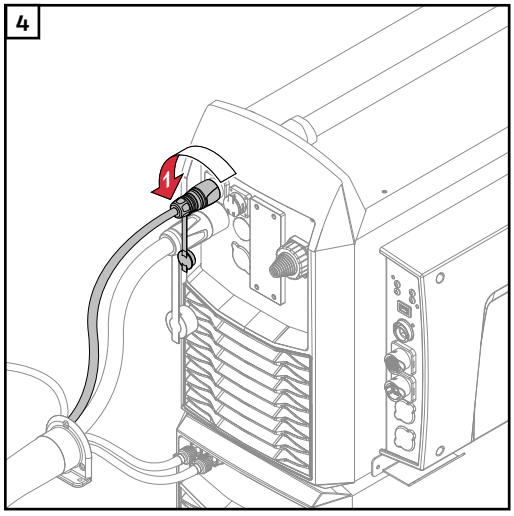
Electrical current hazard caused by an inadequate ground conductor connection.
This can result in severe personal injury and damage to property.
- ▶ Always use the original housing screws in the original quantity.

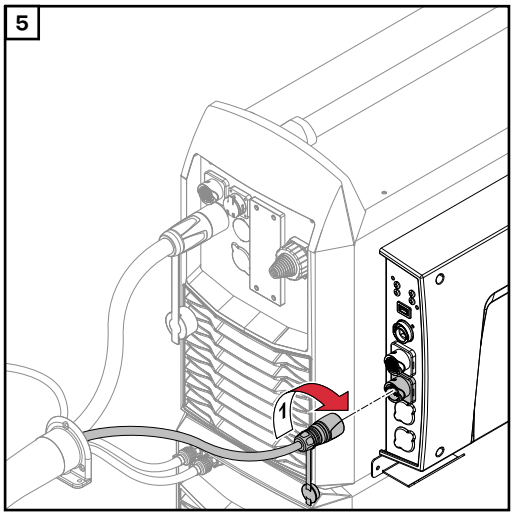
Installing the robot interface







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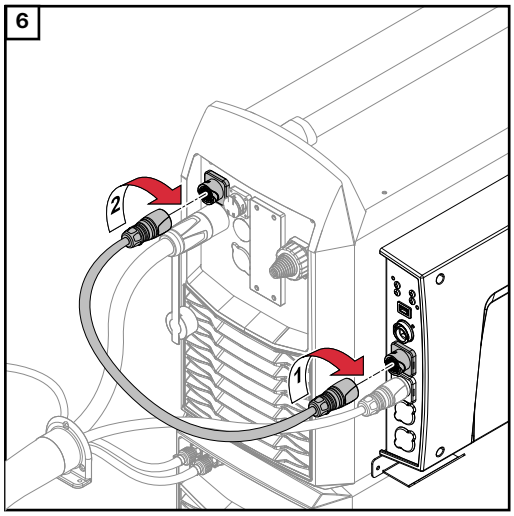
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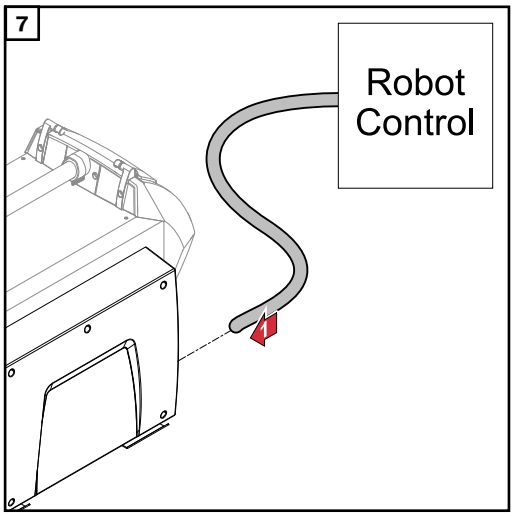
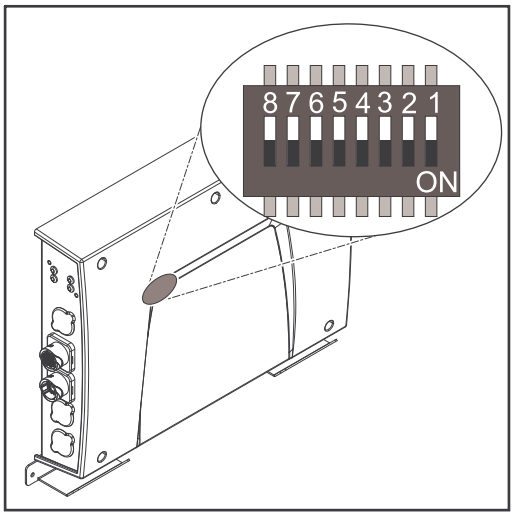

7
Robot
Control
1

Dip Switch

General



Depending on the bus module being used, the dip switch inside the robot interface can be used to set the node address/IP address.

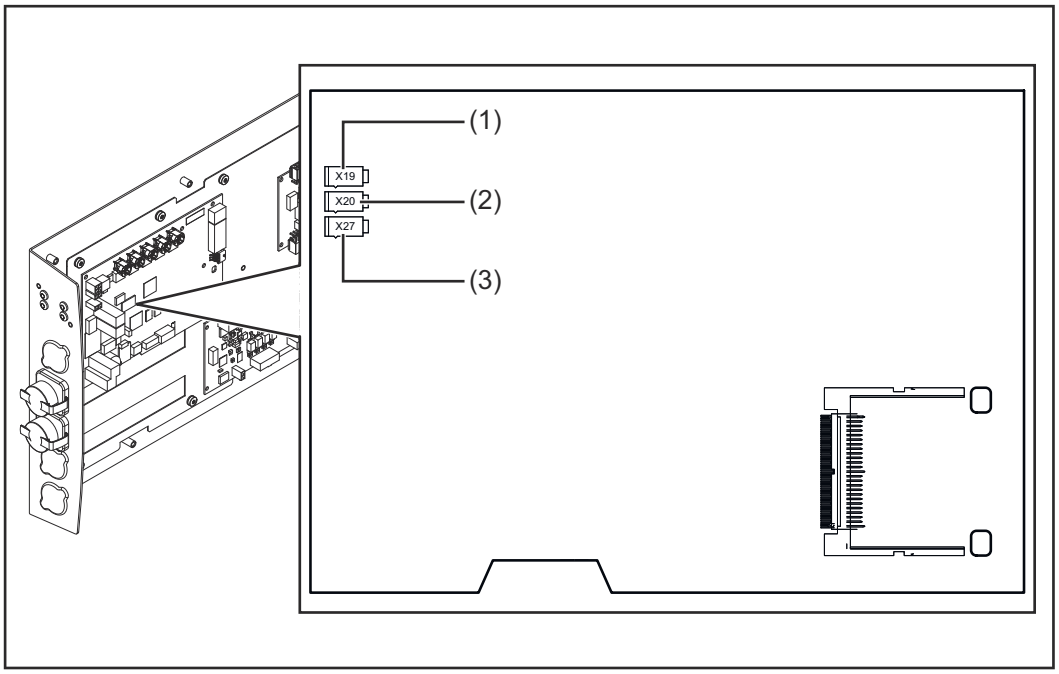
Example: Setting the node address/IP address

Dip switch								Node address
8	7	6	5	4	3	2	1	
-	-	OFF	OFF	OFF	OFF	OFF	ON	1
-	-	OFF	OFF	OFF	OFF	ON	OFF	2
-	-	OFF	OFF	OFF	OFF	ON	ON	3
-	-	ON	ON	ON	ON	ON	OFF	62
-	-	ON	ON	ON	ON	ON	ON	63

The node address/IP address is set using dip switch positions 1 to 6.
The setting is in binary format. This results in a configuration range of 1 to 63 in decimal format.

Notes on the Robot Interface Power Supply

Notes on the interface power supply



- By default the interface is supplied with +24 V DC via connector X19 (1).
- If the interface has connection sockets for an external power supply, these sockets must be connected to connector X20 (2) or X27 (3), through which the interface is supplied with +24 V DC.
- The interface can be supplied with power though connectors X19, X20, and X27 in parallel. If this is the case, the interface will continue to function even if one of the power supply lines is disconnected.
- If the interface is to be switched on and off via an external power supply, the connection between the interface and connector X19 must be broken.

Troubleshooting

Safety

⚠ WARNING!

Danger from electric current.
This can result in serious injuries and death.

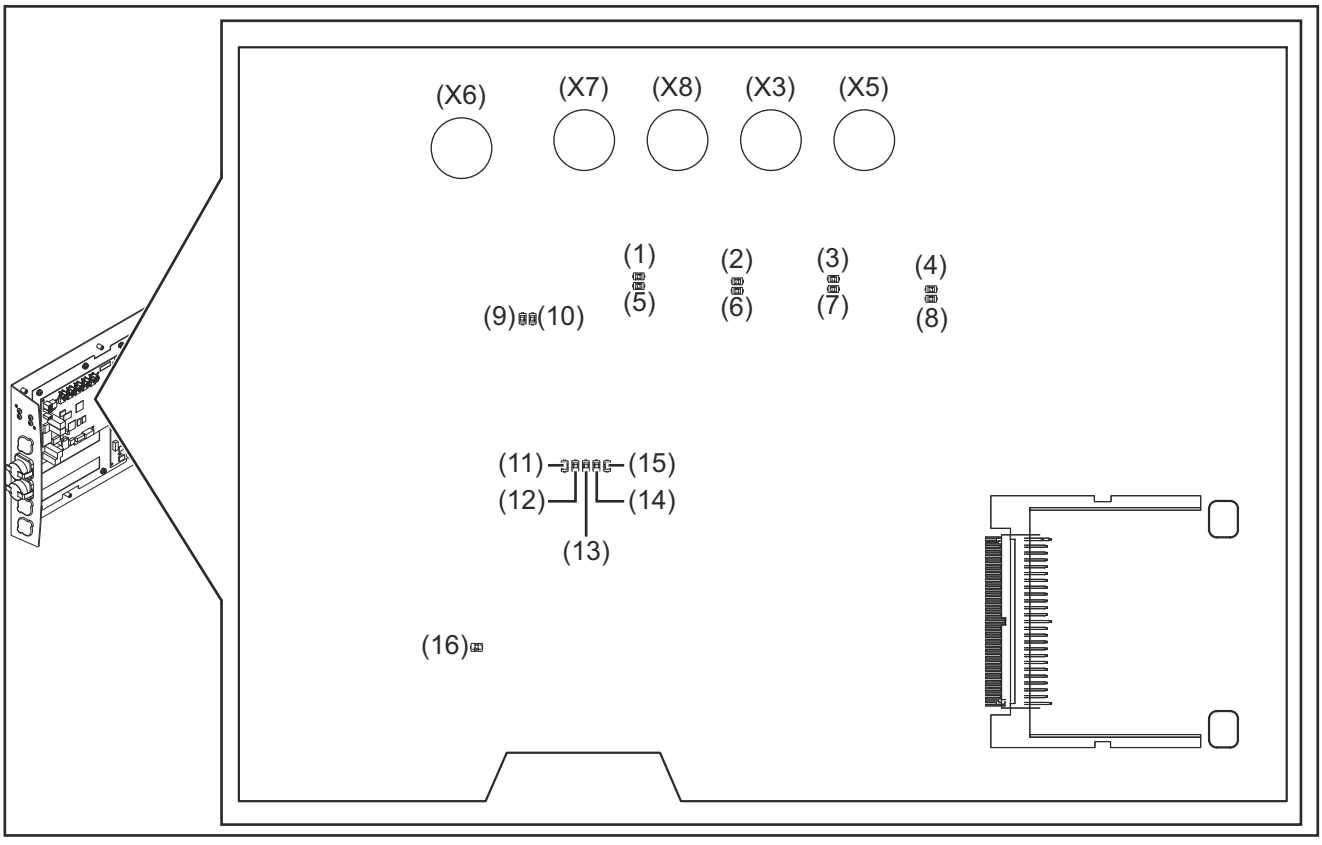
- ▶ Before starting work, switch off all the devices and components involved and disconnect them from the grid.
- ▶ Secure all devices and components involved so they cannot be switched back on.
- ▶ After opening the device, use a suitable measuring instrument to check that electrically charged components (such as capacitors) have been discharged.

⚠ WARNING!

Danger from electrical current due to inadequate ground conductor connection.
This can result in serious injury and damage to property.

- ▶ Always use the original housing screws in the original quantity.

LEDs on robot interface PCB



LEDs for network connection diagnosis:

LED		Display	Meaning
(1)	LED LINK	Lights up orange	Transmission speed 100Mbps
		Off	Transmission speed 10Mbps
(2)	LED LINK	Lights up orange	Transmission speed 100Mbps
		Off	Transmission speed 10Mbps
(3)	LED LINK	Lights up orange	Transmission speed 100Mbps
		Off	Transmission speed 10Mbps
(4)	LED LINK	Lights up orange	Transmission speed 100Mbps
		Off	Transmission speed 10Mbps
(5)	LED ACTIVITY	Lights up orange	A cable is connected to the X7 connector
		Lights up/flashes green	Data transfer in progress
(6)	LED ACTIVITY	Lights up orange	A cable is connected to the X8 connector
		Lights up/flashes green	Data transfer in progress
(7)	LED ACTIVITY	Lights up orange	A cable is connected to the X3 connector
		Lights up/flashes green	Data transfer in progress
(8)	LED ACTIVITY	Lights up orange	A cable is connected to the X5 connector
		Lights up/flashes green	Data transfer in progress
(9)	LED ACTIVITY	Lights up/flashes green	Data transfer in progress
(10)	LED SPEED	Lights up green	A cable is connected to the X6 connector
(11)	LED LINK	Not assigned	-
(12)	LED LINK	Not assigned	-
(13)	LED LINK	Not assigned	-
(14)	LED USER3	Lights up/flashes green	For fault analysis
(15)	LED USER4	Flashes green	The PC board operating system is working properly

LEDs for power supply diagnosis:

LED		Display	Meaning
(16)	+5V LED	Lights up green	5V operating voltage present
		Off	No operating voltage present

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