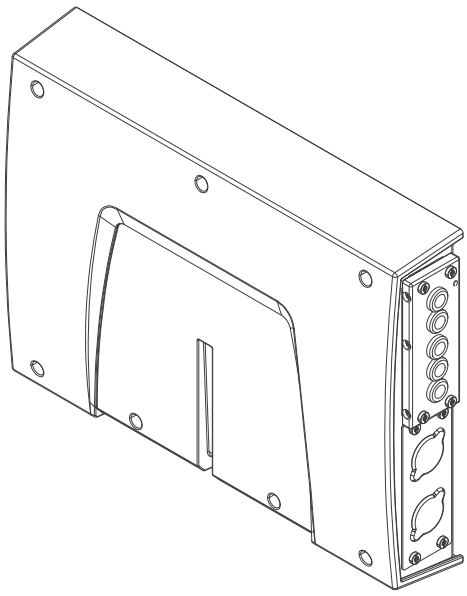
Operating Instructions

RI FB PRO/i TIG Basic



EN-US | Operating instructions

42,0426,0481,EA 002-11042024

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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.

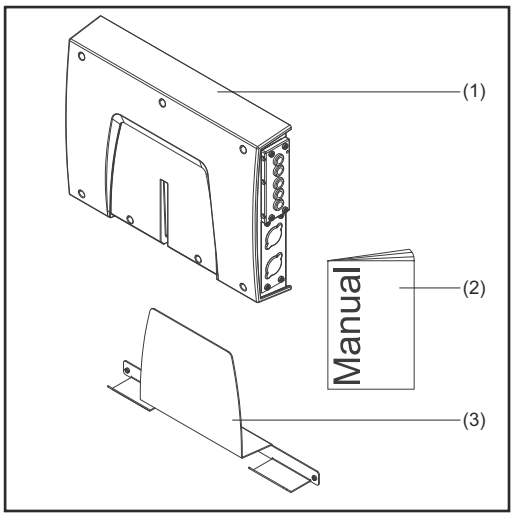
⚠ WARNING!

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.

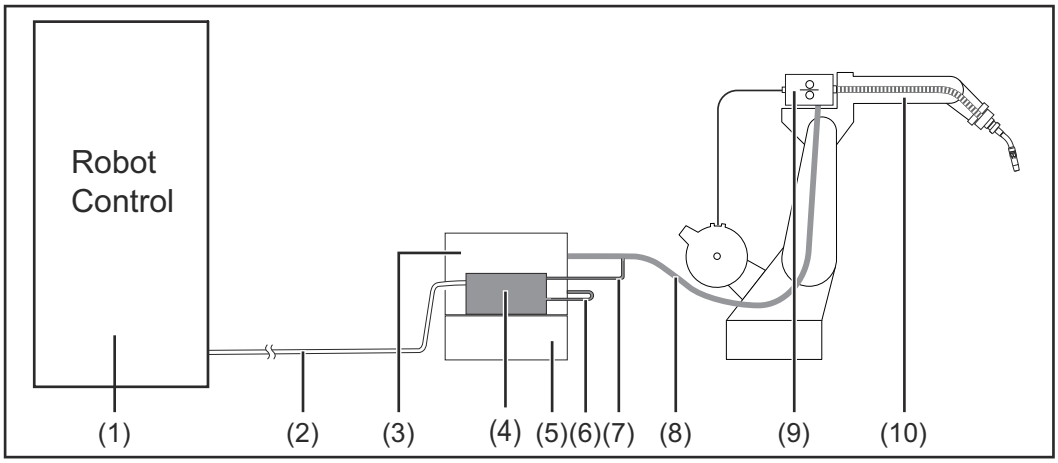
Scope of supply



(1) RI FB PRO/i Basic TIG
(2) Operating Instructions
(3) Mounting plate
(4) Circuit Diagram (not shown)

Device concept

The RI FB PRO/i TIG Basic robot interface serves as an interface between the welding machine 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 welding machine either at the factory by the manufacturer or subsequently retrofitted 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)	Welding machine		
(4)	RI FB PRO/i TIG Basic robot interface	(8)	Interconnecting hosepack
		(9)	Wirefeeder
(5)	Cooling unit	(10)	Robot

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

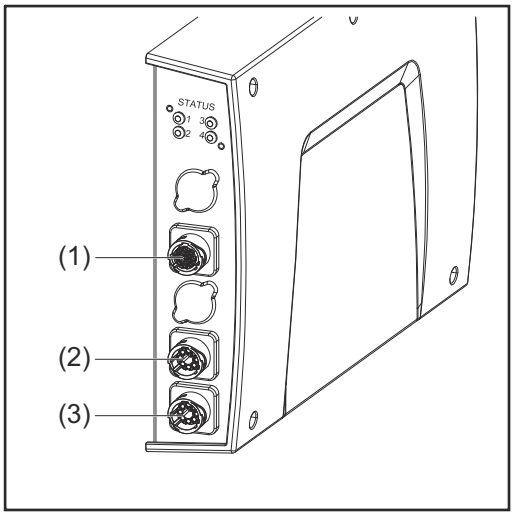
Power supply	internally (24 V)
Protection class	IP 20

Connection Sockets and Indicators on the Robot Interface

General

As a result of customer-specific requirements, there may be certain connection sockets on the device that are not described in these operating instructions or vice versa.
This does not affect the basic functions of the device.

Connections for the welding machine and system components

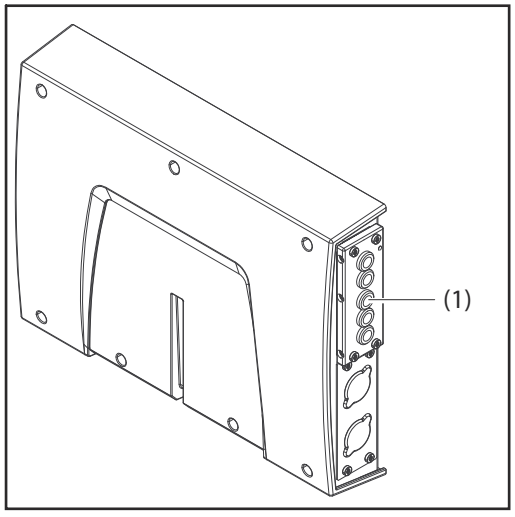


(1)	**CrashBox connection**
(2)	**SpeedNet connection** For connecting the SpeedNet cable between the back of the welding machine and the robot interface.
(3)	**SpeedNet connection** For connecting a SpeedNet cable to other system components.

Connection sockets for the robot control

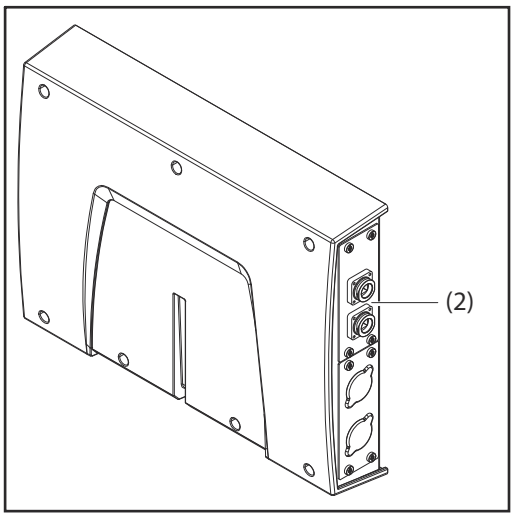
The robot interface is supplied with one of the following connection configurations depending on the requirement.

Basic configuration example:



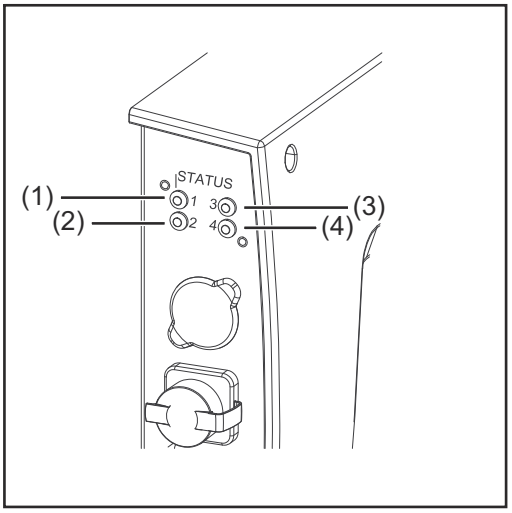
(1) **Strain-relief device**
The robot control cable harness is guided through the strain-relief device into the robot interface and connected directly to the bus module.

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



(2) **Connection sockets of the relevant bus module**
When installed in the factory, the connection sockets of the bus module lead to the outside of the robot interface. The robot control cable harness can be connected directly to the outside of the robot interface.

Indicators on the interface



	Display	Meaning
(1)	Off	Offline, no supply voltage
	Flashes green	The robot interface operating system is working properly.
(2)	No function	-
(3) + (4)	See description of the respective bus module	-

Installation

Safety

⚠ WARNING!

Danger from electrical current.
Serious personal injuries may result.

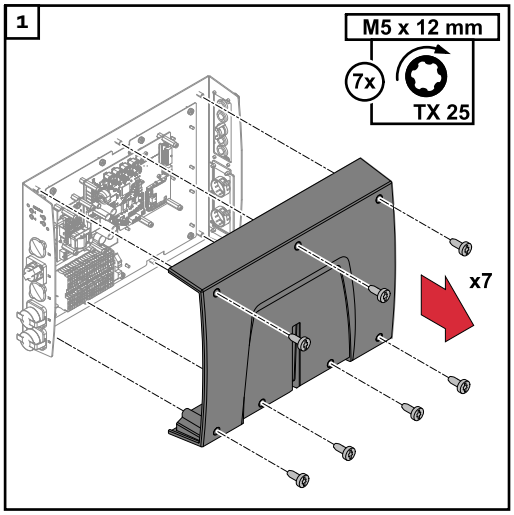
- ▶ Before starting work, switch off all the devices and components involved and disconnect them from the grid.
- ▶ Secure all devices and components involved so they cannot be switched back on.
- ▶ After opening the device, use a suitable measuring instrument to check that electrically charged components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

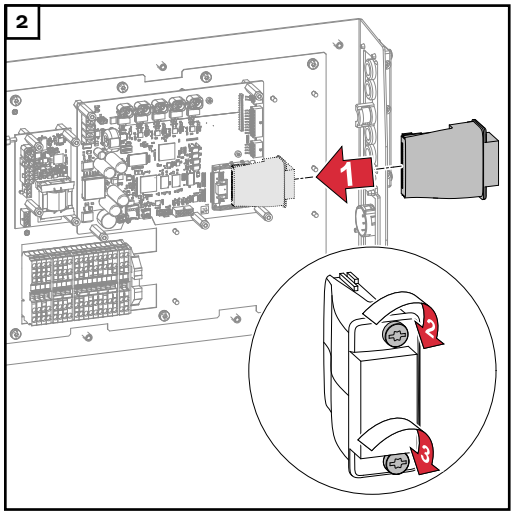
⚠ WARNING!

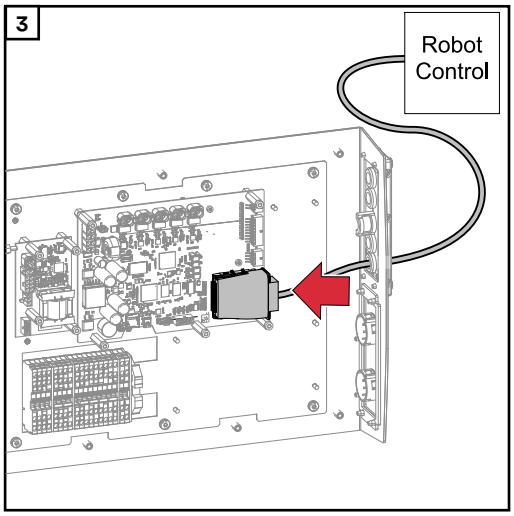
Danger from electrical current due to inadequate ground conductor connection.
This can result in serious personal injury and damage to property.

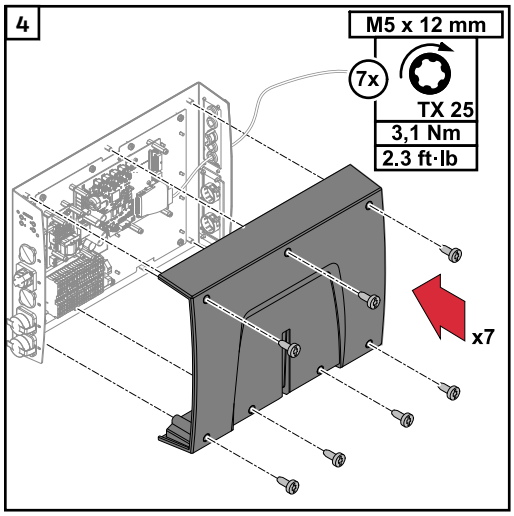
- ▶ Always use the original housing screws in the quantity initially supplied.

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

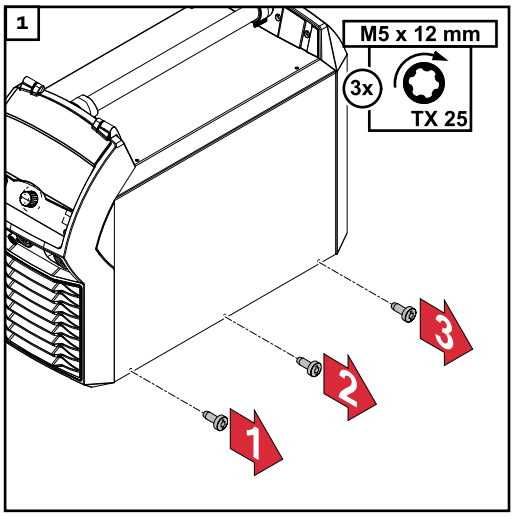


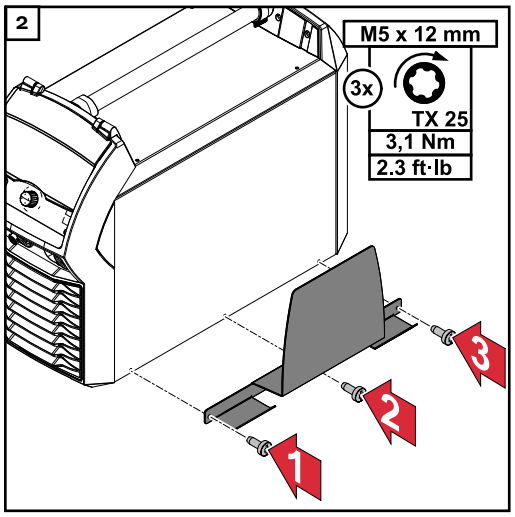


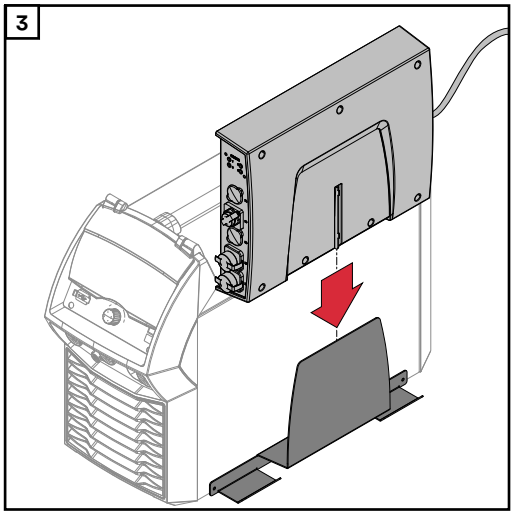


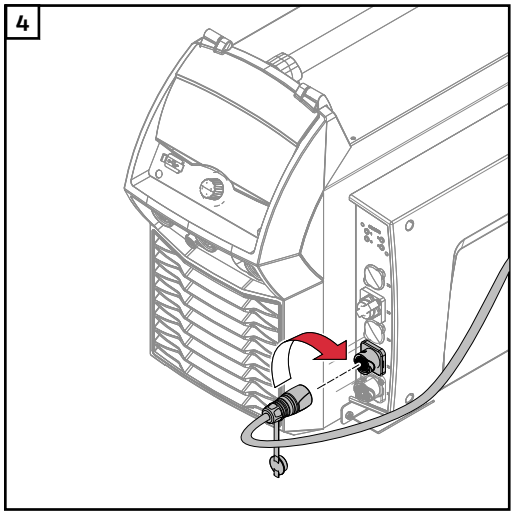


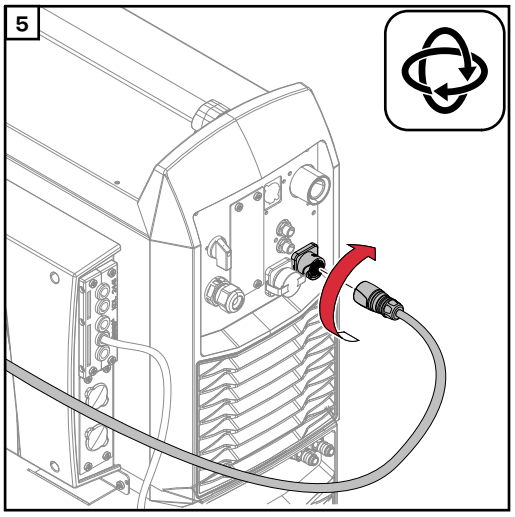
Installing the robot interface and connecting it to the welding machine

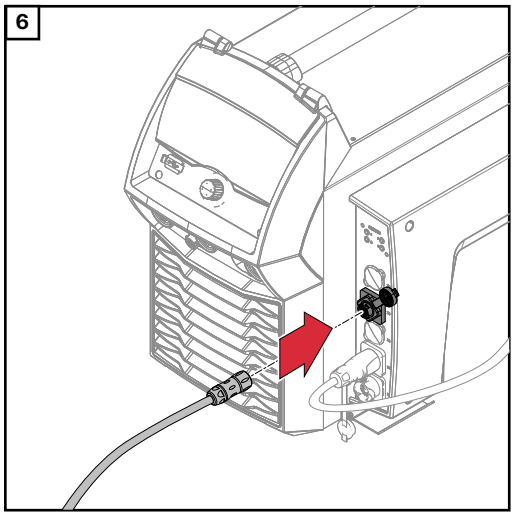






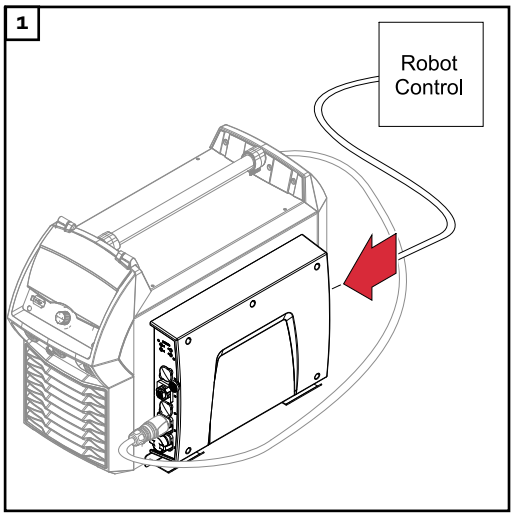






Connecting the robot interface with built-in bus module to the robot

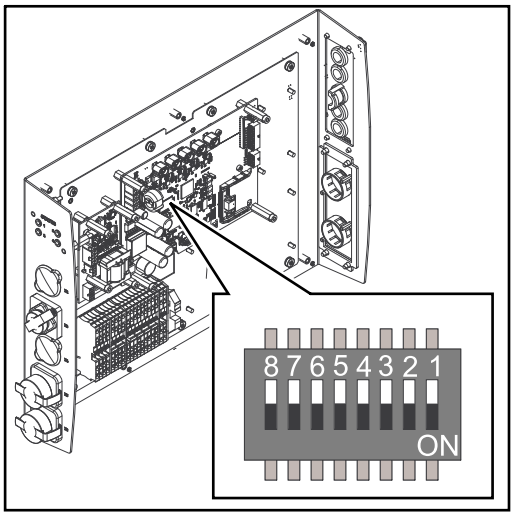
Requirement:
The robot interface is mounted on the welding machine (see chapter **Installing the robot interface and connecting it to the welding machine** on page **9**).



Connect the data cable of the robot control to the RI FB PRO/i TIG Basic.

Dip Switch

General



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

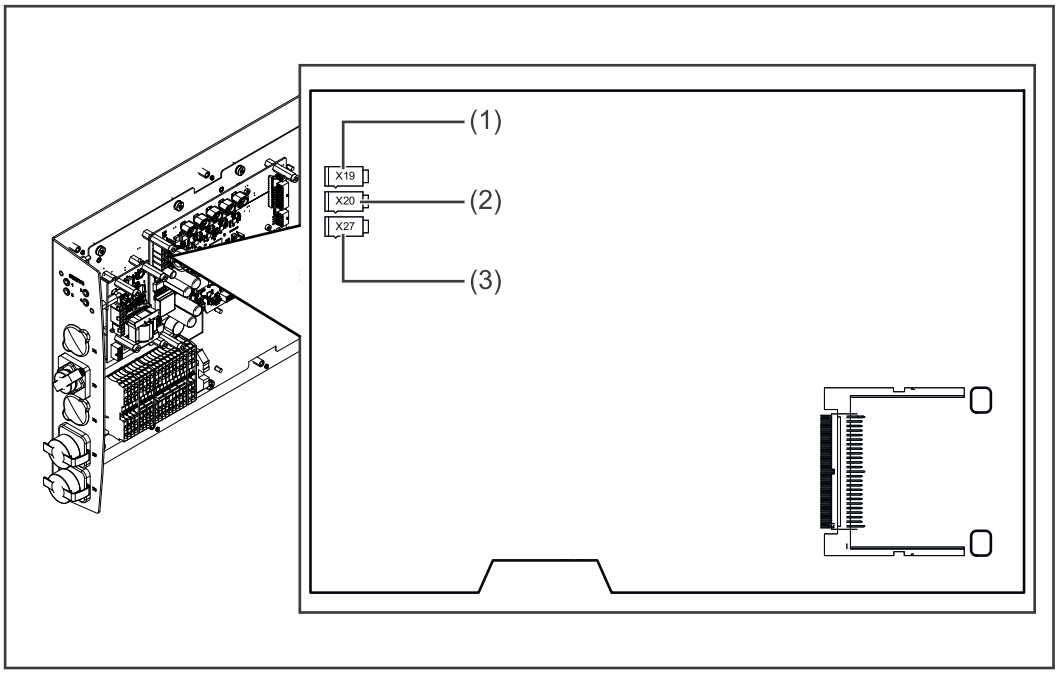
Example: Setting the node address or IP address

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 or IP address is set using dip switch positions 1 to 6.
The setting is made 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 robot interface power supply



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

Troubleshooting

Safety

⚠ WARNING!

Danger from electrical current.
Serious personal injuries may result.

- ▶ Before starting work, switch off all 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!

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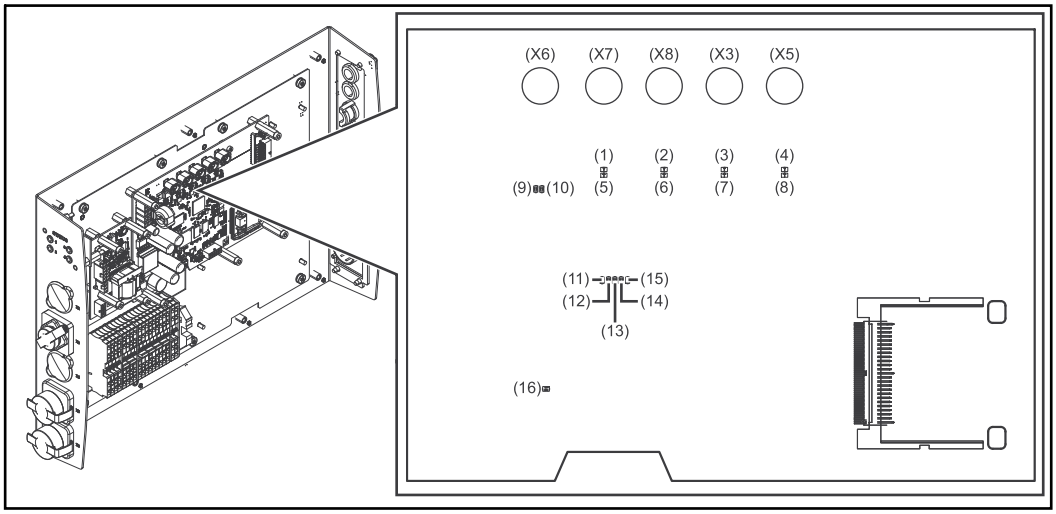
This can result in serious personal injury and damage to property.

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

LEDs on robot interface PC board



LEDs for network connection diagnosis			
LED		**Display**	**Meaning**
(1)	LED LINK	Lights up orange	Transmission speed 100 Mbit
		Off	Transmission speed 10 Mbit
(2)	LED LINK	Lights up orange	Transmission speed 100 Mbit
		Off	Transmission speed 10 Mbit
(3)	LED LINK	Lights up orange	Transmission speed 100 Mbit
		Off	Transmission speed 10 Mbit
(4)	LED LINK	Lights up orange	Transmission speed 100 Mbit
		Off	Transmission speed 10 Mbit
(5)	LED ACTIVITY	Lights up orange	A cable is connected to the X7 connector

LEDs for network connection diagnosis			
		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	5 V operating voltage present
		Off	No operating voltage present

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