TURCK

Your Global Automation Partner

TBIF-LL-...-TM24
Circuit Breaker Module

Instructions for Use

Contents

1 About these instructions

These instructions describe the setup, functions and use of the product and help you to operate the product according to its intended purpose. Read these instructions carefully before using the product. This will prevent the risk of personal injury and damage to property. Keep these instructions safe during the service life of the product. If the product is passed on, pass on these instructions as well.

1.1 Target groups

These instructions are aimed at qualified personal and must be carefully read by anyone mounting, commissioning, operating, maintaining, dismantling or disposing of the device.

1.2 Explanation of symbols

The following symbols are used in these instructions:

	**DANGER** DANGER indicates a hazardous situation with a high level of risk, which, if not avoided, will result in death or serious injury.
	**WARNING** WARNING indicates a hazardous situation with a medium level of risk, which, if not avoided, will result in death or serious injury.
	**CAUTION** CAUTION indicates a hazardous situation with a medium level of risk, which, if not avoided, will result in moderate or minor injury.
	**NOTICE** CAUTION indicates a situation which, if not avoided, may cause damage to property.
	**NOTE** NOTE indicates tips, recommendations and important information about special action steps and issues. The notes simplify your work and help you to avoid additional work.
▶	**MANDATORY ACTION** This symbol denotes actions that the user must carry out.
⇨	**RESULT OF ACTION** This symbol denotes the relevant results of an action.

1.3 Additional documents

The following additional documents are available online at **www.turck.com**:

- Data sheet
- Commissioning manual IO-Link devices
- EU Declaration of Conformity (current version)

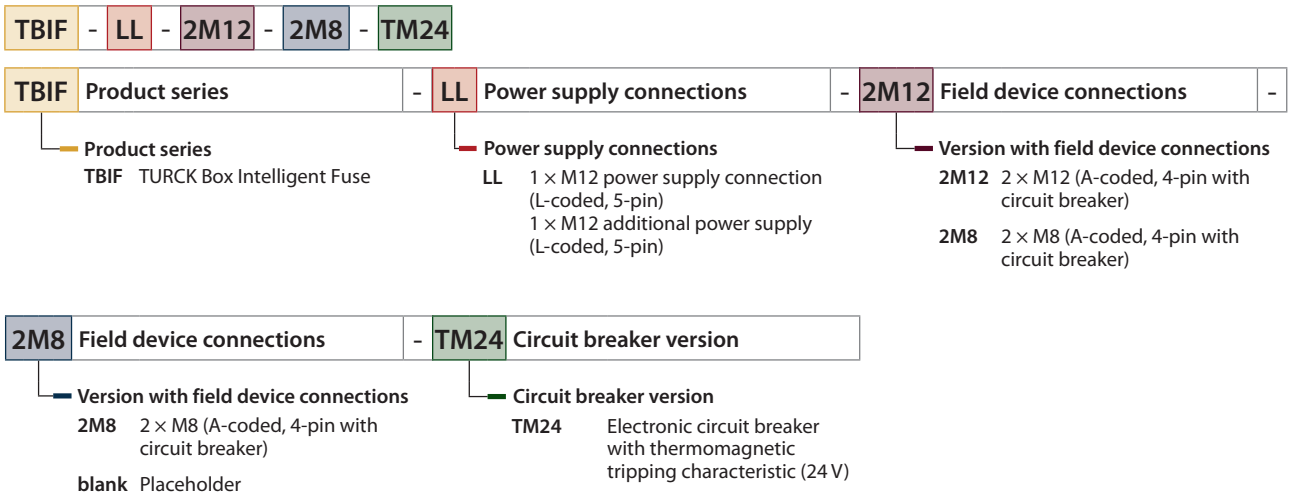
1.4 Feedback about these instructions

We make every effort to ensure that these instructions are as informative and as clear as possible. If you have any suggestions for improving the design or if some information is missing in the document, please send your suggestions to **techdoc@turck.com**.

2 Notes on the product

2.1 Product identification

These instructions apply to the following devices:



2.2 Scope of delivery

The following are included in the scope of delivery:

- Circuit breaker module TBIF-LL-…-TM24
- Screw-on caps for M8 or M12 connectors
- Labeling clips

2.3 TURCK service

TURCK supports you in your projects — from the initial analysis right through to the commissioning of your application. The TURCK product database at www.turck.com offers you several software tools for programming, configuring or commissioning, as well as data sheets and CAD files in many export formats.

For the contact details of our branches worldwide, please see page [▷ 46].

3 For your safety

The product is designed according to state of the art technology. Residual hazards, however, still exist. Observe the following safety instructions and warnings in order to prevent danger to persons and property. TURCK accepts no liability for damage caused by failure to observe these safety instructions.

3.1 Intended use

The 4-channel block modules of the TBIF-LL-…-TM24 series are IO-Link devices (Class A) and are used as a circuit breaker module between the 24 VDC power supply and the field devices. The devices are designed in protection class IP67 and IP69K and can be mounted directly in the field.

The device must only be used as described in these instructions. Any other use is not in accordance with the intended use. TURCK accepts no liability for any resulting damage.

3.2 General safety instructions

- The device must only be fitted, installed, operated, parameterized and maintained by trained and qualified personnel.
- Only use the device in compliance with the applicable national and international regulations, standards and laws.
- The device meets the EMC requirements for the industrial areas. When used in residential areas, take measures to prevent radio frequency interference.
- Always disconnect the power supply and secure it against unintentional restart before commissioning, maintenance or modification of the assembly.

4 Product description

The TBIF-LL-…-TM24 protective switch modules have up to four supply connections for field devices, depending on the version. The devices have 4 channels. Each channel has an upstream circuit breaker (0.5…4 A). Tripping of the circuit breakers is delayed, two trip characteristic profiles can be set. The devices are executed in a fully potted plastic housing with protection class IP67 and IP69K.

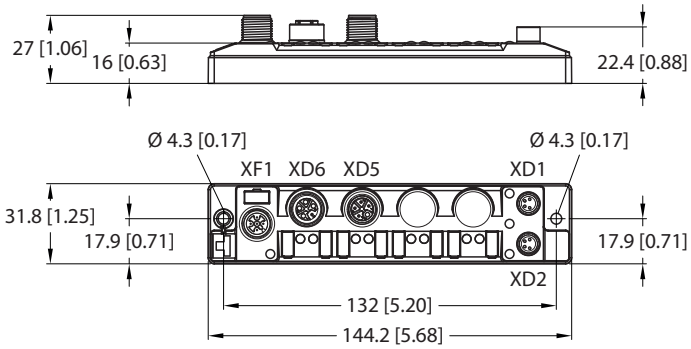
The following device types are available, which differ in the technical features listed:

TBIF-LL-2M8-TM24	
Power input	2 × M8 (connection designations: XD1, XD2)
Channels	4 (2 individual channels per connection)
Circuit breaker	4 (1 per channel)

TBIF-LL-2M12-TM24	
Power input	2 × M12 (terminal designations: XD3, XD4)
Channels	4 (2 individual channels per connection)
Circuit breaker	4 (1 per channel)

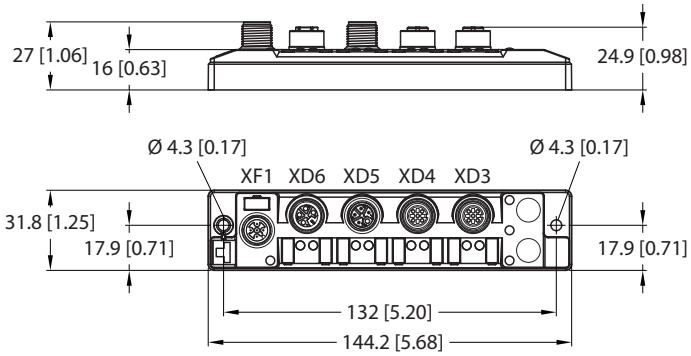
TBIF-LL-2M12-2M8-TM24	
Power input	2 × M8 (connection designations: XD1, XD2) 2 × M12 (terminal designations: XD3, XD4)
Channels	4 (2 multi-assigned channels per connection)
Circuit breaker	4 (1 per channel, connected in parallel to 4 ports each with 2 channels)

4.1 Device overview



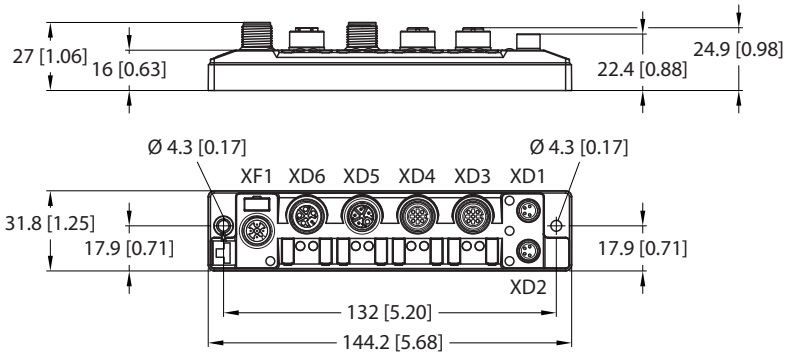
mm [Inch]

Fig. 1: Dimensions TBIF-LL-2M8-TM24



mm [Inch]

Fig. 2: Dimensions TBIF-LL-2M12-TM24



mm [Inch]

Fig. 3: Dimensions TBIF-LL-2M12-2M8-TM24

4.1.1 Display Elements

The device has the following LED displays:

- IO-Link communication (COM LED)
- Channel status LEDs (V1A, V1B, V2A and V2B LEDs)

4.2 Properties and features

- Glass fiber reinforced housing
- Vibration tested
- Fully encapsulated module electronics
- Protection class IP67/IP69K
- M12 power supply connection (24 VDC, max. 16 A)
- M12 voltage output (24 VDC, max. 16 A) for the series connection of several protective switch modules
- 2 to 4 consumer connections (24 VDC, 2-channel), depending on version
- 4 channels, each equipped with adjustable circuit breaker
- Setting and transmitting the circuit breaker operating state via IO-Link
- Transfer of the channel-related power consumption via IO-Link

4.3 Functional principle

The TBIF-LL-…-TM24 circuit breaker modules distribute the supplied 24 VDC voltage to connected consumers. The consumer connections are 2-channel. The individual channels are equipped with circuit breakers for which a tripping current of 0.5…4 A can be set. In the factory setting, all circuit breakers are set to 4 A and all channels are switched on via parameters. If the output current exceeds the tripping current, the relevant channel is switched off with a time delay. The delay time is influenced by the set tripping current and is defined via the set tripping characteristic. Two tripping characteristic profiles are available. In the factory setting, the profile is set with the lower tripping time. The tripping status of the individual circuit breakers is displayed on the LEDs on the device and transmitted to the IO-Link master via IO-Link. Defective circuit breakers remain in the tripped state.

4.4 Functions and operating modes

4.4.1 IO-Link interface

The TBIF-LL-…-TM24 have an IO-Link interface V1.1 for connecting to the IO-Link master. The devices can be parameterized with the associated IODDs via IO-Link. In addition, device-internal measurement data and diagnostics are made available via IO-Link. The IODDs are available for download free of charge at**www.turck.com**.

The devices can also be operated without active IO-Link communication. Settings made, for example, during commissioning via IO-Link, are saved in the EEPROM of the device and are also available if IO-Link communication fails.

4.5 Technical accessories

Figure	Type	Description
I/O module (M12)		
	TBEN-LL-8IOLA (100029880)	Ethernet multiprotocol I/O module PROFINET, EtherNet/IP, Modbus TCP, CC-Link, IP65/IP67/IP69K protection class, ATEX Zone 2/22, 2 × M12, 4-pin, D-coded Ethernet, 8 × M12, IO-Link port, 1 × M12, 5-pin, L-coded VDC input, 1 × M12, 5-pin, L-coded VDC output https://www.turck.de/en/product/100029880
Industrial Ethernet extension cables (M12, D-coded, 4-pin)		
	RSSD-RSSD-4422-2M (6635170)	Industrial Ethernet cable 4-pin, AWG 22, CAT 5E, jacket material: PUR, jacket color: green, RJ45 connector, M12 connector, straight, D-coded, example cable length: 2 m https://www.turck.de/en/product/6635170
	RSSD-RJ45S-4422-2M (6635150)	Industrial Ethernet cable 4-pin, AWG 22, CAT 5E, jacket material: PUR, jacket color: green, 2 × M12 connector, straight, D-coded, Example cable length: 2 m https://www.turck.de/en/product/6635150
Power supply (M12 Power, L-coded, 5-pin outputs)		
	PSU67-1P-1S-2L-24150-IOL-F (100028305)	IO-Link switching power supply in IP67, 1-phase M12 S-coded AC input, 24…28 VDC output voltage 1-phase, 15 A output current, 2 × M12 L-coded, 4 separate eFuses at the outputs, LED interface and control buttons for maximum flexibility https://www.turck.de/en/product/100028305
	PSU67-3P-1S-2L-24250-IOL-F (100025929)	IO-Link switching power supply in IP67, 3-phase M12 S-coded AC input, 24…28 VDC output voltage 3-phase, 25 A output current, 2 × M12 L-coded, 4 separate eFuses at the outputs, LED interface and control buttons for maximum flexibility https://www.turck.de/en/product/100025929

Figure	Type	Description
Field-wireable connectors (M12 Power, L-coded, 5-pin)		
	FW-ERSPM0514-PL-S-0813 (100008140)	Field-wireable connector M12 Power, connector M12 × 1, straight, L-coding, 5-pin (4+FE) https://www.turck.de/en/product/100008140
	FW-ERKPM0514-PL-S-0813 (100008139)	Field-wireable connector M12 Power, female connector M12 × 1, straight, L-coding, 5-pin (4+FE) https://www.turck.de/en/product/100008139
Splitter (M12 Power, L-coded, 5-pin)		
	VH2-M12L-M5-2F5 (100028587)	M12 Power H-splitter, M12 connector, 2 × M12 female connector, 5-pin (4+FE), L-coded, protection class: IP65, IP67, IP68 https://www.turck.de/en/product/100028587
	VH3-M12L-M5-3F5 (100028591)	M12 Power H-splitter, M12 connector, 3 × M12 female connector, 5-pin (4+FE), L-coded, protection class: IP65, IP67, IP68 https://www.turck.de/en/product/100028591
	VT2-M12L-M5-2F5 (100028579)	M12 Power T-splitter, M12 connector, 2 × M12 female connector, 5-pin (4+FE), L-coded, protection class: IP65, IP67, IP68 https://www.turck.de/en/product/100028579
TBIF circuit breaker reset bridge		
	RKE4.4T-R24 (6638601)	Bridge between pins 2 and 4, M12 female connector, straight, 4-pin https://www.turck.de/en/product/6638601

Figure	Type	Description
M12 power cables (M12, L-coded, 5-pin)		
	RKP56PLA-2/TXG (100038706)	Supply cable — M12 Power connection cable, M12 female connector, L-coded, straight, 5-pin (4+FE), jacket material: PUR, jacket color: gray, protection class: IP65, IP67, IP68, example cable length: 2 m https://www.turck.de/en/product/100038706
	RKP56PLA-2-RSP56PLA/TXG (100038722)	Supply cable — M12 Power extension cable, M12 female connector, L-coded, straight, 5-pin (4+FE), M12 connector, L-coded, straight, 5-pin (4+FE), jacket material: PUR, jacket color: gray, protection class: IP65, IP67, IP68, example cable length: 2 m https://www.turck.de/en/product/100038722
IO-Link extension cables (M12, A-coded, 5-pin)		
	RKC4.5T-2-RSC4.5T/TXL (6625612)	Actuator and sensor cable/PUR extension cable, M12 female connector, straight, 5-pin, M12 connector, straight, 5-pin, jacket material: PUR, jacket color: black, protection class: IP67, IP69K, example cable length: 2 m https://www.turck.de/en/product/6625612
	WKC4.5T-2-RSC4.5T/TXL (6625644)	Actuator and sensor cable/PUR extension cable, M12 female connector, angled, 5-pin, M12 connector, straight, 5-pin, jacket material: PUR, jacket color: black, protection class: IP67, IP69K, example cable length: 2 m https://www.turck.de/en/product/6625644

Figure	Type	Description
Actuator and sensor cables (M12, A-coded, 4-pin)		
	RKC4.4T-2-RSC4.4T/TXL (6625608)	Actuator and sensor cable/PUR extension cable, M12 female connector, straight, 4-pin, M12 connector, straight, 4-pin, jacket material: PUR, jacket color: black, protection class: IP67, IP69K, example cable length: 2 m https://www.turck.de/en/product/6625608
	WKC4.4T-2-RSC4.4T/TXL (6625640)	Actuator and sensor cable/PUR extension cable, M12 female connector, angled, 4-pin, M12 connector, straight, 4-pin, jacket material: PUR, jacket color: black, protection class: IP67, IP69K, example cable length: 2 m https://www.turck.de/en/product/6625640
	RKC4.4T-2-WSC4.4T/TXL (6625624)	Actuator and sensor cable/PUR extension cable, M12 female connector, straight, 4-pin, M12 connector, angled, 4-pin, jacket material: PUR, jacket color: black, protection class: IP67, IP69K, example cable length: 2 m https://www.turck.de/en/product/6625624

Figure	Type	Description
Actuator and sensor cables (M8, A-coded, 4-pin)		
	PKG4M-2-PSG4M/TXL (6625673)	Actuator, sensor and supply cable/PUR extension cable, M8 female connector, straight, 4-pin, M8 connector, straight, 4-pin, jacket material: PUR, jacket color: black, protection class: IP67, IP69K, example cable length: 2 m https://www.turck.de/en/product/6625673
	PKW4M-2-PSW4M/TXL (6625691)	Actuator, sensor and supply cable/PUR extension cable, M8 female connector, angled, 4-pin, M8 connector, angled, 4-pin, jacket material: PUR, jacket color: black, protection class: IP67, IP69K, example cable length: 2 m https://www.turck.de/en/product/6625691
	PKW4M-2-PSG4M/TXL (6626664)	Actuator, sensor and supply cable/PUR extension cable, M8 female connector, angled, 4-pin, M8 connector, straight, 4-pin, jacket material: PUR, jacket color: black, protection class: IP67, IP69K, example cable length: 2 m https://www.turck.de/en/product/6626664
	PKG4M-2-PSW4M/TXL (6625682)	Actuator, sensor and supply cable/PUR extension cable, M8 female connector, straight, 4-pin, M8 connector, angled, 4-pin, jacket material: PUR, jacket color: black, protection class: IP67, IP69K, example cable length: 2 m https://www.turck.de/en/product/6625682

In addition to the above connection cables, TURCK also offers other cable types for specific applications with the correct terminals for the device. More information on this is available from the TURCK product database at www.turck.de/products in the Connectivity area.

5 Mounting

The devices are mounted via two M4 screws to a level and pre-drilled mounting surface.

- ▶ Attach the module to the mounting surface with two M4 screws. The maximum tightening torque for the screws is 1.3 Nm.

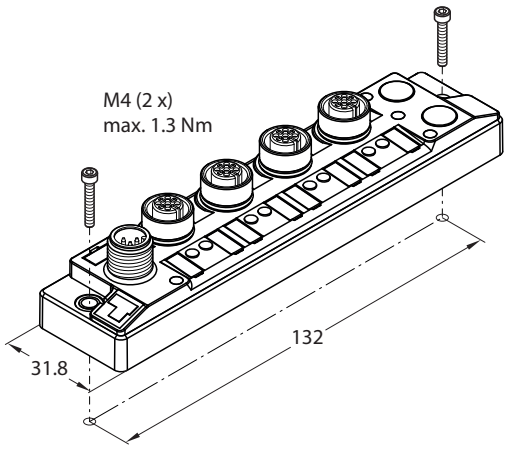


Fig. 4: Attach the device to the mounting surface (example device)

5.1 Grounding the device

- ▶ When mounting on a mounting plate, fasten the device with an M4 metal screw.
- ⇨ The FE connection of the device is connected to the reference potential of the installation via the M4 metal screw.

6 Connecting

WARNING
Use of incorrect or defective power supply unit
Danger to life due to dangerous voltages on touchable parts
- Only use for SELV or PELV power supplies in accordance with EN ISO 13849-2, which allow a maximum of 60 VDC or 25 VAC in the event of a fault.

NOTICE
Non-tight connections can lead to ingress of liquids or foreign matter
Loss of IP67 and IP69K protection class, possible damage to equipment
- Tighten the M8 connector to a tightening torque of 0.4 Nm.
- Tighten the M12 connector to a tightening torque of 0.6 Nm.
- Only use accessories that ensure the protection class.
- Seal unused connectors with suitable screw caps or blind caps. The tightening torque for the screw caps is 0.5 Nm.

For the electronic fuse of the TBIF-LL-…-TM24 to trip properly, the power supply must be able to supply the tripping current for at least 2 milliseconds. The tripping characteristics of the TBIF-LL-…-TM24 are described on page [▷ 34].

6.1 Connecting IO-Link

A 5-pin M12 connector is available for connecting to IO-Link and for supplying power to the internal circuits.

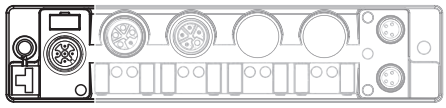
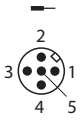


Fig. 5: M12 connector for connecting to the IO-Link (example: TBIF-LL-2M8-TM24)

- Connect the device to an IO-Link network as shown in the pin assignment.



1 = 24 VDC
2 = RST
3 = GND
4 = C/Q
5 = n.c.

Fig. 6: Pin assignment XF1

6.2 Connecting the Power Supply

CAUTION
Live connectors
Electric shock in the event of improper handling
- ▶ Only combine devices that are suitable for joint use based on their technical data.
- ▶ Switch off the external power supply before connecting.

6.2.1 Connecting the external power supply

A 5-pin M12 connector is available for connecting to the external power supply.

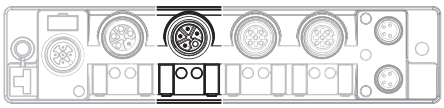


Fig. 7: M12 connector for connecting to the external power supply
(example: TBIF-LL-2M12-2M8-TM24)

▶ Connect the device to the external power supply according to the pin assignment.

1 = 24 VDC (V1)
2 = GND (V2)
3 = GND (V1)
4 = 24 VDC (V2)
FE

Fig. 8: Pin assignment XD5

6.2.2 Connecting other TBIF-LL-…-TM24 in series

The devices of the TBIF-LL-…-TM24 series can be connected in series (daisy chain). An M12 connector is available as a current outlet connection for this purpose.

NOTICE
Overloading of internal circuits
Damage to the equipment and the resulting fire hazard

- ▶ Disconnect the power supply.
- ▶ For series connection of several TBIF-LL-…-TM24: connect the 16-A fuse upstream of the power supply.
- ▶ Ensure that the total current consumption of all subordinate field devices connected to the overall system does not exceed 16 A.

A 5-pin M12 connector is available for connecting the power supply of another TBIF-LL-…-TM24.

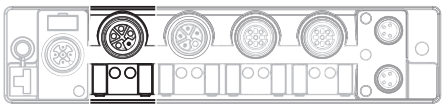


Fig. 9: M12 connector for connecting additional TBIF-LL-…-TM24
(example: TBIF-LL-2M12-2M8-TM24)

- ▶ Connect additional TBIF-LL-…-TM24 to 24 VDC output according to pin assignment.

1 = 24 VDC (V1)
2 = GND (V2)
3 = GND (V1)
4 = 24 VDC (V2)
FE

Fig. 10: Pin assignment XD6

6.3 Connect the additional power supply for sensors and actuators

TBIF-LL-2M8-TM24

The TBIF-LL-2M8-TM24 has two 4-pin M8 connectors for connecting the power supply to sensors and actuators. The connections have two channels.

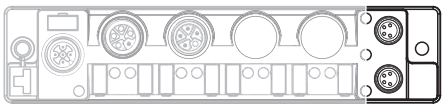


Fig. 11: TBIF-LL-2M8-TM24: M8 connectors for supplying power to sensors and actuators

▶ Connect the sensors and actuators to the device according to the pin assignment.

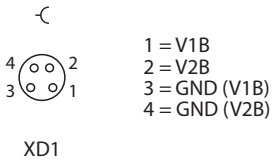


Fig. 12: Pin assignment XD1

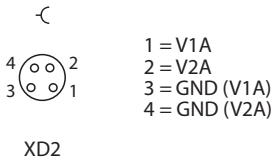


Fig. 13: Pin assignment XD2

TBIF-LL-2M12-TM24

The TBIF-LL-2M12-TM24 has two 4-pin M12 connectors for connecting the power supply to sensors and actuators. The connections have two channels.

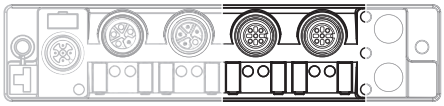


Fig. 14: TBIF-LL-2M12-TM24: M12 connector for the power supply of sensors and actuators

- ▶ Connect the sensors and actuators to the device according to the pin assignment.

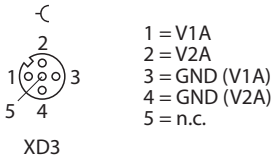


Fig. 15: Pin assignment XD3

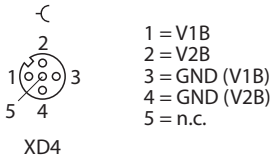


Fig. 16: Pin assignment XD4

TBIF-LL-2M12-2M8-TM24

NOTE
The TBIF-LL-2M12-2M8-TM24 circuit breaker modules have four channels (1A, 1B, 2A, 2B), which are connected in parallel across sockets and can be accessed. If a channel is tapped via several sockets at the same time, the total current of the channel cannot exceed the set tripping current (max. 4 A).

The TBIF-LL-2M12-2M8-TM24 has two 4-pin M8 connectors and two 4-pin M12 connectors for connecting the power supply to sensors and actuators. The connections are 2-channel. The four channels and their circuit breakers are connected in parallel across connections.

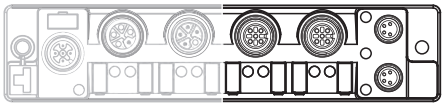


Fig. 17: TBIF-LL-2M12-2M8-TM24: M8 and M12 connectors for supplying power to sensors and actuators

- Connect the sensors and actuators to the device according to the pin assignment.

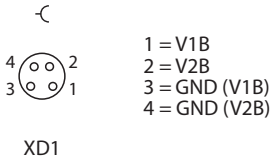


Fig. 18: Pin assignment XD1

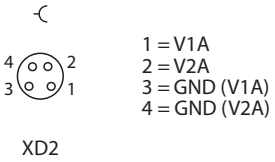


Fig. 19: Pin assignment XD2

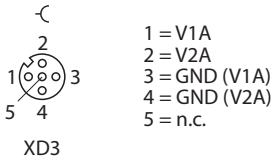


Fig. 20: Pin assignment XD3

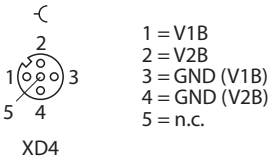


Fig. 21: Pin assignment XD4

7 Parameterizing and Configuring

7.1 IO-Link Default Parameters

Index hex. (dec.)	Sub-index hex. (dec.)	Name	Access	Size in bits	Description (Default value)
0x0000 (0)	0x03 (3)	Minimum cycle time	Read	8	2 ms
	0x05 (5)	IO-Link version ID	Read	8	(17)
	0x08 (8)	Vendor ID	Read	8	0x13D
	0x09 (9)				
	0x0A (10)	Device ID	Read	8	
	0x0B (11)				
	0x0C (12)				
0x0002 (2)	0x00 (0)	Standard command	Write	8	0…159: System command
					128: Reset device
					129: Reset application
					130: Restore factory settings
0x000C (12)	0x01 (1)	Parameter (write) access lock	Read/write	1	Block device access
	0x02 (2)	Data storage lock	Read/write	1	Block device access
	0x03 (3)	Local parameteriza-tion lock	Read/write	1	Block device access
	0x04 (4)	Local user interface lock	Read/write	1	Block device access
0x0010 (16)	0x00 (0)	Manufacturer name	Read	512	Manufacturer name (TURCK)
0x0011 (17)	0x00 (0)	Manufacturer text	Read	512	Additional manufacturer information (www.turck.com)
0x0012 (18)	0x00 (0)	Product name	Read	512	ID of the product (e.g. 1000050317)
0x0013 (19)	0x00 (0)	Product ID	Read	512	Type designation (e.g. TBIF-LL-2M12-2M8-TM24)
0x0014 (20)	0x00 (0)	Product text	Read	512	Equipment category (Electronic circuit breaker)
0x0015 (21)	0x00 (0)	Serial number	Read	128	Equipment serial number
0x0016 (22)	0x00 (0)	Hardware version	Read	512	Hardware status

Index hex. (dec.)	Sub-index hex. (dec.)	Name	Access	Size in bits	Description (Default value)
0x0017 (23)	0x00 (0)	Firmware version	Read	512	Firmware status
0x0018 (24)	0x00 (0)	Application-specific marking	Read/write	256	User-definable
0x0020 (32)	0x00 (0)	Number of defects	Read	16	
0x0024 (36)	0x00 (0)	Device status	Read	8	0…250
					0: Device is OK
					1: Maintenance required
					2: Out of specification
					3: Function check
					4: Error
0x0025 (37)	0x00 (0)	Detailed device status	Read	64	
0x0028 (40)	0x00 (0)	Process data input	Read	96	

7.2 Parameters

7.2.1 Command Parameters — Overview

Index hex. (dec.)	Sub-index hex. (dec.)	Name	Access	Size	Data type	Description
0x0050 (80)	0x00 (0)	Command	Write	8 bits	UINT	Channel-specific basic commands (ON/OFF/RESET)
0x0052 (82)	0x00 (0)	Save options to all device channels	Write	8 bits	UINT	Transfer channel settings from channel 1A to all other channels
0x0053 (83)	0x00 (0)	Reset trip counter	Write	8 bits	UINT	Set the trip counter of the circuit breaker to 0
0x005C (92)	0x00 (0)	Option-01	Read/write	8 bits	UINT	Set process input data "Option-01"
0x005D (93)	0x00 (0)	Option-02	Read/write	8 bits	UINT	Set process input data "Option-02"
0x0064 (100)	0x00 (0)	Critical input voltage max. threshold	Read/write	16 bit	INT	Set the upper critical input voltage threshold (event trigger)
0x0065 (101)	0x00 (0)	Critical input voltage min. threshold	Read/write	16 bit	INT	Set the lower critical input voltage threshold (event trigger)
0x0191 (401) … 0x0194 (404)	0x00 (0)	Nominal current	Read/write	8 bits	UINT	Read/define the tripping current of a channel's circuit breaker
0x02BD (701) … 0x02C0 (704)	0x01 (1)	Device channel options — SIO conditions	Read/write	1 bit	BOOL	SIO response: Set OK signal conditions (circuit breaker status)
	0x02 (2)	Device channel options — SIO error	Read/write	1 bit	BOOL	SIO response: Set OK signal mode LOW/HIGH
	0x04 (4)	Device channel options — Fuse characteristic	Read/write	1 bit	BOOL	Define a channel's tripping characteristic

7.2.2 Diagnostic Parameters — Overview

Index hex. (dec.)	Sub-index hex. (dec.)	Name	Access	Size	Data type	Description
0x0079 (121)	0x00 (0)	Input voltage 1	Read	16 bit	INT	Read out input voltage V1 (connection XD5, pins 1 and 3)
0x007B (123)	0x00 (0)	Input voltage 2	Read	16 bit	INT	Read out input voltage V2 (connection XD5, pins 2 and 4)
0x00C9 (201) … 0x00CC (204)	0x00 (0)	Trip counter	Read	8 bits	UINT	Read out the trip counter of a single channel's circuit breaker
0x012D (301) … 0x0130 (304)	0x00 (0)	Output current	Read	16 bit	INT	Read out a single channel's output current value
0x01F5 (501) … 0x01F8 (504)	0x00 (0)	Status	Read	8 bits	UINT	Read out a single channel's status

7.2.3 Command Parameters — Description

Command: Channel-specific basic commands

These parameters switch device channels on and off and can reset individual circuit breakers.

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x0050 (80)	0x00 (0)	0.0	Write	8 bits	UINT	1	ON: Switch on channel 1A
						2	OFF: Switch off channel 1A
						3	RESET: Reset channel 1A circuit breaker
						6	ON: Switch on channel 1B
						7	OFF: Switch off channel 1B
						8	RESET: Reset channel 1B circuit breaker
						11	ON: Switch on channel 2A
						12	OFF: Switch off channel 2A
						13	RESET: Reset channel 2A circuit breaker
						16	ON: Switch on channel 2B
						17	OFF: Switch off channel 2B
						18	RESET: Reset channel 2B circuit breaker

Command: Transfer channel settings from channel 1A to all other channels

This parameter transfers the settings from channel 1A to all other channels of the device.

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x0052 (82)	0x00 (0)	0.0	Write	8 bits	UINT	1	SAVE: Transfer settings from channel 1A to all other channels

Command: Reset the trip counter of the circuit breaker to 0

This parameter resets the trip counter of an individual channel.

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x0053 (83)	0x00 (0)	0.0	Write	8 bits	UINT	1	RESET: Reset the trip counter for channel 1A
						2	RESET: Reset the trip counter for channel 1B
						3	RESET: Reset the trip counter for channel 2A
						4	RESET: Reset the trip counter for channel 2B

Command: Set process input data "Option-01" and "Option-02"

These parameters can be used to set which statuses are transmitted cyclically in the process data for "Option-01" and "Option-02" (see [▶ 39]. Default values are shown in **bold**.

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x005C (92)	0x00 (0)	0.0	Read/write	8 bits	UINT	1	OFF: Sends a 1 cyclically if the respective channel is switched off.
						2	ON: Sends a 1 cyclically if the respective channel is switched on.
						3	TRIPPED: Sends a 1 cyclically if the circuit breaker of the respective channel is triggered.
						6	**OUTPUT CURRENT >90 % OF NOMINAL CURRENT: Sends a 1 cyclically if the output current of the respective channel is >90 % of the set tripping current.**
						14	OUTPUT CURRENT >100 % OF NOMINAL CURRENT: Cyclically sends a 1 if the set tripping current of the respective channel has been exceeded — the delayed tripping according to the characteristic is imminent, provided the output current does not drop.
						18	TRIPPED, HARDWARE ERROR: Sends a 1 cyclically if the circuit breaker of the respective channel is defective. In the faulty state, the circuit breaker remains triggered.
						20	TRIPPED, THERMAL RELEASE: Sends a 1 cyclically if the circuit breaker of the respective channel is in the thermal discharge process. The circuit breaker is tripped in this state.

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x005D (93)	0x00 (0)	0.0	Read/write	8 bits	UINT	**1**	**OFF:** **Sends a 1 cyclically if the respective channel is switched off.**
						2	ON: Sends a 1 cyclically if the respective channel is switched on.
						3	TRIPPED: Sends a 1 cyclically if the circuit breaker of the respective channel is triggered.
						6	OUTPUT CURRENT >90 % OF NOMINAL CURRENT: Sends a 1 cyclically if the output current of the respective channel is >90 % of the set tripping current.
						14	OUTPUT CURRENT >100 % OF NOMINAL CURRENT: Cyclically sends a 1 if the set tripping current of the respective channel has been exceeded — the delayed tripping according to the characteristic is imminent, provided the output current does not drop.
						18	TRIPPED, HARDWARE ERROR: Sends a 1 cyclically if the circuit breaker of the respective channel is defective. In the faulty state, the circuit breaker remains triggered.
						20	TRIPPED, THERMAL RELEASE: Sends a 1 cyclically if the circuit breaker of the respective channel is in the thermal discharge process. The circuit breaker is tripped in this state.

Command: Set the upper critical input voltage threshold (event trigger)

This command specifies the upper input voltage threshold for the IO-Link event input voltage alarm (default values are shown in **bold**).

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x0064 (100)	0x00 (0)	0.0	Read/write	16 bit	UINT	**2600**	**26 V**
						1250	12.5 V
						…	…
						3000	30 V

Command: Set the lower critical input voltage threshold (event trigger)

This command specifies the lower input voltage threshold for the IO-Link event input voltage alarm (default values are shown in **bold**).

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x0065 (101)	0x00 (0)	0.0	Read/write	16 bit	UINT	**2200**	**22 V**
						900	9 V
						…	…
						2350	23.5 V

Command: Read or set the tripping current of the circuit breaker

This parameter defines the tripping current of a single channel's circuit breaker (default values are shown in **bold**).

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Tripping current circuit breaker (Channel)
0x0191 (401)	0x00 (0)	0.0	Read/write	8 bits	UINT	**0**	**DEFAULT IODD** **4 A** (Channel 1A)
						5	0.5 A (Channel 1A)
						10	1 A (Channel 1A)
						20	2 A (Channel 1A)
						30	3 A (Channel 1A)
						40	4 A (Channel 1A)

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Tripping current circuit breaker (Channel)
0x0192 (402)	0x00 (0)	0.0	Read/write	8 bits	UINT	**0**	**DEFAULT IODD 4 A** (Channel 1B)
						5	0.5 A (Channel 1B)
						10	1 A (Channel 1B)
						20	2 A (Channel 1B)
						30	3 A (Channel 1B)
						40	4 A (Channel 1B)
0x0193 (403)	0x00 (0)	0.0	Read/write	8 bits	UINT	**0**	**DEFAULT IODD 4 A** (Channel 2A)
						5	0.5 A (Channel 2A)
						10	1 A (Channel 2A)
						20	2 A (Channel 2A)
						30	3 A (Channel 2A)
						40	4 A (Channel 2A)
0x0194 (404)	0x00 (0)	0.0	Read/write	8 bits	UINT	**0**	**DEFAULT IODD 4 A** (Channel 2B)
						5	0.5 A (Channel 2B)
						10	1 A (Channel 2B)
						20	2 A (Channel 2B)
						30	3 A (Channel 2B)
						40	4 A (Channel 2B)

Command: Set OK signal conditions in SIO mode

This parameter defines the circuit-breaker conditions for the OK signal in SIO mode (standard I/O mode) (default values are shown in **bold**).

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning (Channel)
0x0191 (701)	0x01 (1)	0.0	Read/write	1 bit	BOOL	0	SIO OK signal transmission when the circuit breaker is triggered (Channel 1A)
						1	**SIO OK signal transmission when the circuit breaker is triggered or the channel is switched off** (Channel 1A)
0x0192 (702)	0x01 (1)	0.0	Read/write	1 bit	BOOL	0	SIO OK signal transmission when the circuit breaker is triggered (Channel 1B)
						1	**SIO OK signal transmission when the circuit breaker is triggered or the channel is switched off** (Channel 1B)
0x0193 (703)	0x01 (1)	0.0	Read/write	1 bit	BOOL	0	SIO OK signal transmission when the circuit breaker is triggered (Channel 2A)
						1	**SIO OK signal transmission when the circuit breaker is triggered or the channel is switched off** (Channel 2A)
0x0194 (704)	0x01 (1)	0.0	Read/write	1 bit	BOOL	0	SIO OK signal transmission when the circuit breaker is triggered (Channel 2B)
						1	**SIO OK signal transmission when the circuit breaker is triggered or the channel is switched off** (Channel 2B)

Command: Set OK signal mode in SIO mode

This parameter defines the signal mode (LOW/HIGH) for the OK signal in SIO mode (standard I/O mode) (default values are shown in **bold**).

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning (Channel)
0x0191 (701)	0x02 (2)	0.1	Read/write	1 bit	BOOL	0	SIO "HIGH" when error: OK signal: 0, error signal: 1 (Channel 1A)
						1	**SIO "LOW" when error OK signal: 1, error signal: 0** (Channel 1A)
0x0192 (702)	0x02 (2)	0.1	Read/write	1 bit	BOOL	0	SIO "HIGH" when error: OK signal: 0, error signal: 1 (Channel 2A)
						1	**SIO "LOW" when error OK signal: 1, error signal: 0** (Channel 2A)
0x0193 (703)	0x02 (2)	0.1	Read/write	1 bit	BOOL	0	SIO "HIGH" when error: OK signal: 0, error signal: 1 (Channel 1B)
						1	**SIO "LOW" when error OK signal: 1, error signal: 0** (Channel 1B)
0x0194 (704)	0x02 (2)	0.1	Read/write	1 bit	BOOL	0	SIO "HIGH" when error: OK signal: 0, error signal: 1 (Channel 2B)
						1	**SIO "LOW" when error OK signal: 1, error signal: 0** (Channel 2B)

Command: Define the tripping characteristic of a channel's circuit breaker

This parameter defines the tripping characteristic of a single channel's circuit breaker. A fast and a slow tripping characteristic are available for selection.

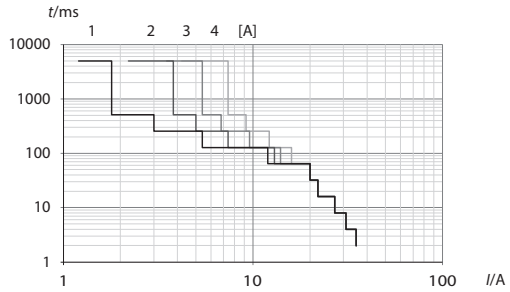


Fig. 22: Fast tripping characteristic

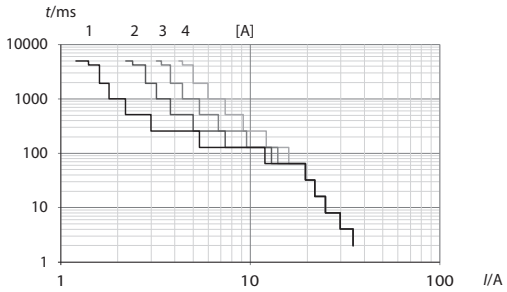


Fig. 23: Slow tripping characteristic

The circuit breaker's tripping delay depends on the set tripping current. The diagrams show the tripping characteristics for a tripping current of 1, 2, 3 and 4 A.

Default values are shown in **bold**:

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning (Channel)
0x0191 (701)	0x04 (4)	0.3	Read/write	1 bit	BOOL	0	SLOW: Set the slow tripping characteristic (Channel 1A)
						1	**FAST: Set the fast tripping characteristic** (Channel 1A)
0x0192 (702)	0x04 (4)	0.3	Read/write	1 bit	BOOL	0	SLOW: Set the slow tripping characteristic (Channel 1B)
						1	**FAST: Set the fast tripping characteristic** (Channel 1B)
0x0193 (703)	0x04 (4)	0.3	Read/write	1 bit	BOOL	0	SLOW: Set the slow tripping characteristic (Channel 2A)
						1	**FAST: Set the fast tripping characteristic** (Channel 2A)
0x0194 (704)	0x04 (4)	0.3	Read/write	1 bit	BOOL	0	SLOW: Set the slow tripping characteristic (Channel 2B)
						1	**FAST: Set the fast tripping characteristic** (Channel 2B)

7.2.4 Diagnostic Parameters — Description

Diagnostics: Read out input voltage V1

This parameter reads the input voltage V1 (connection XD5, pins 1 and 3).

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x0079 (121)	0x00 (0)	0.0	Read	16 bit	INT	Input voltage	Input voltage V1 in volts

Diagnostics: Read out input voltage V2

This parameter reads the input voltage V2 (connection XD5, pins 2 and 4).

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x007B (123)	0x00 (0)	0.0	Read	16 bit	INT	Input voltage	Input voltage V2 in volts

Diagnostics: Read out the trip counter of a single channel's circuit breaker

These parameters read the trip counter of a single channel's circuit breaker.

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x00C9 (201)	0x00 (0)	0.0	Read	8 bits	UINT	Counter reading	Channel 1A
0x00CA (202)	0x00 (0)	0.0	Read	8 bits	UINT	Counter reading	Channel 1B
0x00CB (203)	0x00 (0)	0.0	Read	8 bits	UINT	Counter reading	Channel 2A
0x00CC (204)	0x00 (0)	0.0	Read	8 bits	UINT	Counter reading	Channel 2B

Diagnostics: Read the output current of a single channel

These parameters read the latest output current value of a single channel.

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x012D (301)	0x00 (0)	0.0	Read	16 bit	INT	Output current	Channel 1A
0x012E (302)	0x00 (0)	0.0	Read	16 bit	INT	Output current	Channel 1B
0x012F (303)	0x00 (0)	0.0	Read	16 bit	INT	Output current	Channel 2A
0x0130 (304)	0x00 (0)	0.0	Read	16 bit	INT	Output current	Channel 2B

Diagnostics: Read out a single channel's status

These parameters read the latest status of a single channel.

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x01F5 (501)	0x00 (0)	0.0	Read	8 bits	UINT	0	Not connected (Channel 1A)
						1	Deactivated via software (Channel 1A)
						2	Activated (Channel 1A)
						3	Circuit breaker tripped (Channel 1A)
						6	Output current >90 % of the tripping current; circuit breaker not yet tripped (Channel 1A)
						14	Output current >100 % of the tripping current; circuit breaker not yet tripped (delayed tripping is imminent) (Channel 1A)
						18	Hardware error (Channel 1A)
						20	Thermal discharge process of the circuit breaker active (Channel 1A)

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x01F6 (502)	0x00 (0)	0.0	Read	8 bits	UINT	0	Not connected (Channel 1B)
						1	Deactivated via software (Channel 1B)
						2	Activated (Channel 1B)
						3	Circuit breaker tripped (Channel 1B)
						6	Output current >90 % of the tripping current; circuit breaker not yet tripped (Channel 1B)
						14	Output current >100 % of the tripping current; circuit breaker not yet tripped (delayed tripping is imminent) (Channel 1B)
						18	Hardware error (Channel 1B)
						20	Thermal discharge process of the circuit breaker active (Channel 1B)
0x01F7 (503)	0x00 (0)	0.0	Read	8 bits	UINT	0	Not connected (Channel 2A)
						1	Deactivated via software (Channel 2A)
						2	Activated (Channel 2A)
						3	Circuit breaker tripped (Channel 2A)
						6	Output current >90 % of the tripping current; circuit breaker not yet tripped (Channel 2A)
						14	Output current >100 % of the tripping current; circuit breaker not yet tripped (delayed tripping is imminent) (Channel 2A)
						18	Hardware error (Channel 2A)
						20	Thermal discharge process of the circuit breaker active (Channel 2A)

Index hex. (dec.)	Sub-index hex. (dec.)	Bit offset	Access	Size	Data type	Value (dec.)	Meaning
0x01F8 (504)	0x00 (0)	0.0	Read	8 bits	UINT	0	Not connected (Channel 2B)
						1	Deactivated via software (Channel 2B)
						2	Activated (Channel 2B)
						3	Circuit breaker tripped (Channel 2B)
						6	Output current >90 % of the tripping current; circuit breaker not yet tripped (Channel 2B)
						14	Output current >100 % of the tripping current; circuit breaker not yet tripped (delayed tripping is imminent) (Channel 2B)
						18	Hardware error (Channel 2B)
						20	Thermal discharge process of the circuit breaker active (Channel 2B)

8 Operation

CAUTION
Hot surfaces
Risk of burning
- Do not touch the housing when switching on, during operation and immediately after switching off.

8.1 Process input data

Byte no.	Bit offset							
	7	6	5	4	3	2	1	0
0	Input voltage alarm	-	-	-	Internal communication error (Device restart required)	-	Condensed state message if the output current of a channel reaches more than 90 % of the set tripping current	Condensed state report if a circuit breaker is triggered or a channel is switched off
1	Output current channel 1A (UINT8)							
2	Output current channel 1B (UINT8)							
3	Output current channel 2A (UINT8)							
4	Output current channel 2B (UINT8)							
5	Input voltage V1 (UINT16)							
6								
7	Input voltage V2 (UINT16)							
8								
9	-	-	-	-	Channel 2B (CH2B) Circuit breaker tripped	Channel 2A (CH2A) Circuit breaker tripped	Channel 1B (CH1B) Circuit breaker tripped	Channel 1A (CH1A) Circuit breaker tripped
10	-	-	-	-	Channel 2B (CH2B) Option-01	Channel 2A (CH2A) Option-01	Channel 1B (CH1B) Option-01	Channel 1A (CH1A) Option-01
11	-	-	-	-	Channel 2B (CH2B) Option-02	Channel 2A (CH2A) Option-02	Channel 1B (CH1B) Option-02	Channel 1A (CH1A) Option-02

The conditions for the input voltage alarm can be parameterized via command parameters Index 0x0064 (100) and 0x0065 (101).

The conditions for Option-01 and Option-02 can be parameterized via command parameters Index 0x005C (92) and 0x005D (93).

8.2 LED Displays

The device has the following LED displays:

- Communication status LED (COM)
- Channel status LED channel 1A (V1A)
- Channel status LED channel 1B (V1B)
- Channel status LED channel 2A (V2A)
- Channel Status LED channel 2B (V2B)

COM LED	Meaning
Green	Digital output signal is active (device in SIO mode)
Green flashing	IO-Link communication is active (device in IO-Link mode)
Red flashing	Internal communication error
Off	No supply voltage No IO-Link connection No output signal

LED V1A, V1B, V2A and V2B	Meaning	Voltage output
Off	Initialization Settings are applied or restored after initialization	Off
Green	Output functional	On
Green flashing	Output current in the upper tolerance range of the set tripping current (Output current > 0.9 × tripping current)	On
Green flashing	Output current > tripping current The voltage output is switched off with a delay according to the tripping characteristic	On
Red	Voltage output is switched off	Off
Red flashing	Voltage output was switched off because the tripping current has been exceeded Thermal discharge active	Off
Orange flashing	Voltage output has been switched off Thermal discharge completed	Off
Red flashing (high frequency)	Device error Defective circuit breaker detected	Off

8.3 IO-Link events

Event code	Event type	Description
6200	Notification	Condensed state report if a circuit breaker has been tripped or a channel has been switched off
6201	Notification	Condensed state message if the output current of a channel reaches more than 90 % of the set tripping current
6202	Notification	Reserved
6203	Notification	Internal communication error (device restart required)
6204	Notification	Reserved
6205	Notification	Reserved
6206	Notification	Reserved
6207	Notification	Input voltage alarm

8.4 Reset device

Voltage reset

With this reset method, the parameterization made is retained.

- Switch off the supply voltage.
- Wait 10 seconds.
- Switch on the supply voltage.

Reset the circuit breaker via the hardware

With this reset method, all circuit breakers of the device are set to the untripped state, and the parameterization made is retained.

- Apply 24 VDC voltage to pin 2 of IO-Link connection XF1 (e.g. by inserting the reset bridge, see [▷ 10]).

Reset the circuit breaker via a digital reset

Individual circuit breakers can be reset to the untripped state via TAS or command parameter index 0x0050 (80); the parameterization made is retained.

Reset the device to the factory settings via a digital reset

The device can be reset to the factory settings via TAS or IO-Link standard parameter index 0x0002 (2).

9 Troubleshooting

If the device does not work as expected, proceed as follows:

- Exclude environmental disturbances.
- Check the connections of the device for errors.
- Check device for parameterization errors.

If the malfunction persists, the device is faulty. In this case, decommission the device and replace it with a new device of the same type.

10 Maintenance

Ensure regularly that the plug connections and cables are in good condition.

The devices are maintenance-free, clean dry if required.

11 Repair

The device is not intended for repair by the user. The device must be decommissioned if it is faulty. Observe our return acceptance conditions when returning the device to TURCK.

11.1 Returning devices

If a device has to be returned, bear in mind that only devices with a decontamination declaration will be accepted. This is available for download at
https://www.turck.de/en/return-service-6079.php
and must be completely filled in, and affixed securely and weather-proof to the outside of the packaging.

12 Decommissioning

- Disconnect the power supply.
- Disconnect the power supply cable (M12 connection XD5 on the device) from the circuit breaker module.
- Disconnect all other cables from the circuit breaker module.
- Loosen the mechanical connection of the device to the mounting surface.

13 Disposal

The devices must be disposed of properly and do not belong in the domestic waste.

14 Technical data

Technical data			
Type	**TBIF-LL-2M8-TM24**	**TBIF-LL-2M12-TM24**	**TBIF-LL-2M12-2M8-TM24**
ID	100050320	100050319	100050317
Supply			
Operating/load voltage	18…30 VDC		
Rated voltage	24 VDC		
Max. input current	16 A		
Switch-on threshold	17.5 VDC ± 0.7 VDC		
Switch-off threshold	16.7 VDC ± 0.7 VDC		
Power input	M12 voltage input M12 voltage output		
Outputs			
Nominal output voltage	24 VDC		
Number of channels	4		
Output current per channel	Max. 4 A (adjustable, thermal circuit breaker)		
Integrated output fuse per channel (fail-safe)	15 A		
Switch-on capacity per channel	Max. 40 mF		
Trip characteristic of circuit breaker	Thermomagnetic		
Recovery resistance	Max. 33 VDC		
Output connections	2 × M8 (2-channel, 4-pin, female)	2 × M12 (2-channel, 4-pin, female)	2 × M8 2 × M12 (redundant 2-channel, 4-pin, female)
Condition on delivery	Outputs deactivated		
Permissible tightening torques			
■ Connector sockets	M8: 0.4 Nm M12: 0.6 Nm		
■ Screw-on caps	M8: 0.5 Nm M12: 0.5 Nm		
■ Mounting (M4 screws)	1.3 Nm		
IO-Link			
IO-Link connection	M12, 5-pin, male connector		
IO-Link specification	Specified according to version 1.1 Backward compatible up to version 1.0.1		
Minimum cycle time	2 ms		
Process input data	12 bytes		
Process output data	–		
Parameterization	TAS, IODD		
Transmission rate	COM 3: 230.4 kbps		
Physical transmission layer	Complies with 3-wire technology (PHY2)		

Technical data			
Type	**TBIF-LL-2M8-TM24**	**TBIF-LL-2M12-TM24**	**TBIF-LL-2M12-2M8-TM24**
Standard/Directive conformity			
Vibration testing	Acc. to EN 60068-2-6		
Electromagnetic compatibility	Acc. to EN IEC 61000-6-2 Acc. to EN IEC 61000-6-3 Acc. to EN 61131-2		
Approvals			
CE	Acc. to 2014/30/EU Acc. to 2014/35/EU		
UKCA	Approved		
RoHS	Acc. to 2011/65/EU		
General information			
Dimensions (W × L × H)	31.6 × 144 × 26.8 mm		
Weight	Approx. 135 g		
Operating temperature	(Startup -40 °C) -25…+70 °C		
Temperature limit for power reduction	> 55 °C		
Storage temperature	-40…+85 °C		
Operating altitude	≤ 3000 m		
Type of protection	IP67/IP69K		
Pollution degree	2		
Surge category	I		
Housing material	PA6-GF30		
Housing color	Black		
Halogen free	Yes		
Mounting	2 mounting holes, Ø 4.3 mm		

15 TURCK branches – contact data

Germany	TURCK GmbH Witzlebenstraße 7, 45472 Mülheim an der Ruhr www.turck.de
Australia	Turck Australia Pty Ltd Building 4, 19-25 Duerdin Street, Notting Hill, 3168 Victoria www.turck.com.au
Austria	Turck GmbH Graumanngasse 7/A5-1, A-1150 Vienna www.turck.at
Belgium	Turck Multiprox N. V. Lion d'Orweg 12, B-9300 Aalst www.multiprox.be
Brazil	Turck do Brasil Automação Ltda. Rua Anjo Custódio Nr. 42, Jardim Anália Franco, CEP 03358-040 São Paulo www.turck.com.br
Canada	Turck Canada Inc. 140 Duffield Drive, CDN-Markham, Ontario L6G 1B5 www.turck.ca
China	Turck (Tianjin) Sensor Co. Ltd. 18,4th Xinghuazhi Road, Xiqing Economic Development Area, 300381 Tianjin www.turck.com.cn
Czech Republic	TURCK s.r.o. Na Brne 2065, CZ-500 06 Hradec Králové www.turck.cz
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Mexico	Turck Comercial, S. de RL de CV Blvd. Campestre No. 100, Parque Industrial SERVER, C.P. 25350 Arteaga, Coahuila www.turck.com.mx
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