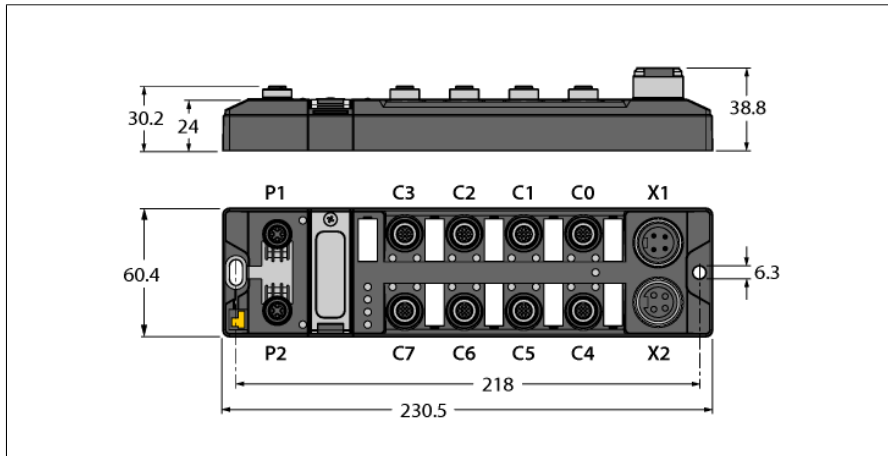


Compact Multiprotocol I/O Module for Ethernet

8 IO-Link Master Channels

4 Universal Digital PNP Channels, 2 A, Channel Diagnostics

TBEN-L4-8IOL/CS30128



- PROFINET device, EtherNet/IP device or Modbus TCP slave
- Integrated Ethernet switch
- Supports 10 Mbps / 100 Mbps
- 2x M12, 4-pin, D-coded, Ethernet fieldbus connection
- Glass fiber reinforced housing
- Shock and vibration tested
- Fully potted module electronics
- Protection classes IP65, IP67, IP69K
- M12 ports for IO-Link master, 5-pin
- IO-Link master port class A and port class B
- IO-Link Protocol 1.1
- ARGEE code loaded
- Programmable ARGEE

Type	TBEN-L4-8IOL/CS30128
ID	U3-10910
Supply	
Supply voltage	24 VDC
Admissible range	18 ... 30 VDC
	Total current max. 9 A per voltage group
	Total current V1 + V2 max. 11 A
	IO-Link 20.4...28.8 VDC
Voltage supply connection	4-pin male 7/8" connector X1
Sensor/actuator supply	Supply from V1
	Short-circuit proof, max. 4 A per slot C0 and C4, max. 2 A per slot C1–C3, C5–C7
Sensor/actuator supply	Class B supply from V2
	Short-circuit proof, max. 4 A per slot C4 and C5, max. 2 A per slot C6 and C7
Electrical isolation	galvanic isolation of the voltage groups V1 and V2, voltages up to 500 VAC
System data	
Fieldbus transmission rate	10/100 Mbps
Fieldbus connection technology	2 x M12, 4-pin, D-coded
Protocol detection	automatic
Web server	Default: 192.168.1.254
Service interface	Ethernet via P1 or P2
Field Logic Controller (FLC)	
ARGEE Firmware Version	3.0.6.0
ARGEE Engineering Version	2.0.25.0
Modbus TCP	
Addressing	Static IP, DHCP
Supported function codes	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Number of TCP connections	8
Input register start address	0 (0x0000 hex)
Output register start address	2048 (0x0800 hex)
Ethernet/IP	
Addressing	acc. to EtherNet/IP specification
Quick Connect (QC)	< 150 ms
Device Level Ring (DLR)	supported
Class 3 connections (TCP)	3
Class 1 connections (CIP)	10
Input Assembly Instance	101
Output Assembly Instance	102
Configuration Assembly Instance	106

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PROFINET

Addressing	DCP
Conformance class	B (RT)
MinCycleTime	1 ms
Fast Start-Up (FSU)	< 150 ms
Diagnostics	acc. to PROFINET alarm handling
Topology detection	supported
Automatic addressing	supported
Media Redundancy Protocol (MRP)	supported

Digital inputs

Number of channels	4 DXP + 8 SIO
Connectivity inputs	M12, 5-pin
Input type	PNP
Type of input diagnostics	Channel diagnostics
Switching threshold	EN 61131-2 type 3, PNP
Low level signal voltage	< 5 V
High level signal voltage	> 11 V
Low level signal current	< 1.5 mA
High level signal current	> 2 mA
Input delay	0.05 ms
Electrical isolation	Galvanic isolation to the bus, voltage resistant up to 500 VAC

Digital outputs

Number of channels	4 DXP
Connectivity outputs	M12, 5-pin
Output type	PNP
Type of output diagnostics	Channel diagnostics
Output voltage	24 VDC from potential group
Output current per channel	2 A, short-circuit proof
Electrical isolation	Galvanic isolation to P1/P2, voltage resistant up to 500 VDC

IO-Link

Number of channels	8
IO-Link	pin 4 in IOL mode
IO-Link specification	V 1.1
IO-Link port type	Class A and Class B
Frame type	supports all specified frame types
Supported devices	Max. 32 bytes in/32 bytes out per port
Transmission rate	4.8 kbps (COM 1) / 38.4 kbps (COM 2) / 230 kbps (COM 3)

Standard/Directive conformity

Vibration test	Acc. to EN 60068-2-6 Acceleration up to 20 g
Shock test	acc. to EN 60068-2-27
Drop and topple	acc. to EN 60068-2-31/IEC 60068-2-32
Electromagnetic compatibility	Acc. to EN 61131-2
Approvals and certificates	CE, FCC, FM Class I, Zone 2, UV-resistant in accordance with DIN EN ISO 4892-2A (2013)
UL Certificate	cULus LISTED 21 W2, Encl.type 1 IND.CONT.EQ.

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General Information

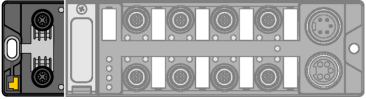
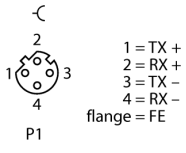
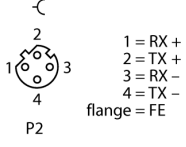
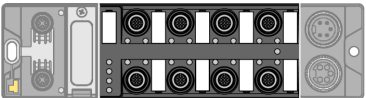
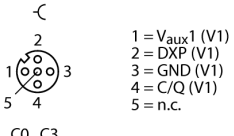
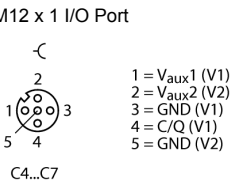
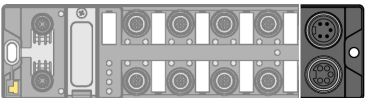

Dimensions (W x L x H)	60.4 x 230.4 x 39 mm
Ambient temperature	-40...+70 °C
Storage temperature	-40...+85 °C
Altitude	Max. 5000 m
Protection class	IP65 IP67 IP69K
MTTF	161 years acc. to SN 29500 (Ed. 99) 20 °C
Housing material	PA6-GF30
Housing color	Black
Male connector material	Nickel-plated brass
Window material	Lexan
Material screw	303 stainless steel
Material label	Polycarbonate
Halogen-free	yes
Mounting	2 mounting holes □ 6.3 mm

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	<p>Accessories</p> <p>Ethernet cable (example): RSSD-RSSD-441-2M/S2174 Ident. no. 6914218</p>	<p>M12 x 1 Ethernet</p>  <p>P1</p>  <p>P2</p>
	<p>Accessories</p> <p>Pin 1: V_{AUX1} can be deactivated via process data Pin 4: IO-Link data or digital input (SIO mode) C0...C3: IO-Link Master Class A Pin 2: digital input or output (DXP) C4...C7: IO-Link Master Class B Pin 2: switchable class B supply (V_{AUX2}) Accessories: Appropriate IO-Link cable for example: ID No. 6625604 2m: RKC4T-2-RSC4T/TXL ID No. 6625730 5 m: RKC4T-5-RSC4T/TXL Further lengths and variants in the product catalog or on request</p>	<p>M12 x 1 I/O Port</p>  <p>C0...C3</p> <p>M12 x 1 I/O Port</p>  <p>C4...C7</p>
	<p>Accessories</p> <p>Power supply cable (example): RKM43-1-RSM43 Ident. no. 6914312</p>	<p>7/8" Power Supply</p>  <p>X1</p> <p>X2</p>

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Module Status LED

LED	Color	Status	Description
ETH1 / ETH2	Green	On	Ethernet Link (100 Mbps)
		Flashing	Ethernet communication (100 Mbps)
	yellow	On	Ethernet link (10 Mbps)
		Flashing	Ethernet communication (10 Mbps)
		Off	No Ethernet link
BUS	Green	On	Active connection to a master
		Flashing	Steady flashing: Ready Sequence of 3 flashes in 2 seconds: FLC/ARGEE active
	Red	On	IP-address conflict or Restore Mode or Modbus timeout
		Flashing	Blink/Wink command active
	Green/Red	Alternating	Autonegotiation and/or waiting for DHCP/Boot-P addressing
		Off	Power off
ERR	Green	On	No diagnostics available
	Red	On	Diagnostics available Undervoltage diagnosis response is parameter dependent
PWR	LED response parameter (PWR) at V_2 undervoltage = "red"		
	Green	On	V_1 and V_2 power supply OK
	Red	On	V_2 power supply off or V_2 undervoltage
		Off	V_1 power supply off or V_1 undervoltage
	LED response parameter (PWR) at V_2 undervoltage = "green"		
	Green	On	V_1 and V_2 power supply OK
		Flashing	V_2 power supply off or V_2 undervoltage
		Off	V_1 power supply off or V_1 undervoltage

LED Status I/O

LED	Color	Status	Description
LED 0, 2, 4, 6, 8, 10, 12, 14 IO-Link Port 1-8 IO-Link Mode	Green	Flashing	IO-Link communication, process data valid
		Red	Flashing
		ON	IO-Link supply OK, no IO-Link Communication
		OFF	Port inactive
LED 0, 2, 4, 6, 8, 10, 12, 14 IO-Link Port 1-8 SIO Mode	Green	ON	Digital Input signal is present
		OFF	No input signal
LED 1, 3, 5, 7 DXP	Green	ON	Digital input or output active
		Red	ON
		Flashing	Overload supply V_{AUX1}
		OFF	Input or output inactive
LED 9, 11, 13, 15 IO-Link Class B VAUX2	Green	ON	V_{AUX2} Active on Pin 2
		Red	ON
		Flashing	Overload supply V_{AUX1}
		OFF	V_{AUX2} Inactive on Pin 2

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Process Data Mapping of the Single Protocols

For more details on the corresponding protocols see manual.