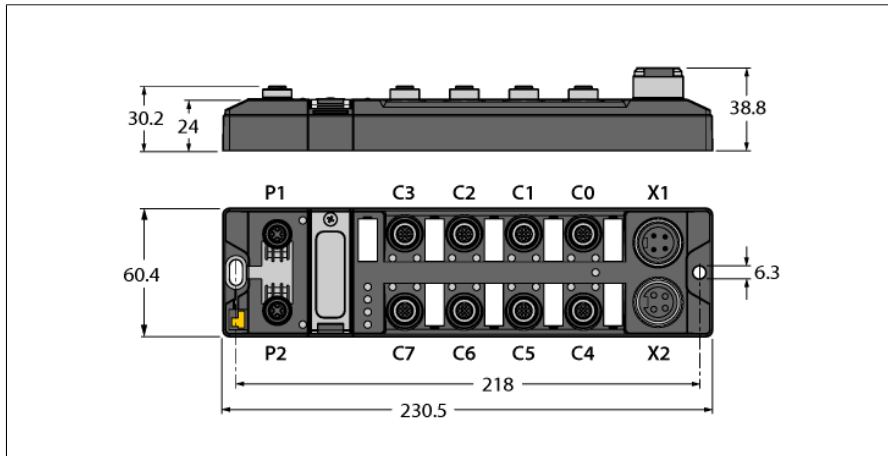


TBEN-L Multiprotocol Module for Ethernet
Compact RFID and I/O module programmable via CODESYS V3
TBEN-L4-4RFID-8DXP-CDS



- Codesys V3 PLC Runtime
- Codesys OPC-UA Server
- PROFINET® device, EtherNet/IP™ device or Modbus® TCP master/slave
- Integrated Ethernet switch
- Supports 10 Mbps/100 Mbps
- Glass fiber reinforced housing
- Shock and vibration tested
- Fully potted module electronics
- Protection classes IP65, IP67, IP69K
- Integration in PLC systems without special function module
- Up to 128 bytes of user data per read/write cycle for each channel and use of fragments for larger amounts of data
- Data interface for convenient use of RFID functionality
- HF bus mode for static applications
- 4 channels with M12 connector for RFID
- Mixed operation of HF and UHF read/write heads
- 8 digital channels, configurable as PNP inputs and/or 2 A outputs
- Integrated web server
- LED displays and diagnostics

Type designation	TBEN-L4-4RFID-8DXP-CDS
Ident no.	6814121
Supply	
Supply voltage	24 VDC
Admissible range	18...30 VDC
	Total current V1 max. 8 A + V2 max. 9 A at 70 °C per module
Voltage supply connection	4-pin male 7/8" connector X1
Operating current	V1: max. 200 mA V2: max. 50 mA
RFID supply V_{AUX1}	Ports C0-C3 from V1
Sensor/Actuator supply V_{AUX2}	Short-circuit proof, 2 A per channel at 70 °C Slots C4...C7 from V2
Electrical isolation	Power supply Pin1 switchable per socket Short-circuit proof, 2 A per slot at 70 °C galvanic isolation of the voltage groups V1 and V2, voltages up to 500 VAC
Power dissipation, typical	≤ 6.5 W
system description	
Processor	ARM Cortex A8, 32 bit, 800 MHz
Program and data memory	20 MB
ROM memory	256 MB Flash
RAM memory	128 MB DDR3
Add-on memory	1 x USB host port
Real time clock	yes
Operating system	Linux
PLC data	
Programming	CODESYS V3
Released for CODESYS version	V 3.5.8.10
Programming languages	IEC 61131-3 (AWL, KOP, FUP, AS, ST)
Application tasks	10
Number of POU's	1024
Programming interface	Ethernet, USB
Cycle time	< 1 ms for 1000 AWL commands (without I/O cycle)
Input data	8 kByte
Output data	8 kByte
System data	
Transmission rate Ethernet	10 Mbit/s / 100 Mbit/s
Connection technology Ethernet	2 x M12, 4-pin, D-coded
Web server	Default: 192.168.1.100
Service interface	Ethernet via P1 or P2
Modbus TCP	
Addressing	Static IP, BOOTP, DHCP
Supported function codes	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Number of TCP connections	8

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EtherNet/IP™

Addressing	acc. to EtherNet/IP™ specification
Device Level Ring (DLR)	supported
Class 3 connections (TCP)	3
Class 1 connections (CIP)	10
Input Assembly Instance	103
Input Data Size	248 INT
Output Assembly Instance	104
Output Data Size	248 INT
Configuration Assembly Instance	106

PROFINET

Addressing	DCP
MinCycleTime	4 ms
Diagnostics	acc. to PROFINET alarm handling
Automatic addressing	supported
Media Redundancy Protocol (MRP)	supported
Input Data Size	max. 512 BYTE
Output Data Size	max. 512 BYTE

RFID

Number of channels	4
Connectivity	M12
Power supply	2 A per channel at 70 °C, short-circuit proof
Operation per channel	1 × HF or UHF read/write head, up to 32 bus-compatible HF read/write heads ending on /C53 (additional power supply may be needed for static applications)
Mixed operation of RFID data interface	HF and UHF read/write heads
Cable length	HF und UHF max. 50 m

Digital inputs

Number of channels	8
Connectivity inputs	M12, 5-pin
Input type	PNP
Type of input diagnostics	Channel diagnostics
Switching threshold	EN 61131-2 Typ 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
Electrical isolation	Galvanically isolated to the fieldbus Voltage proof up 500 VDC

Digital outputs

Number of channels	8
Connectivity outputs	M12, 5-polig
Output type	PNP
Type of output diagnostics	Channel diagnostics
Output voltage	24 VDC from potential group
Output current per channel	2.0 A, short-circuit proof, max. 4.0 A per port
Simultaneity factor	0.56
Load type	EN 60947-5-1: DC-13
Short-circuit protection	yes
Electrical isolation	Galvanically isolated to the fieldbus Voltage proof up 500 VDC

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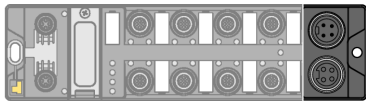
Standard/Directive conformity

Vibration test	acceleration to 20 g acc. to EN 60068-2-6
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.

General Information

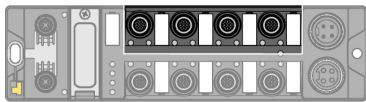
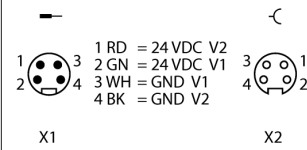
Dimensions (W x L x H)	60.4 x 230.4 x 39mm
Operating temperature	-40...+70 °C
Storage temperature	-40...+85 °C
Altitude	max. 5000 m
Protection class	IP65 IP67 IP69K
MTTF	75 years acc. to SN 29500 (Ed. 99) 20 °C
Housing material	PA6-GF30
Housing color	Black
Window material	Lexan
Material screw	303 stainless steel
Material label	Polycarbonate
Halogen-free	yes
Mounting	2 mounting holes Ø 6.3 mm

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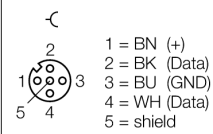
Note
Power supply cable (example):
RKM43-1-RSM43 (Ident. no. 6914312)

7/8" Power Supply

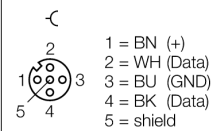


Note
RFID cable (example):
RK4.5T-5-RS4.5T/S2500
Ident. no. 6699201
Connection of TB and TN read/write heads (example):
TN-CK40-H1147
Ident. no. 7030006

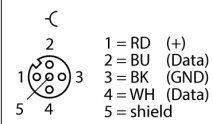
.../S2500 Connectors



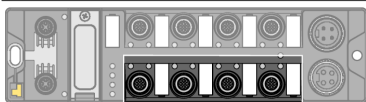
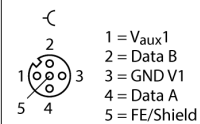
.../S2501 Connectors



Connectors .../S2503

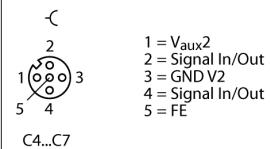


Wiring diagram

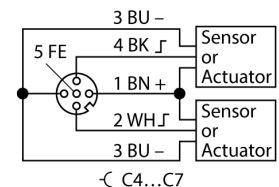


Note
Actuator and sensor cable/PUR cable (example):
RKC4.4T-2-RSC4.4T/TXL
ID number 6625608
Y extension cable for single occupancy
FSM4-2WAK3-1/1/P00
ID number 8009560

M12 x 1 I/O Port

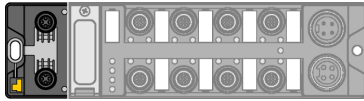


C4...C7



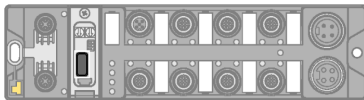
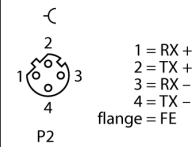
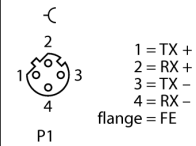
C4...C7

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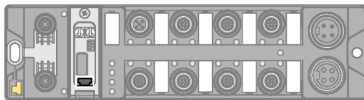
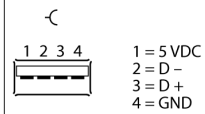
Note
Ethernet cable (example):
RSSD-RJ45S-4416-2M
Ident. no. 6441631

M12 x 1 Ethernet



USB Host Interface
For use with USB sticks

USB 2.0 A Jack



USB Device Interface
For use as a programming interface (alternative to Ethernet)
USB cable (example):
MINI USB 2.0 CABLE 1.5 M (ident. no. 6827388)
USB 2.0 extension A-male on A-female:
USB 2.0 EXTENSION 5 M (ident. no. 6827389)
USB 2.0 EXTENSION ACTIVE 5 M (ident. no. 6827390)

USB 2.0 mini-B Jack

