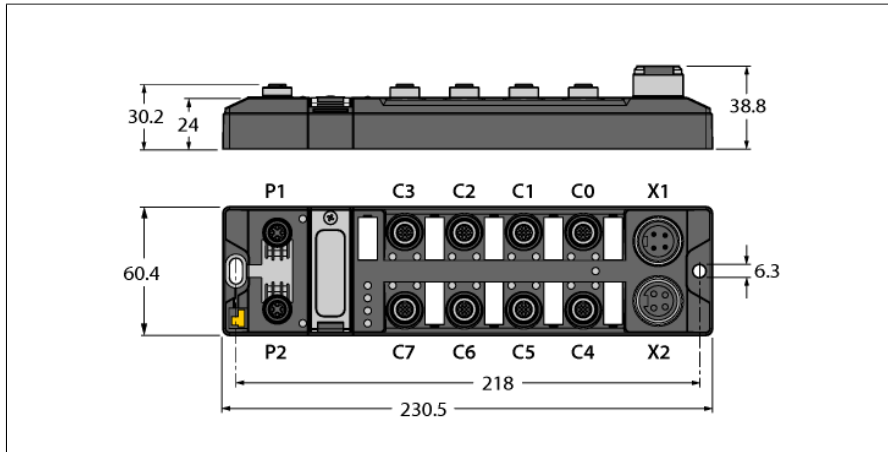


# Compact Multiprotocol RFID Module for Ethernet

## 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
- ATEX Zone 2/22
- Integration in PLC systems without the use of a special function module
- Up to 128 bytes of user data per read/write cycle per channel as well as use of fragments for larger data volumes
- Data interface for convenient use of the RFID functions
- 4 channels with M12 connection for RFID
- 8 universal digital channels, configurable as PNP inputs or 2 A outputs

Type	TBEN-L4-4RFID-8DXP-CDS
ID	6814121

Supply	
Supply voltage	24 VDC
Admissible range	18...30 VDC Total current V1 max. 8 A [UL: 7 A] + V2 max. 9 A at 70 °C [UL: 55 °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 $V_{AUX1}$	Slots C0–C3 from V1 Short-circuit proof, 2 A per channel at 70 °C, [UL: 1.74 A per channel at 55 °C]
Sensor/actuator supply	Slots C4–C7 powered by V2 Power supply Pin1 switchable for each slot Short-circuit proof, 2 A per slot at 70 °C [UL: 55 °C]
Electrical isolation	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 memory and data memory	20 MB
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 3.5.11.20
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	10/100 Mbps
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

Ethernet/IP	
Addressing	acc. to EtherNet/IP specification
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

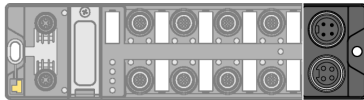
RFID	
Number of channels	4
Connectivity	M12
Power supply	2 A per channel at 70 °C [UL: 1.74 A per channel at 55 °C], short-circuit proof
Operation per channel	1 × HF or UHF read/write head, up to 32 bus-compatible HF read/write heads ending on /C53 (additional power supply may be needed for static applications)
Mixed operation of	HF and UHF read/write heads
RFID data interface	HF und UHF
Cable length	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-pin
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

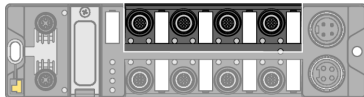
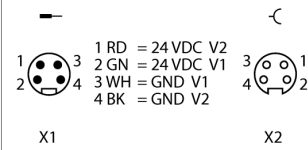
Standard/Directive conformity	
Vibration test	Acc. to EN 60068-2-6 Acceleration up to 20 g
Shock test	acc. to EN 60068-2-27
Drop and topple	acc. to EN 60068-2-31/IEC 60068-2-32
Electromagnetic compatibility	Acc. to EN 61131-2
Approvals and certificates	CE, FCC, FM Class I, Zone 2, UV-resistant in accordance with DIN EN ISO 4892-2A (2013)
UL Certificate	cULus LISTED 21 W2, Encl.type 1 IND.CONT.EQ.
Note on ATEX/IECEX	The Quick Start Guide with information on use in Ex Zones 2 and 22 must be observed.

General Information	
Dimensions (W x L x H)	60.4 x 230.4 x 38.8 mm
Ambient temperature	-40...+70 °C UL: +55 °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
Male connector material	Nickel-plated brass
Window material	Lexan
Material screw	303 stainless steel
Material label	Polycarbonate
Halogen-free	yes
Mounting	2 mounting holes Ø 6.3 mm



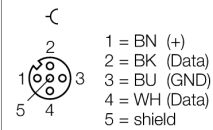
**Note**  
Power supply cable (example):  
RSM RKM 40-2M (Ident. no. U2280-0)

### 7/8" Power Supply

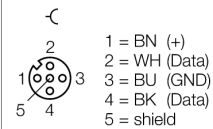


**Note**  
RFID cable (example):  
RK4.5T-2-RS4.5T/S2501  
Ident. no. U3-01243  
Connection of TB and TN read/write heads (example):  
TN-CK40-H1147  
Ident. no. 7030006

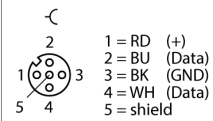
### .../S2500 Connectors



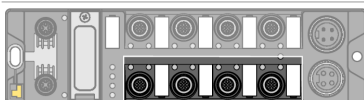
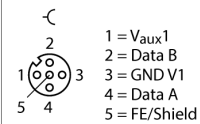
### .../S2501 Connectors



### Connectors .../S2503

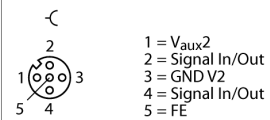


### Wiring diagram

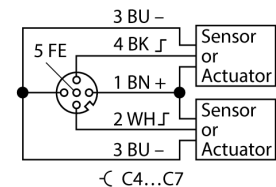


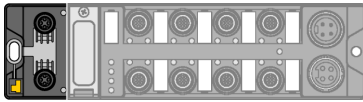
**Note**  
Actuator and sensor cable/PUR cable (example):  
RK4.4T-2-RS4.4T  
ID number U2445  
Y connection for single occupancy  
YB2-FSM4.5-2FKM4.5  
ID number U0875-78

### M12 x 1 I/O Port



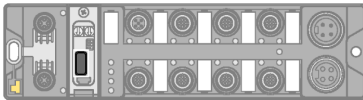
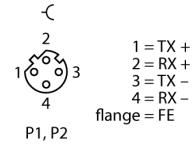
C4...C7





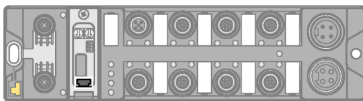
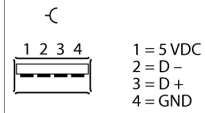
**Note**  
 Ethernet cable (example):  
 RSSD-RSSD-441-2M  
 Ident. no. U-02482

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

USB 2.0 mini-B Jack

