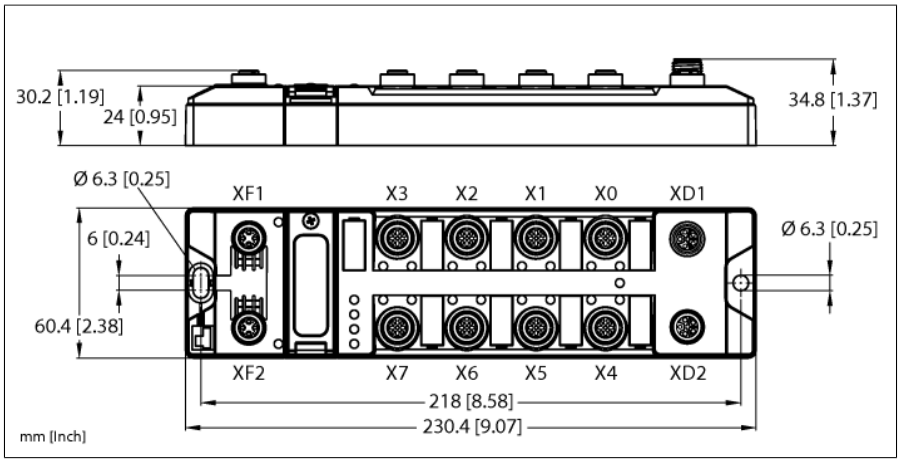
Compact RFID Module for EtherCAT
4 RFID Channels (HF/UHF) and 8 Universal Digital Channels, Configurable as PNP Inputs or 2-A Outputs
TBEC-LL-4RFID-8DXP



Type	TBEC-LL-4RFID-8DXP
ID	100002925

Supply	
Supply voltage	24 VDC
Admissible range	18…30 VDC Total current V1 max. 8 A + V2 max. 9 A at 70 °C [UL: 55 °C] per module
Voltage supply connection	M12, L-coded
Operating current	V1: max. 150 mA V2: max. 100 mA
RFID supply $V_{AUX\,1}$	Slots X0…X3 from V1 Short-circuit proof, 2 A per channel at 70 °C [UL: 55 °C]
Sensor/actuator supply	Slots X4…X7 from V2 Power supply Pin1 switchable per 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	≤ 5 W

System data	
Fieldbus connection technology	2 × M12, 4-pin, D-coded
Service interface	EoE via XF1 or XF2

EtherCAT	
CAN over EtherCAT	acc. to modular device profile (ETG.5001.1)
Diagnostics	CoE Emergencies, DiagnosisHistory
Address allocation	Automatic/Configured Station Alias/Explicit Device Identification

- EtherCAT device acc. to Modular Device Profile
- Glass fiber reinforced housing
- Shock and vibration tested
- Fully potted module electronics
- Protection classes IP65, IP67, IP69K
- M12, L-coded connector for power supply
- ATEX Zone 2/22
- Up to 128 bytes of user data per read/write cycle per channel and use of fragments with 16 kilobytes of FIFO memory each
- Data interface for convenient use of the RFID functions
- Continuous HF bus mode with up to 32 HF read/write heads per channel
- 4 channels with M12 connection for RFID
- 8 universal digital channels, configurable as PNP inputs or 2 A outputs

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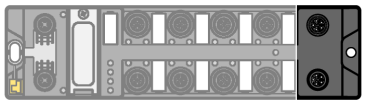
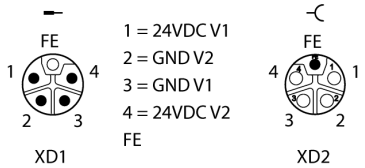
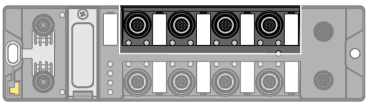
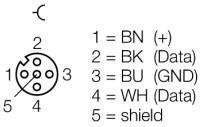
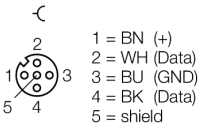
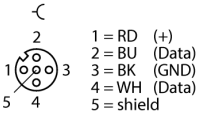
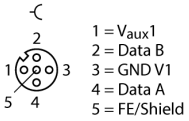
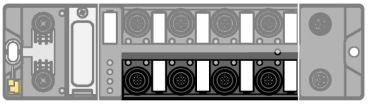
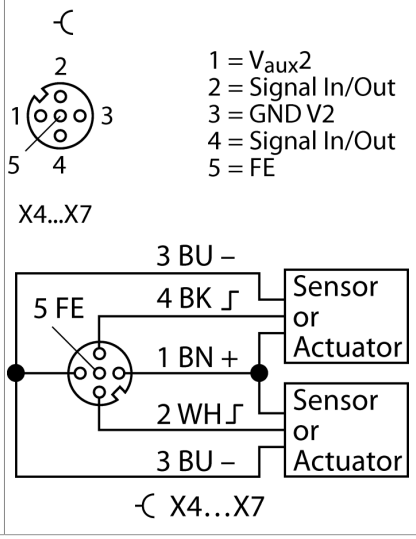
RFID	
Number of channels	4
Connectivity	M12
Power supply	2 A per channel at 70 °C [UL: 55 °C], short-circuit proof
Operation per channel	1 × HF or UHF read/write head, up to 32 bus-compatible HF read/write heads with ending /C53 (additional power supply my be needed)
RFID data interface	HF und UHF
Cable 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 and UKCA FCC statement, UV resistant acc. to 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 34.8 mm
Ambient temperature	-40…+70 °C
	UL: +55 °C
Storage temperature	-40…+85 °C
Altitude	Max. 5000 m
Protection class	IP65 IP67 IP69K
MTTF	89 years acc. to SN 29500 (Ed. 99) 20 °C
Housing material	PA6-GF30
Housing color	Black
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

	**Note** Power supply cable (example): Connection cable 2 m: RKP56PLB-2-RSP56PLB/TXG Ident-No. 100003327 Connection cable 2 m: RKP56PLB-2/TXG Ident-No. 100006303	M12 power supply, L-coded 
	**Note** RFID cable (example): RFID cable 5M: RK4.5T-5-RS4.5T/S2500 Ident-no. 6699201 RFID cable 2M: RSCV-RKCV5500-2M/S2500 Ident-no. 6633193 Connection of TB and TN read/write heads (example): TN-CK40-H1147 Ident-no. 7030006	…/S2500 Connectors  …/S2501 Connector  …/S2503 Connector  Wiring diagram 
	**Note** Actuator and sensor cable/PUR connection cable (example): RKC4.4T-2-RSC4.4T/TXL Ident-no. 6625608 Connection cable with Y piece for single assignment VBRS4.4-2RKC4T-1/1/TXL Ident-no. 6628112	I/O port M12 × 1 

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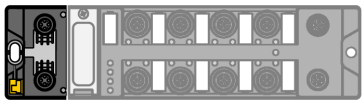
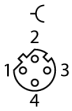
	**Note** Ethernet cable (example): RSSD-RJ45S-4416-2M Ident-no. 6441631	M12 × 1 Ethernet XF1 1 = TX + 2 = RX + 3 = TX – 4 = RX – flange = FE  XF2 1 = RX + 2 = TX + 3 = RX – 4 = TX – flange = FE