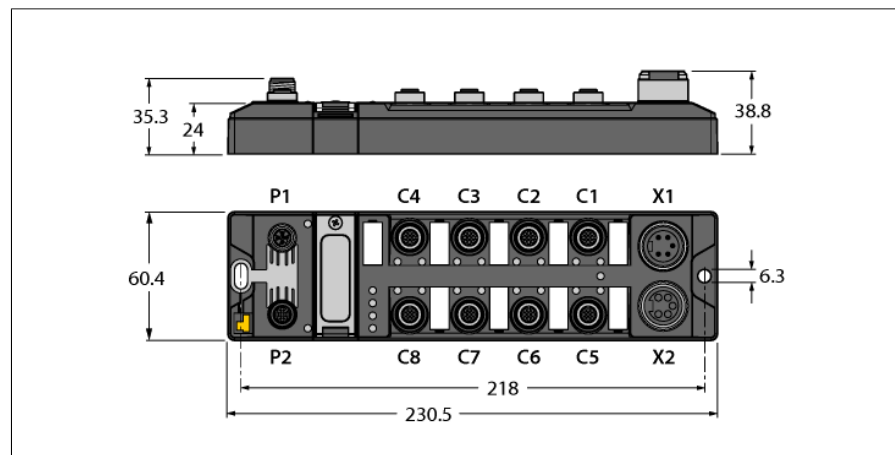


Fieldbus I/O module PROFIBUS-DP

16 Digital Channels, Configurable as PNP Inputs or 2 A Outputs

TBDP-L2-16DXP



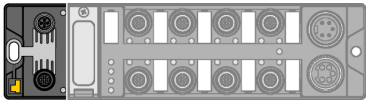
Type	TBDP-L2-16DXP
ID	6814004
Supply	
Supply voltage	24 VDC
Admissible range	18...30 VDC Total current max. 9 A per voltage group Total current V1 + V2 max. 11 A
Voltage supply connection	7/8", 5-pin
Sensor/actuator supply	Slots C1–C4 powered by V1 Short-circuit proof, 120 mA per slot
Sensor/actuator supply	Slots C5–C8 powered by V2 Short-circuit proof, 120 mA per slot
Electrical isolation	galvanic isolation of the voltage groups V1 and V2, voltages up to 500 VAC
System data	
Fieldbus transmission rate	9.6 kbps ...12 Mbps
Fieldbus connection technology	2 × M12, 5-pin, reverse-coded
Fieldbus addressing	0...126 (decimal) via three rotary coding switches
Digital inputs	
Number of channels	16
Connectivity inputs	M12, 5-pin
Input type	PNP
Type of input diagnostics	Group 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
Input delay	2.5 ms
Electrical isolation	Galvanically isolated to the fieldbus Voltage proof up to 500 VDC

- 2 × M12, 5-pin, B-coded, PROFIBUS-DP-Fieldbus connection
- Glass fiber reinforced housing
- Shock and vibration tested
- Fully potted module electronics
- Protection classes IP65, IP67, IP69K
- ATEX zone 2/22
- CCC-Ex
- Input diagnostics per port
- Max. 2 A per output
- Output diagnostics per channel
- Two freely selectable digital channels per port

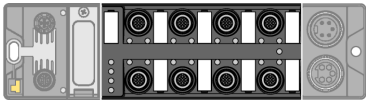
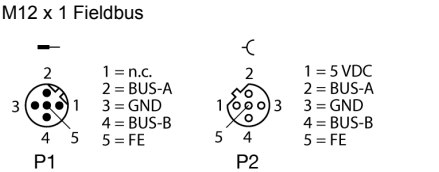
Digital outputs	
Number of channels	16
Connectivity outputs	M12, 5-pin
Output type	PNP
Type of output diagnostics	Channel diagnostics
Output voltage	24 VDC from potential group
Output current per channel	2.0 A, short-circuit proof, max. 2.0 A per port
Output delay	1.3 ms
Load type	EN 60947-5-1: DC-13
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 UKCA ATEX zone 2/22 CCC-Ex 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 areas must be observed.

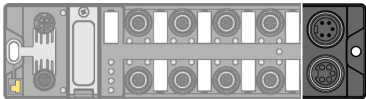
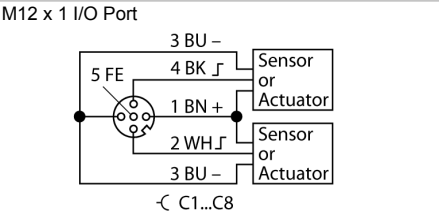
General Information	
Dimensions (W x L x H)	60.4 x 230.4 x 39 mm
Ambient temperature	-40...+70 °C
Storage temperature	-40...+85 °C
Altitude	Max. 5000 m
Protection class	IP65 IP67 IP69K
MTTF	162 years
Housing material	PA6-GF30
Housing color	Black
Connector material	Nickel-plated brass
Window material	Lexan
Material screw	303 stainless steel
Material label	Polycarbonate
Halogen-free	yes
Mounting	2 mounting holes □ 6.3 mm



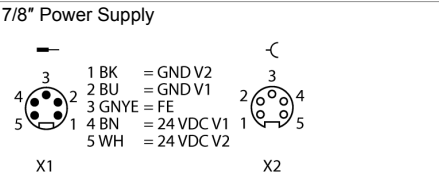
Note
PROFIBUS cable (example):
RSSW-RKSW451-3M
Ident no. 6915658



Note
Actuator and sensor cable, PUR extension cable (example):
RKC4.4T-2-RSC4.4T/TXL
Ident no. 6625608
Extension cable with Y piece for single assignment (example):
FSM4-2WAK3-1/1/P00
Ident no. 8009560



Note
Power supply cable (example):
RKM52-1-RSM52
Ident no. 6914149



Module Status LED

LED	Color	Status	Description
BUS	Green	ON	PROFIBUS online
	Red	ON	PROFIBUS offline
		OFF	Power off
ERR	Green	ON	Diagnostics disabled
	Red	ON	Diagnostics enabled
PWR	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 Status I/O

LED	Color	Status	Description
LED 1 ... 16	Green	ON	Input or output active
	Red	ON	Output active with overload/short circuit
		flashing	Power overload at the corresponding port. Both port LEDs are flashing.
		OFF	Input or output inactive

Process Data Mapping of the Single Protocols

For more details on the corresponding protocols see manual.

PROFIBUS process data

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Inputs	0	DI8 C4P2	DI7 C4P4	DI6 C3P2	DI5 C3P4	DI4 C2P2	DI3 C2P4	DI2 C1P2	DI1 C1P4
	1	DI16 C8P2	DI15 C8P4	DI14 C7P2	DI13 C7P4	DI12 C6P2	DI11 C6P4	DI10 C5P2	DI9 C5P4
Outputs	0	DO8 C4P2	DO7 C4P4	DO6 C3P2	DO5 C3P4	DO4 C2P2	DO3 C2P4	DO2 C1P2	DO1 C1P4
	1	DO16 C8P2	DO15 C8P4	DO14 C7P2	DO13 C7P4	DO12 C6P2	DO11 C6P4	DO10 C5P2	DO9 C5P4
Diagnostics Input	2	SCS8	SCS7	SCS6	SCS5	SCS4	SCS3	SCS2	SCS1
	3	SCO8	SCO7	SCO6	SCO5	SCO4	SCO3	SCO2	SCO1
	4	SCO16	SCO15	SCO14	SCO13	SCO2	SCO11	SCO10	SCO9

Accessories

Type code	Ident no.		Dimension drawing
TB-SG-L	100014865	Protective housing for TBEN-L and TBIL-M block I/O modules for use in ATEX Zone 2/22	