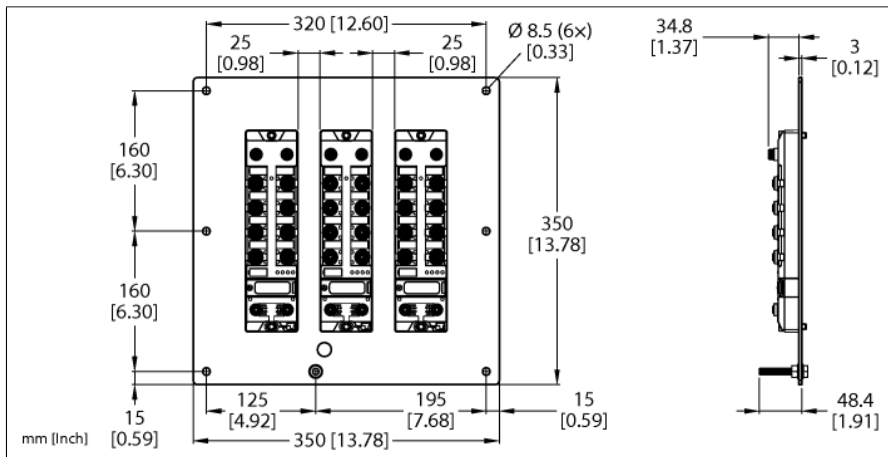


EtherNet/IP Safety Spanner

Master-to-Master Secure Data Exchange

TBCS-LL-SET-01



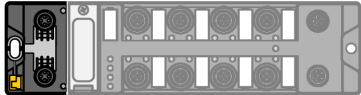
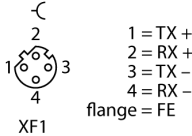
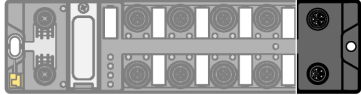
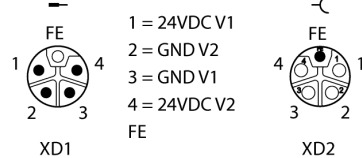
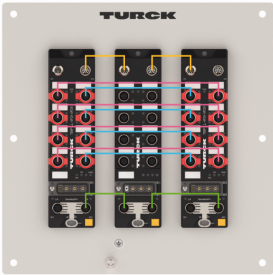
Type	TBCS-LL-SET-01
ID	100040508
Supply	
Supply voltage	24 VDC
Admissible range	20.4...28.8 VDC
Voltage supply connection	M12, L-coded
Electrical isolation	galvanic isolation of the voltage groups V1 and V2, voltages up to 500 VAC
System data	
Fieldbus transmission rate	10/100 Mbps
Fieldbus connection technology	2 × M12, 4-pin, D-coded
Web server	integrated
Service interface	Ethernet via P1 or P2
Ethernet/IP	
Addressing	acc. to EtherNet/IP specification
Quick Connect (QC)	(Not supported according to ODVA specifications)
Device Level Ring (DLR)	supported
Class 1 connections (CIP)	3
Safety Data	
	Sicherheitskennndaten gelten für ein TBIP* Gerät
PL acc. to EN ISO 13849-1	Level e
Category acc. to DIN EN 13849-1:2008	4
MTTF _e gemäß ISO 13849-1:2008	>200 Jahre
DC acc. to ISO 13849-1:2008	99%
SIL acc. to IEC 61508	3
PFH according IEC 61508	< 1* 10E-09 /h
PFD according IEC 61508	< 1* 10E-05
Useful Lifetime	20 years (EN ISO 13849-1)

- EtherNet/IP CIP-safe safety spanner
- Internal connections pre-wired in the set. Wiring must not be changed! The set may only be supplied via the specified supply point!
- 4-bit secure data exchange
- 256 bytes of non-secure data exchange
- Ethernet/IP device
- Integrated Ethernet switch
- 10 Mbps/100 Mbps supported
- 2 × 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, L-coded male connector for power supply

Standard/Directive conformity	
	With request for perusal
Directive	2006/42/EC Machine Directive 2014/35/EC Low Voltage Directive 2014/30/EC EMC Directive
Safety standard	EN/IEC 61508
Application Standard	EN ISO 13849-1 EN/IEC 62061
Product Standard	IEC 61131-6
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.

General Information	
Ambient temperature	-40...+70 °C
Storage temperature	-40...+85 °C
Altitude	Max. 5000 m
Protection class	IP65 IP67 IP69K
Halogen-free	yes
Mounting	Mounting holes Ø 8.5 mm

The data sheet serves as advance information. For definitive values see the corresponding product manual. In this respect, no liability for completeness and accuracy can be applied to the content of this data sheet.

		M12 × 1 Ethernet  1 = TX + 2 = RX + 3 = TX - 4 = RX - flange = FE XF1
		M12 power supply, L-coded  1 = 24VDC V1 2 = GND V2 3 = GND V1 4 = 24VDC V2 FE XD1 XD2
	Note Supply point: M12L I-coded, top left connection All three devices in the set must be powered from the same supply. Internal wiring must not be changed. Ethernet/IP network 1: M12 D-coded, connection XF1, bottom left Ethernet/IP network 2: M12 D-coded, connection XF1, bottom right	

Process data mapping of the individual protocols

See the manual for more details of the relevant protocols.