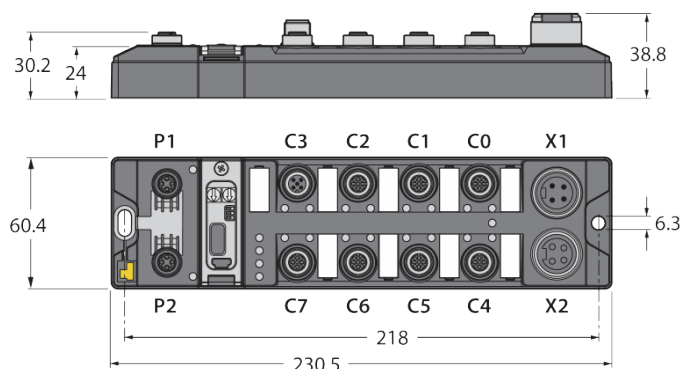


TBEN-L4-PLC-10
**Compact PLC in IP67 design
CODESYS V3**


Type designation	TBEN-L4-PLC-10
Ident-No.	6814019

Technical data

Power supply	
Supply voltage	24 VDC
Admissible range	18 ... 30 VDC Max. total current 9 A per voltage group Max. total current V1 + V2 11 A
Voltage supply connection	7/8", 4-pin
Operating current	< 280 mA
Sensor/actuator supply	Ports C0 to C3 powered by V1 Short-circuit protection, C0 + C1: 2 A per port, C2 + C3: 4 A for both ports
Sensor/actuator supply	Ports C4 to C7 powered by V2 Short-circuit protection, 2 A per port
Electrical isolation	galvanic isolation of the voltage groups V1 and V2, voltages up to 500 VAC
Power dissipation, typical	≤ 5 W
Electrical data	
Short-circuit protection	yes
Controller	
Processor	ARM Cortex A8, 32 Bit, 800 MHz
Program memory and data memory	20 MB

Features

- CODESYS V3 PLC runtime
- CODESYS OPC UA server/client
- IoT gateway for Turck Cloud
- PROFINET controller/device
- EtherNet/IP scanner/device
- EtherCAT master
- Modbus TCP client/server
- Modbus RTU client/server
- CANopen manager/device
- SAE J1939 manager
- RS232/RS485 serial interfaces
- Ethernet 2 × M12, 4-pin, D-coded
- Switched or dual MAC mode
- 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
- CCC-Ex
- Eight universal digital I/O channels
- Max. sensor supply per port 2 A
- Input diagnosis per port

Technical data

Remanent memory	64kB
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 3.5.14.2
Programming languages	IEC 61131-3 (IL, LD, FBD, SFC, 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: 192.168.1.254
Service interface	Ethernet via P1 or P2, Mini USB port
Serial interface	
Signal type	RS232 or RS485
Number of channels	2
RS232 operating mode	
Signal low level	-18 to -3 VDC
Signal high level	3 to 18 VDC
Transmission signals	T×D, R×D
Transmission rate	9600 to 230400 bps
Transmission type	Full duplex
Cable length	15 m at 19200 Bd (max. line capacitance < 2000 pF)
RS485 operating mode	
Transmission signals	TX/RX+, TX/RX-
Transmission rate	9600 to 230400 bps
Transmission type	2-wire half duplex
Terminating resistor	Internal or external
Biasing	Internal or external
Line impedance	120 Ω

- Max. 2 A per output
- Output diagnosis per channel

Technical data

Inputs/Outputs	
Number of channels	16
Electrical isolation	electronics and field level separated via optocouplers
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
Sensor supply	2 A, short-circuit proof, from V2
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 V2
Output current per channel	2.0 A, short-circuit protection, max. 4.0 A per port
Simultaneity factor	0.56
Load type	EN 60947-5-1: DC-13
Actuator power supply	2 A, short-circuit proof, from V2
Electrical isolation	Galvanically isolated to the fieldbus Voltage proof up 500 VDC
Mechanical data	
Dimensions	230,5 mm x 60,4 mm x 38,8 mm
Housing material	PA6-GF30
Housing color	Black
Material screw	303 stainless steel
Material label	Polycarbonate
Male connector material	Nickel-plated brass
Window material	Lexan
Mounting	Two mounting holes Ø 6.3 mm

Technical data

Ambient conditions	
Ambient temperature	-40...+70 °C
Storage temperature	-40...+85 °C
Altitude	max. 5000 m
Electromagnetic compatibility	Acc. to EN 61131-2
Shock test	acc. to EN 60068-2-27
Vibration test	Acc. to EN 60068-2-6, acceleration up to 20 g
Protection class	IP65 IP67 IP69K
Standards/directives	
Drop and topple	acc. to EN 60068-2-31/IEC 60068-2-32
Tests/approvals	
Approvals and certificates	CE UKCA ATEX Zone 2/22 CCC-Ex 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 areas must be observed.
MTTF	80 Years acc. to SN 29500 (Ed. 99) 20 °C
Other properties	
Halogen-free	yes
Comments	
Packaging unit	1

Module Status LED

LED	Color	Status	Description
ETH1/ETH2	Green	On	Ethernet link (100 Mbps)
		Flashing	Ethernet communication (100 Mbps)
	Yellow	On	Ethernet link (10 Mbps)
		Flashing	Ethernet communication (10 Mbps)
		Off	No Ethernet link

BUS	Green	On	Active connection to the first configured master
		Flashing	Ready
	Red	On	IP address conflict, Restore Mode or Modbus timeout
		Flashing	Blink/wink command active
	Green/red	Alternating	Autonegotiation and/or waiting for DHCP/BOOTP addressing
		Off	No power supply to V1 or supply below defined tolerance (18 V)

ERR	Green	On	No diagnosis available
	Red	On	Diagnosis available
		Off	No power supply to V1 or supply below defined tolerance (18 V)

RUN	Green	On	PLC running status
	Red	On	PLC stop status
		Flashing	No PLC program loaded
		Flashing 2 × 1 Hz	Factory reset executed
		Off	No power supply to V1 or supply below defined tolerance (18 V)

APPL	Green/red	On/off/flashing	Control of this LED is user-defined in the CODESYS program
	White	Flashing	Blink/wink command active

PWR	Green	On	V ₁ and V ₂ power supply OK
	Red	On	No power supply to V ₂ or supply below defined tolerance (18 V)
		Off	No power supply to V ₁ or supply below defined tolerance (18 V)

<styleobject font-weight="normal">

I/O status LED

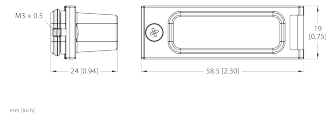
</styleobject>

LED	Color	Status	Description
LED 0	Green	On	COM 0: TX data transmission
		Off	COM 0: no TX data transmission
LED 1	Green	On	COM 0: RX data transmission
		Off	COM 0: no RX data transmission
LED 2	Green	On	COM 1: TX data transmission
		Off	COM 1: no TX data transmission
LED 3	Green	On	COM 1: RX data transmission
		Off	COM 1: no RX data transmission
LED 4 ... 7	Green/red	On/off/flashing	Control of this LED is user-defined in the CODESYS program
LED 8 ... 15	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

Mounting accessories

TBXX-L-SERVICE-WINDOW-02-5pcs	100028429
--------------------------------------	------------------

High PA6 service window for TBxx-L



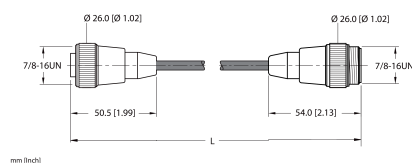
mm (inches)

Connection accessories - Power supply

RKM43-2-RSM43

6914313

Power supply cable, 7/8" female connector, straight, 4-pin to 7/8" male connector, straight, 4-pin, cable length: 2 m, jacket material: PUR, gray

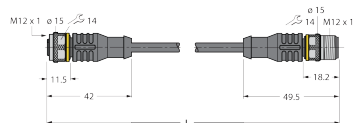


Connection accessories - I/O

RKC4T-2-RSC4T/TXL

6625604

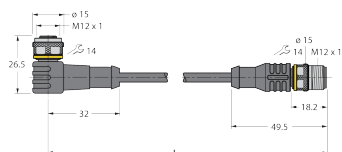
Extension cable, M12 female connector, straight, 3-pin to M12 male connector, straight, 3-pin; cable length: 2 m, jacket material: PUR, black; cULus approval



WKC4T-2-RSC4T/TXL

6625636

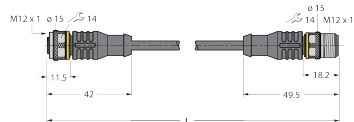
Extension cable, M12 female connector, angled, 3-pin to M12 male connector, straight, 3-pin; cable length: 2 m, jacket material: PUR, black; cULus approval



RKC4.4T-2-RSC4.4T/TXL

6625608

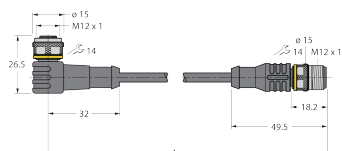
Extension cable, M12 female connector, straight, 4-pin to M12 male connector, straight, 4-pin; cable length: 2 m, jacket material: PUR, black; cULus approval



WKC4.4T-2-RSC4.4T/TXL

6625640

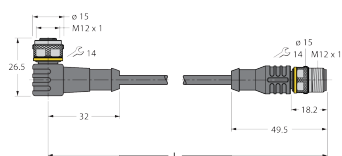
Extension cable, M12 female connector, angled, 4-pin to M12 male connector, straight, 4-pin, cable length: 2 m, jacket material: PUR, black; cULus approval



WKC4.5T-2-RSC4.5T/TXL

6625644

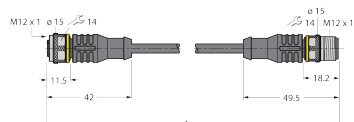
Extension cable, M12 female connector, angled, 5-pin to M12 male connector, straight, 5-pin; cable length: 2 m, jacket material: PUR, black; cULus approval



RKC4.5T-2-RSC4.5T/TXL

6625612

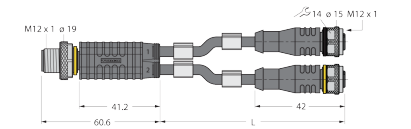
Extension cable, M12 female connector, straight, 5-pin to M12 male connector, straight, 5-pin; cable length: 2 m, jacket material: PUR, black; cULus approval



VBRS4.4-2RKC4T-1/1/TXL

6628112

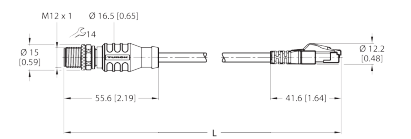
Connection accessories - I/O



2-port junction systems — Y-splitter with cable, M12 male connector, straight, 4-pin — 2 x M12 female connector, straight, 3-pin, cable length: 1 m, jacket material: PUR, black

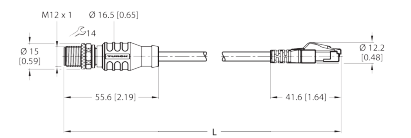
Connection accessories - network

RSSD-RJ45S-4422-2M	6635170
---------------------------	----------------



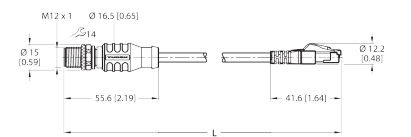
Cable for Industrial Ethernet, M12 male connector, D-coded, straight to RJ45 male connector, straight, cable length: 2 m, jacket material: PUR, green

RSSD-RJ45S-4422-7M	6635579
---------------------------	----------------



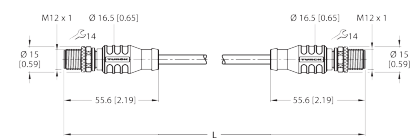
Cable for Industrial Ethernet, M12 male connector, D-coded, straight to RJ45 male connector, straight, cable length: 2 m, jacket material: PUR, green

RSSD-RJ45S-4422-8M	6635538
---------------------------	----------------



Cable for Industrial Ethernet, M12 male connector, D-coded, straight to RJ45 male connector, straight, cable length: 2 m, jacket material: PUR, green

RSSD-RSSD-4422-2M	6635150
--------------------------	----------------



Cable for Industrial Ethernet, M12 male connector, D-coded, straight to M12 male connector, D-coded, straight, cable length: 2 m, jacket material: PUR, green