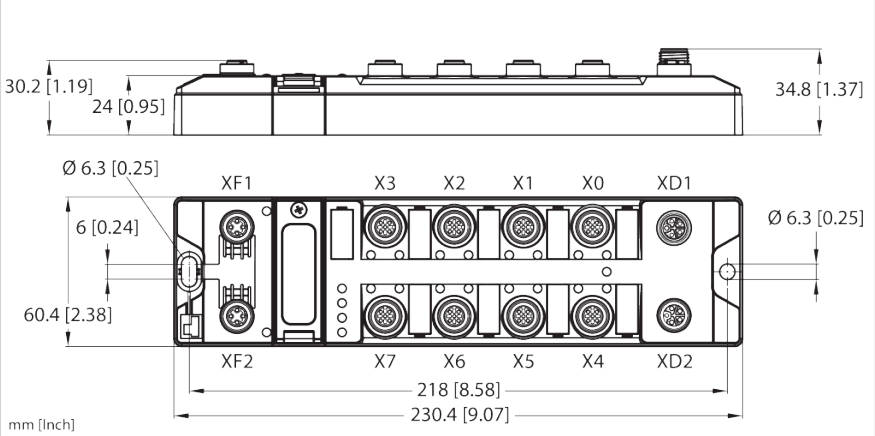
TBEN-LL-4RMC

Compact Multiprotocol I/O Module for Ethernet

4 Roller Motor Controllers

4 digital PNP inputs, 4 universal digital channels, configurable as PNP inputs or 2-A outputs





Typ	TBEN-LL-4RMC
Ident-No.	100050634

Technical data

Power supply	
Supply voltage	V1: 24 VDC V2: 24 VDC
Admissible range	V1: 18 … 30 VDC V2: 18 … 30 VDC XD1…XD2 forward current max. 16 A per voltage group
Voltage supply connection	M12, L-coded
Operating current	Operating temperature 20 °C V1: 24 VDC, 80 mA V2: 24 VDC, 40 mA
Sensor/actuator supply	Ports X0-X3 powered by V1 short-circuit proof, 120 mA per port
Sensor/actuator supply	Ports X4…X7 powered by V2 Short-circuit proof, irreversible, 4 A per port
Electrical isolation	Galvanic isolation of V1 and V2 voltage group Voltage proof up to 500 VDC
Electrical data	
Short-circuit protection	yes

Features

- PROFINET device, EtherNet/IP device or Modbus TCP server
- Integrated Ethernet switch
- Supports 10 Mbps/100 Mbps
- 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
- CAN-based roller motors from manufacturers MTA, MPC, Interroll
- Programmable ARGEE

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Technical data

Interfaces	
Roller motor interface	Interroll RollerDrive EC5000 BI, FW version >=1.00.8, MPC MTR 46 AD product series, MTA MCS-24
System data	
Fieldbus transmission rate	10/100 Mbps
Fieldbus connection technology	2 x M12, 4-pin, D-coded
Protocol detection	automatic
Service interface	Ethernet via XF1 or XF2
ARGEE functionality	Supported
Modbus TCP	
Addressing	Static IP, DHCP
Supported function codes	FC3, FC4, FC6, FC16, FC23
Number of TCP connections	8
Input register start address	0 (0x0000 hex)
Output register start address	2048 (0x0800 hex)
EtherNet/IP	
Addressing	acc. to EtherNet/IP specification
Min. RPI	2 ms
Device Level Ring (DLR)	supported
Class 3 connections (TCP)	3
Class 1 connections (CIP)	10
Input Assembly Instance	101
Output Assembly Instance	102
Configuration Assembly Instance	106
PROFINET	
Addressing	DCP
Conformance class	B (RT)
MinCycleTime	1 ms
Diagnostics	acc. to PROFINET alarm handling
Topology detection	supported
Automatic addressing	supported
Media Redundancy Protocol (MRP)	supported
Ein-/Ausgänge	
Electrical isolation	Electronics and field level isolated via optocouplers
Digital inputs	
Number of channels	8

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Technical data

Input type	PNP
Switching threshold	EN 61131-2 type 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	Galvanic isolation from the fieldbus Voltage proof up to 500 VDC
Digital outputs	
Number of channels	4
Output type	PNP
Type of output diagnostics	Channel diagnostics
Output voltage	24 VDC from potential group
Output current per channel	2 A, short-circuit proof
Load type	EN 60947-5-1: DC-13
Electrical isolation	Galvanic isolation from the fieldbus Voltage proof up to 500 VDC
Mechanical data	
Dimensions	230,4 mm x 60,4 mm x 34,8 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	2 mounting holes Ø 6.3 mm
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, Not assessed by UL
Standards/directives	
Drop and topple	Acc. to IEC 60068-2-31/IEC 60068-2-32
Tests/approvals	

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Technical data

Approvals	cURus
Approvals and certificates	CE and UKCA FCC statement, UV resistant acc. to DIN EN ISO 4892-2A (2013)
Approvals	cURus
UL Certificate	cURus Recognized Component E517268, IND.CONT.EQ For installation and use, see "Conditions of Acceptability."
MTTF	133 Years acc. to SN 29500 (Ed. 99) 20 °C
Other properties	
Halogen-free	yes
Remarks	
Packaging unit	1

Module status LED

L/A LED	Meaning
Off	No Ethernet connection
Green	Ethernet connection established, 100 Mbps
Yellow	Ethernet connection established, 10 Mbps
Green flashing	Data transfer, 100 Mbps
Yellow flashing	Data transfer, 10 Mbps

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BUS LED	Meaning (input)
Off	No voltage present
Green	Connection to a master is active
Green flashing 3 × in 2 s	ARGEE active
Green flashing (1 Hz)	Device ready for operation
Red	IP address conflict, restore mode active, F_Reset active or Modbus connection timeout
Red flashing	Wink command active
Red/green 1 Hz	Autonegotiation and/or waiting for IP address allocation in DHCP or BootP mode

ERR LED	Meaning
Off	No voltage present
Green	No diagnostics, device error-free
Red	Diagnostics present

PWR LED	Meaning
Off	No voltage or undervoltage at V1
Green	Voltage at V1 and V2 OK
Green flashing	No voltage or undervoltage at V2 (LED behavior configurable)
Red	

I/O status LED

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DIP/DXP channel LED X0 … X3	Meaning (input)
Off	Input level below maximum input level
Green	Input level above minimum input level
Red	-
Red flashing (1 Hz)	Power overload at the corresponding port. Both port LEDs flash.
	Meaning (output)
Off	Output not active
Green	Output active (max. 2 A)
Red	Actuator overload

RM channel LEDs X4 … X7	Meaning
LED 8, 10, 12, 14	
Off	No motor parameterized and connected
Green	Motor connected, CANopen PDO transfer in progress
Red	Motor parameterized but not yet connected or ready
LED 9, 11, 13, 15	
Off	Motor at a standstill
Green	Motor in motion
Green flashing	Motor ready for operation, CANopen communication acc. to the CANopen drives profile
Red	Motor reports an error

WINK LED (without designation on device)	Meaning
White flashing	Wink command active

Process Data Mapping of the Single Protocols

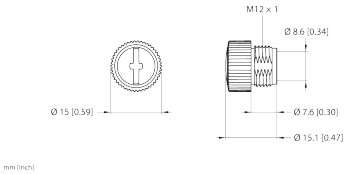
For more details on the corresponding protocols see manual.

Connections and pin assignments

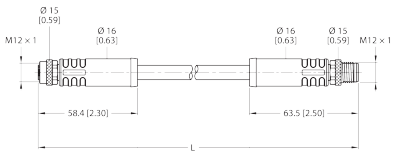
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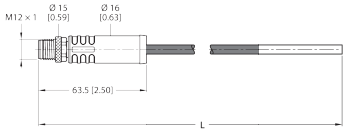
Technical details on connecting the power supply, fieldbus and IO level can be found in the manual.

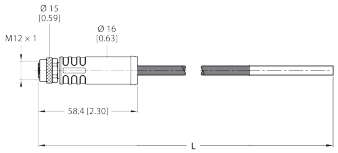
Connection accessories

VS-M12-PWR	100034822
	Blanking plug for M12 female connectors

Connection accessories - Power supply

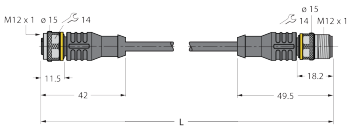
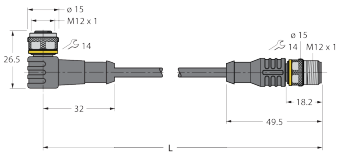
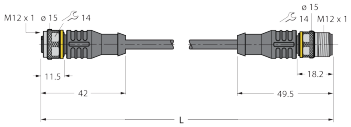
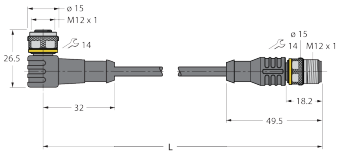
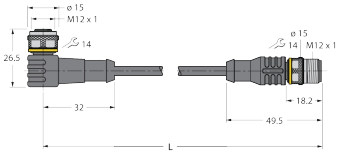
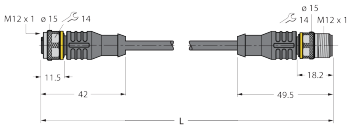
RKP56PLA-2-RSP56PLA/TXG	100038722
	Extension cable, M12 female connector, straight, 4-pin + FE, L-coded; M12 male connector, straight, 4-pin + FE, L-coded; cable length: 2 m, jacket material: PUR, gray

RSP56PLA-2/TXG	100038699
	

RKP56PLA-2/TXG	100038706
	

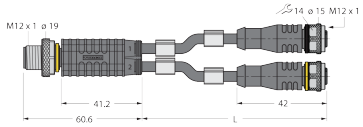
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Connection accessories - I/O

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**

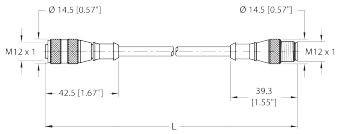
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Connection accessories - I/O



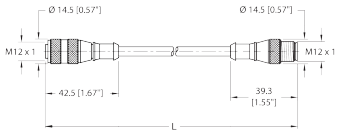
2-port junction systems — Y-splitter with cable, M12 male connector, straight, 4-pin — 2 × M12 female connector, straight, 3-pin, cable length: 1 m, jacket material: PUR, black

RK 4T-2-RS 4T	U2151-3



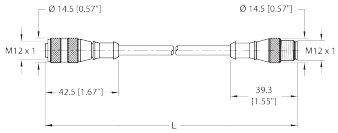
Actuator and sensor cordset, extension cable, M12 female connector, straight, 3-pin, M12 male connector, straight, 3-pin, IP68, IP69K, cable length: 2 m, cable jacket PVC, gray, other cable lengths and versions available, see www.turck.com

RK 4.4T-2-RS 4.4T	U2445



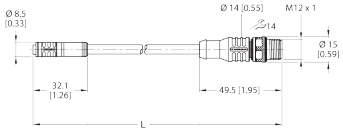
Actuator and sensor cordset, extension cable, M12 female connector, straight, 4-pin, M12 male connector, straight, 4-pin, IP68, IP69K, cable length: 2 m, cable jacket PVC, gray, other cable lengths and versions available, see www.turck.com

RK 4.5T-2-RS 4.5T	U2187-1



Actuator and sensor cordset, extension cable, M12 female connector, straight, 5-pin, M12 male connector, straight, 5-pin, IP68, IP69K, cable length: 2 m, cable jacket PVC, gray, other cable lengths and versions available, see www.turck.com

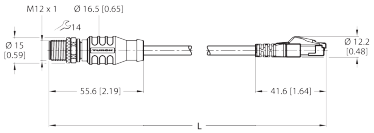
PKG4.5S-2-RSW4.5T/TEL	6634924

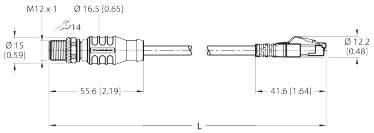


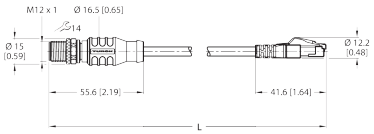
Extension cable, Ø 8-mm female connector, snap-on, straight, 5-pin to M12 male connector, straight, 5-pin, B-coded; cable length: 2 m, jacket material: PVC, black; cULus approval

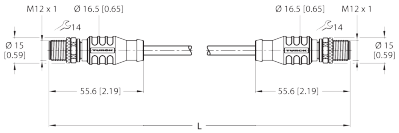
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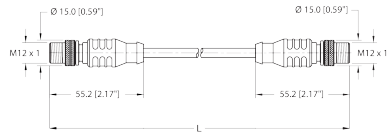
Connection accessories - network

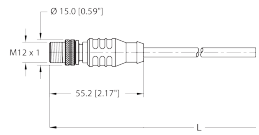
RSSD-RJ45S-4422-2M	6635170
	Cable for Industrial Ethernet, M12 male connector, D-coded, straight to RJ45 male connector, straight, cable length: 2 m, jacket material: PUR, green

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

RSSD RSSD 441-2M	U-02482
	Cable for Industrial Ethernet, M12 male connector, D-coded, straight to M12 male connector, D-coded, straight, cable length: 2 m, jacket material: TPE, turquoise

RSSD RJ45 441-2M	U-08880
	Cable for Industrial Ethernet, M12 male connector, D-coded, straight to RJ45 male connector, straight, cable length: 2 m, jacket material: TPE, turquoise

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