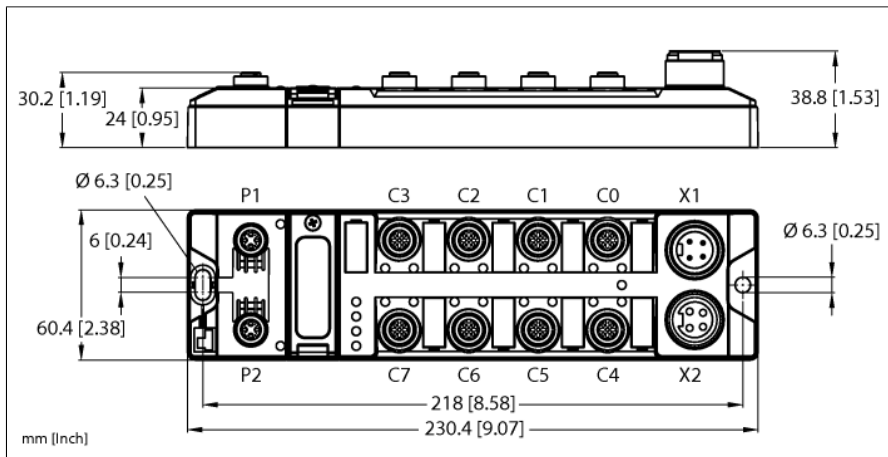


Compact Multiprotocol I/O Module for Ethernet

16 Digital PNP Inputs

TBEN-L4-16DIP



Type	TBEN-L4-16DIP
ID	6814009
Supply	
Supply voltage	24 VDC
Voltage supply connection	4-pin male 7/8" connector X1
Operating current	V1: max. 150 mA
Sensor/actuator supply	supply of ports C0-C7 from V1 short-circuit proof, 120 mA per port
Electrical isolation	galvanic isolation of the voltage groups V1 and V2, voltages up to 500 VAC
Fault exclusion	Yes, acc. to EN ISO 13849-2, appendix D.2
Power dissipation, typical	≤ 5 W
System data	
Fieldbus transmission rate	10/100 Mbps
Fieldbus connection technology	2 × M12, 4-pin, D-coded
Protocol detection	automatic
Web server	Default: 192.168.1.254
Service interface	Ethernet via P1 or P2
BEEP functionality	Supported
Field Logic Controller (FLC)	
ARGEES Firmware Version	3.2.9.0
ARGEES Engineering Version	2.0.24.0
Modbus TCP	
Addressing	Static IP, DHCP
Supported function codes	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Number of TCP connections	8
Input register start address	0 (0x0000 hex)
Output register start address	2048 (0x0800 hex)

- PROFINET device, EtherNet/IP device or Modbus TCP slave
- Integrated Ethernet switch
- Supports 10 Mbps/100 Mbps
- 2 × M12, 4-pin, D-coded, Ethernet fieldbus connection
- PROFINET S2 system redundancy
- Glass fiber reinforced housing
- Shock and vibration tested
- Fully potted module electronics
- Protection classes IP65, IP67, IP69K
- 4-pin 7/8" male connector for power supply
- Galvanically isolated voltage groups support passive safety
- ATEX Zone 2/22
- Input diagnostics per port
- Programmable ARGEE

Ethernet/IP	
Addressing	acc. to EtherNet/IP specification
Quick Connect (QC)	< 150 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

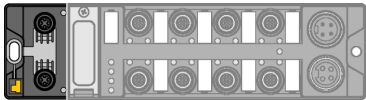
PROFINET	
Version	2.35
Addressing	DCP
Conformance class	B (RT)
MinCycleTime	1 ms
Fast Start-Up (FSU)	< 150 ms
Diagnostics	acc. to PROFINET alarm handling
Topology detection	supported
Automatic addressing	supported
Media Redundancy Protocol (MRP)	supported
System redundancy	S2
Netload class	3

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 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 FCC statement, FM class I, zone 2, 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.

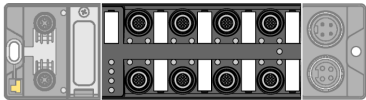
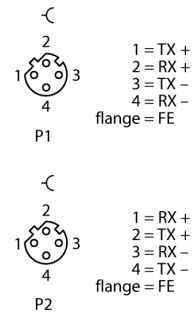
General Information	
Dimensions (W x L x H)	60.4 x 230.4 x 39 mm
Ambient temperature	-40...+70 °C
Storage temperature	-40...+85 °C
Altitude	Max. 5000 m
Protection class	IP65
	IP67
	IP69K
MTTF	205 years acc. to SN 29500 (Ed. 99) 20 °C
Housing material	PA6-GF30
Housing color	Black
Male connector material	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 the numbering of the IO range:
 From firmware version 3.2.9.0 and higher ports C0 to C7 and channels CH0 to CH15 are counted. The process data image is unchanged. For more details on the corresponding change see manual.



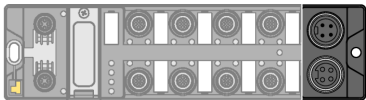
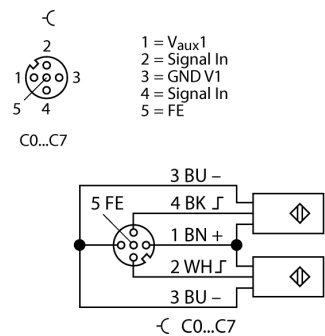
Note
Ethernet cable (example):
RSSD-RSSD-4416-2M
Ident. no. 6441652

M12 x 1 Ethernet



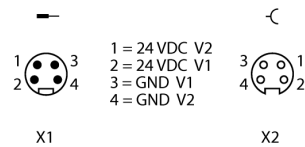
Note
Actuator and sensor cable/PUR connection cable (example):
RKC4.4T-2-RSC4.4T/XTL
Ident.no. 6625608
Connection cable with Y piece for single assignment
VBRS4.4-2RKC4T-1/1/TEL
Ident. no. 6628199

M12 x 1 Input



Note
Power supply cable (example):
RKM43-1-RSM43
ID number 6914312

7/8" Power Supply



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 a master
		Flashing	Steady flashing: Ready for operation
			Sequence of 3 flashes in 2 seconds: FLC/ARGE active
	Red	On	IP address conflict or Restore mode or Modbus timeout
		Flashing	Blink/Wink command active
	Green/red	Alternating	Autonegotiation and/or waiting for DHCP/Boot-P addressing
	Off	Power off	
ERR	Green	On	No diagnostics available
	Red	On	Diagnostics available
			Undervoltage diagnosis response is parameter dependent
	LED response master in the Beep network:		
	Green	1 Hz, 250 ms off	Cyclical IO data exchange
	Red/green	1 Hz, 250 ms red	Cyclical IO data exchange, diagnostics available
	Green/red	1 Hz, alternating	Discovery mode active
	Red		Discovery mode active, diagnostics available
PWR	Green	On	V _i power supply OK
		Off	V _i power supply off or V _i undervoltage

LED Status I/O

LED	Color	Status	Description
LED 0 ... 15	Green	ON	Input active
	Red	Flashing	Power overload at the corresponding port. Both port LEDs are flashing.
		OFF	Input inactive

Process Data Mapping of the Single Protocols

For more details on the corresponding protocols see manual.