Your Global Automation Partner

TURCK

TBEN-S
Ultra-Compact
Multiprotocol I/O Modules

Ultra-Compact Multiprotocol I/O Modules in IP67

Your advantages

The ultra compact TBEN-S block I/O modules are the smallest multiprotocol Ethernet block I/O modules on the market.

- Multiprotocol: one module, three protocols
- Extended temperature range -40…+70 °C
- High degree of protection IP65, IP67 and IP69K
- Ultra-compact design (32 x 144 x 31 mm)
- Lightweight construction
- Easily mounted
- Two M8 connectors for Ethernet
- Consistent diagnostics concept
- Easily configured
- Web server integrated in each module

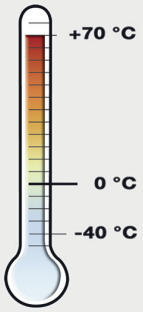
1:1 s

Digital I/O modules

The TBEN-S product series currently includes five versions of the digital modules in 8 x M8 connection technology.

- Digital inputs with channel or group diagnosis
- Digital outputs 0.5 A or 2 A
- Variants with 4 x M12 in preparation

Multiprotocol
All Turck multiprotocol I/O modules can be run "out of the box" in the Ethernet systems PROFINET, EtherNet/IP™ and Modbus TCP. Thus, you can operate a machine with a single I/O level at different control systems.



Harsh environmental conditions
The TBEN-S product series is designed for use in harsh industrial environments. These include the extended temperature range of -40…+70 °C and the high degree of protection IP65, IP67 and IP69K.

Four analog inputs

- One universal module for all signals
- Current, voltage, RTD or thermocouple selectable for each channel

Easily mounted

- Very compact design 32 x 144 mm
- Two M4 holes in line
- Lightweight construction
- Variable grounding concept

Four analog outputs

- One universal module for all signals
- Current or voltage selectable for each channel

IO-Link master

The 4-channel IO-Link master is the new link for digital communication, covering the "last meter" to the sensor or field level. Easy integration of IO-Link devices such as:

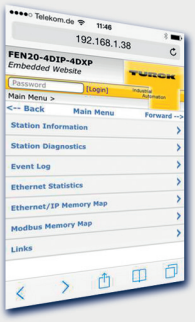
- Sensors and field devices
- I/O hubs (digital passive junction box)
- Valve manifolds

TBEN-S composite

To simplify assembly TBEN-S modules can be combined into one compact unit

- Spacer for panel mounting or DIN rail
- Matched bridges for Ethernet and supply

FDT/DTM configuration
The DTM of the TBEN-S I/O modules can optionally be used in conjunction with PACTware or other FDT frame applications for configuration. In addition to parameterization and diagnostics the tool is very helpful for commissioning. With the graphical user interface you can read and simulate process data without using a control.



Web server
The on-board web server supports during commissioning, maintenance and diagnostics. Settings such as the IP address or PROFINET name can be adjusted without additional tools. The web server clearly displays diagnoses and general system information in plaintext.

TBEN-S – Types and Features

TBEN-S1: 8 x M8 I/O-Ports	TBEN-S2: 4 x M12 I/O-Ports	Ident-no.	Type code	Description
		6814020	TBEN-S1-8DIP	8 digital inputs, PNP Input group diagnostics
		6814034	TBEN-S1-8DIP-D	8 digital inputs, PNP Input diagnostics per channel
		6814021	TBEN-S1-4DIP-4DOP	4 digital inputs, PNP and 4 digital outputs 2 A, PNP
		6814022	TBEN-S1-8DOP	8 digital outputs 0.5 A, PNP
		6814023	TBEN-S1-8DXP	8 universal digital channels, 0.5 A, PNP
		6814025	TBEN-S2-4AI	4 analog inputs, U, I, RTD or TC selectable per channel
		6814028	TBEN-S2-4AO	4 analog outputs, U or I selectable per channel
		6814024	TBEN-S2-4IOL	4 IO-Link master channels and 4 universal digital channels, 0.5 A, PNP

Spacer	Ident-no.	Type code	Description
	6814040	TBNN-S0-DRS-01	Spacer for TBEN-S composite on DIN rail, 1 item per unit
	6814041	TBNN-S0-DRS-05	Spacer for TBEN-S composite on DIN rail, 5 items per unit
	6814042	TBNN-S0-DRS-10	Spacer for TBEN-S composite on DIN rail, 10 items per unit
	6814043	TBNN-S0-STD-01	Spacer for TBEN-S composite on mounting panel, 1 item per unit
	6814044	TBNN-S0-STD-05	Spacer for TBEN-S composite on mounting panel, 5 items per unit
	6814045	TBNN-S0-STD-10	Spacer for TBEN-S composite on mounting panel, 10 items per unit

Ethernet cables	Type code	Description
	PSGS4M-PSGS4M-4414-xM	M8 male to M8 male
	RSSD-PSGS4M-4414-xM	M12 male to M8 male
	PSGS4M-RJ45S-4414-xM	M8 male to RJ45 male
	PSGS4M-4414-xM	M8 male to open end
	PSGS4M-0,2-PSGS4M/TXN	M8 Ethernet bridge for TBEN-S composite

x = Length in meters, variants on request

Power supply	Type code	Description
	PKG4M-x-PSG4M/TXL	M8 female straight to M8 male straight
	PKW4M-x-PSG4M/TXL	M8 female angled to M8 male straight
	PKG4M-x-PSW4M/TXL	M8 female straight to M8 male angled
	PKW4M-x-PSW4M/TXL	M8 female angled to M8 male angled
	PKG4M-x/TXL	M8 female straight to open end
	PKW4M-x/TXL	M8 female angled to open end
	8MBM8-4P2-7/8-M	Power distribution module 1 x 7/8“ male to 8 x M8 female
	PKG4M-0,2-PSG4M/TXL	M8 Ethernet bridge for TBEN-S composite

x = Length in meters, variants on request
More accessories can be found on www.turck.com

28 subsidiaries and over
60 representations worldwide!

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Types and Features

	Type code	Description
	TBEN-S2-2COM-4DXP	Multiprotocol Ethernet block-I/O module with two serial interfaces
	IVU2TB*	iVu BCR camera-based barcode reader from Banner Engineering with serial interface
	EA5R*MOD*	EZ-Array measuring light screens with Modbus RTU interface from Banner Engineering
	K50FF*S1*	K50 optical Pick-to-Light sensors with Modbus RTU interface from Banner Engineering
	QM42VT2*	QM42VT vibration and temperature measuring sensors with Modbus interface from Banner Engineering
	RSE57-TR2/RFID	Terminating resistor to build a bus line topology for RS485 and RFID
	VT2-FKM5-FKM5-FSM5	T-splitter to build a bus line topology for RS485 and RFID
	VB2-FKM5-FSM5.205-FSM5.305/S2550	T-splitter for re-feeding a supply voltage to the bus line topology for RS485 and RFID

*Additional accessories and the necessary connecting cables are listed in the following documents:
Accessories list of block I/O device series TBEN-S: D301367
Connectivity Preferred Program 100000122

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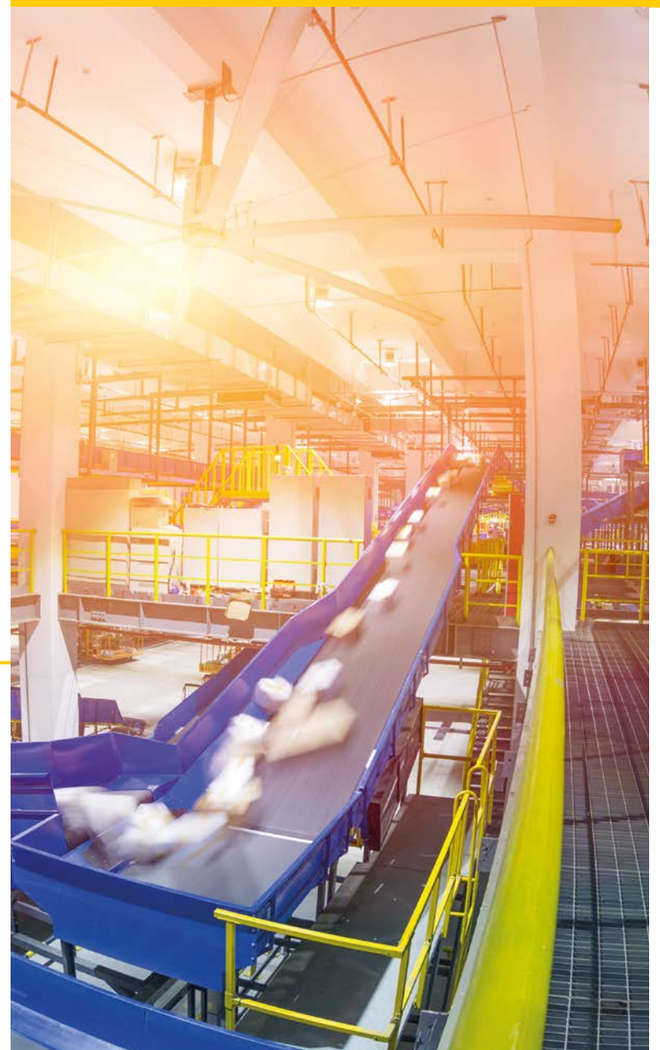
TBEN-S2-2COM-4DXP
Multiprotocol I/O Module with Serial Interfaces



Multiprotocol I/O Module with Serial Interfaces

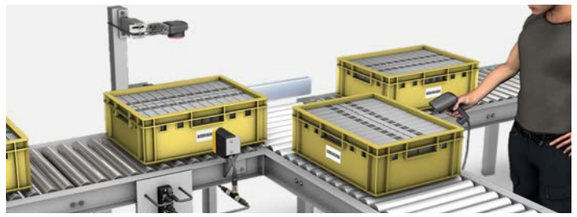
Whether retrofit or new projects, RS232, RS485 or Modbus RTU – serial interfaces still play an important role in industrial automation.

Turck's TBEN-S2-COM block I/O module integrates devices with serial interfaces directly in the field and connects them to modern industrial Ethernet networks. Data can be transferred not only to higher-level controllers but also parallel to IT systems such as edge gateways, data hubs or cloud systems via Modbus TCP.

TBEN-S2-2COM-4DXP
- Ultra Compact: 32 × 144 mm
- Wide temperature range -40…+70 °C
- Robust: IP65, IP67, IP69K, fully potted
- M8-24-V supply for line topologies
- M8 Ethernet switch for line topologies
- PROFINET, EtherNet/IP, Modbus TCP
- Media redundancy, MRP, DLR
- Topology identification, LLDP

Two serial interfaces
- M12 round connectors
- RS232 or RS485
- Integrated Modbus RTU function
- Integrated power supply for devices with 5 V or 24 V

Four universal digital channels
- Two channels per port
- Can be used without any configuration as input or output
- PNP circuitry



Identification of objects using bar codes

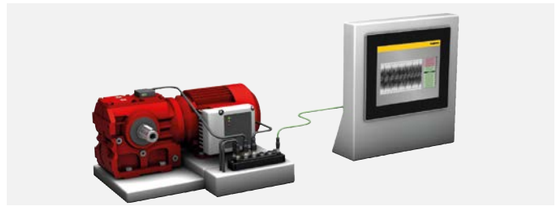
- Efficient identification solution
- Fast field wiring, power is supplied via the serial M12 interface.
- Direct fieldbus connection

Error-free commissioning thanks to Pick-to-Light

- Economic Pick-to-Light solution
- Scalable with up to 64 sensors per TBEN-S module
- Fast wiring
- Easy programming through integrated Modbus RTU function

Measurement and detection of objects

- Reliable measurement of objects
- Easy connection even of large light screens directly in the field
- Easy programming through integrated Modbus RTU function

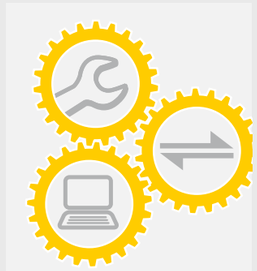


Motor control with vibration monitoring

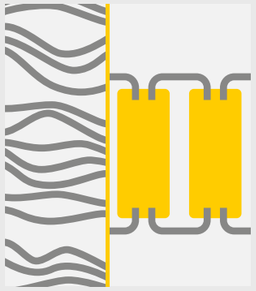
- Efficient motor control
- Plannable machine downtimes
- Higher system availability
- Reduction of maintenance costs

Ethernet multiprotocol
Each module can speak PROFINET, EtherNet/IP™ or Modbus TCP. The module automatically recognizes the bus protocol during the start-up phase. This reduces the number of device variants required and makes it possible to operate a machine with different control systems.

ARGEE FLC(Field Logic Controller)
With the web-based engineering environment ARGEE, Turck's block I/Os become compact controllers (Field Logic Controller, FLC). These FLCs relieve the central PLC by decentralized pre-processing or execute smaller control Tasks without any higher level control.



Configuration vs. Programming
Integrating Modbus RTU has never been easier. Both serial COM ports can be operated as Modbus RTU clients. Only addresses and process data areas have to be configured. The module then takes over the protocol processing.



Easy wiring in the field
True to the motto "Getting out of the control cabinet", Turck's block I/O modules in IP67 can be mounted close to the signals, directly on the machine. In contrast to parallel wiring, only one supply and one data line is required for this purpose, which are continued in line topology.