Your Global Automation Partner

TURCK

TBEN Block
Universal RFID with I/O

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RFID integration must be easier to ensure seamless transparency to meet the needs of the future of industrial manufacturing. Turck therefore presents new compact Ethernet RFID interfaces based on its block I/O families TBEN-L and TBEN-S. The multiprotocol devices use data from HF or UHF read/write heads for control via Profinet, EtherNet/IP or Modbus TCP.

The non-programmable TBEN-S and TBEN-L blocks simplify implementation through integration without extra programming effort or a function block.

The CODESYS-programmable TBEN-L variant offers control functions and can

therefore filter and pre-process RFID data, and even link it directly with control activities. In addition, Turck offers the TBEN-L RFID interface with Linux and Windows Embedded Compact 2013 in a version for system integrators.
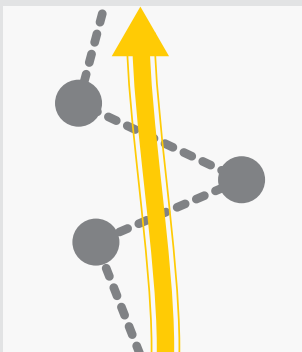
Easy integration
Integration with PLC systems can be implemented without special function blocks. Process data transmission is cyclical. Various HF and UHF interfaces in the data interface can be selected depending on the application and provide the necessary RFID functionality.

Multiprotocol
The modules support Turck multi-protocol, and can therefore be operated in any of the three Ethernet systems EtherNet/IP™, Modbus TCP and PROFINET. They also have an integrated web server.

Customer benefits

- Turck multiprotocol: EtherNet/IP™, Modbus TCP or PROFINET
- Easy integration in PLC systems with no special function module
- Execution of commands using RFID data interface
- Bus mode for connecting up to 32 bus-capable HF read/write heads per channel for static or slow dynamic applications

- (Mixed) operation of HF and UHF read/write heads and connection of sensors and lamps via DXPs
- CODESYS 3 for the filtering and pre-processing of RFID data and the execution of control actions
- Suitable for industrial environments
- TBEN-L5-4RFID-8DXP-WIN and TBEN-L5-4RFID-8DXP-LNX can replace functionality of price-intensive IPCs

U data interface

- Cyclical process data transmission
- Up to 128 bytes of user data per read/write cycle per channel and use of fragments for larger data volumes
- Various HF and UHF interfaces can be selected depending on the application
- Automatic triggering and execution of commands on the HF/UHF read/write head
- Evaluation of additional information such as RSSI in UHF applications
- Password functionality for HF and UHF
- Writing with validation of data
- Grouping of similar EPCs with multiple UHF data carriers
- Backup and restoration of the UHF read/write head configuration
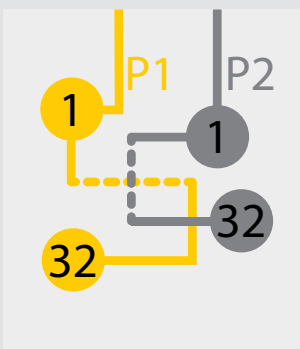
Bus mode
HF bus mode for operating up to 32 bus-capable HF read/write heads per channel for static or slow dynamic applications.
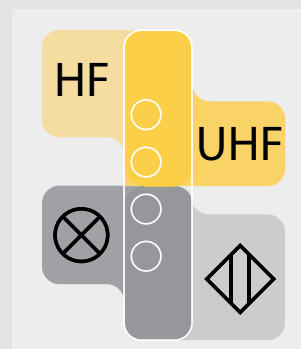
Mixed operation of HF and UHF
HF read/write heads and an UHF read/write head can be operated in parallel on one module. It is also possible to connect additional sensors and lamps via DXPs.

Application examples

- Automatic identification of vehicles, systems, tools, workpieces and products
- Tracking of production processes
- Picking
- Control of the flow of goods
- Read/write even large data volumes (e.g. 8 or 64 kB)
- Product protection
- Container management
- Order control
- Authentication
- Tool and format changes
- Hose connections
- Gate applications (UHF) and fast recording rates, even with large data carrier volumes (> 100)
- Industry 4.0 scenarios
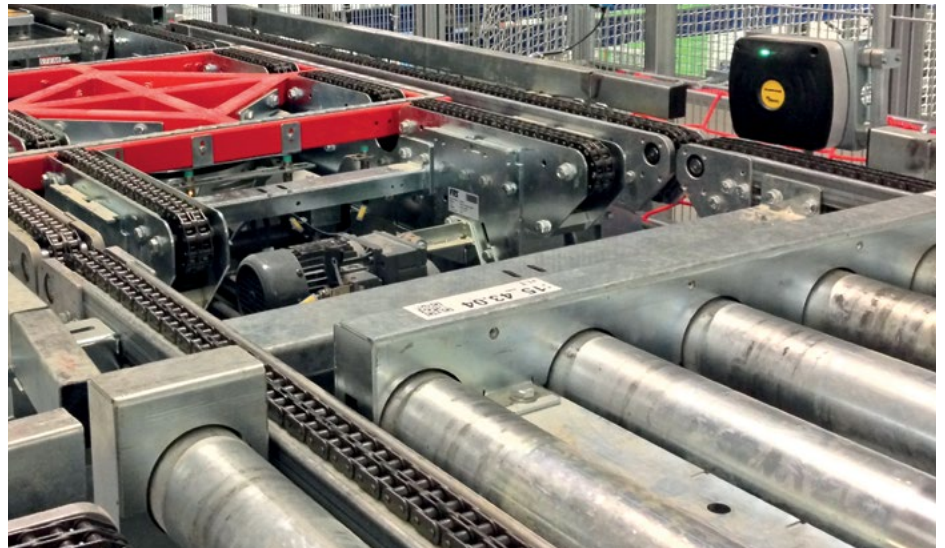
PLC functionality
Decentralized execution of control tasks via CODESYS 3 or Field Logic Controller function (FLC) in combination with the engineering environment ARGEE to relieve the control or autarkic use without higher-level control.

IP65
IP67
IP69K

Protection classes IP65/IP67/IP69K
Suitable for use in an industrial environment: Protection class IP65/IP67/IP69K, glass fiber reinforced housing, shock and vibration tested, fully potted module electronics.

Types and Features

Ident-No.	Type code	Description	Voltage supply connection	Dimensions
6814029	TBEN-S2-2RFID-4DXP	Compact multiprotocol RFID and I/O module with U data interface	4-pin, M8	32 x 144 x 31 mm
100000836	TBEN-L5-4RFID-8DXP	Compact multiprotocol RFID and I/O module with U data interface	5-pin, 7/8"	60.4 x 230.4 x 39 mm
100002462	TBEN-L4-4RFID-8DXP	Compact multiprotocol RFID and I/O module with U data interface	4-pin, 7/8"	60.4 x 230.4 x 39 mm
6814120	TBEN-L5-4RFID-8DXP-CDS	Programmable, compact multiprotocol RFID and I/O module with CODESYS 3 and U data interface	5-pin, 7/8"	60.4 x 230.4 x 39 mm
6814121	TBEN-L4-4RFID-8DXP-CDS	Programmable, compact multiprotocol RFID and I/O module with CODESYS 3 and U data interface	4-pin, 7/8"	60.4 x 230.4 x 39 mm
100000960	TBEN-L5-4RFID-8DXP-CDS-WV	Programmable, compact multiprotocol RFID and I/O module with CODESYS 3 and U data interface	5-pin, 7/8"	60.4 x 230.4 x 39 mm
6814124	TBEN-L5-4RFID-8DXP-LNX	Compact RFID and I/O module with Linux for implementation through system integrators	5-pin, 7/8"	60.4 x 230.4 x 39 mm
6814126	TBEN-L5-4RFID-8DXP-OPC-UA	Compact RFID and I/O module with integrated OPC UA server	5-pin, 7/8"	60.4 x 230.4 x 39 mm

TBEN-S2-2RFID-4DXP	TBEN-L4-4RFID-8DXP TBEN-L5-4RFID-8DXP	TBEN-L4-4RFID-8DXP-CDS TBEN-L5-4RFID-8DXP-CDS TBEN-L5-4RFID-8DXP-CDS-WV
Multiprotocol: EtherNet/IP™ device, Modbus TCP slave or PROFINET device	Multiprotocol: EtherNet/IP™ device, Modbus TCP slave or PROFINET device	Multiprotocol: EtherNet/IP™ device, Modbus TCP master/slave, or PROFINET device, CODESYS OPC UA Server
Power supply via M8 connector	Power supply via 7/8" connector	Power supply via 7/8" connector
–	–	CPU 800 MHz, 128 MB DDR3 RAM, flash memory 256 MB
Optional: FLC/ARGEE programmable	Optional: FLC/ARGEE programmable	PLC functionality via CODESYS 3
2 x M8, 4-pin, Ethernet connection	2 x M12, 4-pin, D-coded, Ethernet fieldbus connection	2 x M12, 4-pin, D-coded, Ethernet fieldbus connection
2 channels with M12 connection for RFID	4 channels with M12 connection for RFID	4 channels with M12 connection for RFID
4 digital channels, configurable as PNP inputs or 0.5 A outputs	8 digital channels, configurable as PNP inputs or 2 A outputs	8 digital channels, configurable as PNP inputs or 2 A outputs
U data interface for convenient use of the RFID functionality	U data interface for convenient use of the RFID functionality	U data interface for convenient use of the RFID functionality
Integrated web server	Integrated web server	Integrated web server
Turck HF and UHF read/write heads are supported	Turck HF and UHF read/write heads are supported	Implementation of the protocol required for the read/write heads
LED displays and diagnostics	LED displays and diagnostics	LED displays and diagnostics
Integrated Ethernet switch allows line topology	Integrated Ethernet switch allows line topology	Integrated Ethernet switch allows line topology
Transmission rate: 10 Mbps/100 Mbps	Transmission rate: 10 Mbps/100 Mbps	Transmission rate: 10 Mbps/100 Mbps
Protection classes IP65/IP67/IP69K	Protection classes IP65/IP67/IP69K	Protection classes IP65/IP67/IP69K

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