

# TURCK

Your Global Automation Partner

## TBEx-S2-2RFID | TBEx-Lx-4RFID Compact RFID Modules with I/Os



Products are linked with further information.

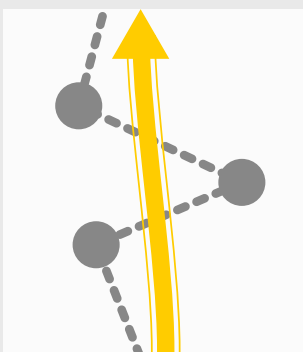
# Compact RFID Modules with I/Os

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

The compact TBEx-S-RFID module simplifies implementation through integration without extra programming effort or function block.

The decentralized control with CODESYS 3 is used to relieve the load on the PLC or even for autonomous applications without a higher-level control.

Turck's IP67 RFID interface with integrated OPC UA server facilitates the integration of RFID systems into MES, PLC, ERP and cloud systems thanks to the platform-independent communication standard OPC UA.



## Easy integration

Integration with PLC systems can be implemented without special function block. 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.

EtherNet/IP™

PROFI  
NET®

Modbus

## Multiprotocol

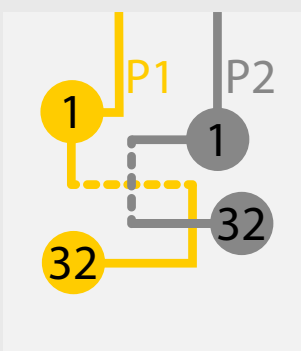
The modules support Turck multiprotocol, and can therefore be operated in any of the three Ethernet systems EtherNet/IP, Modbus TCP and PROFINET. They also have an integrated web server.

## Customer benefits

- EtherCAT and Turck multiprotocol: Ethernet/IP, Modbus TCP or PROFINET
- Easy integration with PLC systems with no special function block
- Execution of commands using RFID data interface
- Continuous HF bus mode with up to 32 HF read/write heads per channel

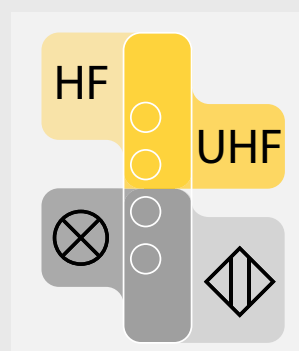
## U Data Interface

- 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
- Automatic addressing in HF bus mode



### Bus mode

HF bus mode for operating up to 32 bus-capable HF read/write heads per channel for static and 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 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.



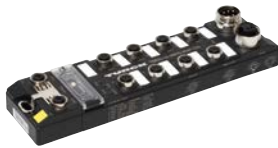
# Types and Features

ID	Type designation	Description	Power supply connection	Dimensions
<a href="#">6814029</a>	TBEN-S2-2RFID-4DXP	Compact multiprotocol RFID and I/O module	4-pin, M8	32 × 144 × 31 mm
<a href="#">100014935</a>	TBEC-S2-4RFID	Compact RFID module for EtherCAT	4-pin, M8	32 × 144 × 31 mm
<a href="#">100002463</a>	TBEN-LL-4RFID-8DXP	Compact multiprotocol RFID and I/O module	M12 L-coded	60.4 × 230.4 × 39 mm
<a href="#">100002925</a>	TBEC-LL-4RFID-8DXP	Compact RFID module for EtherCAT	M12 L-coded	60.4 × 230.4 × 39 mm
<a href="#">100000836</a>	TBEN-L5-4RFID-8DXP	Compact multiprotocol RFID and I/O module	5-pin, 7/8"	60.4 × 230.4 × 39 mm
<a href="#">100002462</a>	TBEN-L4-4RFID-8DXP	Compact multiprotocol RFID and I/O module	4-pin, 7/8"	60.4 × 230.4 × 39 mm
<a href="#">6814120</a>	TBEN-L5-4RFID-8DXP-CDS	Programmable, compact multiprotocol RFID and I/O module with CODESYS 3 and	5-pin, 7/8"	60.4 × 230.4 × 39 mm
<a href="#">6814121</a>	TBEN-L4-4RFID-8DXP-CDS	Programmable, compact multiprotocol RFID and I/O module with CODESYS 3	4-pin, 7/8"	60.4 × 230.4 × 39 mm
<a href="#">100000960</a>	TBEN-L5-4RFID-8DXP-CDS-WV	Programmable, compact multiprotocol RFID and I/O module with CODESYS 3 incl. WebVisu license	5-pin, 7/8"	60.4 × 230.4 × 39 mm
<a href="#">6814124</a>	TBEN-L5-4RFID-8DXP-LNX	Compact RFID and I/O module with Linux for implementation by system integrators	5-pin, 7/8"	60.4 × 230.4 × 39 mm
<a href="#">6814126</a>	TBEN-L5-4RFID-8DXP-OPC-UA	Compact RFID and I/O module with integrated OPC UA server according to the AutoID Companion Specification	5-pin, 7/8"	60.4 × 230.4 × 39 mm



Products are linked with further information.

Variant examples

<a href="#">TBEN-S2-2RFID-4DXP</a>	<a href="#">TBEN-L4-4RFID-8DXP</a> <a href="#">TBEN-L5-4RFID-8DXP</a>	<a href="#">TBEN-L4-4RFID-8DXP-CDS</a> <a href="#">TBEN-L5-4RFID-8DXP-CDS</a> <a href="#">TBEN-L5-4RFID-8DXP-CDS-WV</a>
		
Multiprotocol: EtherNet/IP device, Modbus TCP server or PROFINET device	Multiprotocol: EtherNet/IP device, Modbus TCP server or PROFINET device	Multiprotocol: EtherNet/IP device, Modbus TCP client/server, or PROFINET device, CODESYS OPC UA Server
PROFINET S2 system redundancy	PROFINET S2 system redundancy	–
Power supply via M8 connector	Power supply via 7/8" connector	Power supply via 7/8" connector
Optional: FLC/ARGE programmable	Optional: FLC/ARGE 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
Up to 128 bytes of user data per read/write cycle per channel and use of fragments with 16 kilobytes of FIFO memory each	Up to 128 bytes of user data (Ethernet/IP: Up to 80 bytes) per read/write cycle per channel and use of fragments with 16 kilobytes of FIFO memory each	Up to 128 bytes of user data per read/write cycle per channel and use of fragments with 16 kilobytes of FIFO memory each
Integrated web server	Integrated web server	Integrated web server
Turck HF and UHF read/write heads and HF bus-mode are supported	Turck HF and UHF read/write heads and HF bus-mode are supported	Turck HF and UHF read/write heads and HF bus-mode are supported
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



Products are linked with further information.

Over 30 subsidiaries and  
60 representatives worldwide!

