TURCK

Your Global Automation Partner

RFID Hardware Overview

Introduction to RFID Technology

Turck provides high-quality RFID solutions for better process control, identification and visibility in logistics and asset management applications. From warehouses and distribution centers to the factory floor you'll find Turck's RFID solutions hard at work, boosting efficiency, reducing errors and streamlining production.

Benefits

Enhanced Visibility to Inventory: Provides inventory tracking, reduces stock discrepancies and improves inventory accuracy.

Faster Processing: RFID provides quicker identification and tracking of assets, parts or ingredients compared to traditional methods, speeding up shipping, receiving, picking, and packing.

Reduced Labor Costs: Automated data capture using RFID minimizes the need for manual data entry, lowering labor costs and errors.

Better Asset Tracking: RFID helps track manufacturing equipment, tools, and other assets, pinpointing correct location in the facility, ensuring their proper use and maintenance.

Improved Quality Control: RFID systems can monitor production processes, ensuring that the correct parts and materials are used, thus minimizing errors.

It's important to understand the differences between RFID technologies like low frequency (LF – 125-134 kHz), high frequency (HF - 13.56 MHz), and ultra-high frequency (UHF – 902-928 MHz) to choose the right solution. Each application has unique demands, requiring knowledge of speed, range, read/write operations, environment, and the number of tags needed.

RFID systems have four primary components:

- Transceiver or Read/Write Head
- Interface – for communication
- Tags – active, passive or semi-passive types
- Antennas (if not integrated)

Let the experts at Turck help you choose the right RFID technology based on your application.

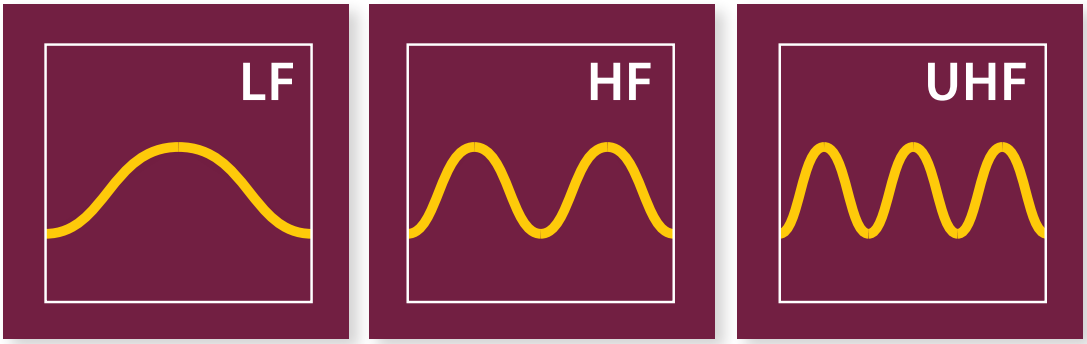
Comparing LF, HF and UHF

RFID systems operate across different frequency ranges, mainly Low Frequency (LF), High Frequency (HF), and Ultra-High Frequency (UHF). Each of these frequency ranges offers unique characteristics and advantages suitable for specific applications.

Materials like water and metal can affect RFID performance. For example, LF signals penetrate these materials well, however, they have limited range and slower data transfer. HF offers faster read rates and works up to 1 meter, making it ideal for mid-range applications. UHF provides even greater range and speed, handling more tags, but uses more power and the frequencies are less likely to penetrate materials.

Another consideration when selecting the appropriate frequency for an application is the amount of electromagnetic interference (EMI). This key factor makes it more difficult to obtain a clear signal. Machines like motors, conveyors, and robots can emit EMI, disrupting RFID signals. Shielding may be necessary in manufacturing settings.

Choosing the appropriate RFID frequency depends on the specific application requirements. Please see the table below for a quick look at the specifications and capabilities of these technologies:



	LF – 125-134 MHz	HF – 13.56 MHz	UHF – 902-928 MHz
Communication Range:	Ranges in inches	Ranges in inches	Ranges in yards
Communication Technology Between Read/ Write Head and Tag:	Inductive coupling	Inductive coupling	Passive backscatter
Field for Tag Identification:	Uniform magnetic field	Uniform magnetic field	Non-uniform electromagnetic field
Environmental Influences:	Mildly influenced by surrounding environment	Moderately influenced by surrounding environment	Highly influenced by surrounding environment
Sources of Interference:	EMF common in industrial environments (e.g. VFDs)	Metal in the environment	Metal and liquids in the environment
Multi-tag Reading:	Yes, some	Yes, several	Yes, over one hundred
Tag Memory Sizes:	10 bytes to 2 KB	64 bytes to 8 KB	24 to 138 bytes
Standards:	ISO/IEC 18000-2	ISO 15693	EPC Global Gen 2 – ISO 18000-6C

All-In-One Transceivers

RFID transceivers are devices that transmit and receive radio frequency signals to communicate with RFID tags. These devices work within various frequencies such as HF or UHF, depending on which version you choose. In addition, Turck offers an all-in-one design with integrated antenna and Ethernet interface, eliminating the need for separate block I/O and cable. Turck's RFID transceivers feature a rugged industrial design, making them ideal for harsh environments. Choose from devices with IP67, IP68 and IP69K ratings.

- Variants with HF and UHF
- UHF variants with and without integrated antennas
- Flexibility in read/write ranges, mounting configurations, and environmental adaptability
- Multiprotocol support (EtherNet/IP, Profinet and Modbus TCP)
- OPC-UA and EtherCAT versions

UHF

				
Part Number	**TN-UHF-Q180L300-NA-CDS**	**TN-UHF-Q180L300-NA-LNX**	**TN-UHF-Q180L300-NA-OPC-UA**	**TN-UHF-Q300-NA-CDS**
ID Number	100000934	100000936	100000937	100000900
Range	Application Dependent*	Application Dependent*	Application Dependent*	Application Dependent*
Technology	UHF RFID	UHF RFID	UHF RFID	UHF RFID
Operating Frequency	902…928 MHz	902…928 MHz	902…928 MHz	902…928 MHz
Region	USA, Canada, Mexico	USA, Canada, Mexico	USA, Canada, Mexico	USA, Canada, Mexico
Dimensions	300 x 180 x 61.7 mm	300 x 180 x 61.7 mm	300 x 180 x 61.7 mm	300 x 300 x 61.7 mm
Protection Class	IP67	IP67	IP67	IP67
Communication Protocol	Multiprotocol Ethernet	Multiprotocol Ethernet	OPC-UA	Multiprotocol Ethernet
Internal Antenna Polarization	N/A	N/A	N/A	RHCP/LHCP/Vertical/ Horizontal, Adjustable
Number of External Antenna Connections	4, At Least One Required	4, At Least One Required	4, At Least One Required	4, All Optional
Supported Platform	CODESYS V3, PLC Runtime	Linux	N/A	CODESYS V3, PLC Runtime
Processor	ARM Cortex A8, 32 bit, 800 MHz	ARM Cortex A8, 32 bit, 800 MHz	ARM Cortex A8, 32 bit, 800 MHz	ARM Cortex A8, 32 bit, 800 MHz
Memory	256 MB Flash	512 MB Flash	256 MB Flash	256 MB Flash
RAM Memory	512 MB DDR3	512 MB DDR3	512 MB DDR3	512 MB DDR3
Additional I/O	4 Configurable Digital Channels	4 Configurable Digital Channels	4 Configurable Digital Channels	4 Configurable Digital Channels

*read/write range varies depending on the environment, application, number of antennas and configuration, antenna power, etc.

All-In-One Transceivers (continued)

UHF

			
Part Number	**TN-UHF-Q300-NA-LNX**	**TN-UHF-Q150-NA-EN**	**TN-UHF-Q150-NA-EC**
ID Number	100000902	100018055	100018056
Range	Application Dependent*	Application Dependent*	Application Dependent*
Technology	UHF RFID	UHF RFID	UHF RFID
Operating Frequency	902…928 MHz	902…928 MHz	902…928 MHz
Region	USA, Canada, Mexico	USA, Canada, Mexico	USA, Canada, Mexico
Dimensions	300 x 300 x 61.7 mm	150 x 150 x 61.7 mm	150 x 150 x 61.7 mm
Protection Class	IP67	IP67	IP67
Communication Protocol	Multiprotocol Ethernet	Multiprotocol Ethernet	EtherCAT
Internal Antenna Polarization	RHCP/LHCP/Vertical/ Horizontal, Adjustable	RHCP/LHCP, Adjustable	RHCP/LHCP, Adjustable
Number of External Antenna Connections	4, All Optional	1, Optional	1, Optional
Supported Platform	Linux	N/A	N/A
Processor	ARM Cortex A8, 32 bit, 800 MHz	N/A	N/A
Memory	512 MB Flash	N/A	N/A
RAM Memory	512 MB DDR3	N/A	N/A
Additional I/O	4 Configurable Digital Channels	None	None

*read/write range varies depending on the environment, application, number of antennas and configuration, antenna power, etc.

All-In-One Transceivers (continued)

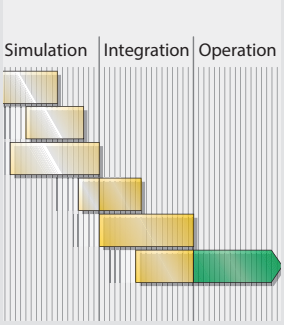
HF

Part Number	**TNSLR-Q130-EN**
ID Number	100004502
Range	Turck Super Long Range Series
Technology	HF RFID
Operating Frequency	13.56 MHz
Region	N/A
Dimensions	130 x 69 x 40 mm
Protection Class	IP69K Front, IP67 Rear
Communication Protocol	Multiprotocol Ethernet
Features	Integrated Ethernet Switch 2 x M12, 4-pin, D-coded
Additional I/O	None

All-In-One Transceivers (continued)

Antennas

				
Part Number	**TN-UHF-ANT-NF-Q150-ETSI-FCC**	**TN-UHF-ANT-Q150-FCC**	**TN-UHF-ANT-Q250-FCC**	**TN-UHF-ANT-Q280-FCC**
ID Number	100028594	100028596	100028600	100028602
Antenna Polarization	N/A	RHCP	RHCP	RHCP
Antenna Gain FCC	-28.5 dBic	5.5 dBic	8.5 dBic	6.5 dBic
Antenna HPBW	N/A	115 Degrees	68 Degrees	60 Degrees
Dimensions	150 x 150 x 14.5 mm	150 x 150 x 15 mm	250 x 250 x 30 mm	280 x 280 x 12.2 mm
Region	Global	USA, Canada, Mexico	USA, Canada, Mexico	USA, Canada, Mexico
Frequency	860…960 MHz	902…928 MHz	902…928 MHz	902…928 MHz
Protection Class	IP67	IP67	IP67	IP67
Accessories	TN-UHF-ACCSY-Q150-PROTECT TN-UHF-ACCSY-VESA100-MOUNT TN-UHF-ACCSY-Q150-MOUNT	TN-UHF-ACCSY-Q150-PROTECT TN-UHF-ACCSY-VESA100-MOUNT TN-UHF-ACCSY-Q150-MOUNT	TN-UHF-ACCSY-Q250-PROTECT TN-UHF-ACCSY-VESA100-MOUNT N/A	N/A TN-UHF-ACCSY-VESA100-MOUNT TN-UHF-ACCSY-Q280-VESA100



RFID Testing Tools

The Turck Automation Suite (TAS) allows users to identify optimal settings for their RFID equipment. With TAS, conduct power sweeps and tag population captures to fine-tune settings, parameterize and update equipment, and read and write to tags all on the same platform.

Optimized components

Application-optimized solutions include high temperature tags up to 240 °C, transceivers for high-speed roller conveyors, as well as components for the food and beverage industry or Ex areas.

HF Transceivers

BL ident®

Turck's proprietary RFID communication protocol, BL ident, offers fast and robust data transfer between the transceiver and interface module with high information fidelity. The Turck BL ident solution allows for easy integration into existing control systems and supports all of the major networking protocols providing a comprehensive industrial RFID solution for whatever your application demands.

- Customizable and comprehensive RFID system for HF/UHF operation
- Connects to OPC UA, PROFINET, EtherNet/IP, Modbus TCP, TCP/IP, PROFIBUS-DP, DeviceNet, CANopen and EtherCAT networks
- Rated up to IP69K for use in harsh environments
- A variety of read/write ranges and form factors to suit any industrial application

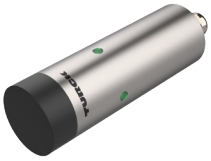
Turck Standard Range Series

			
Part Number	**TB-Q08-0.15-RS4.47T**	**TB-M12-H1147, TN-M12-H1147**	**TB-EM18WD-H1147-EX, TN-EM18WD-H1147-EX**
ID Number	7030553	100003024, 100003026	7030381, 7030382
Form Factor	Rectangular	Barrel	Barrel
Dimensions	32 x 20 x 8 mm	Ø 12 mm	Ø 18 mm
Hazardous Approvals	No	No	ATEX
Protection Class	IP67	IP67	IP69K
Features	Compact Design	TB Embeddable TN Non-embeddable	Stainless Steel Housing/ Washdown TB Embeddable TN Non-embeddable
Bus Mode Variant	TB-Q08-0.15-RS4.47T/C53	TB-M12-H1147/C53 TN-M12-H1147/C53	TB-EM18WD-H1147-EX/C53 TN-EM18WD-H1147-EX/C53

HF Transceivers (continued)

Turck Standard Range Series

				
Part Number	**TB-M18-H1147, TN-M18-H1147**	**TN-Q14-0.15-RS4.47T**	**TB-EM30WD-H1147-EX, TN-EM30WD-H1147-EX**	**TB-M30-H1147, TN-M30-H1147**
ID Number	7030001, 7030002	7030235	7030385, 7030386	7030003, 7030004
Form Factor	Barrel	Rectangular	Barrel	Barrel
Dimensions	Ø 18 mm	52 x 30 x 14 mm	Ø 30 mm	Ø 30 mm
Hazardous Approvals	No	No	ATEX	No
Protection Class	IP67	IP67	IP69K	IP67
Features	TB Embeddable TN Non-embeddable	N/A	Stainless Steel Housing/ Washdown TB Embeddable TN Non-embeddable	TB Embeddable TN Non-embeddable
Bus Mode Variant	TB-M18-H1147/C53 TN-M18-H1147/C53	TN-Q14-0.15-RS4.47T/C53	TB-EM30WD-H1147-EX/C53 TN-EM30WD-H1147-EX/C53	TB-M30-H1147/C53 TN-M30-H1147/C53

				
Part Number	**TN-CK40-H1147**	**TN-R42TC-EX**	**TN-Q80-H1147**	**TN-Q80-H1147-EX**
ID Number	7030006	100020166	7030007	7030302
Form Factor	Rectangular	Barrel	Rectangular	Rectangular
Dimensions	40 x 40 x 46 mm	Ø 42 mm	80 x 80 x 40 mm	80 x 80 x 40 mm
Hazardous Approvals	No	ATEX	No	ATEX
Protection Class	IP67	IP67	IP67	IP67
Features	N/A	N/A	N/A	N/A
Bus Mode Variant	TN-CK40-H1147/C53	TN-R42TC-EX/C53, TN-R42TC-EX/C65*	N/A	N/A

*/C65 read/write heads must be used at the end of a bus line topography

HF Transceivers (continued)

Turck Long Range Series

			
Part Number	**TNLR-Q80-H1147**	**TNLR-Q80-H1147-EX**	**TNLR-Q80L400-H1147**
ID Number	7030230	7030303	7030204
Form Factor	Rectangular	Rectangular	Rectangular
Dimensions	80 x 80 x 40 mm	80 x 80 x 40 mm	80 x 400 x 25 mm
Hazardous Approvals	No	ATEX	No
Protection Class	IP67	IP67	IP67
Features	N/A	N/A	For Roller Conveyors
Bus Mode Variant	TNLR-Q80-H1147/C53	N/A	N/A

Turck Super Long Range Series

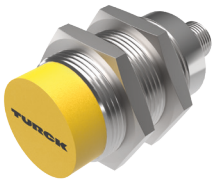
			
Part Number	**TNSLR-Q42TWD-H1147**	**TNSLR-Q80WD-H1147**	**TNSLR-Q350-H1147**
ID Number	7030424	7030418	7030454
Form Factor	Rectangular	Rectangular	Rectangular
Dimensions	42.5 x 67.7 x 42.5 mm	83 x 102 x 40 mm	350 x 370 x 20 mm
Hazardous Approvals	No	No	No
Protection Class	IP69K	IP69K	IP67
Features	Washdown	Washdown	N/A
Bus Mode Variant	TNSLR-Q42TWD-H1147/C53	TNSLR-Q80WD-H1147/C53	N/A

HF Transceivers (continued)

IO-Link

Turck offers high frequency read-write heads that use IO-Link instead of BL ident communication protocol. These select read/write heads have all the benefits of IO-Link, including easy setup and diagnostic information, and can use the same data carriers as our BL ident read/write heads. They require a Class A port on an IO-Link Master and have a process data width of 32 bytes. They can be operated in IO-Link mode or in standard I/O mode (SIO). While our BL ident read/write heads can move data more quickly, these IO-Link read/write heads are an excellent addition to an existing IO-Link system or a cost-effective solution for simple identification tasks.

- Simple setup and parameterization through the IO-Link interface
- Rated IP67 for industrial use
- Provides a cost-effective solution for simple identification tasks
- Flexible read/write heads can be operated in IO-Link mode or in standard I/O mode (SIO mode)

			
Part Number	**TN-M18-IOL2-H1141**	**TN-M30-IOL2-H1141**	**TN-Q40-IOL2-H1141**
ID Number	100012160	100012162	100012163
Form Factor	Barrel	Barrel	Rectangular
Dimensions	Ø 18 mm	Ø 30 mm	66 x 40 x 40 mm
Protection Class	IP67	IP67	IP67
Process Data Width	256 Bit	256 Bit	256 Bit
Compatible Interfaces	TBEN-L4-8IOL, TBEN-L5-8IOL, BL20-E-4IOL-10 + BL20 Gateway		

UHF Transceivers

Standard Range

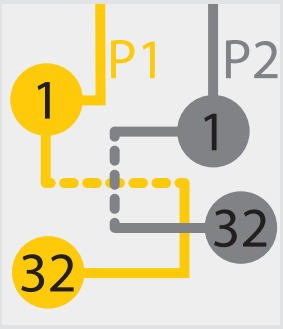
These compact UHF transceivers are used for applications requiring longer ranges and/or a multitude tags. They offer a rectangular design rated to IP67 in an aluminum housing with a plastic front. They provide read/write distances up to several meters, depending on ambient conditions, the parameter setting of the read/write head and the selected tag. The power supply and data exchange with the controller are implemented via an RFID interface. A 4-pin M12 × 1 connector is provided for connecting to the Turck BL ident RFID interface.

- Rectangular, aluminum housing with plastic front
- Writing and reading of passive UHF tags in single and multitag mode
- Rated IP67 for industrial use
- Compact design, active face in front

		
Part Number	**TN902-Q175L200-H1147**	**TN902-Q120L130-H1147**
ID Number	7030457	7030535
Antenna Polarization	RHCP	RHCP
Antenna HPBW	90 Degrees	110 Degrees
Dimensions	200 x 175 x 60 mm	130 x 120 x 60 mm
Region	USA, Canada, Mexico	USA, Canada, Mexico
Frequency	902…928 MHz	902…928 MHz
Protection Class	IP67	IP67
Mounting Bracket	RH-Q240L280/Q280L640	

Decentralized Control

Reduce the burden on higher-level systems by leveraging Turck's programmable interfaces as autonomous PLCs. Execute robust control tasks using CODESYS V3 or simplify and pre-process data using our Field Logic Controller (FLC) environment, ARGEE.



Bus Mode

Expand the number of identification points in an application by creating a line topology with Turck's bus-capable read/write heads. This unique ability allows users to have up to 32 read/write heads on a single RFID port. A continuous bus-mode command is available for higher-speed applications.

Interfaces

At-a-Glance

Use the table below to compare Turck's modular and block interfaces to chose the best one for your application.

				
	BL20	**BL67**	**TBEN**	**BL Compact**
Mounting	In Cabinet	On Machine	On Machine	On Machine
Style	Modular	Modular	Block	Block
RFID Channels (without Bus Mode)	Expandable	Expandable	2 or 4	2 or 4
Additional I/O	Expandable	Expandable	4 or 8 Digital Inputs/Outputs (PNP)	8 Digital Inputs/Outputs (PNP), 4 IO-Link, 8 Digital Outputs (NPN), or 1 RS232
Available Protocols	CANopen, EtherCAT, DeviceNet, Profibus-DP, Multiprotocol Ethernet	CANopen, DeviceNet, Profibus-DP, EtherCAT, Multiprotocol Ethernet	EtherCAT, Multiprotocol Ethernet, OPC-UA	CANopen, DeviceNet, Multiprotocol Ethernet
Protection Class	IP20	IP67	IP69K	IP69K

Interfaces (continued)

Modular Interface

Modular RFID interfaces help integrate RFID technology into industrial automation systems. They enable the connection and management of RFID read/write heads for tracking, identification and data exchange of tagged items. Turck's modular RFID interfaces offer both traditional modular and BL Compact, with up to 20 channels of RFID per gateway and standard I/O options. The read/write heads can be installed up to 50 meters from the RFID I/O card, providing flexible installation.

- Versatile and straightforward fieldbus connections, supporting various protocols such as EtherNet/IP, EtherCAT, Modbus TCP, PROFINET, CANopen, DeviceNet, and PROFIBUS-DP
- Each I/O slice supports both HF and UHF applications simultaneously

BL20

Part Number	ID Number	Protocol	Component
BL20-2RFID-S	6827306	Needs Gateway	Slice
BL20-E-4IOL-10	100001334	Needs Gateway	Slice
BL20-E-GW-EN	6827329	Multiprotocol Ethernet	Gateway
BL20-E-GW-EC-20	100037881	EtherCAT	Gateway
BL20-E-GW-RS-MB/ET	6827381	Modbus RTU	Gateway
BL20-E-GW-DN	6827301	DeviceNet	Gateway
BL20-E-GW-DP	6827250	PROFIBUS-DP	Gateway
BL20-E-GW-CO	6827252	CANopen	Gateway
BL20-S4T-SBBS	6827046	N/A	Base

BL67

Part Number	ID Number	Protocol	Component
BL67-2RFID-S	6827305	Needs Gateway	Slice
BL67-GW-EN	6827214	Multiprotocol Ethernet	Gateway
BL67-GW-EN-4F	6827392	Multiprotocol Ethernet	Gateway
BL67-GW-DN	6827183	DeviceNet	Gateway
BL67-GW-DPV1	6827232	PROFIBUS-DP	Gateway
BL67-GW-CO	6827200	CANopen	Gateway
BL67-B-2M12	6827186	N/A	Base

Interfaces (continued)

Block Interface

This family of interface solutions enables seamless data communication between RFID read/write heads and higher-level control systems. Turck's block RFID interfaces are based on its proven block I/O families. They can distribute control or pre-process data using ARGEE, Turck's propietary programming environment that serves as a field logic controller. The multiprotocol devices use data from HF or UHF read/write heads for control via EtherNet/IP, PROFINET, or Modbus TCP. They are rated up to IP69K for rugged environments. Their compact and modular design allows for easy installation and scalability, making them ideal for industries such as manufacturing, packaging and material handling/logistics.

- Designed for easy integration and scalability
- Seamless data communication to higher-level control systems
- Up to IP69K, ensuring durability in challenging conditions such as extreme temperatures, moisture, and dust
- Multiprotocol design for use with EtherNet/IP, PROFINET, and Modbus TCP platforms

TBEN

Part Number	ID Number	Protocol
TBEN-L4-4RFID-8DXP	100002462	Multiprotocol Ethernet
TBEN-L5-4RFID-8DXP	100000836	Multiprotocol Ethernet
TBEN-LL-4RFID-8DXP	100002463	Multiprotocol Ethernet
TBEN-S2-2RFID-4DXP	6814029	Multiprotocol Ethernet
TBEC-LL-4RFID-8DXP	100002925	EtherCAT
TBEC-S2-4RFID	100014935	EtherCAT

BL Compact

Part Number	ID Number	Protocol
BLCEN-2M12MT-2RFID-S	6811450	Multiprotocol Ethernet
BLCEN-3M12LT-1RS232-2RFID-S	6811463	Multiprotocol Ethernet
BLCEN-4M12LT-2RFID-S-2RFID-S	6811453	Multiprotocol Ethernet
BLCEN-6M12LT-2RFID-S-8XSG-P	6811454	Multiprotocol Ethernet
BLCEN-6M12LT-2RFID-S-8DO-0.5A-N	6811508	Multiprotocol Ethernet
BLCEN-6M12LT-4IOL-2RFID-S	6811501	Multiprotocol Ethernet
BLCEC-2M12MT-2RFID-S	6811630	EtherCAT
BLCDN-4M12L-2RFID-S-2RFID-S	6811055	DeviceNet
BLCCO-2M12S-2RFID-S	6811300	CANopen

Interfaces (continued)

Programmable

Programmable interfaces can be used as autonomous PLCs for control tasks or as network devices for fast signal preprocessing in the periphery. This can be done through CODESYS, the standard programming tool for all programmable Turck devices. It is an open-source integrated development environment for programming controller applications, and is based on programming languages such as AWL, ST, FUP and others. This ensures smooth communication with other devices and systems.

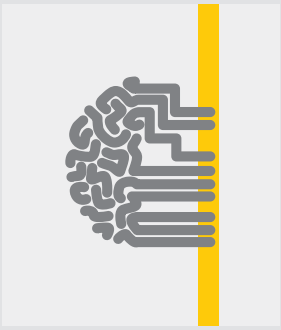
Programmable interfaces are especially valuable in RFID applications, where data speed and processing rates are critical. Programmable interfaces can take on internal system data communication tasks to relieve the higher-level controller and forward user data only. This setup means that field devices with serial interfaces can be integrated into the Ethernet automation world or RFID systems can be connected directly to PC-based automation solutions

- Depending on the device, users can program them with IEC61131-3 based software for distributed or independent control, or via Turck's built-in ARGEE software, enabling the addition of logic to compatible I/O devices without the need for a PLC

Part Number	ID Number	Protocol	Supported Platform
TBEN-L4-4RFID-8DXP-CDS	6814121	Multiprotocol Ethernet	CODESYS V3, PLC Runtime
TBEN-L5-4RFID-8DXP-CDS	6814120	Multiprotocol Ethernet	CODESYS V3, PLC Runtime
TBEN-L5-4RFID-8DXP-CDS-WV	100000960	Multiprotocol Ethernet	CODESYS Runtime, WebVisu
TBEN-L5-4RFID-8DXP-OPC-UA	6814126	OPC-UA	N/A
BL67-PG-EN-V3	6827394	Multiprotocol Ethernet	CODESYS V3, PLC Runtime
BL20-PG-EN-V3	6827393	Multiprotocol Ethernet	CODESYS V3, PLC Runtime
BL67-2RFID-A	6827225	Paired with BL67-PG-EN-V3	N/A
BL20-2RFID-A	6827233	Paired with BL20-PG-EN-V3	N/A

Future-proof investment

BL ident can be adapted flexibly to new system demands. If additional transceiver units are required, they can be added through connecting additional RFID modules to the existing interface. Changing the fieldbus can also be done easily.



Ruggedly engineered

The rugged and modular BL ident concept extends the service intervals and increases the availability of your system. If you wish to extend your system, simply add or remove the electronic modules and the transceivers in ongoing operation.

Data Carriers

HF and UHF Tags

RFID tags store and transmit data wirelessly using radio frequency signals. Each tag consists of a microchip, which holds the information, and an antenna, which transmits and receives signals from RFID readers or transceivers. Turck's tags come in many of different sizes and form factors. Turck's tags are passive and rely on the reader's signal for power, making them simple and cost effective.

- Tag sizes as small as 4 mm
- FRAM and EEPROM memory
- High temperature versions, –40 to +300 °C
- Direct mounting on metal types

UHF - Label Tags

Part Number	TW860-960-L110-25-P-B40-1.5KPCS	TW860-960-L44-18-P-B34-100PCS, TW860-960-L44-18-P-B34-5KPCS	TW860-960-L54-34-P-B36-100PCS, TW860-960-L54-34-P-B36-3KPCS	TW860-960-L90-12-P-B210-100PCS, TW860-960-L90-12-P-B210-31KPCS
ID Number	100050389	100050384, 100050383	100050386, 100050385	100050388, 100050387
Type	Label	Label	Label	Label
Frequency	860…960 MHz	860…960 MHz	860…960 MHz	860…960 MHz
Region	Global	Global	Global	Global
Dimensions	110 x 25 mm	44 x 18 mm	54 x 34 mm	90 x 12 mm
Memory Size	40 Bytes	34 Bytes	36 Bytes	210 Bytes
Mount on Metal	No	No	No	No

Part Number	TW860-960-Q25L54-M-B130-450PCS
ID Number	100050370
Type	Label
Frequency	860…960 MHz
Region	Global
Dimensions	54 x 25 x 1.8 mm
Memory Size	130 Bytes
Mount on Metal	Yes

Data Carriers (continued)

UHF - Hard Tags

Part Number	TW860-960-Q21L85-M-B128	TW860-960-Q27-M-B98	TW860-960-Q27L97-M-B36	TW860-960-Q31-M-HT-B1090
ID Number	100050407	100050405	100044979	100004394
Type	Hard Tag	Hard Tag	Hard Tag	Hard Tag
Frequency	860…960 MHz	860…960 MHz	860…960 MHz	860…960 MHz
Region	Global	Global	Global	Global
Dimensions	21 x 85 x 10 mm	27 x 27 x 5.5 mm	27 x 97 x 15 mm	31 x 31 x 7 mm
Memory Size	128 Bytes	98 Bytes	36 Bytes	1090 Bytes
Mount on Metal	Yes	Yes	Yes	Yes
Hazardous Approvals	No	No	No	No
Features	N/A	N/A	N/A	High Temperature
Protection Class	IP68	IP68	IP69K	IP68

Part Number	TW860-960-Q47L51-M-B98	TW865-868-Q14L37-M-HT-B40	TW902-928-Q14L37-M-HT-B40	EXO 750
ID Number	100050406	100045255	100045254	100018611
Type	Hard Tag	Hard Tag	Hard Tag	Hard Tag
Frequency	860…960 MHz	865…868 MHz	902…928 MHz	860…960 MHz
Region	Global	ETSI	FCC	Global
Dimensions	47 x 51 x 10 mm	14 x 37 x 7.5 mm	14 x 37 x 7.5 mm	48 x 51 x 12.6 mm
Memory Size	98 Bytes	40 Bytes	40 Bytes	112 Bytes
Mount on Metal	Yes	Yes	Yes	Yes
Hazardous Approvals	No	No	No	IECEx and ATEX
Features	N/A	High Temperature	High Temperature	N/A
Protection Class	IP68	IP68	IP68	IP68

Data Carriers (continued)

HF - Hard Tags

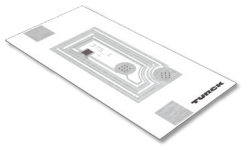
Part Number	TW-R4-22-B320	TW-R4-3-M-B320-10PCS	TW-R10-M-K2	TW-R15-B320
ID Number	100014936	100013771	100002368	100047102
Type	Hard tag	Hard tag	Hard Tag	Hard Tag
Dimension	Ø 4 x 22 mm L	Ø 4 x 3 mm L	Ø 10 x 4.5 mm L	Ø 15 x 2.6 mm L
Memory Size	320 Bytes	320 Bytes	2000 Bytes	320 Bytes
Mount on Metal	No	Yes	Yes	No
Features	Glass Tag, For Use In Autoclaves	N/A	N/A	Extended Storage Temperature Range
Protection Class	IP68	IP68	IP68	IP68

Part Number	TW-R16-K2	TW-R20-B320	TW-R30-K2	TW-R34-8-M-B320
ID Number	7030410	100005244	6900506	100005036
Type	Hard Tag	Hard Tag	Hard Tag	Hard Tag
Dimension	Ø 16 x 3 mm L	Ø 20 x 2.8 mm L	Ø 30 x 3 mm L	Ø 34 x 8 mm L
Memory Size	2000 Bytes	320 Bytes	2000 Bytes	320 Bytes
Mount on Metal	No	No	No	Yes
Features	Extended Storage Temperature Range; Laundry Applications	N/A	N/A	N/A
Protection Class	IP69K	IP69K	IP69K	IP68

Part Number	TW-R50-K2	TW-Q27-M-B320	TW-Q51WH-HT-B128
ID Number	6900507	100033127	7030661
Type	Hard Tag	Hard Tag	Hard Tag
Dimension	Ø 50 x 3.3 mm L	27 x 27 x 5.5 mm	51 x 51 x 6.5 mm
Memory Size	2000 Bytes	320 Bytes	128 Bytes
Mount on Metal	No	Yes	No
Features	N/A	N/A	High Temperature
Protection Class	IP69K	IP68	IP68

Data Carriers (continued)

HF - Label



Part Number	**TW-L36-18-F-B320-4KPCS**
ID Number	100003272
Type	Label
Dimensions	36 x 18 mm
Memory Size	320 Bytes
Mount on Metal	No
Features	4000 Pieces Per Roll, 3 Rolls in Package
Protection Class	IP40

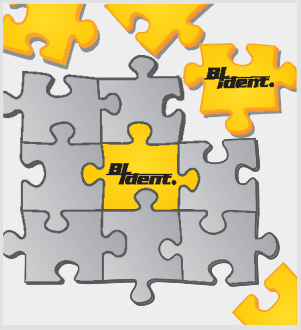
HF - Key Fob

Part Number	**TW-Q32L41-KF-B320**
ID Number	100030396
Type	Key Fob
Dimensions	32 x 41 mm
Memory Size	320 Bytes
Mount on Metal	No
Features	N/A
Protection Class	IP68

Tags

HF - Bolt Tag

Part Number	TW-BS10X1.5-19-K2	TW-BS8X1.25-19-K2
ID Number	6901380	7030638
Type	Bolt Tag	Bolt Tag
Dimensions	17.5 mm	17.5 mm
Memory Size	2000 Bytes	2000 Bytes
Mount on Metal	Yes	Yes
Features	M10 x 1.5	M8 x 1.25
Protection Class	IP69K	IP69K



Maximum flexibility

BL ident solutions offer an extensive portfolio of interchangeable components. Turck offers tags in many different designs as well as industry-standard transceivers, interfaces and fieldbus technology.

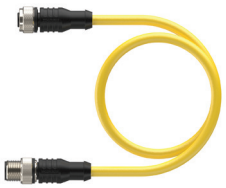
Long ranges

Turck's RFID products maximize the ratio of transceiver size to read/write range. Depending on environmental conditions, read/write distances can be up to 0.5 meters for HF and several meters for UHF. Our proprietary communication protocol reliably reads and writes tags at speeds of up to 0.5 ms/byte, ensuring accurate data transfer for high-speed applications.

Accessories

BL ident Cable

Part Number	ID Number
RK 4.5T-2/S2501	U3-01240
RK 4.5T-2-RS 4.5T/S2501	U3-01243
RK 4.5T-5-RS 4.5T/S2501	U3-01247
RK 4.5T-10-RS 4.5T/S2501	U3-01241

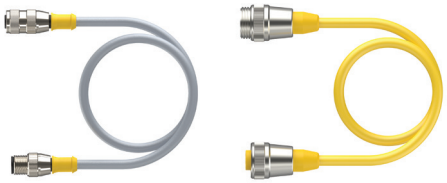


Coaxial Cable

Part Number	ID Number
TN-UHF-CBL-HF240-RPTNC-1-SMA	100028191
TN-UHF-CBL-HF240-RPTNC-2-SMA	100028192
TN-UHF-CBL-HF240-RPTNC-4-SMA	100028193
TN-UHF-CBL-HF240-RPTNC-8-SMA	100028195

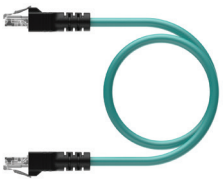
Power Cable

Part Number	ID Number
RK 4.4T-2-RS 4.4T	U2445
RSM RKM 46-2M	U2283-2
RSM RKM 50-2M	U2282-0
RKP46PL-2-RSP46PL	UX11803



Ethernet Cable

Part Number	ID Number
RSSD RSSD 441-2M	U-02482
RJ45S RJ45S 441-2M	U-06842



I/O, Tees, and Terminating Resistors

Part Number	ID Number
RK 4.4T-1-RS 4.4T	U2444-1
RK 4.4T-2-RS 4.4T	U2445
RSC 2RKC 57	E9003
VT2-FKM5-FKM5-FSM5	6930573
RSE57-TR2/RFID	6934908

Turck Automation Suite Desktop (TAS) Software

RFID Demo Tools

Turck Automation Suite is a unique IIoT platform, which enables you to batch configure, troubleshoot, conduct RFID feasibility studies, perform real-time monitoring and more from your Turck devices. This free software provides greater process security for RFID applications. TAS Desktop provides multiple UHF demo tools for RFID, including checking if all tags are detected and determining optimal start/stop times for read and write devices. For HF devices, TAS Desktop helps with system maintenance and the design of an RFID system, streamlining operations.

This software runs in your browser and does not require advance programming knowledge, making it easy for maintenance and operations staff to perform TAS functions.

- All-in-one toolkit
- Scans the network and automatically detects connected RFID devices, making it easier to identify and assign node addresses
- Easy batch configuration saves time
- Built-in functionality for many devices such as radar and RFID
- Access vital device data quickly
- Manage firmware/IP addressing
- Removes the need for commissioning via PACTware
- TAS Desktop helps with node addressing for bus mode and can be used to read/write to tags

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