TURCK

BL ident
RFID System

BL ident – Modular RFID System for HF/UHF Operation

HF (13.56 MHz, ISO15693) and long range UHF (840…960 MHz, ISO 18000-6C/EPC-global Class 1 Gen 2) in one identification solution, in BL ident® the modular RFID system from Turck.

Tags, read/write heads, connection technology and interfaces (gateway and RFID electronic modules) can be combined to a customized BL ident solution and are easily integrated in existing system configurations.

You can choose from extremely fast and almost infinitely writable FRAM tags, but also from high-temperature versions for paint-spray lines. BL ident can be integrated in existing system configurations without problems via gateways which are available for all standard fieldbus protocols. BL ident operates wear-free and contactless and is insensitive to dirt, water, oils and temperature fluctuations. BL ident is a future-proof investment and interoperable, thanks to the open and worldwide applied standards.

BL ident is an all-in-one RFID system designed for industrial applications. The RFID interfaces connect the read/write heads to the networks OPC UA, PROFINET, Ether-Net/IP, Modbus TCP, TCP/IP, PROFIBUS-DP, DeviceNet, CANopen and EtherCAT. The fully potted multiprotocol TBEN modules with RFID and I/Os are ideally suited for direct use in harsh environments with IP67/IP69K - as is the modular BL67 system with

IP67. This saves users having to set up protective boxes in the field. Customers use Turck's BL20 modular system for mounting on the DIN rail in the control cabinet. The programmable variants of the RFID interfaces carry out preprocessing and control actions directly on the module.
Whether deployed in production control, logistics or automation processes: Both technologies, interference immune

Optimized components
BL ident offers many application-optimized components, such as the high-temperature HF or UHF tags for +240 °C, read/write heads for roller conveyors or high-speed applications, as well as components for food & beverage or the Ex-area.

Long ranges
BL ident achieves read/write ranges of up to one meter in the HF range and several meters in the UHF range, depending on the environmental conditions. The tags can be read and written on the fly – the FRAM tags up to 10^{10} times. With up to 0.5 ms/byte they guarantee fast data transfer.

Each BL ident system can be customized to a tailor-made RFID solution that fits in your system. Moreover, it can always be extended if required. Under suitable conditions, for example, up to 32 HF read/write heads can be connected to one channel. Additional sensors and actuators can be connected by simply adding further I/O modules.

The product range features components for very demanding application conditions. For example, environments in which many different tags have to be installed, read/write heads that are protection rated up to IP69K and extendible IP20/IP67 interfaces

(gateways and RFID modules) that are easily connected to the control environment and to matching extension cables.

Tags

The BL ident system offers the right tag for any application – for example, the extremely small ones (Ø 7.5 mm), devices with FRAM memory with up to 8 kByte for high speed reading and many writing cycles, high-temperature tags for temperatures up to + 240 °C and tags for direct mounting on metal or Ex-area approved types.

Turck also offers customized solutions, thanks to the open and worldwide applied standards (ISO 15693 und ISO 18000-6C).
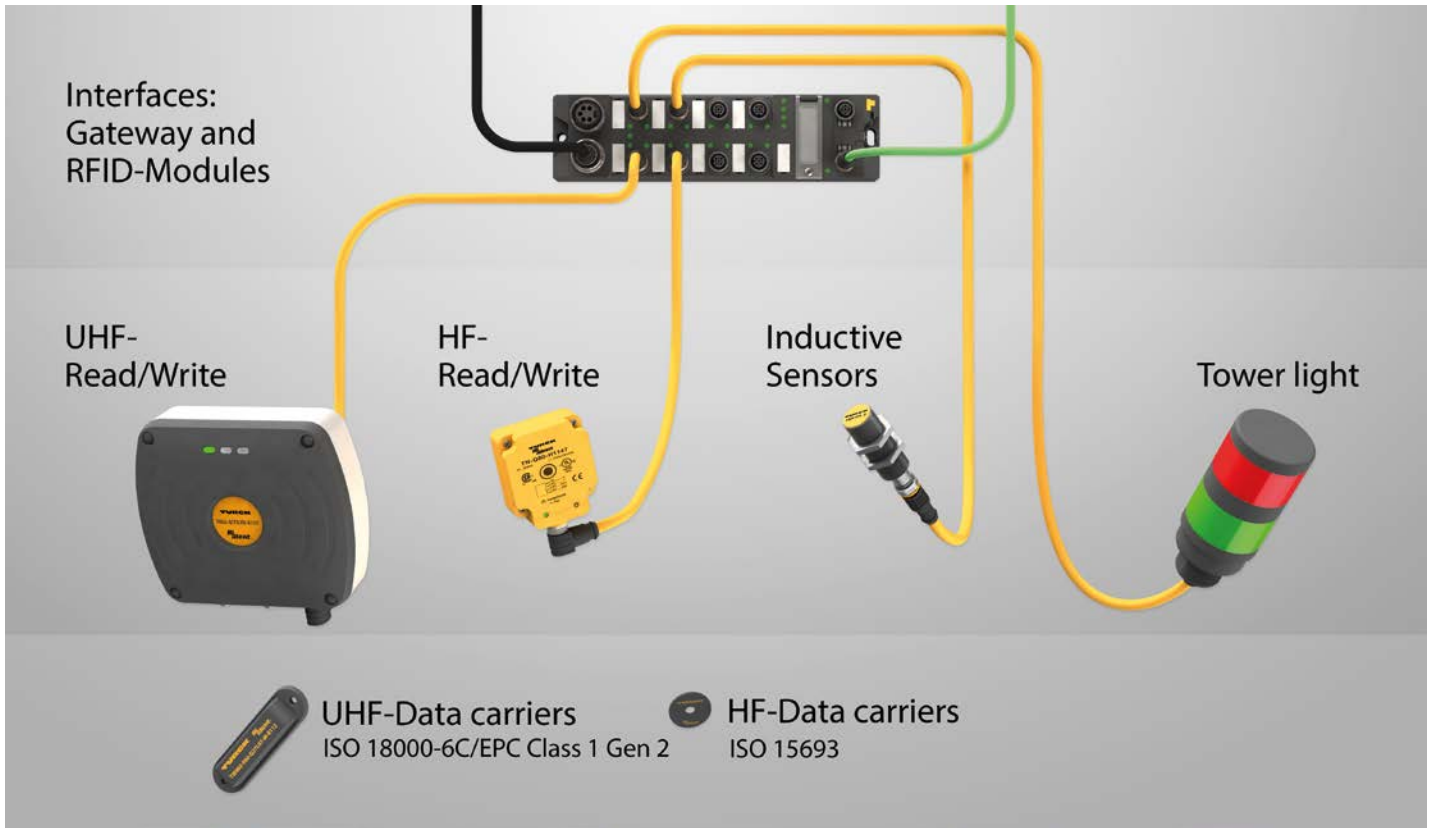
Flexibly connected to the system
BL ident can be connected to the control level via the IP20 and IP67 rated interfaces, using the approved fieldbus standards. The TBEN modules support Turck multiprotocol and can therefore be operated in any of the three Ethernet systems EtherNet/IP, Modbus TCP and PROFINET.

HF and UHF – parallel operation
Both technologies, interference immune HF (13.56 MHz, ISO15693) and long range UHF (840…960 MHz, ISO 18000-6C/EPCglobal Class 1 Gen 2) are available in one identification solution. HF and UHF read/write heads can be connected and operated at the same interface.

BL ident – System Assembly

Interfaces:
Gateway and
RFID-Modules

UHF-
Read/Write

HF-
Read/Write

Inductive
Sensors

Tower light

UHF-Data carriers
ISO 18000-6C/EPC Class 1 Gen 2

HF-Data carriers
ISO 15693

EPCglobal
CODESYS
Class 1 Gen 2
HF
UHF
ISO 18000-6C
ISO 15693
FDT/DTM
RFID

Future-proof investment
BL ident can be adapted flexibly to new system demands. Additionally required read/write units are simply added through connection of further RFID modules to the existing interface. Changing the fieldbus is no problem either.

SERVICE

High availability
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, you can plug or remove the electronic modules and the read/write heads in ongoing operation.

BL ident Applications

Integrative identification of all components in car assembly processes

Owing to Turck's RFID expertise end-to-end identification in automotive production is now possible. Not only the transport systems can be equipped with RFID tags but also every car body and single component. The automotive industry thus profits from seamless identification and quality assurance. Through the entire production process, including also the paint-spray lines, in which the tags are exposed to temperatures of around +200 °C, the tag stays firm on the body. The long range BL ident UHF technology enables the transfer of product data over several meters, between tag and read/write head, fast and reliable.

Long-range UHF technology in logistics

Thanks to the long-range UHF technology, RFID systems can now be applied in many more production environments and creates additional cost saving potential. The UHF tags are not only applied in industrial core processes such as production lines, but also in upstream and downstream processes such as the in intralogistics. A well-known North European supermarket chain has equipped its logistics center entirely with the Turck UHF technology. As many as 300 RIFD read stations identify pallet types and goods. The Turck solution convinced with its high-speed reading rates, fast bulk reading of several tags as well as flexible data connectivity and programmability of the handhelds.
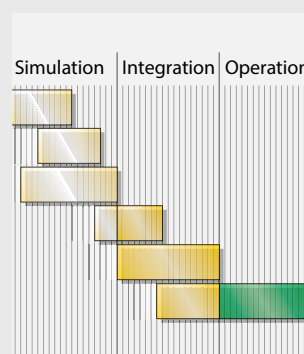
Secure identification of tumbler screens in the dust Ex-zone 22

The chemical group WACKER produces among other products dispersible polymer powders in different granulation for different designated purposes. To ensure correct sieving, the mesh width of the tumbler screens should be monitored by an RFID system. The choice felt on BL ident because it is not only approved for dust Ex-zone 22 but also the right solution for this task. As many as four tumbler screens are equipped with TNLR-Q80 read/write heads for the Ex-zones 2 and 22 an all screens with TW-R50-Ex tags. In addition, Turck has also customized the accompanying function block to the existing Siemens PLC PCS7.

Maximum flexibility
As a BL ident user you profit from an extensive portfolio of flexibly combinable components: We offer tags in many different designs as well as industry-standard read/write heads, interfaces, connection and fieldbus technology for connection to the available fieldbus.

Simulation | Integration | Operation

Fast implementation of projects
BL ident supports you in fast project implementation. You can simulate the air-interface parameters of different system constellations. This reduces the effort and expenses for planning considerably and enables you to implement your RFID project much faster.

BL ident Components

Read/write heads

- Fully encapsulated, rugged HF read/write heads, rectangular and cylindrical design (M18, M30)
- UHF read/write heads designed for industrial use
- Read/write heads for the Ex-area (ATEX) and food industry applications (Wash-Down, IP69K)
- HF (13.56 MHz) and UHF (840 to 960 MHz) devices
- Read/write ranges, one meter (HF) or several meters (UHF), environment dependent

Tags

- EEPROM tags with 128 byte memory, FRAM tags of up to 8 kByte for high speeds and nearly unlimited write cycles
- High-temperature tags -40…+240 °C, environment dependent
- Tags for autoclaves, for high-pressure steam jet cleaning at +121 °C
- Tags for direct mounting on metal
- Open standards, worldwide applicable (ISO 15693 und ISO 18000-6C)
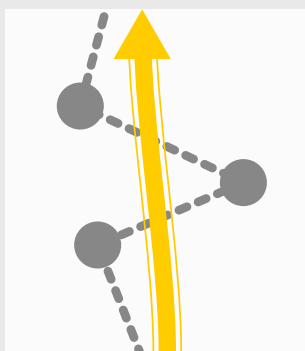- Tags for Ex-area applications

RFID interface and connectivity

- RFID interfaces connect the read/write heads to the networks OPC UA, PROFINET, EtherNet/IP, Modbus TCP, TCP/IP, PROFIB-US-DP, DeviceNet, CANopen and EtherCAT.
- Compact multiprotocol modules in TBEN-S and TBEN-L or BLcompact
- Modular system with BL20 and BL67
- Pre-assembled fieldbus, connection and supply cables
- Cable length to read/write head up to 50 m

Accessories

- Extensive range of accessories for precise and easy mounting of read/write heads and tags
- Protective caps and housings for increased protection against weld splinters
- Mobile HF and UHF handhelds for reading and writing of mobile tags Available with touch screen, Bluetooth, WLAN, barcode scanner and application software
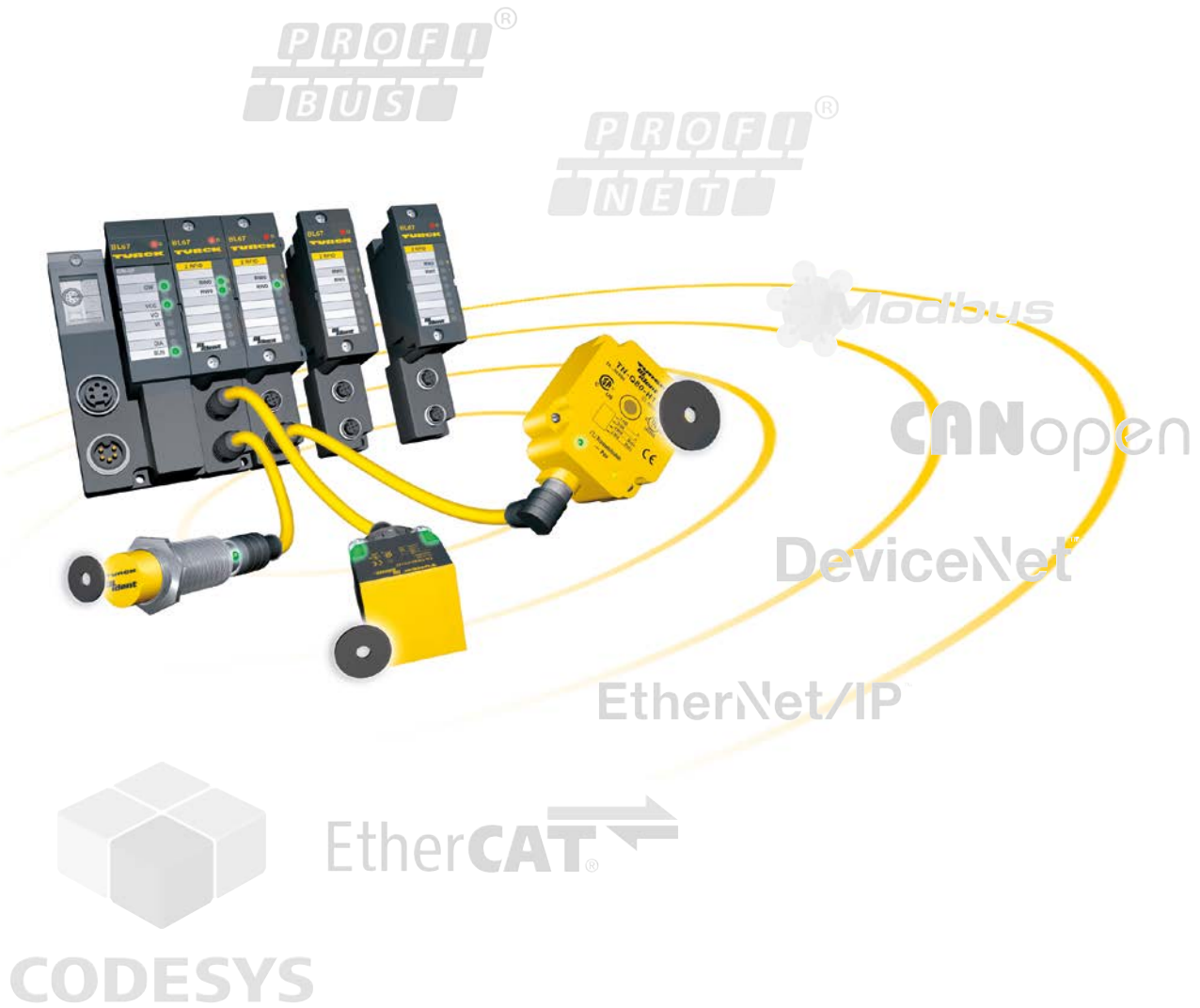
Easy integration
Integration with PLC systems can be implemented without special function block. Process data transmission is cyclical. Various HF and UHF interfaces in the data interface can be selected depending on the application and provide the necessary RFID functionality.
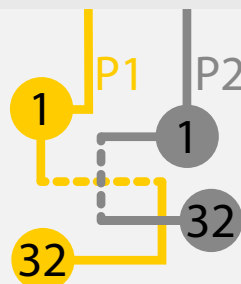
Efficient parameterization
The BL ident system can be parameterized using FDT/DTM technology via PACTware. Write and read commands as well as diagnostic functions can also be executed without control. With the TBEN modules, commands and parameters can be set via the web server.

Easy System Integration

PROFI BUS®

PROFI NET®

Modbus

CANopen

DeviceNet

EtherNet/IP

EtherCAT®

CODESYS

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.

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

Maximum Transparency for the Processes

Whether used in industrial production, logistics or QA processes, with the BL ident system from Turck you cover the entire production process from start to end. You have the entire manufacturing process and all information available on the respective object - no matter how rough the application environment is.

The tags are mounted on all products or containers and identify intermediate and end production stages during the entire production process.

The read/write heads can be mounted in many ways. They read data before or after relevant production processes or at the end of the production chain. This provides more transparency and gives you the possibility to operate your plant highly efficient and to use the gathered data in many ways. The end product is delivered together with a detailed QM protocol.

Over 30 subsidiaries and
60 representatives worldwide!