



TURCK TNSLR-Q130-EN HHF Read or Write Head User Guide

[Home](#) » [TURCK](#) » TURCK TNSLR-Q130-EN HHF Read or Write Head User Guide 

Contents

- [1 TURCK TNSLR-Q130-EN HHF Read or Write Head](#)
- [2 Other documents](#)
- [3 Product Description](#)
- [4 Installing](#)
- [5 Connection](#)
- [6 FCC](#)
- [7 Operation](#)
- [8 Technical data](#)
- [9 Documents / Resources](#)
 - [9.1 References](#)
- [10 Related Posts](#)

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TURCK TNSLR-Q130-EN HHF Read or Write Head



Other documents

Besides this document the following material can be found on the Internet at www.turck.com

- Data sheet
- Instructions for use
- RFID engineering manual
- Commissioning manuals
- Approvals



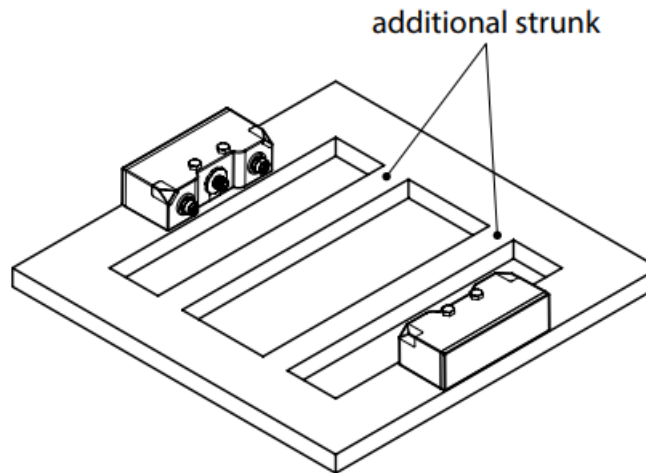
Intended use

The HF read/write head with an integrated RFID interface is used as a means of contactless data exchange with the HF tags in the Turck RFID system. The operating frequency of the device is 13.56 MHz. The read/write head uses the integrated RFID interface to communicate directly with the control unit or other higher-level systems. The device can be connected to the Ethernet fieldbus systems PROFINET, Modbus TCP and EtherNet/IP. The device must only be used as described in these instructions. Any other use is not in accordance with the intended use. Turck accepts no liability for any resulting damage

General safety instructions

- The device must only be mounted, installed, operated and maintained by trained and qualified personnel.
- The device meets the EMC requirements for industrial areas. When used in residential areas, take measures to prevent spark faults.
- Any extended stay within the area of radiation of the HF read/write head may be harmful to health. Maintain a minimum distance of 20 cm from the actively radiating surface of the read/write head

Product Description



Device overview

Functions and operating modes

The device can be used to read and write passive HF tags in single-tag or multi-tag operation. To do this, the device forms a transmission zone. The size and expansion of this zone may vary on account of several conditions, for example the tags used and the application conditions. The possible tags and read/write distances are listed in the data sheet. The read/write head offers the “Automatic Calibration” function. After switching on, the device checks whether its resonant frequency is influenced by any metal in its surroundings. If metal is causing interference, the oscillating circuit alters its frequency in order to regain the optimal resonance frequency. Various commands can be performed via the integrated RFID interface, such as inventory (single-tag and multitag applications), read, write and password protection. Additional functions are provided to optimize the speed and for self-triggering of the system. In every write or read cycle, up to 128 bytes can be transferred on each channel. The data must be fragmented in order to transfer more than 128 bytes

Installing

You will need the following mounting accessories for mounting:

- 2 × M6 × 50 screws (DIN 931 A4)
- 2 × serrated lock washers 6.9J (DIN 6798 A4)
- 2 × M6 nuts (DIN 935 A4)

The following accessories are available as options:

- Mounting bracket MB-Q130WD (ID: A900166)

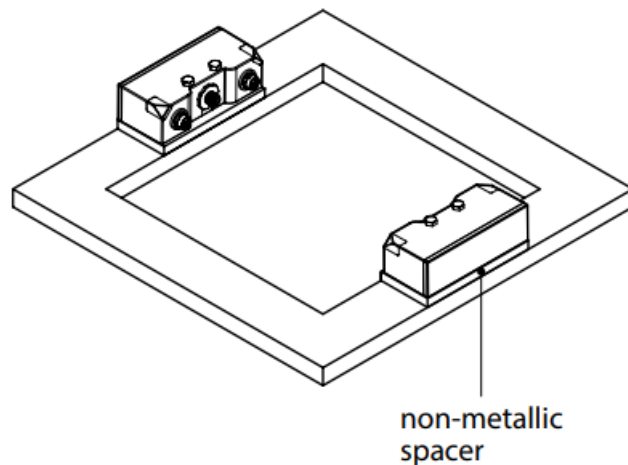
Proceed as follows:

- Mount the device using the corresponding mounting accessories.
- Maintain a minimum distance of 390 mm between two read/write heads.
- Avoid placing the read/write head in close proximity to metal. Metal objects must not interrupt the transmission zone.
- Protect the device from heat radiation, rapid temperature fluctuations, severe contamination, electrostatic charge and mechanical damage.

Installing devices on metal

When mounted on metal, the read/write heads can interfere with one another (e.g. due to coupling of the electromagnetic field to a metal support). Interference can be avoided as follows:

- Increase the distance between two read/write heads.
- Fit one or more iron struts between the read/write heads



- Place non-metallic spacers underneath the read/write heads

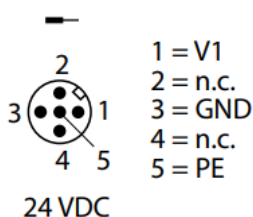
Connection

- Connect the device to the fieldbus as shown in the wiring diagrams (max. tightening torque: 0.8 Nm).
- Connect the device to the power supply as shown in the wiring diagrams (max. tightening torque: 0.8 Nm).

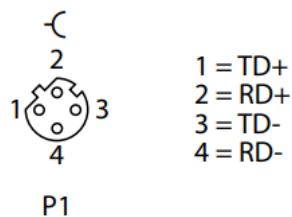
Commissioning

Information on commissioning the device is provided in the operating instructions

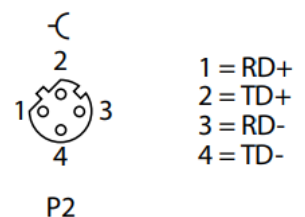
Wiring diagrams



Supply Voltage (XD1)



Ethernet



Declaration of conformity

Hereby, Hans Turck GmbH & Co. KG declares that the radio equipment type TNSLR-Q130-EN is in compliance with Directive 2014/53/EU and Radio Equipment Regulations 2017. The full text of the declaration of conformity is available at the following internet address: www.turck.com

FCC

This device complies with Industry Canada licence-exempt RSS standard(s) and part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Operation

LEDs

PWR LED	Meaning
Off	No voltage or undervoltage at V1
Green	Voltage at V1 error-free
BUS LED	Meaning
Off	No voltage present
Green	Connection to a master present
Green flashing (1 Hz)	Device is operational
Red	IP address conflict or Modbus connection timeout
Red flashing (1 Hz)	Wink command active
Red/Green flashing/ (1 Hz)	Auto-negotiation and/or DHCP/BootP search of the settings
ERR LED	Meaning
Off	No voltage present
Green	No diagnostics, device free of errors
Red	Diagnostics present
P1 and P2 LEDs	Meaning
Off	No Ethernet connection
Green	Ethernet connection established, 100 Mbit/s
Green flashing	Data transfer, 100 Mbit/s
Yellow	Ethernet connection established, 10 Mbps
Yellow flashing	Data transfer, 10 Mbit/s
HF LED	Meaning
Green	Ready for operation
Green flashing (1 Hz)	HF field (read/write head antenna) switched off
Green flashing (2 Hz)	Tag within the detection range
AT LED	Meaning
Green flashing (2 Hz)	Too much metal in the vicinity of the read/write-head, range significantly reduced
WINK LED	Meaning
White flashing	Wink command active

Setting and parameterization

The devices can be parameterized from a PC using the software tools and the controller software. Further information is provided in the operating instructions.

Repair

The device must not be repaired by the user. The device must be decommissioned if it is faulty. Observe our return acceptance conditions when returning the device to Turck.

Disposal

The devices must be disposed of correctly and must not be included in general household garbage.

Technical data

Operating voltage	18...30 VDC
Data transfer	Inductive coupling
Operating frequency	13.56 MHz
Radio communication and protocol standards	ISO 15693, NFC Type 5
Output function	4-wire, read/write
Mounting conditions	non-flush
Ambient temperature	-40...+70 °C
Storage temperature	-40...+85 °C
Housing material	Plastic, black
Active area material	Plastic, PPS-GF30, black
Housing material	Aluminium, AL, silver
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Transmission rate Ethernet	10/100 Mbps
Web server	Default: 192.168.1.254

Modbus TCP

Addressing	Static IP, BOOTP, DHCP
Supported function codes	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Number of TCP connections	8

Ethernet/IP

Addressing	Acc. to EtherNet/IP specification
Device Level Ring (DLR)	Supported
Input Assembly Instance	103
Input data size	248
Output Assembly Instance	104
Output Data Size	248
Class 1 connections (CIP)	10
Class 3 connections (TCP)	3
Configuration Assembly Instance	106

PROFINET

Addressing	DCP
MinCycle time	4 ms
Diagnostics	Acc. to PROFINET alarm handling
Automatic addressing	Supported
Media Redundancy Protocol (MRP)	Supported
Input data size	max. 512
Output data size	max. 512



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TNSLRQ130, YQ7-TNSLRQ130, YQ7TNSLRQ130, TNSLR-Q130-EN, HHF Read or Write Head, TNSLR-Q130-EN HHF Read or Write Head

References

-  [Turck.com](#)
-  [Turck.com](#)

Manuals+