TURCK TN-R42TC-EX HF Read and Write Device User Guide

TN-R42TC-EX HF Read and Write Device
User Guide

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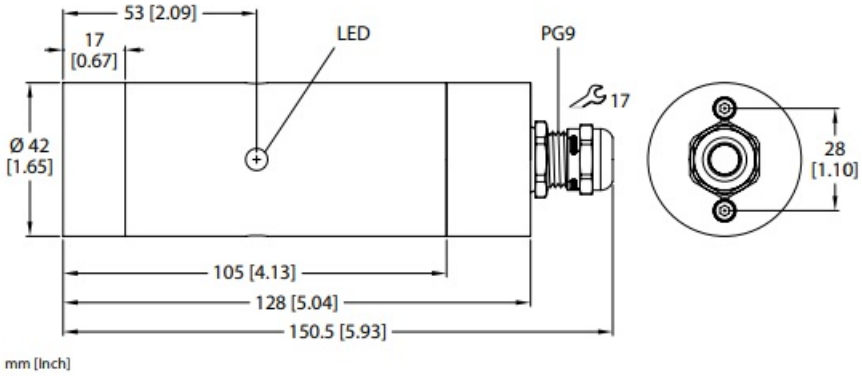


Contents

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
- Startup manuals
- Approvals
- EU Declaration of Conformity (current version)

For your safety

Intended use,
These devices are designed only for use in industrial areas.
The BL ident read/write heads operate at a frequency of 13.56 MHz and are used for contactless data exchange with the BL ident tags in the BL ident HF RFID system. They can only be connected and operated with BL ident interfaces.
The devices are also suitable for operation in Zone 1. The …/C53 read/write heads can be used with the TBEN-… RFID interfaces to form a line topology.
The devices 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 fitted, installed, operated, and maintained by trained and qualified personnel.
- The devices only meet the EMC requirements for industrial areas and are not suitable for use in residential areas.

Notes on Ex protection

- Do not connect or disconnect the device in the Ex area under live conditions.
- The device must only be mounted, installed, operated, parameterized, and maintained by trained and qualified personnel. When using the device in Ex circuits, the user must also have additional knowledge of explosion protection (EN 60079-14, etc.).

- Observe national and international regulations for explosion protection.
- Only use the device within the permissible operating and ambient conditions (see technical data and Ex approval specifications).
- Observe any “special conditions” stated (type examination certificate and/or IECEx CoC).

ATEX approval requirements for use in the Ex area

- The cable glands are only suitable for permanently laid cables and lines. Provide the necessary strain relief on installation. Equivalent cable glands with strain relief can be used as an alternative.
- The cable glands have been tested for a low degree of mechanical damage (drop height of 0.4 m with a mass of 1 kg) and must be protected from greater impact energy.
- Do not connect the shield incorporated in the …/S2500 cable at the end for the read/write heads but at the end for the RFID interface.
- Connect the read/write head to the potential ground via the installation material. The connected potential ground of the read/write head must be identical to the potential ground of the plant sections.

Product Description

Device overview
See fig. 1 (device view) and fig. 2 (dimensions)
Functions and operating modes
The devices enable passive HF tags to be read or written in single and multi-tag operations. For this the devices form a transmission zone that varies in size and range according to the tags used and the operating conditions of the application. Refer to the datasheets for the applicable maximum read/write distances.
Installing

 **DANGER**
Potentially explosive atmosphere
Risk of explosion due to spark ignition!
When used in the Ex area:
➤ Mounting and connection are only permissible if there is no potentially explosive atmosphere present.
➤ Mount the device with the appropriate fixing accessories.
➤ Observe the minimum distance of 90 mm between reading/write heads.
➤ Avoid metal in the proximity of the read/write head. Metal rails or similar objects must not intersect the transmission zone.
➤ Protect the device from heat radiation, rapid temperature fluctuations, severe contamination, electrostatic charge, and mechanical damage.

Connection

The devices must be connected with a …/S2500 connection cable.
➤ Fully remove the housing cover screws. Ensure that the rubber seals are not destroyed or lost (fig. 3).
➤ Lift off the housing cover from the lower section of the read/write head.
➤ Unscrew the upper cap of the cable gland.
➤ Feed the connection cable through the cap of the cable gland and the housing cover (fig. 4).
➤ Feed the stripped section of the connection cable into the cable gland.
➤ Connect the wires to the spring-loaded terminals as per the wiring diagram.
➤ Press the housing cover firmly onto the lower section of the read/write head.
➤ NOTICE! Risk of device damage by undoing the lock nuts in the housing. Only tighten the housing cover screws when it is securely fitted to the housing.
➤ Seal the cable gland.
➤ Ensure the permanent installation of the connection cable.

Commissioning
The device is operational automatically once the cables are connected and the power supply is switched on.

Operation

LED indications

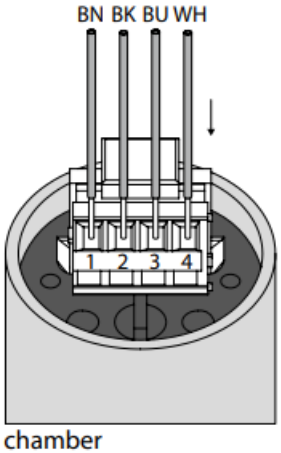
LED indication	Mear
On	The device is operational.
Flashing (1 Hz)	HF field (read/write head antenna) switched off
Flashing (2 Hz)	Tag within the detection range

Setting and parameterization
The devices can be parameterized via the RFID interface. Further information is provided in the BL ident commissioning manuals.
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.

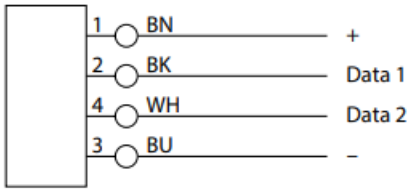
Disposal

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

Wiring diagrams



Terminal chamber



Wiring diagram

Technical Data

Electrical data

Parameters	
Operating voltage	24 VDC ± 10 %
Current max.	70 mA
Transmit frequency	13.56 MHz

Technical data

Working frequency	13.56 MHz
Active area material	Plastic
Mounting conditions	Non-flush
Housing material	Stainless steel, V2A
Dimensions	150.5 mm
Protection class	IP64

Approvals and markings

Marking parts in acc. with		
Approvals	ATEX-directive	EN IEC 60079-0:2018
		EN IEC 60079-7:2015 + A1:2018
		EN 60079-18:2015/A1:2017
		EN 60079-31:2014
ATEX **Certificate number** 20 ATEX E 035 X CE 0102	ÉII 2G ÉII 2D	Ex eb mb IIC T6 Gb
		Ex tb IIIC T80°C Db
IECEx **Certificate number:** IECEx BVS 20.0027X		Ex eb mb IIC T6 Gb Ex tb IIIC T80°C Db

EU Declaration of Conformity

EU Declaration of Conformity No.:
Wir/ We
HANS TURCK GMBH & CO KG
WITZLEBENSTR. 7, 45472 MÜLHEIM A.D. RUHR
read/write head: TN-R42TC-Ex/TN-R42TC-Ex/C53
to which this declaration relates are in conformity with the requirements of the following EU directives by compliance with the following standards:

Radio Equipment Directive (RED)
2014 / 53 / EU

1 EN 62368-1:2014
ETSI EN 300 330 V2.1.1
ETSI EN 301 489-3 V1.6.1
16.04.2014
EN 50364:2010
EN 61000-6-2:2005
Directive ATEX
2014 / 34 / EU
EN 60079-18:2015/A1:2017
26.02.2014
EN 60079-31:2014
EN IEC 60079-0:2018
EN 60079-7:2015+A1:2018
RoHS Directive
2011 / 65 / EU
08.06.2011
EN IEC 63000:2018
additional standards, remarks:
Supplementary information:
ATEX – conformity assessment procedure applied: module A/module B/module D/module E
EC-type examination certificate
examination certificate: BVS 20 ATEX E 035 X
issued by:
DEKRA EXAM GmbH,
Dinnendahlstraße 9, 44809 Bochum
Kenn-№ /number: 015**8**
certification of the QS-system in accordance with module D by :
Physikalisch Technische Bundesanstalt,
Bundesallee 100, 38116 Braunschweig
Kenn-№ /number: 0102
Ruhr, den 16.12.2020
Place and date of issue

Head of Approvals
Name, function, and signature of the authorized person
FCC/IC Digital Device Limitations
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.

TN-R42TC-EX…
HF Read/Write Head
Quick Start Guide
Doc-No. 100021280 2101

For additional information see turck.com

https://www.turck.de/en/search.php?q_simple=TN-R42TC-EX

Hans Turck GmbH & Co. KG
Witzlebenstraße 7, 45472 Mülheim an der Ruhr, Germany
Tel. +49 208 4952-0
Fax +49 208 4952-264
more@turck.com
www.turck.com

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Documents / Resources

	TURCK TN-R42TC-EX HF Read and Write Device [pdf] User Guide TNR42TCEX, YQ7-TNR42TCEX, YQ7TNR42TCEX, TN-R42TC-EX HF Read and Write Device, TN-R42TC-EX, HF Read and Write Device

References

- Turck.com
- Turck.com