



## TURCK TN-M-IOL2-H1141 HF Read-Write Head User Guide

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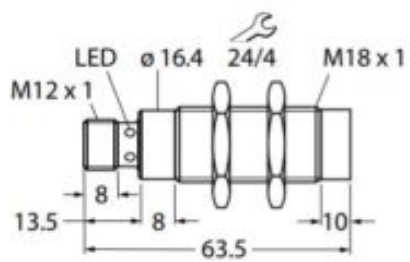


**TN-M...-IOL2-H1141**  
**HF Read/Write Head**  
 Quick Start Guide  
 Doc. no. 100023097

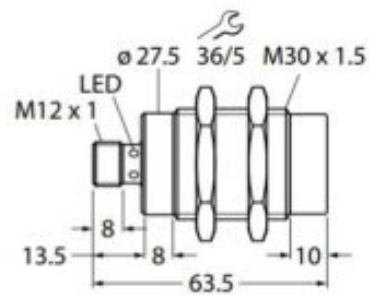
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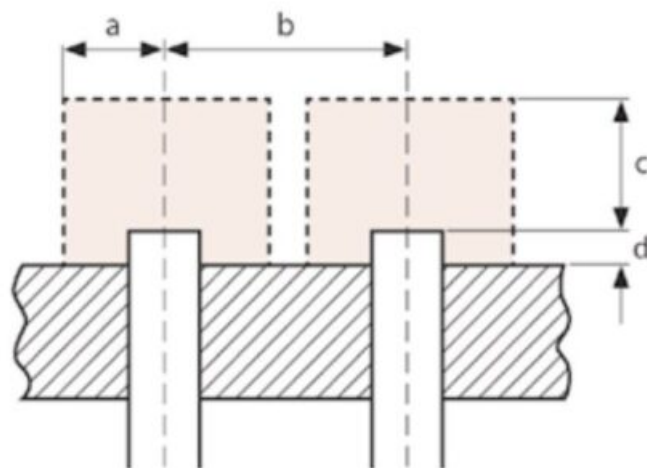
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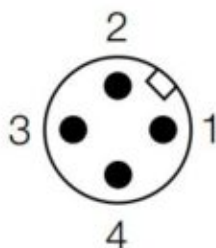


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	a	b	c	d
M18	30 mm	54 mm	60 mm	10 mm
M30	45 mm	90 mm	90 mm	10 mm

## Wiring diagram



## Other documents

Besides this document, the following material can be found on the Internet at [www.turck.com](http://www.turck.com):

- Data sheet
- RFID configuration manual
- IO-Link devices commissioning manual
- IO-Link parameters
- Approvals

## For your safety

### Intended use

Read/write heads work on a frequency of 13.56 MHz and are used as a means of contactless data exchange with

tags within the HF RFID system. It is only possible to connect to and operate the devices via IO-Link masters corresponding to specification V1.1.

The devices must only be used as described in these instructions. Any other use is not in accordance with the intended use. Turck will accept no liability for any resulting damage.

## **General safety instructions**

- The device must only be mounted, installed, operated, parameterized 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 radio interference.

## **Product description**

Device overview

See fig. 2: TN-M18..., fig. 3: TN-M30...

## **Functions and operating modes**

The devices enable passive HF tags to be read and written in single tag mode. To do this, the devices form 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 maximum distance permitted between the read/write heads is outlined in the data sheets.

The devices can be operated in IO-Link mode or in standard I/O mode (SIO mode).

The read/write heads are only suitable for static operation or for slow movements.

In IO-Link mode, bidirectional IO-Link communication takes place between an IO-Link master and the read/write heads. To make this possible, the devices are integrated via an IO-Link master at the control level. The read data or the data to be written is transferred via the IO-Link interface along with the process data. In addition to the read data, diagnostic and identification messages can also be requested via IO-Link. Various device functions can be configured via the IO-Link interface.

The presence of tags can be queried in SIO mode. The data on the tags can also be compared with a data record stored in the read/write head.

## **Installing**

The maximum tightening torque for the housing nuts is 25 Nm (M18 model) or 70 Nm (M30 model).

- Mount the device using the corresponding mounting accessories such that the front cap of the device protrudes fully from the mounting surface.
- Observe the minimum distances between the read/write heads (see fig. 4).
- Avoid placing the read/write head in close proximity to metal. Metal rails or similar objects must not interrupt the transmission zone.
- Protect the device from heat radiation, rapid temperature fluctuations, severe contamination, electrostatic charge and mechanical damage.

## Connection

- Connect the device to an IO-Link master in accordance with the “Wiring diagram.”

## Commissioning

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

## Operation

LED displays — IO-Link mode

Display	Meaning
Flashing green (1 Hz)	IO-Link mode active
Yellow	Tag within the optimal detection range
Flashes yellow (5 Hz)	Tag at the edge of the detection range

### LED displays — SIO mode

Display	Meaning
Green	SIO mode active
Flashes green (5 Hz)	Output is configured for tag detection: Tag at the edge of the detection range
Yellow	Output 1 active
Flashes yellow (5 Hz)	Output is configured for data com- parison: Tag at the edge of the detection range

## Setting and parameterization

The devices are parameterized using IO-Link. Further information can be found in the IO-Link commissioning manual and in the IO-Link parameters manual.

## Repair

The device is not intended for repair 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.

## Declaration of conformity

Hereby, Hans Turck GmbH & Co. KG declares that the radio equipment type TN-M...-IOL2-H1141 is in compliance with Directive 2014/53/EU and Radio Equipment Regulations 2017. The full text of the EU/UK declaration of conformity is available at the following internet address: [www.turck.com](http://www.turck.com)

## FCC information

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

**Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## IC information

This device complies with Industry Canada licence-exempt RSS standard(s). 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.


## Technical data

Operating voltage	11...32 VDC
DC rated operational current	≤ 50 mA
Max. output current	≤ 200 mA
Data transfer	Inductive coupling
Technology	HF
Operating frequency	13.56 MHz
Radio communication and protocol standards	ISO 15693, NFC Type 5
Read/write distance max.	TN-M18...: 26 mm TN-M30...: 58 mm
Wire breakage/ Reverse polarity protection	Yes
Output function	4-wire, read/write, IO-Link
Interface	IO-Link
Mounting conditions	Non-flush
Ambient temperature	-25...+80 °C
Storage temperature	-25...+80 °C
Housing material	Metal, CuZn, chrome-plated
Active area material	Plastic, PBT
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Electrical connection	Connector, M12 × 1
MTTF	391 years acc. to SN 29500 (Ed. 99) 20 °C

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## Documents / Resources

	<p><b><a href="#">TURCK TN-M-IOL2-H1141 HF Read-Write Head</a></b> [pdf] User Guide  TN-M-IOL2-H1141 HF Read-Write Head, TN-M-IOL2-H1141, HF Read-Write Head, Head</p>
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## References

-  [Turck.com](http://Turck.com)

-  [Turck.com](https://www.turck.com)

Manuals+.