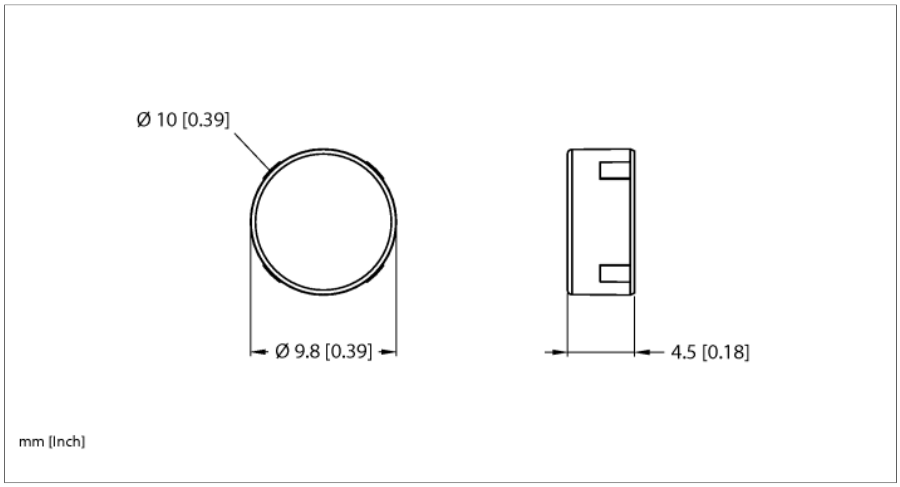
HF Tag
In Metal
TW-R10-HSK-M-B320



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Remark to product	Tag for direct mounting on/in metal. A recommendation for adhesives that meet the requirements of the FDA and the EU for incidental food contact can be requested from TURCK. This recommendations does not relieve the user of the responsbilitiy to check their suitability for the user's application. Tag according to DIN 69 873 (Data media for tools and clamping devices).

Data transfer	Inductive coupling
Technology	HF RFID
Operating frequency	13.56 MHz
Memory type	EEPROM
Chip	NXP I-Code SLIX2
Memory size	320 Byte
Memory	Read/Write
Freely usable memory	316 Byte
	Password-protected access to the data in the tag possible (requires firmware Xv98 or higher in the read/write device)
Number of read operations	unlimited
Number of write operations	10^5
Typical read time	2 ms/Byte
Typical write time	3 ms/Byte
Radio communication and protocol standards	ISO 15693 NFC Typ 5

Minimum distance to metal	0 mm
Temperature during read/write access	-40…+85 °C
Temperature outside detection range	-40…+130 °C
	130, 1000 h
	160, 1 × 35 h

- Tag for direct mounting on/in metal.
- The mounting position (Turck logo) as well as the alignment of the tag toward the read/write head must be observed under all circumstances in order to achieve a maximum read/write distance
- When the tag is undermounted (recessed in metal by 1mm), the read/write distance is reduced by 30%
- Extended storage temperature range: The tags must undergo adequate stress tests within the proposed temperature processes before deployment
- The following stress test was performed on this tag:
- EEPROM, memory 320 byte
- For direct mounting on metal

Functional principle

The HF read/write devices operating at a frequency of 13.56 MHz form a transmission zone the size of which (0…500 mm) varies, depending on the combination of read/write head and tag used.

The read/write distances mentioned here only represent standard values measured under laboratory conditions, free from any influences caused by surrounding materials.

The read/write distances of tags suitable for mounting in/on metal were determined in/on metal.

Attainable distances may vary by up to 30 % due to component tolerances, mounting conditions, ambient conditions and material qualities (especially when mounted in metal).

Testing of the application under real operating conditions is therefore essential, especially with on-the-fly reading and writing!

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Design	Hard tag, R10
Diameter	10 mm -0.04 mm / -0.07 mm
Housing height	4.5 mm 0.0 mm / -0.1 mm
Housing material	Plastic, open housing, potted, PPS
Active area material	Plastic, PPS, black
Protection class	IP68

Packaging unit	1

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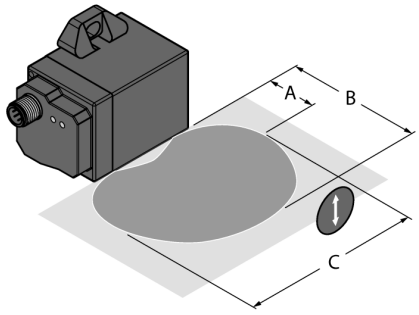
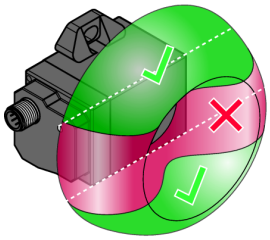
Mounting instructions





Installation information:
The left figure shows how the read/write head must be aligned toward the tag.
The read/write head TNSLR-Q42TWD-H1147 is shown here as an example (instructions valid for all suitable read/write heads).
The alignment of the tag (Turck logo) must be observed.

A: Recommended distance
B: Maximum distance
C: Length of the transmission zone at recommended distance

To achieve the largest possible distance, the tag must be positioned off-center to the read/write head, or rather move along the housing edges during the read/write process.
The figure on the right shows the typical spread of a data transmission zone.

Glueing the tag:
Step 1: First, mill a sufficiently large b ore hole (see drawing)
Step 2: Fill the hole with sufficient adhesive or potting material
Step 3: Press the tag into the hole. Observe the orientation of the tag (see arrow). A subsequent alignment of the tag in the hole is not possible.
Step 4: In order to avoid holes and undercuts, first allow the adhesive to harden after inserting the tag. This also avoids any unintentional rotation of the tag. Then, fill any gaps with adhesive and scrape off any excess so that the adhesive is flush with the surface.

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