Installation Instructions
RF-identification system
Read/write head

DTM428

UK

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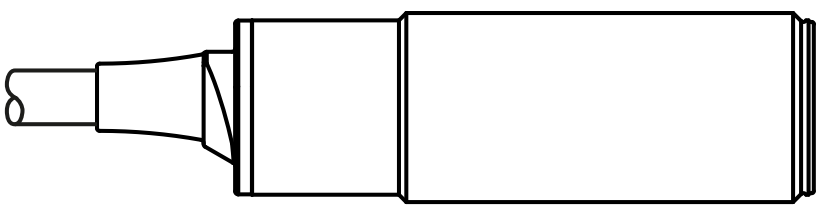


Content

1 Preliminary note

This document is part of the device and contains information about the correct handling of the product.

This document is intended for specialists. These specialists are people who are qualified by their training and their experience to see risks and to avoid possible hazards that may be caused during operation or maintenance of the device.

Read this document before use to familiarise yourself with operating conditions, installation and operation. Keep this document during the entire duration of use of the device.

1.1 Symbols used

▶ Instructions

→ Cross-reference

Important note
Non-compliance may result in malfunction or interference.

Information
Supplementary note

1.2 Warnings used

ATTENTION

Warning of damage to property.

2 Safety instructions

2.1 General

Observe the operating instructions. Non-observance of the instructions, operation which is not in accordance with use as prescribed below, wrong installation or incorrect handling can affect the safety of operators and machinery.

The installation and connection must comply with the applicable national and international standards. Responsibility lies with the person installing the device.

The device must only be installed, connected and put into operation by a qualified electrician as the safe function of the device and machinery is only guaranteed when installation is correctly carried out.

Disconnect the device externally before handling it.

In case of malfunction of the device or uncertainties please contact the manufacturer. Any tampering with the device can seriously affect the safety of operators and machinery. This is not permitted and leads to an exclusion of liability and warranty.

2.2 Radio equipment

In general, radio equipment must not be used in the vicinity of petrol stations, fuel depots, chemical plants or blasting operations.

- ▶ Do not transport and store any flammable gases, liquids or explosive substances near the unit.

2.3 Interference of electronic and medical devices

Operation of the unit can affect the function of electronic devices that are not correctly shielded.

- ▶ Disconnect the device in the vicinity of medical equipment.
- ▶ Contact the manufacturer of the corresponding device in case of any interference.

3 Functions and features

The device is suited for non-contact reading and writing of system-compliant RFID tags (ID tags).

Data transmission is done via the CAN bus.

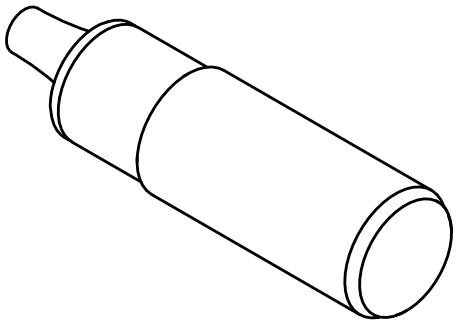
4 Function

4.1 Operating principle

The ID tags are operated passively, i.e. without battery. The energy required for operation is supplied by the read/write head.

The physical principle of the energy transfer is based on inductive coupling. The integrated antenna coil in the read/write head generates a magnetic field which partly penetrates the antenna coil of the ID tag. A voltage is generated by induction that supplies the data carrier with energy.

4.2 Overview



Art. no.:	DTM428
Function:	read/write head
Operating frequency:	13.56 Mhz
RFID standard:	ISO15693
Max. power transmission	200 mW
Type:	M18, flush mountable

5 Installation

5.1 General installation instructions

- When mounting several read/write heads adhere to the minimum distances between the systems.
- Flush mounting of a read/write head in metal reduces the read/write distance.
- The immediate vicinity of powerful HF emission sources such as welding transformers or converters can affect operation of the read/write heads.

Information on the available mounting accessories is available on our website at:
www.ifm.com

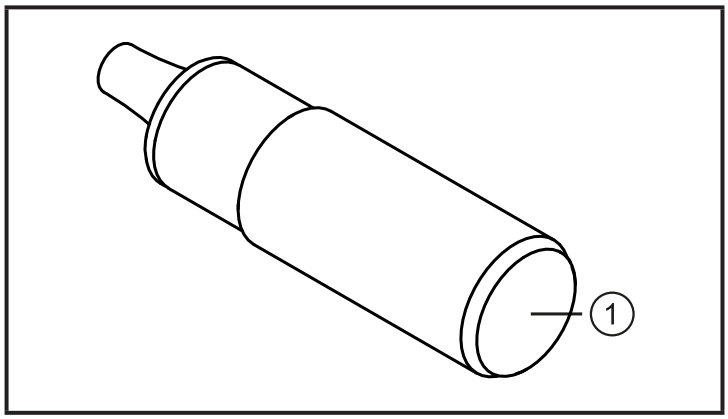
5.2 Notes on ID tag mounting

- Installation of the ID tags in or on metal reduces the read and write distances.
- The orientation of the read/write head antenna axis must correspond with the axis of the ID tag coil.

5.3 Avoiding interference

The device generates a modulated electrical field with a frequency of 13.56 MHz. To avoid interference of the data communication no other devices generating interference emission in this frequency band must be operated in its vicinity. Such devices are for example frequency converters and switched-mode power supplies.

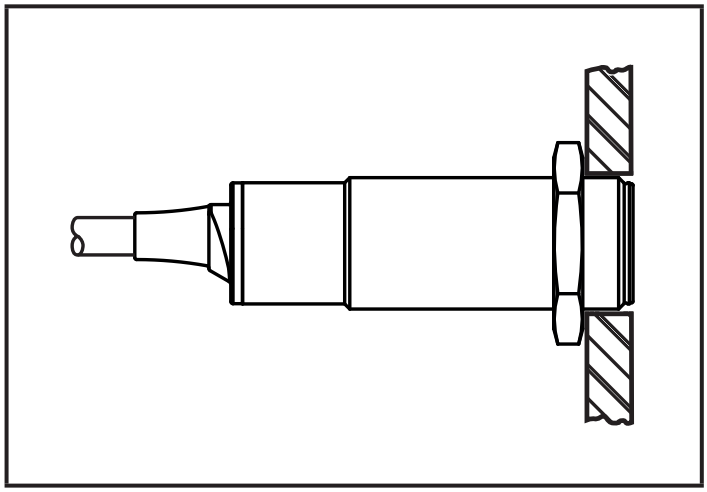
5.4 Mechanical design



1: Sensing face

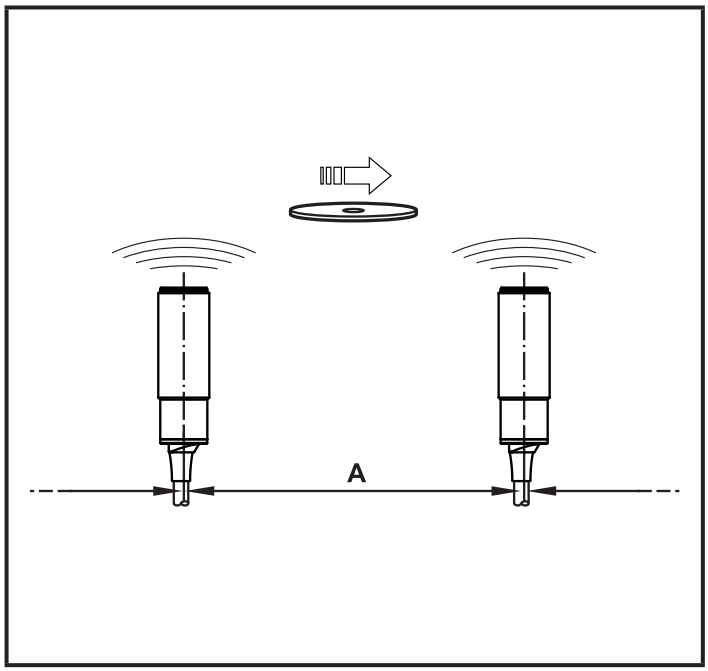
5.5 Fixing example

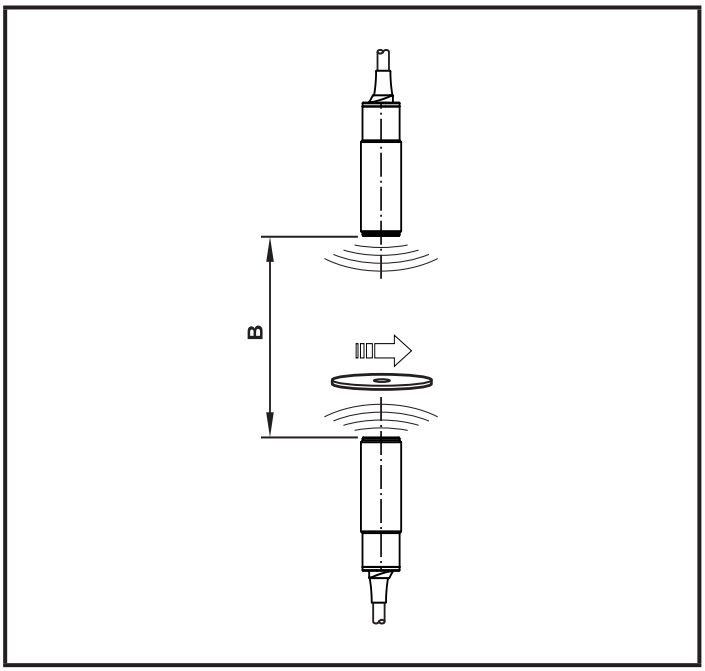
▶ Fix the device using the supplied nuts (M18).



flush

5.6 Mounting distances



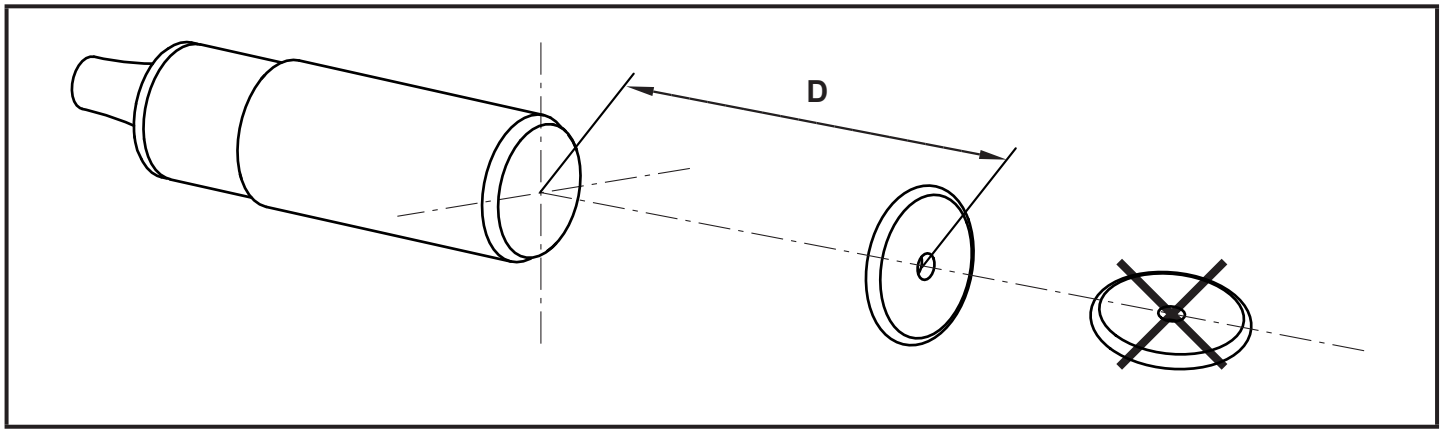


Operating mode	Distance side (A)	Distance front (B)
For reading and writing	≥ 50 mm	≥ 100 mm

5.7 Positioning of the ID tags

A selection of ID tags is available on our website at:

www.ifm.com



▶ Align the ID tag on the antenna central axis.

The ranges of the ID tags are indicated in the data sheet.

6 Electrical connection

ATTENTION

The unit must be connected by a qualified electrician.
Device of protection class III (PC III)
The electric supply must only be made via PELV/SELV circuits.
▶ Disconnect power before connecting the unit.

6.1 Wiring

The unit has a 4-pole DEUTSCH connector (DT04-4P).

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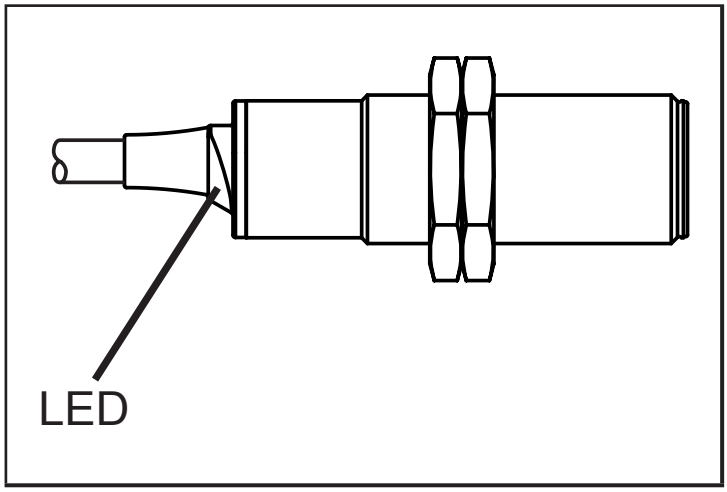
 DEUTSCH connector	1: CAN_H 2: CAN_L 3: GND 4: U+	H bus cable L bus cable GND Supply voltage

6.2 CAN bus interface

The device has a CAN interface.

Use cables that are approved for CAN bus. Terminate the cables using terminating resistors (120 Ω).

7 Indicators



Operating status	LED red	LED green	LED yellow
Preoperational	Off	Lights permanently	Off
Preoperational and tag detected	Off	Flashes alternately with yellow LED (every 1.6 s)	Flashes alternately with green LED (every 1.6 s)
Operational	Off	Flashes (every 0.4 s)	Off
Operational and tag detected	Off	Off	Lights permanently
Configuration error	Flashes (every 0.4 s)	LED reacts according to the current operating status	
Error in the CAN network	Flashes (every 1.2 s)		
CAN: bus OFF	Lights permanently	Off	Off
LSS service active	Flashing	Off	Off
Hardware error detected in the device	Off	Off	Flashing

8 Operation

The device is operated in a CANopen network.

The CAN network must be correctly configured so that the device functions reliably.

Depending on the configuration of the CAN network the settings under (→ 8.1) have to be adapted.

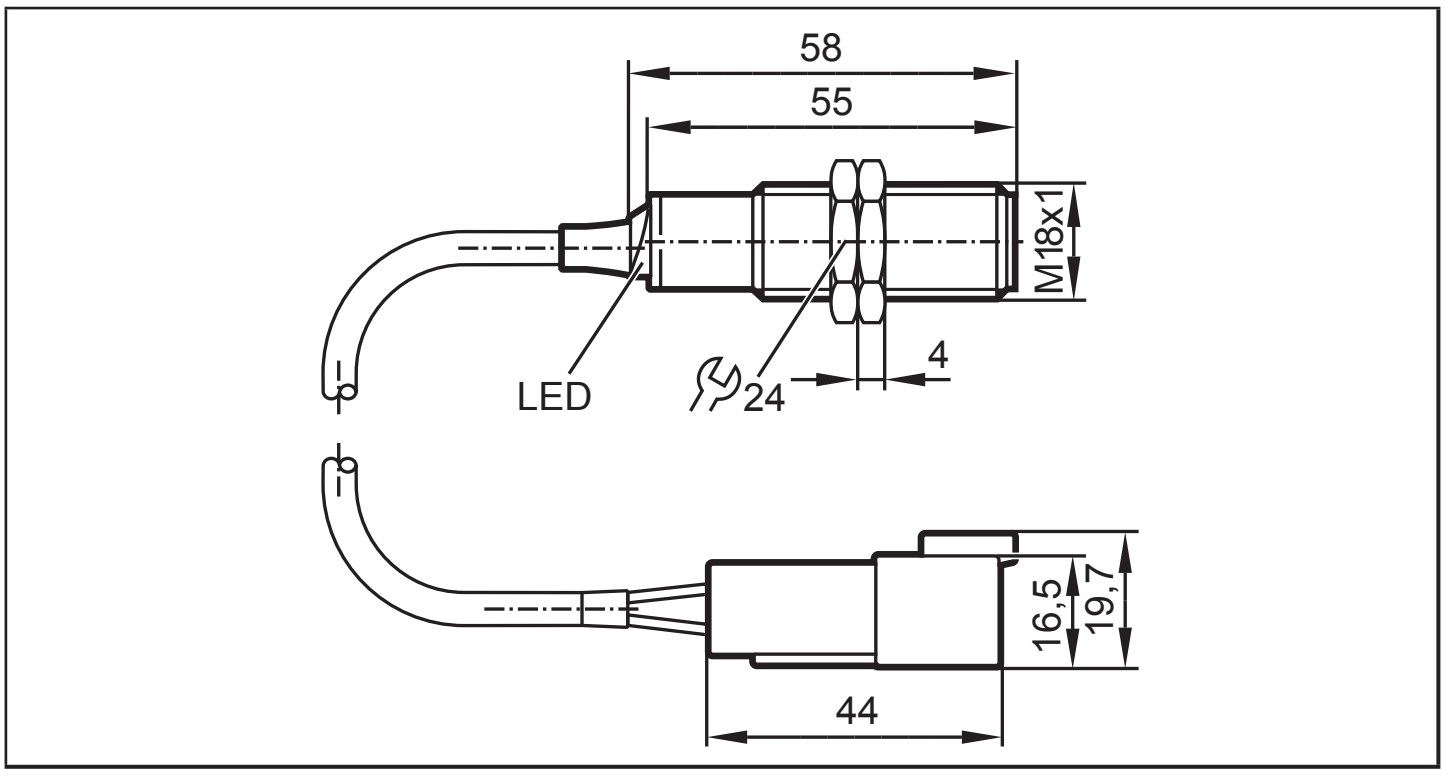
More notes on operation can be found in the operating instructions:

www.ifm.com

8.1 Delivery status

The device is delivered with the node ID 32 and a bit rate of 125 Kbits/s.

9 Dimensions



10 Technical data

The data sheets are available on our website at:

www.ifm.com

11 Maintenance, repair and disposal

- ▶ Do not open the housing as the device does not contain any components which can be maintained by the user. The device must only be repaired by the manufacturer.
- ▶ Dispose of the device in accordance with the national environmental regulations.

12 Approvals/standards

12.1 Radio approvals

12.1.1 Overview

The overview of the approval status of a unit is available on our website at:
www.ifm.com

12.1.2 Europe

Use in all EU countries

12.1.3 EC declaration of conformity

ifm electronic gmbh hereby declares that the DTM428 radio system corresponds to the directive 2014/53/EU.

You can find the EC declaration of conformity on our website at:
www.ifm.com