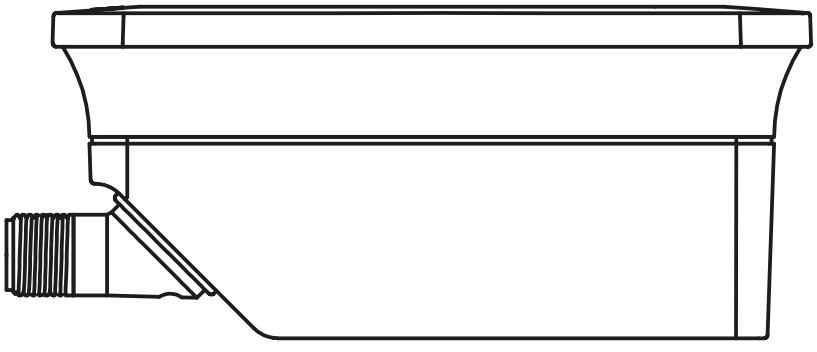
CE

Installation Instructions
RF identification system
Read/write head
ANT600

UK

80256821/00 10/2017



Content

UK

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 can result in malfunction or interference.


Information
Supplementary note

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 unit externally before handling it.

In case of malfunction of the device or uncertainties please contact the manufacturer. 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 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.

Because of the requirements for electromagnetic interference emissions, the unit is intended for use in industrial environments. The unit is not designed for use in domestic areas.

The unit may only be used under the operating conditions specified in the data sheet.

3 Functions and features

In connection with the evaluation unit DTE10x the read/write head ANT600 enables non-contact reading and/or writing of the RFID transponders (ID tags) conforming to the system.

The data is converted into digitally coded values and provided to the evaluation unit.

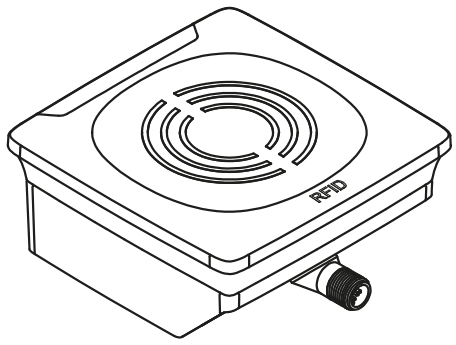
4 Functions

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.:	ANT600
Function:	Read/write head
Type designation:	DTRHF HLRWIDUS03
Operating frequency:	13,56 MHz
Type:	Rectangular
Max. transmitter power:	2 watt

5 Installation

5.1 General installation instructions

- When mounting several read/write heads adhere to the minimum distances between the systems.
- The mounting of a read/write head in and on 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

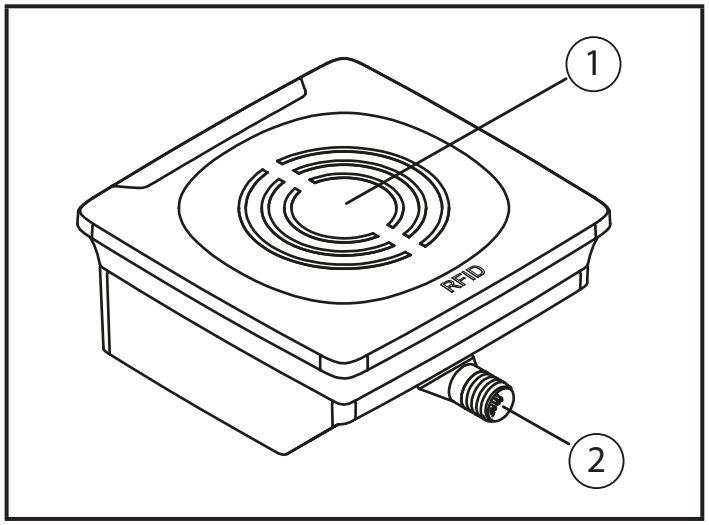
5.2 Notes on ID tag mounting

- If the ID tags are mounted in/on metal, the read/write distance is reduced.
- For positioning the ID tags the read/write heads are marked with an antenna symbol on the active face. It designates the middle of the integrated antenna coil and has to correspond with the middle of the ID tag.
- 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 the vicinity. Such devices are for example frequency converters and switched-mode power supplies.

5.4 Mechanical design



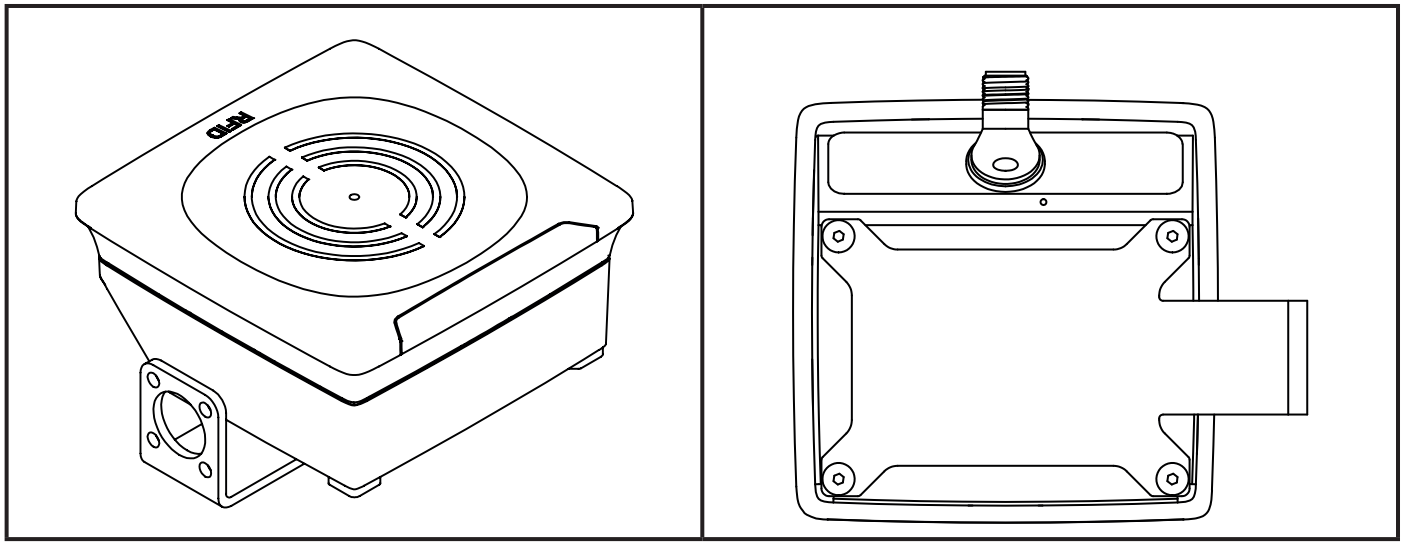
1: Sensing face
2: Connection (can be rotated by 270°)

5.5 Mounting options

For installation, the following optional accessories are available.

The unit can be mounted without the accessories. For installation, please use the threaded sleeves on the back of the unit. The necessary screws are not supplied with the unit.

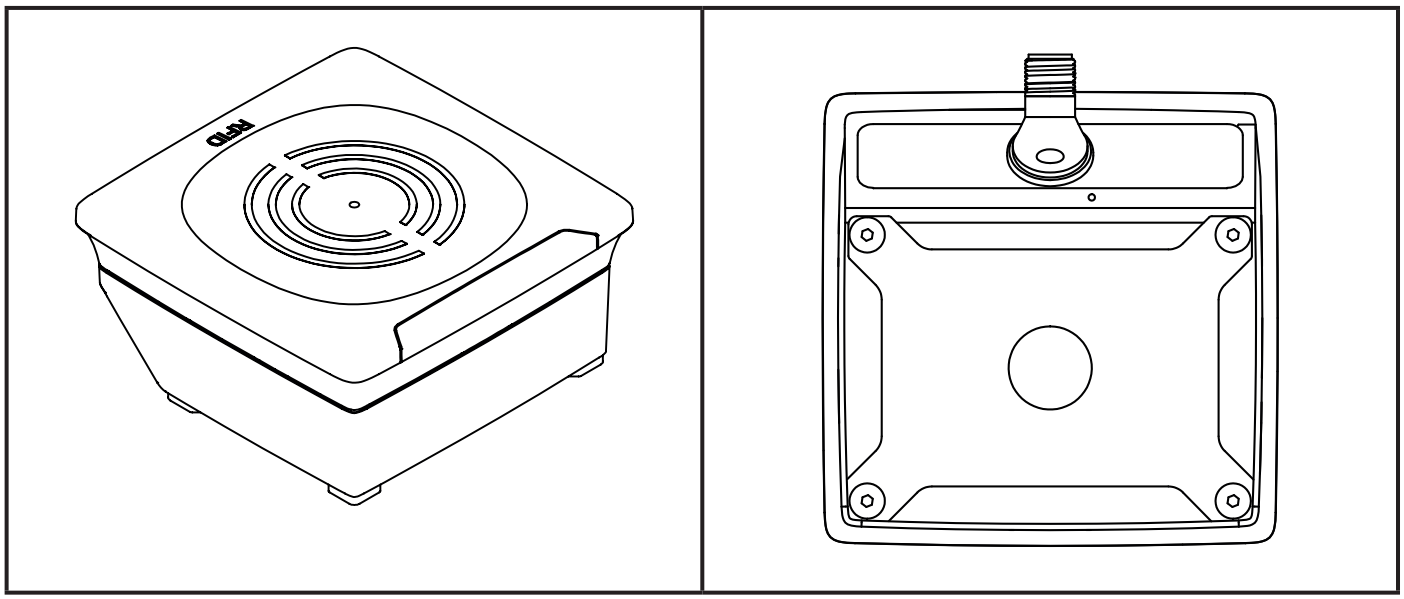
5.5.1 Installation with angle bracket E80335



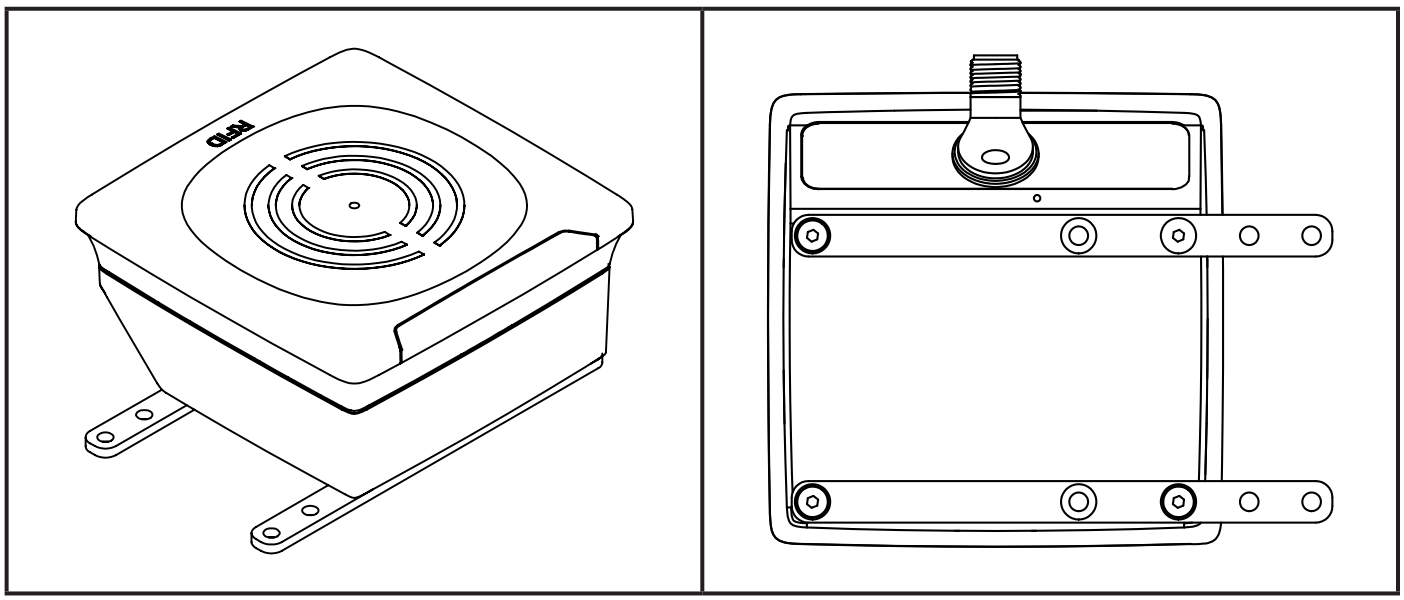
5.5.2 Installation with mounting device E80336

The mounting device is used to mount the unit to a clamp. The following clamps can be used:

- E21110 with a rod diameter of 12 mm
- E20795 with a rod diameter of 14 mm
- E21109 with a rod diameter of 14 mm

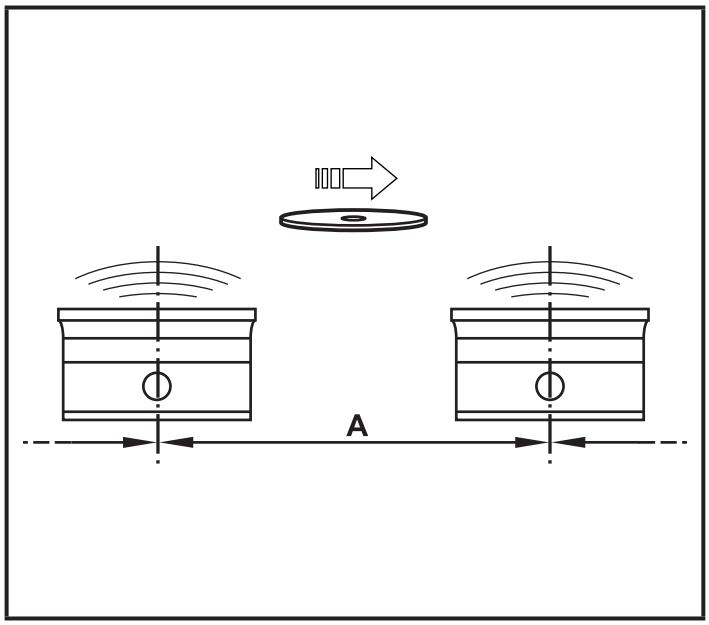


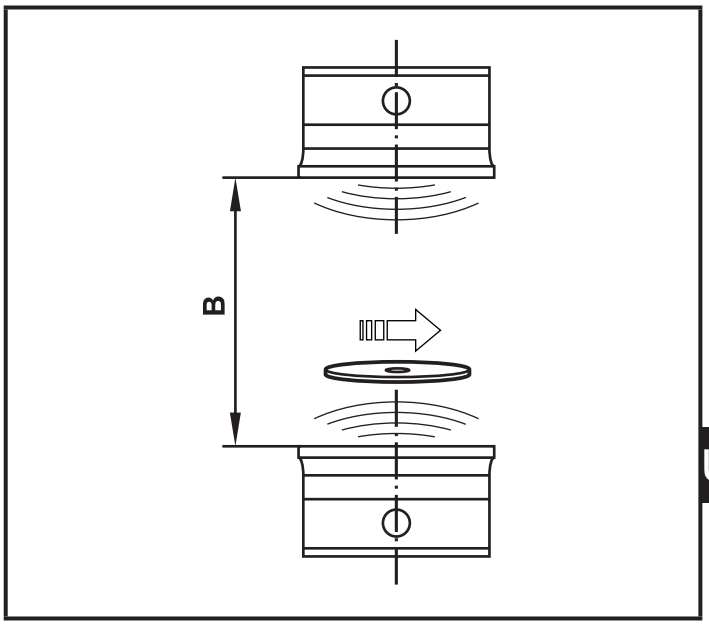
5.5.3 Installation with fixing bars E80337



► Fix the unit with fixing screws to the designated location.

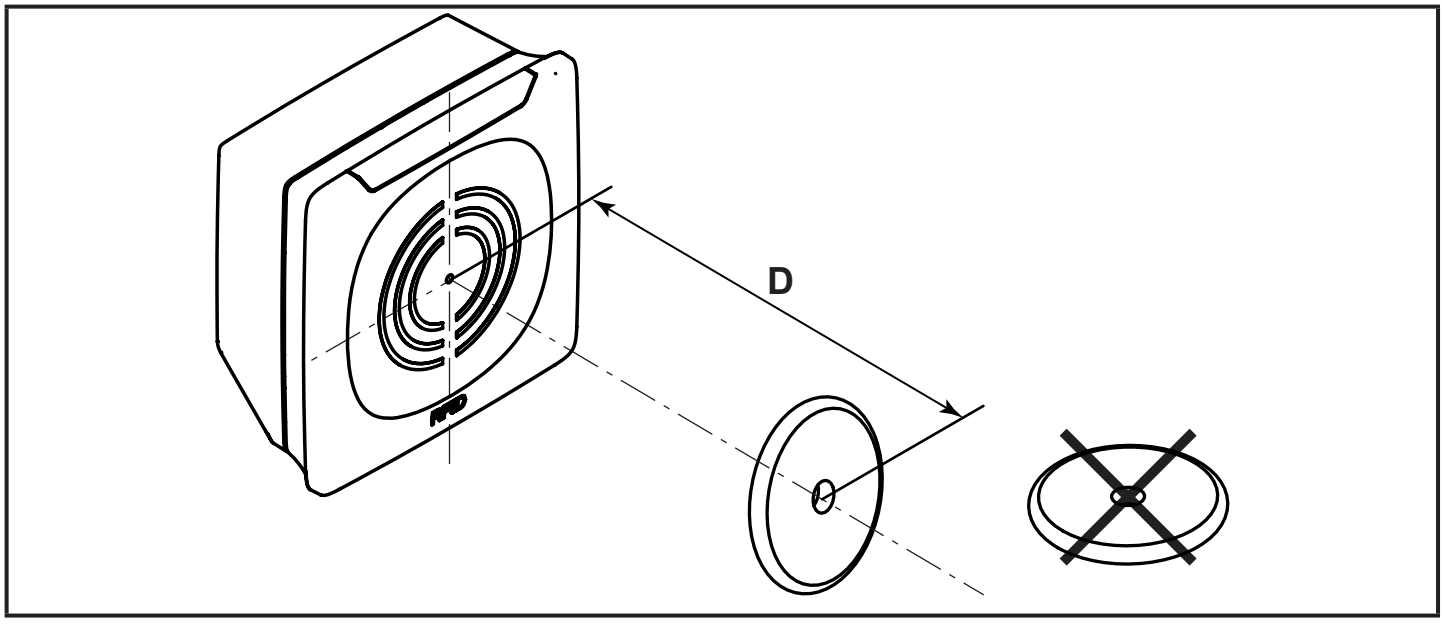
5.6 Mounting distances





Operating mode	Distance side (A)	Distance front (B)
For reading and writing (at 100% transmitter power)	≥ 600 mm	≥ 400 mm

5.7 Positioning of the ID tags



▶ Align the ID tag on the antenna central axis

6 Electrical connection

6.1 Wiring

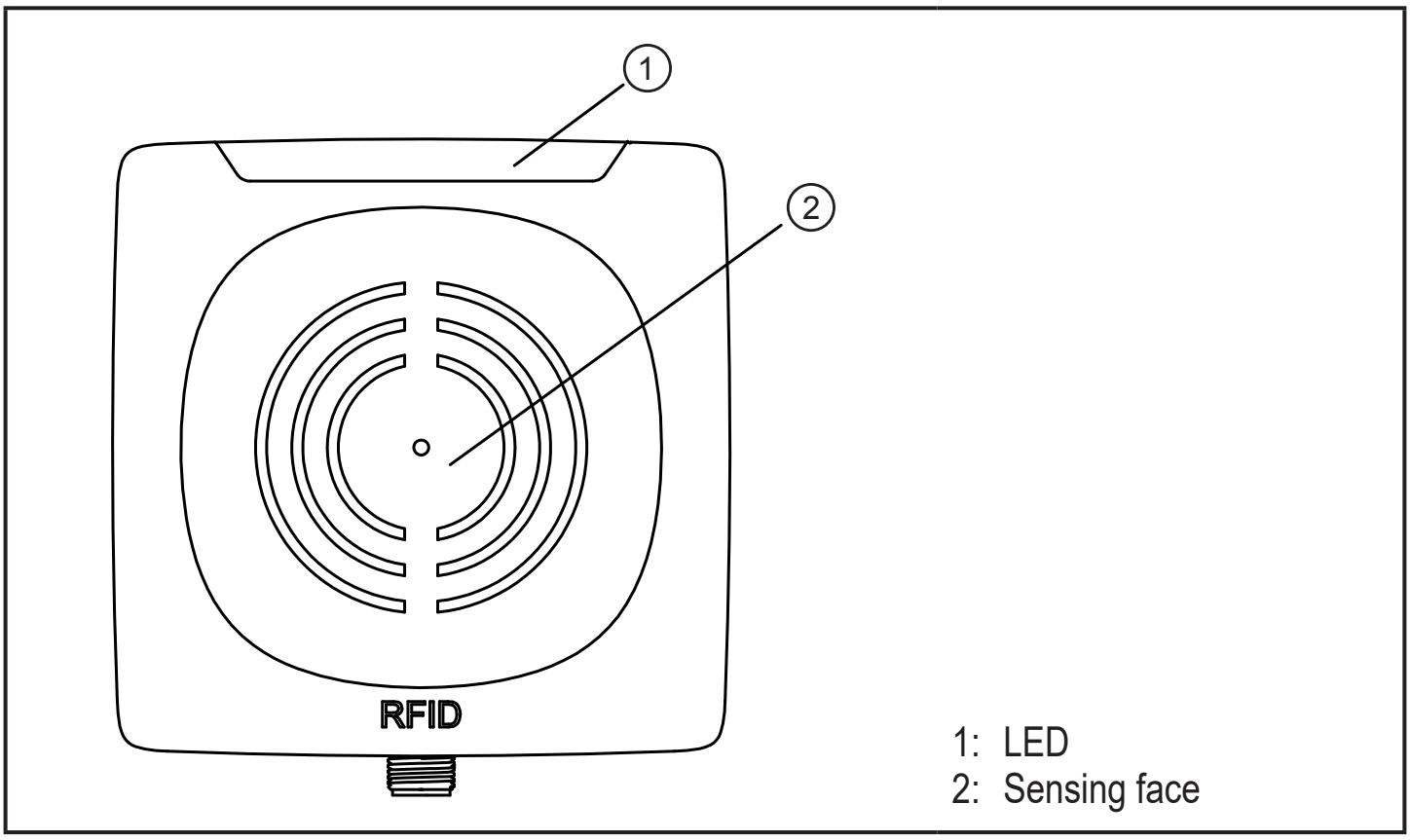
▶ Connect the device to the evaluation unit DTE10x using the M12 connection. Voltage is supplied via the evaluation unit.

A selection of sockets is available on our website at: www.ifm.com

Cables with the following characteristics are suitable for the connection:

Length	Ohmic resistance (feed + return line)	Effective cable capacity
< 20 m	max. 3 Ω	max. 3 nF

7 Display elements



Status	LED PWR (1x green)	LED Signal bar (4x yellow)
Ready for operation	Lights	
Not ready for operation	Flashing slowly	
ID tag read / written successfully		Flashing 2x

Status	LED PWR (1x green)	LED Signal bar (4x yellow)
Error when reading / writing on ID tag		Flashing quickly

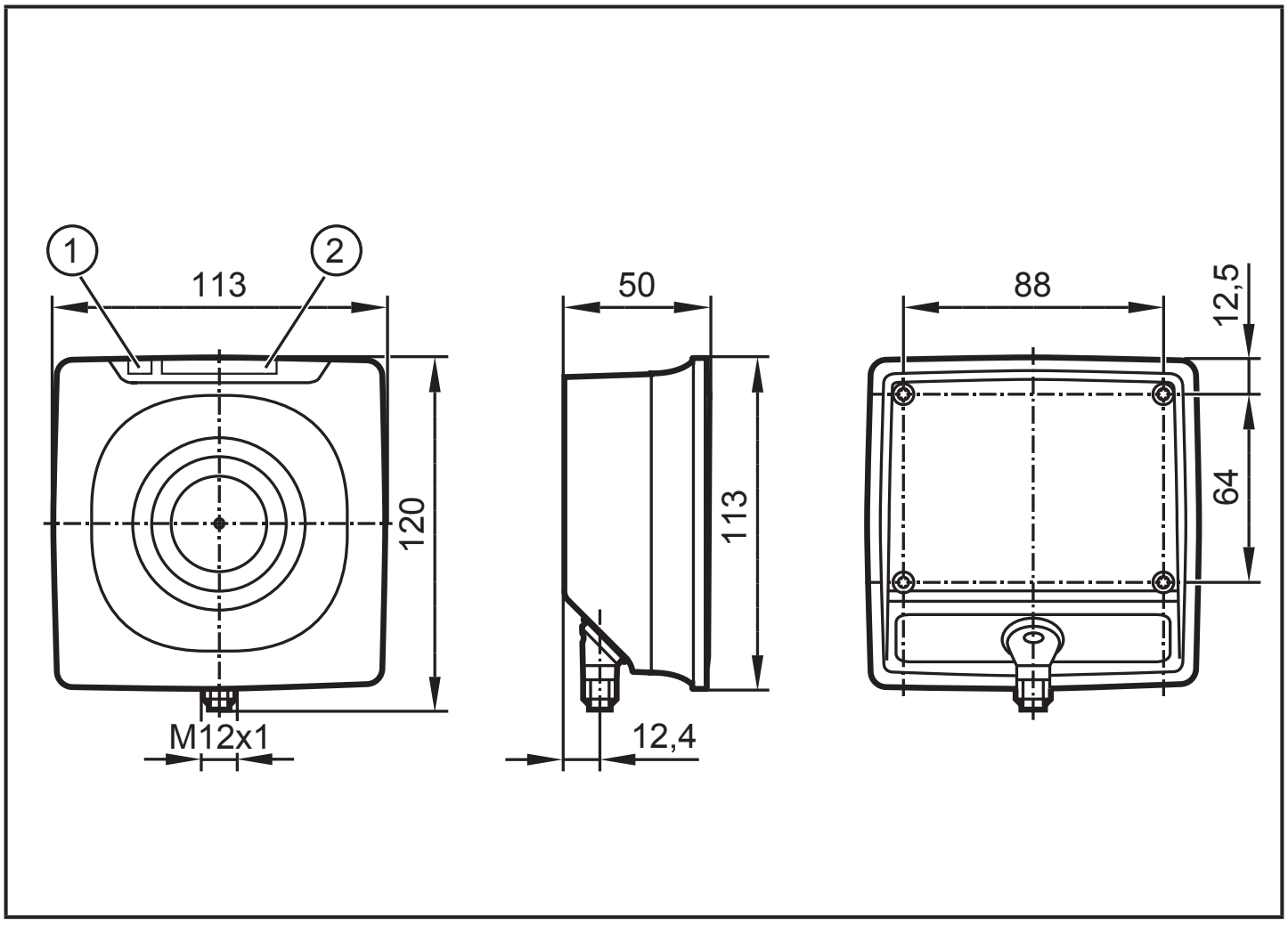
If the ID tag has a high receive signal strength, all LEDs of the signal bar are on (configurable).

The max. receive signal strength depends on the type of the ID tag.

8 Operation

The read/write head is configured via the connected evaluation unit DTE10x. You can find more information about the operation in the manual: www.ifm.com

9 Scale drawing

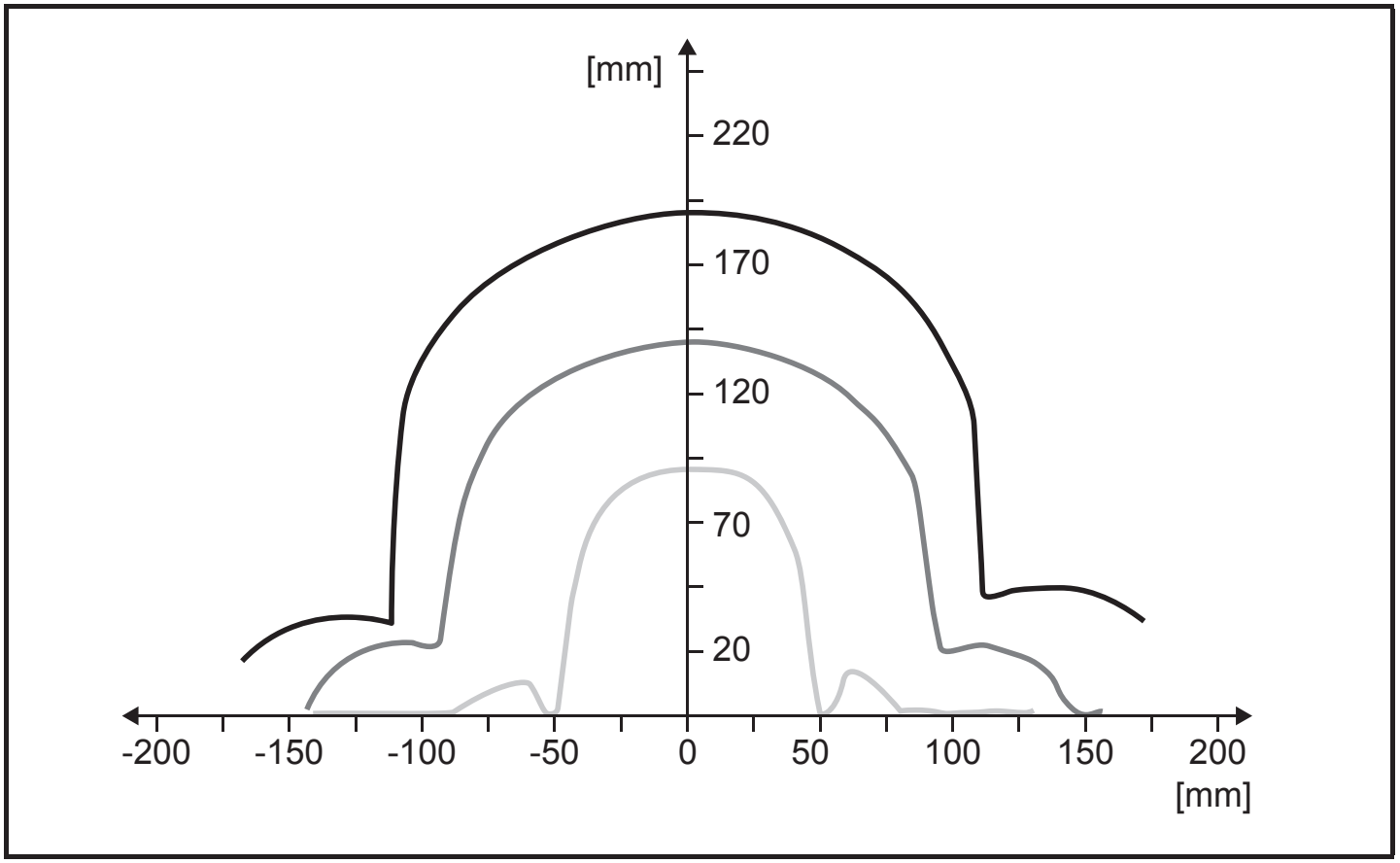


The max. tightening torque of the screws when mounting the unit is 0.8 Nm.

10 Technical data

The data sheets are available on our website at: www.ifm.com

10.1 Detection range with E80384



Detection range at 100 % HF power

Detection range at 75 % HF power

Detection range at 50 % HF power

Individual ID tags require 100 % transmission power for correct reading and writing.

▶ In case of reduced transmission power, check the reading and writing range of the ID tags.

All indications apply to static write operations. If not otherwise stated they refer to the installation of the unit and of the ID tag in a non-metallic environment.

The transmitter power can be set to 50, 75 or 100% via the device configuration.

11 Maintenance, repair, disposal

The operation of the unit is maintenance-free. For perfect functioning: Keep the sensing face and a clear space, if any, free from deposits and foreign bodies.

When replacing the device ensure that installation is done in the same way and that the same type of unit is used. It is not possible to repair the unit. After use dispose of the unit in an environmentally friendly way in accordance with the applicable national 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

12.2 EC declaration of conformity

ifm electronic gmbh hereby declares that the ANT600 radio system corresponds to the directive 2014/53/EU.

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