



# ID ISC.ANT.U170/170-FCC

UHF Midrange Antenna



## Note

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- The sign "☞" indicates extensions or changes of this manual compared with the former issue.
- If bits within one byte are filled with "-", these bit spaces are reserved for future extensions or for internal testing- and manufacturing-functions. These bit spaces must not be changed, as this may cause faulty operation of the reader.
- The following figure formats are used:
  - 0...9: for decimal figures
  - 0x00...0xFF: for hexadecimal figures,
  - b0...1 for binary figures.
- The hexadecimal value in brackets "[ ]" marks a control byte (command).

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**1. Safety Instructions / Warning - Read before start-up !**

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- The device may only be used for the intended purpose designed by for the manufacturer.
- The operation manual should be conveniently kept available at all times for each user.
- Unauthorized changes and the use of spare parts and additional devices which have not been sold or recommended by the manufacturer may cause fire, electric shocks or injuries. Such unauthorized measures shall exclude any liability by the manufacturer.
- The liability-prescriptions of the manufacturer in the issue valid at the time of purchase are valid for the device. The manufacturer shall not be held legally responsible for inaccuracies, errors, or omissions in the manual or automatically set parameters for a device or for an incorrect application of a device.
- Repairs may only be executed by the manufacturer.
- Installation, operation, and maintenance procedures should only be carried out by qualified personnel.
- Use of the device and its installation must be in accordance with national legal requirements and local electrical codes .
- When working on devices the valid safety regulations must be observed.
- When in operation the device in areas covered under FCC 47 CFR Part 15 a minimum separation of 23 cm between antenna and the human body must be maintained.
- Special advice for carriers of cardiac pacemakers:  
Although this device doesn't exceed the valid limits for electromagnetic fields you should keep a minimum distance of 25 cm between the device and your cardiac pacemaker and not stay in an immediate proximity of the device respective the antenna for some time.

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## 2. Performance Features of the antenna ID ISC.ANT.U170/170

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The antenna ID ISC.ANT.U170/170 Type –FCC is a circular polarized antenna and can be used at operating frequencies in the UHF range from 902 MHz – 928 MHz.

Due to the circular polarization a reading of Transponder in two orientations is possible.

The antenna is optimized for within the FCC regulation to RFID applications dedicated UHF frequency band. In this frequency band the antenna offers best possible reading performance.

Table 1: Ordering information - antenna

| Description                 | Type | Frequency         | Order number |
|-----------------------------|------|-------------------|--------------|
| Antenna ID ISC.ANT.U170/170 | -FCC | 902 MHz – 928 MHz | 3687.000.00  |

### 3. Installation

The antenna is designed for wall or fixture mounting. Mounting holes are provided in the housing. Please note that only these holes should be used when mounting the antenna.

An optional mounting set is available to simplify the attachment of the antenna to portal structures or poles and can be ordered from FEIG ELECTRONIC GmbH.

The preferred mounting direction of the antenna is vertical, with the connection cable towards ground.

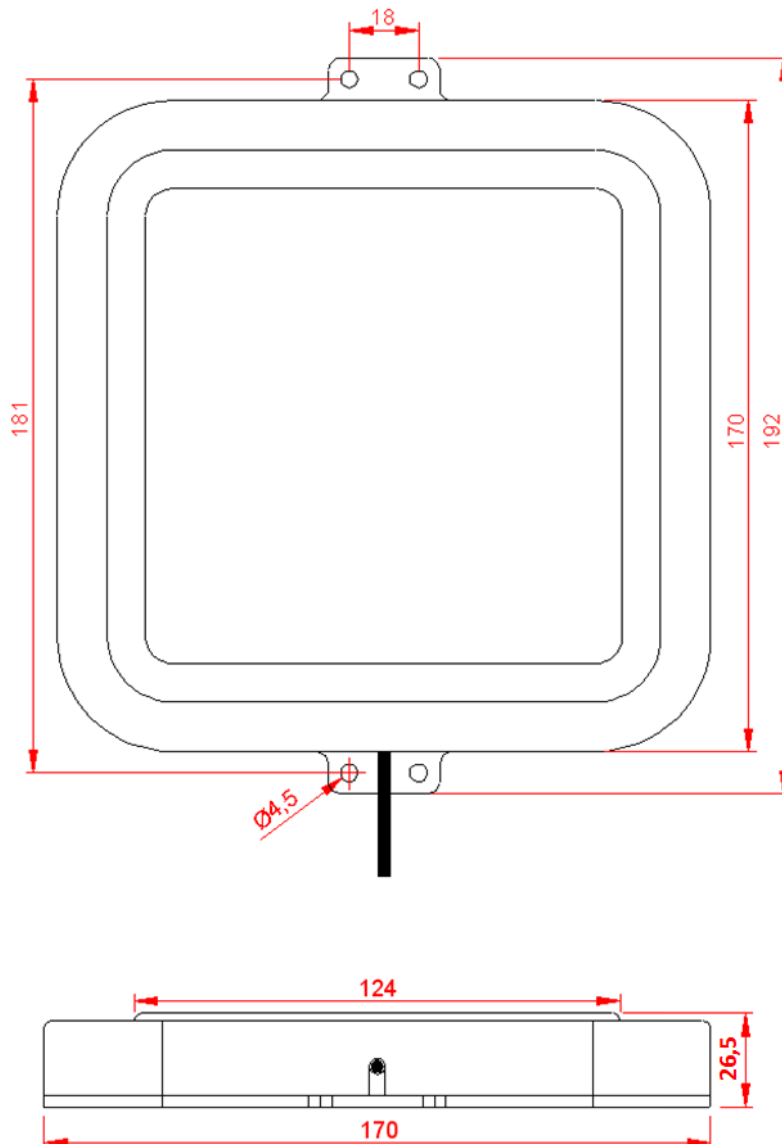


Figure 1: Mounting drawing

**CAUTION:**

**Bending radius of the connection cable: 14 mm (static) / 42 mm (dynamic)**

**All Dimensions  $\pm 0,5$  mm**

### 3.1. Installation with Mounting Set

A special mounting set provides an easy method of mounting of the antenna at a portal, mast, pole or bar. After mounting, the antenna can be changed and positioned at three orientations.



Figure 2: Mounting Set with antenna

Table 2: Ordering Information Mounting Set

| Description                                     | Order number   |
|---|----------------|
| ID ISC.ANT.U170/170-MS Mounting Set Antenna UHF | 3310.000.00.00 |



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### 3.2. Antenna Cable

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There are two antenna cable assemblies available for the extension of the antenna cable. These cable assembly can be ordered by FEIG ELECTRONIC GmbH in a two meter (2 m) or six meter (6 m) version.

Table 3: Ordering Information Antenna Cable

| Length  | Description                          | Order number   |
|---------|--------------------------------------|----------------|
| 2 meter | ID ISC.ANT.C2-A UHF Antenna Cable 2m | 1654.002.00.00 |
| 6 meter | ID ISC.ANT.C6-A UHF Antenna Cable 6m | 1654.003.00.00 |

**NOTE:**

*The maximum tightening torque of the SMA jack is 0,45 Nm (4.0 lbf in).*

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#### 4. Antenna pattern

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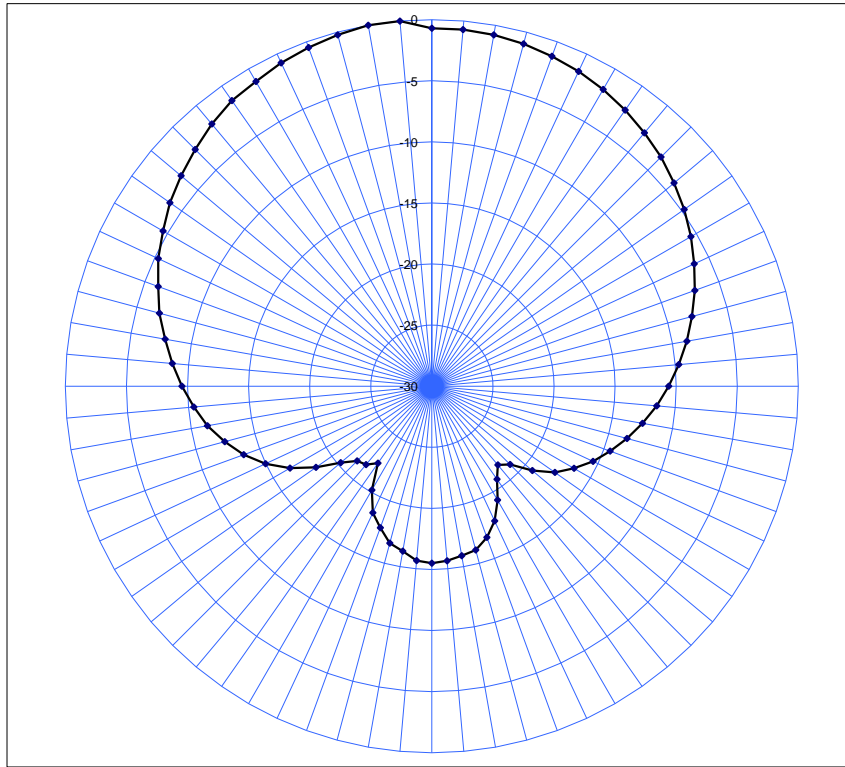


Figure 3: Typical antenna pattern of the Antenna ID ISC.ANT.U170/170-FCC horizontal

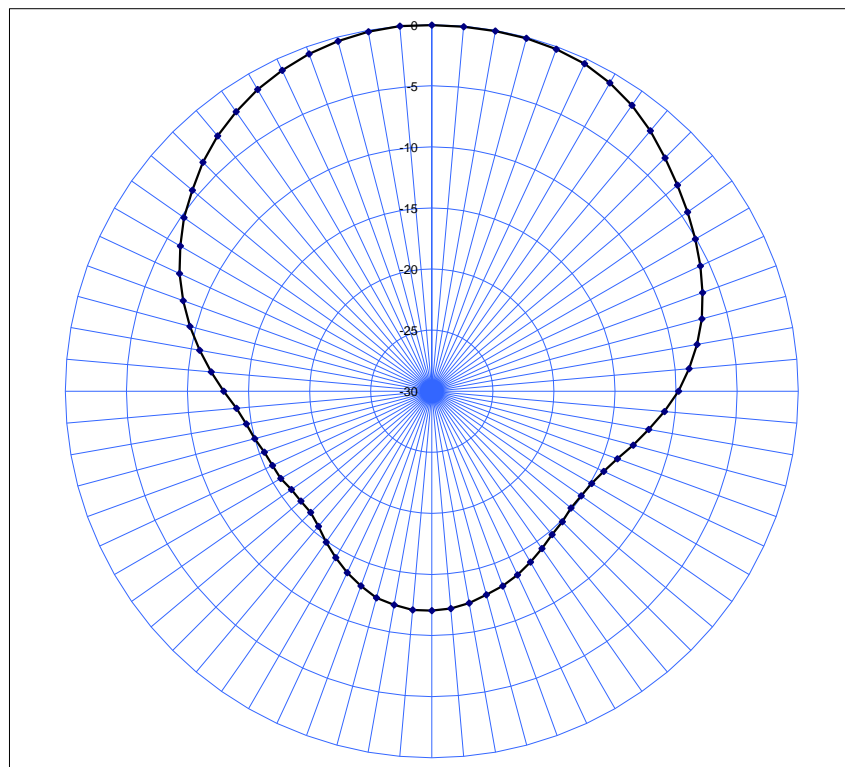


Figure 4: Typical antenna pattern of the Antenna ID ISC.ANT.U170/170-FCC vertical

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## 5. Technical Data

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### MECHANICAL DATA

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|                         |                           |
|-------------------------|---------------------------|
| Housing                 | Plastic ASA/ABS           |
| Dimension (W x H x D) * | 170 mm x 170 mm x 26,5 mm |
| Weight                  | approx. 270 g             |
| Protection Class        | IP 65                     |
| Colour                  | white                     |

### ELECTRICAL DATA

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|                     |                    |
|---------------------|--------------------|
| Operating Frequency | 902 MHz to 928 MHz |
| Gain, typ.          | 4,0 dBic           |
| 3-dB Beamwidth      |                    |
| • E-Plane           | 85°                |
| • H-Plane           | 85°                |
| Polarization        | Circular           |
| VSWR                | < 3:1              |
| Antenna Connector   | SMA socket (50 Ω)  |

### AMBIENT CONDITIONS

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|                   |                  |
|-------------------|------------------|
| Temperature Range |                  |
| • Operation       | -25 °C to +55 °C |
| • Storage         | -25 °C to +80 °C |

\* Tolerances ± 0,5 mm

**MECHANICAL DATA MOUNTING SET**

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|                                     |                                   |
|-------------------------------------|-----------------------------------|
| Material                            | stainless steel, steel zinc-plate |
| Clamping zone for circular profiles | 30 mm to 60 mm                    |
| Weight                              | approx. 480 g                     |
| Alignment of the antenna            | Adjustable at three orientations  |