

INSTALLATION



ID ISC.ANT.U270/270-FCC

Standard UHF 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 !

- 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.
- 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.

2. Performance Features of the Antenna ANT.U270/270-FCC

The antenna ID ISC.ANT.U270/270 Type –FCC is a circular polarized antenna and can be used at operating frequencies in the UHF range from 902 MHz – 928MHz.

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

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

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Table 1: Ordering Information - Antenna

Description	Type	Frequency	Order number
Antenna ID ISC.ANT.U270/270	-FCC	902 MHz – 928 MHz	3686.000.00

3. Installation

3.1. Mounting Holes

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.

NOTE:

When fastening the screws it must be ensured that the housing of the antenna is not bend. Optionally the attachment points should be supported by suitable washers or spacers (Height 14 mm).

If mounted outside the preferred mounting direction of the antenna is vertical with the connection cable towards ground.

Never mount the antenna in a way that the connection cable is guided to the top.

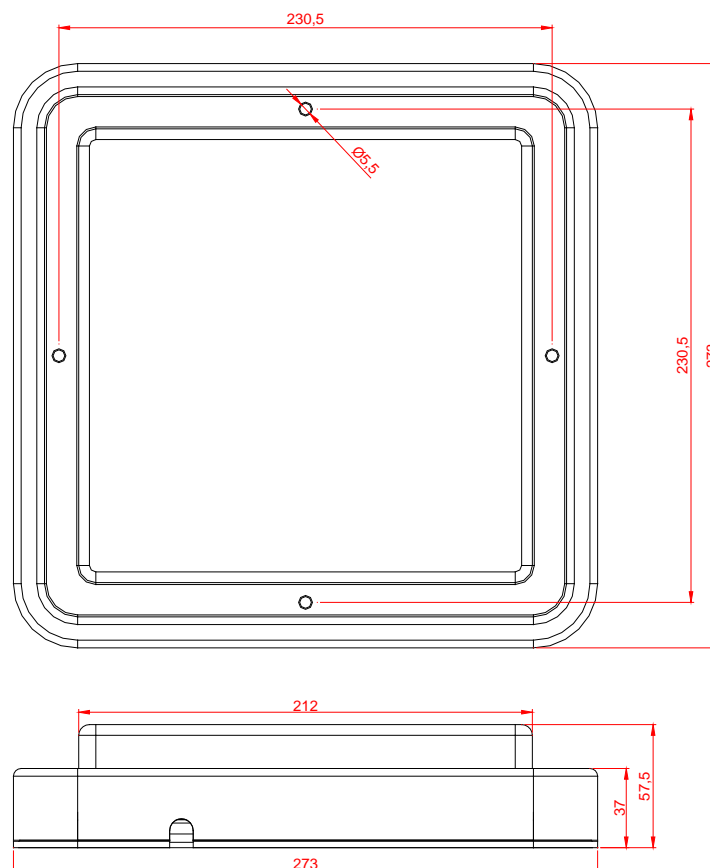


Figure 1: Mounting Drawing

CAUTION:

Bending radius of the connection cable: 15 mm (static) / 30 mm (dynamic)

3.2. 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.U270/270-MS Mounting Set Antenna UHF	3309.000.00.00

3.3. Draining Holes

There are two draining holes inside the housing at the bottom left- and right corner of the antenna. These holes are used to guide condensing water out of the outer circle of the housing.

NOTE:

The protection class of the antenna is not affected by the draining holes. The blocking that guarantees the protection class of IP65 is inside the housing.

Water in the outer circle of the housing does not have any impact on the performance of the antenna.



Figure 3: Draining holes at the bottom left- and right corner of the antenna

3.4. Membrane for pressure balance

At the back of the antenna there is a small hole covered with a thin membrane that is used for pressure balance between the air inside the housing and the air outside the housing. The membrane is water resistant and does not influence the protection class of the antenna.

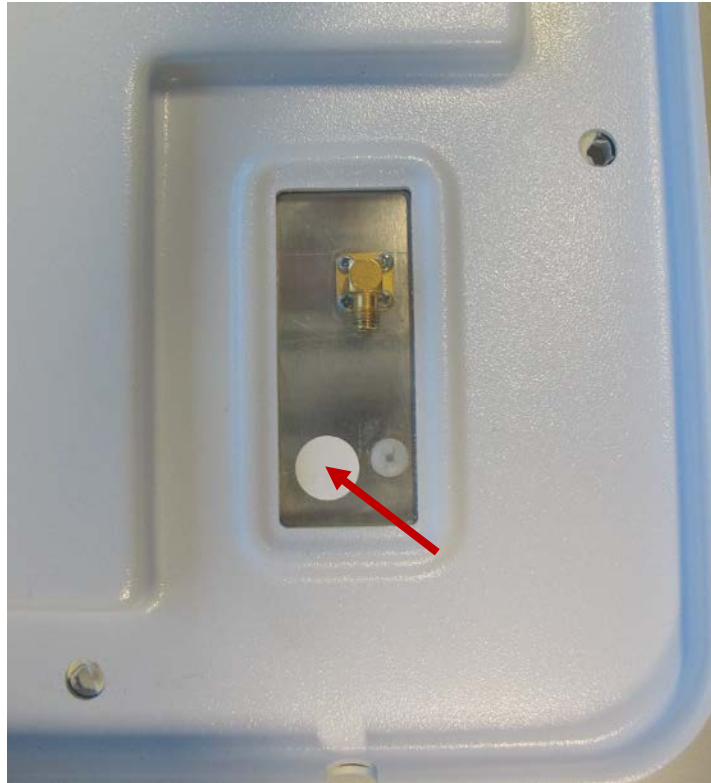


Figure 4: Membrane for pressure balance

CAUTION:

To keep the full protection class and to prevent performance losses of the antenna it needs to be ensured that the membrane is not damaged.

3.5. Antenna cable

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).

4. VSWR

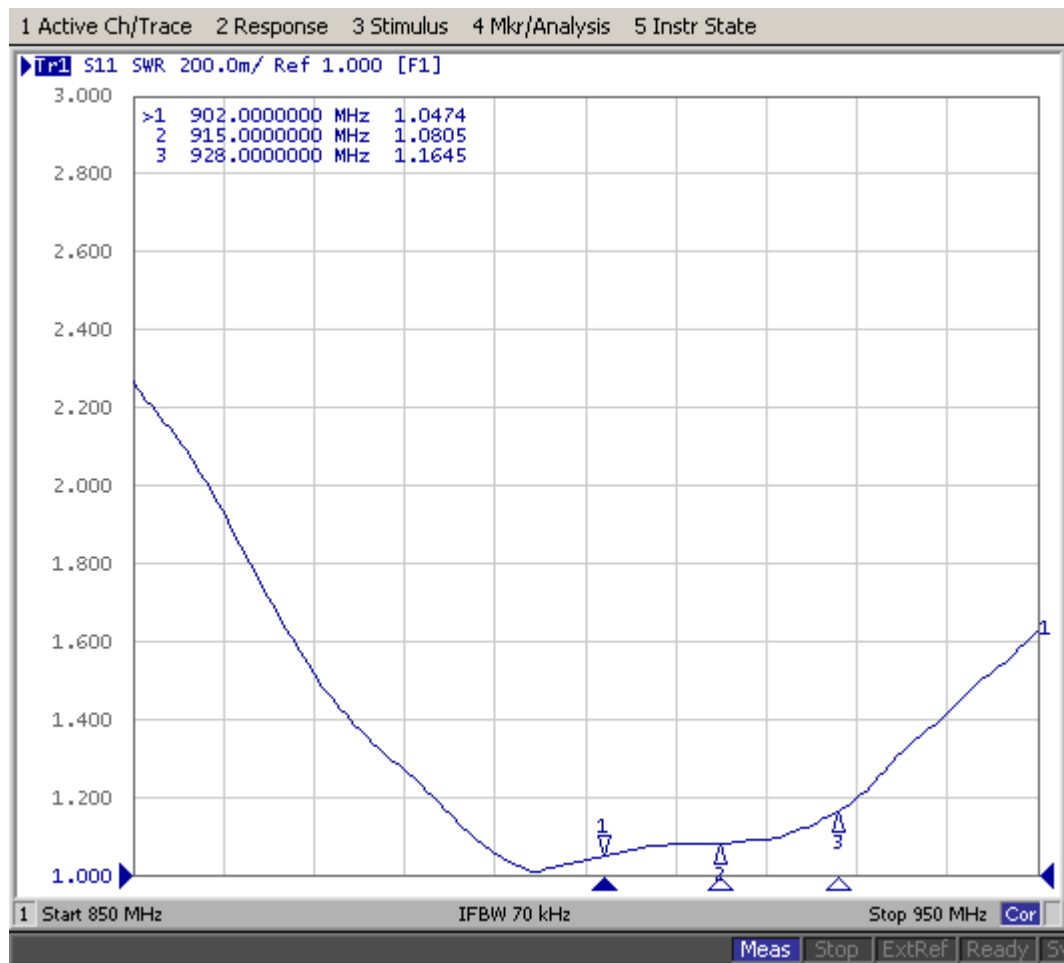


Figure 5: Typical VSWR of the antenna ID ISC.ANT.U270/270-FCC

5. Antenna Pattern

The 3 dB Beamwidth of the antenna is 65° x 65°.

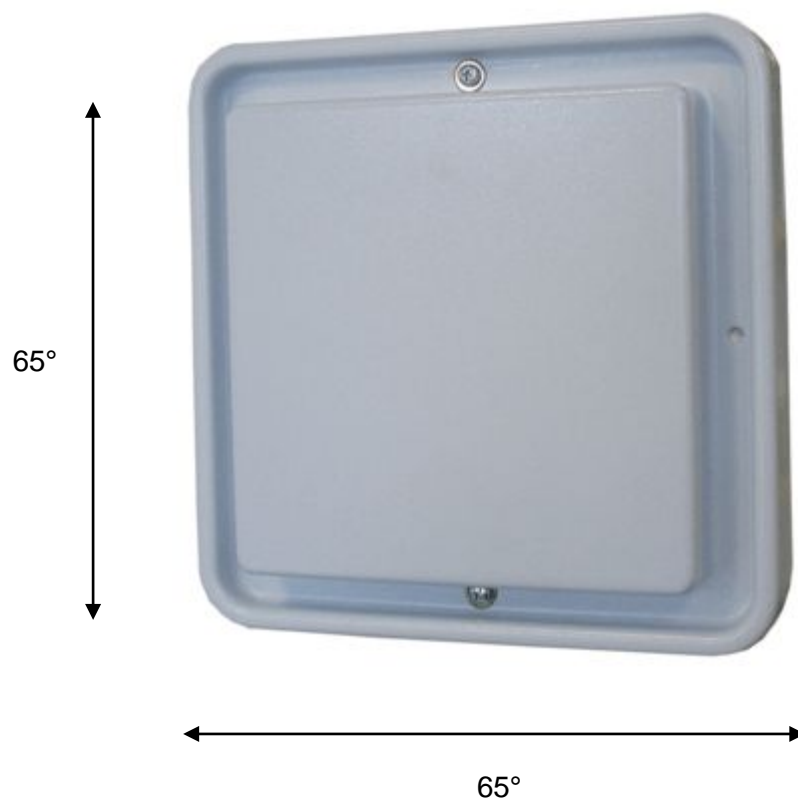


Figure 6: 3 dB Beamwidth

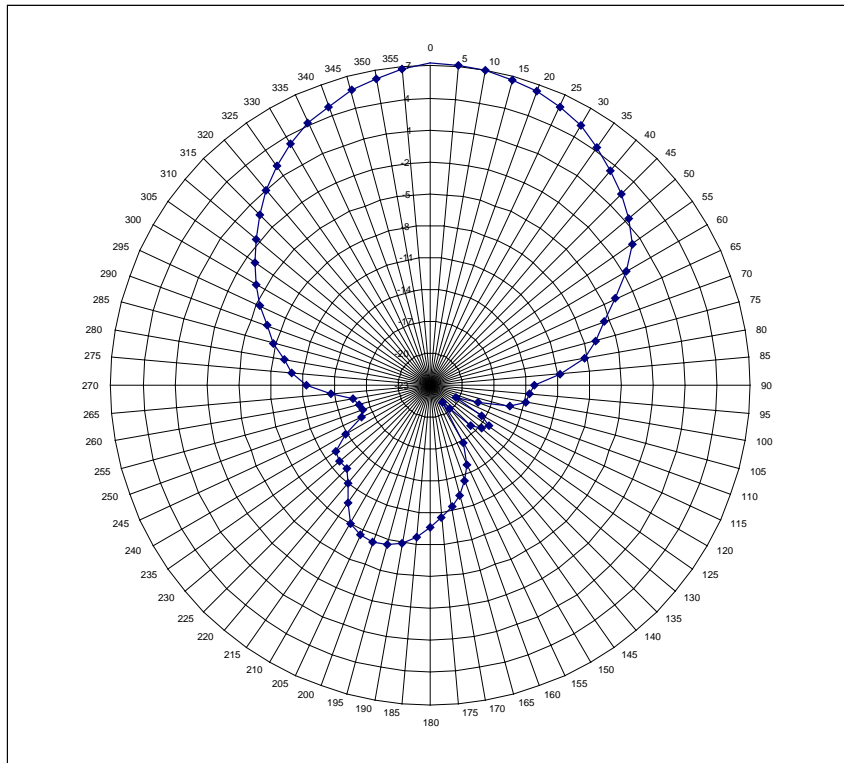


Figure 7: Typical antenna pattern of the Antenna ID ISC.ANT.U270/270-FCC horizontal

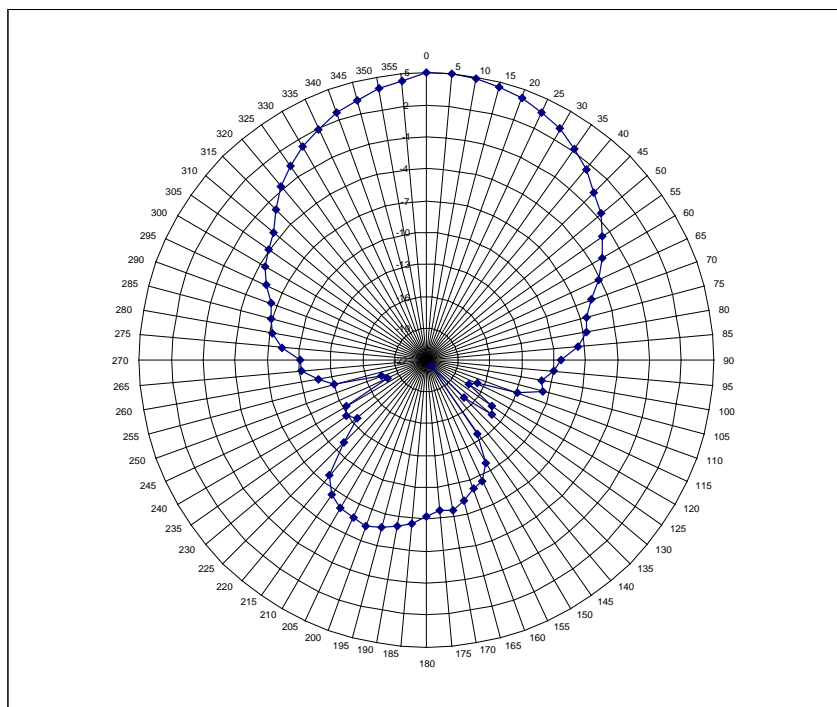


Figure 8: Typical antenna pattern of the Antenna ID ISC.ANT.U270/270-FCC vertical

6. Technical Data

MECHANICAL DATA

Housing	Plastic ASA/ABS
Dimension (W x H x D)	273 mm x 273 mm x 58 mm
Weight	approx. 1210 g
Protection Class	IP 65
Color	White

ELECTRICAL DATA

Operating Frequency	902 MHz to 928 MHz
Gain, typ.	9,0 dBic
3 dB Beamwidth	
• E-Plane	65°
• H-Plane	65°
Polarization	Circular
VSWR	< 1,3:1
Antenna Connector	SMA socket (50 Ω)

AMBIENT CONDITIONS

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

MECHANICAL DATA MOUNTING SET

Material	Aluminum, steel zinc-plate
Clamping zone for circular profiles	30 mm to 60 mm
Weight	approx. 400 g
Alignment of the antenna	Adjustable at three orientations