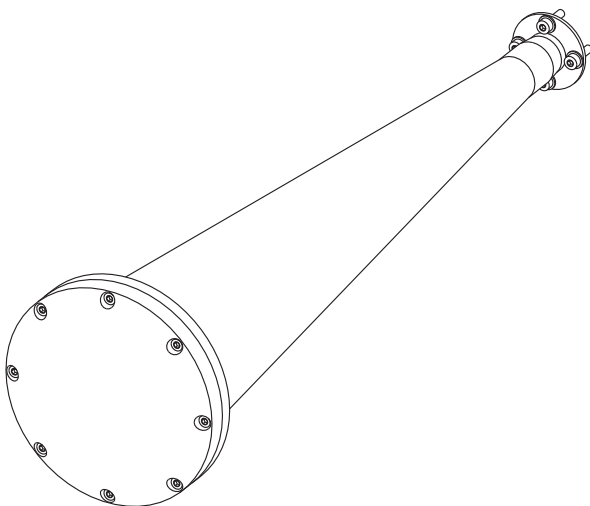


# Special Documentation

## **Micropilot FMR51, FMR57**

Hornschutz

For 80 mm (3") and 100 mm (4") horn antenna



# 1 Safety instructions

## 1.1 Designated use

The horn protection is a retrofitting part for Micropilot FMR51 and FMR57 level measurement devices.

## 1.2 Installation and commissioning

### 1.2.1 Authorised personnel

All operations described in this mounting instructions manual must be carried out only by trained specialist personnel authorised by the operator. During work on and with the device the required personal protection equipment must always be worn.

### 1.2.2 Warning about misuse

Inappropriate or incorrect use of the instrument can give rise to application-specific hazards, e.g. vessel overfill or damage to system components through incorrect mounting or adjustment.

## 1.3 Operational safety

### 1.3.1 General safety instructions

The safety information in the operating instructions of the respective sensor must be observed.

### 1.3.2 Hazardous areas

- in gas explosion hazardous areas
- in dust explosion hazardous areas (apparatus group IIIC)

#### NOTICE

#### **Danger of explosion**

- In gas explosion hazardous areas: Avoid electrostatic charging (e.g. through friction, cleaning, maintenance, strong medium flow).

## 2 Product description

### 2.1 Configuration

The scope of delivery encompasses:

- Horn protection
- Hexagon screws M4
  - 6 pcs. with antenna diameter 75 mm (2.95 in)
  - 8 pcs. with antenna diameter 95 mm (3.74 in)
- Holding ring
- Contact ring
- O-ring seal
- Flat seal
- Documentation: this mounting instructions

### 2.2 Principle of operation

The horn protection is suitable for Micropilot FMR51/FMR57 level measurement devices in applications with strong buildup inside the horn antenna. Thanks to seals on the horn protection and antenna socket, moisture penetration can be prevented. The contact ring provides an electrical connection between holding ring and horn antenna.

When using the horn protection, it is not possible to apply purge air through the air purge connection of the FMR57 as the antenna is sealed by the protection.

## 3 Mounting

### 3.1 Mounting preparations

The following tools are necessary for mounting: Hexagon spanner size 3

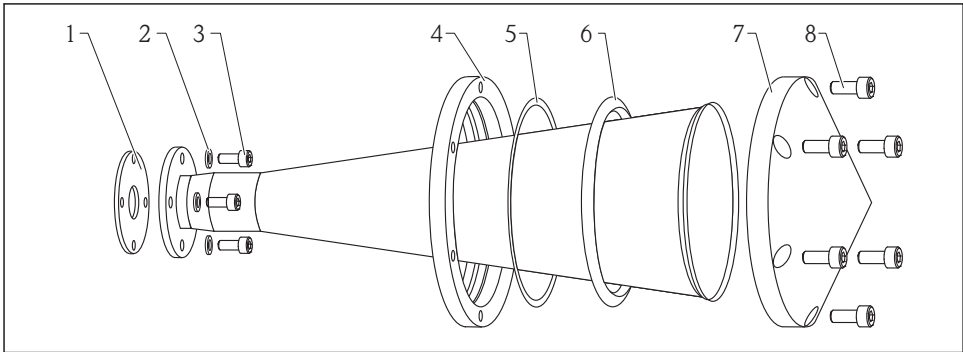
### 3.2 Mounting steps

#### NOTICE

**The tightness of the device is not achieved when using the wrong seal.**

- Do not interchange the flat seals. The flat seals with the bigger inner diameter are intended for the antenna extension.

#### 3.2.1 Standard



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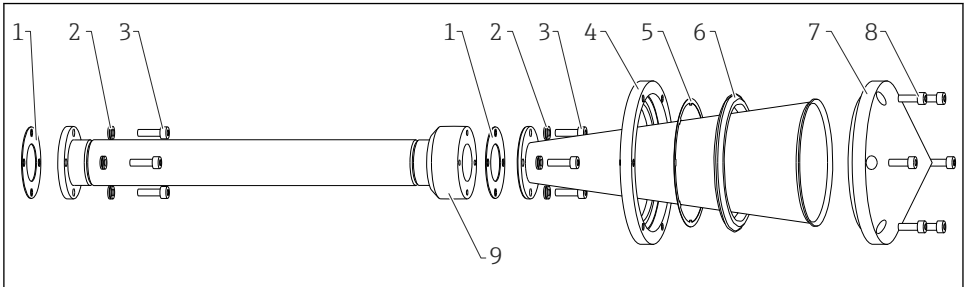
#### 1 Mounting horn protection

- 1 Flat seal
- 2 Lock washer
- 3 Screws, antenna socket
- 4 Holding ring
- 5 Contact ring
- 6 O-ring seal
- 7 Horn protection
- 8 Screws, horn protection

1. Loosen the screws (3) on the antenna socket and remove horn antenna.
2. Shift O-ring seal (6), contact ring (5) and holding ring (4) onto the antenna cone.
3. Plug horn protection (7) onto the antenna opening and direct the holes to the holding ring (4).
4. Tighten the screws (8) crosswise until the horn protection (7) and holding ring (4) are assembled. Max. torque 1.25 Nm (0.92 lbf ft)
5. Insert flat seal (1) between horn antenna and antenna socket.

6. Retighten the horn antenna with screws (3) to the antenna socket; Max. torque 3 Nm (2.21 lbf ft).

### 3.2.2 Antenna extension



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#### 2 Mounting horn protection with antenna extension

- 1 Flat seal
  - 2 Nord-Lock washer
  - 3 Screws, antenna socket
  - 4 Holding ring
  - 5 Contact ring
  - 6 O-ring seal
  - 7 Horn protection
  - 8 Screws, horn protection
  - 4 Antenna extension
1. Loosen the screws (3) on the antenna socket and on the antenna extension. Then remove the horn antenna.
  2. Shift O-ring seal (6), contact ring (5) and holding ring (4) onto the antenna cone.
  3. Plug horn protection (7) onto the antenna opening and direct the holes to the holding ring (4).
  4. Tighten the screws (8) crosswise until the horn protection (7) and holding ring (4) are assembled; Max. torque 1.25 Nm (0.92 lbf ft)
  5. Insert flat seal (1) between horn antenna and antenna extension. Likewise between antenna extension and antenna socket.
  6. Retighten the horn antenna with screws (3) to the antenna socket; Max. torque 3 Nm (2.21 lbf ft).

# 4      **Appendix**

## 4.1      **Technical data**

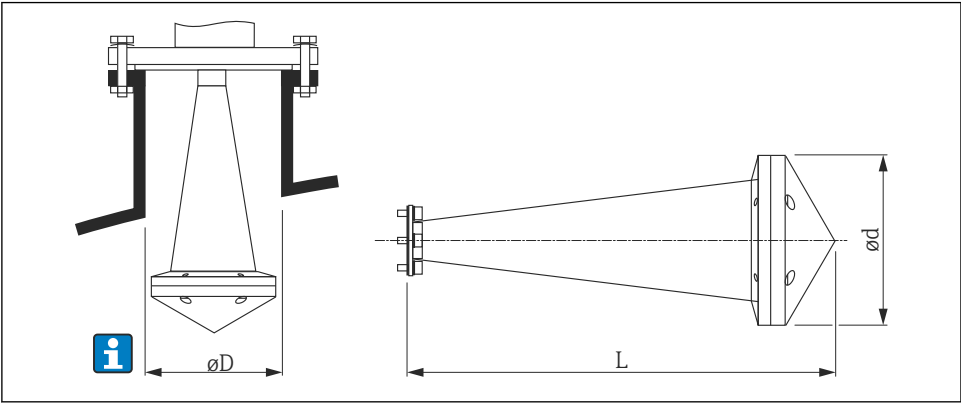
### 4.1.1      **Materials**

|                        |          |
|------------------------|----------|
| <b>Horn protection</b> | PTFE     |
| <b>Screws</b>          | 316L     |
| <b>Holding ring</b>    | 316L     |
| <b>Contact ring</b>    | 316L     |
| <b>O-ring seal</b>     | Silicone |
| <b>Flat seal</b>       | PTFE     |

### 4.1.2      **Process conditions**

|                                 |                     |
|---------------------------------|---------------------|
| <b>Vessel pressure max.</b>     | 0.5 bar (7.252 psi) |
| <b>Process temperature max.</b> | 130 °C (266 °F)     |

4.2 Dimensions



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Horn protection FMR51

| Antenna <sup>1)</sup> | Accessory mounted <sup>2)</sup>                                                                                         | Order code of horn protection | Dimensions       |                  |         |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------|------------------|---------|
|                       |                                                                                                                         |                               | Ød               | L                | ØD      |
| BC: Horn 80mm/3"      | <ul style="list-style-type: none"><li>■ OU: ... mm antenna extension</li><li>■ OV: ... inch antenna extension</li></ul> | 71105890                      | 96 mm (3.78 in)  | 203 mm (8 in)    | ≥ DN100 |
|                       | any other version                                                                                                       | 71105890                      | 96 mm (3.78 in)  | 238 mm (9.4 in)  | ≥ DN100 |
| BD: Horn 100mm/4"     | <ul style="list-style-type: none"><li>■ OU: ... mm antenna extension</li><li>■ OV: ... inch antenna extension</li></ul> | 71105889                      | 116 mm (4.57 in) | 267 mm (10.5 in) | ≥ DN150 |
|                       | any other version                                                                                                       | 71105889                      | 116 mm (4.57 in) | 302 mm (11.9 in) | ≥ DN150 |

1) Feature 070 of the product structure

2) Feature 610 of the product structure

Horn protection for FMR57

| Antenna <sup>1)</sup> | Order code of horn protection | Dimensions       |                  |         |
|-----------------------|-------------------------------|------------------|------------------|---------|
|                       |                               | Ød               | L                | ØD      |
| BC: Horn 80mm/3"      | 71105890                      | 96 mm (3.78 in)  | 238 mm (9.4 in)  | ≥ DN100 |
| BD: Horn 100mm/4"     | 71105889                      | 116 mm (4.57 in) | 450 mm (17.7 in) | ≥ DN150 |

1) Feature 070 of the product structure



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