

## Antenna ANTM03/3

### Ordering data

Designation	Type	Item no.
Antenna	ANTM03/3	133 812 03 03 AX
Replacement antenna rod		133 981 03 03



- Shortened  $\lambda/4$ -antenna
- Frequency range 20 MHz to 50 MHz
- Type of protection: I M 1 Ex ia I Ma

### Application

The antenna ANTM03/3 is a shortened  $\lambda/4$  antenna with extension coil. It is installed in a stainless steel housing. A replaceable rod antenna is screw-mounted onto an M8 threaded bolt on the housing.

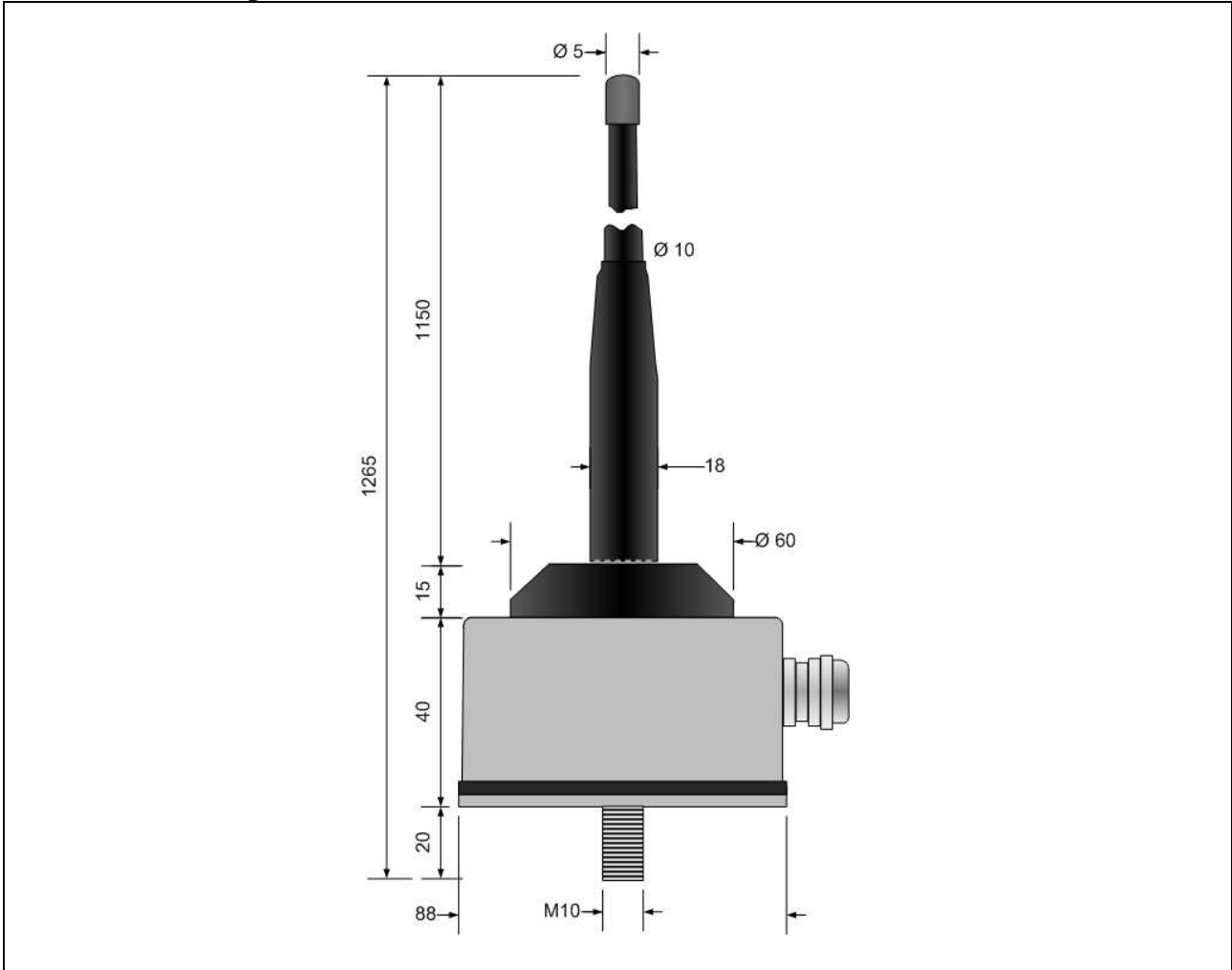
The replaceable rod antenna (replacement antenna rod) consists of a GFRP rod with copper inner conductor, which is firmly fixed with a brass mount.

The coaxial connecting cable KK02 to link the antenna with a radio station enters the housing through a M16x1.5 cable gland.

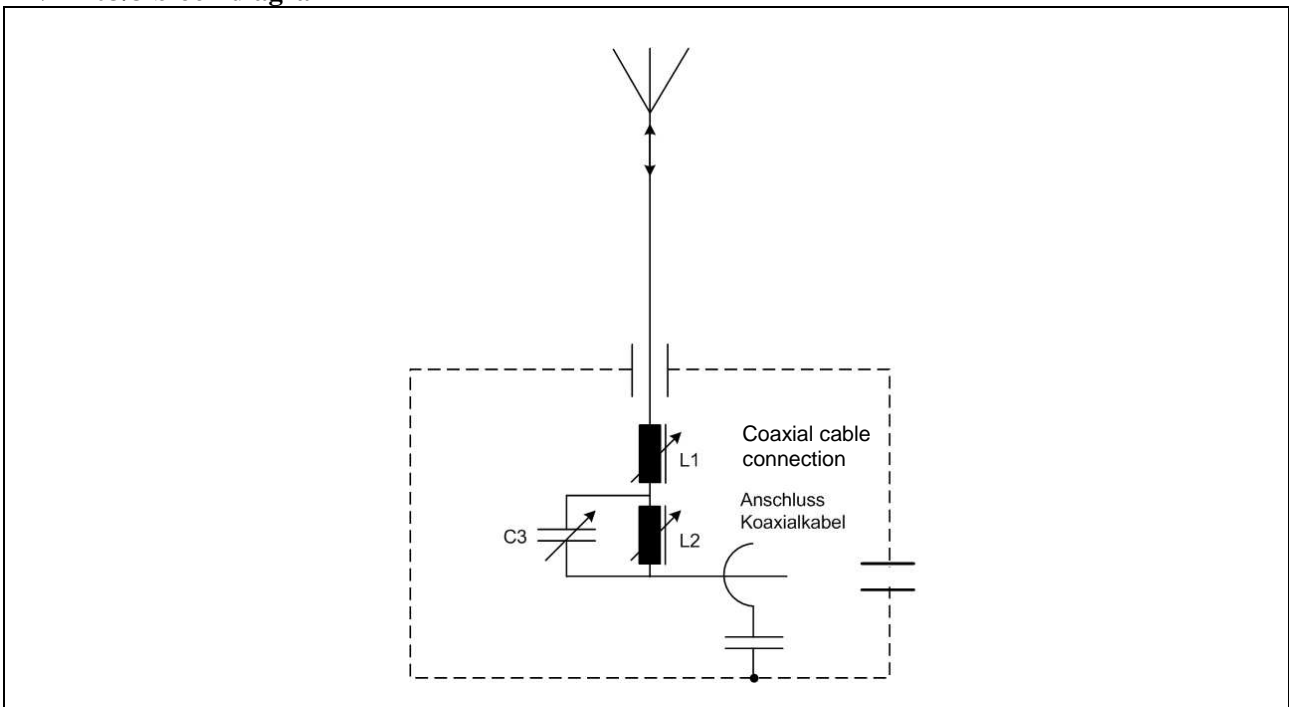
The bottom side of the antenna housing is closed with a cover plate which is fastened with 4 countersunk screws. A fastening bolt on the cover is used to fix the antenna e.g. by means of the supplied mounting bracket, and at the same provides the required earthing connection.

The pcb in the housing interior is equipped with the connection for the coaxial cable and an adaptation network which ensures the required antenna adaptation within the transmission and reception band.

**Dimensional drawing of antenna ANTM03/3**



**ANTM03/3 block diagram**



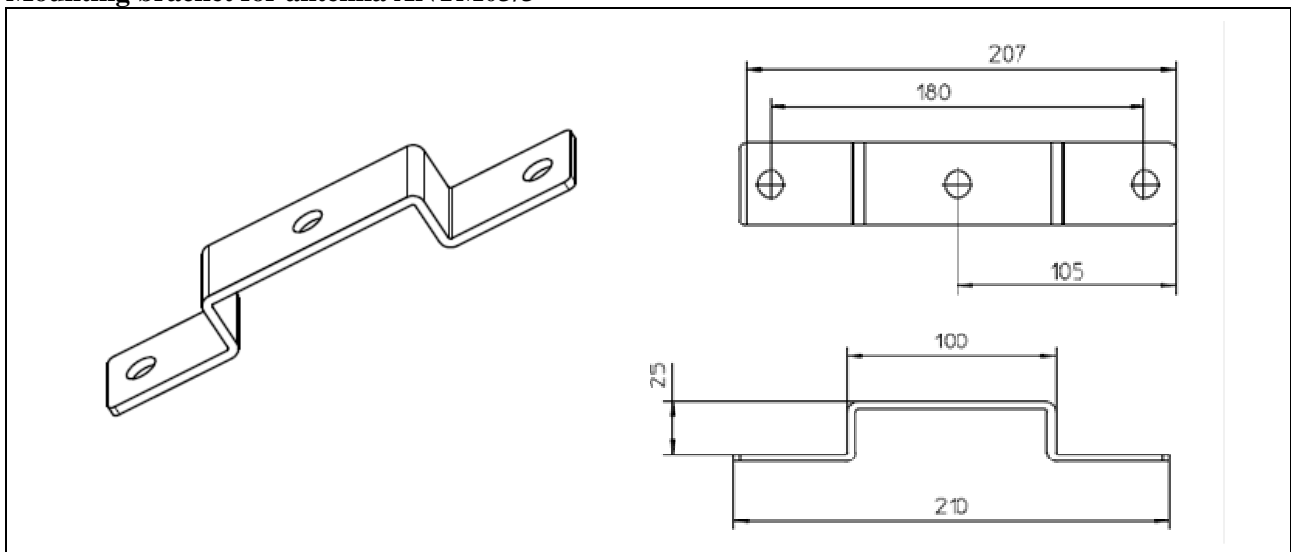
### Assembly and disassembly

Special care shall be taken with regard to the sealing area when the antenna is open, to avoid damaging the sealing. The coaxial connecting cable KK02 which is to be introduced into the antenna housing, shall be properly isolated, the inner conductor connected to the single terminal, the braid of the outer conductor which is turned back, to be brought in contact with the thrust piece on the pcb in the antenna housing. The housing has to be closed by careful screw-mounting of the cover plate.

The antenna features a factory-installed coaxial connecting cable of type KK02 (8m) which is protected by a flexible tube (outer diameter Ø16 mm). The supplied mounting bracket can be used for installing the antenna. The installation as a base station antenna requires a connecting box of type MRVB01 (item no.: 133 822 11 AX).

Maximum efficiency of the antenna is reached by its installation on a largest possible metal mass area (counterweight, ground plane).

### Mounting bracket for antenna ANTM03/3



### Maintenance



In case the antenna rod turns out to be damaged so that the antenna loses its efficiency, the rod including the mount should be replaced with a replacement antenna rod.

To do so, first turn loose the defective antenna rod by means of an appropriate tool (width across flats 20) and screw in the new replacement antenna rod. The joint between rod and housing has to be sealed from the exterior with silicon as protection against moisture ingress.

### Disposal

The disposal of the packaging material and of used parts must be realised in compliance with the regulations of the country in which the device is installed.

**Technical data**

Designation	Antenna
Type	ANTM03/3
Electrical length	shortened $\lambda/4$ - antenna
<b>Parameters</b>	
Electrical parameters	
Max. input voltage $U_i$	10 V <sub>AC</sub>
Max. RF power $P_i$	1 W
Nominal impedance $Z_n$	50 $\Omega$
Frequency range f	20 MHz to 50 MHz (Preferred transmission bands 26.5 to 27.5 MHz and 34.5 to 35.5 MHz)
Max. effective internal inductance $L_i$	2.3 $\mu$ F
Max. effective internal capacitance $C_i$	negligible
Type of protection	IP54 as per IEC 529
Ambient temperature range $T_a$	$-30^\circ\text{C} \leq T_a \leq +55^\circ\text{C}$
Test and approval	
- Type of protection	I M 1 Ex ia I Ma
- Approval no.	BVS 12 ATEX E 075
Flexible tube for coaxial cable (outer diameter)	$\varnothing 16$ mm
Dimensions	see dimensional drawing
Weight	approx. 2.2 kg (antenna with coaxial connecting cable KK02 (8m) plus mounting bracket)
<b>Marking</b>	
The nameplate of the type ANTM03/3 antenna is marked as follows:	
Company:	FHF Bergbautechnik D-42551 Velbert Germany
Type	ANTM03/3  I M 1 Ex ia I Ma BVS 12 ATEX E 075  0158 F. No. ... Test (short sign, month/year) $-30^\circ\text{C} \leq T_a \leq +55^\circ\text{C}$

**Warnings & Safety Advice**

This equipment item is a device of explosion-proof design destined for operation inside an explosive atmosphere. It belongs to equipment group I M 1 and is suited for use underground.

Especially the following warnings and safety advice shall be observed:

Connection and installation of the equipment item have to be carried out by an instructed qualified expert in due consideration of the specified type of protection and in accordance with the applicable regulations for installation.

The interconnection with other equipment must be certified separately.

The device may only be connected and operated with the specified voltage.

Make sure to avoid any damage to the housing. Devices with damaged housing must not be operated and have to be put out of service immediately.

For the operation of the device in industrial facilities, the accident prevention regulations of the employer's liability insurance association for electrical installations and equipment have to be observed.

The device must only be operated under the indicated ambient conditions. Harsh ambient conditions can result in damage to the device and therefore lead to a possible risk for the life of the user. Harsh ambient conditions can be:

- moisture, dusts (pay attention to degree of protection)
- combustible gases, vapours, solvents which the type of protection does not cover.
- excessively high ambient temperatures (>+55°C)
- excessively low ambient temperatures (<-30°C)

The ambient temperature range specified for the device must neither be exceeded nor fallen short of during operation.

Make sure to replace defective parts by corresponding original spare parts only.

Attachment and installation of further parts is prohibited.

Repair work must only be carried out by the manufacturer or a person committed by the manufacturer for this work in connection with a new routine test for the device.

In case of transport and storage as well as when not in use the devices and components have to be protected against damage and ingress of dirt.

**Mounting or attaching the type ANTM03/0 antenna onto the enclosure of electrical devices or the wall of electrical operating areas is prohibited.**

**Non-observance of the above mentioned points leads to loss of the explosion protection for the device. In this case the device will be a danger for the life of the operator and can cause an explosive atmosphere to ignite.**

**EG-KONFORMITÄTSERKLÄRUNG****EC DECLARATION OF CONFORMITY**

**Wir erklären in alleiniger Verantwortung, dass das Produkt auf das sich diese Erklärung bezieht mit der/den folgenden Norm(en) oder normativen Dokumenten übereinstimmt:**

Herewith we declare bearing sole responsibility that the product referred in this declaration is in conformity with the following standards or normative documents and regulations of the directive:

<b>Bezeichnung Erzeugnis / Komponente</b> Name of product or component	<b>Antenne</b> Antenna
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<b>Geräte- oder Typenbezeichnung</b> Equipment type or mark of equipment	<b>ANTM03/3</b>
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<b>Bestimmung der Richtlinie</b> Provisions of the directive	<b>Nr. und Ausgabedatum der Norm(en)</b> No. and date of issue of the standard(s)
<b>94/9/EG: Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen</b> 94/9/EC: Equipment and protective systems intended for use in potentially explosive atmospheres	<b>EN 60079-0:2009</b> General requirements <b>EN 60079-11:2012</b> Intrinsic safety „i“ <b>EN 50303:2000</b> Group „I“ Category M1
<b>EG-Baumusterprüfbescheinigung</b> EC-Type-Examination Certificate	<b>BVS 12 ATEX E 075</b>
<b>Benannte Stelle für die Bescheinigung</b> Notified body of the certificate <b>Kennnummer/Inspection number</b>	<b>0158</b>

<b>Hersteller / Anschrift</b> Manufacturer / Factory address	FHF Bergbautechnik GmbH & Co. KG Eintrachtstr. 95 D – 42551 Velbert
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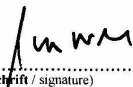
**Geschäftsführer:**  
Managing director:

Schwengers, Jörg

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(name, prename)

Velbert  
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(Ort / place)

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(Datum / date)

  
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(Unterschrift / signature)

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