

Product Information

Active Receiving Antenna STA 10 A/D/0.01-1.6

This antenna is an active monopole receiving antenna providing omnidirectional characteristics in the long- and medium-wave bands.

It covers the frequency range from 0.01 – 1.6 MHz.

Due to its small dimension and the very low radiation coupling, this active antenna is particularly qualified for mobile as well as stationary application under unfavorable localities.

An amplifier circuit directly connected to the base point of the antenna rod matches the high impedance of the rod to the low input impedance of the receiver or the connected coaxial cable.

The aas.tech active receiving antennas are fitted with amplifiers providing a high RF dynamic range to avoid degradation of the reception system characteristics.

A multistage protection circuit at the input of the active element ensures that the antenna electronics will not be damaged even in case of lightning strikes in immediate proximity.

Screw-on rods allows easy matching of the rod length to a wide variety of operating conditions.

Regarding the robust construction and the use of weatherproof materials our active antennas can be used under extreme environmental conditions.

The nominal operating voltage for the antenna is 39 Vdc. The AAN power supply series or an aas.tech Antenna Distribution System is used to feed the operating voltage to the active element via the coaxial cable.

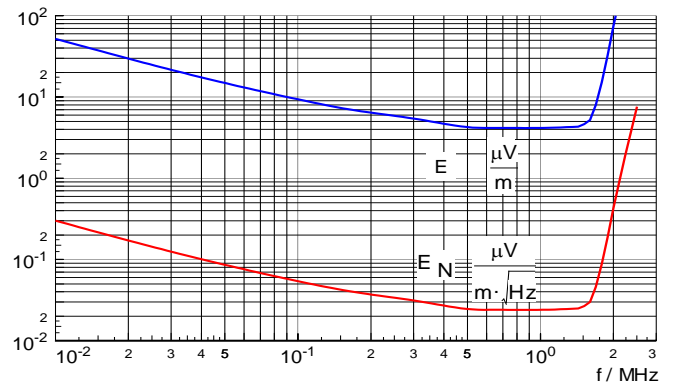


Technical Data

| Parameter | Data |
|---|---|
| Application | active monopole antenna |
| Characteristic | vertically polarized omnidirectional antenna |
| Color | light grey (similar RAL 7035) |
| Bending moment at mounting flange | 1 daNm (wind speed 150 km/h) |
| Shock | 50 g/10 ms |
| Vibration | 4 – 12,5 Hz, amplitude = 1,6 mm 12,5 - 90 Hz, acceleration 10 m/s ² |
| Ambient temperature | -40°C...+70°C |
| Storage temperature | -55°C...+80°C |
| Relative humidity | 100 % |
| EMP test | STANAG 4145 |
| Lightning protection | 500 kV/m/μs |
| RF connector | N socket |
| Supply voltage | 39 Vdc through coaxial cable |
| MTBF | 80.000 h (Tu=40°C) |
| MTTR | 0,5 h (replacing of subunits) |
| Frequency range | 0,01 – 1.6 MHz |
| Attenuation in stop band | > 50 dB (f >2,5 MHz) |
| Output impedance | 50 Ω VSWR ≤ 1,6 (typ. 1.4) |
| Effective height at 50 Ω | 10,5 cm (tolerance ± 1 dB) |
| Intermodulation 2nd order ⁽¹⁾ E1=E2=100 mV/m | ≥ 82 dB |
| Intermodulation 3rd order ⁽¹⁾ E1=E2=100 mV/m | ≥ 130 dB |
| Cross modulation ⁽¹⁾ (causing 10 % modulation) | 40 V/m |
| Max. tolerable field strength ⁽¹⁾ (1dB reduction of gain) | 60 V/m |

Equivalent noise field strength ⁽¹⁾
 (limit of sensitivity B=1 Hz)

Sensitivity ⁽¹⁾
 (B=3 kHz, S/N=10 dB)



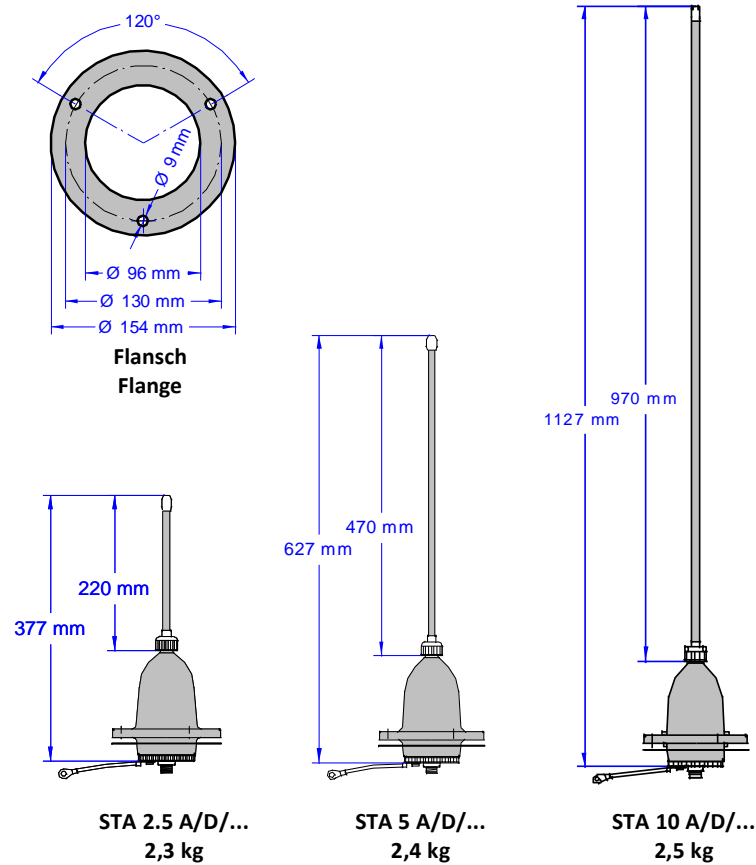
(1) The technical data refer to a 100 cm long antenna vertically mounted on conductive ground plane.
 For calculation of other rod lengths resp. mounting heights refer to doc. AN1.

Design and specification are subject to change without prior notice, errors excepted.
 Data given without tolerance are typical values.

Scope of Supply

| Pos. | Description |
|------|---|
| 1 | Active Receiving Rod Antenna STA .. A/D/0.01-1.6 |
| 2 | Accessory Set ZS 15 |
| 3 | USB stick with product documentation in pdf format |

Dimensions and Weight



Accessories

| Type Designation | Part No. | Description |
|------------------|--------------|--|
| ZS 15 | 0028.3715.00 | Accessory set consisting of <ul style="list-style-type: none"> - 1 ea. N male plug Part No. ST.0015 - 1 ea. Rubber sleeve for N plug black Part No. A.0047 - 1 ea. Flat Gasket 7 Part No. 0002.2101.04 NSN 5330-12-320-9989 |

Variants and Order Information

| Type Designation | Part No. NSN | Description |
|---------------------|--------------|----------------------------|
| STA 10 A/D/0.01-1.6 | 0005.8969.00 | 100 cm rod, color RAL 7035 |
| STA 20 A/D/0.01-1.6 | 0005.8978.00 | 200 cm rod, color RAL 7035 |
| STA 5 A/D/0.01-1.6 | 0005.8977.00 | 50 cm rod, color RAL 7035 |

Other variants are available on request.

Options

| Option | Part No. NSN | Description |
|----------------|----------------------------------|---|
| RAL Color Code | depends on RAL color code | Painting in RAL color according to customer specification |
| AE ME | 0005.5805.00 | Reconfigure antenna frequency range to 0.01 – 30 MHz by replacement of active element to AE ME Configuration to STA .. A/D/0.01-30 Doc. FIG 010103 |
| AE MD | 0005.5804.00 | Reconfigure antenna frequency range to 0.01 – 100 MHz by replacement of active element to AE MD Configuration to STA .. A/D/0.01-100 Doc. FIG 010104 |
| AE MB1 | 0005.5826.00 | Reconfigure antenna frequency range to 1.6 – 30 MHz by replacement of active element to AE MB1 Configuration to STA .. A/D/1.6-30 Doc. FIG 010108 |
| AE MS4 | 0005.5822.00 5985-12-334-6141 | Reconfigure antenna frequency range to 0.01 – 0.6 MHz by replacement of active element to AE MS4 Configuration to STA .. A/D/0.01-0.6 Doc. FIG 010105 |

Other or customer specific options are available on request.

Spare Parts

Applicable for the following types of active antennas:

- **STA 2.5 A/D/0.01-1.6**
- **STA 5 A/D/0.01-1.6**
- **STA 10 A/D/0.01-1.6**

| No. | Designation Type | Part-Number NSN | Max. Qty. (a) | MTBF/hrs MTTR/hrs | Dimensions/mm Weight/kg (b) | Qty (c) Qty (d) | Remark |
|-----|-------------------------------|----------------------------------|---------------|----------------------|--------------------------------|--------------------|----------------------------------|
| 1 | Insulator ISO A1 | 0005.4201.00 5970-12-320-6145 | 1 | 130.000 - | 160x150 1,00 | - - | |
| 2 | Flat Gasket 7 | D.0052 5330-12-320-9989 | 1 | - - | 160x3 0,20 | 1 1 | |
| 3 | Antenna Rod STA 2.5 | 0005.4206.00 5985-12-320-5342 | 1 | 130.000 - | 32x220 0,15 | 1 1 | applicable for STA 2.5 A/D/.. |
| 3a | Antenna Rod STA 5 | 0005.4204.00 5985-12-320-5341 | 1 | 130.000 - | 32x470 0,20 | 1 1 | applicable for STA 5 A/D/.. |
| 3b | Antenna Rod STA 10 | 0005.4202.00 5985-12-314-0516 | 1 | 130.000 - | 32x970 0,30 | 1 1 | applicable for STA 10 A/D/.. |
| 4 | Active Element AE ME4 | 0005.5827.00 | 1 | 80.000 1,0 | 80x130 0,75 | 1 1 | |
| 5 | O-Ring 69x3 mm | A.0254 5331-12-331-7313 | 1 | - - | 69x3 - | 1 1 | |
| 6 | Test Adapter TA 1/10 | 0014.0200.00 | | - - | 170x70 0,80 | | applicable for test purposes |
| 7 | Manual STA .. A/D/0.01-1.6 | 058969 | | - - | DIN A4 - | | |

- (a) Maximum quantity per equipment
 (b) Dimensions and weight are without packing
 (c) Recommended quantity per equipment for 90 days on board
 (d) Recommended quantity per equipment for 3 years depot

Note:

The spare part table is applicable for versions in standard color (similar RAL7035).
 Spare parts (insulators, rods) in other colors are available.

Associated Products

For integration into the application environment associated products are available.

| Type Designation | Part No. NSN | Description |
|------------------|-----------------|--|
| AAN 110 | 2061.0110.00 | <p>19-inch 1 HU Remote Power Supply Unit Frequency range 0.01 – 100 MHz</p> <p>The AAN 110 provides 1 remote power feeding port and 1 receiver port, typically used with 1 active monopole antenna STA or 1 active dipole antenna HD 1 A.</p> <p>AAN 110 replaces AAN 10/B (0008.7424.00) Concerning 19-inch rack installation the AAN 110 requires 1 HU rack space instead of 3 HU required by AAN 10/B.</p> <p>Doc. PIG 010620</p> |
| AAN 120 | 2061.0120.00 | <p>19-inch 1 HU Remote Power Supply Unit Frequency range 0.01 – 100 MHz</p> <p>The AAN 120 provides 2 remote power feeding ports and 2 receiver ports, typically used with 2 active monopole antennas STA or 2 active dipole antennas HD 1 A or 1 active dipole antenna HD 2 A.</p> <p>Doc. PIG 010620</p> |
| AAN 130 | 2061.0130.00 | <p>19-inch 1 HU Remote Power Supply Unit Frequency range 0.01 – 100 MHz</p> <p>The AAN 130 provides 3 remote power feeding ports and 3 receiver ports, typically used with 3 active monopole antennas STA or 2 active dipole antennas HD 1 A or 1 active dipole antenna HD 2 A or 1 active combination antenna HD 2 A + STA ...</p> <p>AAN 130 replaces AAN 30/B (0008.7427.00) Concerning 19-inch rack installation the AAN 130 requires 1 HU rack space instead of 3 HU required by AAN 30/B.</p> <p>Doc. PIG 010620</p> |
| AAN 140 | 2061.0140.00 | <p>19-inch 1 HU Remote Power Supply Unit Frequency range 0.01 – 100 MHz</p> <p>The AAN 140 provides 4 remote power feeding ports and 4 receiver ports, typically used with 4 active monopole antennas STA or 2 active dipole antennas HD 1 A or 1 active dipole antenna HD 2 A or 1 active combination antenna HD 2 A + STA ...</p> <p>Doc. PIG 010620</p> |

Associated Products (continued)

| Type Designation | Part No. NSN | Description |
|------------------|----------------------------------|---|
| EAH 1 | 0007.2800.00 | Adapter for mounting a monopole antenna on a pipe with external diameter of 2" (60,3 mm) Doc. PIG 010501 |
| TR 10/E1 | 0007.3411.00 | 2" supporting pipe 1 m high, aluminum, RAL 7035 (EAH 1 required) with EAH 1 the distance from ground to antenna base is 1 m Doc. PIG 010501 |
| RF Coaxial Cable | 2078.xxxx.00 --- | Assembled ready-made coaxial cable according to customer specification. Type of connectors and type of cable to be specified by customer. |
| TA 1/10 | 0014.0200.00 6625-12-373-2794 | Test adapter for active elements of AE M series Frequency range 0.01 – 100 MHz integrated load represents 100 cm rod |
| TA 1/20 | 0014.0400.00 | Test adapter for active elements of AE M series Frequency range 0.01 – 100 MHz integrated load represents 200 cm rod |
| TA 1/5 | 0014.0500.00 | Test adapter for active elements of AE M series Frequency range 0.01 – 100 MHz integrated load represents 50 cm rod |
| TA 1/2.5 | 2060.0200.02 | Test adapter for active elements of AE M series Frequency range 0.01 – 100 MHz integrated load represents 25 cm rod |

Compatible Distribution Systems

The following distribution systems match ideally to be fed from the STA series.

| Type Designation | Part No. | Description |
|----------------------|---------------------------------|---|
| AVA Series | depends on AVA configuration | <p>Antenna Distributor AVA series for the non-blocking switching and distribution of active and passive antenna signals for up to 20 receiver outputs.</p> <p>Frequency range 0.01 – 30 MHz</p> <p>A separate remote power supply is not needed. The aas.tech active antennas can be directly fed from an AVA series distributor.</p> <p>Doc. PIG 020156</p> |
| AVS 2G Series | depends on AVS 2G configuration | <p>Antenna Distribution System AVS 2G series for the non-blocking switching and distribution of active and passive antenna signals for more than 20 receiver outputs</p> <p>Frequency range A: 0.01 – 30 MHz Frequency range B: 1.5 – 30 MHz</p> <p>Depending on the number of connected active antennas a separate remote power supply is needed.</p> <p>Doc. PIG 020601</p> |
| AMC A Series | depends on AMC configuration | <p>Antenna Distributor AMC series for the distribution of the antenna signal to up to 16 receiver outputs</p> <p>Frequency range 0.01 – 30 MHz</p> <p>A separate remote power supply is not needed. The aas.tech active antennas can be directly fed from an AMC A series distributor.</p> <p>Doc. PIG 020801</p> |