SMA

System Monitoring

Anemometer

Installation Guide

Table of Contents

1 Notes on this Guide

This installation guide describes how to install and commission the anemometer. Store this installation guide where it will be accessible at all times.

1.1 Validity

This installation guide is valid for the upgrade kit of the anemometer.

1.2 Target Group

This installation guide is intended for the installer.

1.3 Symbols Used

The following types of safety instructions and general information appear in this document as described below:

⚠ **DANGER!**
"DANGER" indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING!**
"WARNING" indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION!**
"CAUTION" indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

⚠ **CAUTION!**
"NOTICE" indicates a situation that can result in property damage if not avoided.

i	**Information**
	Information provides tips that are valuable for the optimum operation of the product.

2 Safety

2.1 Appropriate Usage

The anemometer is a sensor intended to measure horizontal wind force outdoors. The provided performance data can be processed by the Sunny SensorBox. Use the anemometer exclusively for purposes indicated in the installation guide and the indicated application range. Use only SMA Solar Technology AG original accessories or accessories recommended by SMA Solar Technology. Read the accompanying documentation for the anemometer and the communication product carefully before connecting the anemometer.

2.2 Safety Precautions

**General safety precautions to avoid bodily harm**

- Lay cables so that no one stands on them or trips over them.
- Work on rooftops entails a safety risk, and requires special safeguards to be implemented.

General information in order to avoid damage to the device.

- Damage to the sensors as a result of incorrect connection to the Sunny Boy Control Plus or Sunny Central Control. Before connecting, read the corresponding installation guide and use the enclosed circuit diagram when commissioning the Sunny Central Control.
- Integrate the sensor into the existing lightning protection.
- Protect your PV plant components against overvoltage from outside by connecting the sensors to an overvoltage protector. When using the sensors with the Sunny Central, the corresponding overvoltage protectors can be ordered as an option from Sunny Central.

3 Unpacking

3.1 Packing List
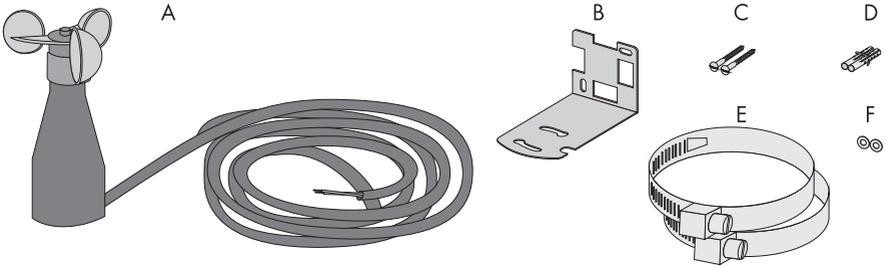
Position	Number	Description
A	1	Anemometer with 3 m output cable
B	1	Mounting angle
C	2	Screws
D	2	Screw anchor
E	2	Straps
F	2	Washers

3.2 Cabling Recommendations

In the event that the pre-configured output cable is too short, please note the following information when purchasing a longer cable:

- Cross section: min. 2 x 0.25 mm², min. 2 x AWG 24
  Tip: you can also use a 4-core line (4 x 0.25 mm²).

- External cable diameter: min. 4.5 mm, max. 6 mm

- The maximum cable length may not exceed 30 m

- UV resistant (for outdoor use only)

3.3 Selecting the Mounting Location
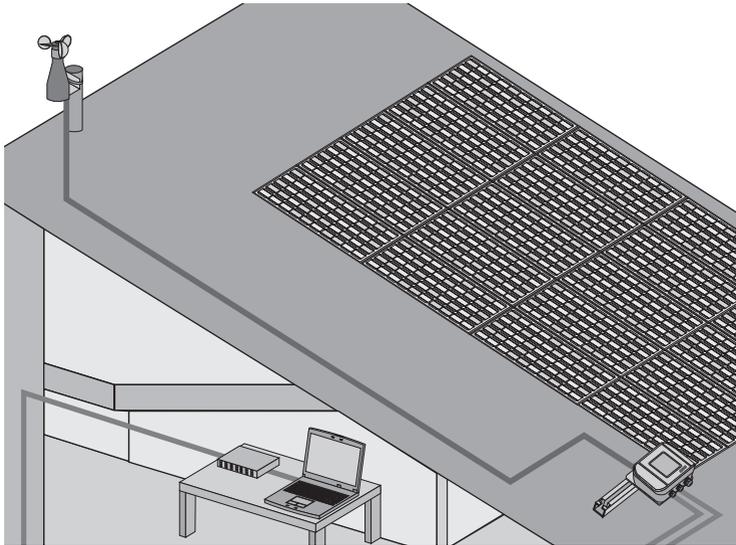
- The mounting location must not be sheltered from the wind or in the lee of objects such as chimneys or satellite systems.

- The anemometer must be mounted in an upright position; otherwise, water can enter the anemometer and destroy it.

- If possible, install the anemometer in the center of flat roofs. Installing the anemometer at the edge of the roof may cause air turbulence that may distort the measuring results.

- Observe the pre-configured cable length of 3 m. The cable may be cut or extended to a maximum of 30 m.

4 Mounting the Device

4.1 Mounting the anemometer on a mast

1. Determine the mounting position taking into consideration the requirements of the mounting location.

2. Attach the mounting angle using the enclosed clamp at the top end of the mast (see ①).

3. Place anemometer with the screws in the wide recesses of the mounting angle (see ②) and rotate the anemometer up to the end of the narrow recess (see ③).

4. Tighten the screws below the anemometer.

5. Attach cables closely to the mast using cable ties or similar attaching material.

☑ The anemometer is mounted.
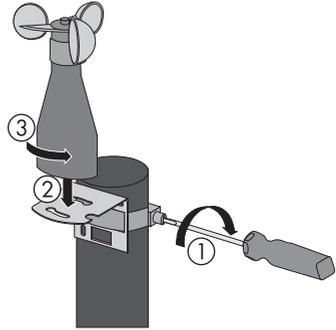
## 4.2 Mounting the anemometer on a wall

4.2.1 Wall Mounting with Mounting Angle

i If the anemometer is mounted directly on the wall, turbulence may occur, which reduces the precision of measurements.

We recommend using a wall mounting bracket for wall mounting (see chapter4.2.2 "Wall Mounting with Wall Mounting Bracket" (page 9)). The wall mounting bracket enlarges the distance to the wall and avoids turbulence. The accuracy of measurements is increased.

1. Determine the mounting position taking into consideration the requirements of the mounting location.

2. Attach the mounting angle on the lateral end of the wall using screws and screw anchors (see ①).

3. Place the anemometer including screws into the wide recesses of the mounting angle (see ②) and rotate the anemometer to the end of the narrow recesses (see ③).

4. Tighten the screws below the anemometer.

5. Lay cables on the wall.

☑ The anemometer is mounted.
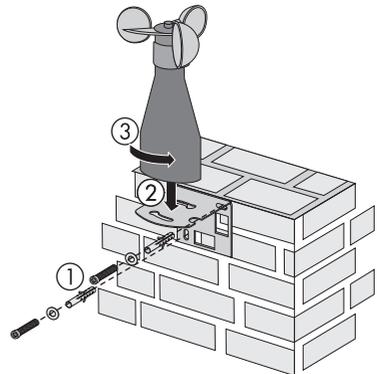
4.2.2 Wall Mounting with Wall Mounting Bracket

SMA order number: Wall mounting bracket
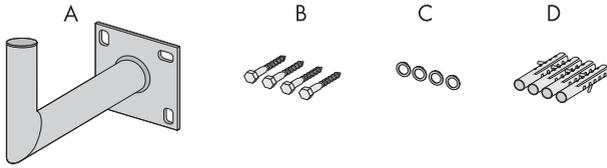
Position	Number	Description
A	1	Wall mounting bracket
B	4	Hex screws
C	4	Washers
D	4	Screw anchor

The optional wall mounting bracket is required for wall mounting using the wall mounting bracket.

1. Determine the mounting position taking into consideration the requirements of the mounting location.

2. Attach the wall mounting bracket to the wall using screws, screw anchors and washers.

3. Mounting the anemometer on a mast (see page 8).

4. Attach cables closely to the wall mounting bracket using cable ties or similar attaching material.

☑ The anemometer is mounted.
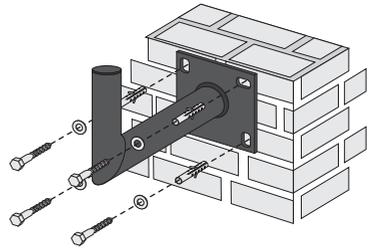
5 Electrical Connection

5.1 Circuit diagram
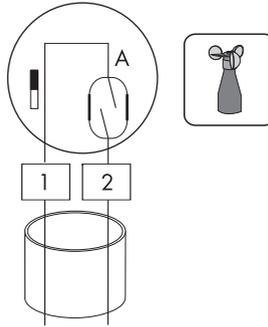
| Position	Description
A	Reed sensor

5.2 Connecting the Sensor to the Sunny SensorBox

1. Open Sunny SensorBox as described in the Sunny SensorBox Installation Guide.
2. Unscrew the cable gland's lock nut on the top left of the Sunny SensorBox and remove the filler plugs.
3. Thread the sensor cable through the lock nut and the cable gland at the top left into the Sunny SensorBox enclosure.
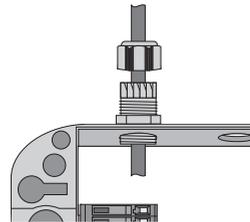
4. Connect sensor to connection "F3: Wind" of the Sunny SensorBox. The polarity of the cables is arbitrary.

IP +	IP -

F4:	GI +
ExtSol	GI -
F3:	IP +
Wind	IP -
	+12 V
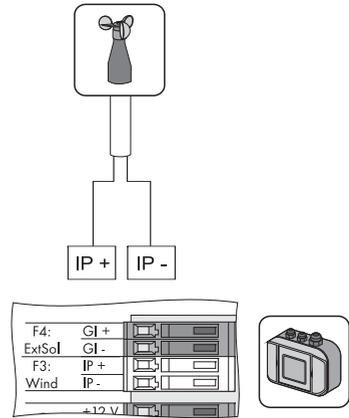
5. Manually tighten the sleeve nut to the cable gland (torque: 0.8 Nm).
6. Lay the cable using suitable fastening material.
☑ The anemometer is connected. You can now put Sunny SensorBox into operation.

6 Decommissioning

6.1 Disassembling the Sensor

1. Reset the configuration of the sensor in the communication device.
2. Detach the sensor cable from the communication device.
3. Disassemble the sensor depending on the assembly type.
☑ The sensor is now disassembled.

6.2 Disposing of the Sensor

At the end of its service life, dispose of the sensor in accordance with the applicable disposal regulations for electronic waste at the installation site at that time. Alternatively, send it back to SMA Solar Technology with shipping paid by the sender, and labeled "ZUR ENTSORGUNG" ("for disposal").

7 Technical data

Mechanical data

Height	160 mm
Base diameter	50 mm
Cup diameter	134 mm
Weight	300 g

Measured values

Proportional frequency in relation to wind force	100 Hz at 40 m/s
Accuracy	± 0.5 %
Measuring range*	0.8 m/s to 40 m/s
Resolution**	0.4 m
Proportional frequency to wind force	100 Hz at 40 m/s

* 60 m/s are also possible briefly

** Wind run

Environmental conditions during operation*

Ambient temperature	– 25 °C to + 60 °C
Mounting location	Outdoors

* When free of ice

8 Contact

If you have technical problems with our products, please contact our Service line. We require the following information in order to provide you with the necessary assistance:

- Sensor model
- Communication device
- Measured values

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