



System Monitoring
Anemometer
Installation Guide



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IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

This manual contains important instructions for the anemometer, that must be followed during installation and maintenance.

The anemometer is designed and tested according to international safety requirements, but as with all electrical and electronic equipment, certain precautions must be observed when installing and/or operating the anemometer. To reduce the risk of personal injury and to ensure the safe installation and operation of the anemometer, you must carefully read and follow all instructions, cautions and warnings in this installation guide.

Warnings in this document

A warning describes a hazard to equipment or personnel. It calls attention to a procedure or practice, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the SMA equipment and/or other equipment connected to the SMA equipment or personal injury.



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.

NOTICE

NOTICE is used to address practices not related to personal injury.

Other symbols in this document

In addition to the safety and hazard symbols described on the previous pages, the following symbol is also used in this installation guide:



Information

This symbol accompanies notes that call attention to supplementary information that you must know and use to ensure optimal operation of the system.

General warnings



General warnings

All electrical installations must be done in accordance with the local and *National Electrical Code*[®] ANSI/NFPA 70 or the *Canadian Electrical Code*[®] CSA C22.1. This document does not and is not intended to replace any local, state, provincial, federal or national laws, regulation or codes applicable to the installation and use of the anemometer, including without limitation applicable electrical safety codes. All installations must conform with the laws, regulations, codes and standards applicable in the jurisdiction of installation. SMA America, LLC assumes no responsibility for the compliance or noncompliance with such laws or codes in connection with the installation of the anemometer.

Before installing or using the anemometer, read all of the instructions, cautions, and warnings on the anemometer in this installation guide.

Wiring of the anemometer must be made by qualified personnel only.

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1 Notes on this Guide

This installation guide describes how to install and commission the anemometer. Keep this guide in a convenient place for future reference.

1.1 Validity

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

1.2 Target Group

This guide is for electrically skilled persons. Electrically skilled persons received training and have demonstrated skills and knowledge in the construction and operation of this device. Electrically skilled persons are trained to deal with the dangers and hazards involved in installing electric devices.

1.3 Storing the Documentation

Keep these guides in a convenient place for future reference.

1.4 Nomenclature




In this document, SMA America Production, LLC and SMA Solar Technology Canada Inc. are hereinafter referred to as SMA.

2 Safety

2.1 Appropriate Usage

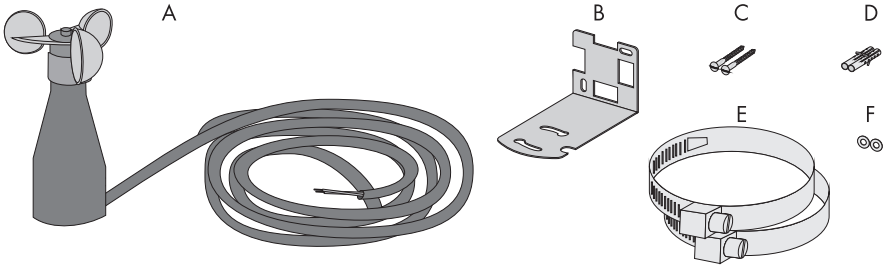
The anemometer is a sensor intended to measure horizontal wind force outdoors. The provided performance data can be processed by the Sunny SensorBox. Use the anemometer exclusively for purposes indicated in the installation guide and the indicated application range. Use only SMA original accessories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

2.2 Safety Instructions

 DANGER
<p>Installation of the anemometer at great heights. Death or serious injuries may result from falling.</p> <ul style="list-style-type: none"> • Work on rooftops entails a safety risk and requires special safeguards to be implemented. • Only qualified personnel may perform work on rooftops.
 WARNING
<p>Danger of falling due to incorrectly laid cables.</p> <ul style="list-style-type: none"> • Lay cables so that no one stands on them or trips over them.
 CAUTION
<p>Overvoltage due to lightning. Fire and damage of connected devices possible.</p> <ul style="list-style-type: none"> • Integrate the sensor into the existing lightning protection.
NOTICE <p>Damage to the sensors as a result of incorrect connection to the Sunny Boy Control Plus or Sunny Central Control.</p> <ul style="list-style-type: none"> • Before connecting, read the corresponding installation guide and use the enclosed circuit diagram when commissioning the Sunny Central Control.

3 Unpacking

3.1 Scope of Delivery



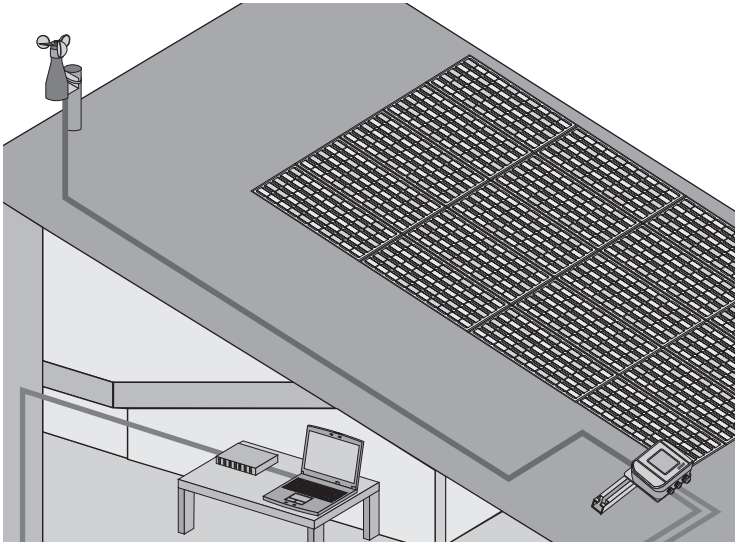
Position	Number	Description
A	1	Anemometer with 98 ft. (30 m) connection cable
B	1	Mounting bracket
C	2	Screws
D	2	Screw anchors
E	2	Straps
F	2	Washers

3.2 Cabling Recommendations

If the pre-configured connection 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-conductor cable (4 x 0.25 mm²).
- External cable diameter: min. 1/8 in., max. 1/4 in. (min. 4.5 mm, max. 6 mm)
- The maximum cable length may not exceed 98 ft (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 prefabricated cable length of $9\frac{3}{4}$ ft. (3 m). The cable may be cut or extended to a maximum of 98 ft. (30 m).

4 Mounting

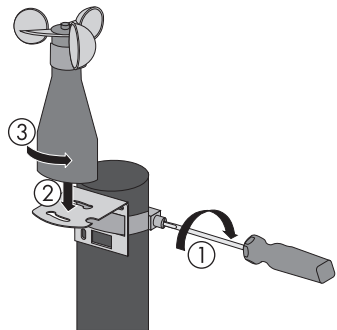
4.1 Safety

 DANGER
<p>Installation of the anemometer at great heights. Death or serious injuries may result from falling.</p> <ul style="list-style-type: none"> • Only qualified personnel may perform work on rooftops.

 CAUTION
<p>Overvoltage due to lightning. Fire and damage of connected devices possible.</p> <ul style="list-style-type: none"> • Integrate the anemometer into the existing lightning protection.

4.2 Mounting the Anemometer on a Mast

1. Determine the mounting position taking into consideration the requirements of the mounting location.
 2. Attach the mounting bracket 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 bracket (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 mounting material.
- The anemometer is mounted.



4.3 Mounting the Anemometer on a Wall

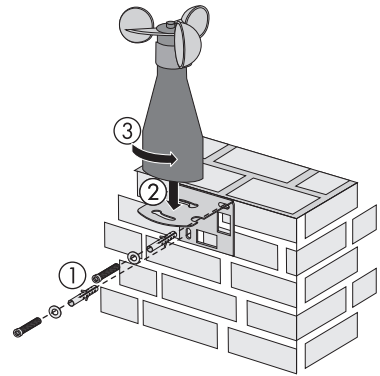
4.3.1 Wall Mounting with Mounting Bracket



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

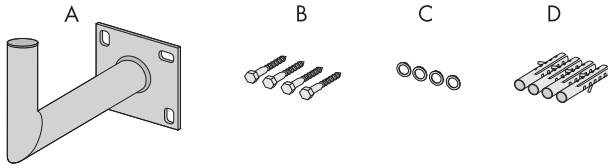
We recommend using a wall mounting bracket for wall mounting (see section 4.3.2 “Wall Mounting with Wall Mounting Bracket” (page 15)). The wall mounting bracket enlarges the distance to the wall and avoids turbulence. The accuracy of measurements is increased.

1. Determine the mounting position taking into consideration the requirements of the mounting location.
 2. Attach the mounting bracket 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 bracket (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.



4.3.2 Wall Mounting with Wall Mounting Bracket

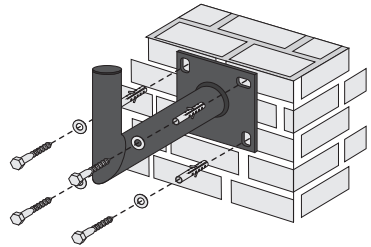
SMA order number: Wall mounting bracket



Position	Number	Description
A	1	Wall-mounting bracket
B	4	Hexagon screws
C	4	Washers
D	4	Screw anchors

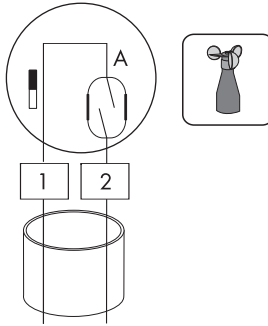
The optional wall mounting bracket is required for wall mounting using the wall mounting bracket.

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 .13).
 4. Attach cables closely to the wall mounting bracket using cable ties or similar mounting material.
- The anemometer is mounted.



5 Electrical Connection

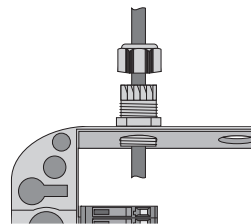
5.1 Circuit diagram



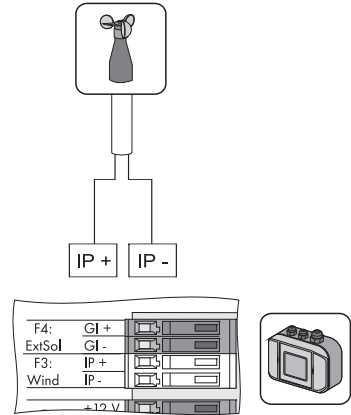
Position	Description
A	Reed sensor

5.2 Connecting the Sensor to the Sunny SensorBox

1. Open the 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 the sensor to connection "F3: Wind" of the Sunny SensorBox. The polarity of the cables is user-defined.



5. Tighten the lock nut with 7 in-lbs. (0.8 Nm) to the cable gland.
 6. Lay the cable using suitable mounting material.
- The anemometer is connected. You can now put the Sunny SensorBox into operation.

6 Decommissioning

6.1 Dismantling 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 disassembled.

6.2 Disposing of the Sensor

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

7 Technical data

Mechanical data

Altitude	6 $\frac{5}{16}$ in. (160 mm)
Base diameter	2 in. (50 mm)
Cup diameter	5 $\frac{9}{32}$ in. (134 mm)
Weight	10 $\frac{5}{8}$ oz. (300 g)

Measured Values

Proportional frequency to wind force	100 Hz at 78 kn. (40 m/s)
Accuracy	± 0.5 %
Measuring range*	78 kn. to 117 kn. (0.8 m/s to 40 m/s)
Resolution**	1 $\frac{5}{16}$ ft. (0.4 m)
Proportional frequency to wind force	100 Hz at 78 kn. (40 m/s)

* 117 kn. (60 m/s) are also possible briefly

** Wind run

Environmental conditions during operation*

Ambient temperature	-13 °F to +140 °F (-25 °C to +60 °C)
Mounting location	Outdoors

* When free of ice

8 Contact

If you have technical problems concerning our products, contact the SMA Serviceline. We need the following information in order to provide you with the necessary assistance:

- Sensor model
- Communication device
- Measured values

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