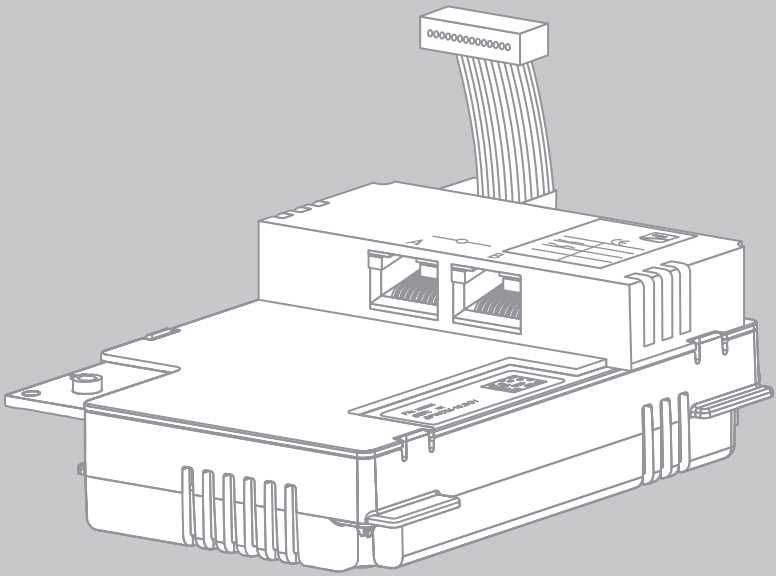
Installation Manual

SMA SPEEDWIRE/WEBCONNECT DATA MODULE



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Important Safety Instructions

SAVE THESE INSTRUCTIONS

This manual contains important instructions for the following products:

- SMA Speedwire/Webconnect Data Module

This manual must be followed during installation and maintenance.

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

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.

Symbol	Description
⚠ 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.

Warnings on this Product

The following symbols are used as product markings with the following meanings.

Symbol	Description
	**Warning regarding dangerous voltage** The product works with high voltages. All work on the product must only be performed as described in the documentation of the product.
	**Electric arc hazards** The product has large electrical potential differences between its conductors. Arc flashes can occur through air when high-voltage current flows. Do not work on the product during operation.
	**Risk of fire** Improper installation of the product may cause a fire.
	**Beware of hot surface** The product can become hot during operation. Do not touch the product during operation.
	**Observe the operating instructions** Read the documentation of the product before working on it. Follow all safety precautions and instructions as described in the documentation.

General Warnings

⚠ WARNING

All electrical installations must be made 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, regulations or codes applicable to the installation and use of the product, 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 assumes no responsibility for the compliance or non-compliance with such laws or codes in connection with the installation of the product.

The product contains no user-serviceable parts.
For all repair and maintenance, always return the unit to an authorized SMA Service Center.

Before installing or using the product, read all of the instructions, cautions, and warnings in this manual.

Before connecting the product to the electrical utility grid, contact the local utility company. This connection must be made only by qualified personnel.

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

Table of Contents

1 Information on this Document

Validity

This document is valid for device type "SWDM-10.GRUS" (Speedwire/Webconnect data module) from hardware version A and firmware version 1.00.11.R.

Target Group

This document is for qualified persons. Only persons with the appropriate skills are allowed to perform the tasks described in this document (see Section 2.2, page 11).

Symbols

Symbol	Explanation
	Information that is important for a specific topic or goal, but is not safety-relevant
☐	Indicates a requirement for meeting a specific goal
☑	Desired result
✖	A problem that could occur

Typographies

Typography	Explanation	Example
bold	• Display texts • Elements on a user interface • Terminals • Elements to be selected • Elements to be entered	• The value can be found in the **Energy** field. • Select **Settings**. • Enter the value **10** in the **Minutes** field.
>	• Connects several elements to be selected	• Select **Settings > Date**.
[**Button/Key**]	• The button or key to be selected or pressed	• Select [**Next**].

Nomenclature

Complete designation	Designation in this document
PV plant	Plant
Small-scale PV plant	Small-scale plant
Large-scale PV power plant	Large-scale plant
SMA America Production, LLC	SMA
SMA Solar Technology Canada Inc.	SMA
SMA Cluster Controller	Cluster Controller
SMA Speedwire	Speedwire
SMA Speedwire/Webconnect data module	Speedwire/Webconnect data module
SMA Webconnect function	Webconnect function
SMA inverter	Inverter

Abbreviations

Abbreviations	Designation	Explanation
AC	Alternating Current	-
DC	Direct Current	-
DHCP	Dynamic Host Configuration Protocol	Protocol for the dynamic assignment of IP configurations
ESD	Electrostatic Discharge	-
IP	Internet Protocol	-
PIC	Product Identification Code	Identification key for registration in Sunny Portal
RID	Registration Identifier	Registration key for registration in Sunny Portal
AF	Width Across Flats	The distance between two parallel flat surfaces ("flats") of a screw head
UMTS	Universal Mobile Telecommunications System	System succeeding GSM

Figures

The figures in this document have been created for Sunny Boy inverters and may deviate slightly in some cases for Sunny Tripower inverters.

2 Safety

2.1 Intended Use

The Speedwire/Webconnect data module is a Speedwire communication interface with Webconnect function for inverters.

Speedwire is a wire-based type of communication based on the Ethernet standard and the communication protocol SMA Data2+. This enables inverter-optimized 10/100 Mbit data transmission between Speedwire devices in PV plants. The Webconnect function enables direct data transmission between the inverters of a small-scale plant and the Internet portal Sunny Portal without any additional communication device and for a maximum of four inverters per Sunny Portal plant. For this, a Speedwire/Webconnect data module must be installed in each of the inverters. You can access your Sunny Portal plant from any computer with an Internet connection.

The Speedwire/Webconnect data module performs the following tasks:

- Set-up of a Speedwire network in small-scale and large-scale plants
- Data exchange with Sunny Portal:
  - In small-scale plants via a router with Internet connection
  - In large-scale plants via the Cluster Controller
- Data exchange with Sunny Explorer from software version 1.06

The Speedwire/Webconnect data module is available as a retrofit kit or is pre-installed in the inverter.

For safety reasons, it is forbidden to modify the product or install components that are not explicitly recommended or distributed by SMA.

The type label must be permanently attached to the product.

Use the Speedwire/Webconnect data module only in accordance with the enclosed documentation and with the local standards and directives. Any other use may cause injury to persons or property damage.

The enclosed documentation is an integral part of this product.

- Read and observe the documentation.
- Keep the documentation in a convenient place for future reference.

2.2 Skills of Qualified Persons

The tasks described in this document may only be performed by qualified persons. Qualified persons must have the following skills:

- Training in the installation and commissioning of electrical devices and plants
- Knowledge of how to deal with the dangers and risks associated with installation and operation of electrical devices and plants
- Knowledge of all applicable standards and directives
- Knowledge of how an inverter works and is operated
- Knowledge of and adherence to this document and all safety precautions

2.3 Safety Precautions

This section contains safety precautions that must be observed at all times when working on or with the product. To prevent personal injury or property damage and to ensure long-term operation of the product, read this section carefully and follow all safety precautions at all times.

⚠ DANGER

Danger to life due to electric shock when opening the inverter

High voltages are present in the conductive components of the inverter. Touching live components results in death or serious injury.

- Prior to performing any work on the inverter, always disconnect the inverter from all voltage sources on the AC and DC sides (see inverter installation manual). Observe the waiting time to allow the capacitors to discharge.

⚠ CAUTION

Risk of burns due to hot enclosure parts

Some parts of the inverter enclosure may get hot during operation. Touching these enclosure parts can result in burn injuries.

- Do not touch any parts other than the lower enclosure lid of the inverter during operation.

NOTICE

Damage to the inverter or the Speedwire/Webconnect data module due to electrostatic discharge

The internal electronic components of the inverter or in the Speedwire/Webconnect data module can be irreparably damaged by electrostatic discharge.

- Ground yourself before touching any electronic component.

2.4 Operating Instructions

NOTICE

High costs possible due to inappropriate Internet rates

When using the Webconnect function, a constant Internet connection is required.

Depending on the quality of the Internet connection, the data transfer volume for an inverter is between 150 MB and 550 MB per month. When using the plant overview in Sunny Portal with live data display, there is an additional data volume of 600 kB per hour.

- Since there is a constant Internet connection to Sunny Portal, time-based billing systems should be avoided. High costs could be incurred. SMA recommends using an Internet flat rate.

If UMTS is used, VoIP is required

If UMTS is used, VoIP (Voice over IP) is required to use the Webconnect function.

- Ensure that the UMTS provider also provides the "VoIP" service".

2.5 Supported Products

SMA Inverters

The Speedwire/Webconnect data module must only be installed in the following inverters from firmware version 2.51:

Sunny Boy

- SB 3000TL-US-22
- SB 3800TL-US-22
- SB 4000TL-US-22
- SB 5000TL-US-22

Sunny Tripower

- STP 12000TL-US-10
- STP 15000TL-US-10
- STP 20000TL-US-10
- STP 24000TL-US-10

Additional SMA Products

The Speedwire/Webconnect data module can be configured with the following communication products:

- SMA Cluster Controller from firmware version 1.0
- Sunny Explorer from software version 1.06
- SMA Connection Assist from software version 1.00.8.R

Sunny Explorer and SMA Connection Assist are available free of charge at www.SMA-Solar.com.

3 Scope of Delivery

Check the scope of delivery for completeness and any visible external damage. Contact your distributor if the delivery is incomplete or damaged.

Order Option: Speedwire/Webconnect Data Module Pre-Installed in the Inverter

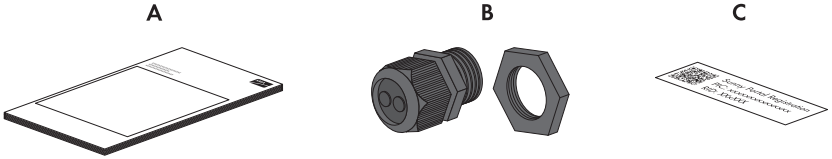


Figure 1: Components of the order option "Speedwire/Webconnect data module pre-installed in the inverter"

Position	Number	Designation
A	1	Installation manual
B	1	Cable gland
C	1	Label with PIC and RID for registering of a small-scale plant in Sunny Portal

Order Option: Speedwire/Webconnect Data Module as Retrofit Kit

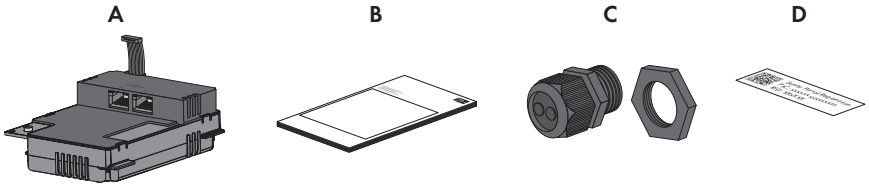


Figure 2: Components of the order option "Speedwire/Webconnect data module as retrofit kit"

Position	Number	Designation
A	1	Speedwire/Webconnect data module (SWDM-US-10)
B	1	Installation manual
C	1	Cable gland
D	2	Label with PIC and RID for registering of a small-scale plant in Sunny Portal

4 Product Description

4.1 Speedwire/Webconnect Data Module

The Speedwire/Webconnect data module is a Speedwire communication interface with Webconnect function for inverters.

Speedwire is a wire-based type of communication based on the Ethernet standard and the communication protocol SMA Data2+. This enables inverter-optimized 10/100 Mbit data transmission between Speedwire devices in PV plants.

The Webconnect function enables direct data transmission between the inverters of a small-scale plant and the Internet portal Sunny Portal without any additional communication device and for a maximum of four inverters per Sunny Portal plant. For this, a Speedwire/Webconnect data module must be installed in each of the inverters. You can access your Sunny Portal plant from any computer with an Internet connection.

The Speedwire/Webconnect data module performs the following tasks:

- Set-up of a Speedwire network in small-scale and large-scale plants
- Data exchange with Sunny Portal:
  - In small-scale plants via a router with Internet connection
  - In large-scale plants via the Cluster Controller
- Data exchange with Sunny Explorer from software version 1.06

The Speedwire/Webconnect data module is available as a retrofit kit or is pre-installed in the inverter.

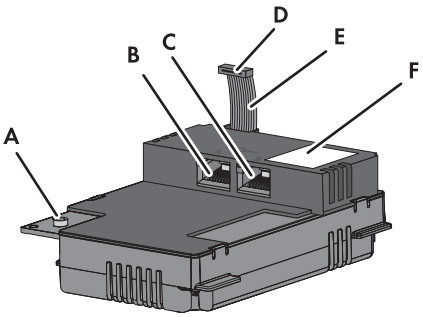


Figure 3: Design of the Speedwire/Webconnect data module

Position	Designation
A	Hexagon socket screw (AF 3)
B	Network port A
C	Network port B
D	Ribbon cable plug
E	Ribbon cable
F	Type label

Label with PIC and RID for Registering of a Small-Scale Plant in Sunny Portal

To activate the Speedwire/Webconnect data module of a small-scale plant in Sunny Portal, you will need the PIC and RID numbers printed on the label included in the delivery. After installation of the Speedwire/Webconnect data module, a label should be attached to the exterior of the inverter in the vicinity of the type label. Keep the other label in a safe place for future reference.

Use in Small-Scale Plants with a Maximum of Four Inverters

A small-scale plant in Sunny Portal can consist of a maximum of four inverters with installed Speedwire/Webconnect data module.

In small-scale plants, the Speedwire network can be set up optionally with line, star or tree topology. Depending on the plant, the computer with the Sunny Explorer software will be connected to the router or the network switch.

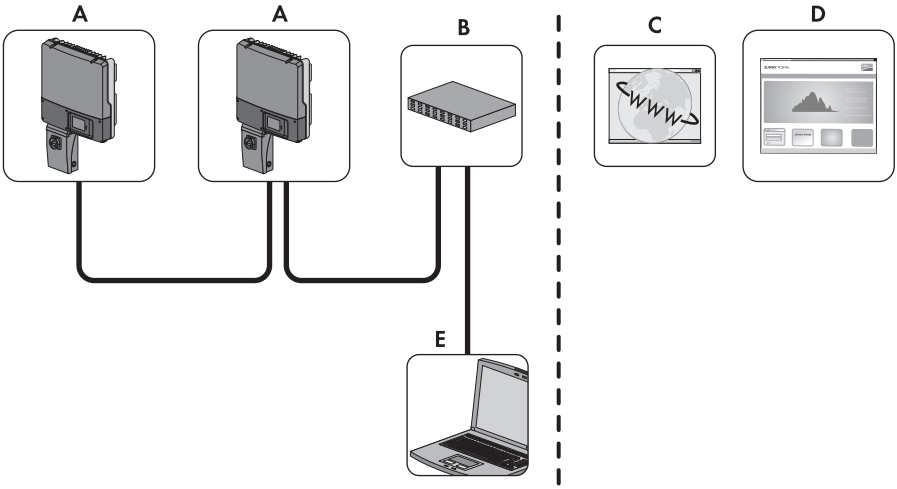


Figure 4: Small-scale plant with two inverters in line topology (example)

Position	Designation
A	Inverter with Speedwire/Webconnect data module
B	Router
C	Internet
D	Sunny Portal
E	Computer with Sunny Explorer

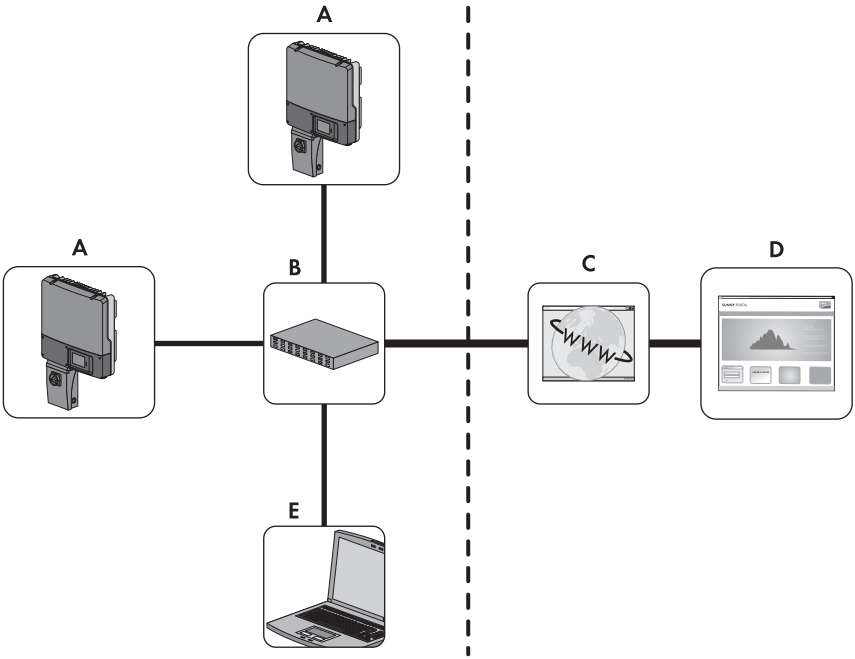


Figure 5: Small-scale plant with two inverters in star topology (example)

Position	Designation
A	Inverter with Speedwire/Webconnect data module
B	Router
C	Internet
D	Sunny Portal
E	Computer with Sunny Explorer

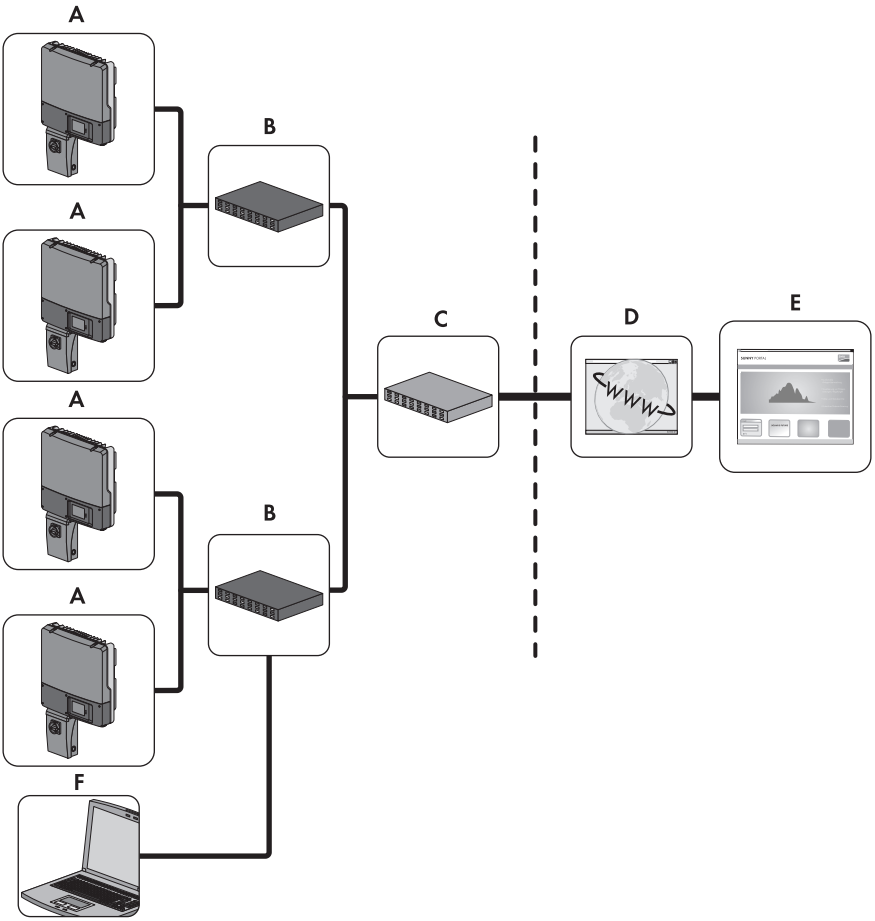


Figure 6: Small-scale plant with four inverters in tree topology (example)

Position	Designation
A	Inverter with Speedwire/Webconnect data module
B	Network switch
C	Router
D	Internet
E	Sunny Portal
F	Computer with Sunny Explorer

Use in Large-Scale Plants with Cluster Controller

The Speedwire network can be set up optionally with line or tree topology. In large-scale plants with Cluster Controller, the data exchange with Sunny Portal does not take place via the individual inverters, but centrally via the Cluster Controller (see user manual of the Cluster Controller and user manual of the Cluster Controller in Sunny Portal).

Deactivation of the Webconnect function of inverters in large-scale plants with Cluster Controller

In large-scale plants with Cluster Controller, communication with Sunny Portal takes place via the Cluster Controller itself.

- For optimum operation of large-scale plants with Cluster Controller, deactivate the Webconnect function of the inverters with installed Speedwire/Webconnect data module (see user manual of the Cluster Controller).

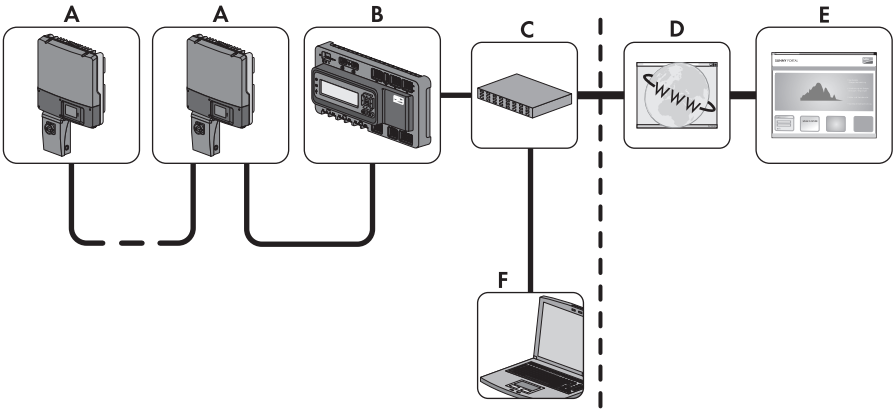


Figure 7: Large-scale plant with Cluster Controller and inverters in line topology (example)

Position	Designation
A	Inverter with Speedwire/Webconnect data module
B	Cluster Controller
C	Router
D	Internet
E	Sunny Portal
F	Computer with access to the user interface of the Cluster Controller

4.2 Type Label

The type label clearly identifies the product. The type label is located in the right-hand top corner on the front of the product. You can read the following data from the type label:

- Device type (Type)
- Serial number
- Hardware version (Version)
- PIC
- RID
- MAC address (MAC Address)

You will require the information on the type label to use the product safely and when seeking customer support from the SMA Service Line.

Symbols on the Type Label

Symbol	Designation	Explanation
	FCC marking	The product complies with the requirements of the applicable FCC standard.
	Data matrix code	2D code for device-specific characteristics

4.3 Cable Gland

The cable gland fixes the network cables to the inverter enclosure. The cable gland also protects the interior of the inverter from dust intrusion and moisture penetration.

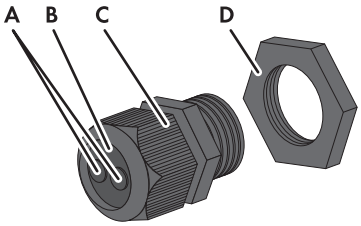


Figure 8: Design of cable gland

Position	Designation
A	Filler plug
B	Seal
C	Swivel nut
D	Counter nut

5 Connection

5.1 Mounting Position and Cable Route

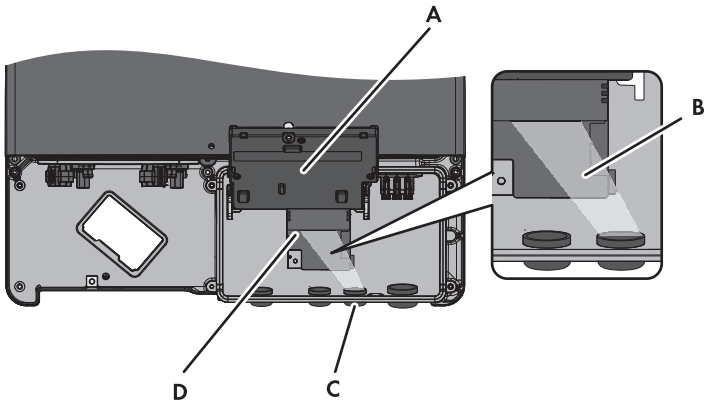


Figure 9: Mounting position and cable route in the inverter with the lower enclosure lid open and the display flipped up

Position	Designation
A	Flipped up display
B	Cable route to the network ports
C	Inverter enclosure opening for cable gland or conduit fitting and conduit • Size for Sunny Boy inverters (SB): $^{3}/_{4}$ in. (19 mm) • Size for Sunny Tripower inverters (STP): $1\ ^{3}/_{32}$ in. (27.8 mm) to $1\ ^{7}/_{64}$ in. (28.0 mm)
D	Mounting position of the Speedwire/Webconnect data module in the inverter

5.2 Cable Requirements and Information on Routing

The cable length and quality have an effect on the signal strength in the Speedwire network. Observe the following cable requirements and the information on cable laying.

Disturbance in data transmission due to unshielded power cables

If unshielded power cables are used, they generate an electromagnetic field which may induce interference in network cables during data transmission.

- When laying network cables, observe the following minimum clearances to unshielded power cables:
  - For installation without separating strip: at least 8 in. (200 mm)
  - For installation with aluminum separating strip: at least 4 in. (100 mm)
  - For installation with steel separating strip: at least 2 in. (50 mm)

Cable requirements:

- ☐ UV-resistant for outdoor use
- ☐ Number of insulated conductor pairs and insulated conductor cross-section: at least 2 x 2 x 24 AWG (2 x 2 x 0.22 mm^2)
- ☐ External diameter of cable:
  - When using conduits: the maximum diameter of the cable depends on the size of the enclosure opening at the bottom of the inverter and the number of network cables to be inserted through the opening (see Section 5.1 "Mounting Position and Cable Route", page 21).
  - When using the cable gland included in the delivery: max. $^{17}/_{48}$ in. (9 mm)
- ☐ Cable category: Cat5, Cat5e, Cat6, Cat6a, Cat7
- ☐ Cable shield: SF/UTP, S/UTP, SF/FTP, S/FTP
- ☐ Plug type: RJ45 for Cat5, Cat5e, Cat6, Cat6a
- ☐ Cable length between two nodes: max. 164 ft (50 m) with patch cable, max. 328 ft (100 m) with installation cable

SMA recommends the following cable types:

- For outdoor use: SMA COMCAB-OUTxxx*
- For indoor use: SMA COMCAB-INxxx*

The cables are available in the following lengths xxx = 328 ft. (100 m), 656 ft. (200 m), 1,640 ft. (500 m) und 3,280 ft. (1,000 m).

5.3 Installing the Speedwire/Webconnect Data Module

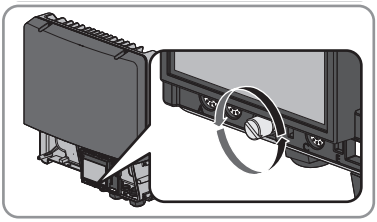
1. **⚠ DANGER**

   Danger to life due to electric shock when opening the inverter

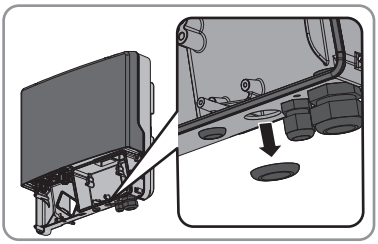
   High voltages are present in the conductive components of the inverter. Touching live components results in death or serious injury.

   - Disconnect the inverter from voltage sources on the AC and DC sides and open it (see the inverter installation manual). Observe the waiting time to allow the capacitors to discharge.

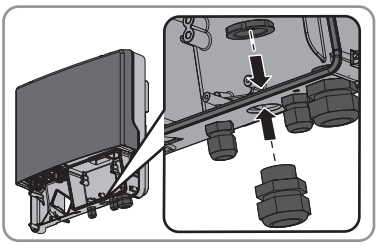
2. Release the screw of the display far enough to allow the display to be flipped up.



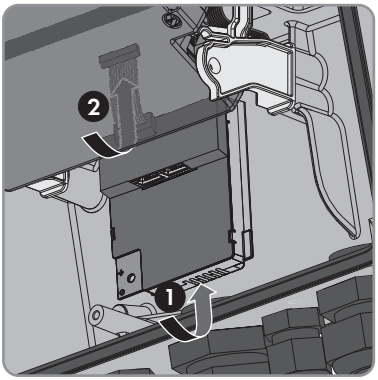
3. Flip the display up until it clicks into place.
4. Push the pre-mounted filler plug out of the second hole from the left in the inverter enclosure and retain it for future decommissioning.



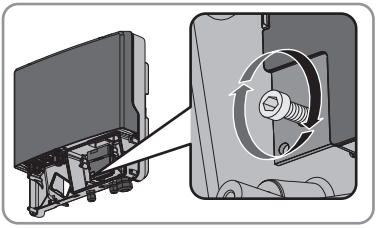
5. Attach the cable gland to the enclosure opening using the counter nut.



6. Insert the Speedwire/Webconnect data module and slide the ribbon cable upwards behind the display. The key on the top edge of the Speedwire/ Webconnect data module must fit into the hole in the plastic retainer in the inverter.

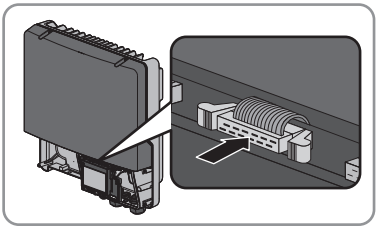


7. Fasten the Speedwire/Webconnect data module hand-tight using the hexagon socket screw (AF 3).



8. Flip the display down.

9. Plug the ribbon cable plug onto the center connector strip.



10. Stick one of the labels with the data for registration in Sunny Portal (PIC and RID) on the outside of the inverter in the vicinity of the type label.
11. If you do not wish to proceed immediately with the connection of the Speedwire/Webconnect data module, close the inverter (see inverter installation manual).

5.4 Connecting the Speedwire/Webconnect Data Module

Depending on the plant topology you require, you must connect either one or two cables to the Speedwire/Webconnect data module.

Requirements:

☐ All electrical installations must be carried out in accordance with the electrical standards applicable on site and the *National Electrical Code*® (NE, ANSI/NFPA 70).

☐ Installations in Canada must comply with the applicable Canadian standards.

☐ The network cables must be pre-assembled in accordance with the plant topology and the cable requirements (see Section 5.2, page 22).

Additionally required material (not included in the scope of delivery):

☐ Network cable (see Section 5.2 "Cable Requirements and Information on Routing", page 22)

☐ If cables are routed in a conduit:

– One rain-tight conduit fitting or conduit fitting for wet locations (diameter: $^{3}/_{4}$ in. (19 mm))

– One conduit (diameter: $^{3}/_{4}$ in. (19 mm))

Procedure:

1. **⚠ DANGER**

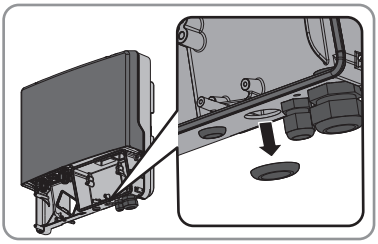
   Danger to life due to electric shock when opening the inverter

   High voltages are present in the conductive components of the inverter. Touching live components results in death or serious injury.

   - If the inverter has not yet been opened, disconnect the inverter from voltage sources on the AC and DC sides and open it (see the inverter installation manual). Observe the waiting time to allow the capacitors to discharge.

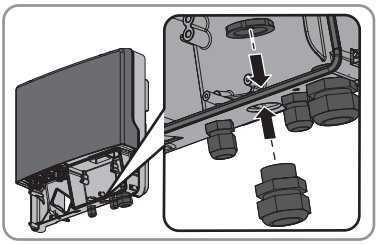
2. Flip the display up until it clicks into place.

3. Push the pre-mounted filler plug out of the second hole from the left in the inverter enclosure.

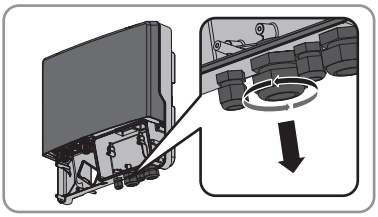


4. If a conduit is to be used, proceed as follows:
   - Insert one rain-tight conduit fitting or a conduit fitting for wet locations into the enclosure opening and fasten from the inside using a counter nut.
   - Install one conduit at the enclosure opening.
   - Lead one or two cables through the conduit into the inverter.
   - Insert the network cables into the network ports. This can be done in any order.

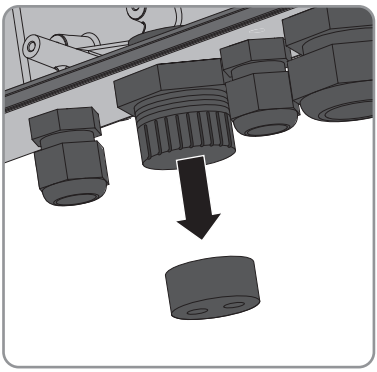
5. If no conduit is to be used, proceed as follows:
   - Attach cable gland to the enclosure opening using the counter nut.



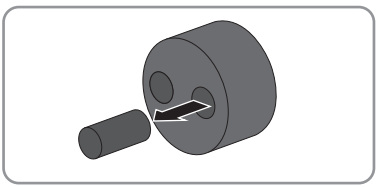
   - Unscrew the swivel nut of the cable gland on the inverter.



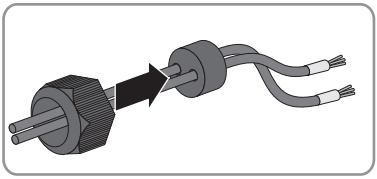
   - Press the seal out of the cable gland from the inside.



   - Lead the network cables from the outside into the inverter through the loose swivel nut and the cable gland.
   - For each network cable, remove one of the filler plugs from the seal and retain for later decommissioning.



- Lead the network cables through the swivel nut and into the seal. Route the network cable plugs into the inverter to the network ports.



- Press the seal into the cable gland. Make sure that any unused cable openings are sealed with filler plugs.
- Screw the swivel nut of the cable gland on loosely.
- Insert the network cables into the network ports. This can be done in any order.
- Fasten the swivel nut on the cable gland hand-tight. This will fix the network cables in place.

6. Flip the display down and fasten it hand-tight using the screw.
7. Close the inverter (see inverter installation manual).
8. In a small-scale plant, connect at least one inverter directly to the router depending on the plant topology.
9. In a large-scale plant with Cluster Controller, connect the Cluster Controller to the Speedwire network in accordance with the required network topology (see the Cluster Controller installation manual).

6 Commissioning

6.1 Commissioning a Large-Scale Plant with Cluster Controller

Requirements:

- ☐ Speedwire/Webconnect data modules must be installed in the inverters (see Section 5.3, page 23).
- ☐ Speedwire/Webconnect data modules must be connected (see Section 5.4, page 25).
- ☐ The Cluster Controller must be connected to the Speedwire network in accordance with the desired network topology (see installation manual of the Cluster Controller).

Procedure:

1. Commission all inverters (see inverter installation manual).
2. For optimum operation of large-scale plants with Cluster Controller, deactivate the Webconnect function of the inverters with installed Speedwire/Webconnect data module (see user manual of the Cluster Controller). In large-scale plants with Cluster Controller, communication with Sunny Portal takes place via the Cluster Controller itself.

6.2 Commissioning a Small-Scale Plant

Requirements:

- ☐ Speedwire/Webconnect data modules must be installed in the inverters (see Section 5.3, page 23).
- ☐ Speedwire/Webconnect data module must be connected (see Section 5.4, page 25).
- ☐ There must be a router with Internet connection in the local network of the plant.
- ☐ At least one inverter must be connected to the router.
- ☐ If the IP addresses in the local network are to be assigned dynamically, DHCP must be activated in the router (see the router manual). If you do not want to use DHCP or your router does not support DHCP, use either the SMA Connection Assist or Sunny Explorer to integrate the inverters with the Speedwire/Webconnect data module into the local network (see Section 2.5 "Supported Products", page 13).

Procedure:

- Commission all inverters (see inverter installation manual).

6.3 Managing Small-Scale Plants with Sunny Explorer

6.3.1 Functions and Parameter Settings in Sunny Explorer

The following functions for small-scale plant management in Sunny Explorer are available:

- Overview of the plant status
- Graphic display of key plant data, device data and energy values
- Parameterization of individual devices or an entire device class
- Simple diagnostics thanks to display of faults and events
- Data export of inverter energy values and events in CSV format
- Device updates

You can change the following parameters in Sunny Explorer:

- Device name of the inverter
- Automatic IP configuration On/Off
- DNS-IP, gateway IP, IP address, subnet mask
- Webconnect function On/Off

6.3.2 Creating a Small-Scale Plant in Sunny Explorer

Requirements:

☐ The small-scale plant must be commissioned (see Section 6.2, page 28).

☐ Sunny Explorer must be installed on the computer (see Section 2.5 "Supported Products", page 13).

Procedure:

1. Connect the computer to the plant router with a network cable.
2. If you have used the SMA Connection Assist for the static network configuration, ensure that the SMA Connection Assist has ended.
3. Start Sunny Explorer and create a Speedwire plant for the small-scale plant in Sunny Explorer (see Sunny Explorer help).

6.4 Plant Registration in Sunny Portal

6.4.1 Registering a Large-Scale Plant with Cluster Controller in Sunny Portal

Requirements:

- ☐ The large-scale plant with Cluster Controller must be be commissioned (see Section 6.1, page 28).
- ☐ The computer must have an Internet connection.
- ☐ The Cluster Controller must be connected to a router with Internet connection (see installation manual of the Cluster Controller).
- ☐ JavaScript must be activated in the Internet browser.

Procedure:

- In large-scale plants with Cluster Controller, register in Sunny Portal via the user interface of the Cluster Controller (see user manual of the Cluster Controller).

6.4.2 Registering a Small-Scale Plant in Sunny Portal

Requirements:

- ☐ The small-scale plant must be commissioned (see Section 6.2, page 28).
- ☐ PIC and RID of the Speedwire/Webconnect data module must be available.
- ☐ Your computer must have an Internet connection.
- ☐ JavaScript must be activated in the Internet browser.

Maximum permissible number of devices for a small-scale plant in Sunny Portal

In Sunny Portal, a maximum of four inverters with installed Speedwire/Webconnect data module is permitted per small-scale plant.

Small-scale plant with Speedwire/Webconnect data module cannot be combined with other plants

If you already have a plant with a different communication device, e.g. Sunny WebBox, in Sunny Portal, you will still need to create a separate small-scale plant with Speedwire/Webconnect data module. It is not possible to combine the Speedwire/Webconnect data module and other communication devices within one plant in Sunny Portal. Sunny Portal treats the existing plant and the new small-scale plant with Speedwire/Webconnect data module as independent plants.

- Create a new small-scale plant with Speedwire/Webconnect data module.

Replacing the Speedwire/Webconnect data module in the inverter

If you have replaced the Speedwire/Webconnect data module in the inverter with a new Speedwire/Webconnect data module, the PIC and the RID of the inverter change. Therefore, you must also replace the inverter using the Plant Setup Assistant in Sunny Portal (see the Sunny Portal user manual). In the Plant Setup Assistant, you must enter the PIC and the RID of the new Speedwire/Webconnect data module.

Starting the Plant Setup Assistant in Sunny Portal

The Plant Setup Assistant is a step-by-step guide to the processes required for user registration and the registration of your plant in Sunny Portal

Procedure:

1. Go to **www.SunnyPortal.com**.
2. Select [**Plant Setup Assistant**].
   ☑ The Plant Setup Assistant opens.
3. Follow the instructions of the Plant Setup Assistant.

7 Decommissioning

7.1 Removing the Speedwire/Webconnect Data Module

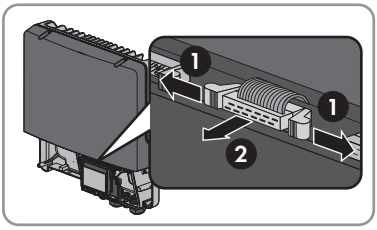
1. **⚠ DANGER**

   Danger to life due to electric shock when opening the inverter

   High voltages are present in the conductive components of the inverter. Touching live components results in death or serious injury.

   - Disconnect the inverter from voltage sources on the AC and DC sides and open it (see the inverter installation manual). Observe the waiting time to allow the capacitors to discharge.

2. Press the left-hand and right-hand lock hooks outwards and remove the ribbon cable plug from the center connector strip of the inverter.



3. Release the screw of the display far enough to allow the display to be flipped up.
4. Flip the display up until it clicks into place.
5. Unscrew the swivel nut of the cable gland.
6. Remove the network cables from the Speedwire/Webconnect data module.
7. Unscrew the counter nut of the cable gland or the conduit fitting.
8. Remove the cable gland or the conduit fitting with conduit and the cables from the inverter.
9. Release the hexagon socket screw of the Speedwire/Webconnect data module (AF 3) and remove the module.
10. Flip the display down and fasten the display screw hand-tight.
11. Seal the enclosure opening of the inverter with the corresponding filler plug.
12. Close the inverter (see inverter installation manual).

7.2 Packaging the Speedwire/Webconnect Data Module for Shipping

- Pack the Speedwire/Webconnect data module for shipping. Use the original packaging or packaging that is suitable for the weight and size of the Speedwire/Webconnect data module (see Section 9 "Technical Data", page 34).

7.3 Disposing of the Speedwire/Webconnect Data Module

- Dispose of the Speedwire/Webconnect data module in accordance with the regulations for the disposal of electronic waste applicable at the installation site.

8 Troubleshooting

Problem	Cause and corrective measures
The Speedwire/Webconnect data module cannot be accessed.	There is no Speedwire connection. **Corrective measures:** • Ensure that all network cable plugs are inserted and locked. • Ensure that all inverters in the plant are in operation. • Make sure that the plant router is switched on. • Make sure that the ribbon cable plug of the Speedwire/ Webconnect data module is correctly plugged into the center connector strip in the inverter.
	The inverter does not recognize the Speedwire/Webconnect data module. The firmware version of the inverter is not supported (see Section 2.5, page 13). **Corrective measures:** • An inverter firmware update can only be carried out by SMA Service. If an inverter firmware update is required, contact the SMA Service Line (see Section 11, page 36).
	Firewall or IP filter settings are not correct. **Corrective measures:** • Adjust firewall or IP filter settings (see firewall or router manual).
	The Speedwire/Webconnect data module does not have a valid IP address. **Corrective measures:** • Ensure that DHCP is activated in the router or assign a manual IP address to the Speedwire/Webconnect data module.

9 Technical Data

General Data	
Mounting location	in the inverter
Voltage supply	via the inverter

Mechanical Data	
Width x height x depth	2 $^{7}/_{8}$ in. x 3 $^{7}/_{16}$ in. x 1 $^{3}/_{8}$ in. (73 mm x 88 mm x 34 mm)

Communication	
Communication interface	Speedwire/Webconnect
Maximum cable length	328 ft. (100 m)

Terminals	
Type of plug	RJ45
Number of RJ45 terminals	2

Ambient Conditions for Storage/Transport	
Ambient temperature	− 40°F to +185°F (− 40°C to +85°C)
Relative humidity, non-condensing	10% to 100%

10 Compliance Information

FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

The user is cautioned that changes or modifications not expressly approved by SMA America, LLC could void the user's authority to operate this equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

IC Compliance

This device complies with Industry of Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- This device may not cause interference, and
- This device must accept any interference, including interferences that may cause undesired operation of the device.

11 Contact

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

- Inverters:
  - Type
  - Serial number
  - Firmware version
- Speedwire/Webconnect data module:
  - Type
  - Serial number
  - Firmware version
  - Number of Speedwire/Webconnect data modules connected
- Large-scale plants:
  - Serial number and firmware version of the Cluster Controller
- Small-scale plants:
  - Name of your Sunny Portal plant
  - PIC and RID of the Speedwire/Webconnect data module

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