Accessories Solar Datatechnology

Wireless-Set485-01/-Set485-02

Installation Guide

WirelessSet485-IEN091511 | 98-0009411 | Version 1.1

EN

Table of Contents

1 Notes on this Manual

1.1 Scope of Application

This manual is intended for the radio module from version IRIS-RS485-EXT-01, the plug adapter from version A and the RS485 Power Injector from version C. The versions are displayed on the type plates and in chapter 3.4 "Identification" (page 10).

1.2 Target Group

This manual is intended for use by the installer.

1.3 Storage of the Documentation

All documentation on the Wireless-Set485-01 and the Wireless-Set485-02 and the integrated components must be kept close to the set and must be accessible at all times.

1.4 Symbols Used

The following safety warnings and general information are used in this document:

DANGER!

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

WARNING!

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

CAUTION!

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

NOTICE!

"NOTICE" indicates a situation which, if not avoided, could result in damage to property!

Information

Information provides tips that are valuable for the optimal operation of your product.

2 Safety

Working Environment

- Pay attention to all safety regulations relating to the handling of electrical equipment, which apply in your area of work.
- Ensure that children and other people are kept well clear of potential sources of danger during mounting and maintenance of the device.

Electrical Safety

- The plugs must not be altered in any way; only install cable connections as is described in this manual. Unaltered plugs and appropriate plug sockets reduce the risk of an electric shock.
- Keep the device out of the rain and clear of sources of water during installation and operation. If water gets into the radio module, the risk of electric shock is increased and the device may be damaged.

Personal Safety

- Take the necessary precautions to keep unauthorized persons clear of the device and prevent it from being accidentally started up during mounting.

Radiation

- Possible health risks associated with the effect of radiation. Do not remain within a distance of less than 20 cm from the antenna for long periods of time.

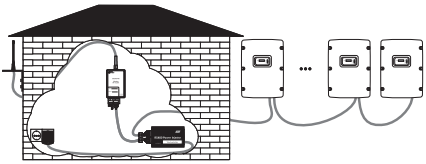
Service

- Only allow your Wireless Set to be repaired by qualified specialists and only using original spare parts.

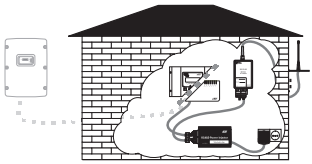
3 The Wireless-Set485-01

3.1 Applications

With the Wireless-Set485-01, you can extend the RS485 communication bus of your PV plant using radio transmission. The transmission path should be seen as a cable substitute and establishes a point-to-point connection. SMA distinguishes between the communication device side and the inverter side. On the communication device side, there is the communication device (Sunny WebBox, Sunny Boy Control) and possibly other communication bus devices. On the inverter side, all the other communication bus devices can be connected. Communication bus devices include the inverter or the Sunny SensorBox.



Inverter side

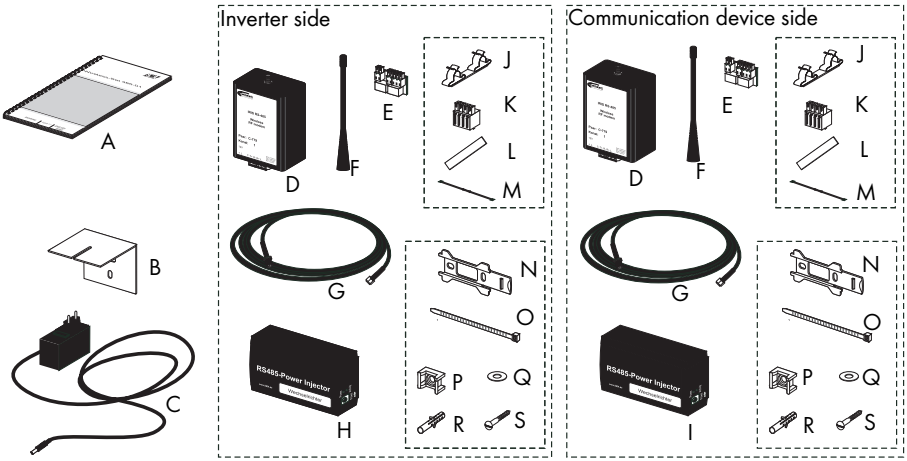


Communication device side

3.2 Functions

- Radio network topology:
  - Point-to-point connection
  - Connection from a further plant unit via separate transmission paths possible (Complementary set Wireless-Set485-02)
  - Connection of several transmission paths in series not permitted
- Max. range in open air 500 m
- Transmission frequency between 433.05 MHz and 434.79 MHz
- Power supply via RS485 Power Injector and plug-in power supply

3.3 Scope of Delivery



A 1 Installation Guide

B 2 brackets for antennae (1 each for inverter side and communication device side)

C 2 plug-in power supply units (90-264 V AC, 12 V DC, 10 W) (1 each inverter side and communication device side)

Inverter Side

D 1 IRIS RS 485 Wireless RF modem (radio module)

E 1 plug adapter 485IRISADAP-01

F 1 antenna

G 1 antenna cable 3 m

H 1 RS485 Power Injector-02 ("Inverter")

J 1 shield clamp (2 poles)

K 4 plugs (4 poles)

L 2 copper foil strips (self-adhesive)

M 1 termination resistor (120 ohms)

N 1 wall bracket for the RS485 Power Injector

O 2 cable ties

P 2 mounting clamps

Q 4 washers stainless

R 6 dowels S6

S 6 screws 4 x 35 mm stainless

Communication Device Side

D 1 IRIS RS 485 Wireless RF modem (radio module)

E 1 plug adapter 485IRISADAP-01

F 1 antenna

G 1 antenna cable 3 m

I 1 RS485 Power Injector-01 ("Datalogger")

J 1 shield clamp (2 poles)

K 4 plugs (4 poles)

L 2 copper foil strips (self-adhesive)

M 1 termination resistor (120 ohms)

N 1 wall bracket for the RS485 Power Injector

O 2 cable ties

P 2 mounting clamps

Q 4 washers stainless

R 6 dowels S6

S 6 screws 4 x 35 mm stainless

3.4 Identification

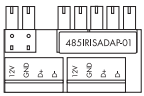
3.4.1 Identification of the Radio Module

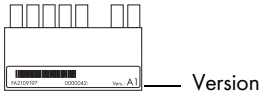
Identifying the Radio Module

You can identify the radio module with the help of the type plate
(see figure below). The type plate can be found on the back of the housing and includes the version (here "IRIS-RS485-EXT-01) and the ID (here "0093323284").

Identifying the Plug Adapter

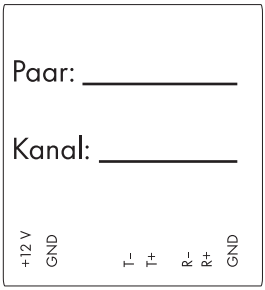
You can identify the plug adapter with the aid of the labels (see figure on the right). The labels can be found on the front and back of the plug adapter and include the plug type (here "485IRISADAP-01") and the device version (here "A1").





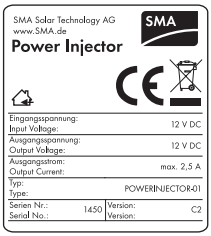
Distinguishing between Radio Module Pairs

A Wireless Set consists of two radio modules. You can identify the radio module pair and the radio channel with the aid of the label on the front of the radio module. For both the radio modules in a set, the "pair" and the "channel" on the type plate must correspond.



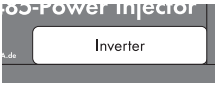
3.4.2 Identification of the RS485 Power Injector

Identifying the RS485 Power Injector



You can identify the RS485 Power Injector with the aid of the type plate (see figure on the right). The type plate can be found on the back of the housing. It includes the type (here "POWERINJECTOR-01") and version (here "C2") of the RS485 Power Injector.

Distinguishing between the RS485 Power Injectors



The Wireless-Set 485-01 and Wireless-Set485-02 consist of different RS485 Power Injectors ("Datalogger" and "Inverter"). You can identify the different RS485 Power Injectors with the aid of the label on the front of the housing (here "Inverter").

4 Mounting

4.1 Choosing a Mounting Site

Please pay attention to the following required ambient conditions.

Antenna / Antenna Bracket

- The antenna must be protected from the effects of the weather.
- For optimal transmission, the opposing antenna should be visible (maximum free-field range 500 m).
- The antenna must be installed vertically.
- For installation, there must be approx. 25 cm of space above the antenna bracket.
- The antenna bracket must be installed on a solid surface.

Radio Module

- The radio module is only suitable for indoor installation.
- The ambient temperature must be between -10 °C and +55 °C.
- The mounting location must be accessible at all times.
- The cable length between the RS485 Power Injector and the radio module may not exceed 30 m. This also applies to the radio module from the Wireless-Set485-02 on the communication device side.
- The cable feeds require around 20 cm of space below the radio module.
- The radio module must be mounted on a solid surface.

RS485 Power Injector

- The RS485 Power Injector is only suitable for indoor installation.
- The RS485 Power Injector must be mounted near a 230 V/110 V plug socket (cable length of the power supply unit approx. 180 cm).
- The cable feeds require around 15 cm of space at the plug connections.
- The RS485 Power Injector must be installed on a solid surface.

4.2 Mounting Instructions

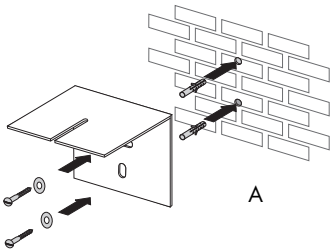
First mount and connect all devices on the inverter side and then those on the communication device side (see 3.1 "Applications" (page 8)). For each mounting, corresponding mounting kits have been included in the delivery.

To mount the inverter or communication device side, you must carry out the following instructions in sequence:

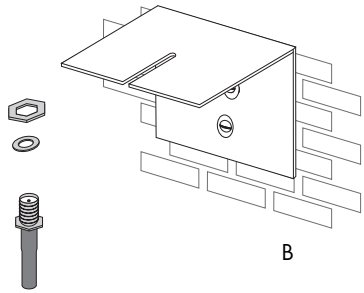
- Mount antenna bracket and antenna
- Mount the Radio Module
- Mount the RS485 Power Injector
- Establish electrical connection of the devices, see chapter 5 "Electrical Connection" (page 16).

4.2.1 Mounting the Antenna Bracket and Antenna

1. Hold the antenna bracket vertically to the wall and mark two drill holes.
2. Drill holes (diameter: 6 mm) at the marked points and insert dowels.
3. Screw the antenna bracket to the wall using two screws and washers (see figure A).

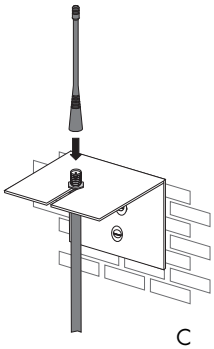


4. Attach antenna cable to antenna bracket (see figure B).



5. Screw the antenna hand-tight onto the cable (see figure C).
6. Run the antenna cable to the location where you intend to mount the radio module.

You have now successfully mounted the antenna.



C

4.2.2 Mounting the Radio Module

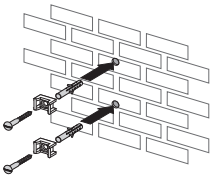
NOTICE!

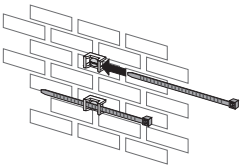
To prevent damage to the radio module, do not allow water to get into it.

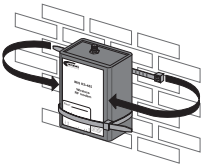
The radio module is only suitable for indoor installation.

1. Mark two drill holes one above the other and around 4 cm apart.
2. Drill holes (diameter: 6 mm) at the marked points and insert dowels.
3. Attach the two mounting clamps to the wall using the screw mounting holes provided.
4. Run the cable ties through the mounting clamps.
5. Attach the radio module using the cable ties.

You have successfully mounted the radio module.



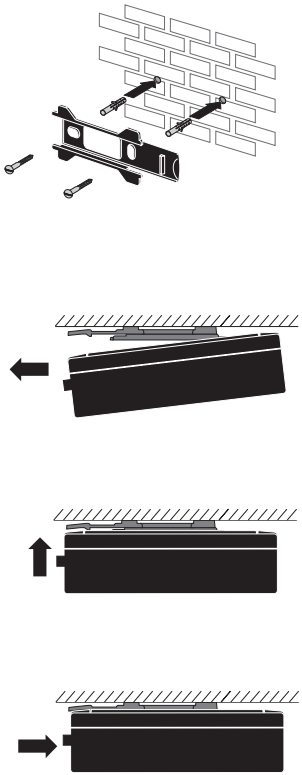




4.2.3 Mounting the RS485 Power Injector

1. Hold the wall mounting bracket of the RS485 Power Injector to the wall and mark two drill holes.
2. Drill holes (diameter: 6 mm) at the marked points and insert the dowels provided.
3. Attach the wall mounting bracket to the wall using the two screws provided.
4. Slide the RS485 Power Injector onto the wall mounting bracket from the right hand side.
5. Press the RS485 Power Injector onto the wall.
6. Push the RS485 Power Injector to the right until you hear the lever click into place.

You have successfully mounted the RS485 Power Injector.



5 Electrical Connection

First connect all the devices on the inverter side and then those on the communication device side. For each side, you need to carry out the following instructions in sequence.

Inverter Side	Communication Device Side
1. Connect the antenna cable to the radio module. 2. Cabling the inverters. 3. Connect the RS485 Power Injector ("inverter"). – Connect the inverter to the RS485 Power Injector. – Connect the radio module to the RS485 Power Injector. – Affix the shield clamp.	1. Connect the antenna cable to the radio module. 2. Connect the RS485 Power Injector ("Datalogger") – Connect the communication device to the RS485 Power Injector (see Sunny Boy Control chapter5.4.2 or Sunny WebBox chapter 5.4.3). – Connect the radio module to the RS485 Power Injector. – Affix the shield clamp.

5.1 Cabling Recommendations for the RS485

The cable length and quality affect the signal quality.

Note the following cabling recommendations in order to achieve good signal quality.

Indoors

For the indoors, use a cable with the following key properties.

- Cross-section: minimum 2 x 2 x 0.22 mm^2, and minimum 2 x 2 x AWG 24
- Shielded
- Twisted pair cables
- The maximum cable length in each RS485 bus is 1,200 m.

We recommend the following cable types for indoors:

- SMA communication cable: COMCAB-INxxx*
  * available in lengths of xxx=100 m/200 m/500 m and 1000 m.

Outdoors

For the outdoors, use a communication cable with the following key properties.

- Cross-section: minimum 2 x 2 x 0.22 mm^2, and minimum 2 x 2 x AWG 24
- Shielded
- Twisted pair cables
- UV-resistant
- The maximum cable length in each RS485 bus is 1,200 m.

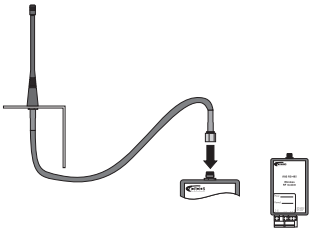
We recommend the following cable types for the outdoors:

- SMA communication cable: COMCAB-OUTxxx*
  * available in lengths xxx=100 m/200 m/500 m and 1000 m.

5.2 Connecting the Antenna Cable to the Radio Module

Screw the antenna cable hand-tight onto the radio module.

You have successfully mounted the antenna.



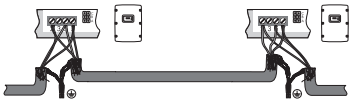
5.3 Cabling the Inverters

DANGER!

Risk of lethal electric shock when working on the inverter.

- Open the inverter as described in the inverter manual.

1. Cabling of inverters must always be carried out in accordance with the specific instructions for each inverter model. The connection procedure is described in the corresponding piggyback or module manual.



2. Establish termination on the inverter:

If...	Then...
The inverter is at the center of the RS485 communication bus	- Do not establish termination (jumper A). - Do not establish pull-up/pull-down of signal (jumpers B and C).
Inverter at the end of the RS485 communication bus	- Establish termination (jumper A) - Do not establish pull-up/pull-down of signal (jumpers B and C).

3. Close the inverter as described in the inverter manual.

The inverters are now wired up.

5.4 Connecting the RS485 Power Injector

NOTICE!

Danger of short circuit when connecting the RS485 Power Injector.

Install the RS485 Power Injector directly before the load (which will be supplied with +12 V).

5.4.1 Connecting the Inverter to the RS485 Power Injector

RS485 Power Injector

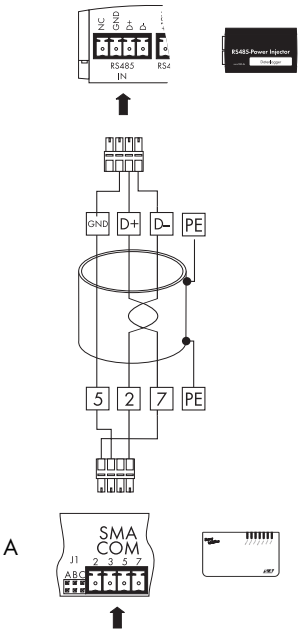
1. Remove around 4 cm of the cable sheath at the end of the communication cable.
2. Shorten the shielding to 1.5 cm, fold it back, and wrap it with conductive adhesive foil.
3. Connect the leads to the clamps (Data+, Data–, GND) on the plug for the RS485 Power Injector. Data+ and Data– must be a twisted lead pair.
4. Note the connection and lead color:
   2 Data+ _____
   7 Data– _____
   5 GND _____
5. Plug the plug into the RS485 Power Injector input port (IN).

Inverter

DANGER!
Risk of lethal electric shock when opening the inverter.

- Open the inverter as described in the inverter manual.

6. Connect three leads to the connector clamps on the inverter (see A). The connection may vary from one module to another and is described in the corresponding piggyback or module manual.



7. Establish termination on the inverter:

If...	Then...
The inverter is in the middle of the RS485 communications bus.	- Do not establish termination (jumper A). - Do not establish pull-up/pull-down of signal (jumpers B and C).
The inverter is at the end of the RS485 communication bus.	- Establish termination (jumper A) - Do not establish pull-up/pull-down of signal (jumpers B and C).

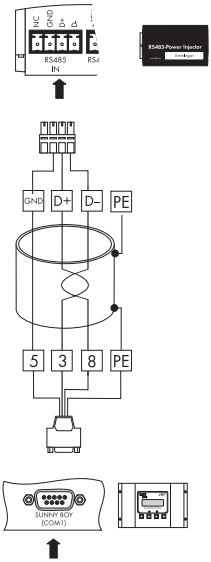
You have successfully connected the RS485 Power Injector to the inverter.

5.4.2 Connecting the Sunny Boy Control to the RS485-Power Injector

RS485 Power Injector

1. Remove around 4 cm of the cable sheath at the RS485 Power Injector end of the communication cable.
2. Shorten the shielding to 1.5 cm, fold it back, and wrap it with conductive adhesive foil.

3. Connect the leads to the clamps (Data+, Data–, GND) on the plug for the RS485 Power Injector. Data+ and Data– must be a twisted lead pair.
4. Note the connection and lead color:
   3 Data+ _____
   5 Data– _____
   8 GND _____
5. Plug the plug into the RS485 Power Injector input port (IN).



Sunny Boy Control

6. Connect the leads on the Sunny Boy Control side to the pins on the D-Sub plug (3, 5 and 8) - see point 4.
7. Mount jumpers at the Sunny Boy Control as is described in the Sunny Boy Control manual

If...	Then...
Sunny Boy Control is at the center of the communication bus.	- Do not establish termination (jumper A). - Establish pull-up/pull-down of signal (jumpers B and C).
Sunny Boy Control is at the end of the RS485 communication bus.	- Establish termination (jumper A) - Establish pull-up/pull-down of signal (jumpers B and C).

8. Plug the D-Sub plug into the Sunny Boy Control.

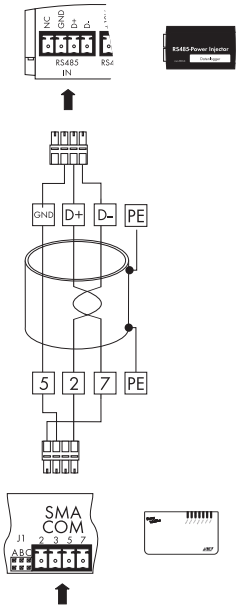
You have successfully connected the RS485 Power Injector with the Sunny Boy Control.

5.4.3 Connecting the Sunny WebBox to the RS485 Power Injector

RS485 Power Injector

1. Remove around 4 cm of cable sheath at the RS485 Power Injector end of the communication cable.
2. Shorten the shielding to 1.5 cm, fold it back, and wrap it with conductive adhesive foil.

3. Connect the leads to the clamps (Data+, Data–, GND) on the plug for the RS485 Power Injector. Data+ and Data– must be a twisted lead pair.
4. Note the connection and lead color:
   2 Data+ _____
   7 Data– _____
   5 GND _____
5. Plug the plug into the RS485 Power Injector input port (IN).



Sunny WebBox

6. Connect the leads on the Sunny WebBox side to the clamps on the plug (2, 7 and 5) - see point 4.
7. Mount jumpers at the WebBox as is described in the Sunny WebBox manual

If...	Then...
The Sunny WebBox is at the center of the RS485 communication bus.	- Do not establish termination (jumper A). - Establish pull-up/pull-down of signal (jumpers B and C).
The Sunny WebBox is at the end of the RS485 communication bus.	- Establish termination (jumper A) - Establish pull-up/pull-down of signal (jumpers B and C).

8. Plug the plug into the Sunny WebBox.

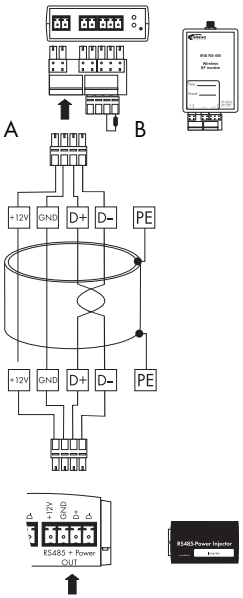
You have successfully connected the RS485 Power Injector to the Sunny WebBox.

5.4.4 Connecting the Radio Module to the RS485 Power Injector

Radio Module

1. Remove around 4 cm of cable sheath at the radio module end of the communication cable.
2. Shorten the shielding.
3. Connect the leads to the clamps (Data+, Data–, GND, +12V) on the plug for the radio module.
4. Note connection and lead color:

   Data+ _____
   Data– _____
   GND _____
   +12V _____
5. Plug the plug into the radio module as shown in figure (A).
6. Plug the terminal plug into the radio module as shown in figure (B).



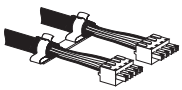
RS485 Power Injector

7. Remove around 4 cm of the cable sheath at the RS485 Power Injector end of the communication cable.
8. Shorten the shielding to 1.5 cm, fold it back, and wrap it with conductive adhesive foil.
9. Connect the leads to the clamps (Data+, Data–, GND, +12V) on the plug for the RS485 Power Injector. Data+ and Data– must be a twisted lead pair (see point 4).
10. Plug the plug into the RS485 Power Injector output port (OUT).

You have successfully connected the radio module to the RS485 Power Injector.

5.4.5 Affixing the Shield Clamp

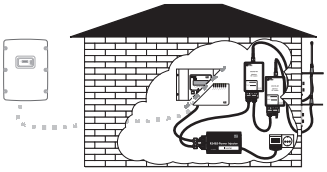
Push the foil-covered shielding of the two cables on the RS485 Power Injector into the shield clamp.



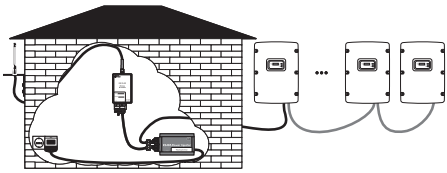
6 The Wireless-Set485-02

6.1 Applications

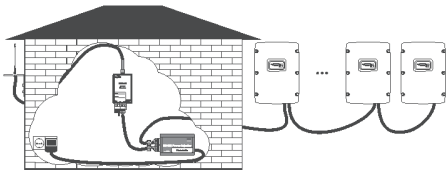
The Wireless-Set485-02 extends your Wireless-Set485-01 by a further transmission path. As with the Wireless-Set485-01, SMA distinguishes between the communication device side and the inverter side. The communication device side of the Wireless Set 495-02 corresponds to the communication device side of the Wireless-Set485-01. The power is supplied by the Power Injector, labeled "Datalogger", which has already been supplied with the Wireless-Set485-01. The functions overview and identification are the same as those of the Wireless-Set485-01 (see chapter 3).



Communication device side

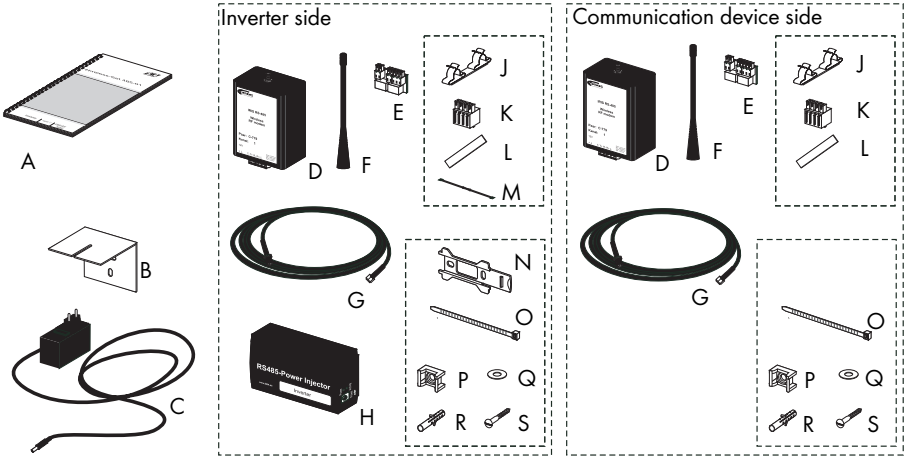


Inverter side of the Wireless-Set485-02



Inverter side of the Wireless-Set485-01

6.2 Scope of Delivery



A 1 Installation Guide

B 2 antenna brackets (1 each for the inverter and communication device side)

C 1 power supply unit (90-264 V AC, 12 V DC, 10 W)(for inverter side)

	Inverter side	**Communication device side**
D	1 IRIS RS 485 Wireless RF modem (radio module)	1 IRIS RS 485 Wireless RF modem (radio module)
E	1 plug adapter	1 plug adapter
F	1 antenna	1 antenna
G	1 antenna cable 3 m	1 antenna cable 3 m
H	1 RS485 Power Injector-02 ("inverter")	
J	1 shield clamp (2 poles)	1 shield clamp (2 poles)
K	4 plugs (4 poles)	2 plugs (4 poles)
L	2 copper foil strips (self-adhesive)	2 copper foil strips (self-adhesive)
M	1 termination resistor (120 ohms)	
N	1 wall mounting bracket for the RS485 Power Injector	
O	2 cable ties	2 cable ties
P	2 mounting clamps	2 mounting clamps
Q	4 washers stainless	4 washers stainless
R	6 dowels S6	4 dowels S6
S	6 screws 4 x 35 mm stainless	4 screws 4 x 35mm, stainless

6.3 Mounting

Mount the Wireless-Set485-02 as is described in chapter 4 "Mounting" (page 12).

6.4 Electrical connection of the Wireless-Set485-02

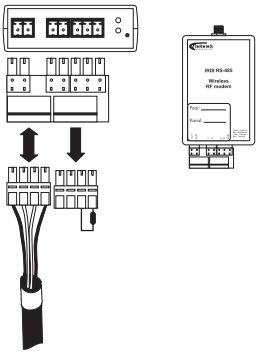
First connect all devices on the inverter side, then those on the communication device side. The inverter side should be connected in the same way as the inverter side of the Wireless-Set485-01 (see 5.2). On the communication device side, the radio module of the Wireless-Set485-02 is directly connected to the radio module of the Wireless-Set485-01. The following instructions need to be carried out in sequence:

Inverter Side	Communication Device Side
1. Connect the antenna cable to the radio module (see chapter 5.2). 2. Connect the inverters to each other (see chapter 5.3). 3. Connect the RS485 Power Injector (see chapter 5.4). – Connect the inverter to the RS485 Power Injector. – Connect the radio module to the RS485 Power Injector. – Affix the shield clamp.	1. Connect the antenna cable to the radio module (see chapter 5.2). 2. Connect the radio module to the Wireless-Set485-01. – Prepare the radio module of the Wireless-Set485-01 (see chapter 6.4.1). – Connect the radio module to the radio module of the Wireless-Set485-01 (see chapter 6.4.2). – Affix the shield clamp (see chapter).

6.4.1 Preparing the plug adapter from Wireless-Set485-01

Carry out the following instructions on the communication device side of the Wireless-Set485-01 (Set 1).

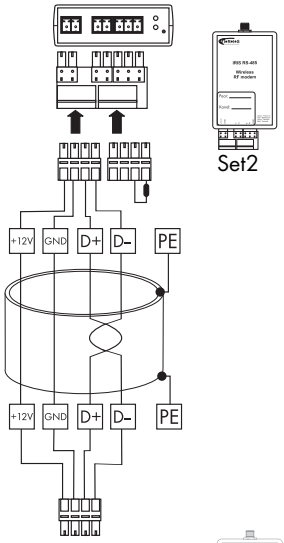
1. Unplug the power supply unit of the RS485 Power Injector from the plug socket.
2. Pull the RS485 communication cable and termination plug out of the radio module of the Wireless-Set485-01.
3. Remove 1.5 cm of the cable sheath on the RS485 communication cable.
4. Shorten the shielding to 1.5 cm, fold it back, and wrap it with conductive adhesive foil.
5. Plug the plug back into the radio module of the Wireless-Set485-01.



6.4.2 Connecting the radio module to the radio module of Wireless-Set485-01.

Carry out the following instructions on the communication device side of the Wireless-Set485-01.

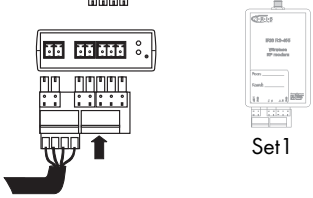
Radio Module of the Wireless-Set485-02 (Set 2)



1. Remove around 4 cm of the cable sheath at the end of the communication cable.
2. Shorten the shielding.
3. Connect the leads to the clamps (Data+, Data–, GND, +12V) on the plug for the radio module.
4. Note the connection and lead color:

   Data+ _____
   Data– _____
   GND _____
   +12V _____
5. Plug the plug into the radio module of the Wireless-Set485-02.
6. Plug the termination plug of the Wireless-Set485-01 into the radio module of the Wireless-Set485-02.

Radio Module of the Wireless-Set485-01 (Set 1)

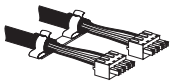


7. Remove around 4 cm of the cable sheath at the end of the communication cable.
8. Fold back the shielding and wrap it with conductive adhesive foil.
9. Connect the leads to the clamps (Data+, Data-, GND, +12V) on the plug and to the radio module (see point 4).
10. Plug the plug into the radio module of the Wireless-Set485-01.

You have successfully connected the radio module to the radio module of the Wireless-Set485-01.

Affixing the Shield Clamp

Press the foil-wrapped shielding of the two RS485 cables on the radio module of the Wireless-Set485-01 into the shield clamp.



7 Commissioning

Do not connect the power supply unit until the mounting and cabling of the Wireless-Set485-01 / Wireless-Set485-02 is complete.

Connecting the RS485 Power Injector to the Power Supply

1. Plug the plug of the power supply unit into the RS485 Power Injector.
2. Plug the power supply unit of the RS485 Power Injector into a 230 V / 110 V plug socket.

The green Power LED on the RS485 Power Injector will light up.

8 Decommissioning

1. Unplug the power supply units of the RS485 Power Injectors.
2. Remove the RS485 cable connections.
3. Disassemble the antenna, radio module and RS485 Power Injector.

9 Troubleshooting

9.1 RS485 communication unit is not working

If the LED on the radio module shows no activity, carry out the following checks in sequence.

Radio Module

1. Check whether the radio modules are switched on (see 7 "Commissioning" (page 27)).
2. Check the correspondence of the radio module pair and the radio channel of the Wireless Set. See chapter 3.4 "Identification" (page 10). The "pair" and the "channel" must correspond for both radio modules in a set.

RS485 Power Injector

3. Check the power supply to the RS485 Power Injector (see 7 "Commissioning" (page 27)).
4. Check whether the RS485 Power Injector is installed on the correct side (communication device or inverter side) - see chapter 3.4 "Identification" (page 10).
5. Check the length of the cable connecting the RS485 Power Injector to the radio module. The cable length must not exceed 30 m. This also applies to all the cabling of the Wireless-Set485-01 and 485-02 on the communication device side.

Electrical Connection

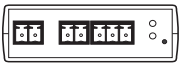
6. Check the plug connections and cable connections of all devices, see chapter 5 "Electrical Connection" (page 16).
7. Check the termination of the communication bus, see chapter 5 "Electrical Connection" (page 16).

Antenna

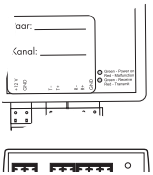
8. Check that the opposing antenna is visible and remove any objects which may be causing disturbance (e.g. vehicles). Change the position of the antenna if necessary.

If the measures described here are insufficient to solve the problem, contact our Service Line (see chapter 12 "Contact" (page 32)).

9.2 Explanation of the LEDs on the Radio Module

LED	Status	Function	
POWER	off	The radio module is switched off.	
	green continuous	The radio module is switched on.	
ACTIVITY	green continuous	no activity	
	green blinking	receiving data	
	red blinking	sending data	

9.3 Explanation of the LEDs on the RS485 Power Injector

LED	Status	Function	
Power	off	The RS485 Power Injector is switched off.	
	green continuous	The RS485 Power Injector is switched on.	
activity	off	no activity on the RS485 communication bus	
	yellow continuous	activity on the RS485 communication bus	

10 Maintenance and Cleaning

10.1 Maintenance

Carry out regular visual checks of the antenna, the radio module, the RS485 Power Injector and the connected cables, to detect any external damage or dirt. If the functioning or safety is impaired, the damaged device or cable should be replaced by a qualified specialist.

10.2 Cleaning

NOTICE!

Damage to the Wireless-Set485-01 or Wireless-Set485-02 devices caused during cleaning.

The Wireless-Set485-01 and Wireless-Set485-02 devices are not waterproof. No water must be allowed to get into the devices.

- Unplug the RS485 Power Injector power plug.
- Clean the Wireless-Set485-01 or Wireless-Set485-02 with a slightly damp cloth only.

Clean the devices with a soft, slightly damp cloth. Extremely dirty devices can be cleaned with a mild, non-abrasive and non-corrosive cleaning agent.

If dirt gets into the plug or the terminal strip, clean these with a cleaning agent for circuit boards or electrical devices.

10.3 Disposal

At the end of their service life, dispose of the Wireless-Set485-01 or Wireless-Set485-02 in accordance with the disposal regulations for electronic scrap applicable at the installation site at that time. Alternatively, return it to SMA with shipping paid by sender, and labeled "FOR DISPOSAL".

11 Technical Data

Communication	
Maximum free-field communication range	500 m
Frequency band	433.05 MHz - 434.75 MHz
Channel spacing	25 kHz
Topology	Point-to-point connection

Interfaces	
RS485	2x (In/Out)

Power supply	
Plug-in power supply	90 - 264 V (AC), 50/60 Hz
Output voltage	12 V (DC) / 0,85 A
Power consumption	10 W
Max. distance between RS485 Power Injector and radio module	30 m
Operable wireless sets	Up to two radio modules can be connected to an RS485 Power Injector.
Dimensions RS485 Power Injector	105 mm x 55 mm x 30 mm (width x height x depth)
Weight RS485 Power Injector (not including cable)	80 g
Mounting site	indoor

Ambient Conditions	
Ambient temperature	-10 °C to +55 °C
Relative humidity	5 % to 95 %, non-condensing
International protection	IP 20

General Information Radio Module	
Dimensions (not including antenna)	70 mm x 95 mm x 30 mm (width x height x depth)
Weight	approx. 150 g
Mounting site	indoor

CE Declaration of Conformity

You can download the CE Declaration of Conformity at www.SMA.de under "Certificates".

12 Contact

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

- Type of inverter and serial number
- Type of radio module (see chapter 3.4 "Identification" (page 10))
- Type of RS485 Power Injector (see chapter 3.4 "Identification" (page 10)).

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