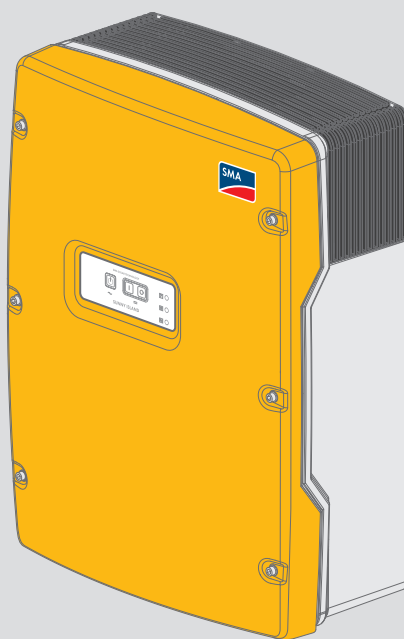


Replacement of Various Components
SUNNY ISLAND 4.4M / 6.0H / 8.0H



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1 Information on this Document

1.1 Validity

This document is valid for:

- SI4.4M-12 (Sunny Island 4.4M)
- SI6.0H-12 (Sunny Island 6.0H)
- SI8.0H-12 (Sunny Island 8.0H)

1.2 Target Group

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

- Training and approval must be made by SMA Solar Technology AG or subsidiary companies of SMA Solar Technology AG to carry out the activities described in this document
- Knowledge of how to safely disconnect SMA inverters
- Knowledge of how an inverter works and is operated
- Knowledge of how batteries work and are operated
- Training in how to deal with the dangers and risks associated with installing, repairing and using electrical devices, batteries and installations
- Training in the installation and commissioning of electrical devices and installations
- Knowledge of all applicable laws, standards and directives
- Knowledge of and compliance with this document and all safety information
- Knowledge of and compliance with the documents of the battery manufacturer with all safety information

1.3 Content and Structure of this Document

This document describes how to replace components.

Illustrations in this document are reduced to the essential information and may deviate from the real product.

1.4 Levels of warning messages

The following levels of warning messages may occur when handling the product.

DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.






CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a situation which, if not avoided, can result in property damage.

1.5 Symbols in the Document

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 might occur
	Example

1.6 Typographies in the document

Typography	Use	Example
bold	<ul style="list-style-type: none"> • Messages • Terminals • Elements on a user interface • Elements to be selected • Elements to be entered 	<ul style="list-style-type: none"> • Connect the insulated conductors to the terminals X703:1 to X703:6. • Enter 10 in the field Minutes.
>	<ul style="list-style-type: none"> • Connects several elements to be selected 	<ul style="list-style-type: none"> • Select Settings > Date.
[Button]	<ul style="list-style-type: none"> • Button or key to be selected or pressed 	<ul style="list-style-type: none"> • Select [Enter].
[Key]		

1.7 Additional Information

For more information, please go to www.SMA-Solar.com.

Title and information content	Type of information
Mounting, installation, commissioning, operation, configuration, troubleshooting and decommissioning	Operating manual

2 Safety

2.1 Intended Use

Use the retrofit kits only in accordance with the information provided in this documentation and with the locally applicable laws, regulations, standards and directives. Any other application may cause personal injury or property damage.

Unauthorized or improper use will void guarantee and warranty claims and in most cases terminate the operating license. SMA Solar Technology AG shall not be held liable for any damage caused by such use.

If the replacement and all activities stated in this document are carried out by persons who are not qualified within the meaning of this documentation, this will void the guarantee and warranty claims and in most cases terminate the operating permit. SMA Solar Technology AG shall not be held liable for any damage caused directly or indirectly due to such changes by unauthorized persons.

The provided documentation is an integral part of this product. You must read and observe the documentation.

This document does not replace and is not intended to replace any local, state, provincial, federal or national laws, regulations or codes applicable to the installation, electrical safety and use of the product. SMA Solar Technology AG assumes no responsibility for the compliance or non-compliance with such laws or codes in connection with the installation of the product.

2.2 IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

This section contains safety information that must be observed at all times when working on or with the product.

The product has been designed and tested in accordance with international safety requirements. As with all electrical or electronic devices, there are residual risks despite careful construction. To prevent personal injury and property damage and to ensure long-term operation of the product, read this section carefully and observe all safety information at all times.

DANGER

Danger to life due to electric shock when live components or cables are touched

High voltages are present in the conductive components or cables of the product. Touching live parts and cables results in death or lethal injuries due to electric shock.

- Do not touch non-insulated parts or cables.
- Disconnect the product from voltage sources and make sure it cannot be reconnected before working on the device.
- After disconnection, wait 15 minutes until the capacitors have discharged.
- Observe all safety information on components associated with the product.
- Wear suitable personal protective equipment for all work on the product.

⚠ DANGER**Danger to life due to electric shock when operating a damaged product**

Operating a damaged product can lead to hazardous situations since high voltages can be present on accessible product parts. Touching live parts and cables results in death or lethal injuries due to electric shock.

- Only operate the product when it is in a flawless technical condition and safe to operate.
- Check the product regularly for visible damage.
- Make sure that all external safety equipment is freely accessible at all times.
- Make sure that all safety equipment is in good working order.
- Wear suitable personal protective equipment for all work on the product.

⚠ WARNING**Risk of crushing injuries due to moving PV array parts**

A generator can be started automatically by the Sunny Island. Moving parts in the PV array can crush or sever body parts.

- Operate the generator only with the specified safety equipment.
- Carry out all work on the generator in accordance with the manufacturer's specifications.

⚠ CAUTION**Risk of burns due to short-circuit currents on the disconnected inverter**

The capacitors in the DC input area of the inverter store energy. After the battery is isolated from the inverter, battery voltage is still temporarily present at the DC terminal. A short circuit at the DC terminal of the inverter can lead to burns and may damage the inverter.

- Wait 15 minutes before performing any work at the DC terminal or on the DC cables. This allows the capacitors to discharge.

⚠ CAUTION**Risk of burns due to hot components**

Some components of the inverter can become very hot during operation. Touching these components can cause burns. Heat build-up can cause burns.

- During operation, do not touch any parts other than the enclosure lid of the inverter.
- After opening the inverter, wait until the component parts have cooled down.

NOTICE**Damage to the product due to sand, dust and moisture ingress**

Sand, dust and moisture penetration can damage the product and impair its functionality.

- Only open the product if the humidity is within the thresholds and the environment is free of sand and dust.
- Do not open the product during a dust storm or precipitation.

NOTICE**Damage to the inverter due to electrostatic discharge**

Touching electronic components can cause damage to or destroy the inverter through electrostatic discharge.

- Ground yourself before touching any component.

NOTICE**Damage to the enclosure seal in subfreezing conditions**

If you open the product when temperatures are below freezing, the enclosure seals can be damaged. Moisture can penetrate the product and damage it.

- Only open the product if the ambient temperature is not below -5°C .
- If a layer of ice has formed on the enclosure seal when temperatures are below freezing, remove it prior to opening the product (e.g. by melting the ice with warm air). Observe the applicable safety regulations.

NOTICE**Damage due to cleaning agents**

The use of cleaning agents may cause damage to the product and its components.

- Clean the product and all its components only with a cloth moistened with clear water.

i Grounding conductor test prior to recommissioning

Prior to recommissioning SMA inverters after the installation of SMA components or power assemblies which cannot be replaced intuitively, ensure that the grounding conductor in the inverter is correctly connected. The function of the grounding conductor must be ensured and all locally applicable laws, standards and directives must be observed.

i Observe superordinate standards

The repair work on devices and the consideration and application of other standards which correspond to a superordinate standard is the responsibility of the qualified person performing the work. Unauthorized alterations will void guarantee and warranty claims and in most cases terminate the operating license. SMA Solar Technology AG shall not be held liable for any damage caused by such changes.

3 Component Overview

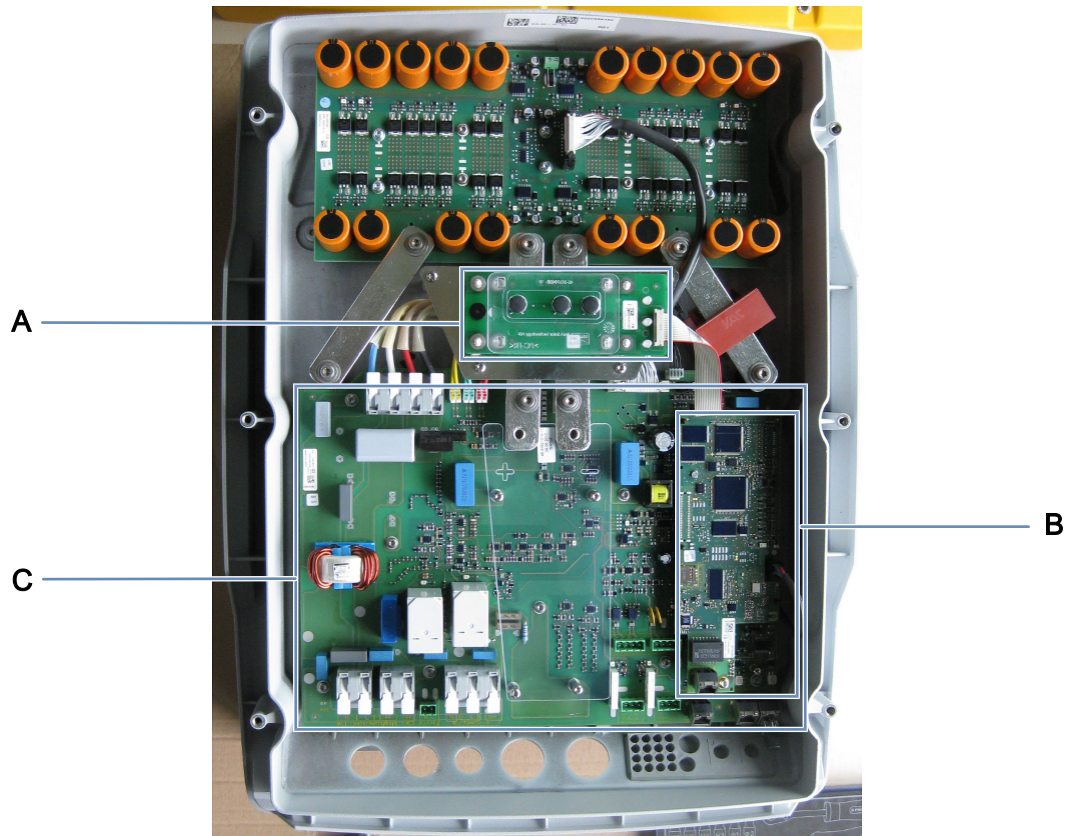


Figure 1: Overview of the assemblies in the inverter

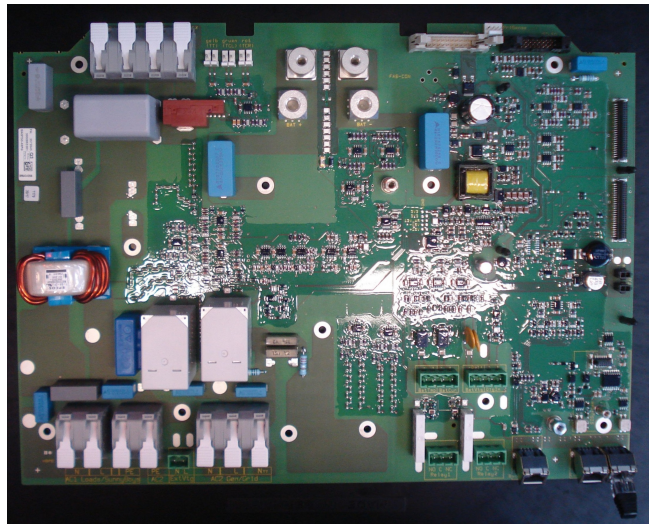
Position	Designation
A	SI-LED
B	SI-BFSLAN
C	SI-AST

4 Replaceable Components and Order Numbers

Assembly SI-AST

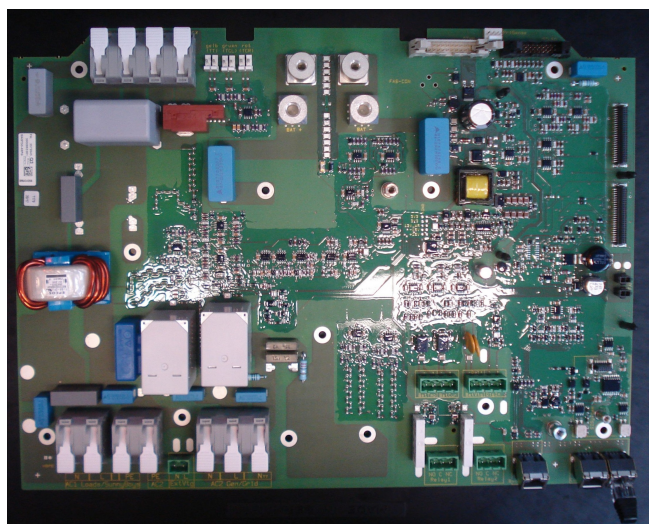
SIAST50-48PS
 (Material description: SP-SIAST50-48PS
 Material number: SP-SIAST50-48PS)
 for SI4.4M-12, comprising:

Designation	Quantity
Assembly SIAST50-48PS	1
Screw and washer assembly M4x15 with pan head	9
Screw and washer assembly M6x20 with cylindrical head	4
Spacer bolt M4x15	3
Spring washers M8	2



SIAST50-48PG
 (Material description: SP-SIAST50-48PG
 Material number: SP-SIAST50-48PG)
 for SI6.0H-12 / SI8.0H-12, consisting:

Designation	Quantity
Assembly SIAST50-48PG	1
Screw and washer assembly M4x15 with pan head	9
Screw and washer assembly M6x20 with cylindrical head	4
Spacer bolt M4x15	3
Spring washers M8	2



Assembly SI-BFSLAN

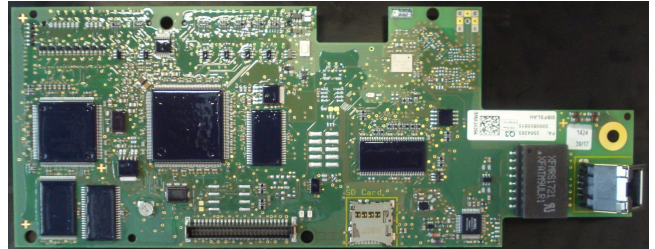
SIBFSLAN

(Material description: SP-SIBFSLAN)

Material number: SP-SIBFSLAN)

for SI4.4M-12 / SI6.0H-12 / SI8.0H-12, consisting:

Designation	Quantity
Assembly SIBFSLAN	1
Printed circuit board retaining clip	4
Label with identification key (PIC), registration ID (RID) and device-specific WLAN password (WPA2-PSK)	1



Assembly SI-LED

SILED

(Material description: SP-SILED)

Material number: SP-SILED)

for SI4.4M-12 / SI6.0H-12 / SI8.0H-12, consisting:

Designation	Quantity
Assembly SILED	1
Printed circuit board retaining clips	4
Pan head screw M4x8	4



5 Additionally Required Materials and Equipment

Material:

Material	Quantity	Explanation
Ethanol cleaning agent (e.g. Isopropanol)	-	For cleaning the contact surfaces during SI-AST installation

Equipment:

Equipment	Quantity	Explanation
Adjustable torque wrench (measurement range: 0.8 Nm to 8.0 Nm)	1 to n	For the installation of SI-AST and SI-BFSLAN
Screwdriver bit for torque wrench TX20	1	For the installation of SI-AST and SI-BFSLAN
Screwdriver bit for torque wrench TX30	1	For the installation of SI-AST
Screwdriver bit for torque wrench (hex socket AF5)	1	For the installation of SI-AST
Screwdriver bit for torque wrench (hex socket AF7)	1	For the installation of SI-AST
Screwdriver TX20	1	For the removal of SI-AST and SI-BFSLAN
Screwdriver TX30	1	For the removal of SI-AST
Allen key AF5	1	For the removal of SI-AST
Wrench AF7	1	For the removal of SI-AST
Multimeter	1	For voltage measurement during disconnection and VAC test
Pliers	1	For the removal of SI-BFSLAN and SI-LED
Diagonal cutting pliers for electronics	1	For the installation of SI-BFSLAN and SI-LED
End device (e.g. laptop)	1	For connecting to the user interface of the inverter after recommissioning

6 Disconnecting the Inverter from Voltage Sources

NOTICE

The replacment of SI-BFSLAN assembly in a slave is possible as of firmware version 1.02.11.R.

If an older firmware version than 1.02.11.R is installed in the master of a Sunny Island system, the system cannot be started properly anymore after replacing the SI-BFSLAN in a slave. The new SI-BFSLAN are damaged when restarting the system. The damage of the SI-BFSLAN leads to a permanent system failure.

- Check whether at least the firmware version 1.02.11.R is installed in the master of the Sunny Island.
- If an older firmware version is installed, update the firmware at the master of the Sunny Island system (see inverter operating manual).

1. Stop the system (see the inverter operating manual).
2. Switch off all Sunny Island inverters (see the inverter operating manual).
3. Disconnect the circuit breakers and the load-break switches in the sub-distributions and secure against reconnection.
4. Open the load-break switch in the DC cable and secure against reconnection.
5. Wait 15 minutes. This enables electric discharge of the capacitors in the inverter.

6.

NOTICE

Destruction of the Sunny Island inverter due to electrostatic discharge (ESD)

By touching electronic components within the Sunny Island, you can damage or destroy the Sunny Island.

- Ground yourself before touching any component.

7. Unscrew all six screws of the enclosure lid using an Allen key (AF 5) and remove the enclosure lid.
8. Ensure that the **DC** terminal is disconnected from all voltage sources (for an overview of the connection area see the inverter operating manual).
9. Ensure that the terminals **AC1 Loads/SunnyBoys** and **AC2 Gen/Grid** are disconnected from all voltage sources (for an overview of the connection area see the inverter operating manual).
10. Ensure that the terminal **ExtVtg** is disconnected from all voltage sources (for an overview of the connection area see the inverter operating manual).
11. Ensure that the terminals **Relay1** and **Relay2** are disconnected from all voltage sources (for an overview of the connection area see the inverter operating manual).
12. Ground and short-circuit the AC power cables outside the Sunny Island.
13. Cover or isolate any adjacent live components.

7 Component Replacement

7.1 Replacement of the assembly SI-AST

7.1.1 Overview of the assembly connections

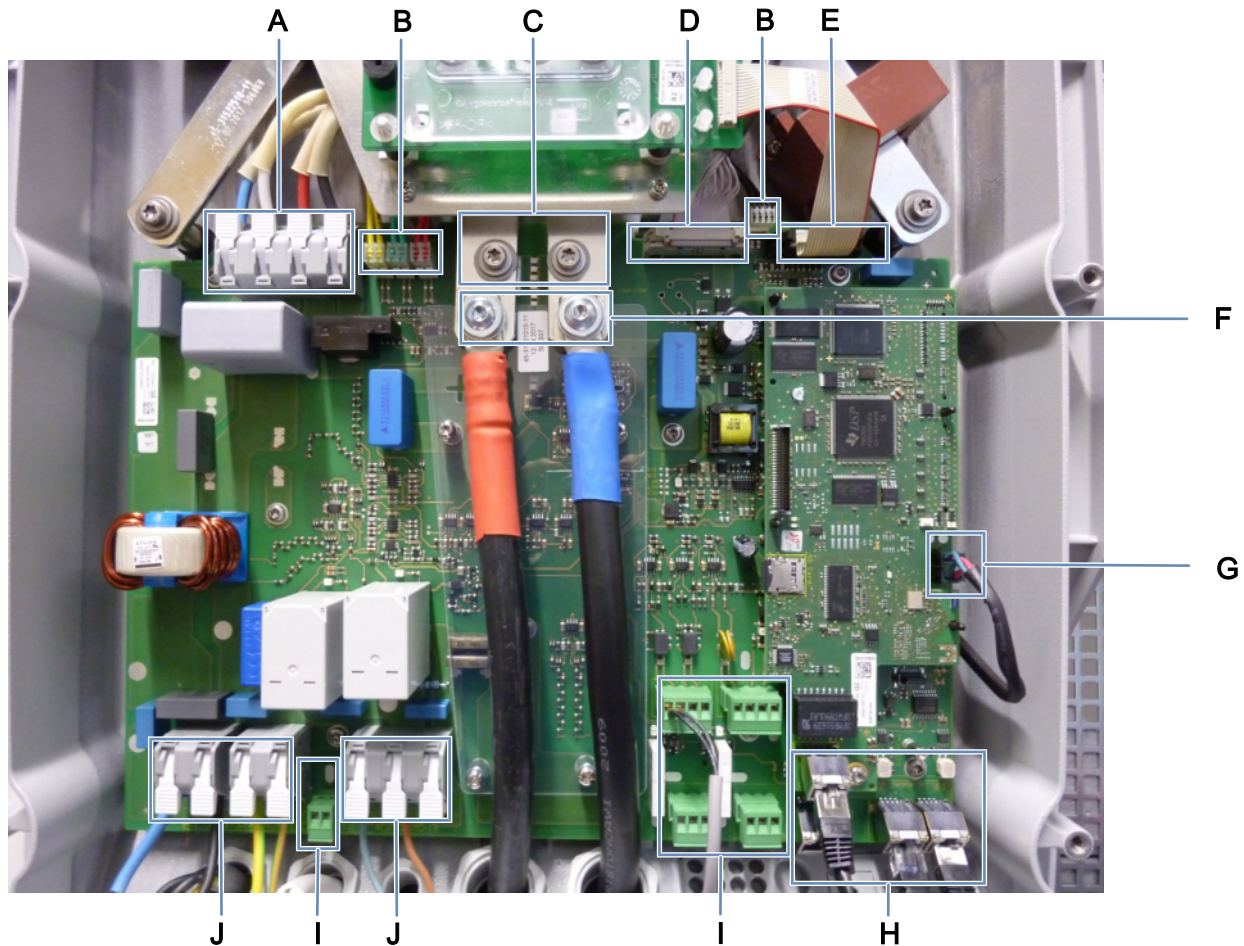


Figure 2: Overview of the assembly connections (example)

Position	Designation
A	Internal power cables
B	Internal control and measuring cables
C	Center busbars
D	Ribbon cable at the upper edge of the assembly (left)
E	Ribbon cable at the upper edge of the assembly (right), connection cable of the assembly SI-LED
F	DC connection cable
G	Fan cable
H	External data cable
I	External control and measuring cables
J	AC connection cable

7.1.2 Removing the SI-AST

1. Disconnect the inverter from all voltage sources (see Section 6, page 13).
2. Label the terminal used on each connected cable. Use marking tape and a waterproof marker to do this.

3.

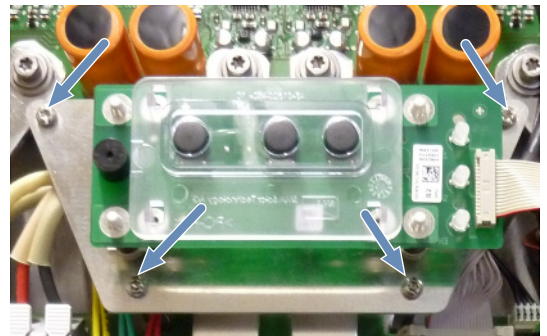
⚠ CAUTION

Danger of crushing when locking levers snap shut

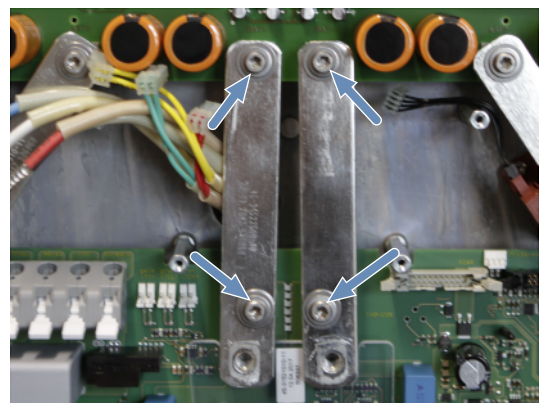
The locking levers of the terminal blocks close by snapping down fast and hard.

- Do not grip the entire terminal block.
- Do not place your fingers under the locking levers.

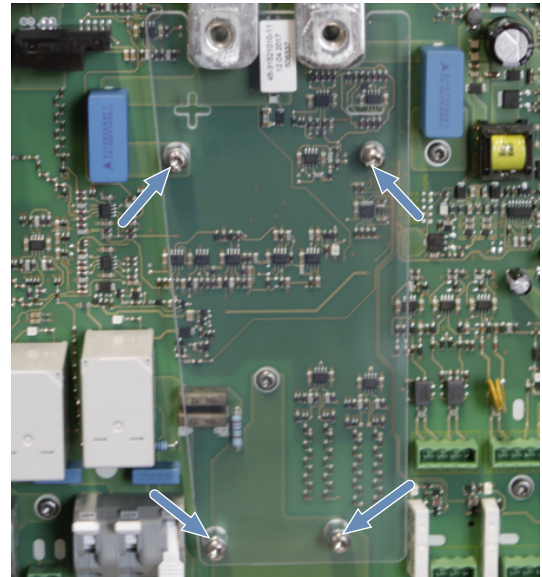
4. Remove the AC connection cable and internal power cable (see Section 7.1.1 "Overview of the assembly connections", page 14). For this, push the safety levers of the terminal blocks right up to the stop.
5. Remove the DC connection cables. To do so, unscrew the pan-head screws (Allen key AF 5) and store them safely.
6. Dispose the conical spring washers after the DC connection cables have been removed.
7. Remove the external communication cable.
8. Remove both ribbon cables on the upper edge of the assembly. Release and remove the ribbon cable plugs.
9. Release and disconnect the plug of the fan cable. Mark the position of the plug for the later connection.
10. Release and disconnect the plugs of the internal control and measuring cables.
11. Disconnect the terminal blocks of the external control and measuring cables.
12. Remove the assembly SI-BFSLAN. In doing so, observe the handling areas of the assembly (see Section 7.2.2, page 22):
 - Unfasten the fastening screw of the assembly (TX 20).
 - Carefully remove the assembly by pulling it towards you. Press together both locking tabs with pliers on each printed circuit board retaining clip (see Section 7.2.1, page 21).
13. Remove the carrier plate including the assembly SI-LED. Unscrew all fastening screws of the carrier plate (TX 20).



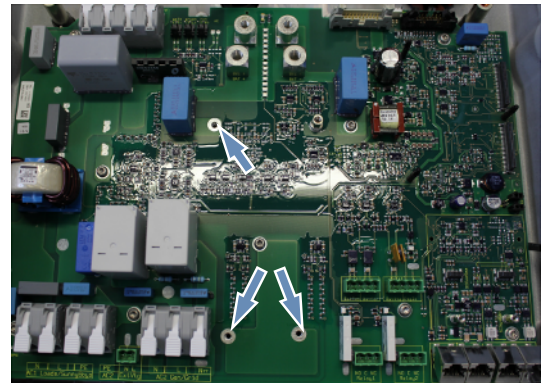
14. Remove the center busbars. Unscrew all fastening screws of the busbars (TX 30).



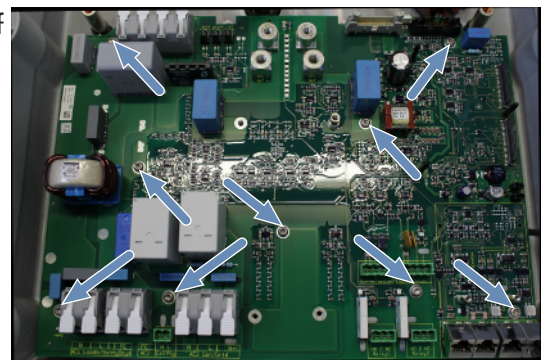
15. Remove the protective cover. Unscrew all fastening screws of the protective cover (TX 20).



16. Only unscrew the spacer bolts at the marked positions (Allen Key AF 7).



17. Unscrew all fastening screws of the SI-AST (TX 20) and dispose of the mounting screws.



18. Carefully remove the assembly by pulling it towards you.

7.1.3 Installing the SI-AST

There are assemblies on this assembly with a safety extra-low voltage circuit (SELV circuit). To ensure the safety of the circuits, an optical inspection must be carried out before installation.

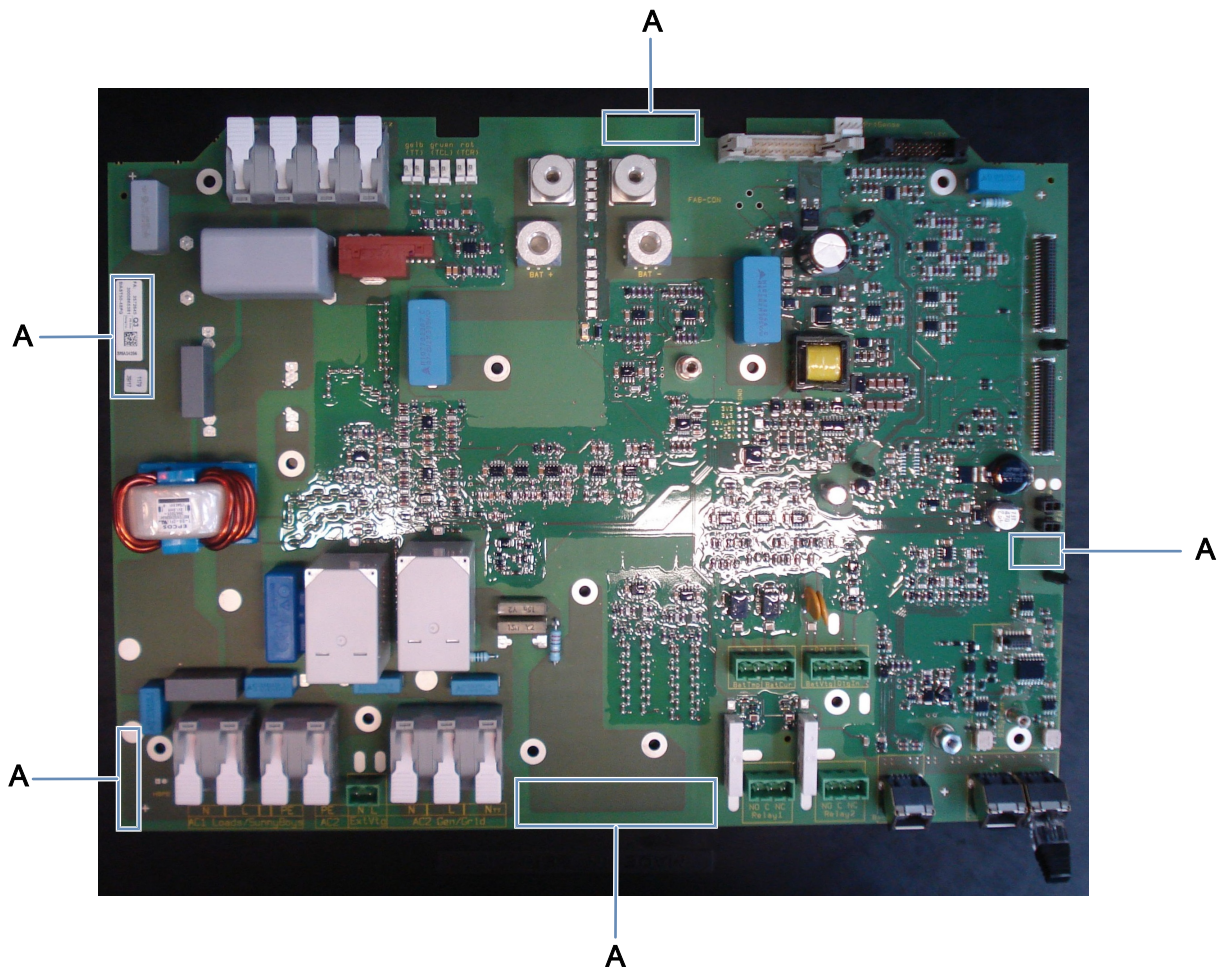


Figure 3: Handling areas of the SI-AST

Position	Designation
A	Area of the assembly that can be touched without consequence. Area that can be used as a holding point during mounting.

The remaining areas may not be touched. The assembly can be damaged through touching.

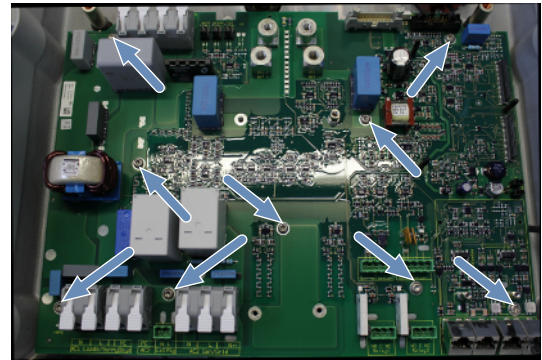
Additionally required equipment

- Ethanol cleaning agent (e.g. Isopropanol)

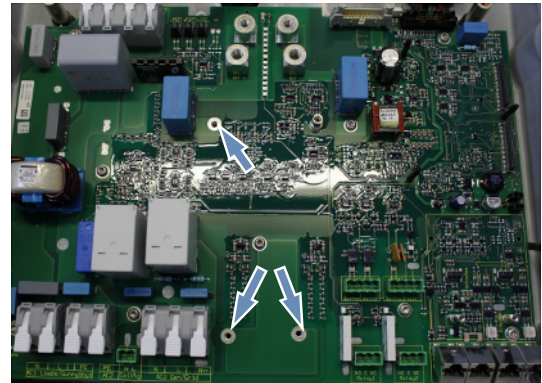
Procedure:

1. Check the new assembly for visible dirt prior to installation. If dust or other deposits cover the assembly, the safety of the SELV circuits is no longer guaranteed.
2. If the safety of the SELV circuits is no longer guaranteed, do not use the assembly and contact the service department (see Section 11, page 30).
3. Align the SI-AST and insert in the inverter.

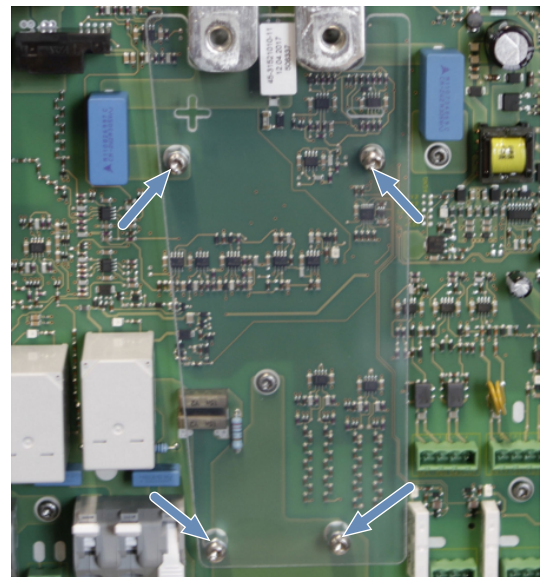
4. Tighten the provided screw and washer assemblies M4x15 at all anchoring points (TX 20, torque: 2 Nm).



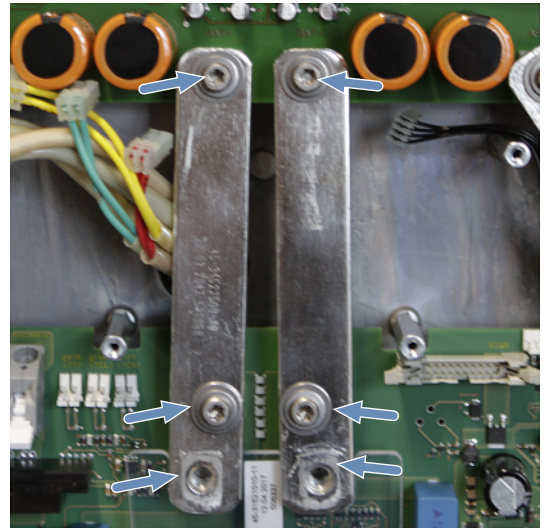
5. Tighten the spacer bolts of the DC protective cover at the three marked positions (Allen key AF 7, torque: 2 Nm).



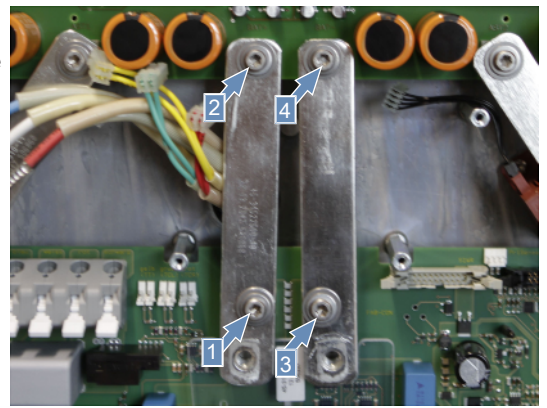
6. Position the protective cover above the spacer bolts and tighten the four fastening screws (TX 20, torque: 1.1 Nm).



7. Clean the contact surfaces of the center busbars using a clean cloth and ethanol cleaning agent and do not touch the contact surfaces after cleaning.



8. Position the center busbars above the contact surfaces, insert the provided screw and washer assemblies M6x20 and tighten in the specified sequence (TX 30, torque: 6 Nm).



9. Install the assembly SI-BFSLAN. In doing so, observe the handling areas of the assembly (see Section 7.2.2, page 22):

- Ensure that all printed circuit board retaining clips are in place and intact (see Section 7.2.2, page 22).
- Align the assembly and insert it into the inverter. When doing so, ensure that the printed circuit board retaining clips snap into place correctly.
- Tighten the fastening screw (TX 20, torque: 2 Nm).

10. Connect the internal control and measuring cables (see Section 7.1.1 "Overview of the assembly connections", page 14).

11. Connect the external control and measuring cables.

12. Connect the external communication cables.

13. Connect the fan cable. Observe that the plug is positioned as noted during removal.

- 14.

⚠ CAUTION

Danger of crushing when locking levers snap shut

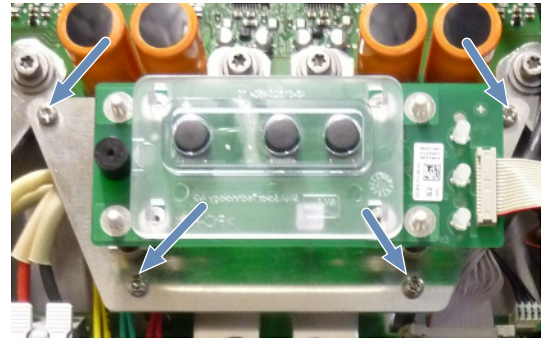
The locking levers of the terminal blocks close by snapping down fast and hard.

- Do not grip the entire terminal block.
- Do not place your fingers under the locking levers.

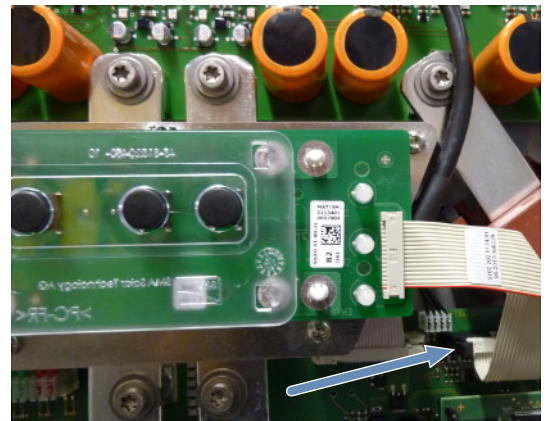
15. Connect the AC connection cables and internal power cables. For this purpose, insert the AC cables into the respective terminals right up to the stop and move the lever downward.

16. Connect the left ribbon cable to the upper edge of the assembly.

17. Position the carrier plate including the SI-LED assembly above the spacer bolts and tighten the fastening screws (TX 20, torque: 2 Nm).



18. Fasten the connection cable of the assembly SI-LED on the assembly SI-AST.



19. Clean the contact surfaces of the terminals **DC+** and **DC-** using a clean cloth and ethanol cleaning agent and do not touch the contact surfaces after cleaning.

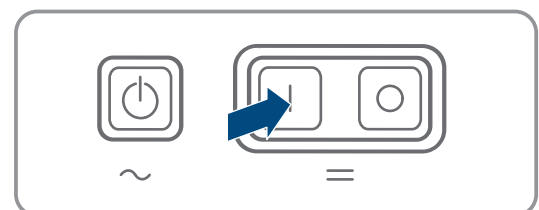
20. **NOTICE**

Damage to the Sunny Island due to reverse polarity

If the DC cables are swapped, high currents will flow after the load-break switch has closed and these can damage the Sunny Island.

- Observe the marking of poles on the protective cover when connecting the DC cables.

21. Fasten the DC cables with hexagon socket screws. Use the provided conical spring washers for this and be sure to adhere to the following screw assembly: screw head | conical spring washer | fender washer | terminal lug | DC connection.
22. Tighten the hexagon socket screws used to attach the DC cables (AF 5, torque: 12 Nm).
23. Carry out the necessary tests according to the locally applicable laws, standards and directives for the correct recommissioning after power assembly replacement. Take the requirements for component replacements into account (see Section 2.2 "IMPORTANT SAFETY INSTRUCTIONS", page 6).
24. Ensure that the grounding conductor in the inverter is correctly connected and functions properly.
25. Close the inverter (for information on sealing and closing see inverter operating manual).
26. Switch on the Sunny Island (see the inverter operating manual).



27. Establish a connection to the user interface of the inverter (see the inverter operating manual).
28. Log in as **installer** and follow the instructions on the user interface (for information on the basic configuration of the installation assistant see inverter operating manual).

29. Check whether the current firmware version is installed. For this purpose, read off the installed firmware version in the footer and compare it with the firmware version available at www.SMA-Solar.com.
If the installed firmware version is not up-to-date, update to the latest firmware version of the inverter (see inverter operating manual).
30. Start the Sunny Island (see the inverter operating manual).
31. Perform the VAC test (see Section 8, page 27).

7.2 Replacement of the assembly SI-BFSLAN

7.2.1 Removing the SI-BFSLAN

NOTICE

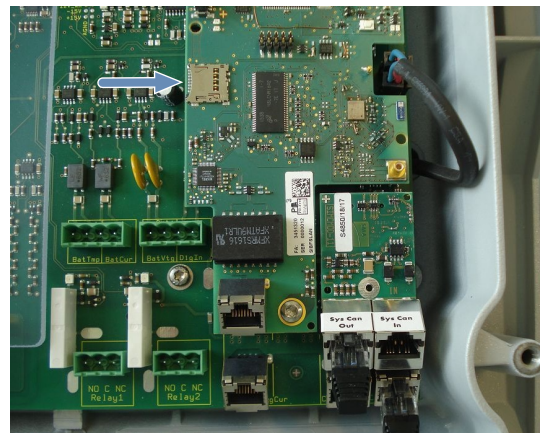
The replacment of SI-BFSLAN assembly in a slave is possible as of firmware version 1.02.11.R.

If an older firmware version than 1.02.11.R is installed in the master of a Sunny Island system, the system cannot be started properly anymore after replacing the SI-BFSLAN in a slave. The new SI-BFSLAN are damaged when restarting the system. The damage of the SI-BFSLAN leads to a permanent system failure.

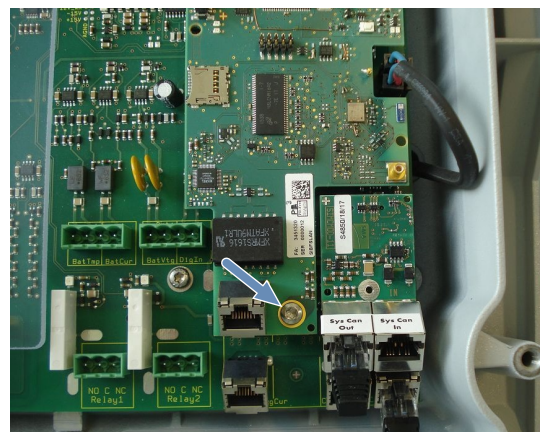
- Check whether at least the firmware version 1.02.11.R is installed in the master of the Sunny Island.
- If an older firmware version is installed, update the firmware at the master of the Sunny Island system (see inverter operating manual).

Procedure:

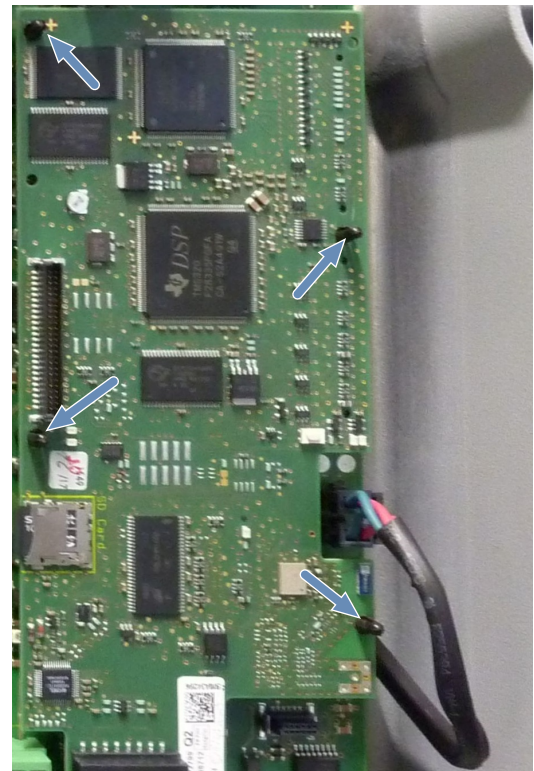
1. Disconnect the inverter from all voltage sources (see Section 6, page 13).
2. Remove the network cable plug from the **ComETH** jack.
3. If a microSD card is inserted, remove the microSD card and keep it safe.



4. Unscrew the fastening screw (TX 20).



5. Carefully remove the assembly by pulling it towards you. Press together both locking tabs with pliers on each printed circuit board retaining clip.



7.2.2 Installing the SI-BFSLAN

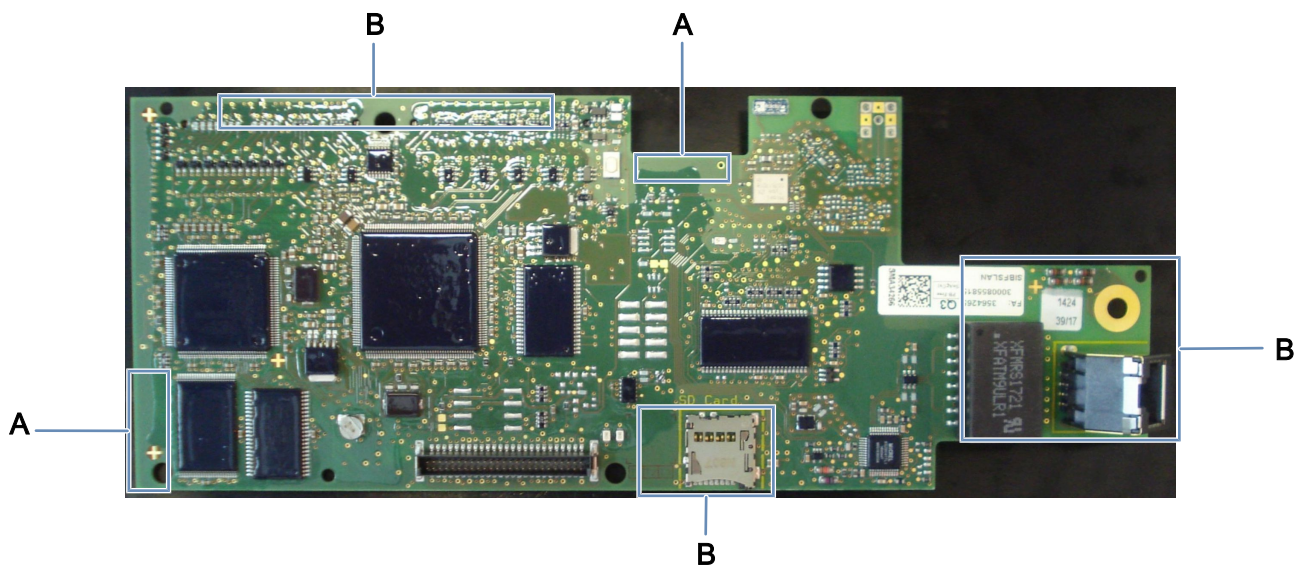


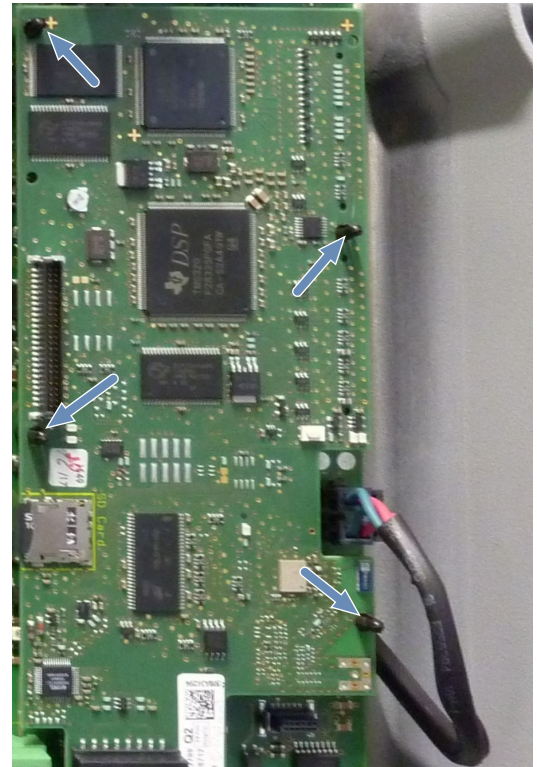
Figure 4: Handling areas of the SI-BFSLAN

Position	Designation
A	Area of the assembly that can be touched without consequence. Area that can be used as a holding point during mounting.
B	Area of the assembly that is to be handled with great care. Area that can be used as a holding point during mounting.

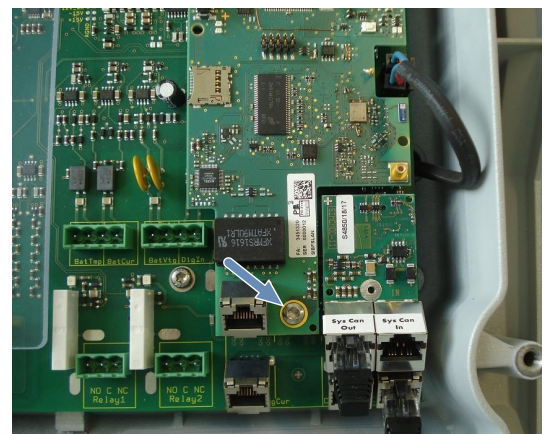
The remaining areas may not be touched. The assembly can be damaged through touching.

Procedure:

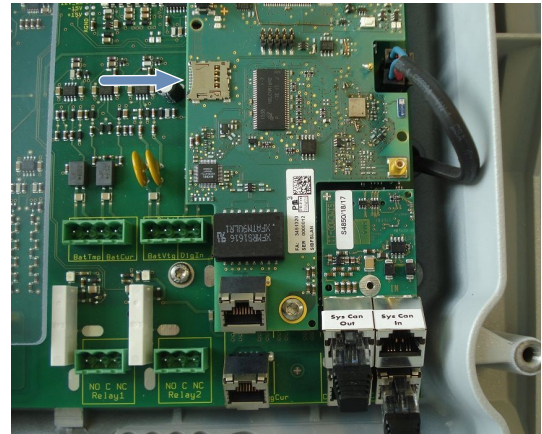
1. Check whether all printed circuit board retaining clips are in place and intact.



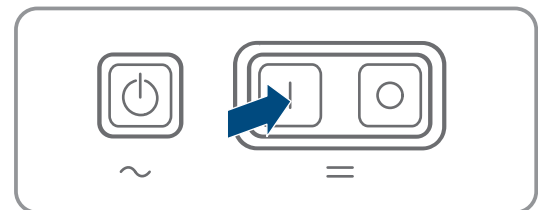
- If the locking tab of a printed circuit board retaining clip is damaged, cut off the printed circuit board retaining clip in question with electronic diagonal cutting pliers. In this process, the assembly must not be damaged.
 - If any printed circuit board retaining clips are missing or have been cut off, insert the supplied printed circuit board retaining clips in these positions.
2. Align the assembly and insert it into the inverter. When doing so, ensure that the printed circuit board retaining clips snap into place correctly.
 3. Tighten the fastening screw (TX 20, torque: 2 Nm).



4. If a microSD card is available, insert the microSD card into the slot up to the stop. Do not jam the micro SD card when doing so.



5. Connect the network cable to terminal **ComETH**. Observe that the plug snaps properly into place.
6. Carry out the necessary tests according to the locally applicable laws, standards and directives for the correct recommissioning after power assembly replacement. Take the requirements for component replacements into account (see Section 2.2 "IMPORTANT SAFETY INSTRUCTIONS", page 6).
7. Ensure that the grounding conductor in the inverter is correctly connected and functions properly.
8. Close the inverter (for information on sealing and closing see inverter operating manual).
9. Attach the provided label with new identification key (PIC), new registration ID (RID) and new device-specific WLAN password (WPA2-PSK) to the type label of the inverter. Make sure that the previous identification key (PIC), the previous registration ID (RID) and the previous WLAN password are covered completely.
10. Close the fuse switch-disconnector of the battery fuse.
11. Switch on the Sunny Island (see the inverter operating manual). This causes the assembly to start synchronizing with the inverter.



12. Wait 15 minutes before the new assembly has synchronized with the inverter. In addition, the serial number of the inverter is adopted.
13. **i** **Disturbed WLAN connection due to outdated WLAN password**
 With the new assembly SI-BFSLAN, the inverter has received a new device-specific WLAN password (WPA2-PSK). If the previous device-specific WLAN password of the inverter is still stored in a computer, tablet or smartphone, no WLAN connection can be established between this device and the inverter.
 - Search for WLAN networks with your computer, tablet or smartphone.
 - Delete the previous device-specific WLAN password in the list of the detected WLAN networks.
14. Establish a connection to the user interface of the inverter (see the inverter operating manual).
15. Log in as **installer** and follow the instructions on the user interface (for information on the basic configuration of the installation assistant see inverter operating manual).
16. Check whether the serial number on the footer of the user interface matches the serial number on the type label. If the serial numbers do not match, contact the Service (see Section 11, page 30).
17. Check whether the current firmware version is installed. For this purpose, read off the installed firmware version in the footer and compare it with the firmware version available at www.SMA-Solar.com. If the installed firmware version is not up-to-date, update to the latest firmware version of the inverter (see inverter operating manual).

18. **i** Serial number of the new assembly in the user interface as device name

The serial number of the new assembly is stored as a new device name in the inverter user interface. The previous device name of the inverter is no longer shown.

- To change the device name of the inverter, select the **Device configuration** page on the user interface.

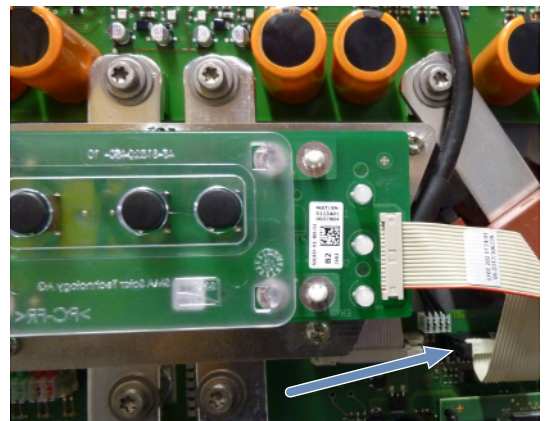
19. Start the Sunny Island (see the inverter operating manual).

20. When the system is registered in Sunny Portal, add the inverter with the new registration data in Sunny Portal at www.sunnyportal.com.

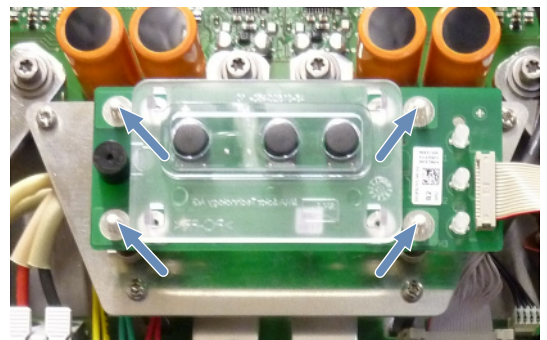
7.3 Replacement of the assembly SI-LED

7.3.1 Removing the SI-LED

1. Disconnect the inverter from all voltage sources (see Section 6, page 13).
2. Disconnect the connection cable of the assembly SI-LED on the assembly SI-AST. For this, release and remove the plug of the ribbon cable.

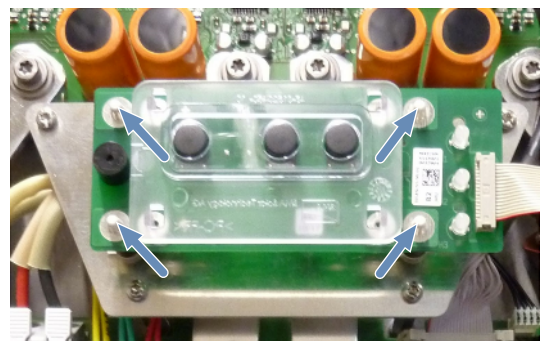


3. Carefully remove the assembly by pulling it towards you. Press together both locking tabs with pliers on each printed circuit board retaining clip.



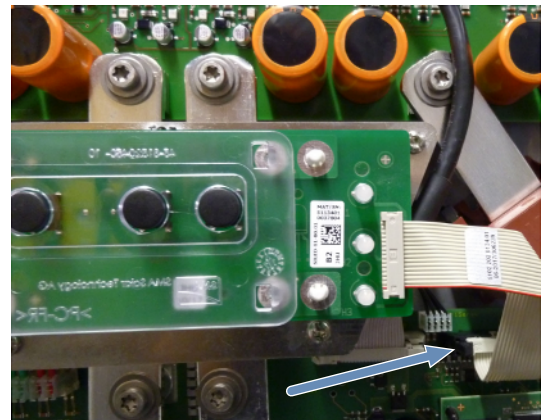
7.3.2 Installing the SI-LED

1. Check whether all printed circuit board retaining clips are in place and intact.

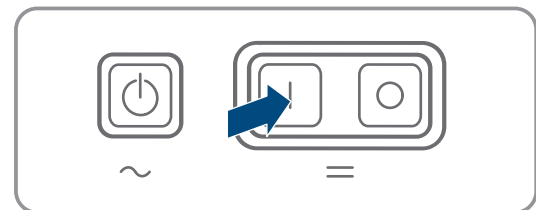


- If the locking tab of a printed circuit board retaining clip is damaged, cut off the printed circuit board retaining clip in question with electronic diagonal cutting pliers. In this process, the assembly must not be damaged.

- If any printed circuit board retaining clips are missing or have been cut off, insert the supplied printed circuit board retaining clips in these positions.
2. Align the assembly and insert it into the inverter. When doing so, ensure that the printed circuit board retaining clips snap into place correctly.
 3. Fasten the connection cable of the assembly SI-LED on the assembly SI-AST.



4. Carry out the necessary tests according to the locally applicable laws, standards and directives for the correct recommissioning after power assembly replacement. Take the requirements for component replacements into account (see Section 2.2 "IMPORTANT SAFETY INSTRUCTIONS", page 6).
5. Ensure that the grounding conductor in the inverter is correctly connected and functions properly.
6. Close the inverter (for information on sealing and closing see inverter operating manual).
7. Switch on the Sunny Island (see the inverter operating manual).



8. Start the Sunny Island (see the inverter operating manual).

8 Performing the VAC Test

Due to the replacement of the assembly, elements in the supply voltage measurement area were replaced. To ensure that the supply voltage measurement in the inverter has the required accuracy, the installer must carry out a VAC test.

The VAC test compares the AC voltage present in the utility grid with the AC voltage measured by the inverter. The inverter may display up to 5 V more or 1 V less than the applied AC voltage.

Requirements:

- A measuring device suitable for the VAC measurement must be available.
- During measurement, devices causing fluctuations in the utility grid (e.g. other inverters) must be switched off or set to **Stop**.
- You must be logged in on the user interface of the inverter.

Procedure:

1. Make sure the inverter is in the operating state "Standby". Set the parameter **Operating condition** to **Stop**.
2. Make sure that the VAC voltage measured by the inverter is displayed. Call up the parameter **Grid voltage Phase Lx**.
3. Measure the AC voltage as close as possible to the inverter.
4. Compare the measured AC voltage and the AC voltage displayed on the inverter.
5. Check whether the AC voltage shown by the inverter is a maximum of 5 V above or 1 V below the measured AC voltage.
6. If the AC voltage shown by the inverter is not within the given range, carry out a VAC adjustment. Contact the Service (see Section 11 "Contact", page 30).

9 Recommissioning the Inverter

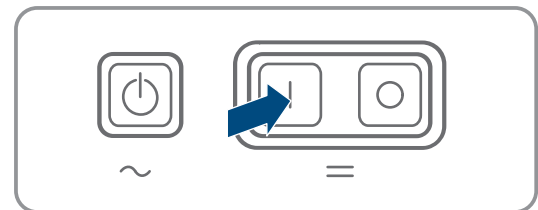
If you have disconnected the inverter from all voltage sources and want to recommission it, proceed as follows.

Requirements:

- All circuit breakers in the AC distribution board must be open.
- All Sunny Island inverters must be connected correctly (see the inverter operating manual).
- All Sunny Island inverters must be closed (for information on sealing and closing of the inverter see the Sunny Island inverter operating manual).
- All Sunny Island inverters must be switched off.
- The fuse switch-disconnector of the battery fuse must be closed.

Procedure:

1. Switching on the Sunny Island:



- For systems with one Sunny Island, press the "On" button.
 - For systems with three Sunny Island inverters, press and hold the "On" button on the master until an acoustic signal sounds.
 - For multicluster systems, press and hold the "On" button on each master until an acoustic signal sounds.
2. Establish a connection to the user interface of the inverter (see the inverter operating manual).

10 Packing and Returning the Defective Assembly / Disposing of the Defective Assembly

If the defective assembly is to be returned, this will be stated on the order form.

Procedure:

1. If the defective assembly is to be returned:
 - Pack the defective assembly for shipping. Use the original packaging for this, or packaging that is suitable for the weight and size of the assembly.
 - Organize the return shipment to SMA Solar Technology AG. To do this, contact Service (refer to www.SMA-Solar.com for contact details).
2. If the assembly is not to be returned, dispose of the assembly in accordance with the locally applicable disposal regulations for electronic waste.

11 Contact

Deutschland	SMA Solar Technology AG	Belgien	SMA Benelux BVBA/SPRL
Österreich	Niestetal	Belgique	Mechelen
Schweiz	Sunny Boy, Sunny Mini Central, Sunny Tripower: +49 561 9522-1499	België	+32 15 286 730
	Monitoring Systems (Kommunikationsprodukte): +49 561 9522-2499	Luxemburg	SMA Online Service Center: www.SMA-Service.com
	Hybrid Controller (PV-Diesel-Hybridsysteme): +49 561 9522-3199	Luxembourg	
	Sunny Island, Sunny Boy Storage, Sunny Backup: +49 561 9522-399	Nederland	
	Sunny Central, Sunny Central Storage: +49 561 9522-299	Česko	SMA Service Partner TERMS a.s.
	SMA Online Service Center: www.SMA-Service.com	Magyarország	+420 387 6 85 111
		Slovensko	SMA Online Service Center: www.SMA-Service.com
		Türkiye	SMA Service Partner DEKOM Ltd. Şti. +90 24 22430605
			SMA Online Service Center: www.SMA-Service.com
France	SMA France S.A.S. Lyon +33 472 22 97 00	Ελλάδα	SMA Service Partner AKTOR FM.
	SMA Online Service Center : www.SMA-Service.com	Κύπρος	Αθήνα +30 210 8184550
			SMA Online Service Center: www.SMA-Service.com
España Portugal	SMA Ibérica Tecnología Solar, S.L.U. Barcelona +34 935 63 50 99	United Kingdom	SMA Solar UK Ltd. Milton Keynes +44 1908 304899
	SMA Online Service Center: www.SMA-Service.com		SMA Online Service Center: www.SMA-Service.com
Italia	SMA Italia S.r.l. Milano +39 02 8934-7299	Australia	SMA Australia Pty Ltd. Sydney Toll free for Australia: 1800 SMA AUS (1800 762 287)
	SMA Online Service Center: www.SMA-Service.com		International: +61 2 9491 4200
United Arab Emirates	SMA Middle East LLC Abu Dhabi +971 2234 6177	India	SMA Solar India Pvt. Ltd. Mumbai +91 22 61713888
	SMA Online Service Center: www.SMA-Service.com		
ไทย	SMA Solar (Thailand) Co., Ltd. กรุงเทพฯ +66 2 670 6999	대한민국	SMA Technology Korea Co., Ltd. 서울 +82-2-520-2666

South Africa	SMA Solar Technology South Africa Pty Ltd. Cape Town 08600SUNNY (08600 78669) International: +27 (0)21 826 0699 SMA Online Service Center: www.SMA-Service.com	Argentina Brasil Chile Perú	SMA South America SPA Santiago de Chile +562 2820 2101
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Other countries	International SMA Service Line Niestetal 00800 SMA SERVICE (+800 762 7378423) SMA Online Service Center: www.SMA-Service.com
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