

If you have technical problems, first contact your installer. The following information is required in order to provide you with the necessary assistance:

- Inverter device type
- Inverter serial number
- Type and number of PV modules connected
- Blink code or display message of the inverter
- Optional equipment (e.g. communication devices)

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PV Inverter SUNNY BOY 2500/3000 User Manual



SB25_30-BA-BEN110620 | IMEN-SB25_30 | Version 2.0

EN

EXPLANATION OF SYMBOLS

Symbols on the Inverter

- Operation display.
- Ground fault or varistor defective. Please inform your installer.
- An error has occurred. Please inform your installer **immediately**.
- Tap to switch on the display light and switch to the next message.

Symbols on the Type Label

- Beware of dangerous electrical voltage. The inverter operates at high voltages. All electrical work on the inverter must be carried out by qualified personnel only.
- Beware of hot surface. The inverter can become hot during operation. Avoid contact during operation.
- Observe enclosed documentation.
- The inverter must not be disposed of with the household waste. Further disposal information can be found in the enclosed installation guide.
- CE mark. The inverter complies with the requirements of the applicable EC guidelines.
- RAL quality mark for solar products. The inverter complies with the requirements of the German Institute for Quality Assurance and Labeling.
- Direct Current (DC)
- Alternating current (AC)
- The inverter is protected against penetration by dust particles and water jets from any angle.
- The inverter has a transformer.

VISUAL INSPECTION, MAINTENANCE AND CLEANING

Visual inspection

Check the inverters and the cables for visible external damage. Contact your installer if you find any defects. Do not perform any repair work yourself.

Maintenance and Cleaning

Ask your installer to check for proper inverter operation at regularly.

GLOSSARY

- AC**
Abbreviation for "Alternating Current".
- DC**
Abbreviation for "direct current".
- Derating**
A controlled reduction in performance, usually dependent on component temperatures.
- Electronic Solar Switch (ESS)**
The Electronic Solar Switch is part of the inverter's DC switch-disconnector. The Electronic Solar Switch must be securely inserted into the bottom of the inverter and must only be removed by qualified personnel.
- MPP (Maximum Power Point)**
Operational point of the inverter, dependent on current/voltage of the PV generator. The actual position of the MPP changes constantly, depending on the level of solar irradiation and the cell temperature.
- PV**
Abbreviation for photovoltaics.
- Varistor**
The varistors protect the electronics in the inverter from atmospherically coupled energy peaks, such as those that can occur in the event of nearby lightning strikes.

SAFETY INSTRUCTIONS



DANGER!

Electric shock caused by high voltage at the inverter.

Even when no external voltage is present, there can still be high voltages in the device. The following work must be carried out by qualified personnel only:

- Electrical installation
- Repairs
- Modification



CAUTION!

Risk of injury from touching the enclosure during operation. Burns to the body.

- Only touch lid and display during operation.

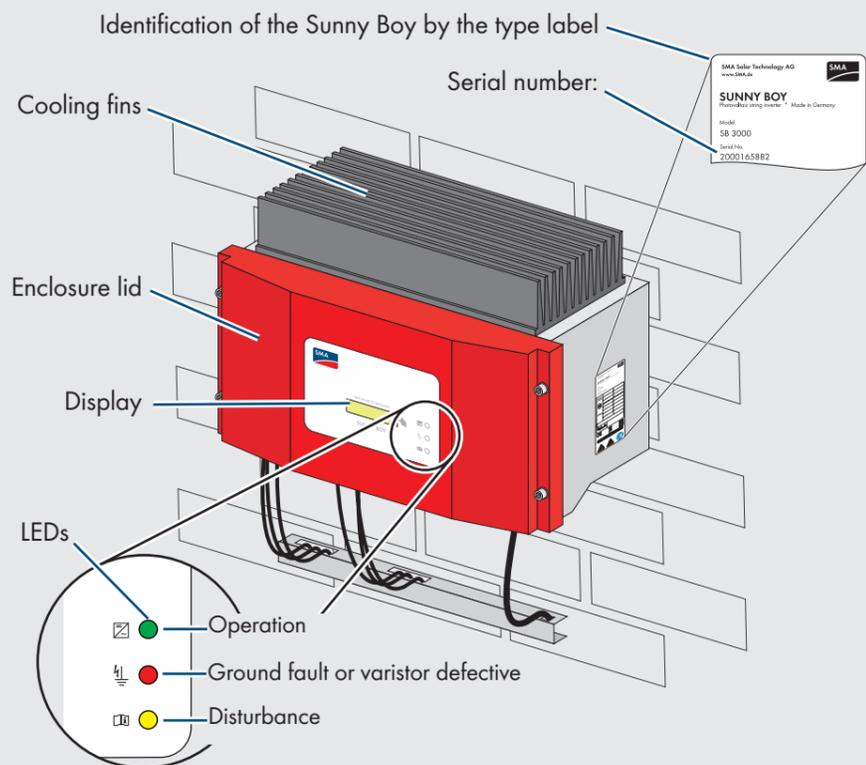
NOTICE!

Overvoltage in the inverter if yellow LED flashes 4 times. Destruction of the inverter.

- Inform your installer immediately if the yellow LED starts flashing and the following display message appears.

!PV-Overvoltage!
!Disconnect DC!

PRODUCT OVERVIEW



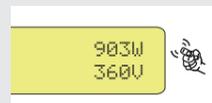
LED MODES

Mode	Description	Function
☑️ Green LED ⚡ Red LED ⚠️ Yellow LED	All LEDs are on	Initialization The inverter is initializing.
☐ Green LED ☐ Red LED ☐ Yellow LED	All LEDs are off	Deactivation The inverter has detected a DC input voltage that is too low for grid feeding.
☑️ Green LED ☐ Red LED ☐ Yellow LED	Green LED is glowing continuously	Feeding Operation The inverter is feeding power into the public grid.
☑️ Green LED ☐ Red LED ☐ Yellow LED	Green LED is flashing	Waiting, Grid Monitoring The inverter monitors the grid and waits for the DC voltage to reach a certain level so that it can start feeding the grid. Stop Interruption of operation. Derating Overtemperature in the inverter.
☑️ Red LED ☐ Green LED ☐ Yellow LED	Red LED is glowing	Warning A grounding error has occurred, or one of the thermally monitored varistors on the DC input side is defective. Please inform your installer.
☑️ Yellow LED ☐ Green LED ☐ Red LED	Yellow LED is on continuously	Disturbance The inverter is operating in "Operation constantly disabled" mode. This can have several causes. Please inform your installer.
☑️ Yellow LED ☐ Green LED ☐ Red LED	Yellow LED is flashing	Disturbance The inverter displays a disturbance. This can have several causes. Please inform your installer.

DISPLAY

Operation

The display shows current values of your system. The displayed values are updated every 5 seconds. The display is operated by tapping on it.



Tap once

The background illumination is switched on. After 2 minutes, the illumination switches off automatically.

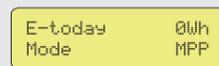
Tap again

The display switches to the next notification.

Display messages

Operation

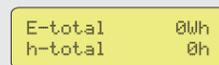
Upon error-free connection of the inverter to the grid, the following messages are shown in turn after approximately one minute. Each message appears for five seconds, then the cycle starts over.



Power produced on the current day
Operating state



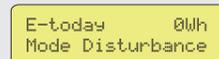
Current feed-in power
Voltage of the PV generator



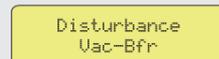
Total amount of feeding-in energy
Total number of grid-feeding operational hours

Disturbance

In the event of a disturbance, the inverter will display the status "Disturbance" and an error message. Please inform your installer. The following messages will be issued:



Power produced on the current day
Operating state "Disturbance"

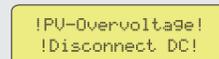


Operating state
Error message



Measured value at time of disturbance
Current measured value (only displayed if a measured value is responsible for the disturbance)

DC overvoltage



The DC input voltage connected to the inverter is too high. Please inform your installer **immediately**.

MEASURING CHANNELS

If your inverter is equipped with a communication component, then numerous measuring channels and messages can be transmitted for diagnosis.

Measuring channel	Description
Error	Identification of the current disturbance/error.
E-total	Total amount of feeding-in energy
Event-Cnt	Number of events that have occurred
Fac	Grid frequency
h-On	Total number of operating hours
h-total	Total number of grid-feeding operational hours
Iac	Grid current
Ipv	DC current
Mode	Display of the current operating mode
Pac	Generated AC power
Power On	Total number of grid switch-ons
Riso	Insulation resistance of the PV system to the power supply line
Serial number	Inverter serial number
Vac	Grid voltage
Vpv	PV input voltage
Vpv-Setpoint	PV target voltage

STATUS MESSAGES

Your inverter can be in various operating modes. These are displayed as status messages, which can vary according to the method of communication.

Message	Description
Derating	Overtemperature in the inverter. The inverter will reduce its output to prevent overheating. To avoid unnecessary output losses, the design of the PV plant should be checked. Please inform your installer.
Disturbance	Disturbance. This message appears for reasons of safety and prevents the inverter from connecting to the grid. Please inform your installer.
Error	An error has been detected. Please inform your installer.
Grid mon.	Grid monitoring This message appears during the startup phase, before the inverter connects to the grid; it usually appears in the morning and evening when there is little solar irradiation and after an error has occurred.
MPP	The inverter is operating in MPP mode. MPP is the standard display message when operating under normal irradiation conditions.
Off Grid	The inverter is in "Island" mode. This mode has been specially conceived for operation in an off-grid power system with a Sunny Island as grid controller.
Offset	Offset adjustment of measurement electronics.
Riso	Measurement of the insulation resistance of the PV system.
Stop	Interruption of operation.
V-Const	Constant voltage operation.
Waiting	The switch-on conditions are not (yet) fulfilled.