

SMA DC-Disconnect

Accessories for PV Inverters



Version: 1.1

Mat.-Nr.

DB-DC-DISCON

Please check the Installation Guide delivered with your Sunny Boy. If the Installation Guide version is earlier than 2.1 (for example 1.2 or 1.3), then please read this information carefully and follow the instructions below. If your Sunny Boy Installation Guide has the version 2.1 you may disregard this additional information.

The SMA DC-Disconnect is a DC circuit breaker disconnecting the PV generator from the inverter. The SMA DC-Disconnect is NOT an AC circuit breaker.

This Additional Information describes the wiring of the DC-Disconnect. This instruction does NOT replace the Sunny Boy Installation Guide. Pay attention to all operation and safety instructions listed in the Installation Guide of the Sunny Boy. The Installation Guide describes how to connect the DC-Disconnect and provides information on the torque of the cable connection.

AC Wiring with SMA DC-Disconnect

The Sunny Boy 3000US and 4000US are suitable for the connection to a 208 V and 240 V grid. The Sunny Boy 5000US, 6000US and 7000US are suitable for the connection to a 208 V, 240 V and 277 V grid.

Pay attention to all operation and safety instructions listed in the Installation Guide of the Sunny Boy. This instruction does NOT replace the Sunny Boy Installation Guide.

L1 Connect the black L1 (AC line 1 or UN-GROUNDED) wire to the terminal labeled L1 in the SMA DC-Disconnect

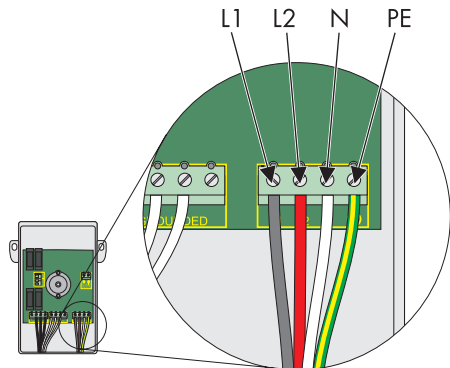
L2 Connect the red L2 (AC line 2) to the terminal labeled L2 in the SMA DC-Disconnect.

Only for 277 V:

L2 terminal not used!

N Connect the white N (AC line N) wire to the terminal labeled N in the SMA DC-Disconnect.

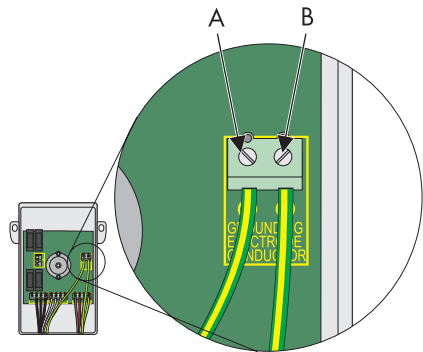
PE Connect the green-yellow AC equipment-ground wire to the PE terminal labeled in the SMA DC-Disconnect.



DC Ground Wiring With SMA DC-Disconnect

Pay attention to all operation and safety instructions listed in the Installation Guide of the Sunny Boy. This instruction does NOT replace the Sunny Boy Installation Guide.

- A Connect the grounding electrode conductor with the grounding electrode.
- B Connect the PV generator grounding to the grounding electrode.



DC Wiring With SMA DC-Disconnect

Pay attention to all operation and safety instructions listed in the Installation Guide of the Sunny Boy. This instruction does NOT replace the Sunny Boy Installation Guide.

Negative Grounding

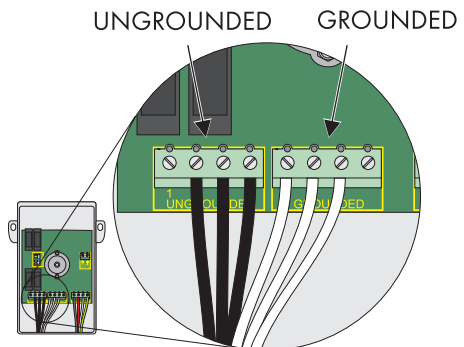
Connect the positive DC wires to the terminal labeled PV UNGROUNDED in the SMA DC-Disconnect.

Connect the negative DC wires to the terminal labeled PV GROUNDED in the SMA DC-Disconnect.

Positive Grounding

Connect the negative DC wires to the terminal labeled PV UNGROUNDED in the SMA DC-Disconnect.

Connect the positive DC wires to the terminal labeled PV GROUNDED in the SMA DC-Disconnect.



DC Wiring With Additional DC Distribution

When combining strings outside of the SMA DC-Disconnect, and when the combined input of a single source circuit is greater than 15 A, use the terminal labeled COMBINED for the ungrounded conductor. DO NOT use the terminals 1 - 4 labeled UNGROUNDED in this case.



Additional DC Source Circuit

Note: This circuit will no longer be fused so additional DC source circuit fusing may be required in order to meet UL and NEC.

Pay attention to all operation and safety instructions listed in the Installation Guide of the Sunny Boy. This instruction does NOT replace the Sunny Boy Installation Guide.

Negative Grounding

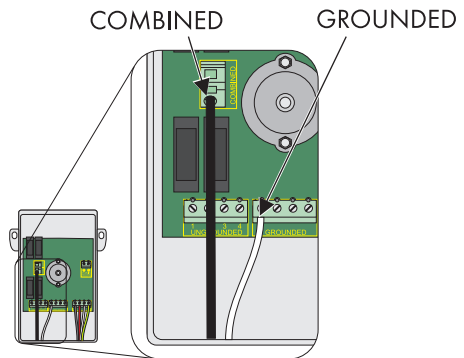
Connect the positive DC wire to the terminal labeled COMBINED in the SMA DC-Disconnect.

Connect the negative DC wire to the terminal labeled PV GROUNDED in the SMA DC-Disconnect.

Positive Grounding

Connect the negative DC wire to the terminal labeled COMBINED in the SMA DC-Disconnect.

Connect the positive DC wire to the terminal labeled PV GROUNDED in the SMA DC-Disconnect.



For connecting the DC wires to the Sunny Boy, see Installation Guide of the Sunny Boy.

Torque Values and Wire Sizes SMA DC-Disconnect

Terminal	in-lbs	Nm.	Wire Size
AC & DC Terminal Blocks	15	1.7	6 - 10 AWG
Combined Terminal Block	Spring Terminal	Spring Terminal	6 - 10 AWG
Grounding Electrode Conductor Block	15	1.7	6 - 10 AWG


AC Wiring in the Sunny Boy

Pay attention to all operation and safety instructions listed in the Installation Guide of the Sunny Boy. This instruction does NOT replace the Sunny Boy Installation Guide.

- L1 Connect the black L1 (AC line 1 or UNGROUNDED) wire of the SMA DC-Disconnect to the terminal labeled L1 in the Sunny Boy.
- L2 Connect the red L2 (AC line 2) wire of the SMA DC-Disconnect to the terminal labeled L2 in the Sunny Boy.

Only for 277 V:

L2 terminal not used!

- N Connect the white N (AC line N) wire of the SMA DC-Disconnect to the terminal labeled N in the Sunny Boy.
- PE Connect the green-yellow AC equipment-ground wire of the SMA DC-Disconnect to the PE terminal labeled  in the Sunny Boy.

