

Quick Installation Guide

PV Rapid Shutdown Equipment

SR20D-M



- The content of the manual will be updated from time to time due to product updates or other reasons. Under no circumstances should this guide be taken as a substitute for the user manual and safety instructions on the product.
- Before performing any operation, read through the user manual the relevant standards and specifications carefully, which can be downloaded from <http://support.sungrowpower.com/> or by scanning the QR code on the back cover of this guide.
- Operations must all be performed by qualified technical persons who have received special training, read through the manual carefully, have a good understanding of the instructions for safe operation, and are familiar with local standards and safety specifications for electrical systems.
- Before installation, check the delivery for quantity of items, consistency with the order, and damages according to the packing list. In case of anything abnormal, contact the transport service provider or SUNGROW.
- Make sure the cables are intact and well-insulated before electrical connections. Use insulated tools and wear personal protective equipment during operation.
- Failure to follow any of the above requirements may lead to personal injury or damage to the device.

Safety Instructions

SUNGROW shall not be held liable for any personal injury or device damage caused by violation of the operation instructions in this guide and the user manual.

Danger

Electric shock!

- The PV string will generate lethal high voltage when exposed to sunlight.
- All electrical connections must and can only be completed by qualified technical persons.
- All electrical connections must be completed in compliance with local and national electrical standards.

Warning

The safety signs, warning labels, and nameplate on the RSD must all be legible and cannot be removed or covered.

Caution

Danger of burns!

Do not touch the RSD when it is running. Otherwise, it may cause burns.

Security Declaration

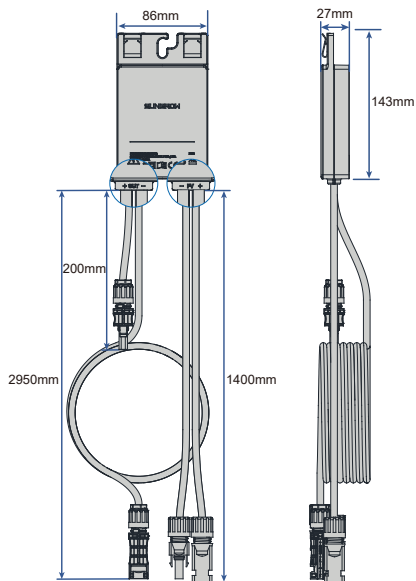
- To learn more about the product network security vulnerability response process and vulnerability disclosure, please scan the QR code below or visit the following website:
<https://en.sungrowpower.com/security-vulnerability-management>



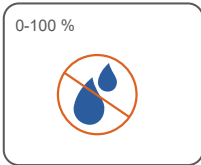
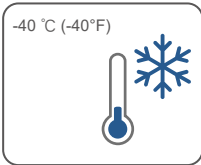
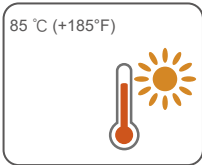
Signs on the Product

 Lethal high voltage! Only professional and qualified personnel are allowed to install and operate the RSD!	 Hot surface with a temperature that may exceed 60 °C. Risk of burns!
 Equipment protected by double insulation or reinforced insulation.	 Comply with RCM certification.
 Comply with CE certification. EU/EEA importer.	 Read the instructions before performing any operation on the RSD.
 Do not dispose of the RSD as household waste.	

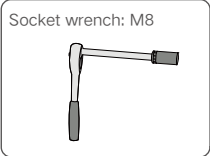
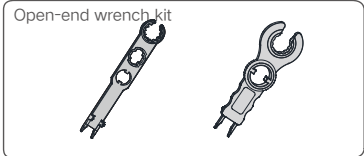
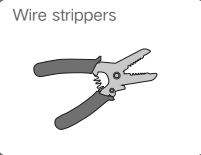
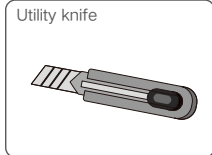
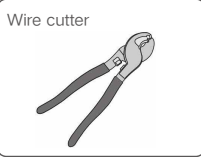
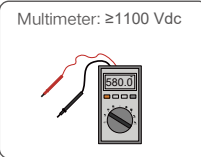
Product Introduction



Installation Site



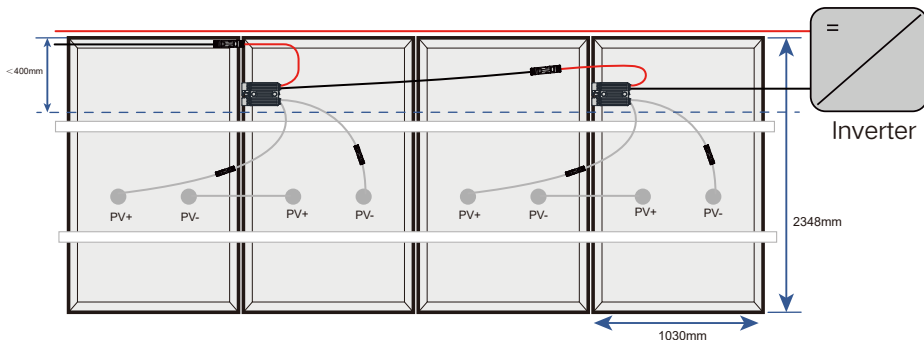
Installation Tools



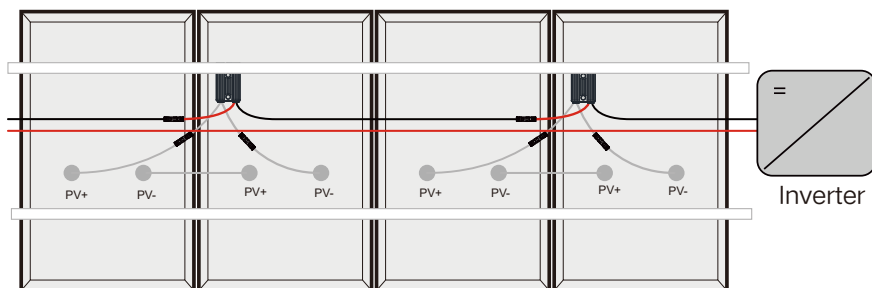
Installation Scenarios

Before installation, decide the installation and arrangement schemes based on the actual situation, to ensure that the RSD can be connected to PV modules and adjacent RSDs normally.

• Case 1: Mounted on PV module (Clip-on)



• Case 2: Mounted on guide rail

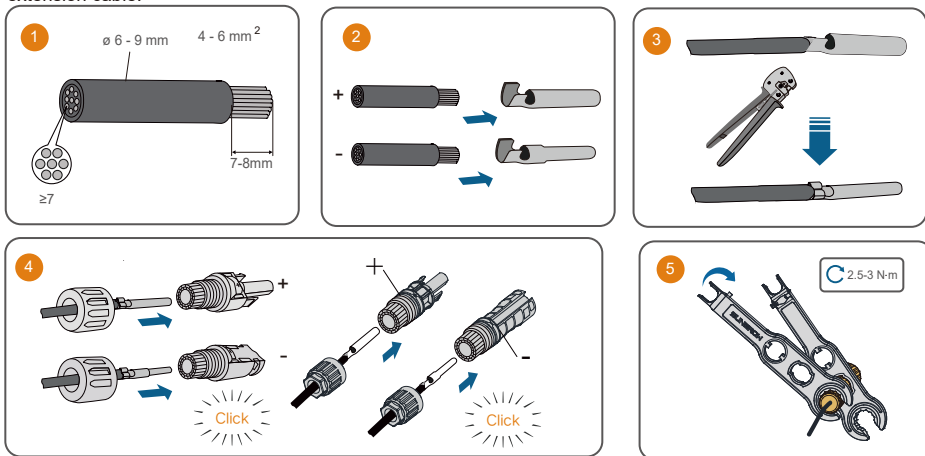


Notice

The mounting and wiring should be performed in compliance with local laws, regulations, safety standards, and installation specifications. If the cable is too long, make sure it does not hang down to the ground. You can secure it nearby to the bracket or the edge of the module.

Extension Cable Preparation

When connecting the RSD, if the distance between the connectors is too long, you will need to prepare an extension cable.

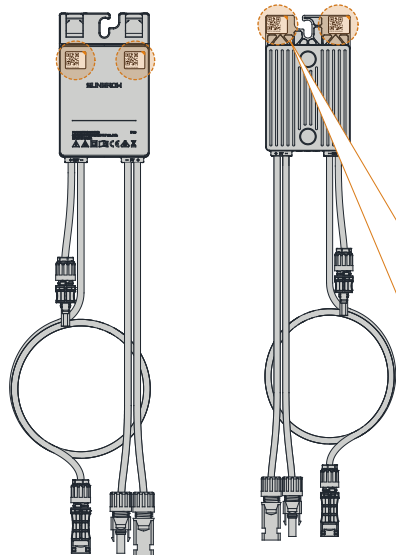


Warning

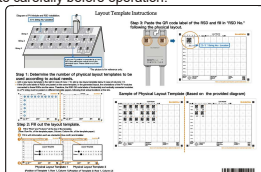
- When preparing an extension cable, pay attention to the selection of DC connectors at the two ends of the cable. Do not mix them up.
- Make sure the DC connectors of the cable are identical to or compatible with the connectors on the product. Otherwise, it may lead to damage and such damage will not be covered by the warranty.

RSD Mounting

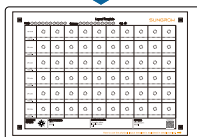
Decide on an appropriate position to mount the RSD. Remove the QR code label from the RSD, and attach the QR code label to the layout template by referring to the instructions for "Physical Layout Template".



1. Read through the instructions provided on the back of the layout template carefully before operation.

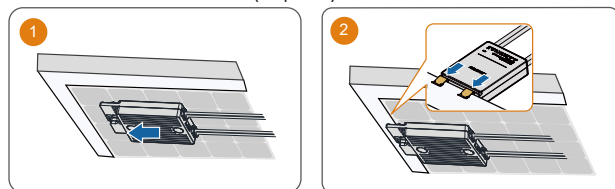


2. Remove the QR code label from the RSD, and attach it to the layout template.

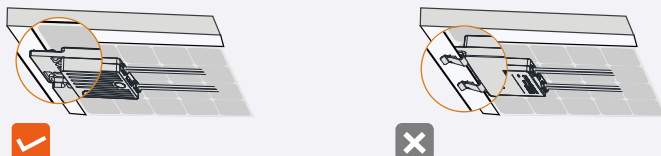


- * Attach the QR code label to the template based on the actual position of the RSD at the site.
- ** Keep the QR code label flat and even, and make sure it does not go outside the cell border.

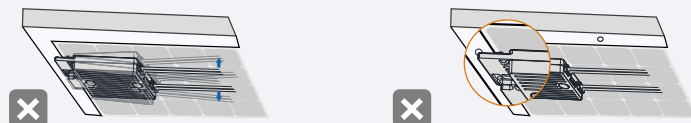
Mounted on PV module (Clip-on)



- Ensure that the RSD is installed facing the back of the module. Otherwise, the clips may be damaged.

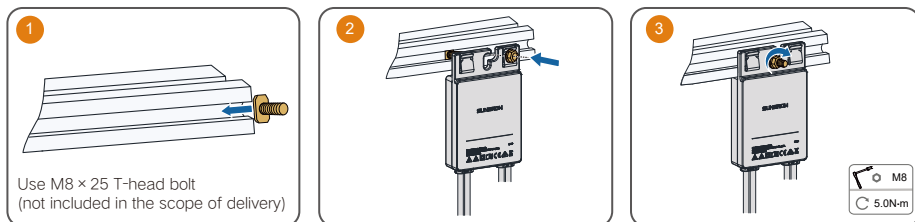


- Do not apply force to the RSD in a direction vertical to its clips when clipping the RSD onto the module. Otherwise, the clips may be damaged.
- Do not clip the RSD into holes in the module frame during installation. Otherwise, you may not be able to remove the RSD again and its clips may be damaged.

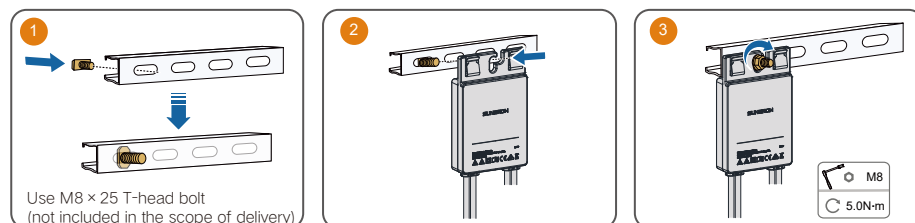


- Do not forcibly bend its clips when clipping the RSD onto the module. Otherwise, the clips may be damaged.
- It is recommended to install RSDs on the same side of modules.
- Do not clip and remove the RSD repeatedly. Otherwise, the clips may become loose and thus cannot function properly.

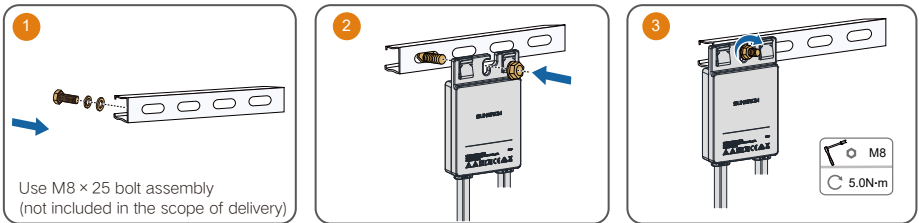
Mounted on aluminum guide rail



Mounted on steel guide rail (T-head bolt)

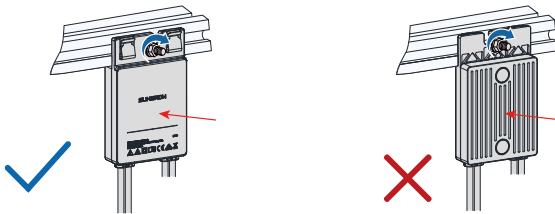


Mounted on steel guide rail (bolt assembly)

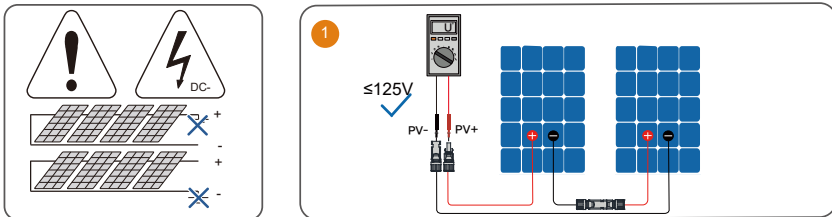


⚠ Warning

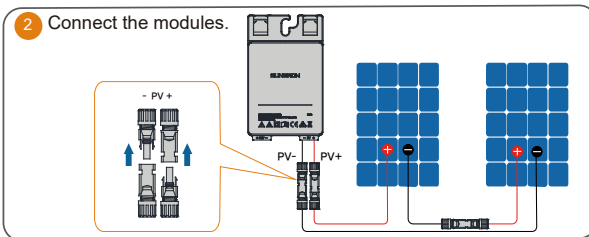
- During installation, make sure the metal clips do not get in contact with the bracket.
- Install the RSD with its back tightly against the bracket. Installing it from the opposite direction may damage the RSD and such damage will not be covered by warranty.



Electrical Wiring



- Before connecting the PV module to the RSD's input terminals, test the input voltage of the RSD using a multimeter and make sure it is below 125V. RSD or PV module damages caused by failing to observe this instruction will not be covered by the warranty.

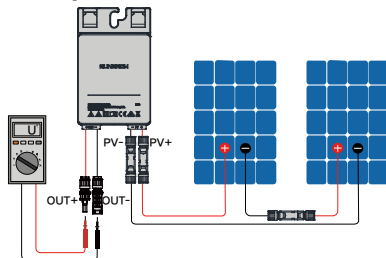


⚠ Notice

Complete the RSD wiring and measure the output voltage by following the steps below.

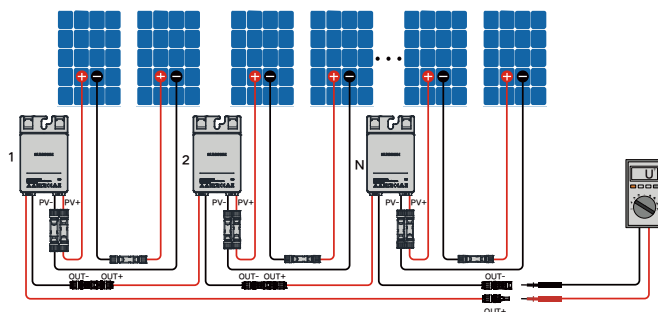
- When there is an odd number of PV modules, it is allowed to connect one single module to an RSD.
- After completing the wiring of an RSD, use a multimeter to measure its output voltage. Ensure that the output voltage of each RSD is within the normal range.
- After confirming that the output voltages of all RSDs are normal, use a multimeter to measure the output voltages of RSDs in the same string.
- If you do not check the RSD output voltage and confirm the string wiring is completed properly in this step, in case of something abnormal, you may have to check the whole wiring again, where rework is required.

3 Measure the output voltage of each RSD.



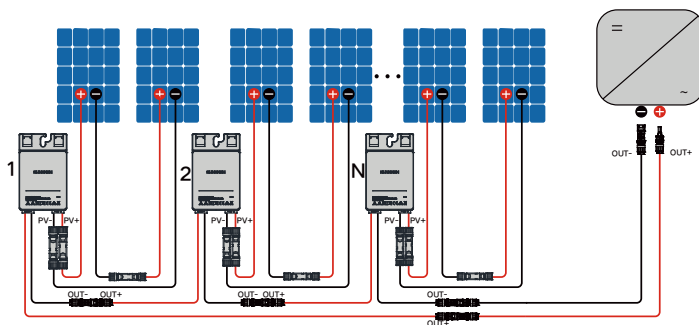
Voltage	Description	Suggestion
$0.9\text{ V} \leq U \leq 1.1\text{ V}$	RSD normal.	/
$U < 0.9\text{ V}$	1. Poor sunlight. 2. No PV module is connected to the input side of the RSD. 3. The wiring of the RSD is wrong. 4. RSD fault.	1. Measure the voltage when there is sufficient sunlight. 2. Connect the PV module to the input side of the RSD. 3. Reconnect the RSD cables correctly. Make sure the input side of the RSD is connected to the output side of the PV module. 4. Replace the RSD.
$U > 1.1\text{ V}$	RSD fault.	Replace the RSD.

4 Measure the output voltages of all RSDs in the same string. Typical voltage value U : $1\text{ V} \times N$.



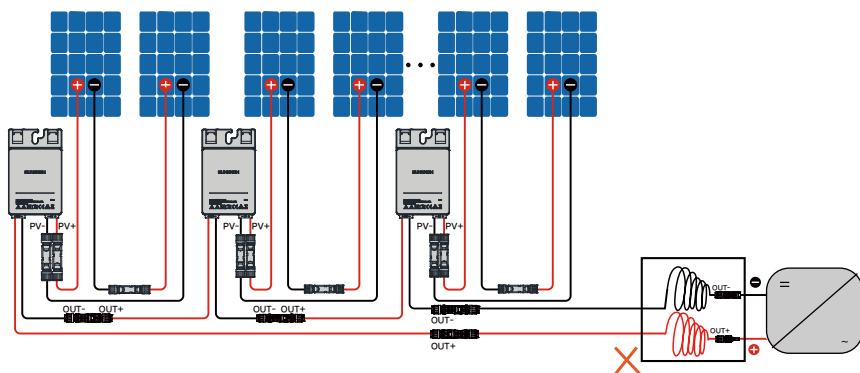
Voltage	Description	Suggestion
$U=1*N$	RSD normal.	/
$U=0$	1. The string is open-circuited. 2. The cables are not connected to the same string.	1. Check whether the string is open-circuited. 2. Identify the string cables correctly.
$U<0$	1. The probes are reversely connected. 2. The cable labels are incorrect.	1. Reconnect the positive and negative probes correctly. 2. Prepare cable labels correctly.
$U<0.9 *N$	1. Some RSD input cables are not connected. 2. Some RSD output cables are not connected. 3. Some RSD output cables are reversely connected.	Check whether cables of modules and strings are properly connected.
$U>1.1*N$	1. The actual number of RSDs in the string is greater than expected. 2. The PV module is connected to the string directly, not connected to any RSD.	1. Check whether the number of RSDs in the string is correct. 2. Check whether cables of modules and strings are properly connected.

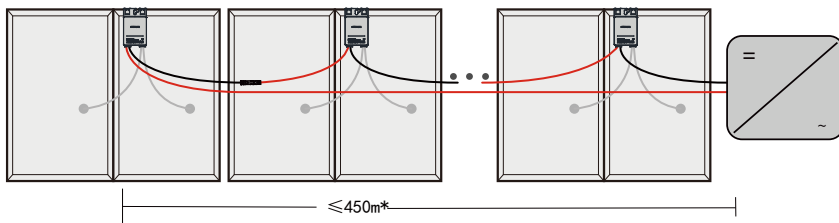
5 Connect the inverter.



Warning

- Do not coil the RSD's cable when wiring, given that the communication quality may decline if the extension cable is too long.
- The maximum communication distance between the inverter and the RSD should be less than 350m. If the distance exceeds 350m, consult SUNGROW first.



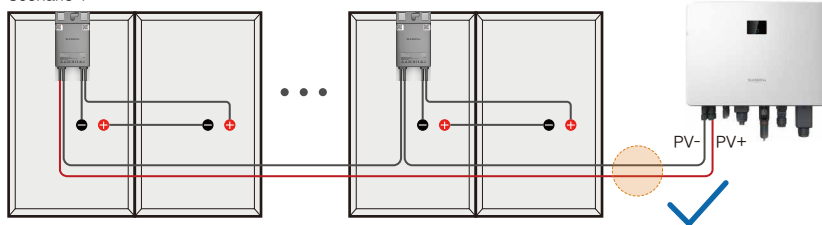


*PLC communication distance varies depending on the model: up to 350m when compatible with SG25-50CX-P2/SG125CX-P2, and up to 450m when compatible with SG150CX.

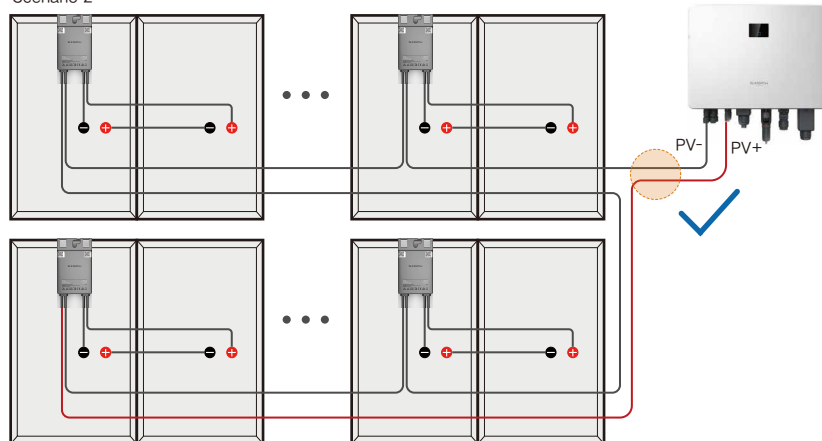
⚠ Warning

- DC wiring requirements: The positive and negative DC cables of the same PV string should be kept parallel and close to each other. The correct wiring is shown below.

Scenario 1

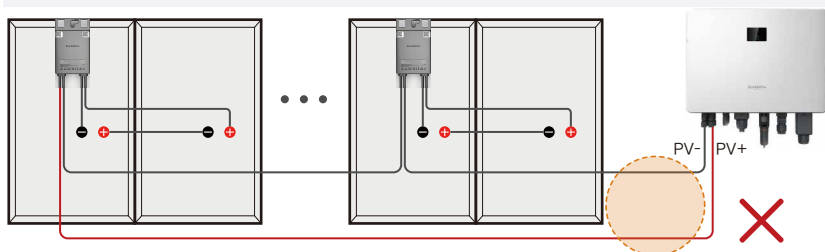


Scenario 2



Warning

- The positive and negative DC cables of the same PV string are not allowed to be routed apart separately, as shown in the figure below.



Commissioning

Complete the settings for the RSD on the iSolarCloud App. For detailed instructions, see the user manual for the iSolarCloud App.

iSolarCloud App





For more product information in the QR code
or at <http://support.sungrowpower.com/>



QIMUL M0H00039