2-in-1 Rapid Shutdown Devices SUNGO RSD-2 & Rapid Shutdown Transmitter SUNGO SD Quick Installation Guide

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1 Product Overview

2-in-1 Rapid Shutdown Devices SUNGO RSD-2

Rapid Shutdown Transmitter SUNGO SD

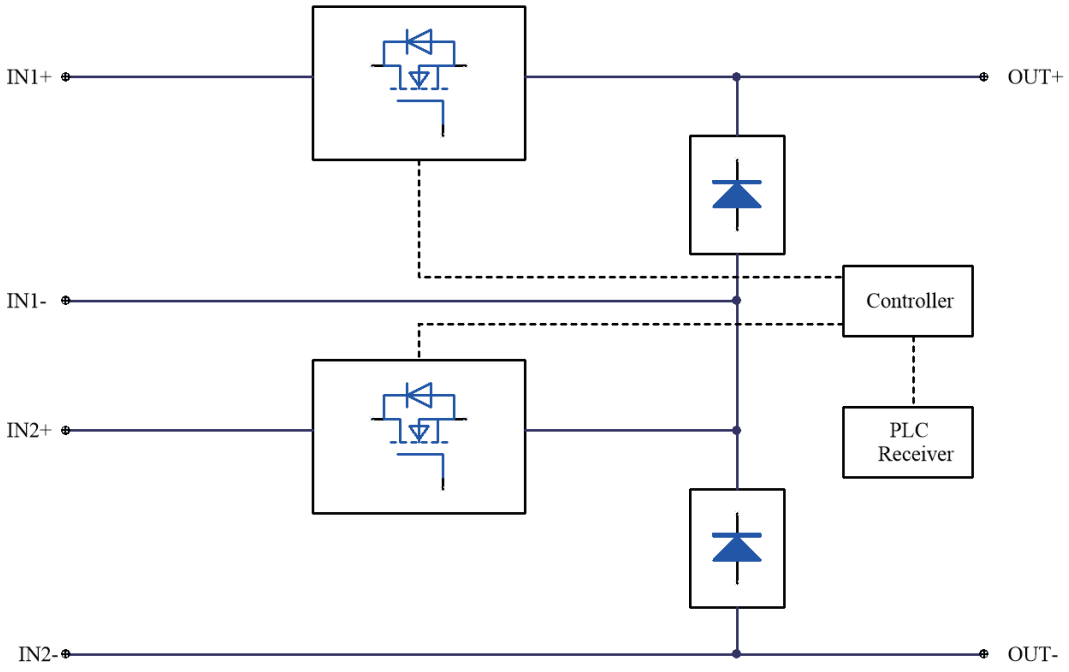
❶ OUT- ❷ OUT+ ❸ IN1+ ❹ IN1- ❺ IN2+ ❻ IN2- ❼ Magnet ring ❽ SD

SUNGO Energy Technology has launched a 2-in-1 rapid shutdown product system. In this system, when the rapid shutdown device RSD-2 receives a control signal from the shutdown signal generator SUNGO SD, it can maintain the normal output of the module. When no control signal is received from the SUNGO SD, the RSD-2 rapid shutdown device will disconnect the output of the PV module within 15 seconds, thereby stopping the entire PV system from outputting power. This operating mode complies with the relevant provisions of NEC 2017/2020 (609.12).

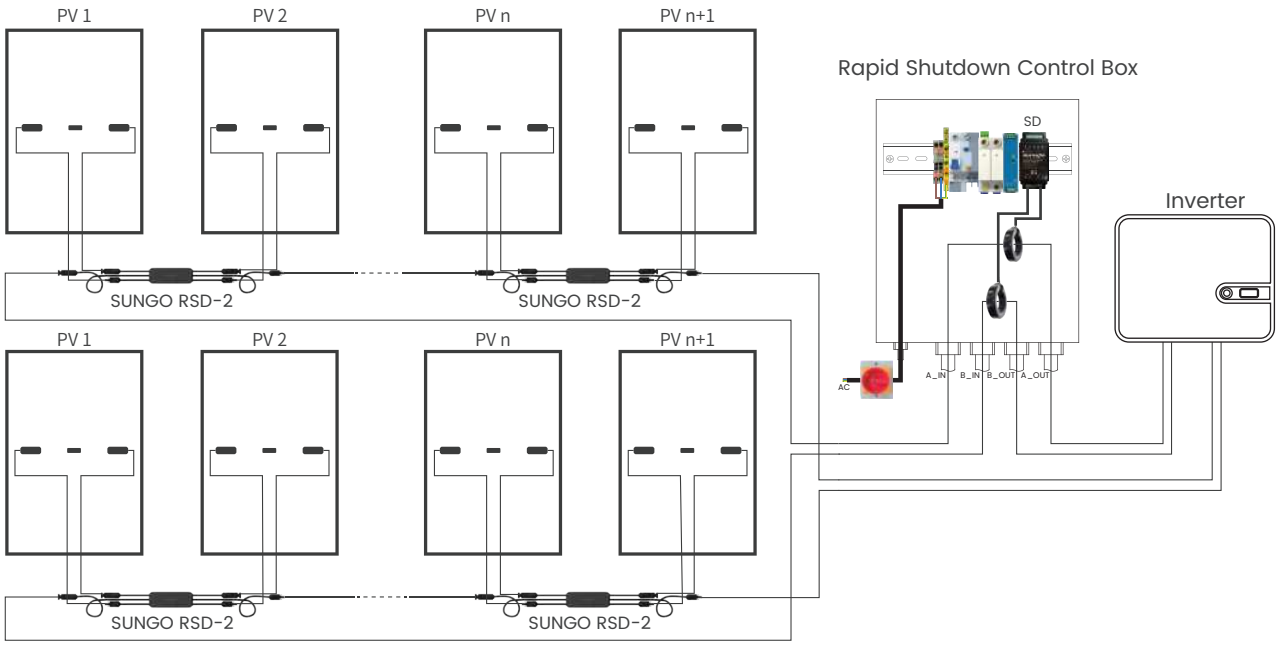
CAUTIONS

Before installing the product, make sure that the installation tools used are available and within the maintenance intervals.
Installation, operation and maintenance must be carried out by trained professionals.
SUNGO is not responsible for malfunctions or damages caused by incorrect operation, installation, maintenance or misuse of the product.

SUNGO RSD-2 Circuit Diagram

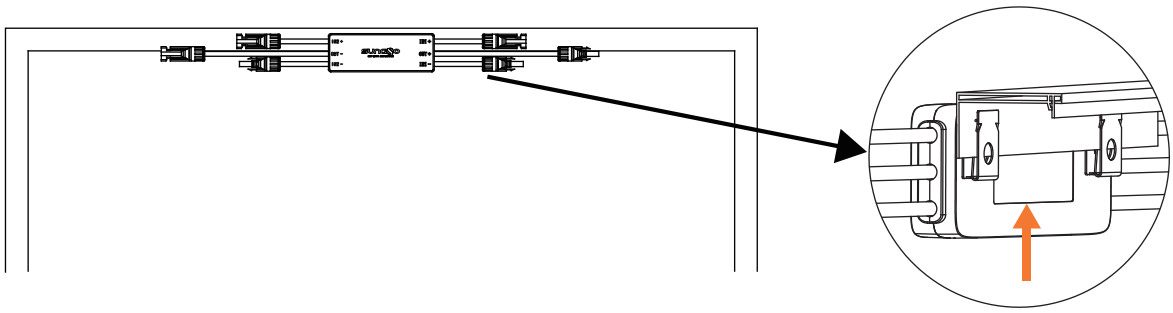


System Wiring Diagram

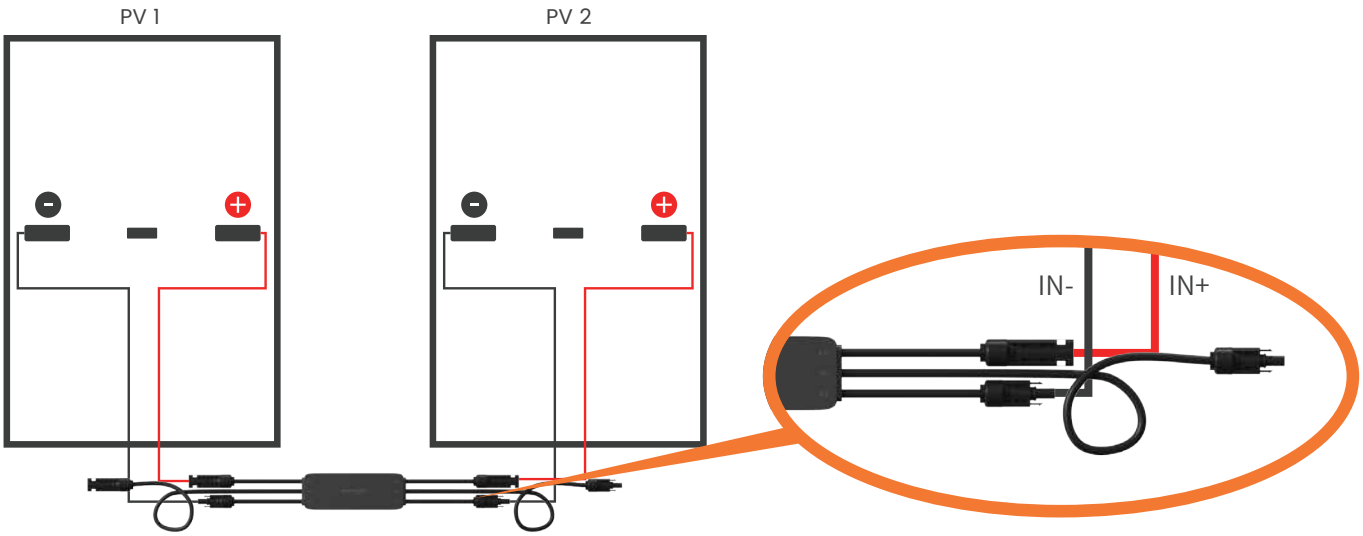


2 SUNGO RSD-2 Product Installation

1. Attach RSD-2 to PV module frame by the clips on RSD-2.

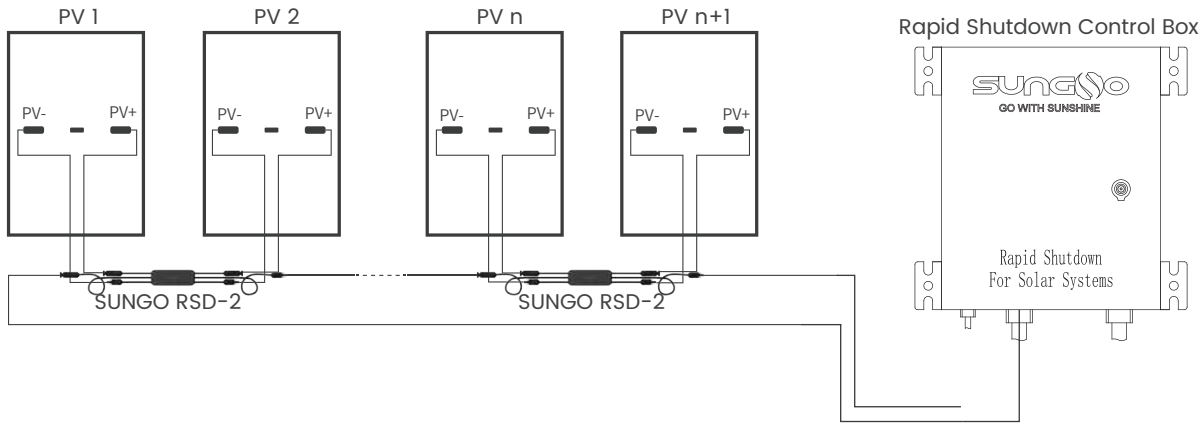


2. Connect IN+ and IN- of RSD-2 to the positive and negative terminals of the first and second PV module, and so on.



Warning: Cut the connecting between PV modules and inverter before operation, for electric shock risks.

3. Connect two adjacent RSD-2 output ports in series and then connect them to the rapid shutdown control box with a homemade DC extension cable.



3 SUNGO SD Product Installation

1. SD recommends using a rapid shutdown control box for installation. If you need a rapid shutdown control box, please contact us. (You can also use your own waterproof electrical box for installation.)
2. Install SD in a rapid shutdown control box (protection rating IP65) near the inverter. (If you use your own waterproof electrical box, it must have a protection rating of ≥ IP54.)

ATTENTION

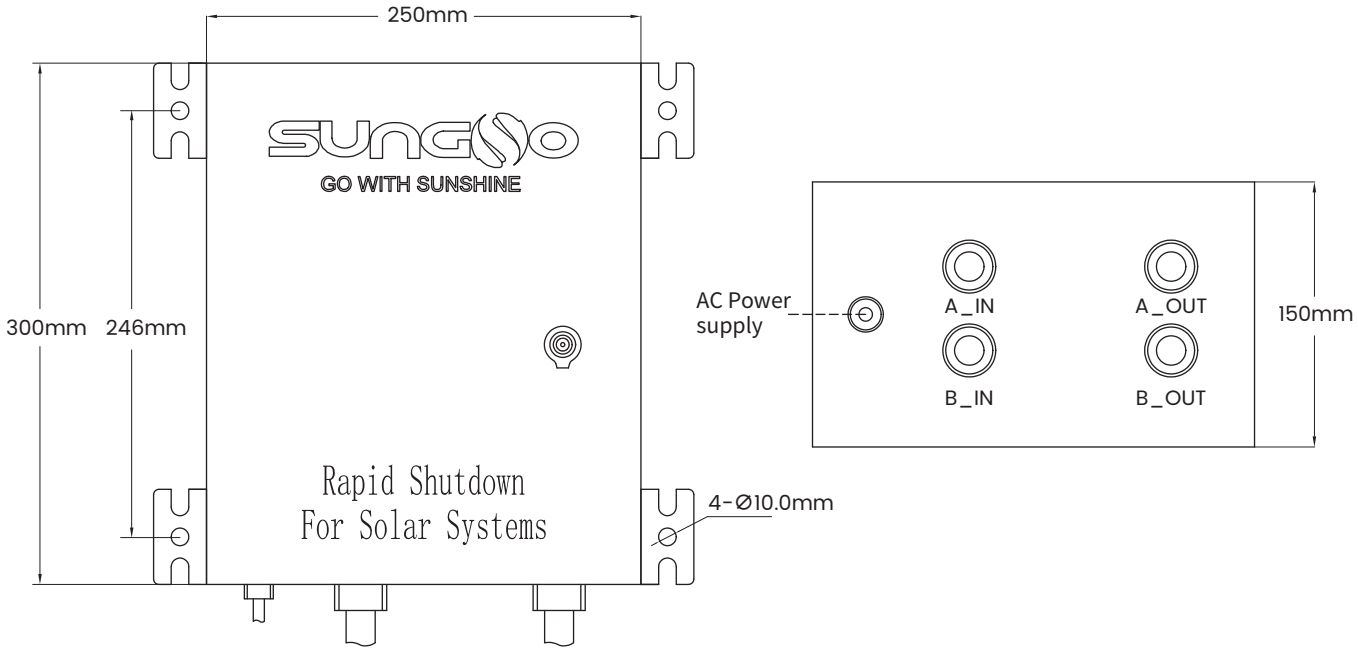
1. This product is used on the user side. A single magnetic ring can accommodate a maximum of 5 strings of photovoltaic modules. Each product can be connected to two magnetic rings, allowing for a total of up to 10 strings.

2. The number of strings passing through the magnetic ring should be evenly distributed.

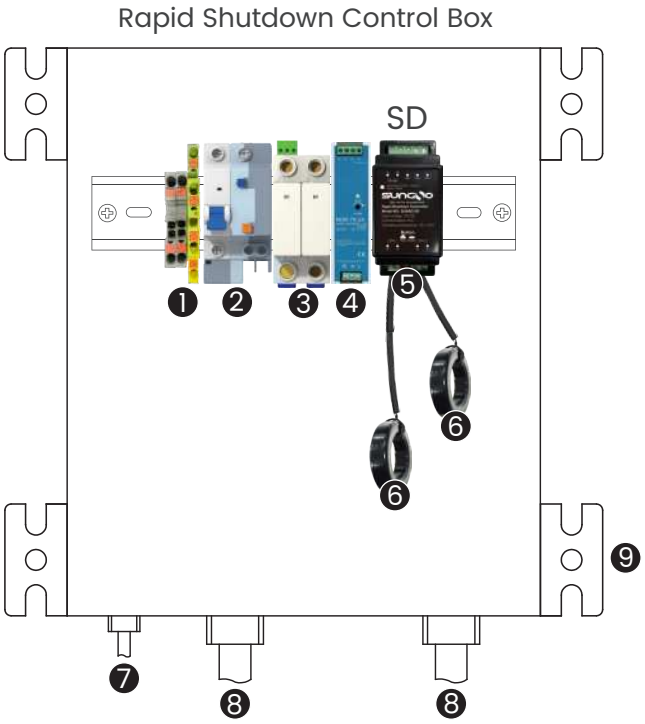
3. A single SD rapid shutdown control box can connect up to 10 strings, while a dual SD rapid shutdown control box can connect up to 20 strings.

4. Overview of a single SD rapid shutdown control box (Max NO. of strings: 10)

Rapid Shutdown Control Box Dimensions



Rapid Shutdown Control Box Components

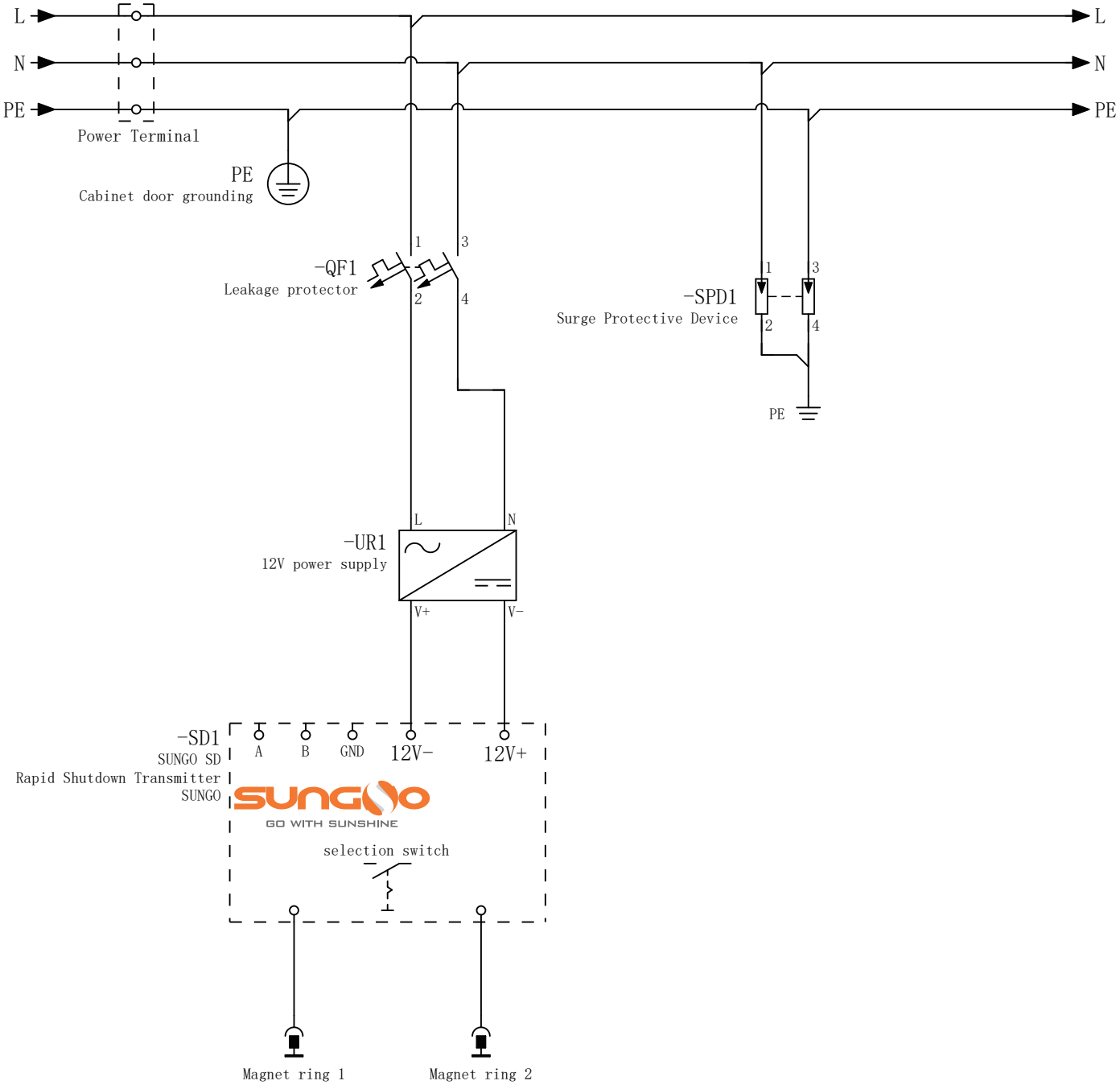


Components

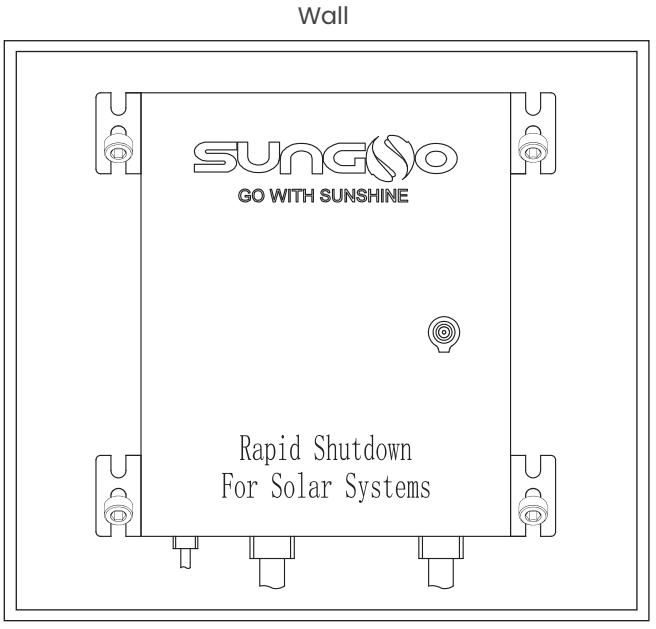
1. Connection terminal
2. MCB
3. Surge Protector
4. 12V Power Supply
5. SD
6. Magnet ring,
7. AC Waterproof Connector
8. Waterproof Connector For PV Cable
9. Install accessories

Make electrical connections in the rapid shutdown control box according to the wiring diagram.

Electrical Wiring Diagram

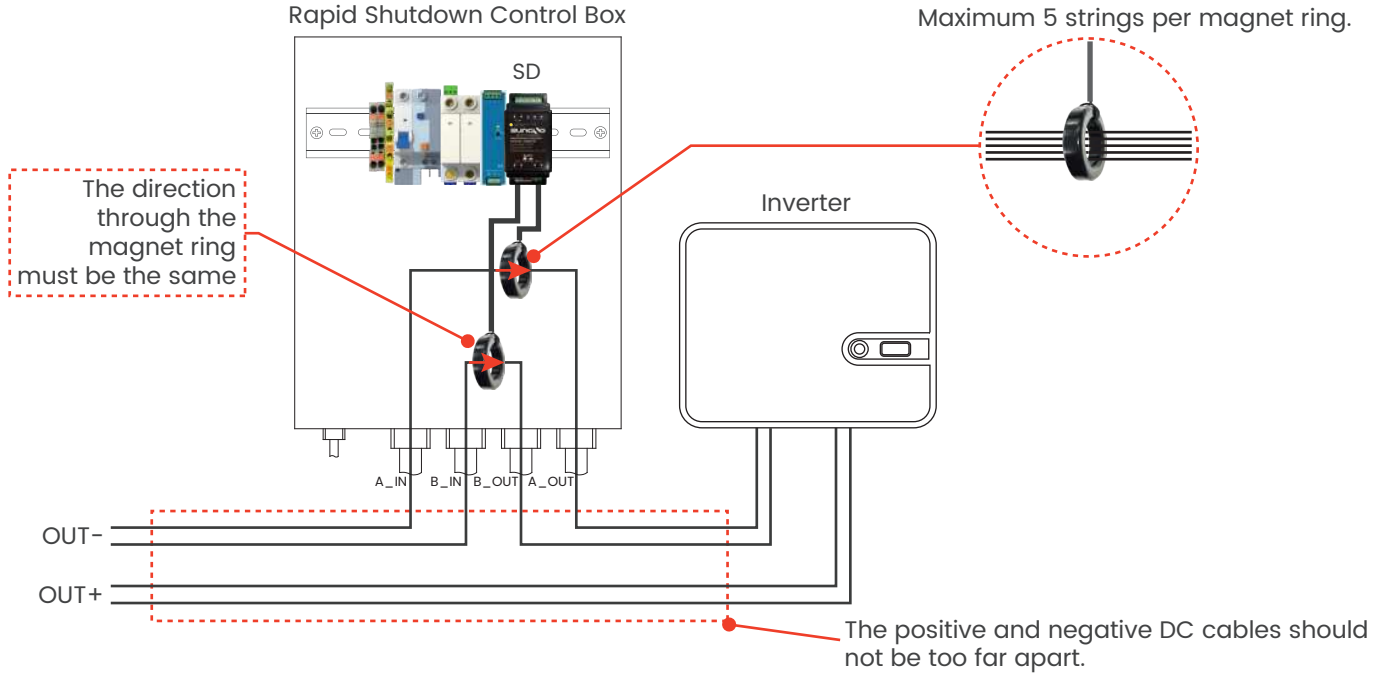


5. Installation of a single SD rapid shutdown control box



Step 1: Install the fixing accessories of the rapid shutdown control box, and use screws to lock the fixing accessories at the four corners through the screw holes and fix them on the wall.

Step 2: Threading the negative DC cable through the magnetic ring, and then connect it to the inverter. Connect the positive DC cable directly to the inverter.



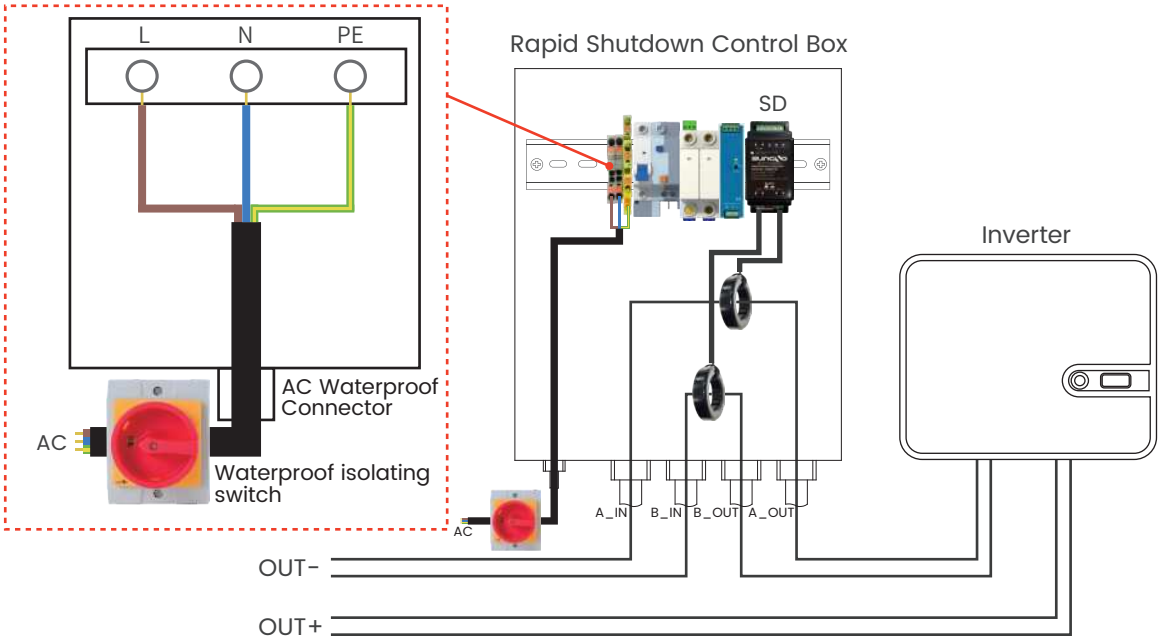
CAUTIONS

1. A magnet ring can hold up to 5 strings, and the entire system's strings must have an average number of DC lines passing through the magnet ring.

2.Through the magnet ring must have the same direction, and both need to use the negative DC wires through.

3.The positive and negative DC wires need to be connected into the same inverter.

Step 3: Connect the power inlet terminal to the waterproof isolating switch and then to the AC power.



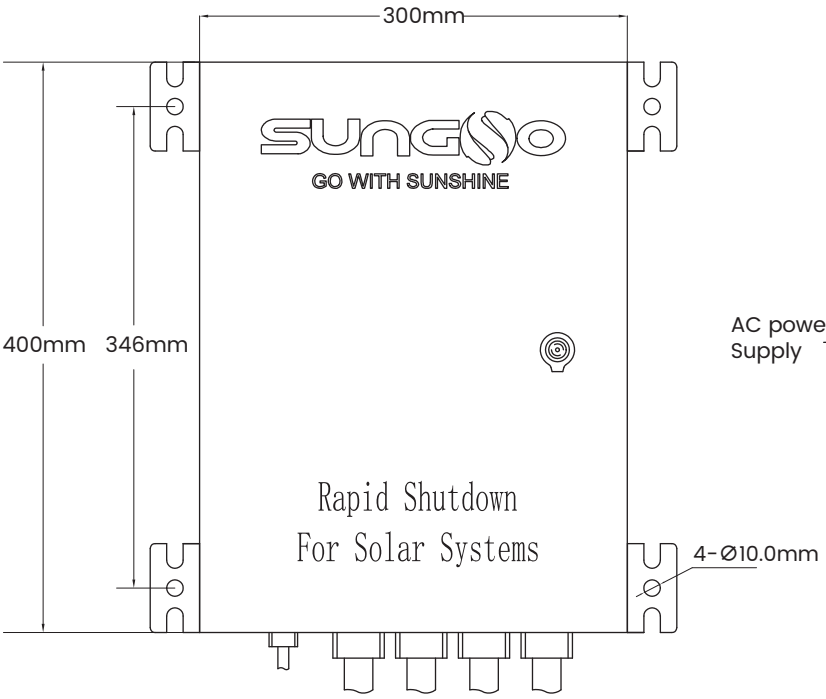
Step 4: Start operation and rapid shutdown

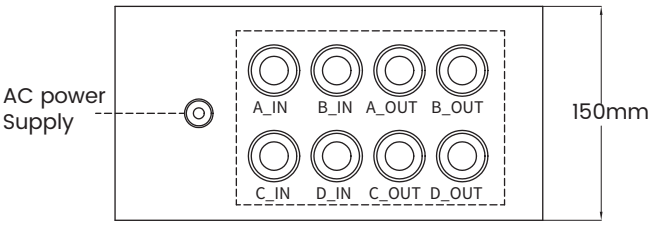
(1) After connecting the AC power supply, ensure that the waterproof disconnect switch and the miniature circuit breaker in the rapid shutdown control box are in the closed state. Then set the DC switch of the inverter to the ON position, and the photovoltaic system begins operation.
When the system is operating normally, the SD indicator light flashes yellow-green.

(2) Open the miniature circuit breaker in the rapid shutdown control box or the waterproof isolating switch/AC power supply, and the entire photovoltaic system will shut down within 15 seconds, with the inverter ceasing operation.

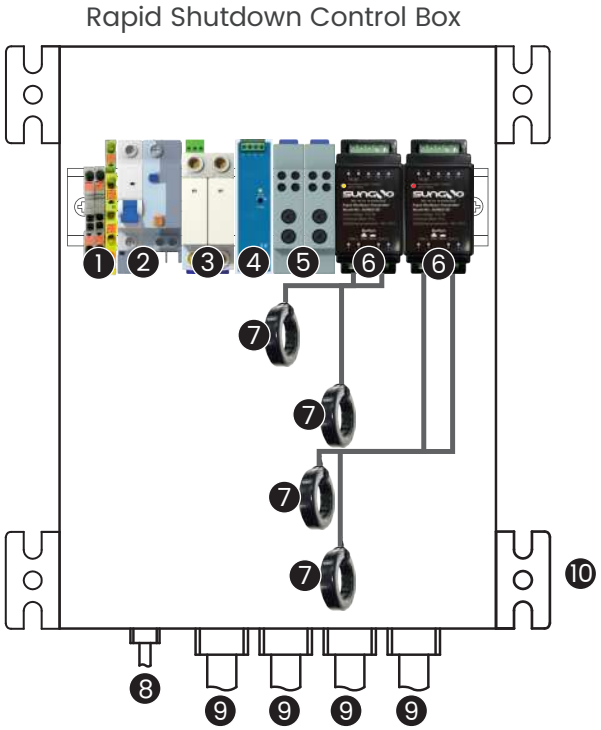
6. Overview of two SD rapid shutdown control box (Max NO. of strings: 20)

Rapid Shutdown Control Box Dimensions





Rapid Shutdown Control Box Component Composition

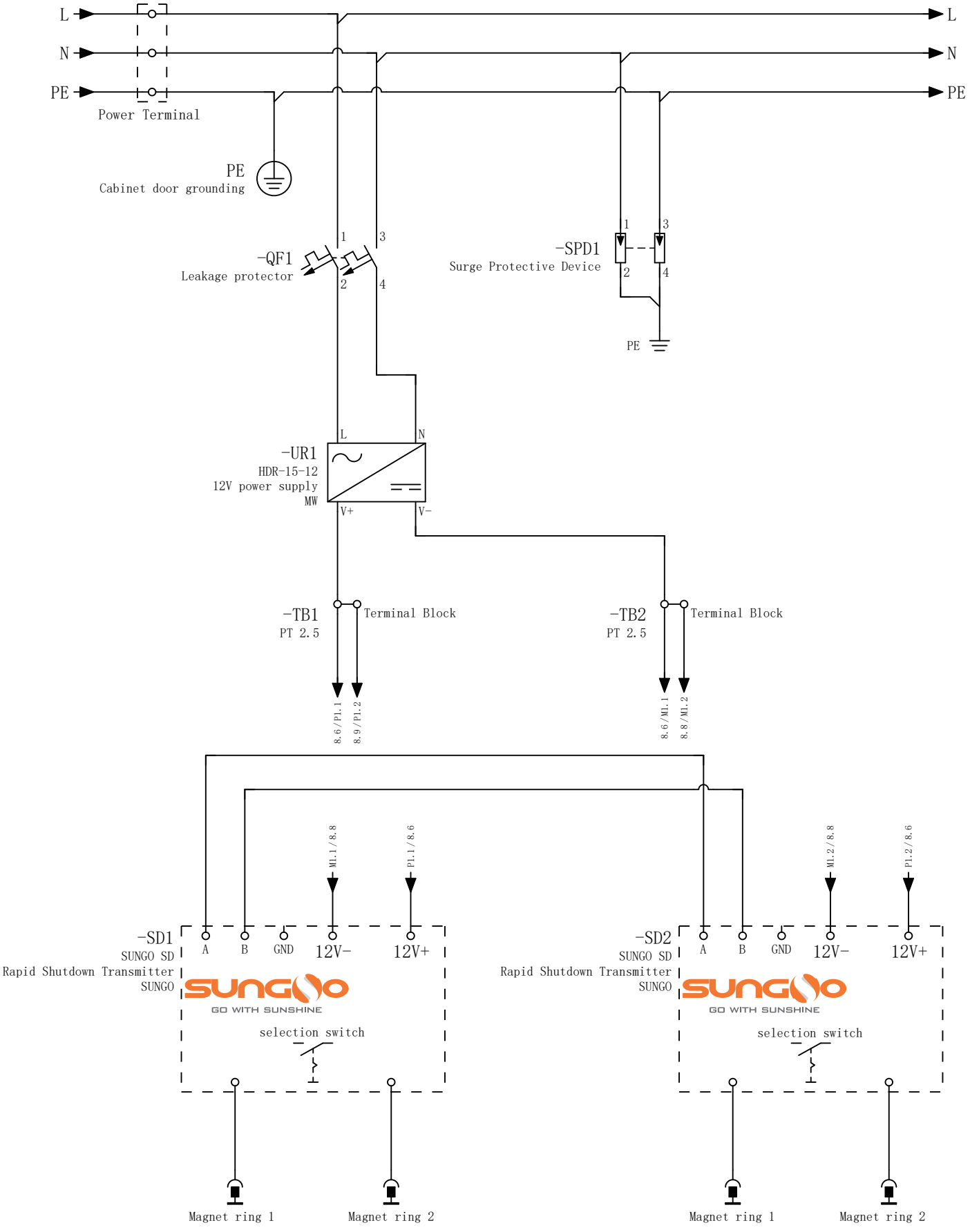


Components

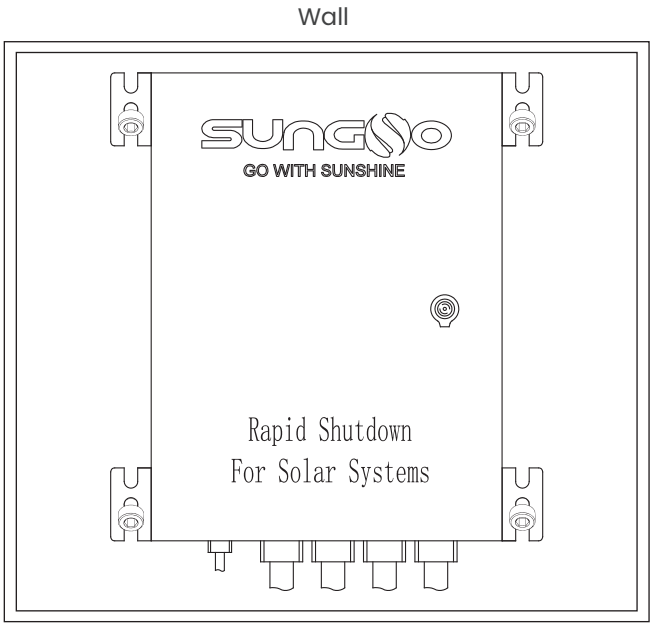
1. Connection terminal
2. MCB
3. Surge Protector
4. 12V Power Supply
5. Wire terminal block
6. SD
7. Magnet ring
8. AC Waterproof Connector
9. Waterproof Connector For PV Cable
10. Install accessories

Make electrical connections in the rapid shutdown control box according to the wiring diagram.

Electrical Wiring Diagram

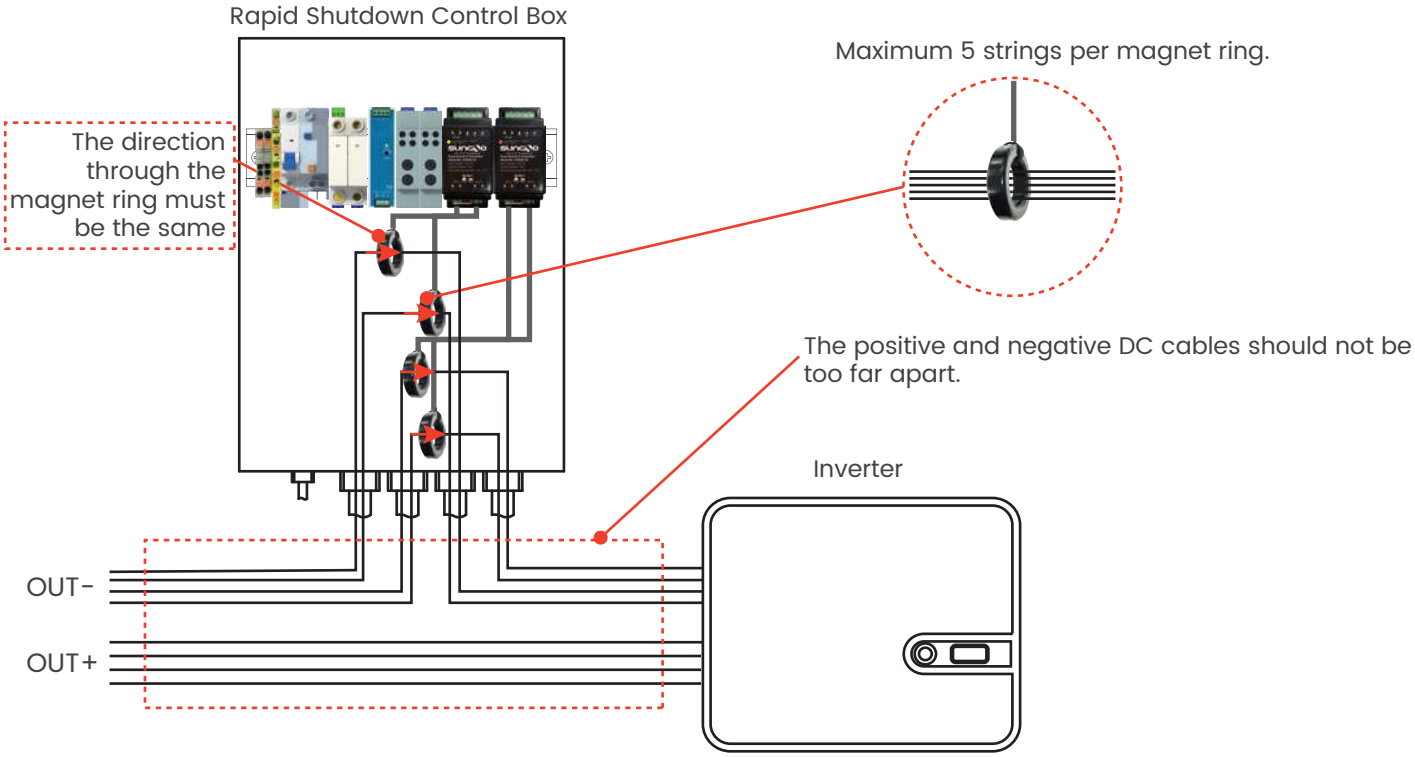


7. Installation of two SD rapid shutdown control box



Step 1: Install the fixing accessories of the rapid shutdown control box, and use screws to lock the fixing accessories at the four corners through the screw holes and fix them on the wall.

Step 2: Threading the negative DC cable through the magnetic ring, and then connect it to the inverter. Connect the positive DC cable directly to the inverter.



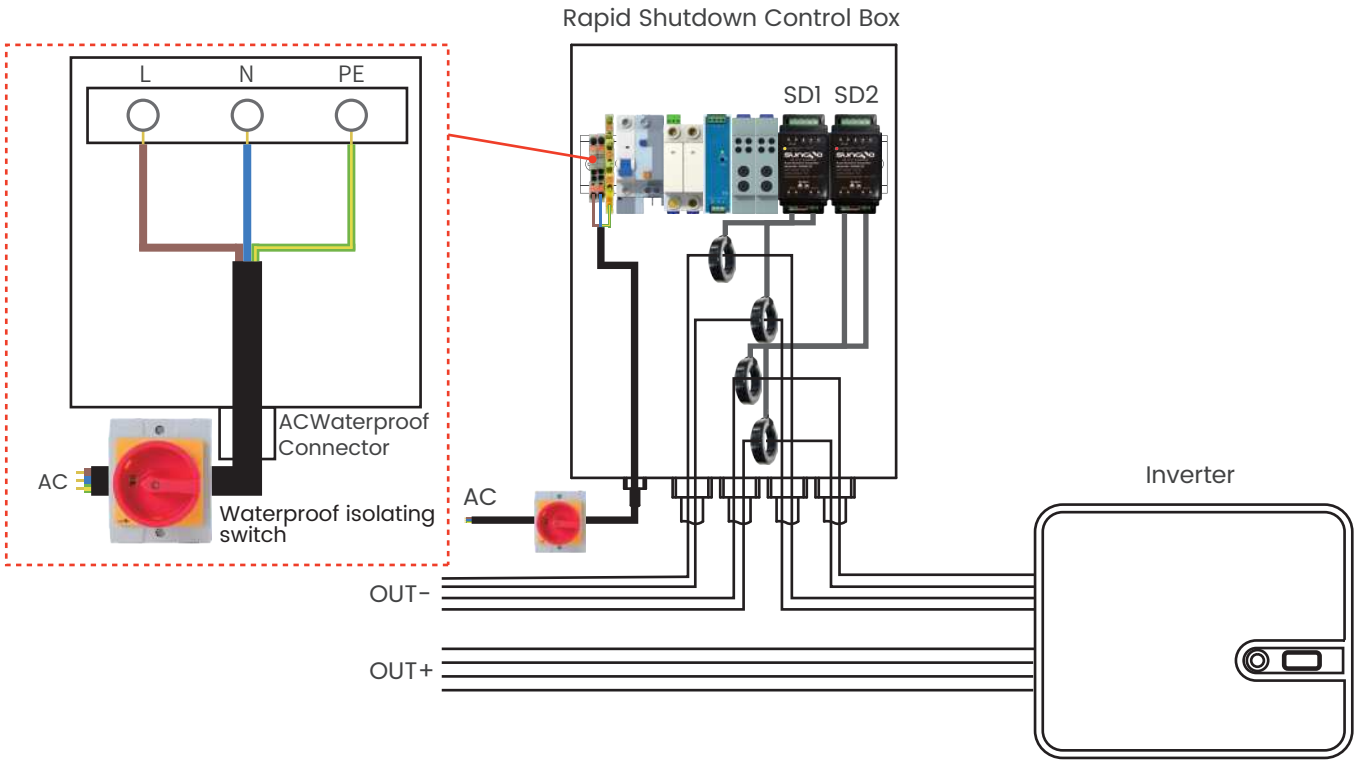
CAUTIONS

1.A magnet ring can be threaded through a maximum of 5 strings, the entire system group strings need to average the number of DC wires through the magnet ring.

2.Through the magnet ring must have the same direction, and both need to use the negative DC wires through.

3.The positive and negative DC wires need to be connected into the same inverter.

Step 3: Connect the power inlet terminal to the waterproof isolating switch and then to the AC power.



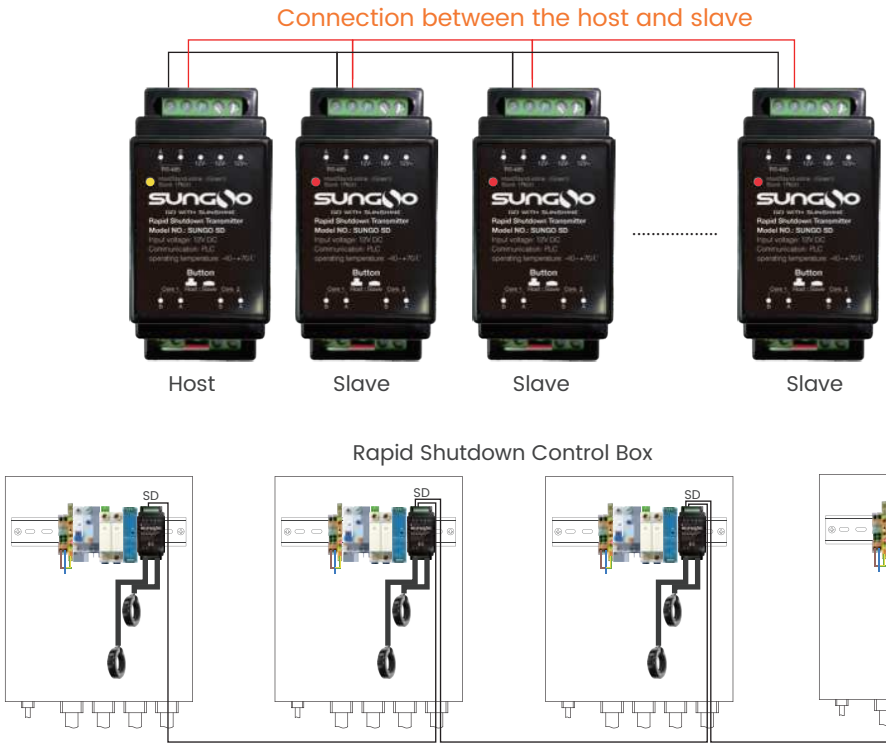
Step 4: Start operation and rapid shutdown

(1) After connecting the AC power, the SD1 button is released (set as the Host), and the SD2 button is pressed down (set as the slave). The waterproof disconnect switch and the miniature circuit breaker in the rapid shutdown control box are in the closed state. Then, set the inverter's DC switch to the ON position, and the photovoltaic system begins to operate.
When the system is operating normally, the yellow-green light on SD1 flashes, and the red light on SD2 flashes.
(2) Open the miniature circuit breaker in the rapid shutdown control box or the waterproof isolating switch/AC power supply, and the entire photovoltaic system will shut down within 15 seconds, and the inverter will stop operating.

When there are several rapid shutdown control boxes on site

When there are several rapid shutdown control boxes on site, the SDs must be connected to each other using dedicated RS485 communication lines. The first SD must be designated as the host, and the remaining SDs as slaves. (As host: The button is released, and the operation light flashes yellow-green; as slave: The button is pressed, and the operation light flashes red.)

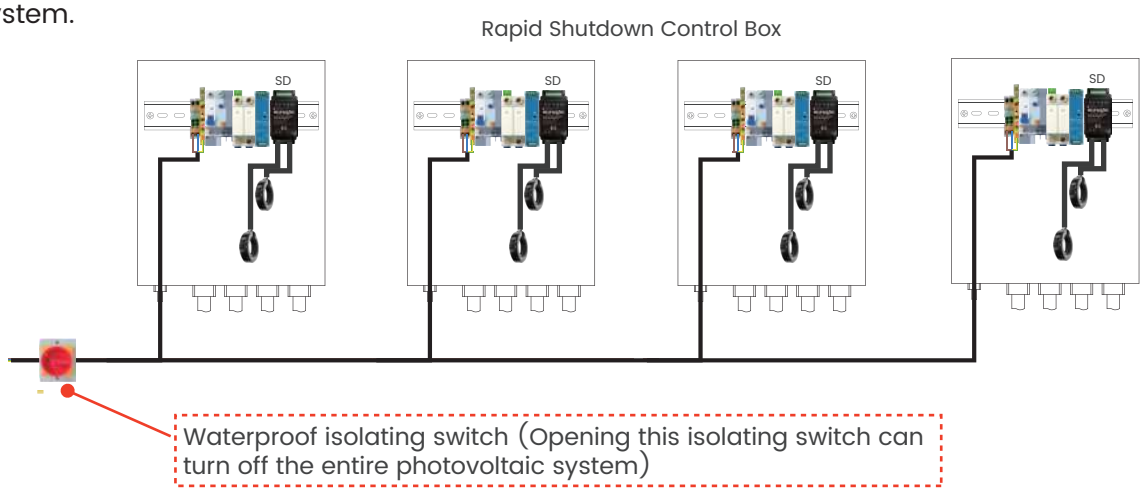
The SD signal generator communicates via a series wired connection. The first generator communicates with the next generator in series until the last transmitter in the series receives the signal. This achieves heartbeat signal synchronization, allowing all strings in the power station to operate at the same beat, thereby preventing mutual signal interference and reducing the possibility of crosstalk.of crosstalk.



Schematic diagram of master-slave connection for rapid shutdown control box

Wiring for several rapid shutdown control boxes

This circuit can be shut down by opening the waterproof isolating switch to shut down the entire PV system.



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