

# SUNGROW SBR HV Battery Parallel Extension Manual

## **Disclaimer**

*The material in this document has been prepared by Sungrow Australia Group Pty. Ltd. ABN 76 168 258 679 and is intended as a guideline to assist solar installers for troubleshooting. It is not a statement or advice on any of the Electrical or Solar Industry standards or guidelines. Please observe all OH&S regulations when working on Sungrow equipment.*

## **Scope**

This Manual describes the requirements and installation procedures for SBR battery parallel configuration.

Note: Maximum 4 batteries can be connected in parallel to compatible inverters.

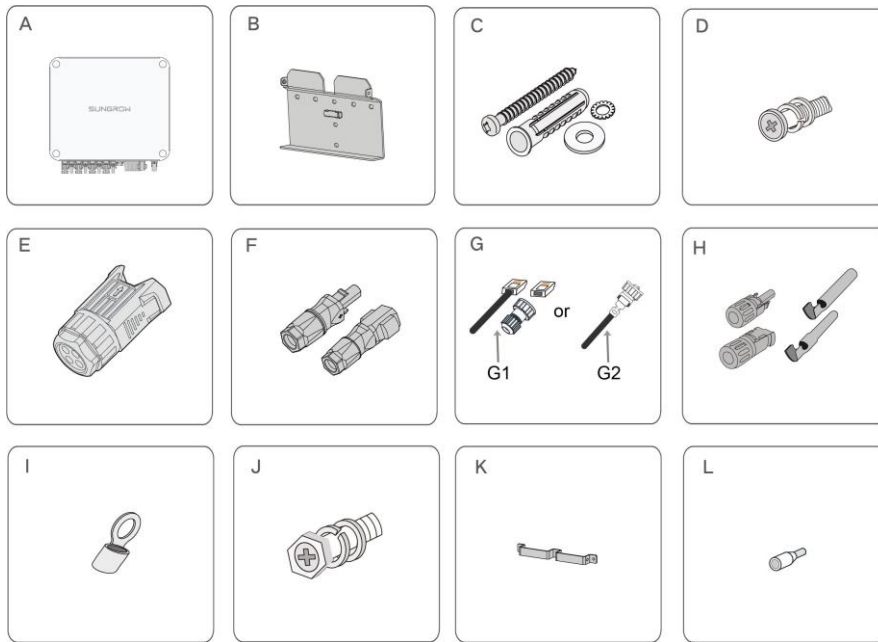
## **1.1 Requirement**

Hybrid inverter model: SH10RT

Wifi dongle: WiNet

SUNGROW SBR battery combiner box

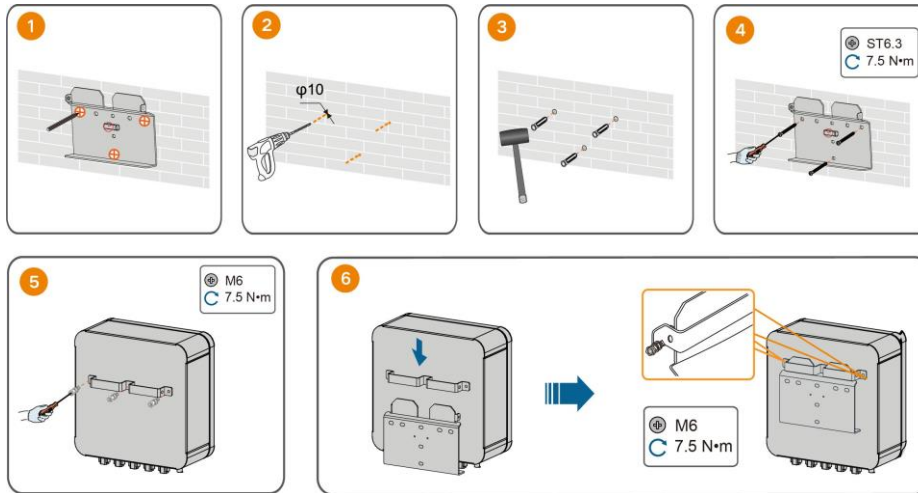
## 1.2 Scope of Delivery



Item	Name	Quantity
A	Combiner box	1
B	Bracket	1
C	Expansion plug set	3
D	M4 screw set	1
E	COM2 connector	1
F	SUNCLIX connector	1
G	COM1 connector	1
H	Battery connectors	4
I	OT terminal	1
J	M6 screw set	5
K	Mounting ear	1
L	Cord-end terminal	18

\* Images are for reference only. The actual products received may differ.

### 1.3 Mounting the Combiner Box



step 1 Install the wall-mounting bracket and mount the Combiner box to the bracket.

### 1.4 Terminal Description (Combiner Box)

All electrical terminals are located at the bottom of the combiner box.

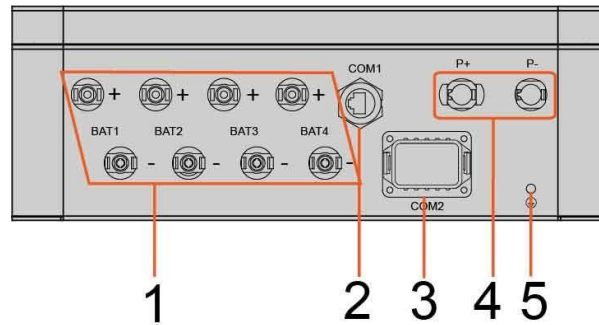


figure 1 Terminals at the Bottom of the Combiner Box

\* The image shown here is for reference only. The actual product received may differ.

table 5-1 The label description of Combiner Box terminal


No.	Label	Description
1	BAT1+, BAT1-	BAT+ terminals, connected to the battery P+ terminal
	BAT2+, BAT2-	
	BAT3+, BAT3-	
	BAT4+, BAT4-	
2	COM1	Communication terminal, connected to the PCS <u>communication terminal</u>
No.	Label	Description
3	COM2	Communication terminal, connected to the battery COMM terminal
4	P+, P-	P+ terminal, connected to the PCS positive terminal
		P- terminal, connected to the PCS negative terminal
5		Connected to the ground

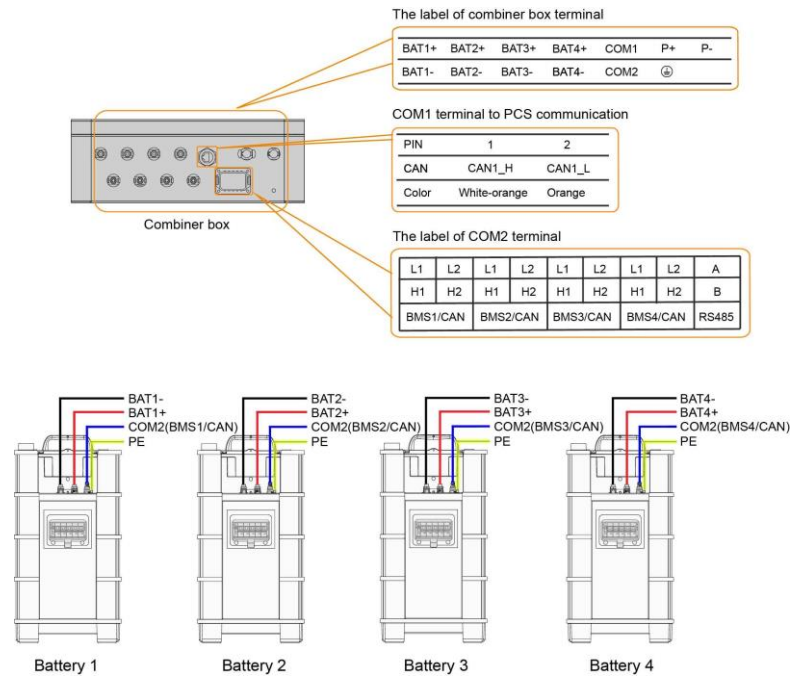
table 2 The label of COM2 terminal

L1	L2	L1	L2	L1	L2	L1	L2	A
H1	H2	H1	H2	H1	H2	H1	H2	B
BMS1/CAN		BMS2/CAN		BMS3/CAN		BMS4/CAN		RS485

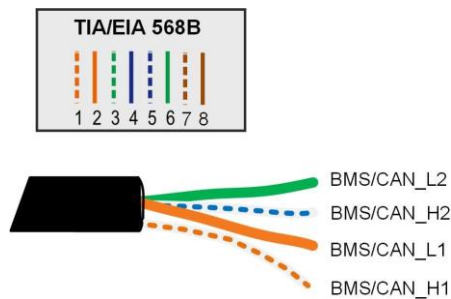
table 3 The label description of COM terminal

No.	Label	Description
1	BMS1/CAN (L1, L2, H1, H2)	Connected to the battery COMM terminal.
	BMS2/CAN (L1, L2, H1, H2)	
	BMS3/CAN (L1, L2, H1, H2)	
	BMS4/CAN (L1, L2, H1, H2)	
2	RS485 (A, B)	Connected to the BMS, functionally reserved.

### 1.5 Connection Diagram in Parallel System



- The COMM terminal of the battery is connected to the COM2 terminal of the combiner box. Signal cable 1 white and orange cable is used as BMS/CAN\_H1; signal cable 2 orange cable is used as BMS/CAN\_L1; signal cable 5 white and blue cable is used as BMS/CAN\_H2; and signal cable 6 green cable is used as BMS/CAN\_L2.

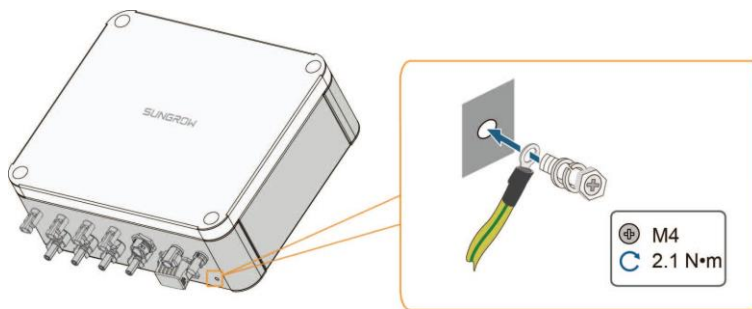
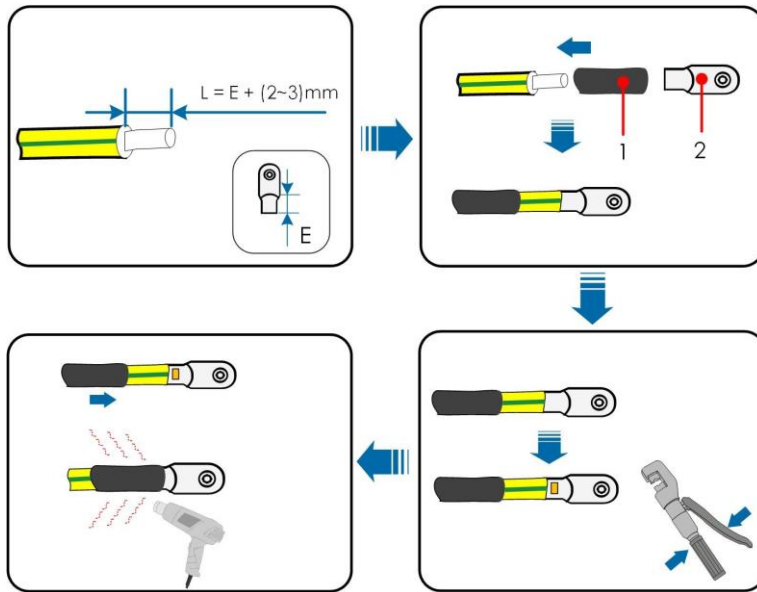


- The grounding terminal of the battery is connected to the PE terminal of the combiner box.
- The COM1 terminal of the combiner box is connected to the PCS. Signal cable 1 white and orange cable is used as CAN1\_H; and signal cable 2 orange cable is used as CAN1\_L.



## 1.6 PE Cable Connection

step 1 Prepare an earth cable by shrink tub and lug.



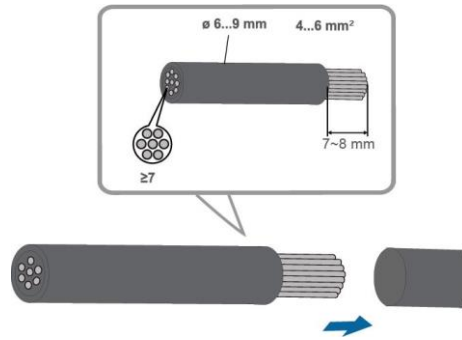
step 2 Remove the screw on the **PE** terminal and fasten the cable with a screwdriver.

step 3 Apply paint to the grounding terminal to ensure corrosion resistance.

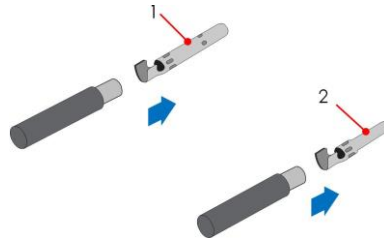
## 1.7 Battery Connection *(please use only the SUNCLIX connectors provided in the box)*

### 1.7.1 Assembling the Battery Connectors

step 1 Strip the insulation from each DC cable by 7~8 mm.



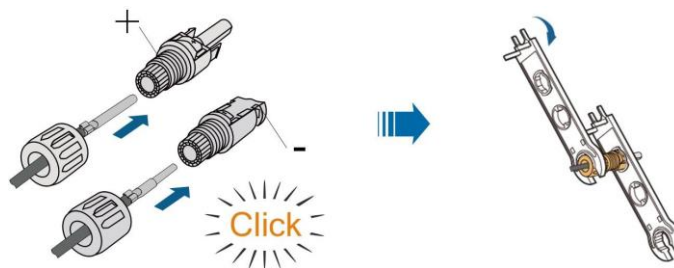
step 2 Assemble the cable ends with the crimping pliers.



1: Positive crimp contact

2: Negative crimp contact

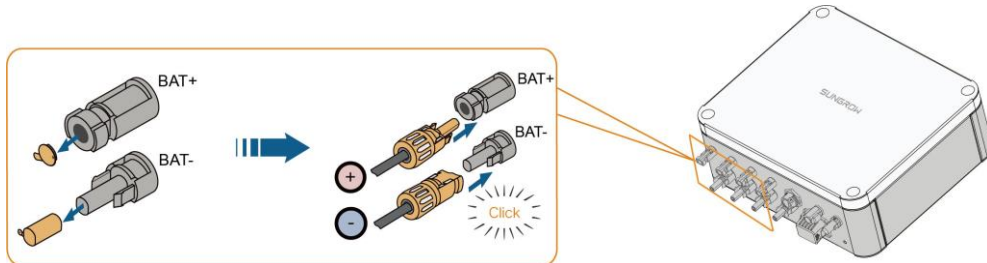
step 3 Lead the cable through cable gland, and insert the crimp contact into the insulator until it snaps into place. Gently pull the cable backward to ensure firm connection. Tighten the cable gland and the insulator (torque 2.5 N.m to 3 N.m).



step 4 Check for polarity correctness.

## 1.7.2 Installing the Battery Connectors

step 1 Connect the Battery connectors to corresponding terminals until there is an audible click.



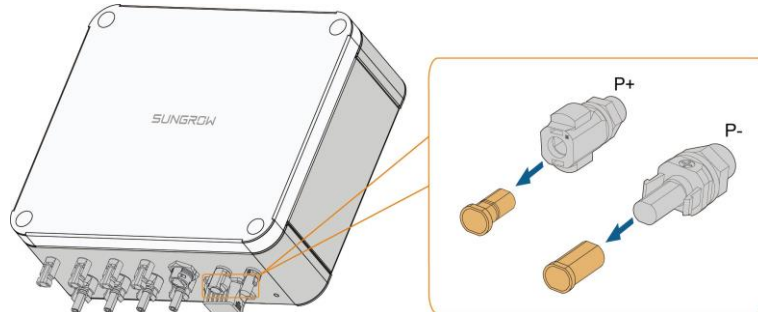
step 2 Seal the unused Battery terminals with the terminal caps.



## 1.8 SUNCLIX Connection

step 1 For the assembly of the SUNCLIX connector, refer to the appendix.

step 2 Remove the waterproof lid from **P+** and **P-** the terminal.



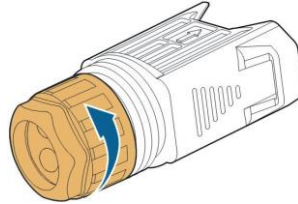
step 3 Plug the connectors into **P+** and **P-** terminals.

## 1.9 COM2 Cable Connection

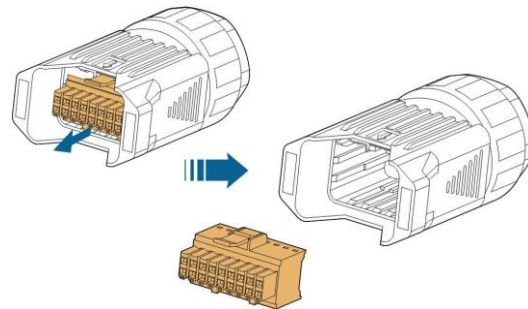
### 1.9.1 Assembling the COM2 Cable Connector

The BMS3/CAN terminal is used as an example for description.

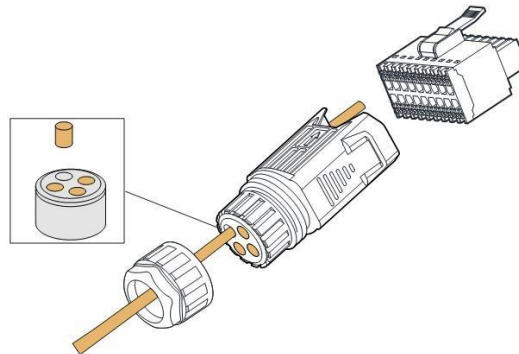
step 1 Unscrew the swivel nut from the connector.



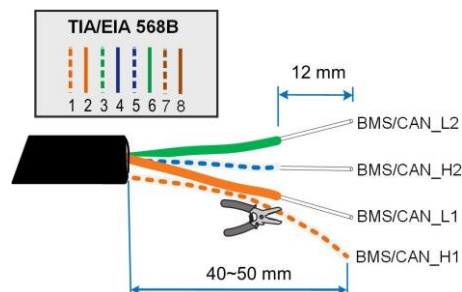
step 2 Take out the terminal block.



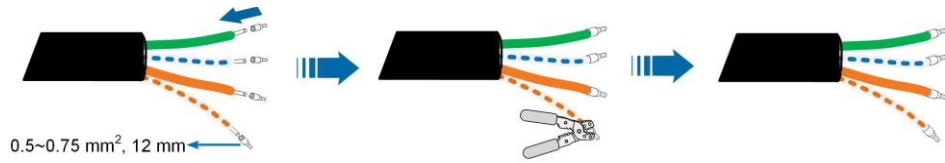
step 3 Remove the seal and lead the cable through the cable gland.



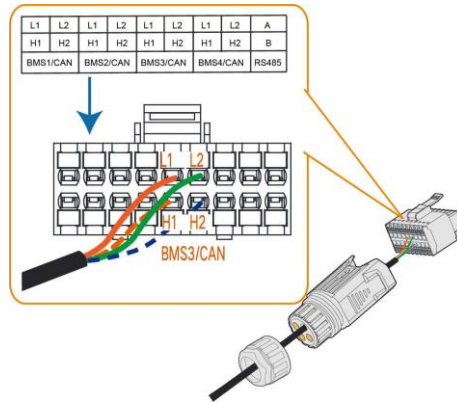
step 4 Strip the cable with a wire stripper.



step 5 Crimp the cord end terminal .

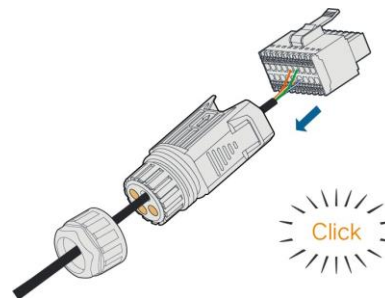


step 6 Plug the wires into the corresponding terminal according to the labels on the bottom of the device.

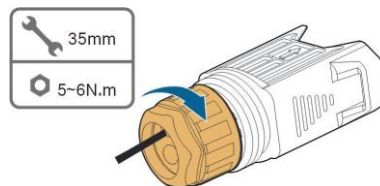


step 7 Pull the wires outward to check whether they are firmly installed.

step 8 Insert the terminal block into the connector until it snaps into place with an audible click.

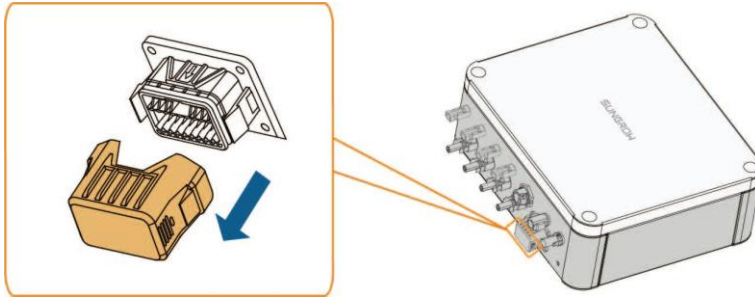


step 9 Fasten the swivel nut.

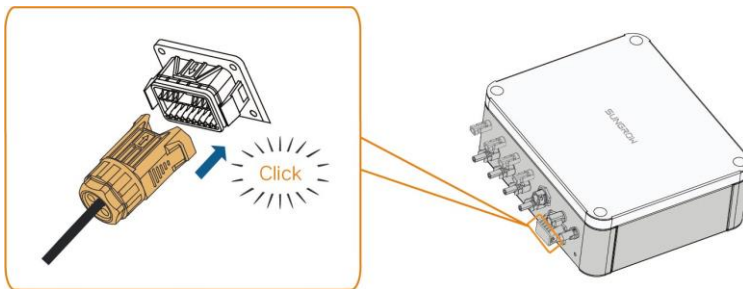


## 1.9.2 Installing the COM2 Cable Connector

step 1 Remove the waterproof lid from the **COM2** terminal.



step 2 Insert the COM2 connector into **COM2** terminal on the bottom of the combiner box until there is an audible click.



step 3 Pull cables outwards to confirm whether they are fastened firmly.

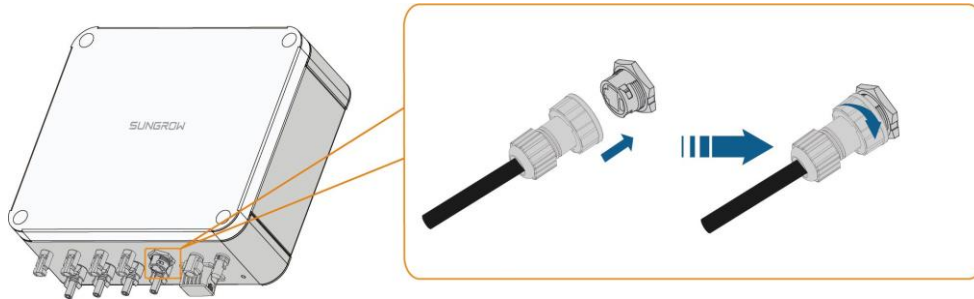
## 1.10 COM1 Cable Connection

step 1 For the assembly of the COM1 connector, refer to the appendix.



If the COM1 connector received is G2, please skip this step.

step 2 Insert the COM1 connector into **COM1** terminal on the bottom of the combiner box. Tighten the swivel nut.



The installation method of COM1 connector G1 and COM1 connector G2 is the same, and here takes G1 as an example.

## 1.11 Firmware upgrade

A manual firmware upgrade might be applicable to do the battery parallel configuration. Please contact Sungrow service team before the commissioning.

There are two ways to do the manual firmware upgrade.

Method 1: Connect the inverter to the iSolarCloud, then ask Sungrow Service team to upgrade.

Method 2: Request a firmware upgrade package from Sungrow, and do it locally.

### 1.11.1 Upgrading firmware locally

step 1 Connect to the inverter through local access. Refer to the link [Local Access Methods Guide](#)

step 2 Change the Wi-Fi network on your mobile phone from your home network to the Sungrow inverter network (network starting with SG). Open iSolarCloud app again and click '**Local Access**' → select **WLAN** access → enter the '**user**' for the account and "**pw1111**" for the password →click '**Login**'. (Figure 4).

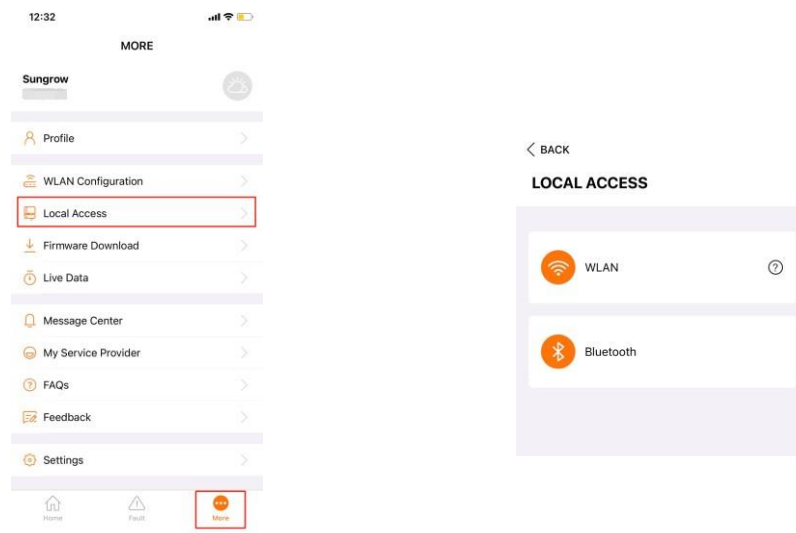


Figure 4 Local Access

Now click on the **'More'** button located on the bottom right corner of the iSolarCloud APP (Figure 7) and Select **'Update firmware'** (Figure 8).

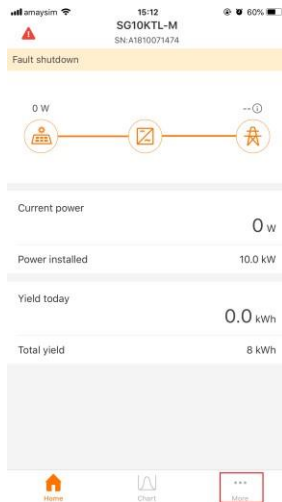


Figure 5 Local Access

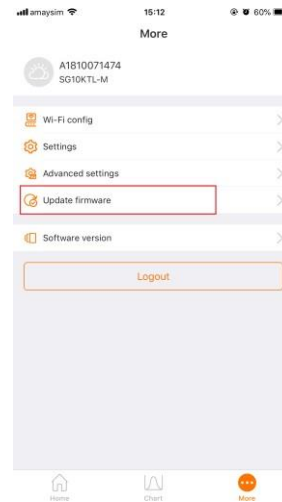
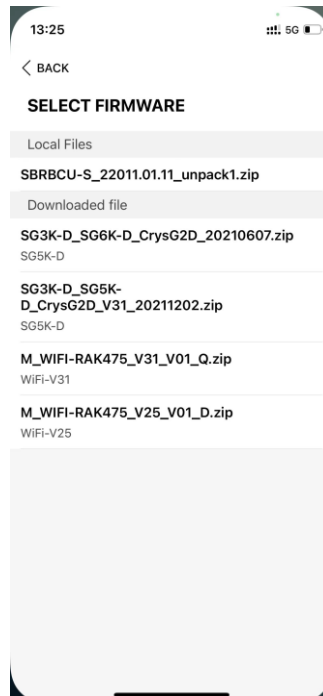


Figure 6 Device Upgrade

Step 3 Select the firmware upgrade package which is received from Sungrow Service team. Tap “confirm” on the prompt message, and allow 15 minutes for it to finish the upgrade.



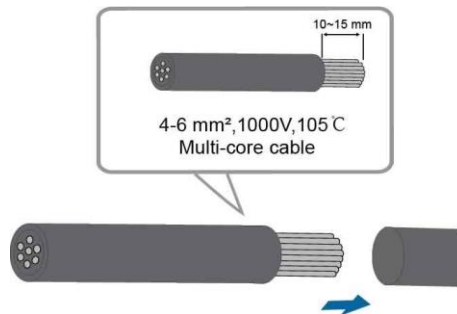
\*\*\*\*\*END\*\*\*\*\*

# Appendix

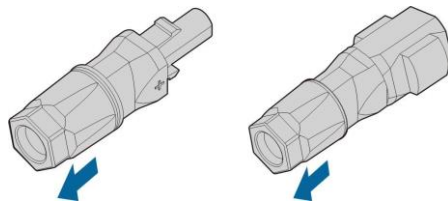
## 1. Assembling the SUNCLIX Connector

**NOTICE**

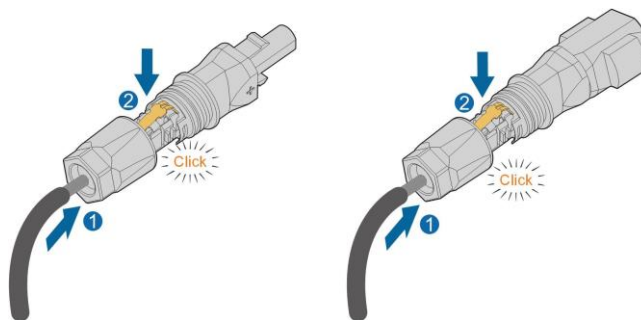
**During assembly, be careful not to contaminate, pull out, or shift, the seal in the cable gland. A contaminated or shifted seal impairs strain relief and leak tightness.**



step 2 Pry the connection open and pull the sleeve and the insert apart.

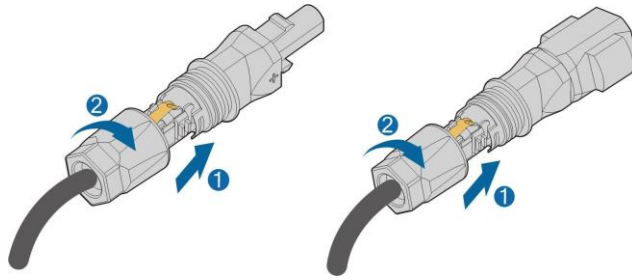


step 3 Insert the stripped cable into the cable gland up to the stop. The stranded wire can be seen inside the spring. Press the spring down until it audibly snaps into place.





step 4 Push the insert into the sleeve and tighten the cable gland (torque 2 N·m).

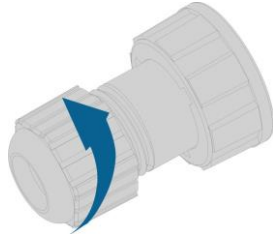


## 2. Assembling the Communication Connector

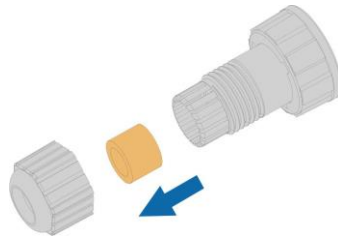


If the communication connector received is G2, please skip this step.

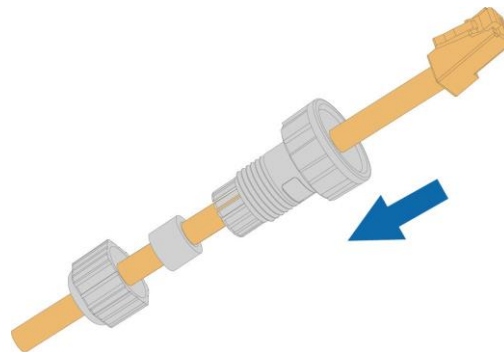
step 1 Unscrew the swivel nut from the connector.



step 2 Remove the inner rubber gasket.



step 3 Insert the RJ45 plug into the front plug connector until there is an audible click, and install the rubber gasket.



step 4 Tighten the swivel nut.

