# SH5.0/10RT Parallel Connection

Disclaimer

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For Sungrow SH5.0/10RT inverters, maximum **five** hybrid inverters of **same type (rating)** can be connected in parallel via RS485 communication. The parallel system can operate under on-grid and off-grid modes. Backup circuits must be separated as following diagram.

In off-grid mode, there is no power flow between the hybrid inverters. The PV and battery can only supply to the loads which connect to same inverter.
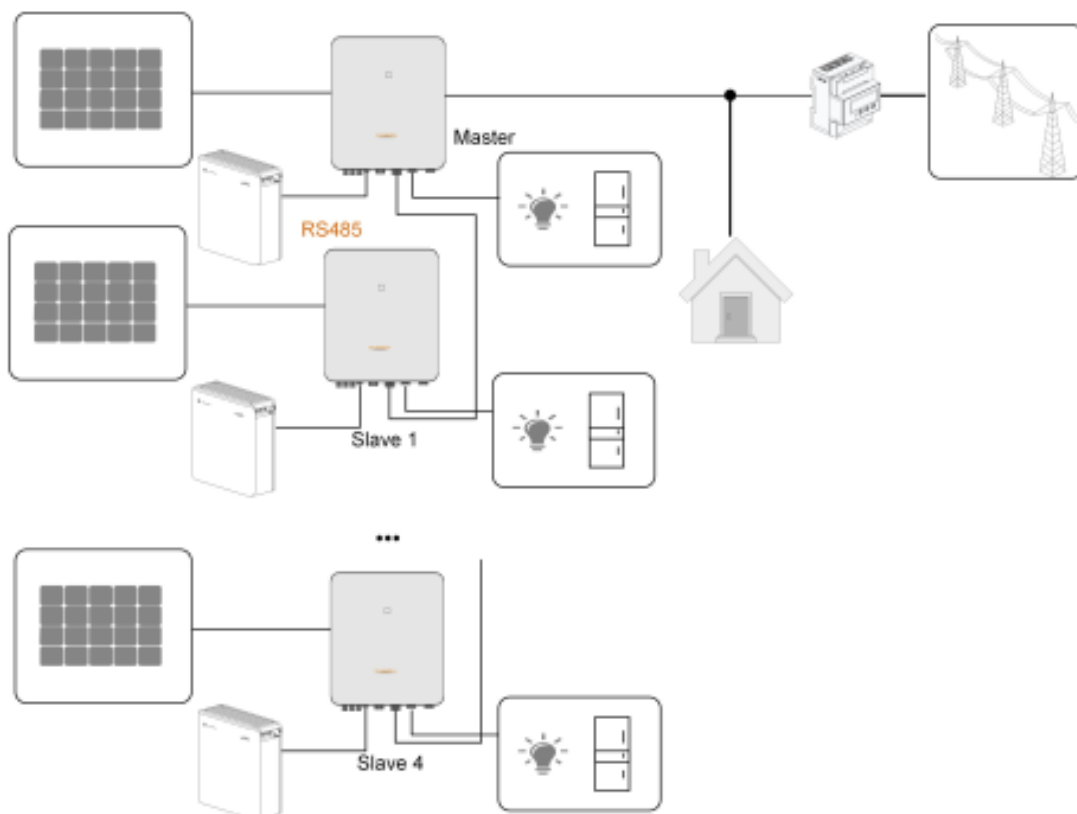
1. RS485 Connection

Where there are two or more inverters in parallel, the RS485 connection enables the communication between master inverter and slave inverters, as shown in the following figure *(3 inverters paralleled as an example)*.
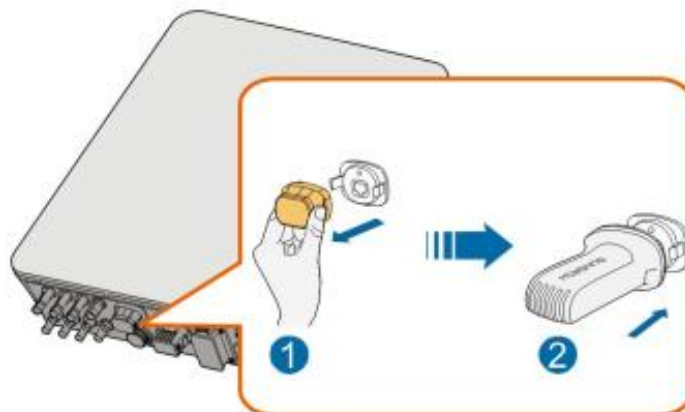
Note: As A1, B1 are occupied on Master inverter, it cannot connect LG battery.
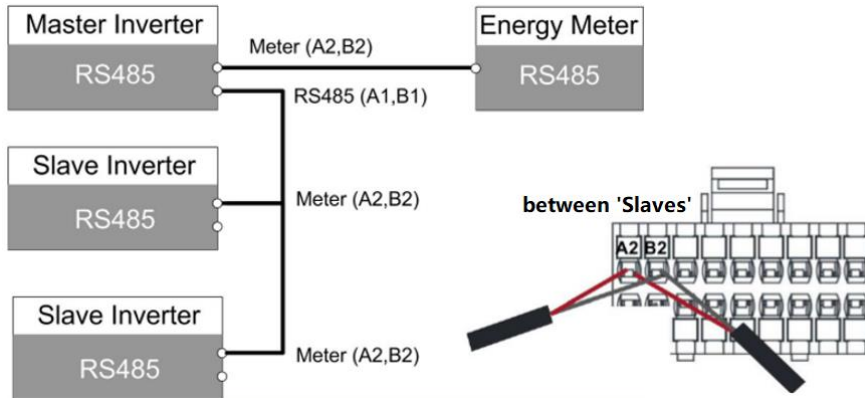
The location of RS485 (A1, B1) and Meter (A2, B2) is shown in the following figure.
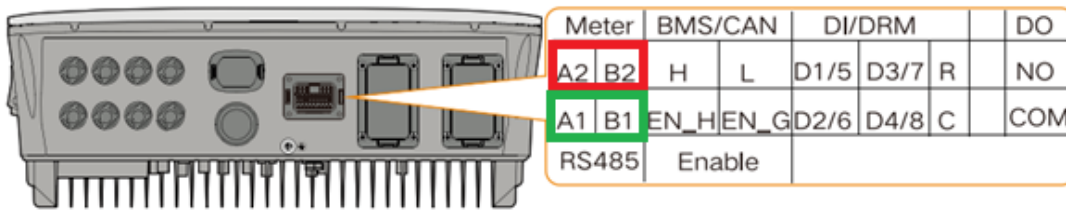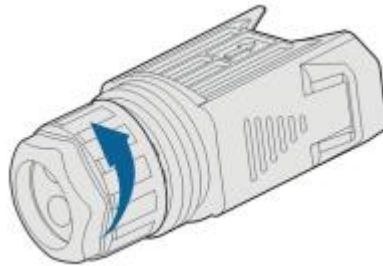

Each inverter in the daisy chain should have a WiFi dongle installed. Each WiFi dongle should be configured and connected to the iSolarCloud separately.
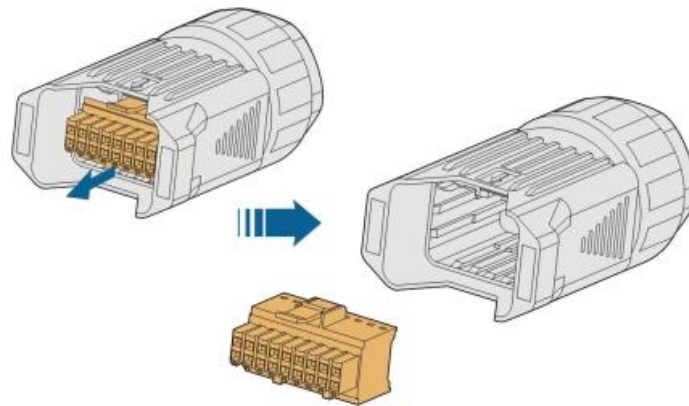
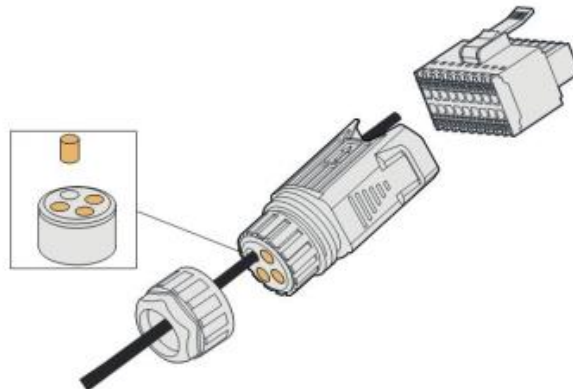## Assembling the COM Connector

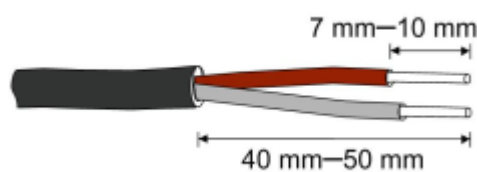**Step 1** Unscrew the swivel nut from the **COM** connector.

Step 2 Take out the terminal block.

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

Step 4 Remove the cable jacket and strip the wire insulation.

7 mm—10 mm

40 mm—50 mm

Step 5 Plug the wires into the RS485 terminal according to the labels on the bottom of the inverter.
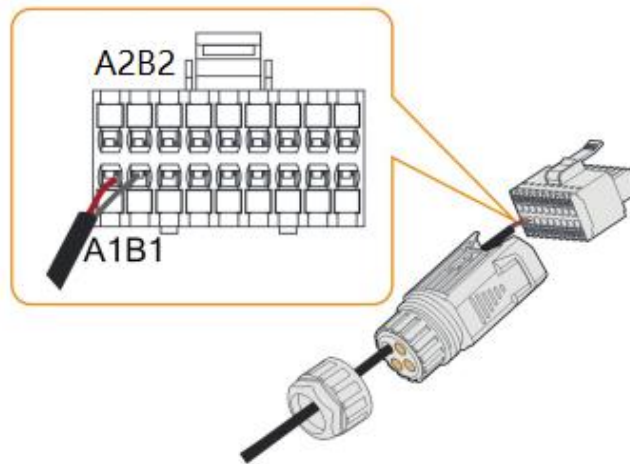
Step 6 Pull the wires outward to check whether they are firmly installed.

Step 7 Insert the terminal block into the connector until it snaps into place with an audible click.

Step 8 Fasten the swivel nut.

2. Parallel Configuration
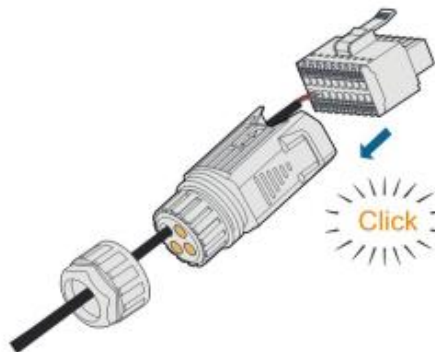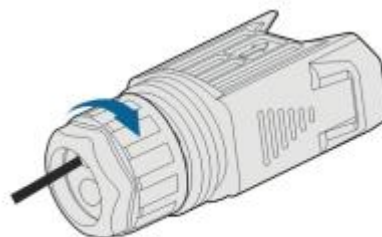
When two or more inverters are connected in parallel, the inverter needs to be set as the master or slave.

Step 1 Connect the mobile phone to the WLAN network named as "SG-WiFi Module Serial Number" (the serial number is on the side of the WiFi module).

Step 2 Open the App to enter the login page and tap "Local Access".

Step 3 Select "WLAN", change the account name to "**admin**" and enter the password "**pw8888**", and tap "LOGIN".
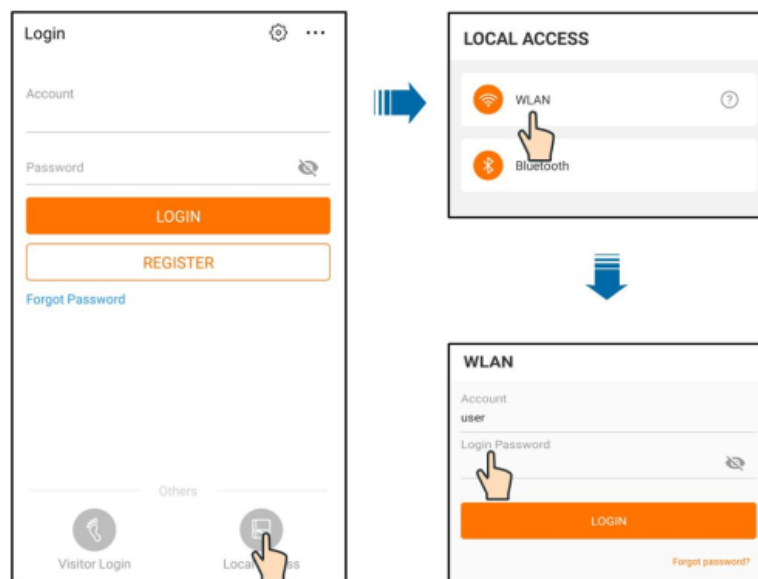
Step 4 Tap "More -> Settings -> Power Regulation Parameters -> Feed-in Limitation" to enter the corresponding screen.
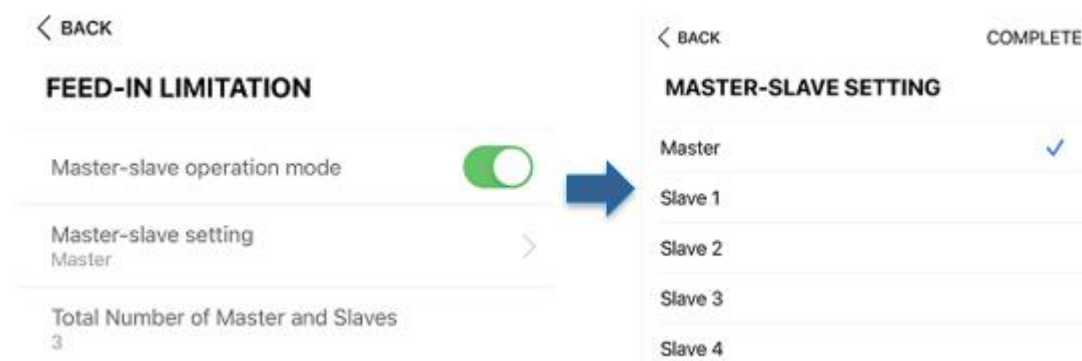
Step 5 Switch on the "Master-slave operation mode", change the master slave setting to "Master" or "Slave#" correspondingly, and input the total number of master and slaves in the chain.

Eg. If there are 3 inverters, set the inverter connected to the meter as "Master", and set the other inverters as "Slave 1" and "Slave 2" following the daisy chain. The total number of master and slaves set to 3 for both inverters.
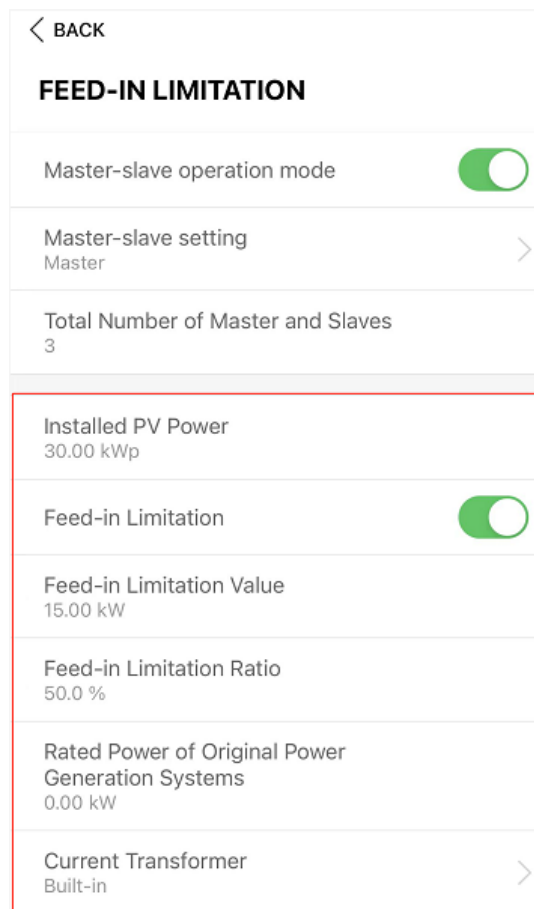
Parameter	Default value	Range
Master-slave operation mode	ON	ON / OFF
Master-slave setting	Master	Master / Slave 1 / Slave 2 / Slave 3 / Slave 4
Total Number of Master and Slaves	2	2 ~ 5

3. Feed-in Limitation

In the Local Access, "More -> Settings -> Power Regulation Parameters -> Feed-in Limitation. Follow the table to set the proper values to each inverter.

Set total the Installed PV Power to Master inverter – e.g. set 30kW if there are 3 x SH10RT inverters with 30kW PV installed in total.

Turn on the Feed-in Limitation switch

In the Feed-in Limitation Value, put the maximum value that allow to feed-in to the grid.

In the Feed-in Limitation Ratio, put the ratio of the feed-in limitation/ installed power. E.g, if the installed power is 30kW, the feed-in limitation is 15kW, then the ratio is 50%.

In Rated Power of Original Power Generation System, put 0.

	Master	Slave1	Slave2	Slave3	Slave4
1. Master-slave operation mode	On				
1.1 Master-slave setting	Master	Slave1	Slave2	Slave3	Slave4
1.2 Total Number of Master and Slaves	2 ~ 5	-	-	-	-
2. Installed PV Power	Entire Plant installed PV Power (kWp)	Keep in default	Keep in default	Keep in default	Keep in default
3. Feed-in Limitation	On	Off	Off	Off	Off
3.1 Feed-in Limitation Value	Entire Plant Feed-in power (kW) (be equal to 'Feed-in Limitation Ratio')	-	-	-	-
3.2 Feed-in Limitation Ratio	Feed-in % of Installed PV Power (%) (be equal to 'Feed-in Limitation Value')	-	-	-	-
4. Rated Power of Original Power Generation Systems	0				

In Current Transformer, select **"Internal"** if using a **DTSU666** meter or select **"External"** if using a **DTSD1352** meter.

If using external CTs, put the secondary current and primary current range in the following fields.

If you have any question regarding the parallel connection, please contact Sungrow Service Department on 1800 786 476 or email to service@sungrowpower.com.au, Monday- Friday 9 AM – 6 PM (AEDT).