

## SH5.0/6.0RS Parallel Connection

### 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.

For Sungrow SH5.0/6.0RS hybrid inverters (maximum 3 inverters) of same type (rating) can be connected in parallel via RS485 communication in the same phase. The parallel system can operate under On-grid mode only currently. Backup circuits must be separated.

**Decentralized access.** It is applicable when the maximum power of a single load does not exceed the rated power of a single inverter. The system with decentralized loads supports seamless power supply switching, and is free of external ATS, convenient for wiring.

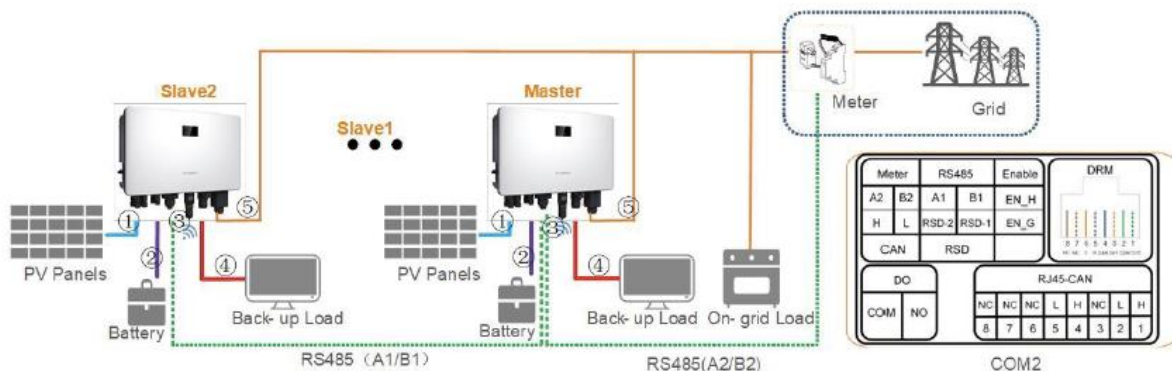


Figure 1-1 Decentralized access

①PV input

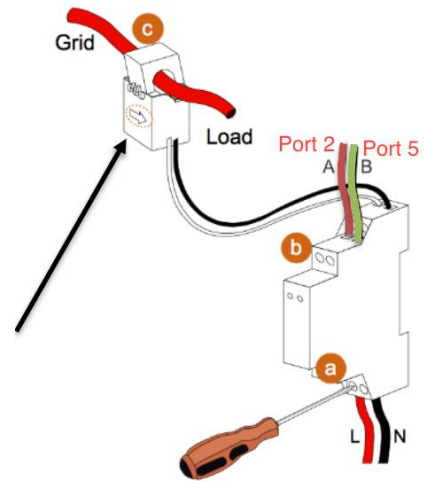
②BAT input

③COM2

④BACKUP

⑤GRID

1. The meter is connected with the master inverter and it controls other slave inverters including feed in limitation as well as battery charging/discharging. Slave inverters do not need to be connected with the meter. **The meter connections are A2 (pin 1) and B2 (pin 3) of COM 2 of the inverter, and Port 2 (A2) and Port 5 (B2) on the meter. The meter model is S100.**



2. **The Master-Slave inverters communicate through RS485 port. Communication interfaces are A1 (pin 5) and B1 (pin 7) of COM 2.** Each inverter is equipped with a Winet-S module and report data separately.



**Figure 1-2 Master-slave inverter communication wiring**

### RS485 Connection

- Meter is connected to A2 and B2 port of Master inverter (Pin 1&3)
- Master and Slave Inverters are connected via A1 and B1 port (Pin 5&7)

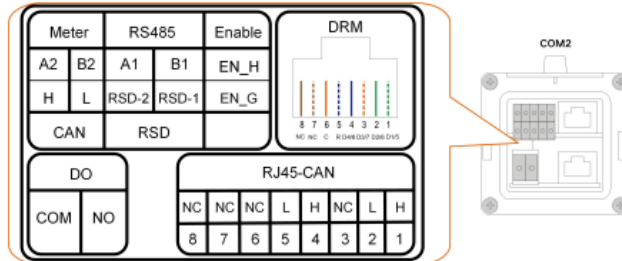
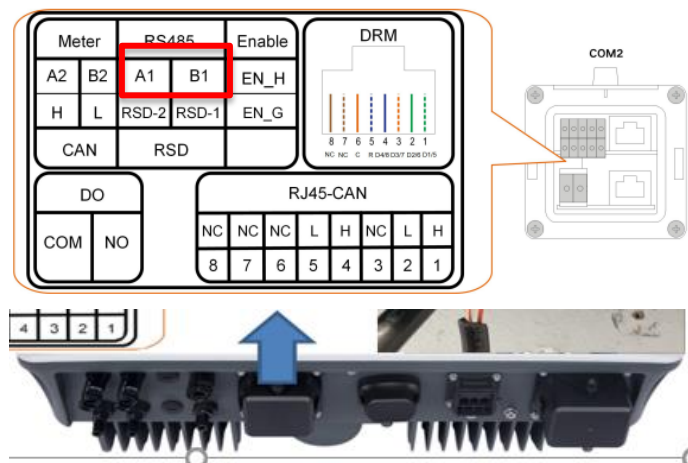


figure 6-2 Label of COM2 Terminal

table 6-2 Label Description of COM2 Terminal

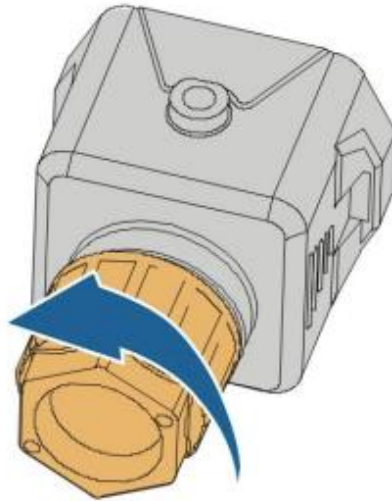
Label	Description
Meter A2, B2	For Smart Energy Meter
CAN H, L	For Li-ion battery communication via CAN protocol.
RS485 A1, B1	For LG Chem Li-ion battery communication via RS485 protocol.
RSD RSD-1, RSD-2	Reserved (Detail availability contact SUNGROW)
Enable EN_H, EN_G	For battery 12V signal, e.g. LG Chem battery.



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

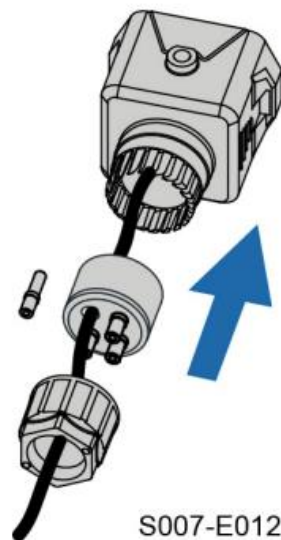
## Assembling the COM Connector

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

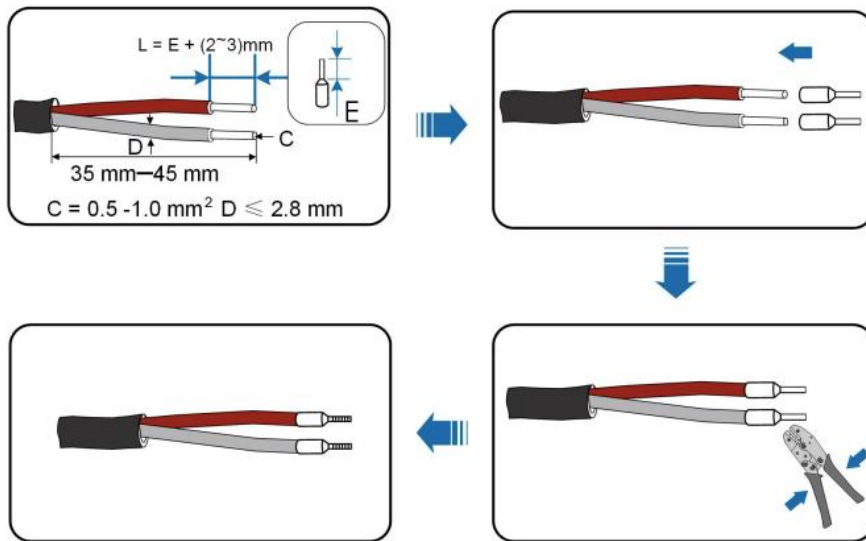


**Step 2** Take out the terminal block.

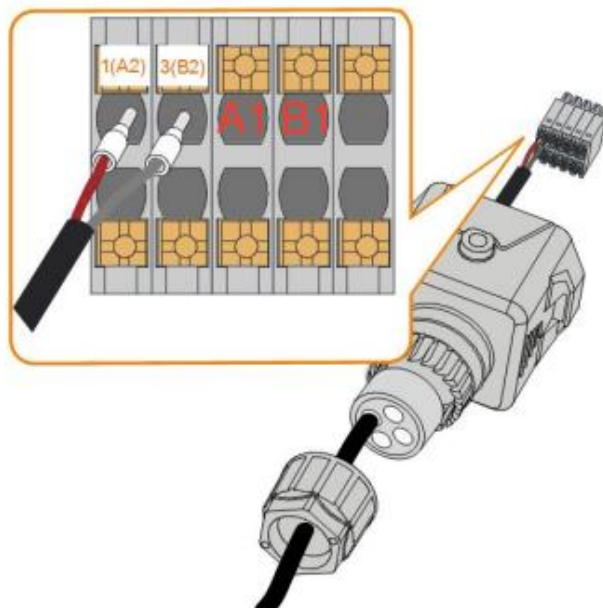
**Step 3** Remove the seal and route the cable into the opening of the sealing.



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

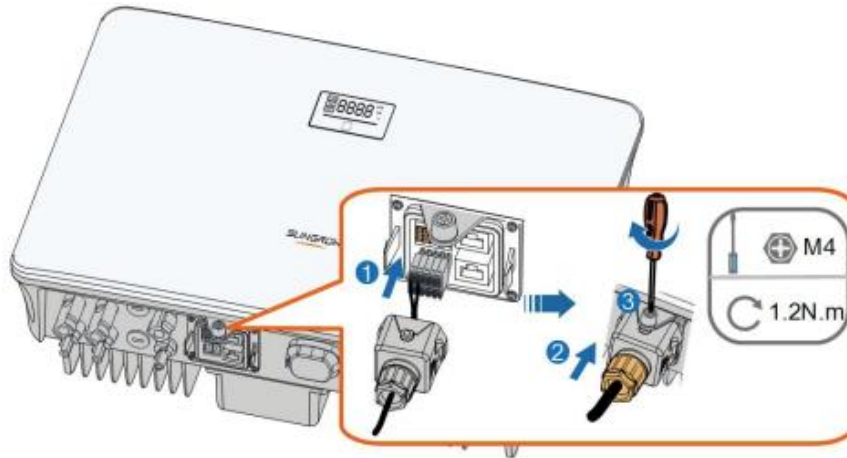


**Step 5** Plug the wires into the RS485 terminal according to the labels on the bottom of the inverter.

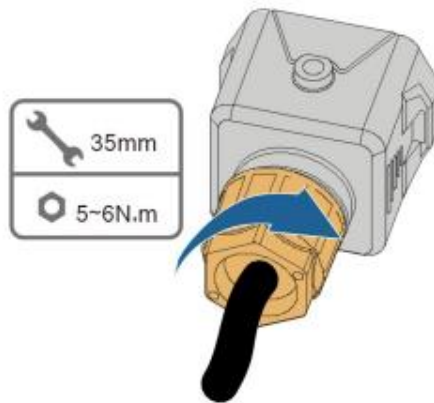


**Step 6** Pull the wires outward to check whether they are firmly installed.

**Step 7** Insert the terminal plug into the COM2 terminal at the bottom side of the inverter and then install the housing.



**Step 8** Slightly pull out the cable and then fasten the swivel nut. Lock the connector with the screw.



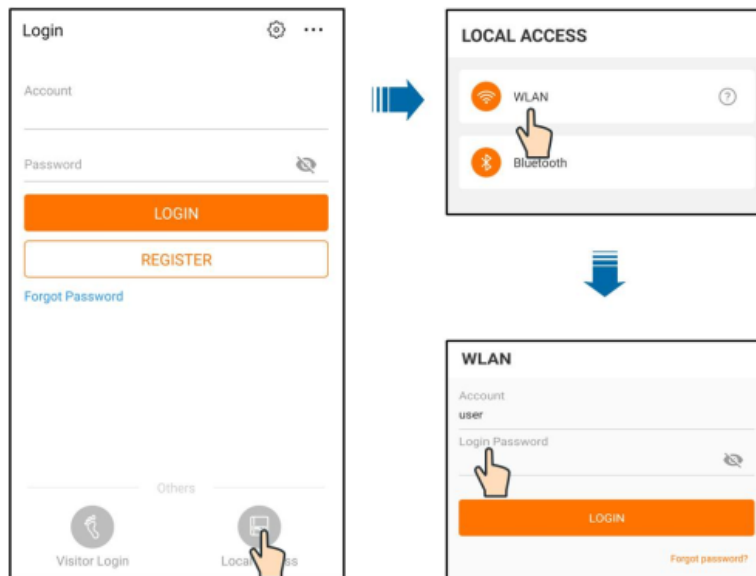
### 1. Parallel Configuration

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

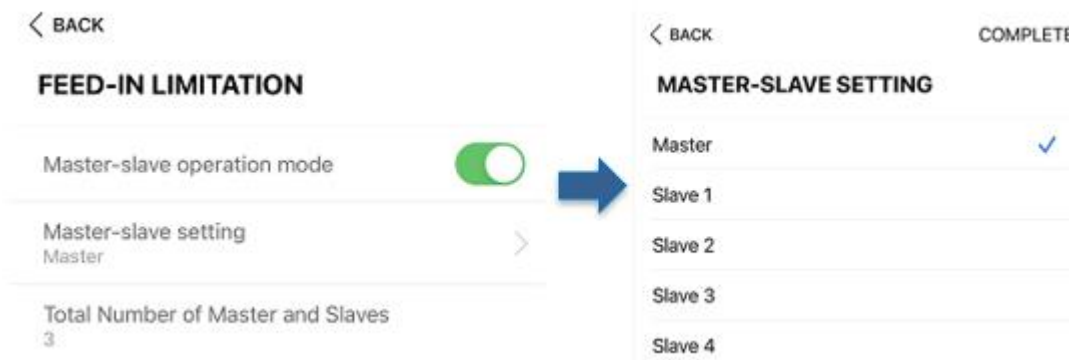
**Step 1** Connect the mobile phone to the WLAN network named as "SG-WiFi Module Serial Number" (the serial number is on the side of the WiFi module).

**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.

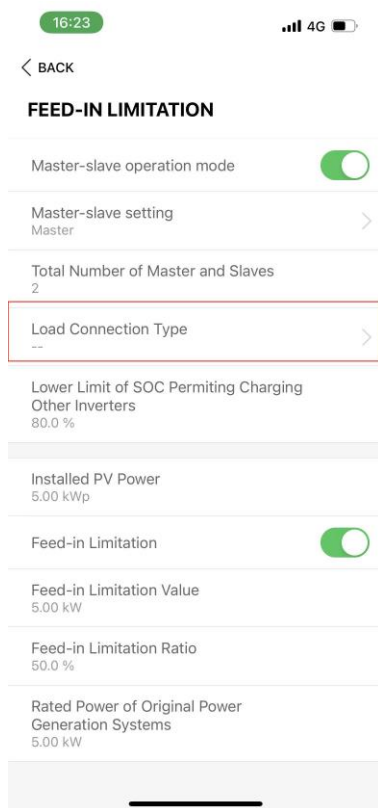


**Step 5** Switch on the "Master-slave operation mode", change the master slave setting to "Master" or "Slave#" correspondingly, and input the total number of master and slaves in the chain.

Eg. If there are 3 inverters, set the inverter connected to the meter as “Master”, and set the other 2 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

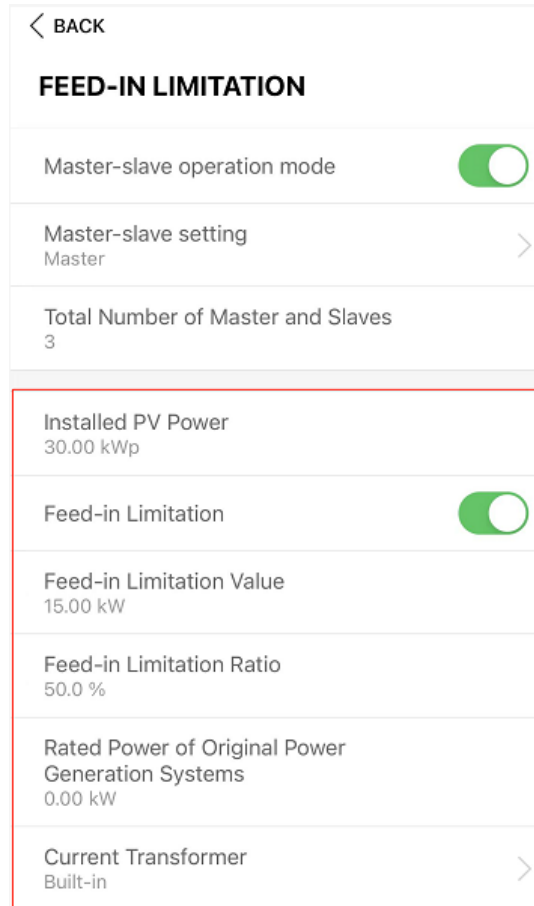
**Step 6** Select the load connection type accordingly





## 2. 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 the total Installed PV Power to Master inverter – e.g. set 15 kW if there are 3 x SH5.0RS inverters are 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%.

	<b>Master</b>	<b>Slave1</b>	<b>Slave2</b>	<b>Slave3</b>	<b>Slave4</b>
1. Master-slave operation mode	On				
1.1 Master-slave setting	Master	Slave1	Slave2	Slave3	Slave4
1.2 Total number of masters 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. Rated Power of Original Power Generation Systems	Sum of the slave inverter power	0	0	0	0
4. Feed-in limitation	On	On	On	On	On
4.1 Feed-in limitation value	Same as the plant feed-in limit	Same as the plant feed-in limit	Same as the plant feed-in limit	Same as the plant feed-in limit	Same as the plant feed-in limit
4.2 Feed-in limitation ratio	feed-in % of installed PV Power	feed-in % of slave1 Power	feed-in % of slave1 Power	feed-in % of slave1 Power	feed-in % of slave1 Power

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](mailto:service@sungrowpower.com.au), Monday- Friday 9 AM – 6 PM (AEDT).