# Installation and operation manual

Q.VOLT HYB-G3-3P PV-KIT

1.Prerequisites for using a second meter (Meter 2)

If customers want another inverter (ON-GRID INV) to be connected to Qcells' energy storage inverter system when a Q.SAVE MATEBOX-G3 3P is also installed, a second meter is used to implement system function scheduling and calculate the power of the inverter (ON-GRID). The system wiring diagram is as follows.
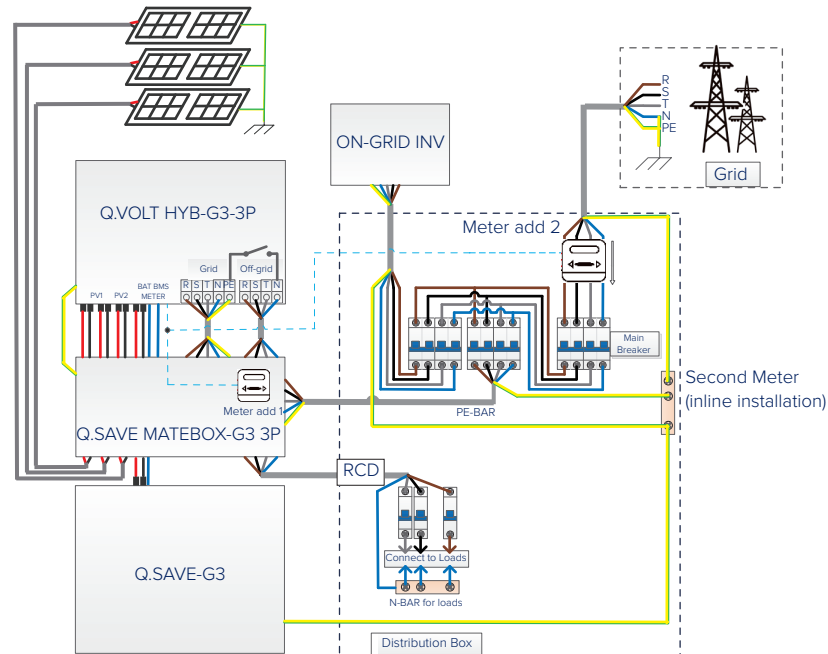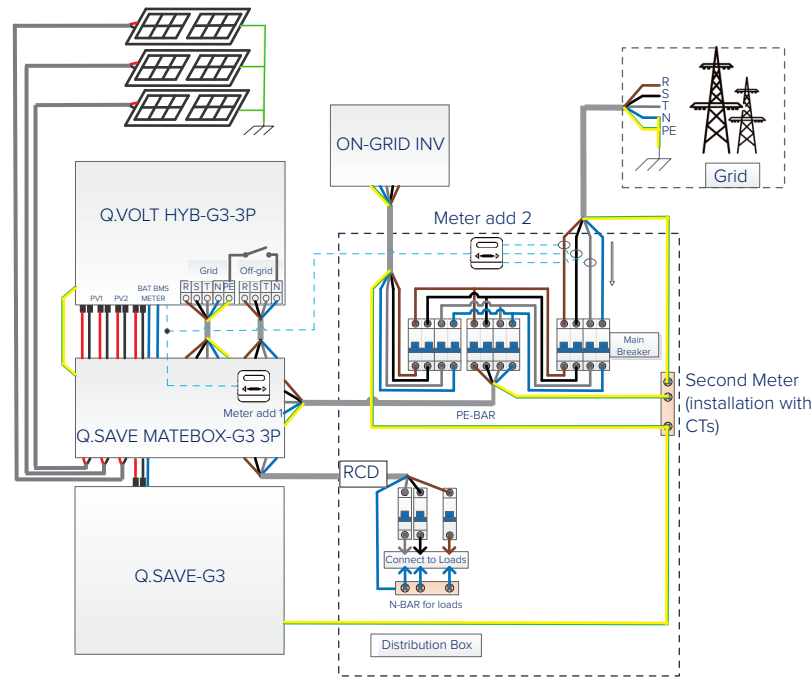

Note: To ensure the calculation of the power of grid-connected inverter, load can only be connected to the Q.SAVE MATEBOX-G3 3P load port.

Here is the diagram where Meter 1 and Meter 2 are connected.
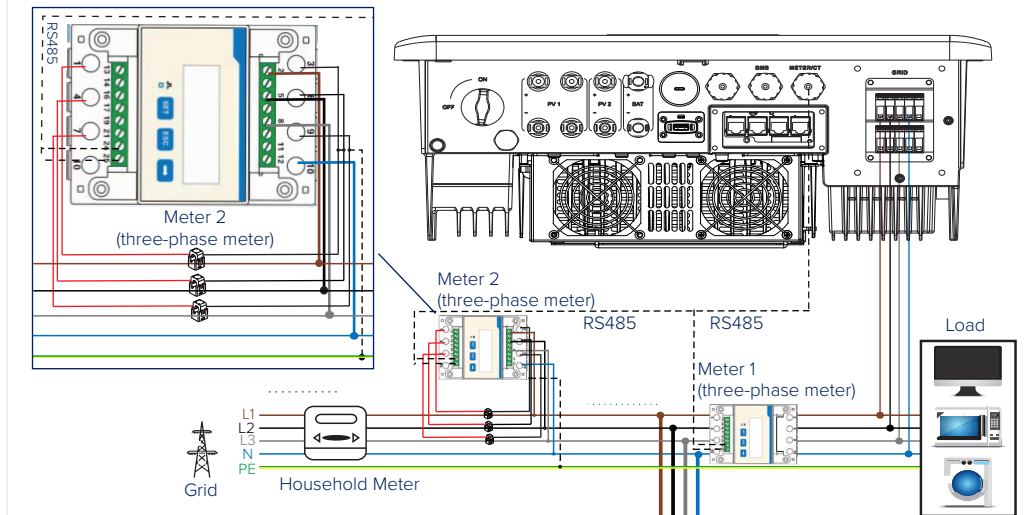
■ Second Meter (installation with CTs)

- **Meter 2:** port 2 is connected to L1, port 5 goes to L2, port 8 goes to L3, port 10 goes to N line. CT 1, CT2 and CT3 is installed on L1, L2 and L3 respectively. Connect port 1 and port 3 with CT1 in the middle, connect port 4 and port 6 with CT2 and connect port 7 and port 9 with CT3. Make a line linked to lines on the side of port3, port 6 and port 9 and connect the line to PE line. RS485 goes to port 24 and 25.
- **Meter 1:** Connect port 1 and 3 to L1, port 4 and 6 to L2, port 7 and 9 to L3 and port 10 and 10 to N line. RS485 goes to port 24 and 25.
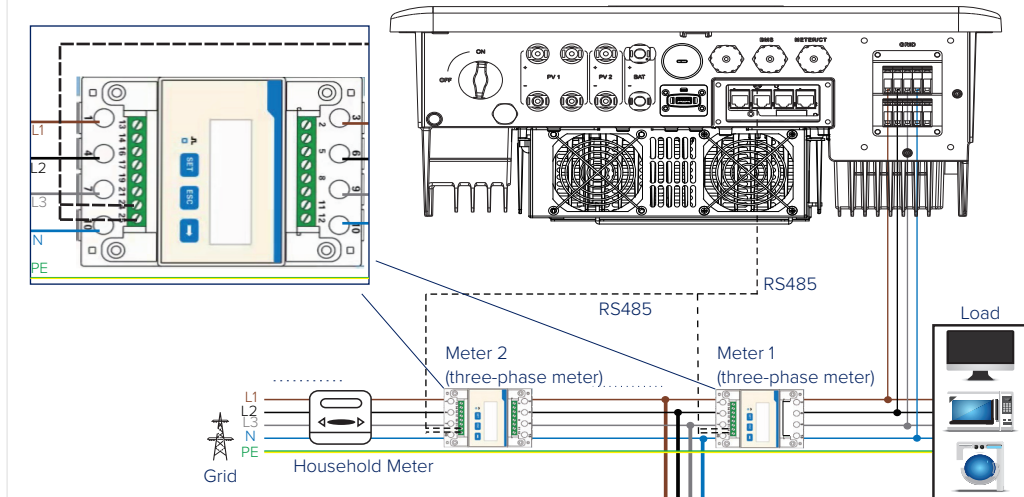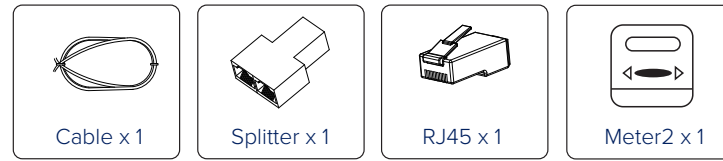

■ Second Meter (inline installation)

- **Meter 2 and Meter 1:** Connect port 1 and 3 to L1, port 4 and 6 to L2, port 7 and 9 to L3 and port 10 and 10 to N line. RS485 goes to port 24 and 25.

2. Communication Cable Connection of Meter 2

2.1 Packing List

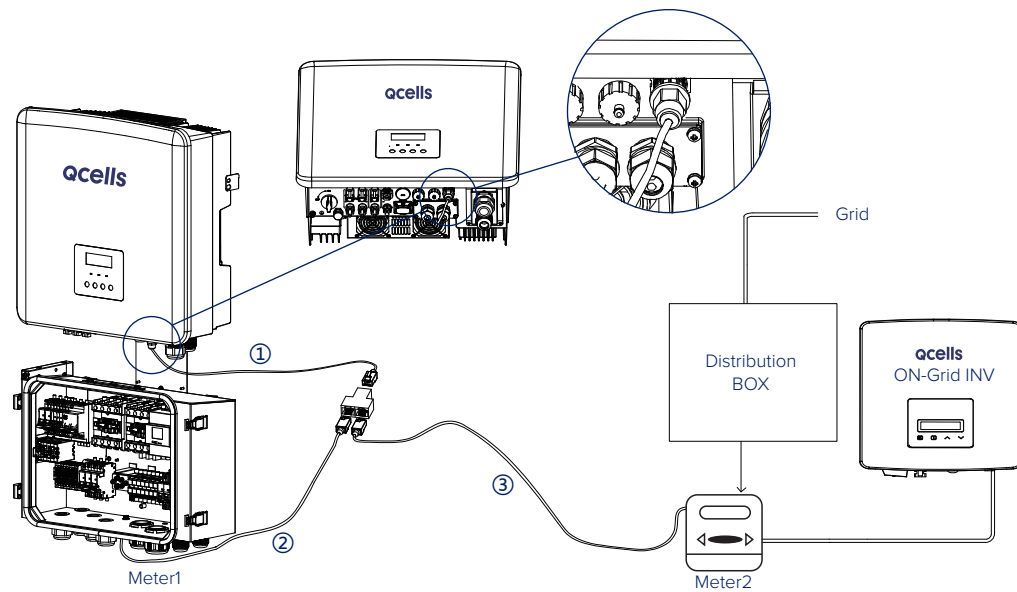| Cable x 1 | Splitter x 1 | RJ45 x 1 | Meter2 x 1 |

Note: other RJ45 terminals and the other meter required for installation are included in the packing list of the Q.SAVE MATEBOX-G3 3P or can be ordered separately.

2.2 Tool

| Utility Knife | Multifunction Terminal Crimping Tool (RJ45) |

2.3 Installation Procedure

■ Plug a cable (one end with RJ45) into the port on the Splitter and connect it to the inverter's CT/Meter port (the other end with waterproof shield).

Please note that, before plugging, the end with waterproof shield is replaced with a registered jack.

■ Plug one end of an RJ45 into one of the outputs of the Splitter and connect it to the communication cable coming from the Mete Splitter and the Meter 1 in the Q.SAVE MATEBOX-G3 3P, there are two alternative ways available for users.

■ Pulling down the waterproof connector, there is a RJ45. See figure below.
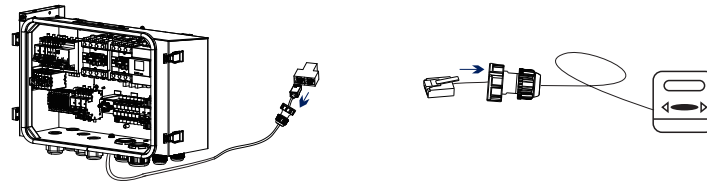
■ Cut off the waterproof connector and RJ45, and install an RJ45 connector by the user self.
■ The Meter PIN is defined as follows

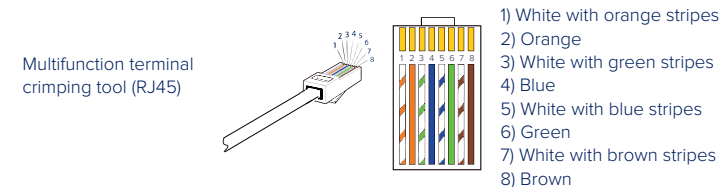| 1	2	3	4	5	6	7	8
X	X	X	485A	485B	X	X	X

485 A cables of the two meters go to pin terminal 4 and 485B cables of the two meters go to pin terminal 5. See figure below.
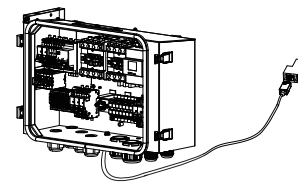
■ Plug another RJ45 into the other output on the Splitter and connect it to Meter2.

With respect to the cable, if the users want to prepare the cable themselves, please follow the steps as follows:

■ Prepare an unshielded twisted pair patch cable with its jacket stripped down from the end for 15.00 mm, crimping tool, and RJ45 terminal.

| unshielded twisted pair patch cable | | RJ45 terminals X 1 | crimping tool |
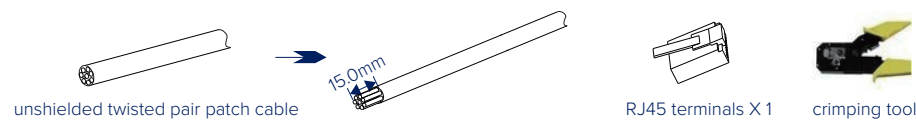
■ Carefully insert the wires all the way into the RJ45 terminal, making sure that each wire passes through the appropriate guides inside the RJ45 terminal.

■ Push the RJ45 inside the crimping tool and squeeze the crimper all the way down.

Multifunction terminal crimping tool (RJ45)

1) White with orange stripes
2) Orange
3) White with green stripes
4) Blue
5) White with blue stripes
6) Green
7) White with brown stripes
8) Brown

■ Plug the last RJ45 into the other port of Splitter and connect it to the Meter2 (delivered with the Q.VOLT HYB-G3 3P PV-KIT).

Meter 2

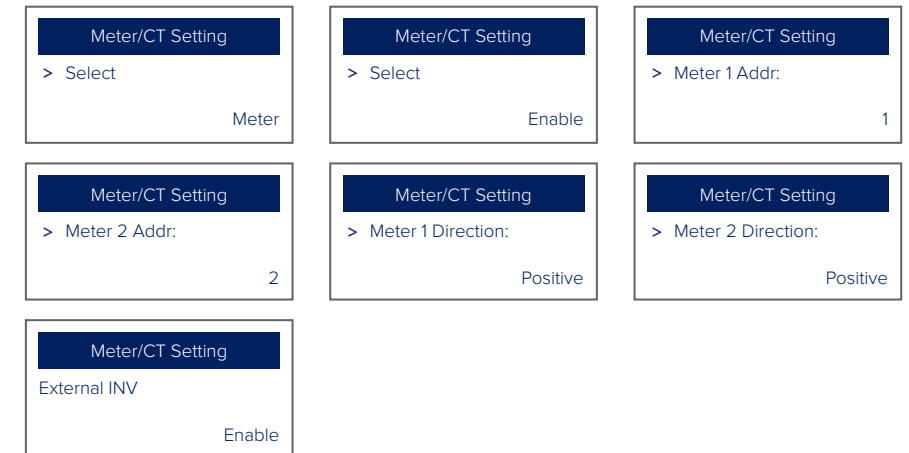## 3. Settings

The users needs to follow the steps to make Meter2 available.

| Main Menu | → | Settings | → | Advanced settings | → | Meter/CT Setting |

The user needs to select electricity meter to connect the inverter here. Select the address of the meter. Users should set "External INV" as a default to make Meter2 work normally.

Power and energy statistics displayed on the screen of the inverter would be wrong if the meters are installed in reverse. And Meter 1 Direction and Meter 2 Direction can be adjusted to repair the wrong connection of the meters or in some cases the meters may need to be removed and rewired correctly.

Meter/CT Setting	Meter/CT Setting	Meter/CT Setting
> Select Meter	> Select Enable	> Meter 1 Addr: 1
Meter/CT Setting > Meter 2 Addr: 2	Meter/CT Setting > Meter 1 Direction: Positive	Meter/CT Setting > Meter 2 Direction: Positive
Meter/CT Setting External INV Enable		

4. LCD Display

Pfeedin shows the total grid-connected power of the system (Q.VOLT HYB-G3 3P + PV-Inverter), P_USERDEF shows the power of the grid-connected inverter (PV-Inverter).

Meter/CT	Meter/CT	History Data
>Pfeedin A 0W Pfeedin B 0W Pfeedin C 0W	>P_USERDEF A 0W P_USERDEF B 0W P_USERDEF C 0W	EPS >E_Feedin E_USERDEF
E_Feedin >ConsumeTotal 0.0KWh	E_Feedin >ConsumeToday 0.0KWh	E_Feedin >FeedInTotal 0.0KWh
E_Feedin >FeedInToday 0.0KWh	E_USERDEF >Output Total 0.0KWh	E_USERDEF >Output Today 0.0KWh