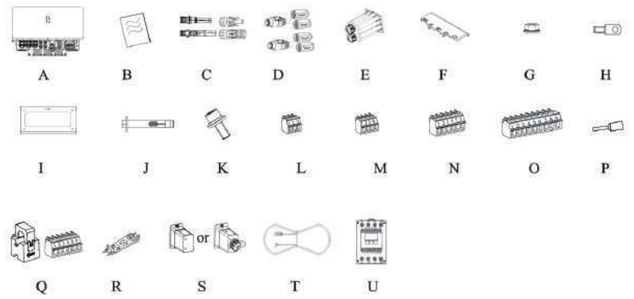
QUICK INSTALLATION GUIDE

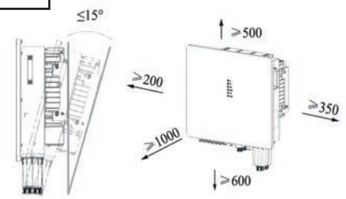
Three-phase ESS Inverter 12kW/15kW/20kW/25kW/30kW

1 PACKING LIST

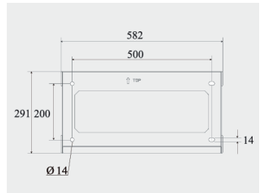


A. Inverter
B. File package
C. PV connector group
D. Battery connector group
E. AC waterproof cover
F. Insulation board for AC terminal
G. M5 Screw cap
H. OT terminal
I. Mountaing bracket
J. M10 Expasion blot
K. M6 Security screw
L. 3-Pin terminal
M. 4-Pin terminal
N. 6-Pin terminal
O. 9-Pin terminal
P. Pin terminal
Q. CT pack
R. Tightening/Removal tool for PV connector
S. WIFI/LAN module
T. Battery temperature sensor
U. Meter

2 LOCATION



Unit: mm

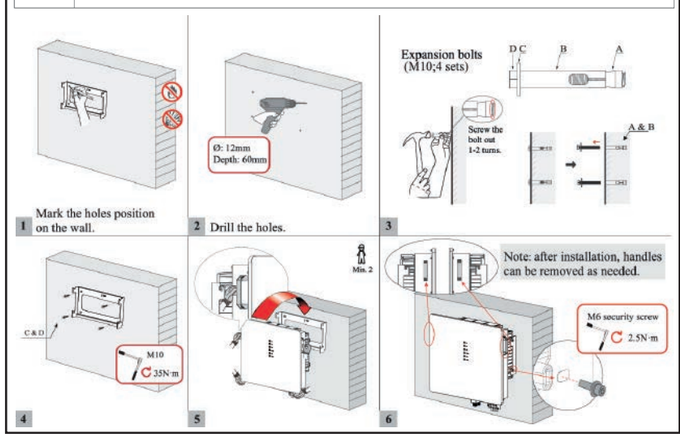


Unit: mm

3 INSTALLATION

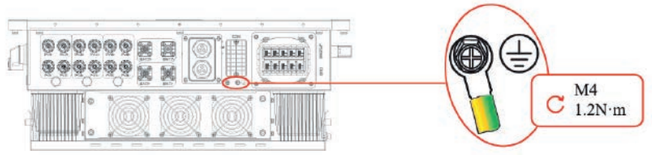
- The installation walls must be fireproof and non-flammable materials, otherwise there is a fire risk.
- Before drilling holes, check whether there are electric power pipes or other pipes buried in the walls to avoid risks.

The inverter is heavy! To avoid device damage and personnel injury, at least two people are recommended to move the inverter and handle with care.



4 GROUNDING

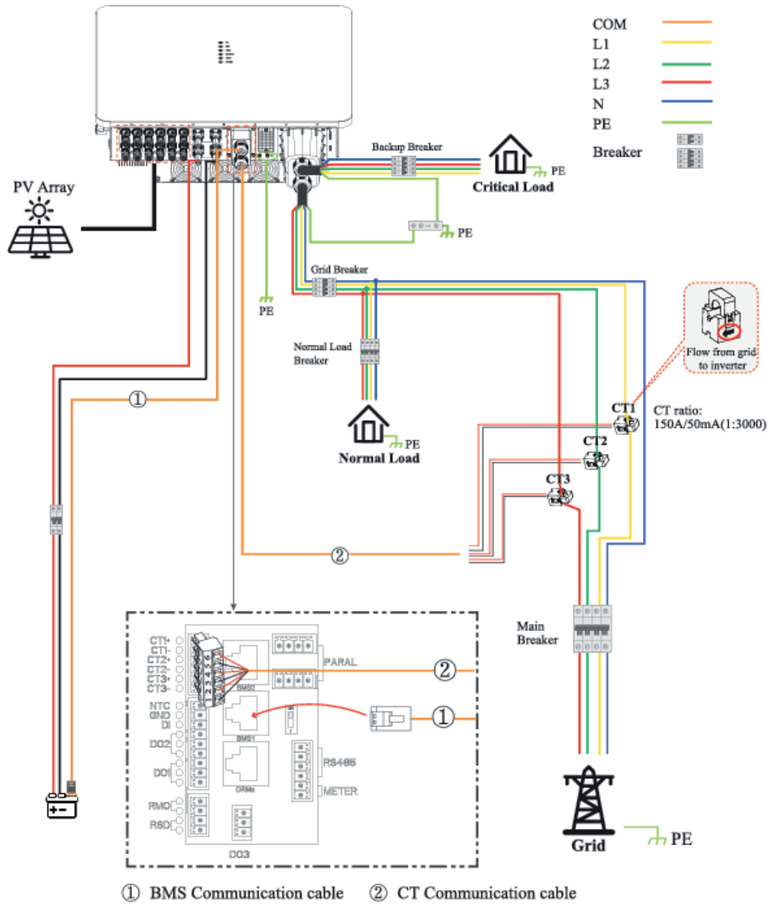
Ensure that the inverter and all cables to be installed have been completely powered off during the whole process of installation and connection. Otherwise, high voltage may result in fatal injury.



Items	Remark
Screw	M4 ×12mm; 1.2 N·m
OT terminal	OT14-4
Green-yellow wire	S (green-yellow wire) ≥ S (PE wire in AC cable) S is the cross-sectional area. OT terminal must be sized to cross-sectional area of green-yellow wire.

5 WIRING SYSTEM

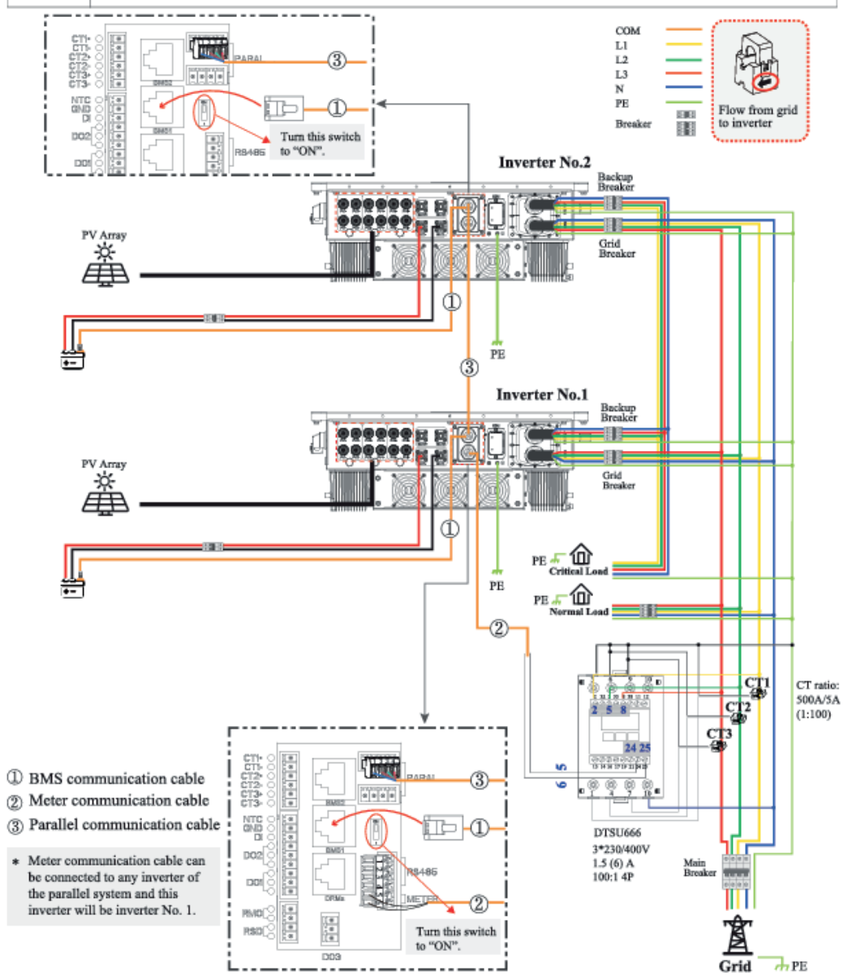
Ensure that the inverter and all cables to be installed have been completely powered off during the whole process of installation and connection. Otherwise, high voltage may result in fatal injury.



① BMS Communication cable ② CT Communication cable

6 WIRING SYSTEM

Ensure that the inverter and all cables to be installed have been completely powered off during the whole process of installation and connection. Otherwise, high voltage may result in fatal injury.

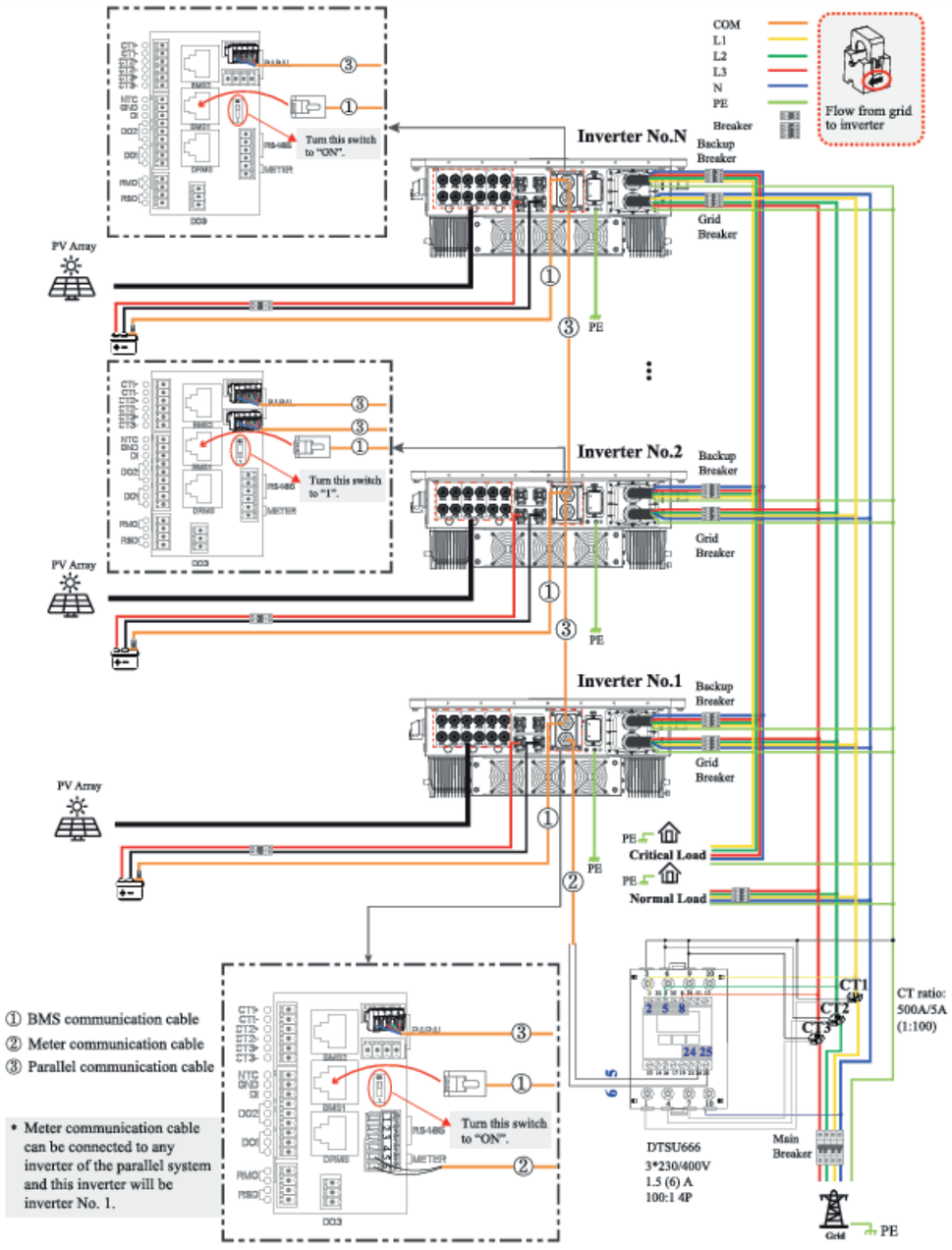


① BMS communication cable
② Meter communication cable
③ Parallel communication cable

* Meter communication cable can be connected to any inverter of the parallel system and this inverter will be inverter No. 1.

7 WIRING SYSTEM

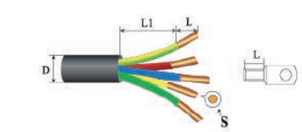
Ensure that the inverter and all cables to be installed have been completely powered off during the whole process of installation and connection. Otherwise, high voltage may result in fatal injury.



- Under Off Grid mode, please complete the output voltage and frequency settings.
- It is better to choose the battery with sufficient capacity to ensure BACKUP function works normally.
- If BACKUP output loads are inductive or capacitive loads, to make sure the stability and reliability of system, it is recommended to configure the power of these loads to be within 50% BACKUP output power range.

8 GRID/BACKUP Connection

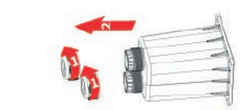
- Before connecting the GRID/BACKUP terminal, ensure that both the AC terminal and the DC terminal are powered OFF and the PV switch is OFF. Otherwise there is a risk of high voltage shock.
- Never touch BACK-UP port when the inverter is powered on as there is an AC output. Power off the inverter first when maintenance is required for the loads connected to BACK-UP ports. Otherwise, electric shock may occur.
- Be aware of the danger of electric shock! When the power grid is connected and the inverter is turned on, even if the Backup Output option is disabled, the Backup port of the inverter still has AC power.



D (Diameter): 22 ~ 27 mm
S (Cross sectional area): 13 ~ 16 mm²
L (Length): 12 ±1 mm
L1: 70 ~ 80 mm

Note:
It is recommended to use outdoor dedicated cables with multiple copper cores.

1



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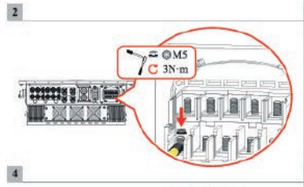

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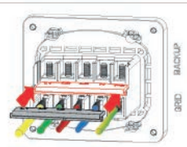

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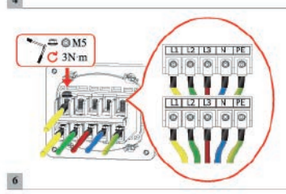

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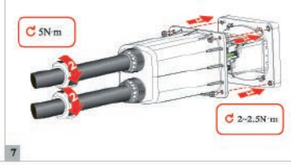
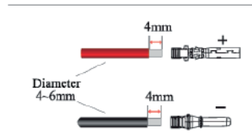


7

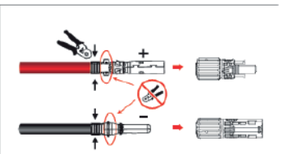
9 PV Connection

- Photovoltaic arrays exposed to sunlight will generate dangerous voltages!
- Before connecting the PV terminal, ensure that both the AC terminal and the DC terminal are powered OFF and the PV switch is OFF. Otherwise there is a risk of high voltage shock.



Note:
PV cable should be dedicated PV cable (suggest using 4~6mm² PV1-F cable).

1 Wires making.



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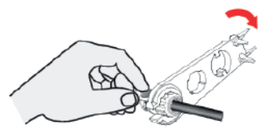
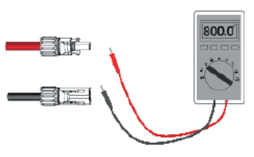
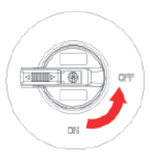


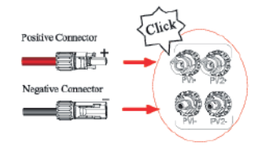
3 Tighten the waterproof nuts.



4 Test string voltage and confirm string polarity.



5 Ensure that the PV switch is OFF.



6 Insert the positive and negative connectors into the PV+/PV- ports until a "click" sound is heard.

10 BATTERY Connection

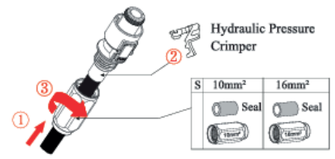
- Before connecting the Battery terminal, ensure that both the AC terminal and the DC terminal are powered OFF and the PV switch is OFF. Otherwise there is a risk of high voltage shock.
- For 12K / 15K / 20K, please connect the communication cable to BMS1 port. Otherwise, BMS communication may fail.
- For 25K / 30K, when single battery system is connected to both BAT1 and BAT2, please connect the communication cable to BMS1 port to realize BMS communication. Otherwise, BMS communication may fail.
- For 25K / 30K, When battery systems connected to BAT1 and BAT2 of the inverter respectively, please connect the BAT1 communication cable to BMS1 and BAT2 communication cable to BMS2 port correspondingly to realize BMS communication. Otherwise, BMS communication may fail.

NOTE: 12K/15K/20K:support BAT1 only; 25K/30K: support BAT1 and BAT2.

Item (recommendation) \ BAT Cable	Spec 1	Spec 2
Diameter(D)	6.5~7.5 mm	8.0~9.0 mm
Cross section(S)	10 mm²	16 mm²
Strip length (L)	~10mm	
Cable total length	≤ 3m	

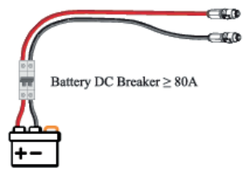
Note: the 10mm² BAT cable is applicable to12K/15K/20K, while the 16mm² BAT cable is applicable to all inverter models.

1



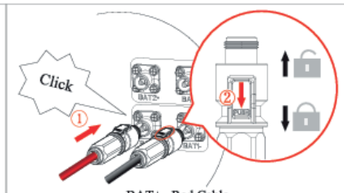
Note: choose the proper connector parts according to the BAT cable cross section (S).

2



Note: battery DC breakers are not supplied with the inverter.

3

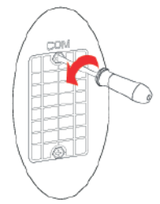


Warning!
Reverse polarity will damage the inverter!

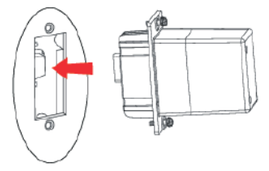
4

11 WIFI/LAN Module Instalaltion

NOTE: For details, please refer to the corresponding Module Installation Guide in the packing.
The appearance of modules may be slightly different. The figure shown here is only for illustration.

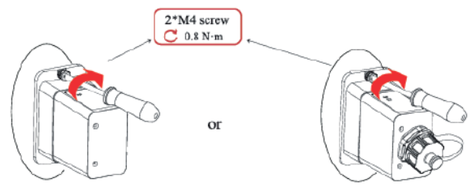


1 Unscrew and remove the cover.



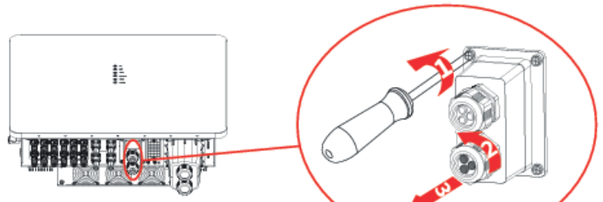
2 Insert WiFi / LAN module into the port firmly.

Note:
Proper strength to avoid damage to the module.

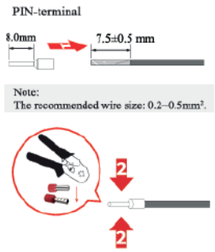


3 Secure the module.

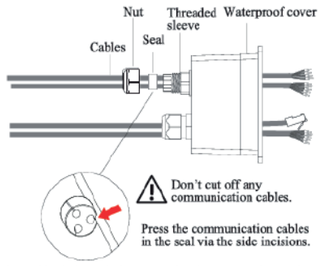
12 COMMUNICATION Cable(s) Connection



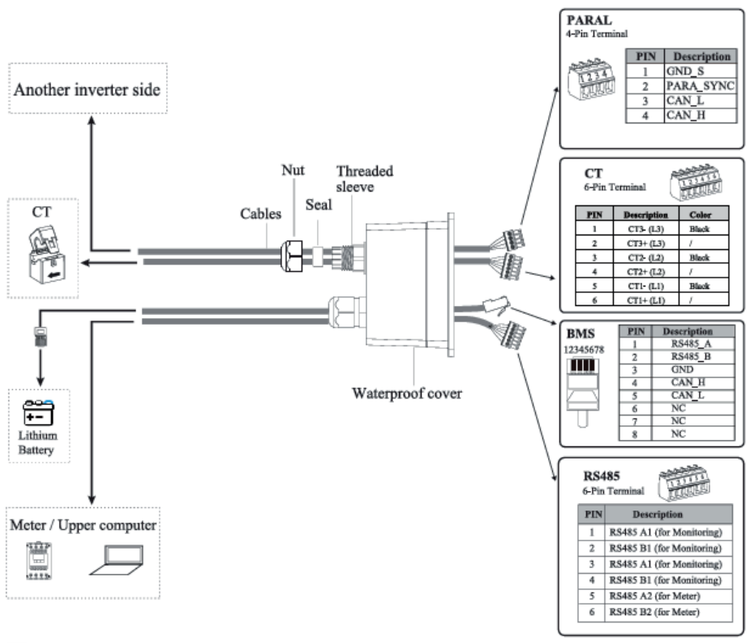
① Unscrew the waterproof cover.
② Loosen the nut on waterproof cover.
1 ③ Remove sealing plugs.



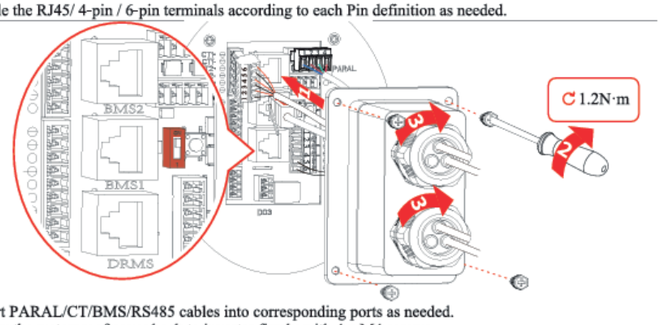
2 Wires crimping.



3 Thread the communication cable(s) through the nut, seal and waterproof cover in turn.



4 Assemble the RJ45/ 4-pin / 6-pin terminals according to each Pin definition as needed.



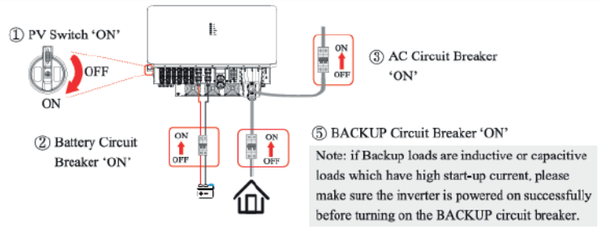
① Insert PARAL/CT/BMS/RS485 cables into corresponding ports as needed.
② Screw the waterproof cover back to inverter firmly with 4 x M4 screws.
5 ③ Install the seal into the threaded sleeve, fasten the rubber nut.

13 STARTUP/SHUTDOWN PROCEDURE

Inspection

No.	Items
1	The inverter is firmly installed.
2	There is enough heat dissipation space, no external objects or parts left on the inverter.
3	It is convenient for operation and maintenance.
4	The wiring of the system is correct and firm.
5	Check whether the DC and AC connections are correct with a multimeter, and ensure that there is no short circuit, break, or wrong connection.
6	Check whether the waterproof nuts of each part are tightened.
7	The vacant ports have been sealed. All gaps at the cable inlet and outlet holes have been plugged with fireproof/waterproof materials, such as fireproof mud.
8	All safety labels and warning labels on the inverter are complete and without occlusion or alteration.

Startup Procedure

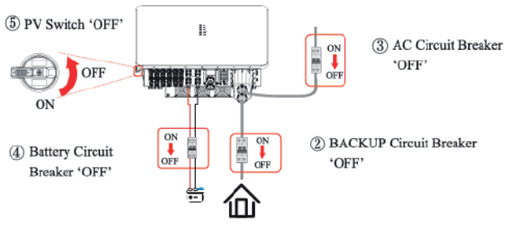


④ Go to APP; finish Quick Setup; and start the inverter.

Shutdown Procedure

After the inverter is powered off, the remaining electricity and heat may still cause electric shock and body burns. If you need to disconnect the inverter cables, please wait at least 10 minutes before touching these parts of inverter.

① Go to APP; enter Quick Setup; and shutdown the inverter.



14 DISPLAY

LED	Status	Description
PV	On	PV input is normal.
	Blink	PV input is abnormal.
	Off	PV is unavailable.
BAT	On	Battery is charging.
	Blink	Battery is discharging. Battery is abnormal.
	Off	Battery is unavailable.
GRID	On	GRID is available and normal.
	Blink	GRID is available but abnormal.
	Off	GRID is unavailable.
BACKUP	On	BACKUP power is available.
	Blink	BACKUP output is abnormal.
	Off	BACKUP power is unavailable.
COM	Blink	Data are communicating.
	Off	No data transmission.
ALARM	On	Fault has occurred and inverter shuts down.
	Blink	Alarms have occurred but inverter doesn't shut down.
	Off	No fault.