QUICK INSTALLATION GUIDE

HYD-5/6/6.5/8/9.9/10/12/15/20K-LT1

102040200593-0

01 BASIC SAFETY INFORMATION

Please familiarize yourself with the safety tips and symbols first.
Shenzhen SOFARSOLAR Co., Ltd. is not responsible for any personal injury or property damage caused by improper use.

1.1 SAFETY SIGNAL SYMBOL

DANGER

- Obtain authorization from the local power grid operator before connecting the inverter to the public power grid.
- All installations and electrical connections may only be carried out by trained electricians!
- Turn off the power and disconnect the high voltage direct current before installing and maintaining the equipment
- Before installing the battery, please check the positive and negative terminals of the battery and turn off the battery.

WARNING

- All safety signs, warning labels and nameplates on the machine must be clearly visible and must not be torn, removed or covered.
- Use insulated tools and wear personal protective equipment to ensure personal safety when performing installation operations.

CAUTION

- When the inverter is in operation, it is strictly forbidden to touch the heating parts of the device to avoid burns (e.g. heatsink, etc.)

NOTICE

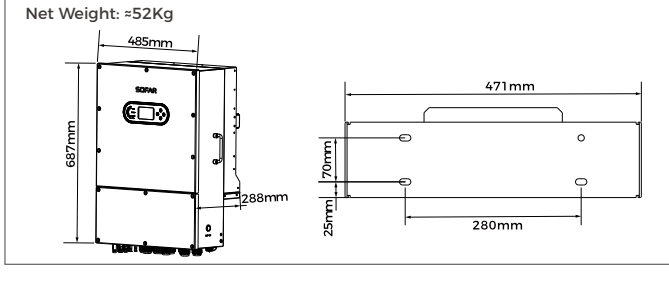
- The inverter national (regional) safety parameters must be set by professional technicians according to the local grid standards.
- Incorrect parameter settings may affect the normal operation of the inverter.

1.2 PRODUCT LABEL MARK

	Caution, risk of danger.	CE	CE mark The product complies with the requirements of the applicable EU directives.
	Caution, risk of electric shock, Energy storage timed discharge (5 minutes).		Please read this manual before install HYD-5/6/6.5/8/9.9/10/12/15/20K-LT1.
	Caution hot surface.		Grounding point.
			WEEE designation Do not dispose of the equipment with household garbage at its end of life. Dispose of it according to local laws and regulations or send it to the manufacturer.

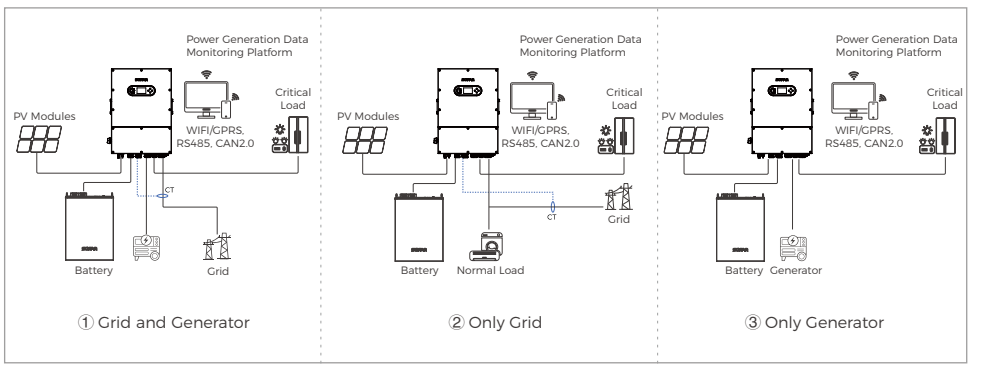
02 PRODUCT OVERVIEW

2.1 DIMENSION W×H×D=485×687×288mm

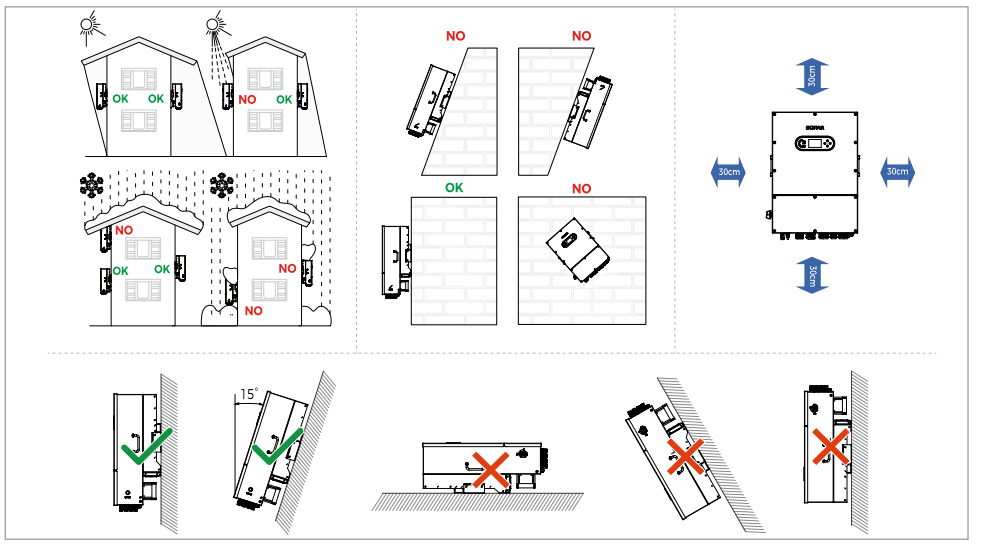


03 INSTALLATION

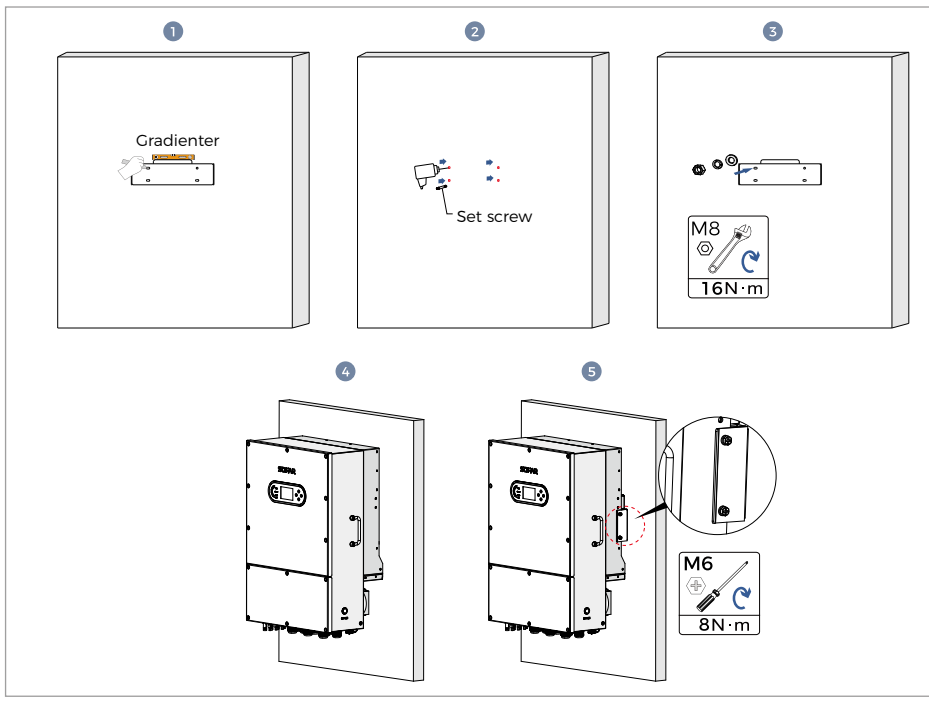
3.1 HYBRID SOLAR SYSTEM



3.2 INSTALLATION REQUIREMENTS

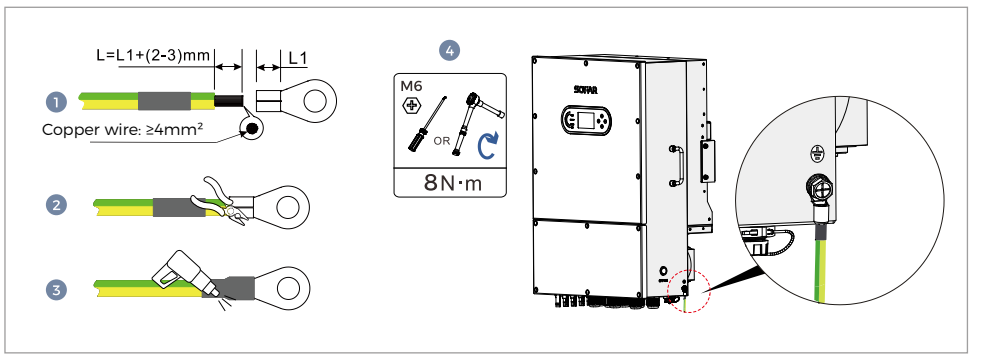


3.3 REAR BRACKET INSTALLATION

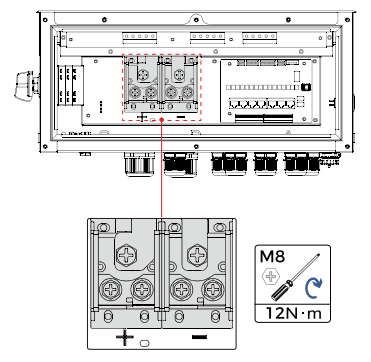


04 ELECTRICAL CONNECTION

4.1 GROUND CONNECTION

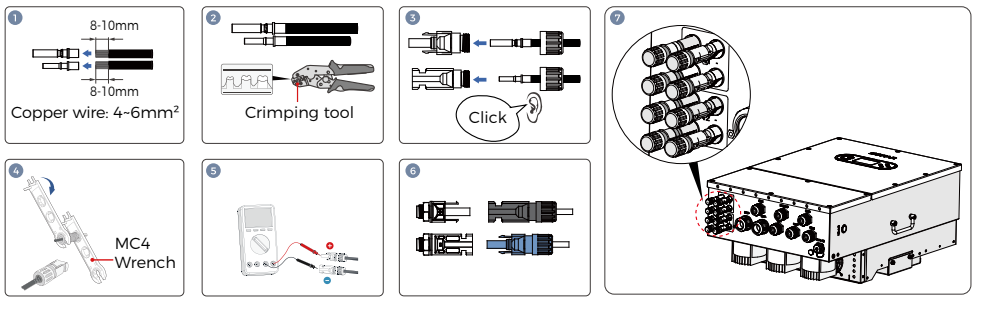


4.2 BATTERY CONNECTION



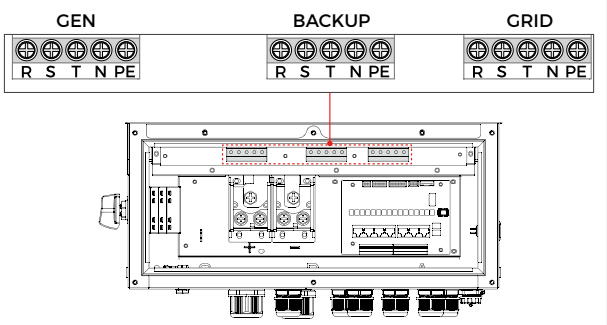
1. The battery (+) and (-) cables shall only be connected to the inverter BAT terminals.
2. Run the cables into the wire box. Strip 13mm off the ends of each cable.
3. Crimp the R-type connectors onto the cables. Do not over crimp the connectors.
4. Remove the terminal bolts and then insert them through the connector holes.
5. Put each bolt back into the proper place, be sure to not reverse he polarity.
6. Tighten the bolts with a torque wrench screwdriver following the torque specs.

4.3 PV CONNECTION



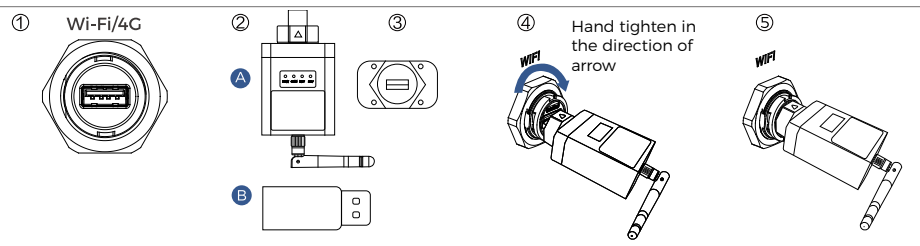
4.4 AC LOAD CONNECTION

1. Bring the AC cables for the backup loads panel (backup) and the main service panel (grid) into the inverter wire box. The backup loads panel should not be electrically connected to the main service panel.
2. Strip 13mm from the ends of each cable. Crimp the tubular terminal onto the end.
3. Loosen the screws of the wiring terminals, insert the crimped terminals into the holes, then use a torque screwdriver to tighten the screws.
4. Please refer to the terminal labels to connect the AC wires to the correct terminals.



05 COMMUNICATION CONNECTION

5.1 WIFI/USB CONNECTION



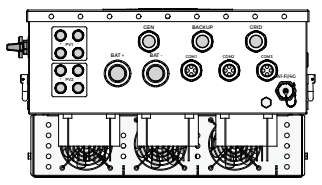
Communication interface:

Ⓐ Wi-Fi/4G: Wi-Fi/4G data collector access. For remote monitoring and control.
Ⓑ USB: USB disk access. Used for inverter firmware upgrade and wave recording.

*For data logger, see the instruction manual of data logger.

5.2 CONNECTING COM PORTS

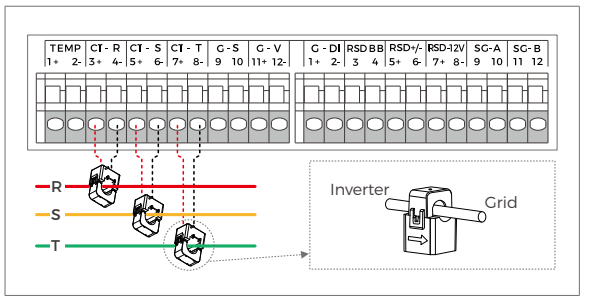
► Communication Ports



Port	Port Type	Description
COM1	4 hole watertight cable gland	Used for RJ45 connection inside wiring box
COM2	4 hole watertight cable gland	Used for RJ45 connection inside wiring box
COM3	4 hole watertight cable gland	Used for 12 PIN terminal block connection inside wiring box
Wi-Fi/4G	USB	Used for Sofar data logger or USB disk connection

5.4 CT & METER TERMINAL CONNECTION

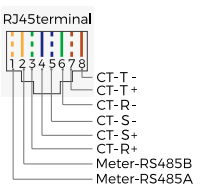
Users may choose between the CT supplied with the inverter and a compatible smart meter based on on-site application requirements.
If using the supplied CT, install it as illustrated and connect the CT to the crimp terminals.
Please confirm the arrow marking on the CT. The arrow indicates the current direction from the inverter side to the grid side, and CT wiring shall follow the arrow direction. The output wires (secondary windings) of the CT shall be connected to the corresponding terminals with clear identification of polarity and associated phase.



The inverter is also equipped with RJ45 terminals, which can be used to connect either the CT or the smart meter; the pinout diagram is shown in the figure.
If a smart meter needs to be installed, please contact your Sofar sales representative to order the smart meter and its dedicated matching CT.

NOTE

Pin definition of the Meter and CT Terminal as follows:
Meter RS485A on Pin 1: Orange/white
Meter RS485B on Pin 2: Orange
CT- R+ on Pin 3: Green/white
CT- S+ on Pin 4: Blue
CT- S- on Pin 5: Blue/white
CT- R- on Pin 6: Green
CT- T+ on Pin 7: Brown/white
CT- T- on Pin 8: Brown



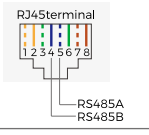
5.5 RS485 PORT CONNECTION (OPTIONAL)

If a 3rd party external device or controller needs to communicate with the inverter, the RS485 port can be used. Modbus RTU protocol is supported by Sofar inverters.

To acquire latest protocol document, please contact Sofar local service team or Sofar sales.

NOTE

Pin definition of the RS485 Port is following EIA/TIA 568B.
RS485A on Pin 5: Blue/White
RS485B on Pin 4: Blue



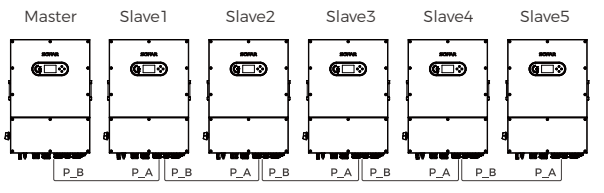
5.6 PARALLEL TERMINAL CONNECTION (OPTIONAL)

Up to 6 units of the inverter can be connected in parallel.

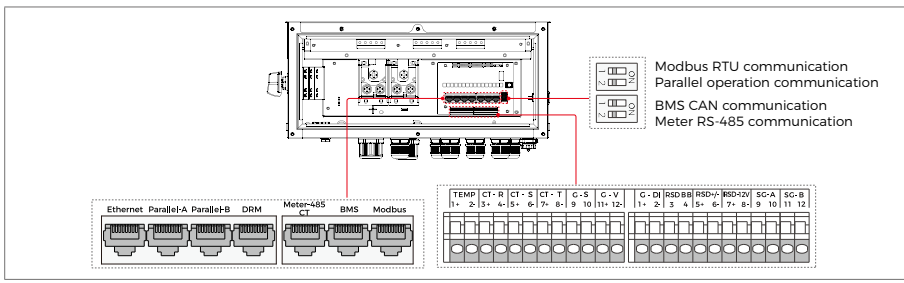
Please connect the paralleled inverters in daisy chain by using P-A and P-B terminals.

Standard CAT5 with shielding layers internet cable can be used.

Both the first and the last inverter in parallel need to set the Switch SW1 position 2 to ON.



► Communication Ports



Terminal	Type	Description
Ethernet	RJ45	(Optional) Used for Modbus TCP communication with 3rd party external device or controller.
BMS	RJ45	Used for CAN communication between inverter and Lithium battery BMS.
CT	RJ45	(Optional) Used for RS485 communication between inverter and the smart meter.
DRM	RJ45	(Optional) To realize Demand Response or Logic Interface function, this function may be required in UK and Australia.
Modbus	RJ45	(Optional) Used for Modbus RTU communication with 3rd party external device or controller.
Parallel-A	RJ45	(Optional) Parallel operation communication port.
Parallel-B	RJ45	(Optional) Parallel operation communication port
Switch SW1	-	A 120Ω termination resistor will connect to communication port when Switch SW1 is turned to ON position. Position 1 is for Modbus RTU communication, and position 2 is for Parallel operation communication.
Switch SW2	-	A 120Ω termination resistor will connect to communication port when Switch SW2 is turned to ON position. Position 1 is for BMS CAN communication, and position 2 is for Meter RS-485 communication.
TEMP	Terminal Block	Pin 1 and Pin 2 (From Left to Right) Used for Battery temperature sensor between inverter and lead-acid battery.
CT-R	Terminal Block	Pin 3 and Pin 4 (From Left to Right) are used for PCC-side Line-R CT wire connection.
CT-S	Terminal Block	Pin 5 and Pin 6 (From Left to Right) are used for PCC-side Line-S CT wire connection.
CT-T	Terminal Block	Pin 7 and Pin 8 (From Left to Right) are used for PCC-side Line-T CT wire connection.
G-S	Terminal Block	Pin 9 and Pin 10 (From Left to Right) Used for Generator start-stop signal.
G-V	Terminal Block	Pin 11 & Pin 12 (From Left to Right) Output wet/dry node.
G-DI	Terminal Block	Pin 1 & Pin 2 (From Left to Right) Used for emergency stop signal.
RSD B-B RSD +/- RSD-12V	Terminal Block	Reserved (RSD)
SG-A SG-B		Reserved (Heat pump)

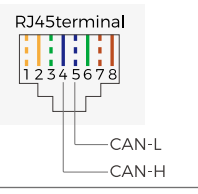
5.3 BMS TERMINAL CONNECTION

CAN communication is supported between inverter and compatible battery models.

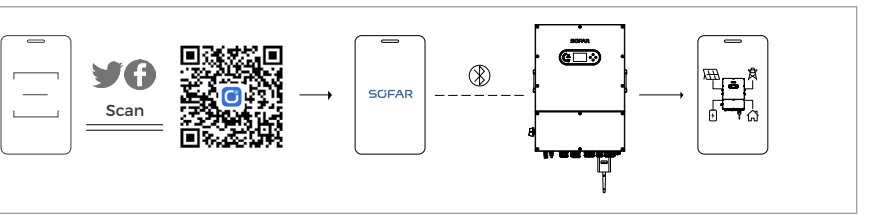
Please lead the CAN cable through the COM1 or COM2 port of the inverter and connect to the BMS terminal with RJ45 connector.

NOTE

Before connecting CAN cable with the battery, please check whether the communication pin sequence of the inverter and the battery match;
If it does not match, you need to cut off the RJ45 connector at one end of the CAN cable and adjust the pin sequence according to the pin definitions of both inverter and battery.
Pin definition of the inverter BMS Port is following EIA/TIA 568B.
CAN-H on Pin 4: Blue
CAN-L on Pin 5: Blue/White

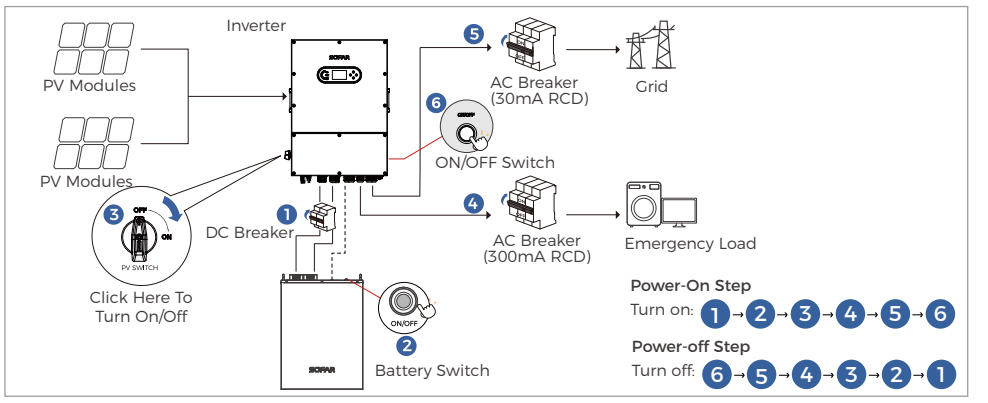


5.7 APP CONNECTION

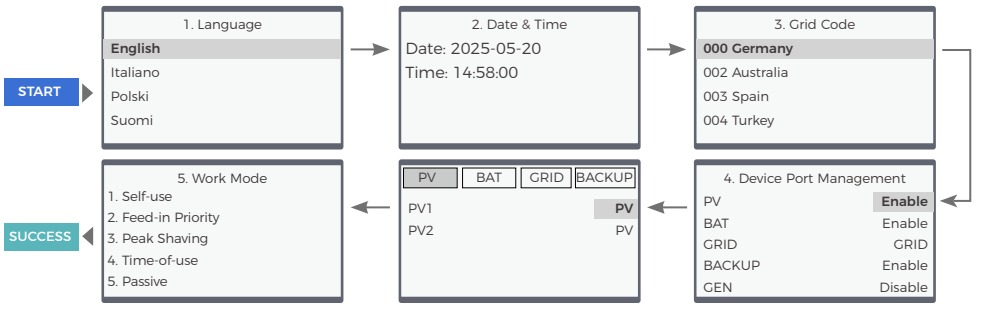


06 COMMISSIONING INVERTER

6.1 START INVERTER



6.2 SETTING



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Product User Manual

After-sales Service