



X1-HYB-LV

**3.0 kW / 3.6 kW / 3.7 kW
4.0 kW / 5.0 kW / 6.0 kW**

Installation Manual

Version 10.0

www.solaxpower.com



Scan the QR code or
at www.solaxpower.com

Table of Contents

Safety..... 1

Preparation before Installation 3

Mechanical Installation..... 10

Electrical Installation..... 11

Power on the System..... 27

LCD Panel..... 28

General Setting..... 29

Safety

General Notice

1. Contents may be periodically updated or revised. SolaX reserves the right to make improvements or changes in the product(s) and the program(s) described in this manual without the prior notice.
2. The installation, maintenance and grid-related setting can only be performed by qualified personnel who:
 - Are licensed and/or satisfy state and local jurisdiction regulations;
 - Have good knowledge of this manual and other related documents.
3. Before installing the device, carefully read, fully understand and strictly follow the detailed instruction of the user manual and other related regulations. SolaX shall not be liable for any consequences caused by the violation of the storage, transportation, installation, and operation regulations specified in this document and the user manual.
4. Use insulated tools when installing the device. Individual protective tools must be worn during installation, electrical connection and maintenance.
5. Please visit the website www.solaxpower.com of SolaX for more information.

Descriptions of Labels

	CE mark of conformity		TUV certification
	Additional grounding point		Caution, hot surface
	Caution, risk of electric shock		Caution, risk of danger
	Read the enclosed documentations		Do not dispose of the inverter together with household waste.
	Do not operate this inverter until it is isolated from mains and on-site PV generation suppliers.		
	Danger of high voltage. Do not touch live parts for 5 minutes after disconnection from the power sources.		

DANGER!

Lethal danger from electrical shock due to the inverter

- Only operate the inverter when it is technically faultless. Otherwise, electric shock or fire may occur.
- Do not open the enclosure in any case without authorization from SolaX. Unauthorized opening will void the warranty and cause lethal danger or serious injury due to electric shock.

DANGER!

Lethal danger from electrical shock due to the PV

- When exposed to sunlight, high DC voltage will be generated by PV modules. Death or lethal injuries will occur due to electric shock.
- Never touch the positive or negative pole of PV connecting device. Touching both of them at the same time is prohibited as well.
- Do not ground the positive or negative pole of the PV modules.
- Only qualified personnel can perform the wiring of the PV panels.

WARNING!

Risk of personnel injury or inverter damage

- During operation, do not touch any parts other than DC switch and LCD panel of the inverter.
- Never connect or disconnect the AC and DC connectors when the inverter is running.
- Turn off the AC and DC power and disconnect them from the inverter, wait for 5 minutes to fully discharge the voltage before attempting any maintenance, cleaning or working on any circuits connected.
- Make sure that the input DC voltage $\leq$ Maximum DC input voltage of the inverter. Overvoltage may cause permanent damage to the inverter, which is NOT covered by the warranty.

WARNING!

- SolaX assumes no responsibility for any problems arising from the use of third-party lithium batteries connected as lead-acid batteries.
- Prohibit the use of SolaX lithium battery in Lead-acid mode. Any consequences arising from the use of lead-acid mode shall be borne by users themselves, and SolaX will not provide warranty!

CAUTION!

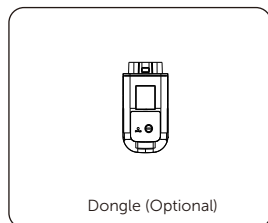
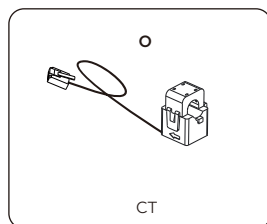
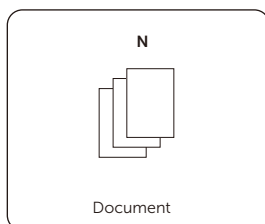
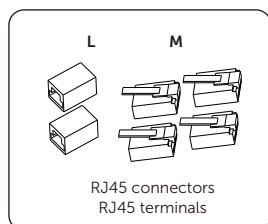
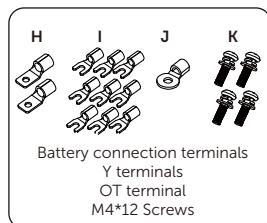
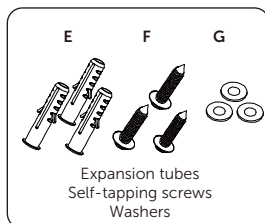
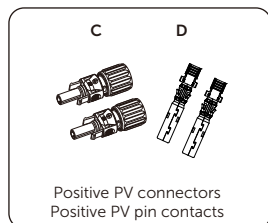
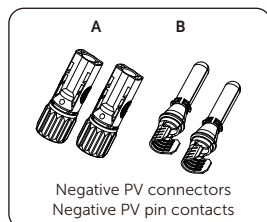
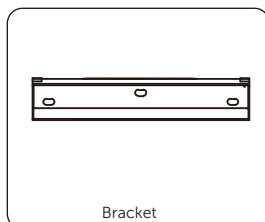
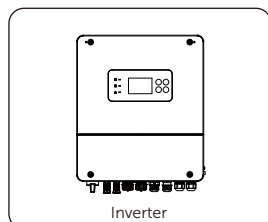
- Keep children away from the inverter.
- Pay attention to the weight of the inverter. Personal injuries may be caused if not handled properly.

NOTICE!

- The inverter has an integrated Type-B Residual Current Monitoring Unit (RCMU). If an external Residual Current Device (RCD) is required by local regulations, verify the type of RCD required. It is recommended to use a Type-A RCD with a rating of 300 mA.
- All the product labels and nameplate on the inverter shall be maintained clearly visible.

Preparation before Installation

Packing List



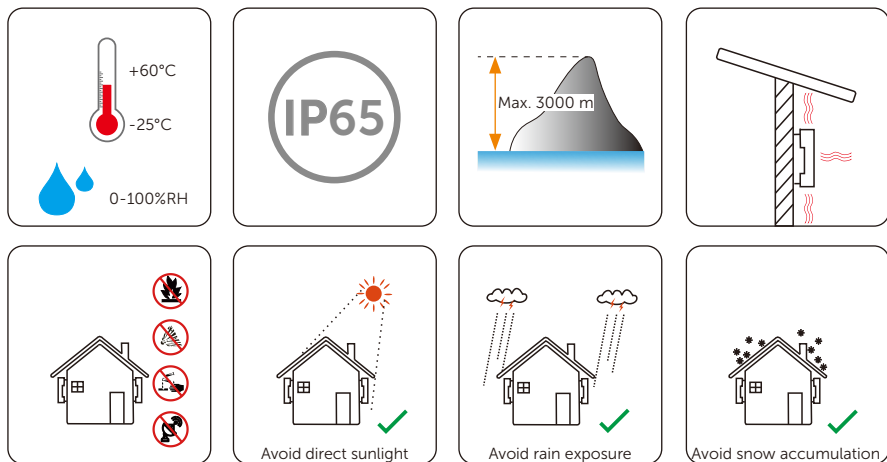
Item	Description	Quantity
/	Inverter	1 pc
/	Wall mounting bracket	1 pc
A	Negative PV connectors	2 pcs
B	Negative PV pin contacts	2 pcs
C	Positive PV connectors	2 pcs
D	Positive PV contacts	2 pcs

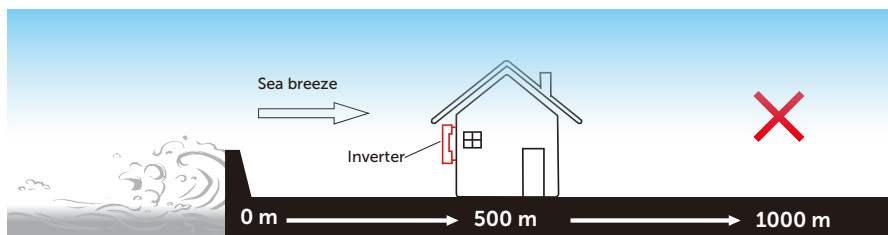
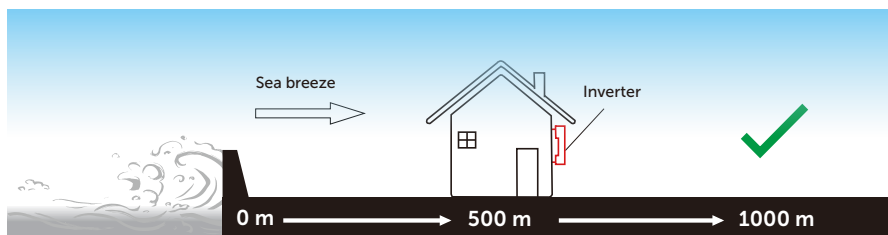
Item	Description	Quantity
E	Expansion tubes	3 pcs
F	Self-tapping screws	3 pcs
G	Washers	3 pcs
H	Battery connection terminals	2 pcs
I	Y terminals	9 pcs
J	OT terminal	1 pc
K	M4*12 Screws	4 pcs
L	RJ45 connectors	2 pcs
M	RJ45 terminals	4 pcs
N	Document	/
O	CT	1 pc
/	Dongle (Optional)	1 pc

NOTICE!

- Please refer to the actual delivery for the optional accessories.
- The figures of packing list take X1-HYB-3.0-LV inverter as an example.

Installation Site

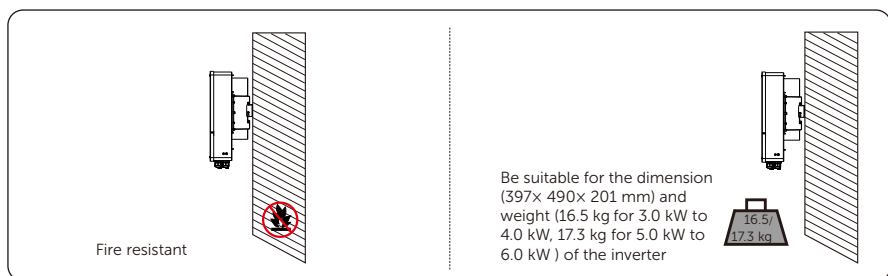




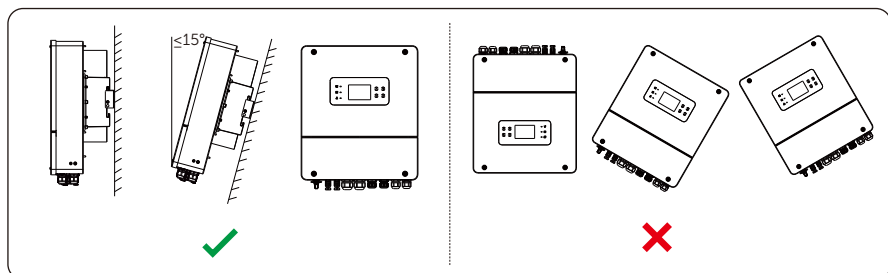
NOTICE!

- For outdoor installation, precautions against direct sunlight, rain exposure and snow accumulation are recommended.
- Exposure to direct sunlight raises the temperature inside the device. This temperature rise poses no safety risks, but may impact the device performance.

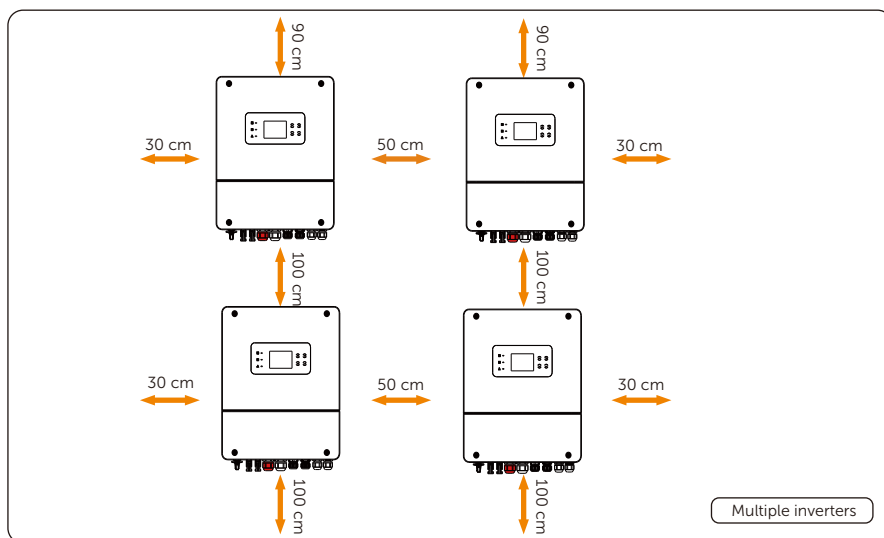
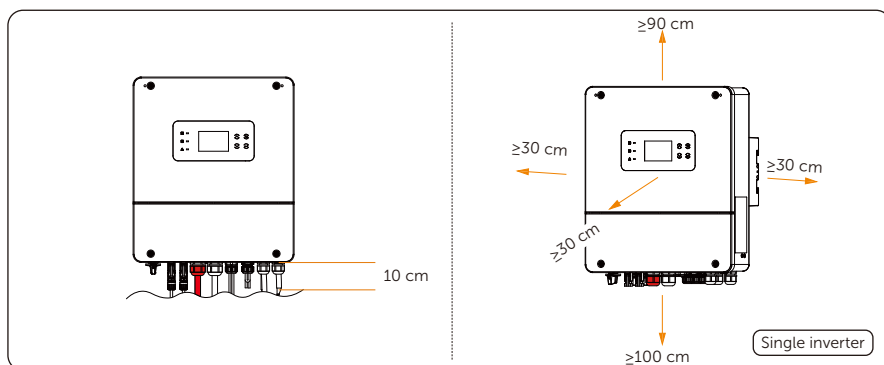
Installation Carrier



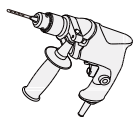
Installation Angle



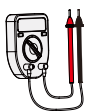
Installation Space



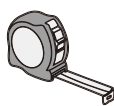
Installation Tools



Hammer drill



Multimeter



Measuring tape



Utility knife



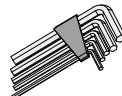
Marker



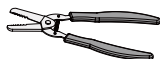
Cross screwdriver



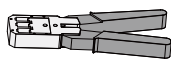
Flat-head
screwdriver



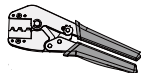
Allen key



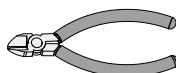
Wire stripper



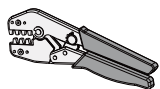
Crimping tool
for RJ45



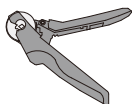
Crimping tool for
PV terminals



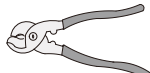
Diagonal pliers



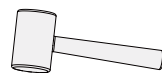
Crimping tool



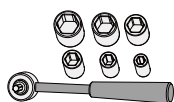
Crimping tool for ferrules



Wire cutter



Rubber mallet



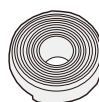
Torque wrench



Spirit level



Heat gun



Ø6 mm Heat shrink tubing



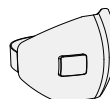
Safety gloves



Safety boots



Safety goggles



Anti-dust mask

Additionally Required Materials

No.	Required Material	Type	Conductor Cross-section
1	PV cable	Dedicated PV wire withstand voltage 600 V	4 mm ²
2	Communication cable	Network cable CAT5	0.2 mm ²
3	Additional PE cable	Conventional yellow and green wire	4 mm ² -10 mm ²
4	Battery power cable	Conventional copper wire	16-25 mm ² or 35-50 mm ²

- Grid cable and micro-breaker recommended:

Model	X1-HYB- 3.0-LV	X1-HYB- 3.6-LV	X1-HYB- 3.7-LV	X1-HYB- 4.0-LV	X1-HYB- 5.0-LV	X1-HYB- 6.0-LV
Cable (copper)	4-6 mm ²	6-8 mm ²	6-8 mm ²	6-8 mm ²	8-10 mm ²	8-10 mm ²
Micro- Breaker	32 A	40 A	40 A	40 A	50 A	50 A

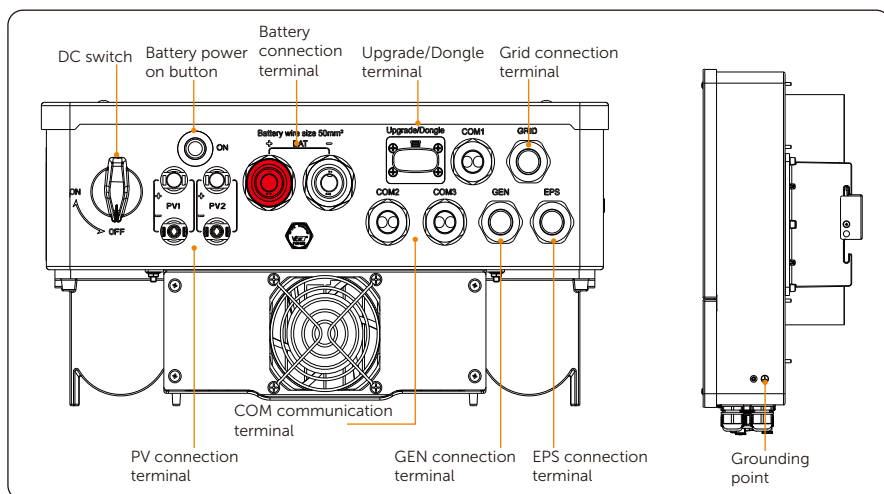
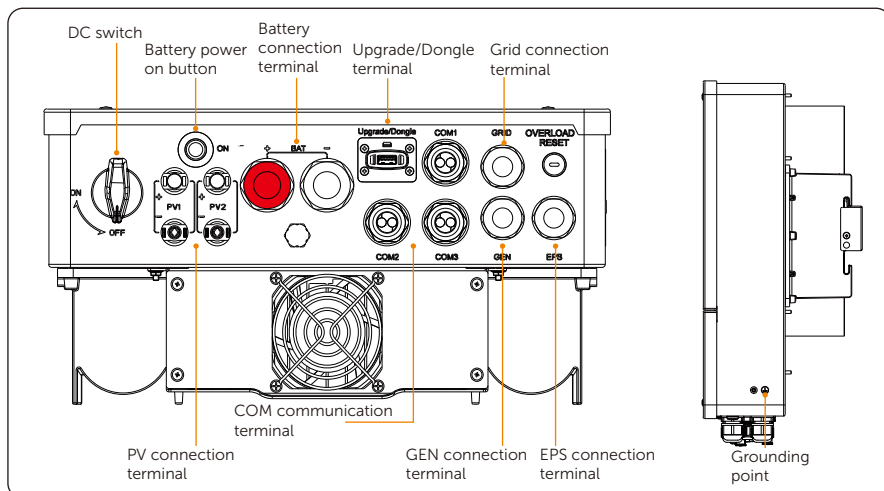
- EPS cable and micro-breaker recommended:

Model	X1-HYB- 3.0-LV	X1-HYB- 3.6-LV	X1-HYB- 3.7-LV	X1-HYB- 4.0-LV	X1-HYB- 5.0-LV	X1-HYB- 6.0-LV
Cable (copper)	3-4 mm ²	3-4 mm ²	3-4 mm ²	3-4 mm ²	4-6 mm ²	6-8 mm ²
Micro- Breaker	25 A	25 A	25 A	25 A	32 A	40 A

- GEN cable and micro-breaker recommended:

Model	X1-HYB- 3.0-LV	X1-HYB- 3.6-LV	X1-HYB- 3.7-LV	X1-HYB- 4.0-LV	X1-HYB- 5.0-LV	X1-HYB- 6.0-LV
Cable (copper)	3-4 mm ²	3-4 mm ²	3-4 mm ²	3-4 mm ²	4-6 mm ²	6-8 mm ²
Micro- Breaker	25 A	25 A	25 A	25 A	32 A	40 A

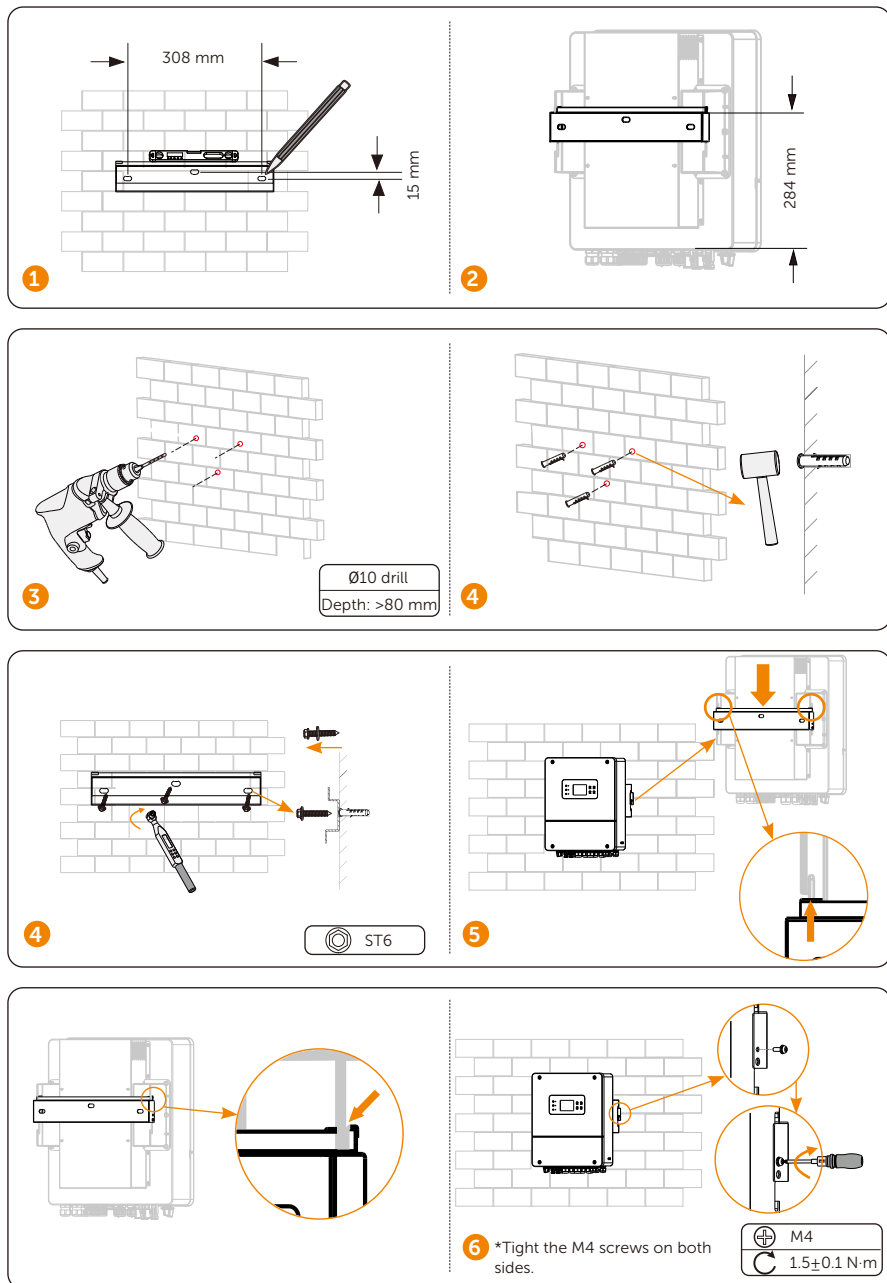
Terminals and Parts of Inverter



NOTICE!

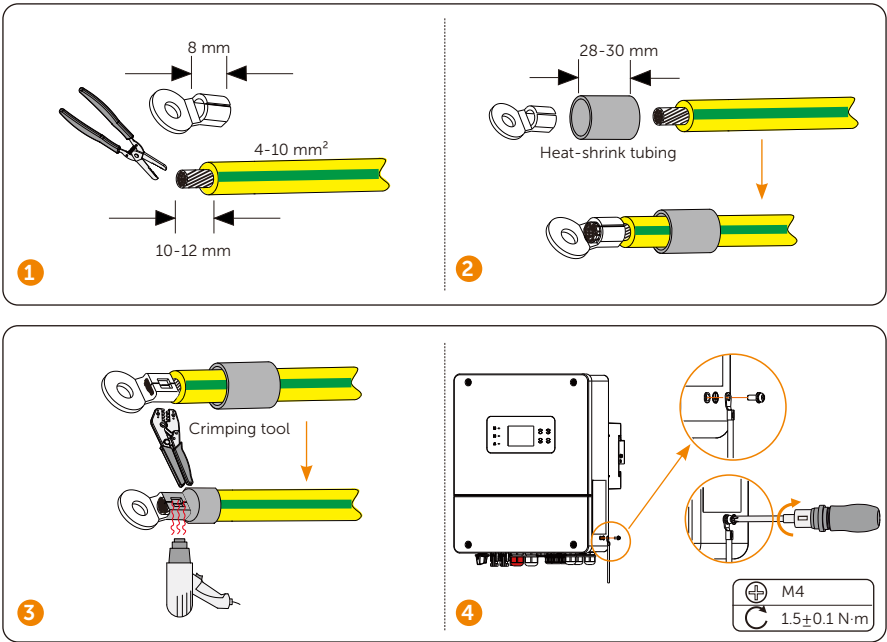
- There may be slight differences in appearance among different versions of the machine. Please refer to the actual product.

Mechanical Installation



Electrical Installation

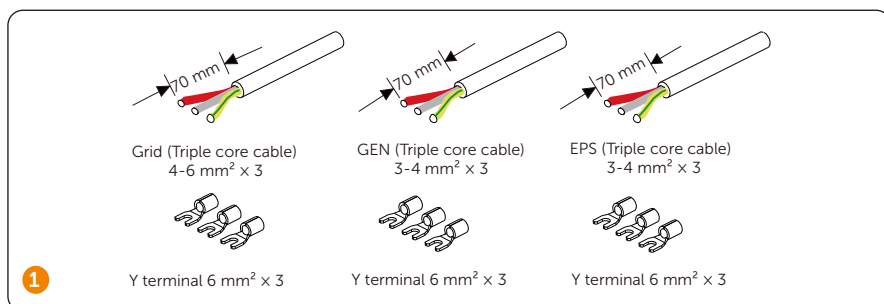
PE Connection



- PE cable recommended:

Model	X1-HYB-3.0-LV	X1-HYB-3.6-LV	X1-HYB-3.7-LV	X1-HYB-4.0-LV	X1-HYB-5.0-LV	X1-HYB-6.0-LV
PE cable	4-6 mm ²	6-8 mm ²	6-8 mm ²	6-8 mm ²	8-10 mm ²	8-10 mm ²

GRID, EPS and GEN Connection

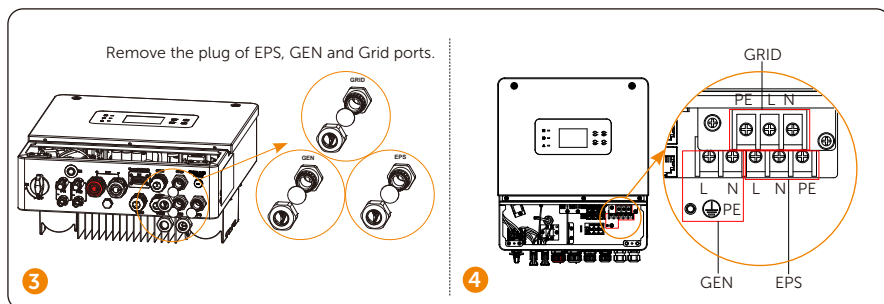
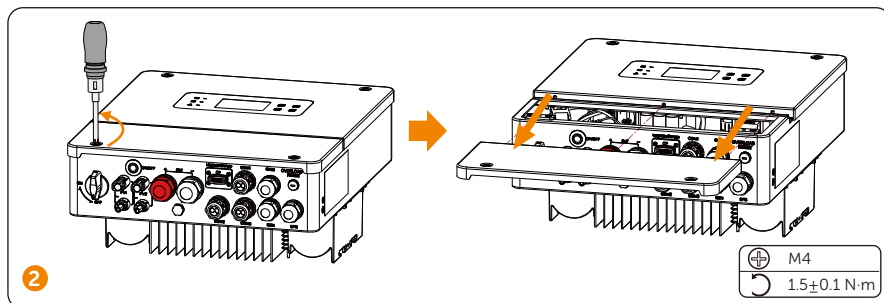


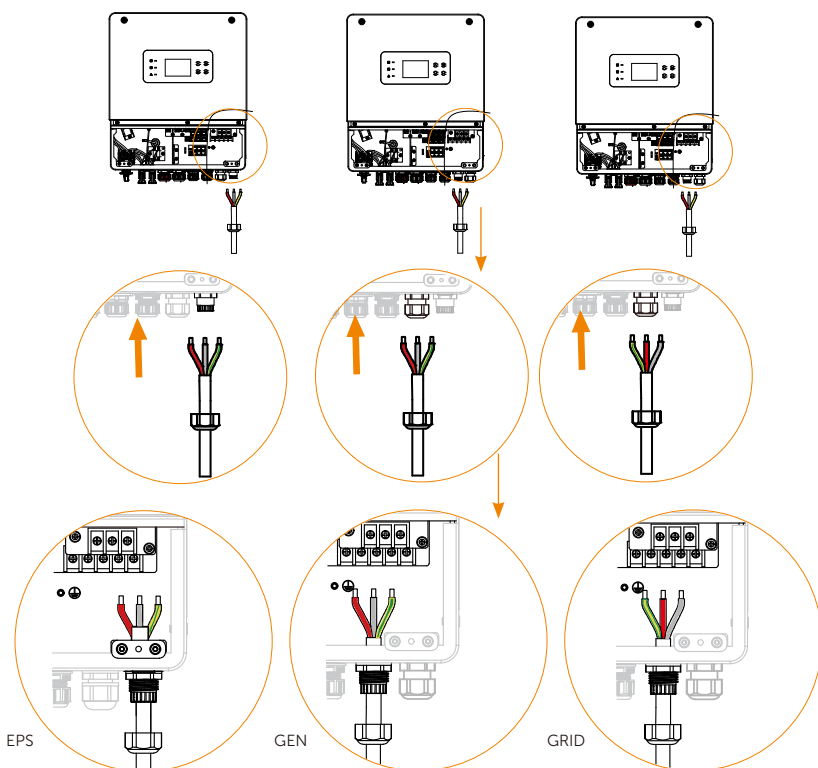
* Please refer to the table in **Additionally Required Materials** to view the recommended wire sizes for GRID, EPS, and GEN.

* It is recommended to use copper wire. Non-triple or non-dual core cables shall be sealed with glue or fireproof mud.

* When using wire sizes of 6 mm² and above, only 2-core wires can be used because the 3-core wire cannot pass through the waterproof terminal. In the case of using 2-core wire, the PE wire should only be connected to the inverter shell and does not need to be connected to the internal terminals.

* All connection diagrams provided here are based on the use of a 3-core wire, with X1-HYB-3.0-LV serving as an example.





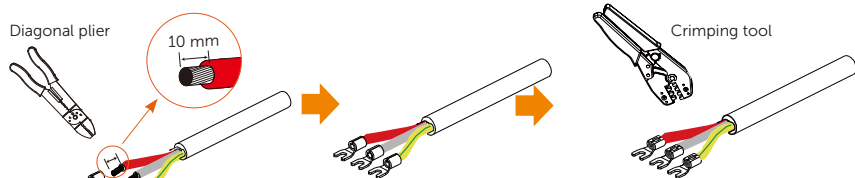
5 * The EPS, GEN and Grid cables go through the corresponding EPS, GEN and Grid ports.

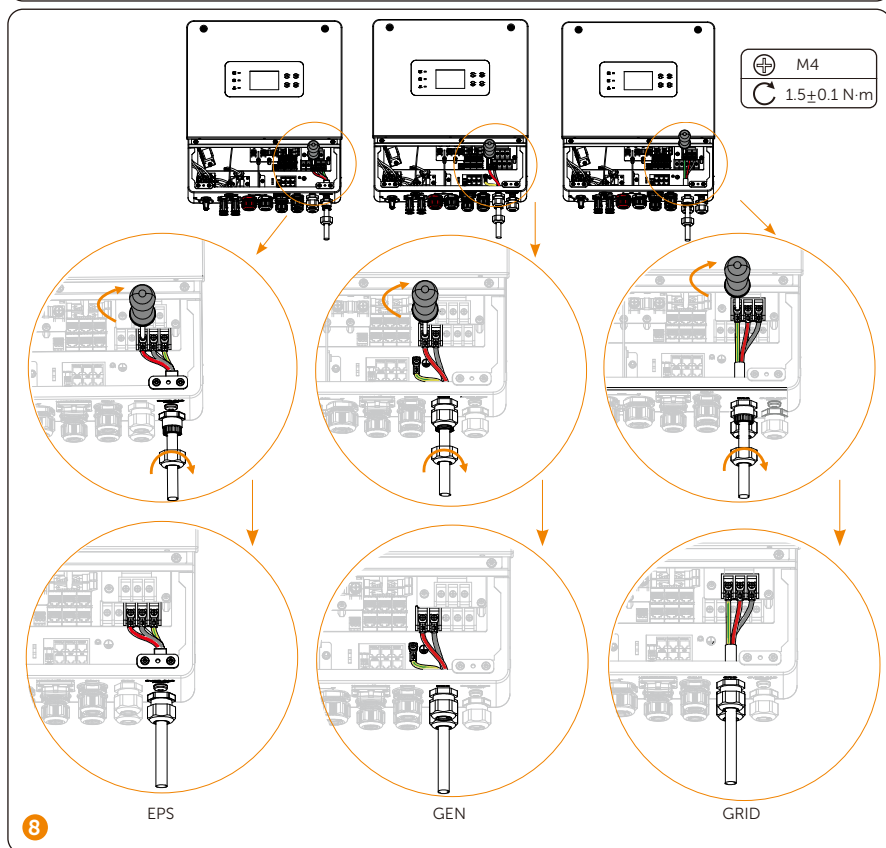
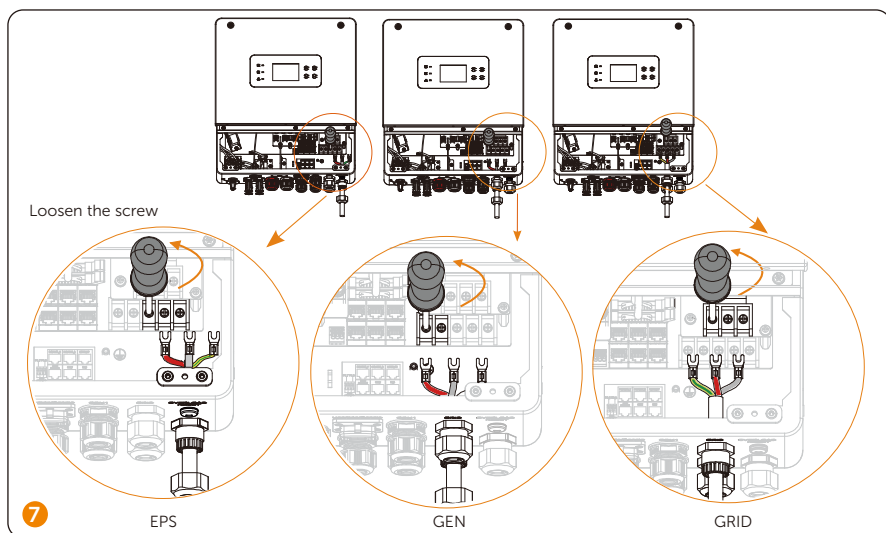
Diagonal plier

10 mm

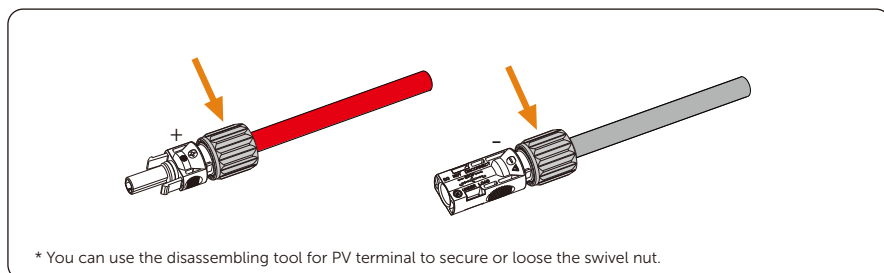
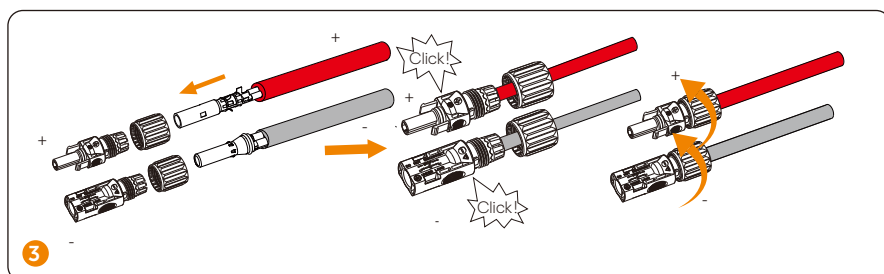
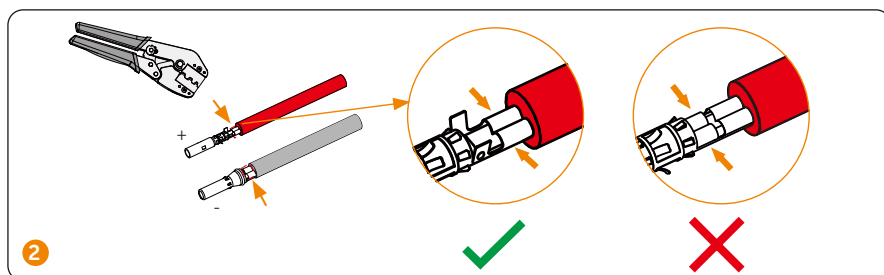
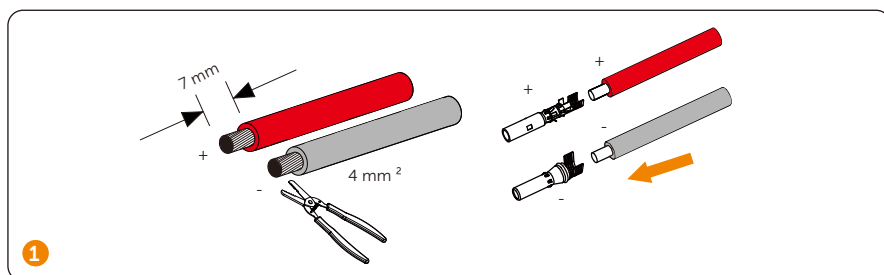
6

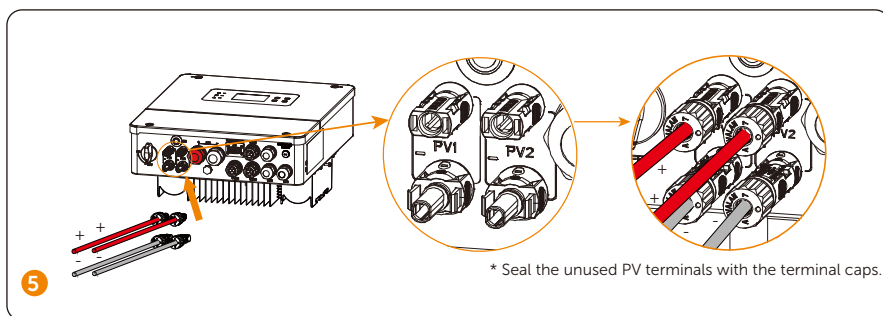
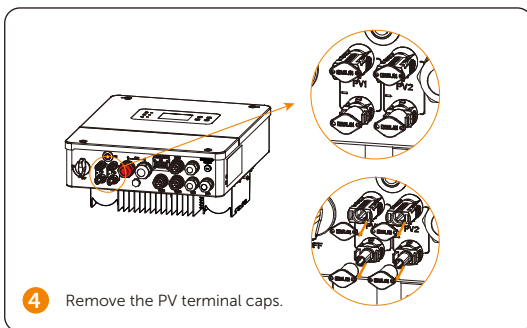
Crimping tool



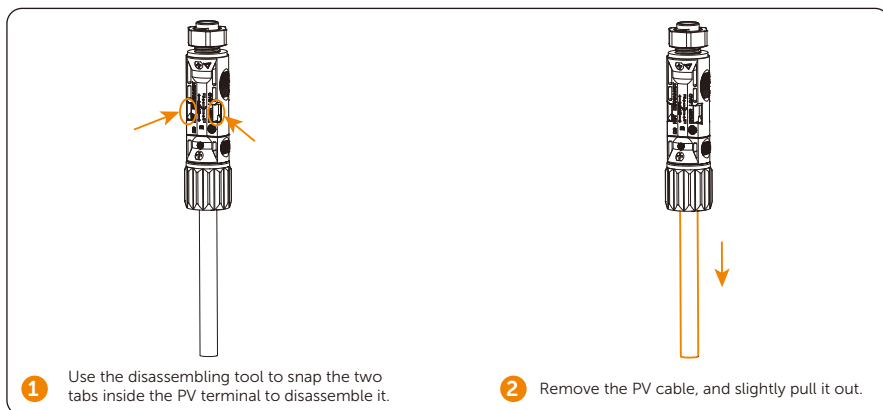


PV Connection

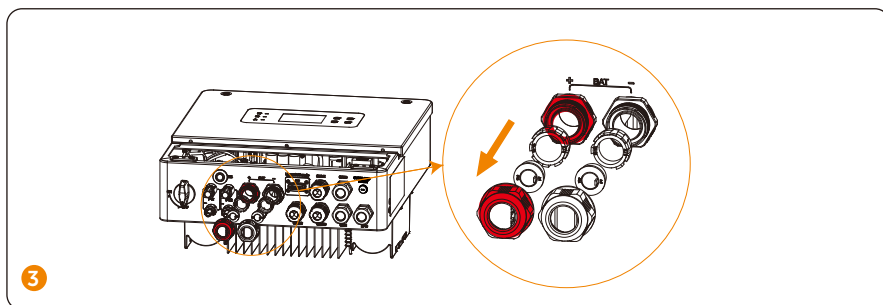
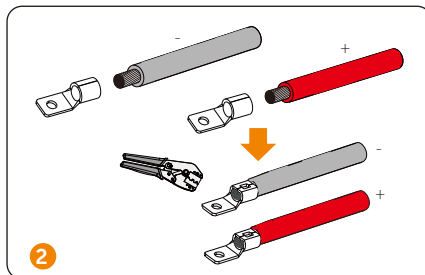
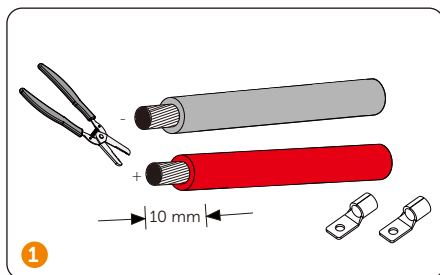




- Disassembling the PV cables

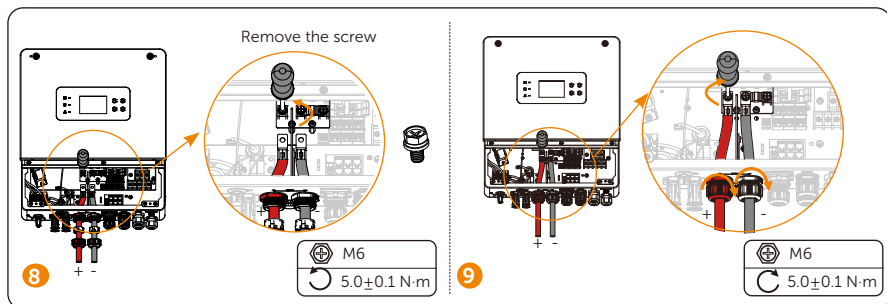
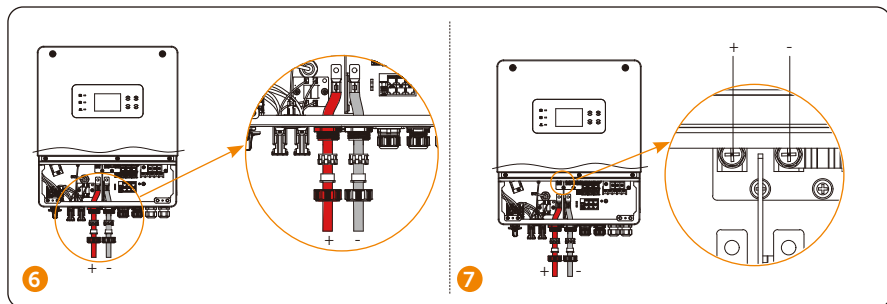
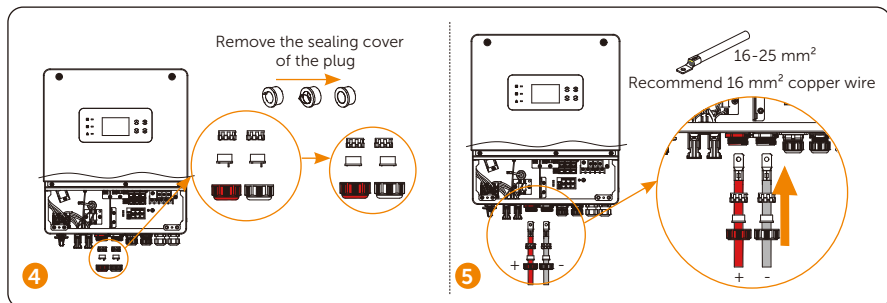


Battery Connection

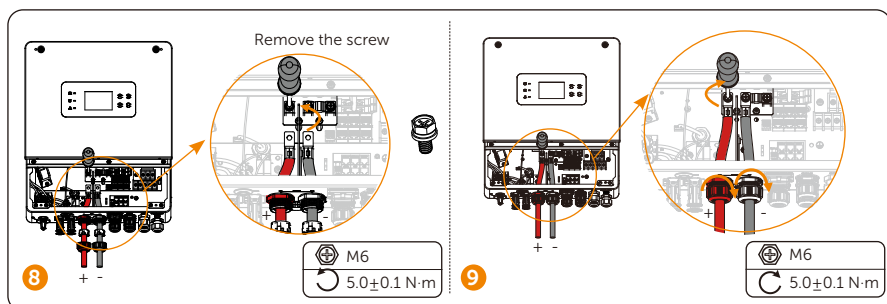
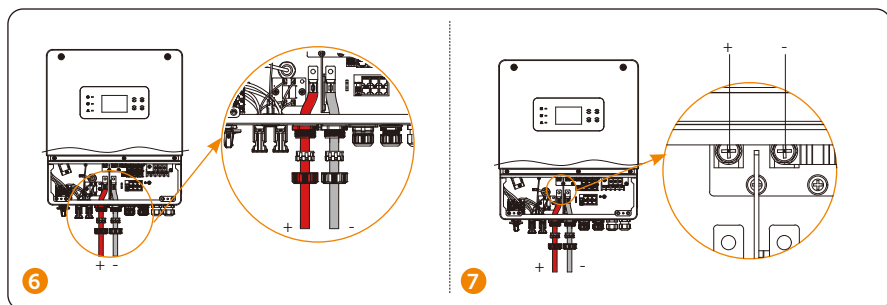
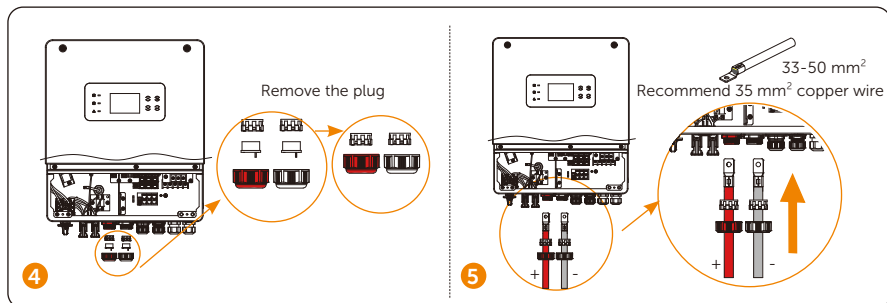


* If only the battery is connected and the PV, GRID, and GEN are not connected, press and hold the battery power button until the screen turns on to start the inverter.

- Battery connection for 3.0 kW to 4.0 kW

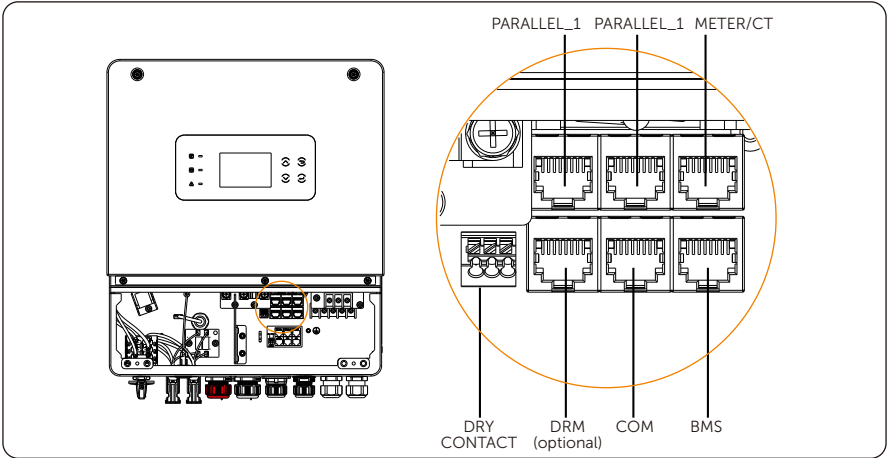


- Battery connection for 5.0 kW to 6.0 kW



Communication Connection

Communication ports diagram



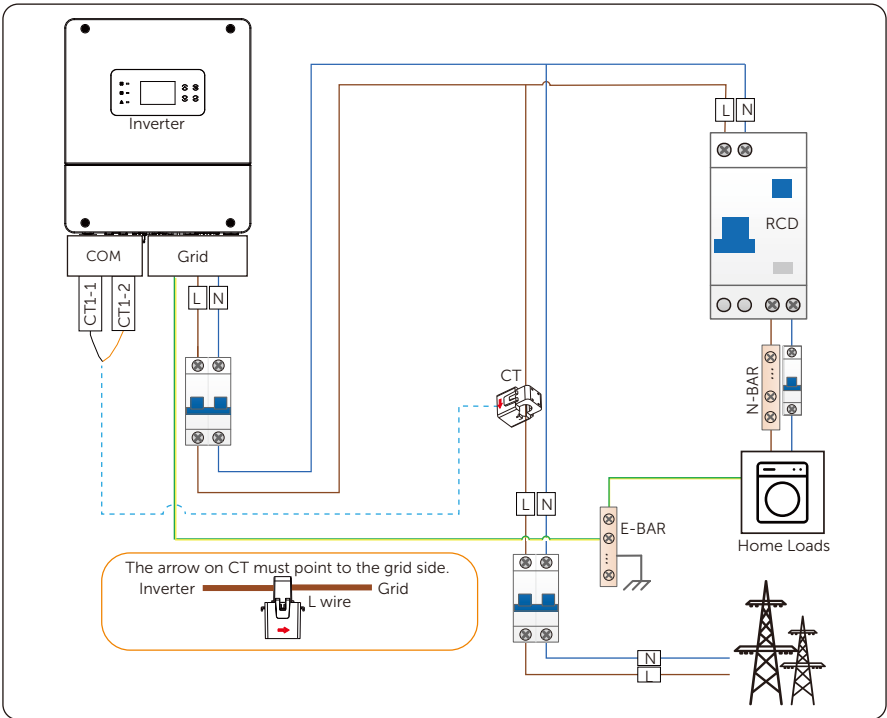
COM port assignment

Port	PIN	PIN Definition	Port	PIN	PIN Definition
PARALLEL_1	1	/	PARALLEL_2	1	/
	2	/		2	/
	3	/		3	/
	4	CAN_H		4	CAN_H
	5	CAN_L		5	CAN_L
	6	GND		6	GND
	7	SYNC_1		7	SYNC_1
	8	SYNC_2		8	SYNC_2
Meter/CT	1	CT1-1	DRY CONTACT	1	DO_1
	2	/		2	/
	3	/		3	DO_2
	4	RS485_A		/	/
	5	RS485_B		/	/
	6	/		/	/
	7	/		/	/
	8	CT1-2		/	/
DRM (optional)	1	DRM1/5	COM	1	DI_1
	2	DRM2/6		2	DI_2
	3	DRM3/7		3	/
	4	DRM4/8		4	RS485_A
	5	RG/0		5	RS485_B
	6	CL/0		6	GND
	7	/		7	/
	8	/		8	/

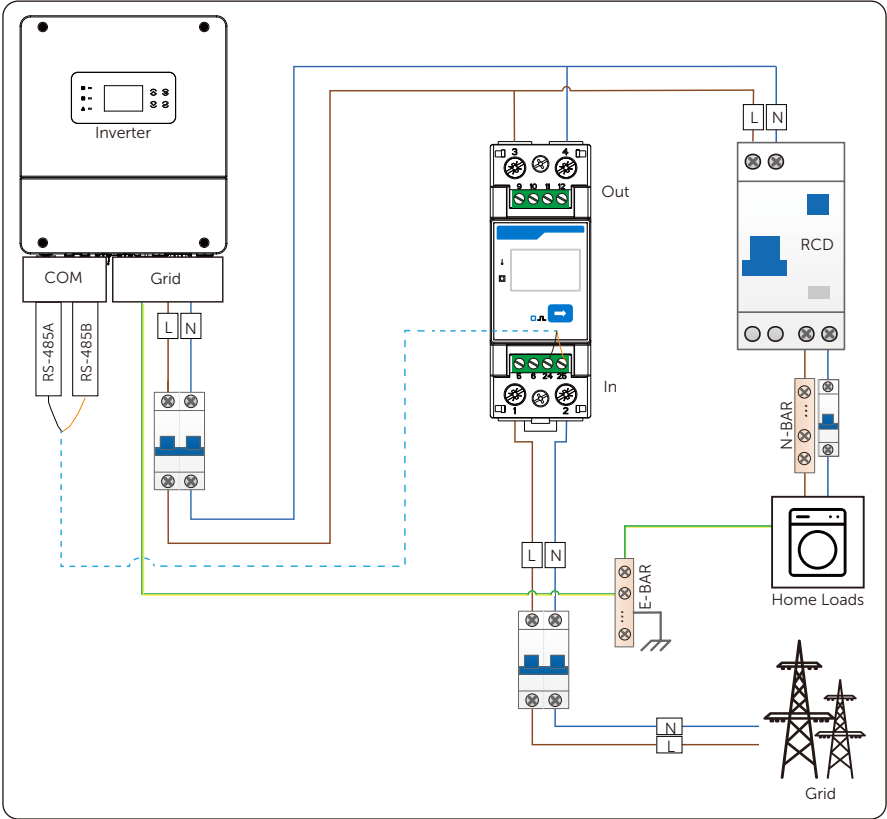
Port	PIN	PIN Definition	Port	PIN	PIN Definition
BMS	1	BMS_485B			
	2	BMS_485A			
	3	GND			
	4	BMS_CANH			
	5	BMS_CANL			
	6	/			
	7	WAKEUP			
	8	BAT_TEMP			

1. CT/Meter connection

- CT connection diagram



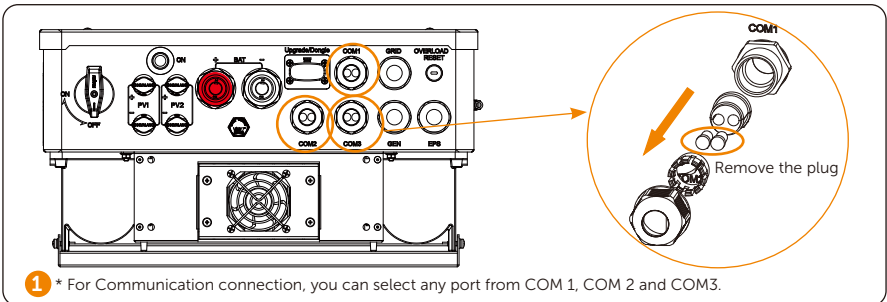
- Meter connection diagram

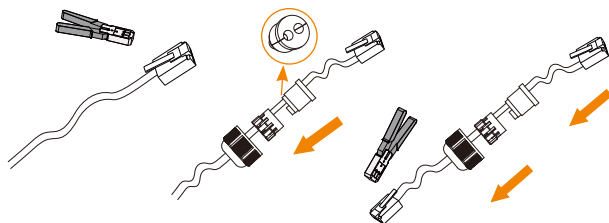


* If two meters were to be connected in the system, the communication cables of the meters should be connected in parallel, i.e. 485A & 485A, 485B & 485B.

* Only one of the Meter and CT connections can be selected. Meter cable goes to pin terminal 4 and 5; CT cable goes to pin terminal 1 and 8; reserve CT cable goes to pin terminal 3 and 6.

- CT/Meter connection steps





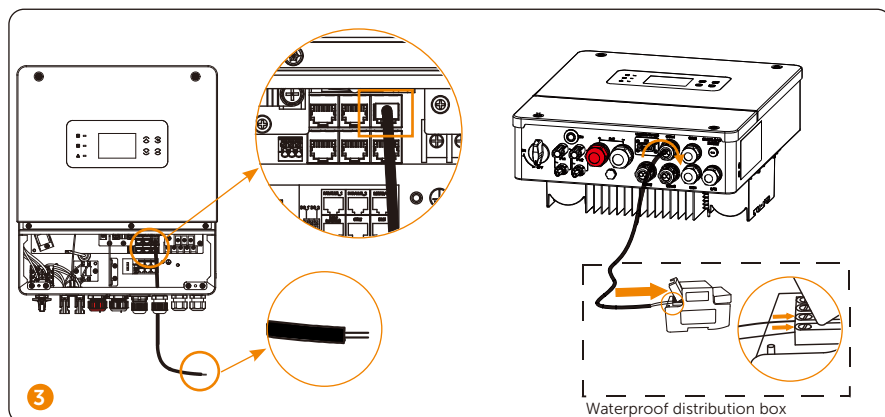
* It is recommended to use CAT5 network cable.

* For Meter connection, crimp only one RJ45 terminal.

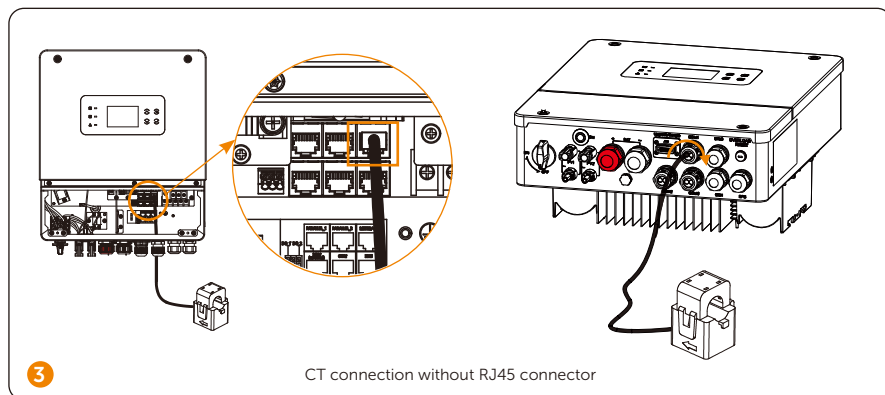
2 * For CT connection without RJ45 connector, there is no need to crimp another RJ45 terminal.

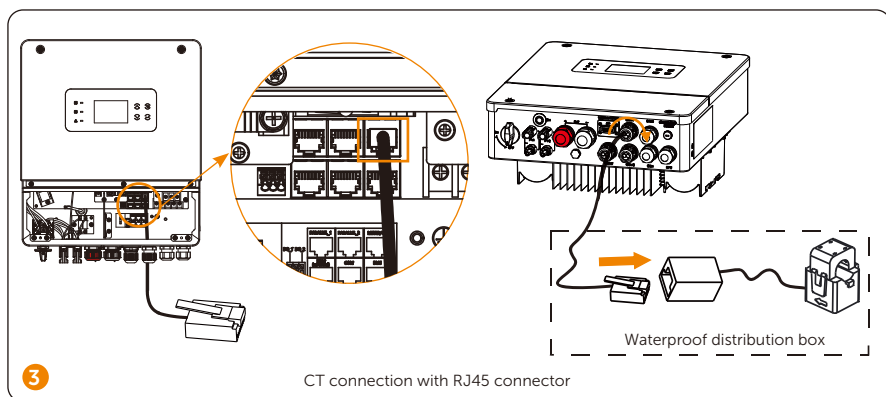
* For CT connection with RJ45 connector, crimp two RJ45 terminals.

• Meter connection

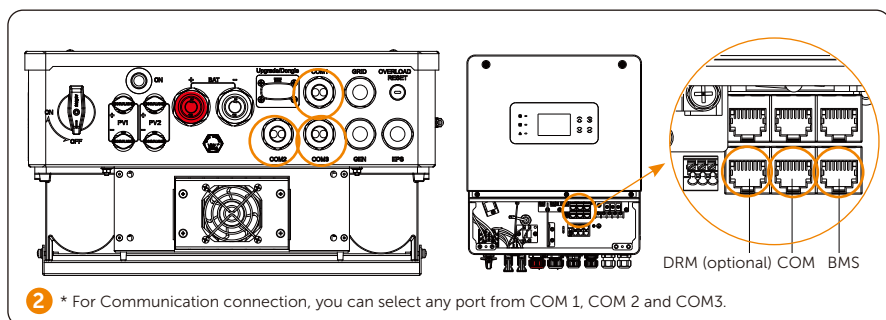
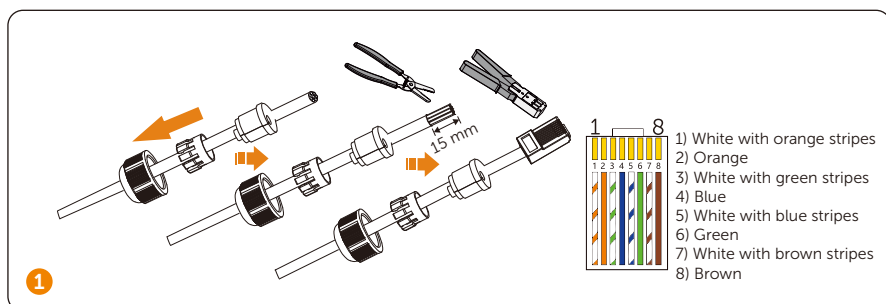


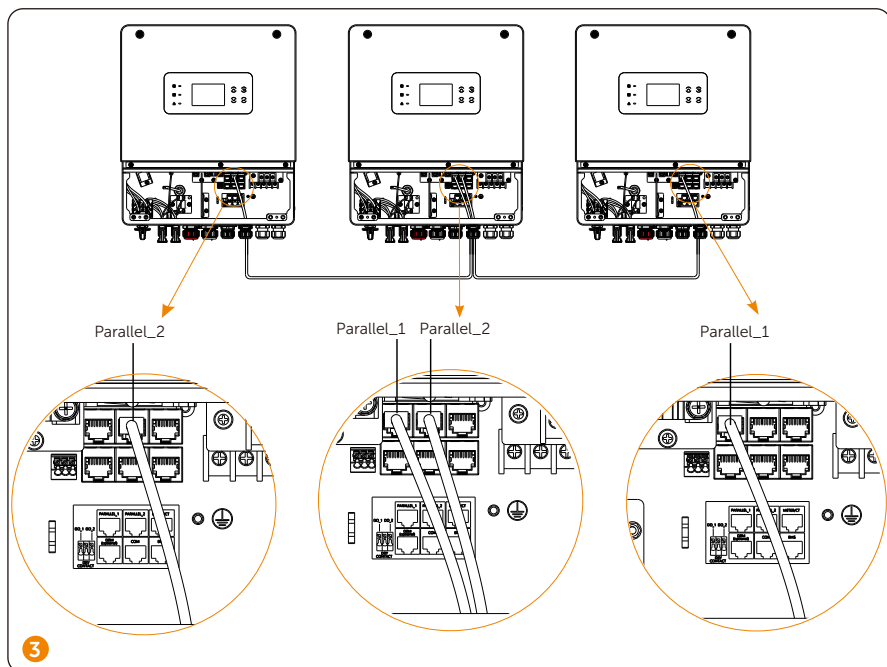
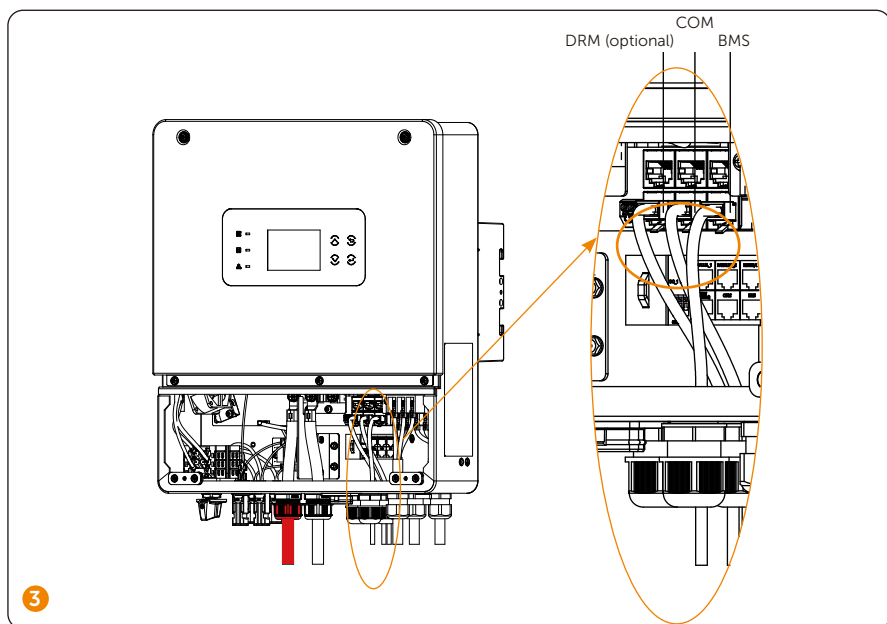
• CT connection





2. BMS/DRM/COM/Parallel port connection

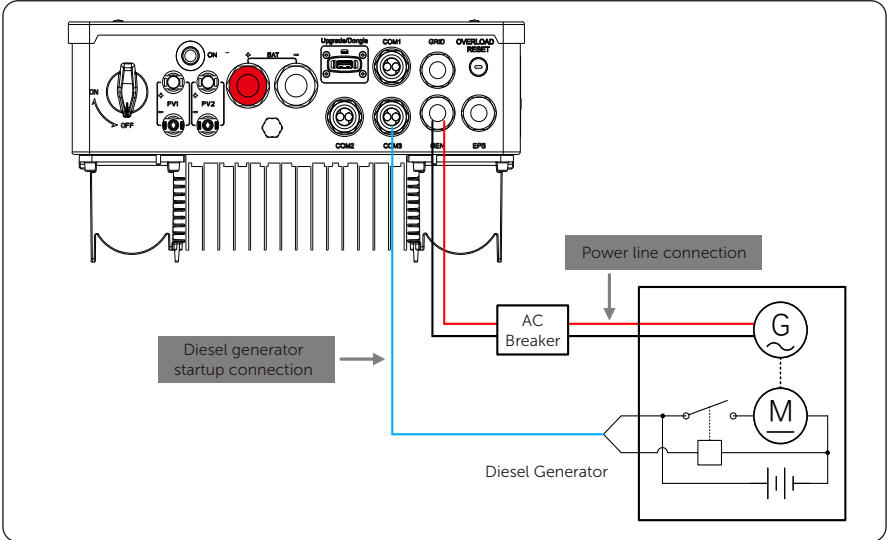




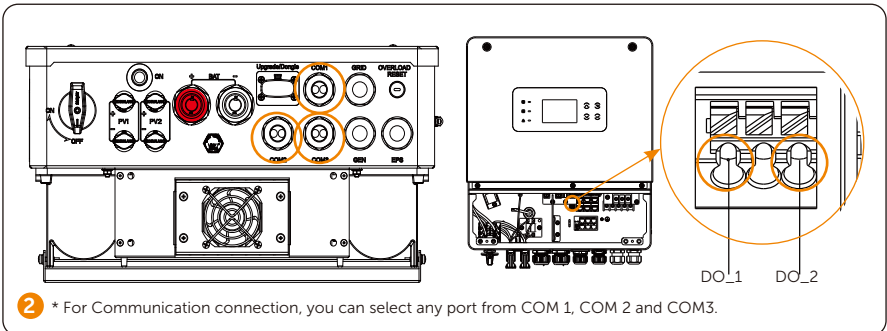
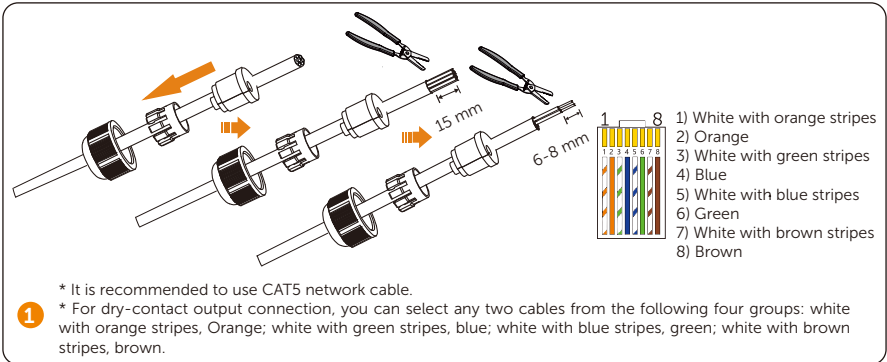
* In parallel operation, if there are PV modules, the master inverter must be connected to the PV modules.

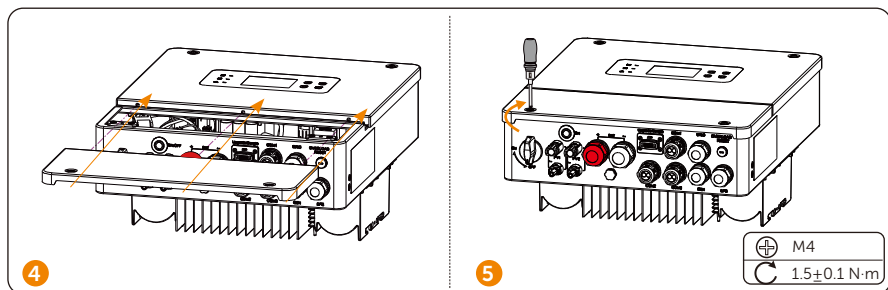
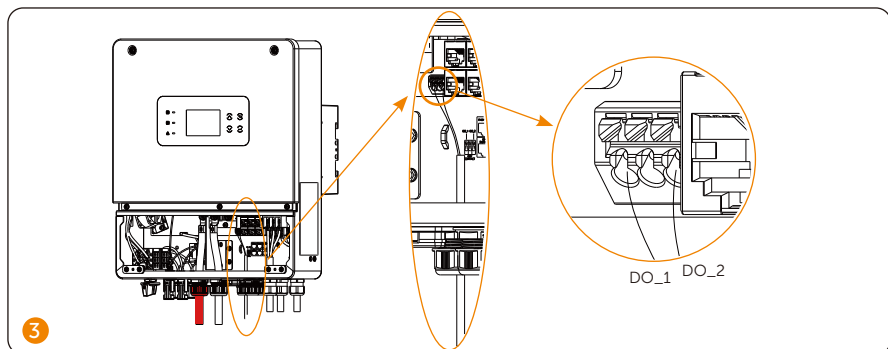
3. Dry-contact output connection

- Dry-contact output connection diagram

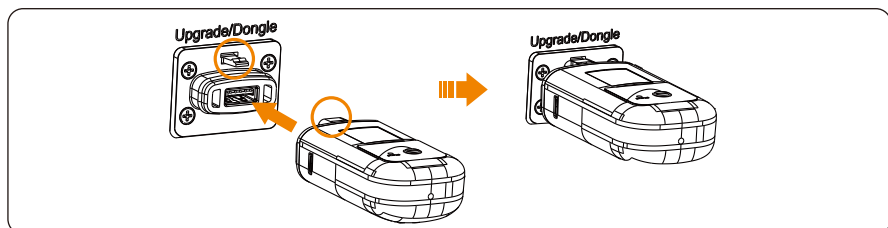


- Dry-contact output connection steps



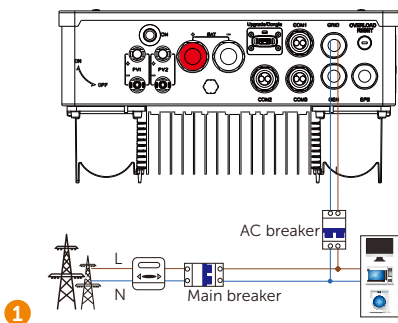


Monitoring Connection

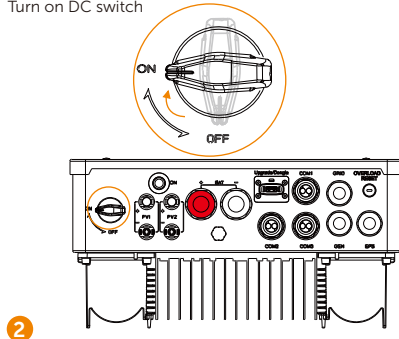


Power on the System

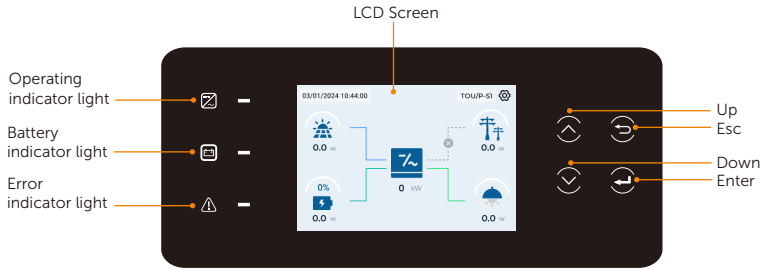
Turn on AC breaker



Turn on DC switch



LCD Panel



- In a normal state, the **PV, Inverter, Load, Grid** and **Battery** information will be displayed. You can touch the screen to check information.
- In an error state, the error message will be displayed, please refer to corresponding solutions in the user manual.

LED indicator	Status	Definition
 Operating	 Light on	The inverter is in grid-connected operation state or off-grid operation state.
	 Blinking	The inverter is in the process of grid connection or off-grid.
	 OFF	The inverter is in a fault or manual shutdown state.
 Battery	 Light on	The battery is online and the voltage is normal.
	 OFF	Low battery voltage or no battery.
 Error	 Light on	The inverter is in a fault state, stop running.
	 Blinking	The inverter has an alarm message.
	 OFF	The inverter has no faults or alarms.

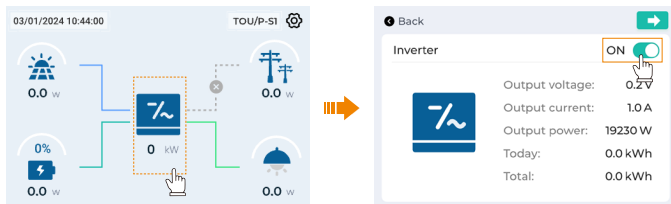
NOTICE!

- While upgrading, the green, blue and red indicator lights will flash in turns, indicating that the upgrade is in progress.

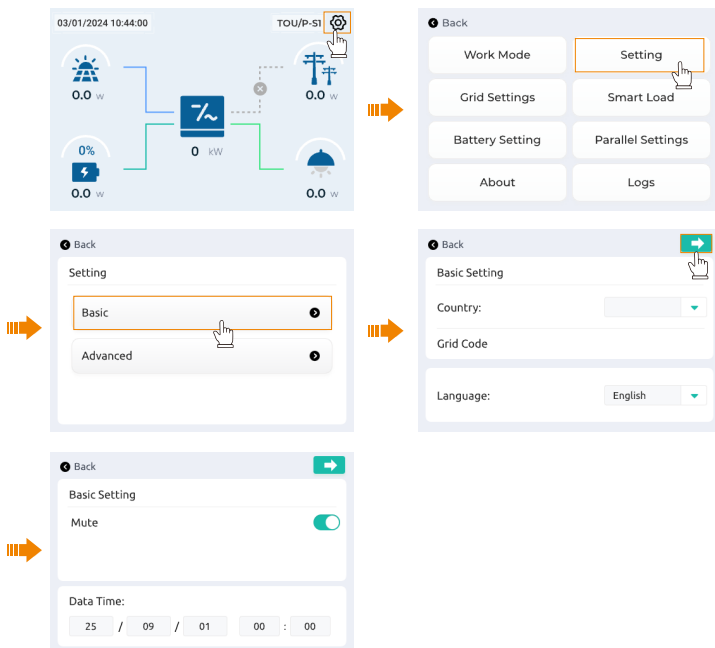
General Setting

1 System ON/OFF

Set the Power ON/OFF. Tap the icon of inverter, then enable or disable the button to power on/off the inverter.



2 Set the basic settings including country, grid code, language and system date&time. When Country is set to Pakistan, Work Mode is different from other countries.



* The default password for Advanced Setting is "2 0 1 4" which should be changed for the consideration of account security.

SolaXCloud Download



Scan the QR code to download SolaXCloud App. Follow the tutorial on the SolaXCloud APP or the App guide at <https://www.solaxcloud.com/> to set the WiFi configuration.

Warranty Registration

Please visit the website: <https://www.solaxcloud.com/user-center/> to complete the warranty registration. For more detailed warranty terms, please visit SolaX official website: www.solaxpower.com.



SolaX Power Network Technology (Zhejiang) Co., Ltd.

ADD.: No. 278, Shizhu Road, Chengnan Sub-district,
Tonglu County, Hangzhou, Zhejiang, China
E-mail: info@solaxpower.com