



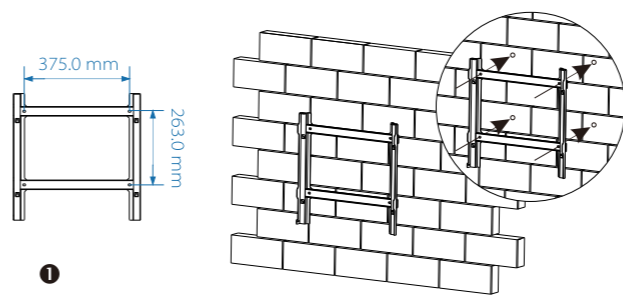
# Quick Installation Guide

## X1-Retro Fit 3.7KW-5.0KW

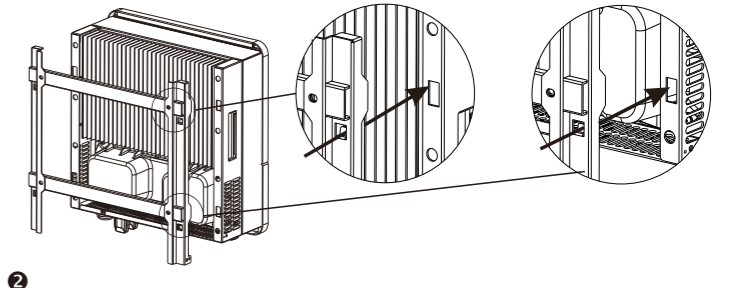
### II

## Mounting

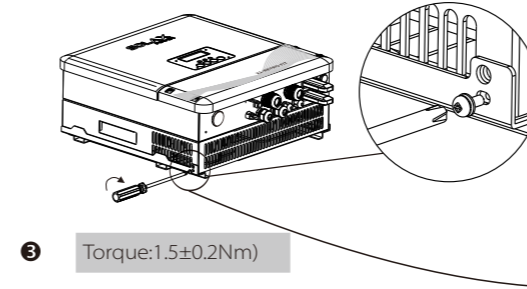
- Mark position of four holes.
- Drill holes with  $\phi 10$  drill. Depth: at least 60mm.
- Tighten the expansion tubes. Screw the expansion screws.



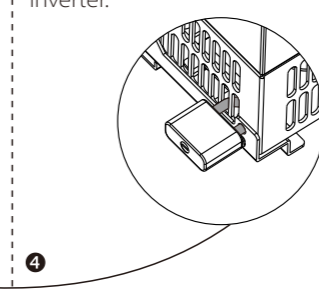
- Match the inverter with the bracket.



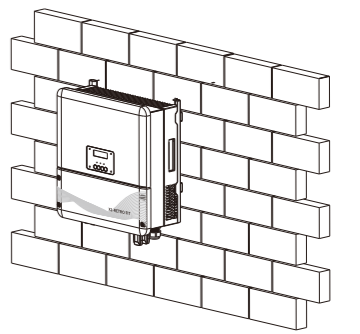
- Screw the set screw on the left-bottom of inverter tightly.



- If necessary, customer can install an anti-theft lock on the left-bottom of the inverter.

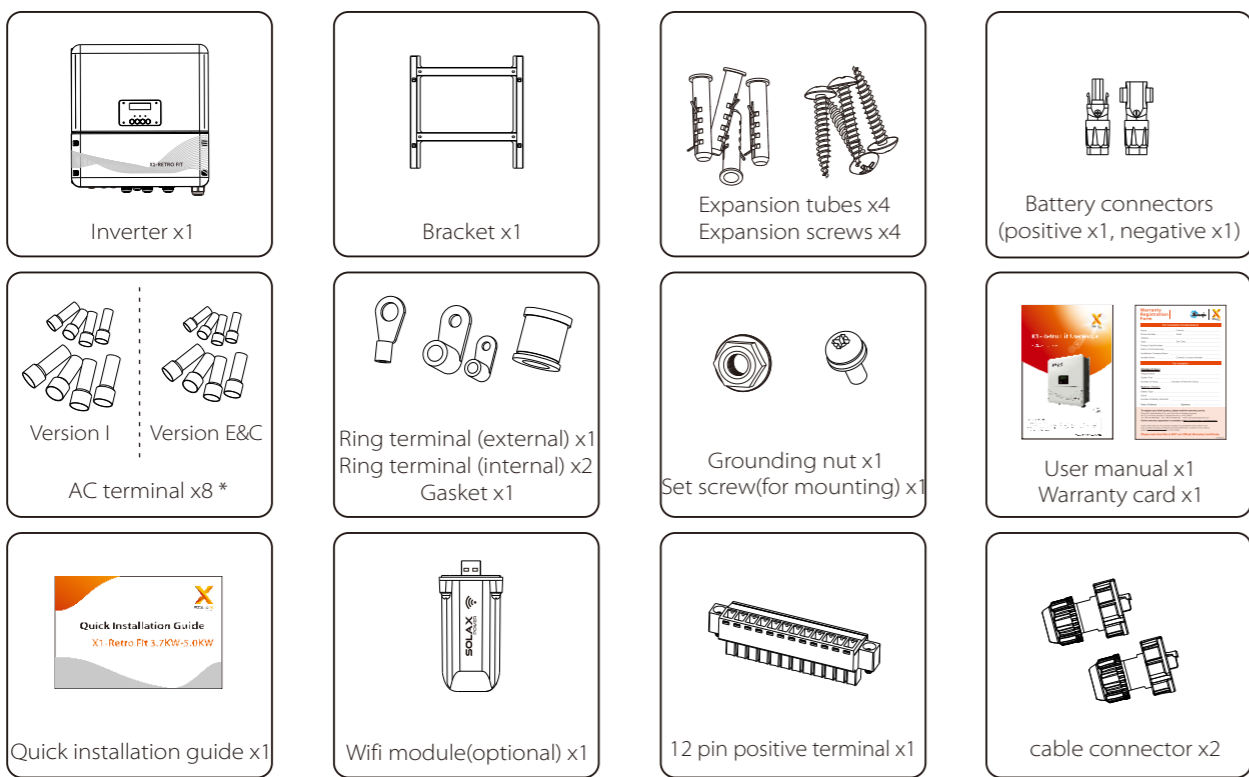


- Overview of Mounting



### I

## Packing List



AC terminal x8\*: 4pcs\* 6AWG AC terminals and 4pcs\* 10AWG AC terminals for Version I  
4pcs\* 10AWG AC terminals and 4pcs\* 8AWG AC terminals for Version E and Version C

### III

## AC Connection

Cable Size Recommended:

Model	X1-FR-3.7-E X1-FR-3.7-C	X1-FR-4.6-E X1-FR-4.6-C	X1-FR-5.0-E X1-FR-5.0-C
Cable	4-5mm	5-6mm	5-6mm
Micro-breaker	20A	32A	32A

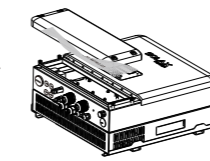
E Version & C Version

Model	X1-FR-3.7-I	X1-FR-4.6-I	X1-FR-5.0-I
Cable	8-10mm	10-13mm	10-13mm
Micro-breaker	50A	63A	63A

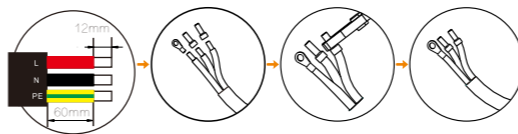
I Version

Connection steps:

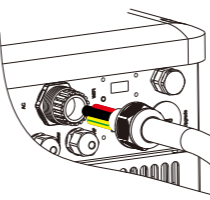
1. Remove the top-down cover.



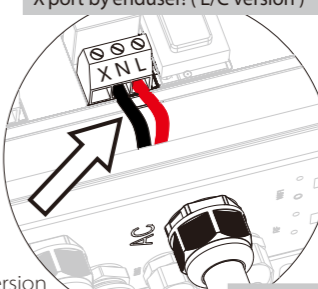
2. Make AC wires.



3. Insert AC cable into AC port through screw cap.



No need to connect wire on X port by enduser! (E/C version)



I port has been wired during the manufactory. (I version)



E/C Version

L-wire, N-wire connection

I Version

Torque: 1.2±0.1Nm

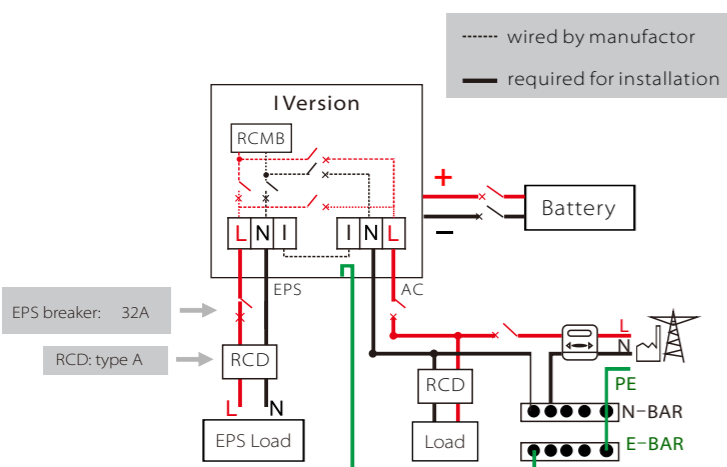
Torque: 1.2±0.1Nm

PE wire connection

## IV EPS Connection(for I version and E version)

Wiring diagram

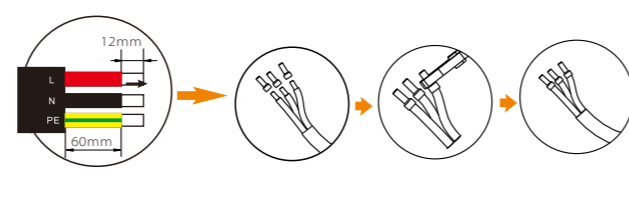
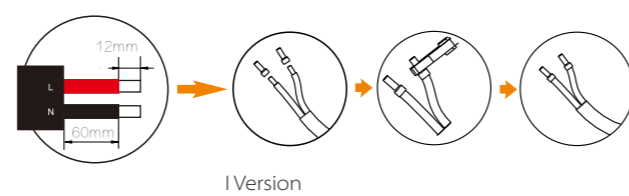
**I Version:** EPS function can be only be achieved automatically. Do not required for Changeover Switch.



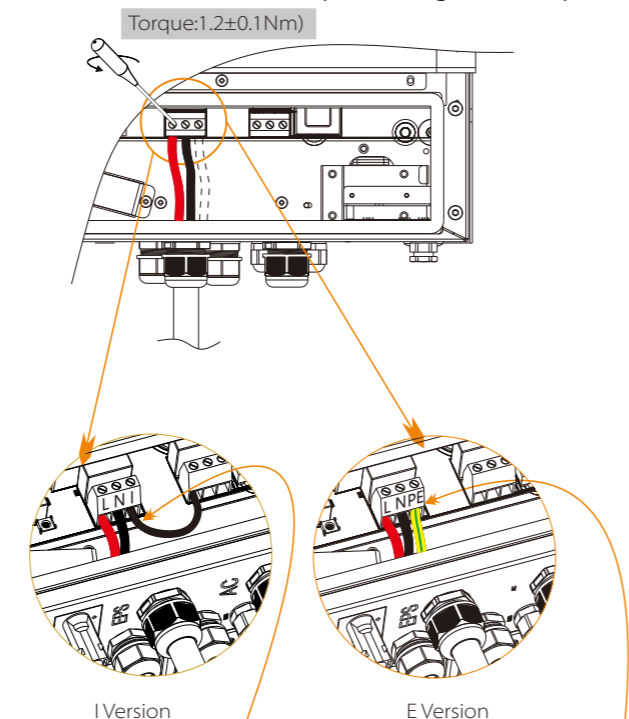
EPS connection steps:

Model	X1-FR-3.7E X1-FR-3.7I X1-FR-3.7C	X1-FR-4.6E X1-FR-4.6I X1-FR-4.6C	X1-FR-5.0E X1-FR-5.0I X1-FR-5.0C
EPS Cable	5mm	5mm	5mm
EPS breaker	25A	32A	32A

1. Make wires



2. Insert EPS cable into EPS port through screw cap.



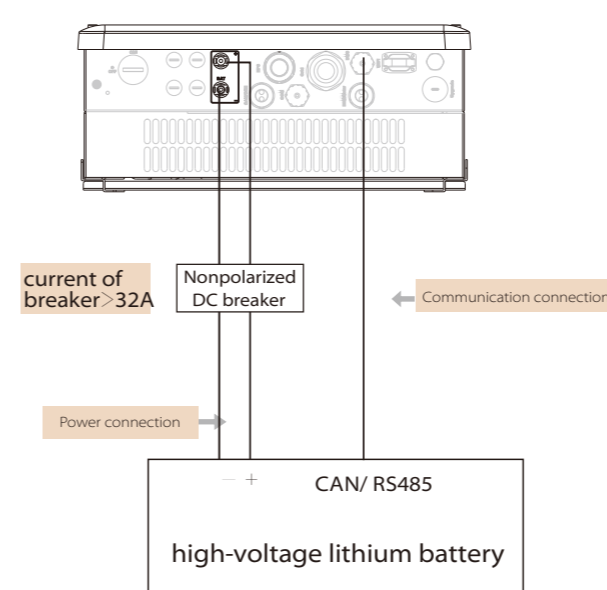
Note: The black cable (the I port) has been wired during the manufactory.

Note: Connect PE wire into PE port.

### V

## Battery Connection

Battery Connection Diagram



Battery breaker

Before connecting to battery, please install a nonpolarized DC breaker.

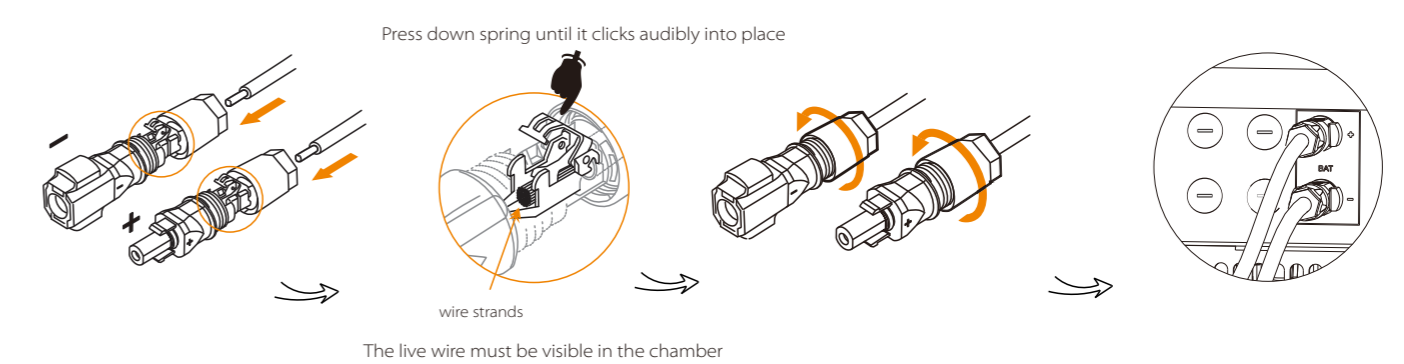
Model	X1-FR-3.7E X1-FR-3.7I X1-FR-3.7C	X1-FR-4.6E X1-FR-4.6I X1-FR-4.6C	X1-FR-5.0E X1-FR-5.0I X1-FR-5.0C
Voltage	Nominal voltage of DC breaker should be larger than maximum voltage of battery.		
Current(A)	32A		

BMS PIN Definition

Communication interface between inverter and battery is RS485 or CAN with a RJ45 connector. The battery communication can only work when the battery BMS is compatible with the inverter.

PIN	1	2	3	4	5	6	7	8
Definition	X	GND	GND	BMS_CANH	BMS_CANL	X	BMS_485A	BMS_485B

Power Cable Connection Steps:

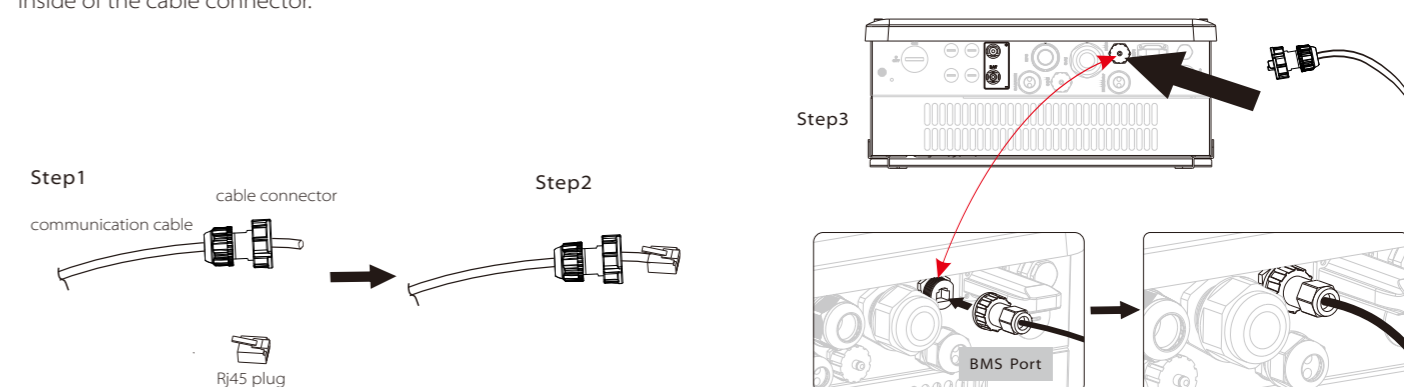


Communication Connection Steps:

**Step1.** Prepare a communication cable (without sheath) and insert the communication cable through the cable connector which can be found in the accessories package.

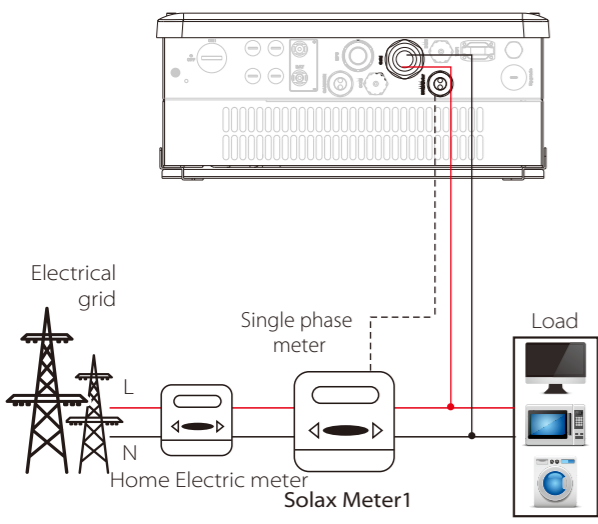
**Step2.** Crimp the communication cable with a RJ45 plug which is inside of the cable connector.

**Step3.** Insert the cable connector into BMS port inside of inverter and screw it tightly. Then insert other side of communication cable into RS485 or CAN port on the battery. Battery BMS module (Pylontech: RS485 port; Triple Power: CAN port; Please check the battery manual for more details).



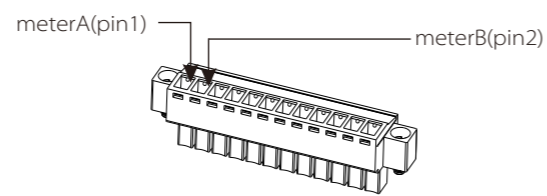


## Meter connection diagram



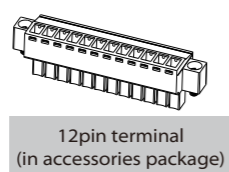
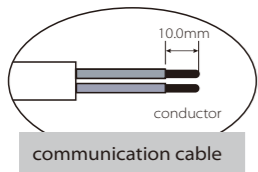
## Meter PIN Definition

Communication interface between inverter and meter is RS485 with two wires.  
Connect the RS485 line from meter with a RJ45 connector and finish the configuration, then plug this RJ45 connector to the "Meter" port of the inverter.  
Note: Please make sure meterA and meterB is connected to port RS485A and RS485B on the meter.

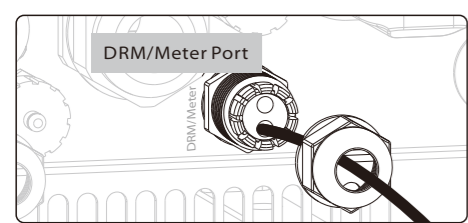


## Meter Connection Steps:

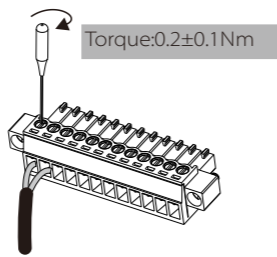
Step1. Prepare two communication wires and find a 12pin terminal in the accessories package.



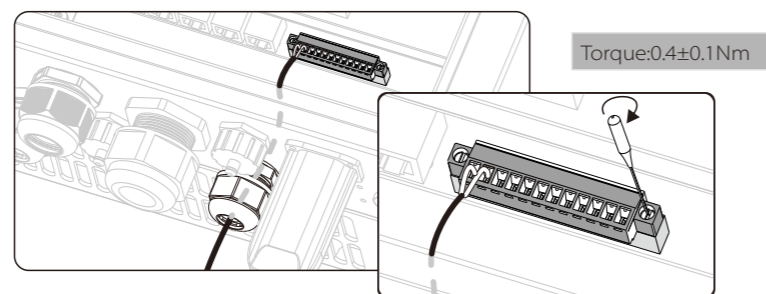
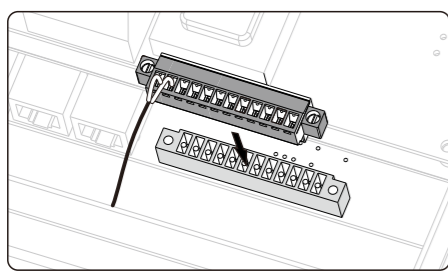
Step2. Unscrew the nut of Meter connector and insert two communication wires through it.



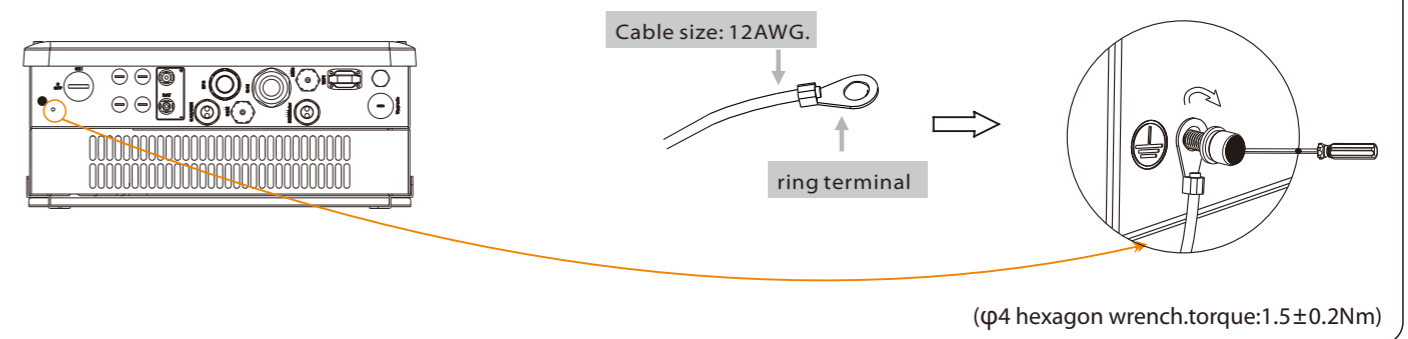
Step3. Strip the insulation from the communication wires, then insert one side of wires into pin1 and pin 2 holes of the 12 pin positive terminal which can be found in accessories package. And then screw them tightly.



Step4. Insert the positive terminal into the corresponding negative terminal block inside of the inverter. And then screw it tightly. (Please refer to the meter instructions for the wiring of the meter.)

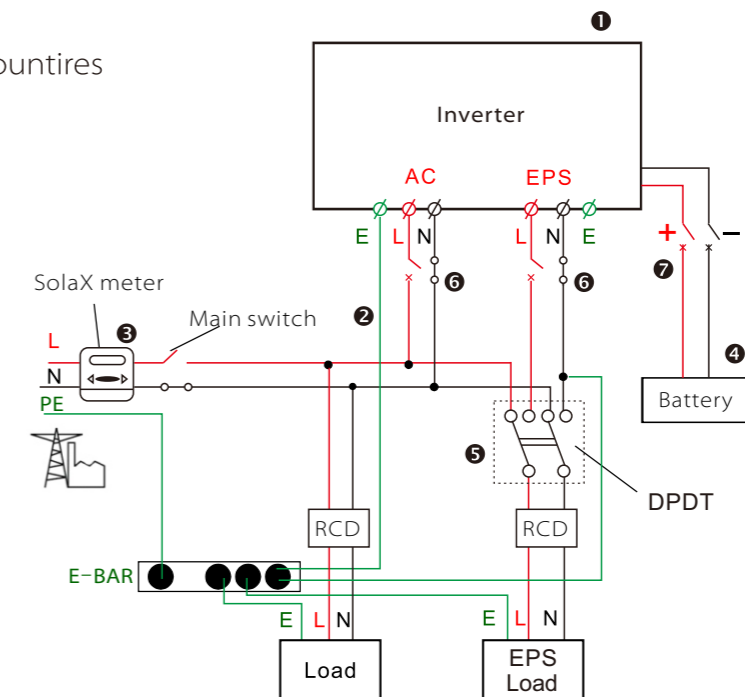


## Earth Connection Steps(mandatory):



## Start inverter

Applies to most countries



- 1 Check the inverter is fixed well on the wall.
- 2 Make sure all the AC wirings are completed.
- 3 Make sure the meter is connected well.
- 4 Make sure the battery is connected well.
- 5 Make sure the external EPS contactor is connected well. (if needed)
- 6 Turn on the AC breaker and EPS breaker.
- 7 Turn on the battery breaker.
- 8 Long-press the "Enter" key for five seconds to exit Off Mode. (The mode is Off Mode when you use it for the first time; Factory default: Off Mode)

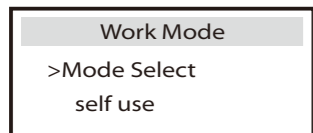
Inverter will start up automatically when the battery is discharging. Check the status of indicators and LCD screen. The left indicator should be blue and the indicator screen should display the main interface.

<b>1.Set language</b> Language English Deutsch Italian	<b>2.Set date time</b> Date time 2017 ->06 <-06 10:19	<b>3.Set the safety standard</b> Safety Country > AS4777	<b>4.Set export control</b> Export Control Use Value: 10000W This function allows the inverter able to control energy exported to the grid. There are user value and factory value. The factory value is default which can not be changed by user. The user value set by installer must be less than the factory value.
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## 5.Set work mode

There are 4 work modes for choice. Self use/ Back Up Mode/ Feed in Priority/ Force Time Use  
All these work modes is available for on-grid condition only:

Parameter	Comment
Self Use (default)	The PV generated power will be used to supply the local loads first, then to charge the battery. The redundant power will export to the public grid. When there is no PV supplied, battery will discharge for local loads first, and grid will supply power when the battery capacity is not enough. The priority of inverter output power is: supplying the load → charging the battery → feeding to the grid
Back Up Mode	Battery will stop discharging to keep higher capacity when the grid is on. when the power generated by PV is not enough, the battery will discharge to supply the local loads too. And if still not enough, the grid will power the local loads together. This work mode applies to the area where suffering from blackout regularly.
Feed in Priority	The priority of inverter output power is: feeding to the grid → supplying the load → charging the battery. This work mode applies to the area with high feed-in tariff.
Force Time Use	In this work mode the charging and discharging time can be set flexibly, and it also allows to choose whether charge from the grid or not. Other time it follows the priority of Self Use mode.

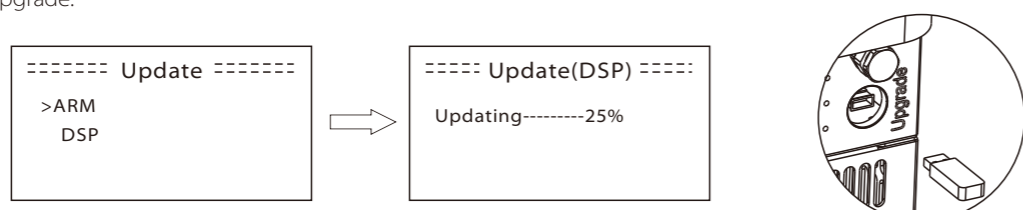


## Preparation

Please ensure the inverter is steadily powered on.  
Inverter must keep the battery on through whole procedure of upgrading.  
Please prepare a PC and make sure the size of U-disk is under 32G, and the format is fat 16 or fat 32.

## Upgrading Steps:

- Step1.** Please contact our service support to get the update files, and extract it into your U-disk as follow:  
"update\ARM\618.000XX.00\_Hybrid\_X1 G3\_Manager\_VX.XX\_XX-XX.usb";  
"update\DSP\618.000XX.00\_Hybrid\_X1 G3\_Master\_VX.XX\_XXXXXXXX";  
(Note: V:xxx is version number, xxxxxxxx is file compilation date. DO NOT modify the program file name, or it may cause that the inverter can't work anymore!)
- Step2.** Press the "Enter" key for 5 seconds to enter Off Mode. Then unscrew the waterproof lid and insert U-disk into the "upgrade" port at the bottom of the inverter.
- Step3.** The LCD will be shown as the picture below. Then press up and down to select the one that you want to upgrade and press "OK" to confirm to upgrade.



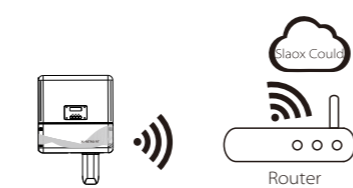
**Step4.** After the upgrade is finished, the LCD will display "succeed"(only for DSP upgrades), please remember to pull off the U-disk, screw the waterproof lid and press the "Esc" to return to the Main interface. Then press the "Enter" key to exit Off Mode.

SolaX provides two ways for users to choose: external pocket product(WIFI/LAN/GPRS) and internal Ethernet(LAN)

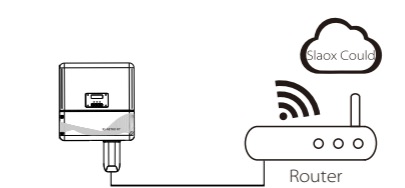
## External Pocket Product (Purchase the product from supplier if needed)

SolaX could provide three type external monitoring data collector, and they are Pocket wifi, Pocket LAN and Pocket GPRS.

## Pocket WIFI Connection Diagram



## Pocket LAN Connection Diagram

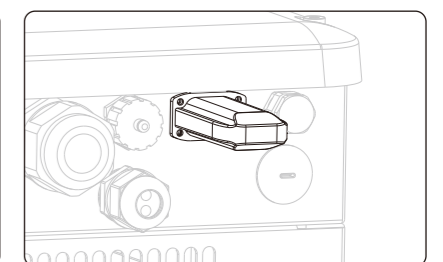
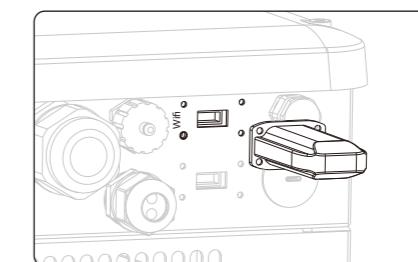


## Pocket GPRS Connection Diagram



## WiFi Connection Steps:

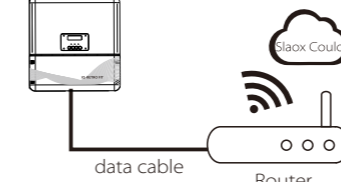
- Step1. Plug Pocket product into "WiFi" port at the bottom of the inverter.
- Step2. Build the connection between the inverter and router.
- Step3. Create a user account online. Please check the Pocket WiFi user manual for more details.



## Internal Ethernet(LAN)

LAN communication is the standard communication interface.

## Diagram



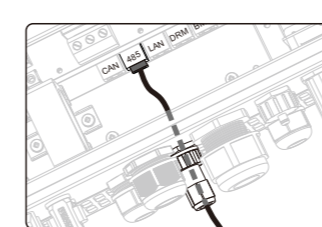
## LAN PIN Definition

Communication interface between inverter and router is RS485 with a RJ45 connector.

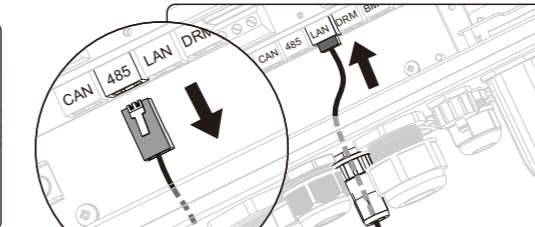
1	2	3	4	5	6	7	8
TX+	TX-	RX+	X	X	RX-	X	X

**Note!** 485 communication and LAN communication have respective RJ45 port interface inside of the inverter. But them share the same connection port (COM port) on the bottom of the inverter. 485 communication is default, if user wants to use LAN function, it needs to open the lid cover to operate.

**Step1.** Open the lid cover, then it can be seen that a network cable has been inserted in the 485 RJ45 port.



**Step2.** Pull out the network cable, then insert it into the LAN RJ45 Port tightly.



**Step3.** For the external network cable operation, please refer to 485 connection steps.

