



# Quick Installation Guide

## X3-Retro Fit 8kW-10kW

II

## Mounting Steps

Mark position of six holes.  
 Drill holes with  $\phi 10$  drill. Depth: at least 60mm.  
 Drill holes with  $\phi 10$  drill. Depth: at least 60mm.

Aim the upper side of the inverter to the top small hook of the bracket.  
 Make the bottom of the inverter lean on the bracket.  
 Press the inverter slightly toward the hole to make it firmly installed.

Screw the set screw on the right-top of inverter tightly.

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

Overview of Mounting

I

## Packing List

|                             |                                       |   |   |
|-----------------------------|---------------------------------------|---|---|
| Inverter X1                 | Bracket X1                            | Expansion tubes X6<br>Expansion screws X6 | Battery connectors (positive X1, negative X1) |
| AC terminal X12             | Ring terminal X2<br>Grounding nut X1  | Set screw (for mounting) X2               | User manual X1<br>Warranty card X1            |
| Quick installation guide X1 | Meter X1<br>WiFi module (optional) X1 | Smart Plug (optional) X1                  |   |

III

## AC Connection

AC connection steps (AC cable size: refer to table1):

1. Remove the top-down cover.
2. Make AC wires.
  - a. L-wire, N-wire connection
  - b. PE wire connection
3. Insert AC cable into AC port through screw cap.
4. Connect the wire to the AC terminal in the inverter.

| Model         | X3-FR-80-E         | X3-FR-80-C         | X3-FR-100-E        | X3-FR-100-C        |
|---------------|--------------------|--------------------|--------------------|--------------------|
| Cable         | 4-5mm <sup>2</sup> | 4-5mm <sup>2</sup> | 5-6mm <sup>2</sup> | 5-6mm <sup>2</sup> |
| Micro-breaker | 25A                | 25A                | 32A                | 32A                |

table1

IV

## EPS Connection (for E Version)

EPS wiring diagram

• E Version • For AU/NZ

• E Version • For Other Countries

EPS connection steps:

1. Make wire (EPS cable size: refer to table 2)
2. Insert EPS cable into EPS port through screw cap.

table2: Cable and Micro-breaker recommended

| Model       | X3-FR-80-E        | X3-FR-80-C        | X3-FR-100-E       | X3-FR-100-C       |
|-------------|-------------------|-------------------|-------------------|-------------------|
| EPS Cable   | 25mm <sup>2</sup> | 25mm <sup>2</sup> | 25mm <sup>2</sup> | 25mm <sup>2</sup> |
| EPS breaker | 32A               | 32A               | 32A               | 32A               |

Note: The N port at right should not be connected!

Note: Connect PE wire into N port at right!

V

## Battery Connection (optional)

Battery connection diagram

Battery breaker

Before connecting to battery, please install a nonpolarized DC breaker to make sure inverter can be securely disconnected during maintenance.

| Model      | X3-FR-80-E  | X3-FR-80-C | X3-FR-100-E | X3-FR-100-C |
|------------|---|------------|-------------|-------------|
| 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 CAN with a RJ45 connector.

| PIN        | 1 | 2   | 3 | 4        | 5        | 6   | 7        | 8        |
|------------|---|-----|---|----------|----------|-----|----------|----------|
| Definition | X | GND | X | BMS_CANH | BMS_CANL | GND | BMS_48SA | BMS_48SB |

Note: The battery communication can only work when the battery BMS is compatible with the inverter.

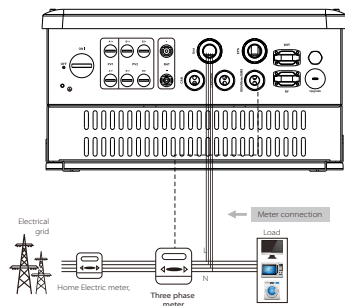
A: Power Connection Steps:

B: Communication Connection Steps:

BMS Port: The first RJ45 port from right

- Step1: Disassemble the GEN/Meter /BMS cable gland.
- Step2: Prepare a communication cable (without sheath) and insert the communication cable through the cable nut.
- Step3: Assemble the cable gland and screw the cable nut.
- Step4: Insert one RJ45 side of the cable into BMS port inside of inverter and the other side into RS485 or Can port of the battery.

## Meter connection diagram



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

## Meter connection step

1) Insert L/N wires and the 485 cable into the meter.

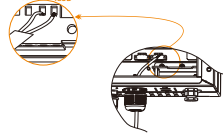
2) Insert the other side of the cable into the meter port on the inverter.

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

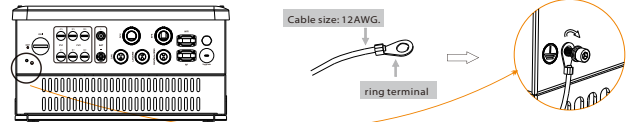


b. Trip the insulation from the communication cable, and then insert it into connector.

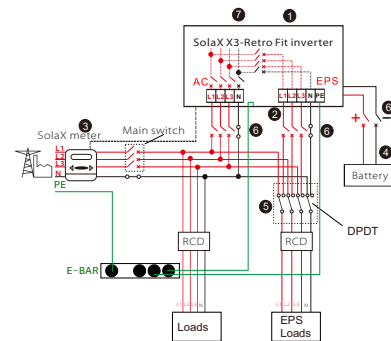
c. Insert connection into corresponding Meter terminal inside of the inverter.



## Earth Connection Steps(mandatory):



## Start inverter



- 1 Ensure the inverter 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 switch, EPS switch and battery switch.
- 7 Press the "Enter" key for five seconds to exit Off Mode. (The mode is factory defaulted as 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.

## Firmware Upgrading

## 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 an U-disk.

**Warning!** Make sure the input power is more than 180V (operate the upgrade on a sunny day), otherwise it may result in serious failing during upgrading.

1) Please contact our service support to get the update files, and extract it into your U-disk as following:

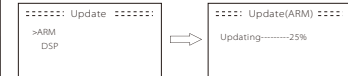
\*update\ARM\618.00098.00\_Hybrid\_X3G\_Manager\_V1000\_X00X0.usb\*

\*update\DSP\618.00096.00\_Hybrid\_G3X3\_Master\_V1000\_X00X0.usb\*

2) 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.



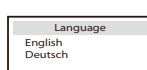
3) The LCD will be shown as picture 3-1. Then press up and down to select the one that you want to upgrade and press "OK" to confirm to upgrade.



4) 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.

## Start Guide

## 1.Set language



## 2.Set date time



## 3.Set the safety standard



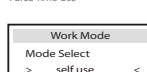
## 4.Set export control



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 charged by user. The user value setting by installer must be less than the factory value.

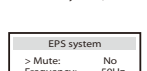
## 5.Set work mode

There are 4 work modes for choice.  
Self use/  
Back up mode/  
Feed in Priority/  
Force Time Use



| Parameter          | Comment  |
|--------------------|--|
| Self Use (default) | The external generator generated power will be used to supply the local loads firstly, then to charge the battery. The redundant power will export to the public grid.   |
| Back Up Mode       | When there is no external generator supplied, battery will discharge for local loads firstly, and grid will supply power when the battery capacity is not enough.<br>The Battery will charging forcibly in the setting time, and it can choose whether charge from the grid or not. The battery stop discharging to keep higher capacity when the grid is on. Only when the grid is off and the power generated is not enough, battery will start to discharge to keep the emergency load working normally.<br>This work mode applies to the area where suffering from blackout regularly. |
| Feed in Priority   | The priority of inverter output power is: supplying the load → feeding to the grid → charging the battery.<br>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 select whether charge from the grid or not.   |

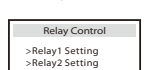
## 6.Set EPS system(For E Version only)



X3-Retro Fit inverter with E Version can work on the EPS mode. EPS parameters can be set as below.  
- "Mute" means you can set the warning of system which has entered EPS mode.  
- "No" means there will be a buzzing and it is the default value.  
- "Yes" means you choose to shut down the system warning.

Besides, if the buzzing is sharp, it means EPS output is over loads.  
Frequency here can be set 50Hz or 60Hz please based on correlative loads.

## 7.Set relay control (The function is being developed)



Relay Control is an optional function which can control designated load intelligently by consuming the surplus energy when feed in power reaches certain values.  
This function can only be achieved with solax product "Smart Plug".  
For specific operation, please refer to "Smart Plug user manual".

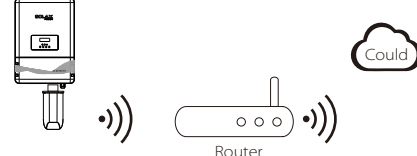
## Monitoring Operation

Solax provides two ways for users to choose: WiFi(optimal) and Ethernet(LAN)

## WiFi(optimal)

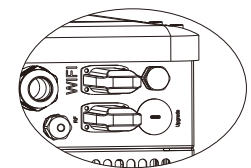
Inverter provides a WiFi port which can collect data from inverter and transmit it to monitoring-website via a Pocket WiFi. (Purchase the product from supplier if needed)

## Diagram



## WiFi Connection Steps:

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



## Ethernet(LAN)

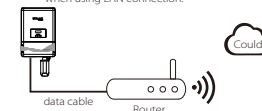
LAN communication is the standard communication interface. It can transmit the data between the router and inverter via the local network.

## Application Occasion

This function is applicable for the below situation:  
When the WiFi signal is too weak to transmit data, user can use LAN port for the monitoring with a data cable.  
Note: The WiFi module still needs to be connected when using LAN connection.

## LAN PIN Definition

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



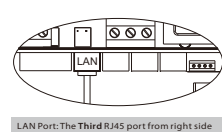
| 1   | 2   | 3   | 4 | 5 | 6   | 7 | 8 |
|-----|-----|-----|---|---|-----|---|---|
| TX+ | TX- | Rx+ | X | X | Rx- | X | X |

## LAN Connection Steps:

Please refer to BMS connection steps (for user manual page30) for LAN connection. Please kindly noted the PIN definition and port position will be slightly different.



LAN/DIRM Port



LAN Port: The Third RJ45 port from right side