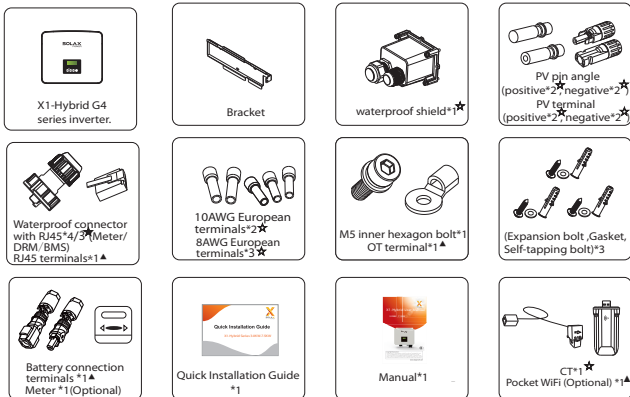




Quick Installation Guide

X1-Hybrid 3.0KW-7.5KW

I Packing List

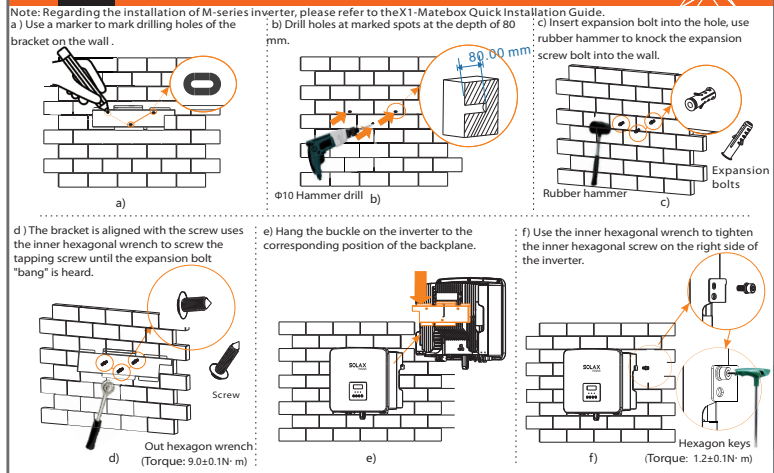


- Note:**
- Accessories marked with "★" indicate that they are not included in the accessory package of M-series inverter, but included in X1-Matebox.
 - Accessories marked with "▲" indicates that, the D-series inverter is equipped with 4 pieces for Australia and 3 pieces for other countries, and the M-series inverter is equipped with 3 pieces for Australia and 2 pieces for other countries.
 - Accessories marked with "▲" indicate that they are included in the D-series inverter, but not the M-series inverter.

II Tool Preparation



III Mounting Steps



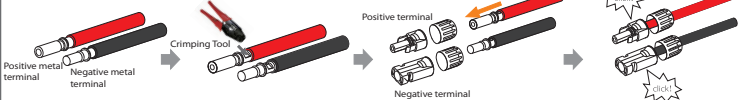
IV PV Connection

The PV port wiring of X1-Hybrid G4 M series inverter has been completed. On X1-Matebox, the D series needs to be wired according to the following steps.

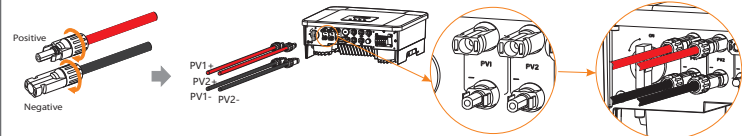
Step 1. Turn off the DC switch, connect the PV module, prepare a 12 AWG PV cable, and find the PV (+) terminal and PV (-) terminal in the package.



Step 3. The PV connector is divided into 2 parts, to the plug and the fastening head. Pass the cable through the fastening head and the alignment plug. Note that the red and black lines correspond to different pairs of plugs. Finally, force the cable into the plug and hear a "click" to indicate that the connection is complete.



Step 4. Tighten the fastening head and into insert the corresponding positive and negative (PV-/PV+) parts of the inverter.



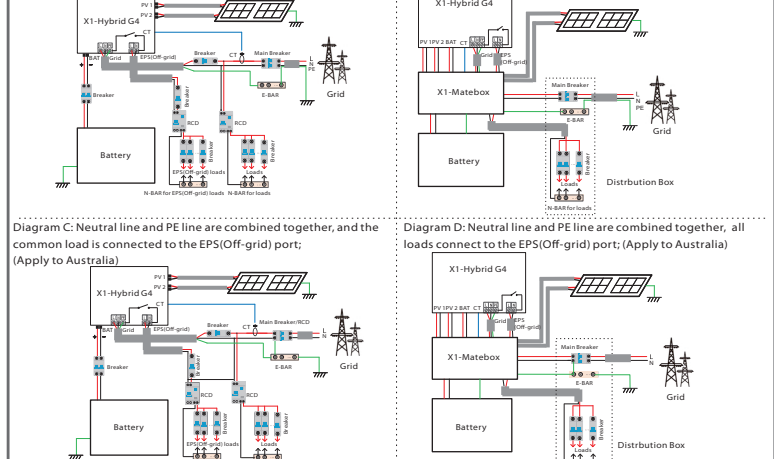
V Grid and EPS(Off-grid) Connection

Diagram A: Neutral line and PE line are separated from each other, and the common load is connected to the EPS(Off-grid) port; (For most countries)

Diagram B: Neutral line and PE line are separated from each other, all loads connect to the EPS(Off-grid) port; (For most countries)

Diagram C: Neutral line and PE line are combined together, and the common load is connected to the EPS(Off-grid) port; (Apply to Australia)

Diagram D: Neutral line and PE line are combined together, all loads connect to the EPS(Off-grid) port; (Apply to Australia)



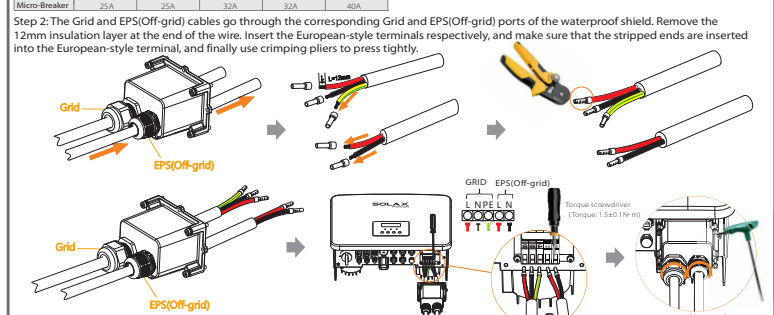
The Grid and EPS(Off-grid) ports of X1-Hybrid G4 M series inverter have been connected, and the D series needs to be wired according to the following steps.

Step 1. Prepare a Grid cable (three-core wire) and an EPS(Off-grid) cable (two-core wire), and then find the European terminal and waterproof shield in the accessory bag.

Grid(Triple Core Cable)8AWG*3 EPS(Off-grid)(Double Core Cable)10AWG*2 10AWG Euro Terminal*2 10AWG Euro Terminal*2

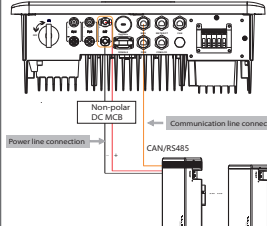
Model	X1-Hybrid3.0M	X1-Hybrid3.7M	X1-Hybrid5.0M	X1-Hybrid6.0M	X1-Hybrid7.5M
Cable (copper)	3-4mm²	3-4mm²	3-4mm²	3-4mm²	3-4mm²
Micro-Breaker	25A	25A	32A	32A	40A

Step 2: The Grid and EPS(Off-grid) cables go through the corresponding Grid and EPS(Off-grid) ports of the waterproof shield. Remove the 12mm insulation layer at the end of the wire. Insert the European-style terminals respectively, and make sure that the stripped ends are inserted into the European-style terminal, and finally use crimping pliers to press tightly.



VI Battery Connection

Battery connection diagram:

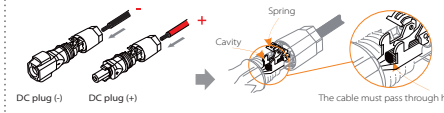


Notice! When using Solax batteries, it is recommended that the number of battery control (T-BAT-5.8) is 1 and the number of battery modules (HV1 1550) is 0-3. The number of battery control (MC0600) is 1 and the number of battery modules (HV10250) is 1-4 pcs.

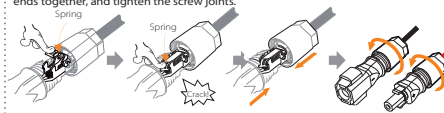
Battery port connection line of the X1-Hybrid G4 M series inverter is on the X1-Matebox, just connect it. It is necessary to wire the D series according to the following steps.

Step 1. Prepare 8 AWG battery power line, find the DC plug (+), DC plug (-) in the accessory bag.

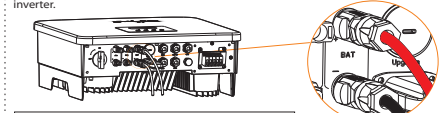
Step 2. Insert the stripped cables into the DC plug (-) and DC Plug (+) respectively.



Step 3. Press down on the spring by hand, you can hear a click sound, then push the ends together, and tighten the screw joints.



Step 4. Insert the battery power lines into the corresponding BAT port (+), (-) of the inverter.



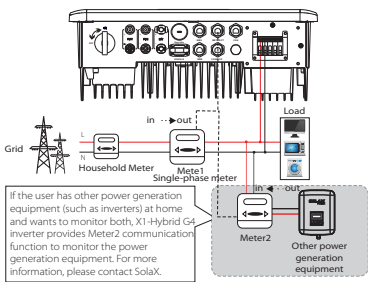
Notice! After the BMS communication between the battery and the inverter is finished, the battery will work normally.

Notice: BAT port, not PV port!

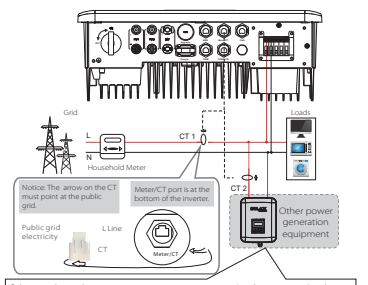
Notice: The positive and negative wires of the battery are not allowed to be reversed!

VII Communication Connection (BMS/Meter/CT/DRM/COM)

Electric meter connection diagram

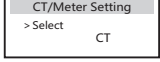


CT connection diagram



LCD settings

To select CT, you need to enter Use setting, then enter CT or Meter Setting.



Meter /CT PIN is defined as follows

1	2	3	4	5	6	7	8
CT-1	X	CT-2	485A	485B	CT-2	X	CT-2

Notice: 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. If you need this feature, please contact us Solax for assistance.

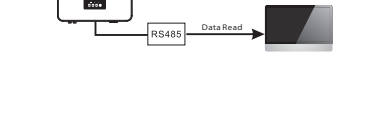
1) To connect the Communication Line of the CT line, the lines need to be made on both sides, connecting the RJ45 terminal on one side and the Communication Line Adapter on the other.

2) One side of the finished cable, communication line adapter is inserted into the inverter, and one side of the RJ45 terminal is inserted into the CT connection.

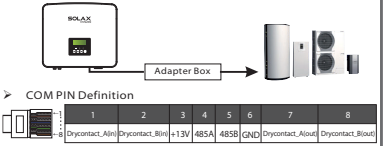


COM Communication

External communication equipment controls the inverter:



Inverter communication control external equipment:



COM PIN Definition

1	2	3	4	5	6	7	8
Drycontact_Aln	Drycontact_Bln	+13V	485A	485B	GND	Drycontact_Alb	Drycontact_Blb

Notice: Customers can communicate or control the inverter and external devices through the COM interface. Professional users can use pins 4 and 5 to realize data acquisition and external control functions. The communication protocol is Modbus RTU. For details, please contact Solax. If the user wants to use the inverter dry contact to control external equipment (such as a heat pump), it can be used with Solax's Adapter Box. For details, please refer to the Quick Installation Manual of the Adapter Box.

The BMS pin is defined as follows

1	2	3	4	5	6	7	8
BAT	TEMP	GND	GND	BMS_CAN+	BMS_CAN-	X	BMS_485A/BMS_485B

Notice: The BMS port on the inverter is the communication port for connecting the battery. The communication port on the lithium battery must be consistent with the definition of pins 4, 5, 7, and 8 above.

The DRM pin is defined as follows

1	2	3	4	5	6	7	8
DRM1/5	DRM2/6	DRM3/7	DRM4/8	+3.3V	DRMG	GND	GND

Notice: For AS477 DRM function, currently only PIN6 (DRMG) and PIN1 (DRM1/5) are functional, other PIN functions are under development.

Communication Connection Steps

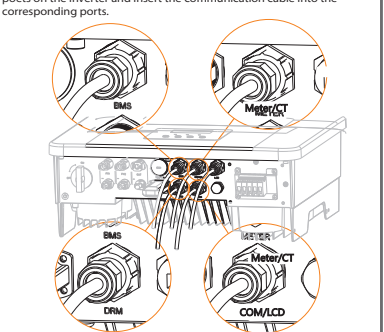
Step 1. Prepare a communication cable, and then find the communication adapter in the accessory bag.

Step 2. Insert the communication cable through the communication adapter, and peel off the outer insulation layer of 15mm.

Step 3. Insert the prepared communication cables into the RJ45 terminals in sequence, and then use network cable crimping pliers to press them tightly.

Step 4. Tighten the completed BMS / Meter / CT / DRM / COM / LCD communication line and tighten the waterproof plug.

Step 5. Finally, find the corresponding BMS / Meter / CT / DRM / COM / LCD ports on the inverter and insert the communication cable into the corresponding ports.



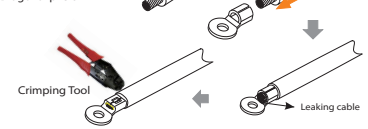
VIII Grounding Connection (mandatory)

The ground wire port of X1-Hybrid G4 M series inverter has been connected, and the D series needs to be wired according to the following steps.

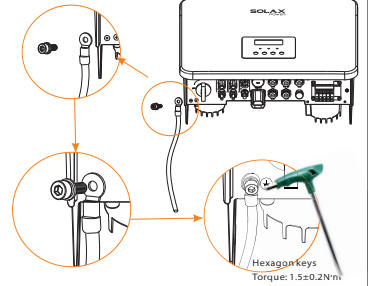
Step 1. Prepare a one-core cable (12AWG), and then find the ground terminal in the accessories.



Step 2. Strip the grounding cable insulation (length L2), insert the stripped cable into the ring terminal, and then clamp it.



Step 3. Find the ground connection port on the inverter, and screw the ground wire on the inverter with an MS Allen key.



IX Monitoring Operation

DONGLE connection diagram



Step 1. Prepare a communication cable, and then find the communication adapter in the accessory bag.

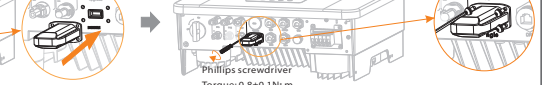
Step 2. Insert the prepared communication cables into the RJ45 terminals in sequence, and then use network cable crimping pliers to press them tightly.

Wireless monitoring accessories connection steps:

Step 1. Of the Dongle port of the inverter needs to unscrew the screw and take off the cover.



Step 2. Insert the Pocket WiFi into the Dongle port, use the four screws in the Pocket WiFi Plus accessory bag and tighten them. Please check the Pocket WiFi user manual/Pocket GPS user manual /4G user manual.



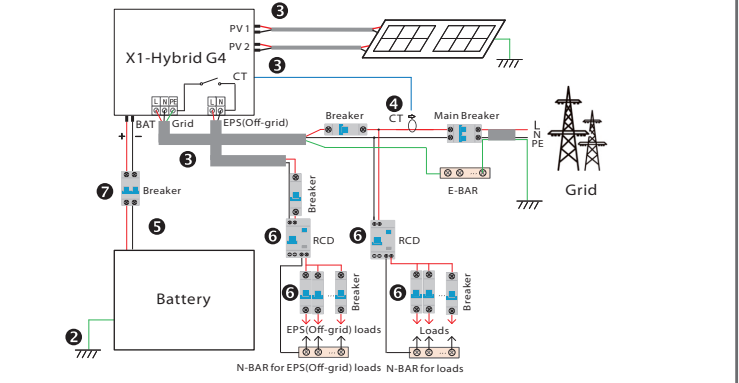
X Start Guide

<p>1. Set date time</p> <p>Date time 2017-06-06 10:19</p>	<p>2. Set language</p> <p>Language English Deutsch Italian</p>	<p>6*. Set work mode</p> <p>There are 4 work modes for choice. Self use / Back Up Mode/ Feed in Priority/ Force Time Use All these work modes are available for on-grid condition only.</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Self Use</td> <td> <p>1) When the power of PV is sufficient Active Charging or discharge time period: PV will power the loads firstly, and surplus power will charge to the battery. If the battery is fully charged, then sell the surplus power to the grid. (The inverter will not output if feed-in limit or zero feed-in is needed) (PV > Load, PV ~ Load ~ Battery ~ Grid)</p> <p>2) When the power of PV is insufficient Active Charging time period: PV will power the loads firstly, then the remaining power will be taken from the grid, the battery will not discharge at this time (PV < Load, PV ~ Grid ~ Load)</p> <p>Active Discharge time period: PV/BAT will power the loads together. If the power is still not enough, the remaining power will be taken from the grid. (PV < Load, PV + Battery + Grid ~ Load)</p> <p>3) Without PV power Active Charging time period: The grid supplies the loads and also can charge the battery. (PV=0, Grid ~ Load + Battery)</p> <p>Active Discharge time period: The battery will power the home loads firstly. If the battery power is not enough, the remaining power will be taken from the grid. The inverter will enter into the standby state. (PV=0, Battery + Grid ~ Load)</p> <p>Battery min SOC can be set: 100% Charge battery for min SOC can be set: 0%.</p> </td> </tr> <tr> <td>Feed-in priority</td> <td> <p>1) When the power of PV is sufficient Active Charging time period: First, PV supply power to the load, then charge the battery to the set capacity, and then sell the power to the grid. If the local grid company limits the grid-connected power of the inverter, the excess energy continues to charge the battery. (PV > Load, PV ~ Load ~ Battery)</p> <p>Active Discharge time period: PV will power the loads together, and surplus power will feed-in to the grid. (PV < Load, PV ~ Load ~ Grid)</p> <p>2) Without PV power Active Charging time period: The grid will power the home loads and also charge the battery. (PV=0, Grid ~ Load + Battery)</p> <p>Active Discharge time period: The battery will power the home loads firstly. If the battery power is not enough, the remaining power will be taken from the grid. The inverter will enter into the standby state. (PV=0, Battery + Grid ~ Load)</p> <p>Battery min SOC can be set: 100% Charge battery for min SOC can be set: 0%.</p> </td> </tr> <tr> <td>Backup mode</td> <td> <p>The backup mode is suitable for areas with frequent power outages. Same working logic with 'Self use' mode. This mode will ensure the battery capacity as a relatively high level (user setting) to ensure that the emergency loads can be used when the grid is off. Customers no need to worry about the battery capacity.</p> <p>1) When the power of PV is sufficient Active Charging time period: The EF/DR-grid mode is used when the power grid is off. System will provides emergency power through PV and batteries to supply power to the household loads. (Battery is necessary)</p> <p>2) When the power of PV is insufficient PV will power the loads firstly, and surplus power will charge to the battery. (PV > Load, PV ~ Load ~ Battery)</p> <p>3) Without PV power The remaining power will be taken from the battery. (PV = Load, PV ~ Load)</p> <p>The battery will power the emergency loads until the battery reached the min SOC, then the inverter will enter into the idle mode. (PV=0, Battery ~ Load)</p> <p>EF/DR-grid min SOC condition is adjustable within the range of 10%-25%.</p> </td> </tr> <tr> <td>EPS (Off-grid)</td> <td></td> </tr> </tbody> </table>	Name	Description	Self Use	<p>1) When the power of PV is sufficient Active Charging or discharge time period: PV will power the loads firstly, and surplus power will charge to the battery. If the battery is fully charged, then sell the surplus power to the grid. 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EPS (Off-grid)												
<p>3. Set the safety standard</p> <p>Safety Country >VDE0126</p>	<p>4. CT/Meter Setting</p> <p>CT/Meter Setting >Meter</p>	<p>5*. Set export control</p> <p>Export Control Use Value: 10000W</p>	<p>6*. Set work mode</p> <p>Work Mode >Mode Select self use</p>									
<p>7.X1-Matebox Setting</p> <p>X1-Matebox Setting >disable enable</p>												
<p>5*. Export Control</p> <p>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.</p>												

XI Start Inverter

Start inverter

After the inverter is checked, the inverter will take the following steps Applies to most countries



- Make sure that the inverter is fixed on the wall.
- Ensure that all ground wires are grounded.
- Confirm that all DC lines and AC lines are connected.
- Make sure the CT is connected.
- Make sure the battery is well connected.
- Turn on the Load switch and EPS(Off-grid) switch.
- Turn on the battery switch.

Long press Enter for 5 seconds to exit the shutdown mode. Mode is the mode when it is turned off for the first time; factory default: off mode)

XII Firmware Upgrading

-In order to upgrade the firmware smoothly, if the DSP and ARM firmware needs to be upgraded, please note that ARM firmware must be upgraded first, then DSP firmware
-Make sure that this directory is completely consistent with the above table, do not modify the firmware file name. Otherwise, the inverter may not work
-For X1-Hybrid G4, ensure that the PV input voltage is greater than 100V (upgrade on sunny days), please ensure that the battery SOC is greater than 20% or the battery input voltage is greater than 90V. Otherwise, it may cause serious failure during the upgrade process!
-If the ARM firmware upgrade fails or stops, please do not unplug the U disk and power off the inverter and restart it. Then repeat the upgrade steps.

> Upgrade preparation
1) Please check the inverter version and prepare a U disk (USB 2.0/3.0) and personal computer before upgrading.
2) Please contact our service support through service@solaxpower.com to obtain the firmware, and store the firmware in the U disk according to the following path.
Update:
For ARM file: update\ARM\618.00361.00_HYB_1P_ARM_V1.01_0710.usb;
For DSP file: update\DSP\618.00360.00_HYB_1P_DSP_V1.01_0710.usb;

> Upgrade steps
Step 1. Please save the "Upgrade" firmware in your U disk first, and press the "Enter" button on the inverter screen for 5 seconds to enter the OFF mode.
Step 2. Locate the "update" port of the inverter, use a flat-blade screwdriver or coin with the same width to remove the waterproof shield, and insert the U disk.

