

Quick Installation Guide

Note:
Storage inverter and AC couple inverter share a quick installation system. The AC couple inverter does not have a PV-side interface or accessories. For PV wiring and related steps in this quick installation, please disregard them during the installation of the AC couple inverter.

5-15kW Three Phase Storage Inverter

1. Packing List

Inverter x1	Bracket x1	Expansion tubes x6 & Expansion screws x6	Hexagonal screws x3
Earth terminal x1	AC connector x1	6CT Meter x1	PV connectors (Only for Hybrid) (positive x3, negative x3)
Communication connector x1	Ethernet cable terminal x4	PV pin contacts (Only for Hybrid) (positive x3, negative x3)	
Installation Guide x1	Antenna x1	PV & Battery Connector Release Tool x1	CT1 x1
CT2 x1			

NOTE
The Packing List antenna is relatively small. Please install it promptly onto the inverter's antenna port to prevent loss.

2. Mounting Steps

Step 1:
Please make sure the inverter will be installed with a proper distance as shown below.

6. BAT Connection

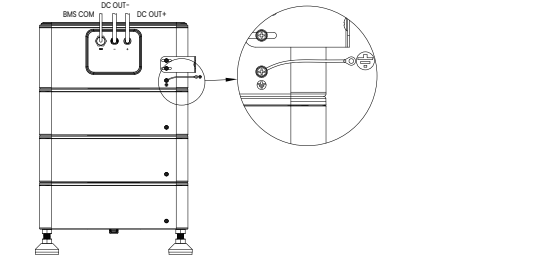
Step 1:
Prepare BAT wire.

We recommend to use the original Bat-Inverter power cable and communication cable from Battery's accessory bag. If require a longer cable, please contact our sales representative to purchase.

Step 2:
Connect the power line and communication line between the BMS and the inverter.

NOTE
When the standard cable harness of the battery is connected to the BMS port of the inverter, the waterproof connector on the battery side may not be compatible and needs to be replaced with the RJ45 waterproof connector from the inverter accessory kit. In this case, the original connector should be moved down and replaced with the one provided with the inverter. If the RJ45 connector on the inverter side is consistent with the one in the accessory kit, no replacement is required.

Step 3:
Connect the grounding cable to ensure that all batteries are grounded. Wiring should be connected in the sequence as shown in below.



The connection between BMS and inverter should be less than 10m.

NOTE
The number of battery packs cannot be less than 2 pcs. (for Battery vision pack 21)

12. DRM Connection

The definition of DRM port pin is as follows:
white rubber ring - old version DRM interface

Pin	1	2	3	4	5	6	7	8
Port	REF	GEN	DRM1/5	DRM2/6	DRM3/7	DRM4/8	COM LOAD/0	END GND
DRM								

Note
To achieve the DRM0 function, pins 1 and 6 need to be short-circuited.
The distributors will provide external adapter harnesses which function to convert the old pinout to the new pin definition.

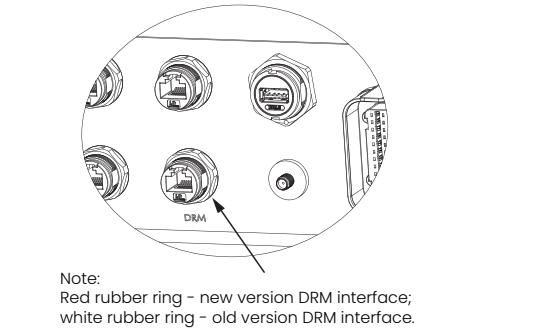
Note
The old version of the pin requires an external adapter cable (P/N: 99-100-03722-00) to be compatible with GSD devices.

Red rubber ring - new version DRM interface

Pin	1	2	3	4	5	6	7	8
Port	DRM	DRM1/5	DRM2/6	DRM3/7	DRM4/8	REF GEN/0	COM LOAD/0	END GND
DRM								

Note
To achieve the DRM0 function, pins 5 and 6 need to be short-circuited.

Note
The new version supports the 568B cable standard and is directly compatible with GSD devices, eliminating the need for an external converter.



Step 2:
Select the installation location, place the bracket on the wall. The bracket has an attached balancing device for observing balance and locating drill points.

Step 3:
Drill the 6 holes with a ø8 drill bit. Depth at least 50mm. Hammer the expansion tubes.

Step 4:
Installing the Bracket. Screw the expansion bolts.

Step 5:
Match the inverter with wall bracket.

Step 6:
Lock the screws on the side (Left and right). Make sure the inverter is firmly attached.

NOTE
After hanging up the machine, when installing other equipment, be sure to take precautions to prevent dust from falling onto the machine or external fans.

7. Grounding Connection

Grounding Wiring

Step 1:
Prepare ground wire.

Step 2:
To insert Earth terminal. Press the wire and terminal tightly with a wire clamp.

Step 3:
screw the ground screw with screwdriver as shown below.

8. Firmware Update

Preparation:
Please ensure the inverter is powered on with steady PV/BAT and AC power. Please prepare a PC and an U-Disk.
Please note the U-Disk shall be less than 32GB and its formats is fat16 or fat 32. Please DO NOT apply USB3.0 U-Disk on USB port, the inverter USB port only support for USB2.0 U-disk.

Step1:
Please contact our service support to get the update files, and extract it into your U-disk as follow:
update/master/____Master_Vxxx.bin
update/slave/____Slave_Vxxx.bin
update/manager/____Manager_Vxxx.bin

NOTE
Vxxx is version number.

Step 2:
Unscrew the waterproof lid and insert U-disk into the "USB" port at the bottom of the inverter.

Step 3:
The LCD will show the selection menu. Then press up and down to select the one that you want to upgrade and press "OK" to confirm to upgrade.

Step 4:
After the upgrade is finished, pull out the U-disk. Screw the waterproof lid.

DRM setting

Settings → Feature Param → Ripple Control → Enable/Disable

DRM supports several demand response modes by configuring control signals as below.

Mode	Asserted by shorting pins	Requirement
DRM0	5 6	Operate the disconnecting device, under Australian safety regulations.
DRM1	1 6	Do not consume power.
DRM2	2 6	Do not consume at more than 50% of rated power.
DRM3	3 6	Do not consume at more than 75% of rated power and sink reactive power if capable.
DRM4	4 6	Increase power consumption (subject to constraints from other active DRMs).
DRM5	1 5	Do not generate power.
DRM6	2 5	Do not generate at more than 50% of rated power.
DRM7	3 5	Do not generate at more than 75% of rated power and sink reactive power if capable.
DRM8	4 5	Increase power generation (subject to constraints from other active DRMs).

3. GRID Connection

Step 1:
Prepare AC wire. Cross-sectional area of wire is shown in the following table.

Model (kW)	6.0	6.0	8.0	10.0	12.0	15.0
Cable (GRID)	6.0mm²					
Cable (EPS)	6.0mm²					
Micro-Breaker	32A					

Step 2:
Dimension of stripping line
Dimension of stripping line outside inverter

Step 3:
Wiring Precautions

Step 4:
Seal accessory option
A. Ø10: The recommended outer diameter of the cable is 11.0-13.5 mm.
B. Ø16: The recommended outer diameter of the cable is 14.5-16 mm.
C. Ø6: When the four wire system is used, the special hole for the ground wire is recommended to be applicable to the outer diameter of the cable (5 - 6mm)

9. RJ45 Connection

RJ45 Wiring

Installation Procedure of the RJ45 Connector

Step 1:
Insert the network cable into the wire-locking nut, sealing plug and mainbody in turn. The sealing plug is stuck into the network cable through the gap on the sealing side.

Step 2:
Insert the network cable plug into the matched RJ45 panel mount connector.

Step 3:
Tighten the connector mainbody by an open-ended wrench into the RJ45 panel mount connector with a torque 1.2±0.2N·m.

Step 4:
Insert the sealing plug into the main body of RJ45 cable and connector.

Step 5:
Tighten the connector's nut by an open-ended wrench with a torque 1.2±0.2N·m.

13. COM Connection

Introduction to COM port:

The COM port mainly includes EMS485, Meter485, WiFi485, Estop port, two relay output ports, two parallel ports and a toggle switch, +12V and corresponding relay output signals.

The ripple control function is described below.

EMS 485:
Supports Modbus485 communication, which can be used to read and control inverter.
The specific protocol is provided by the manufacturer.

Meter 485:
Similar to the Meter485 interface, this interface is designed to be redundant.

Wifi 485:
For internal testing.

Estop port:
When short circuiting ESTOP and GND, the inverter will stop working.

DY OUT:
The inverter has two DY OUT interfaces, with two internal contacts of relays that can drive loads of 230VAC1A/50VDC0.5A, and can be used for powering on and starting heat pumps.

PARA port RJ45:
Used for parallel communication, it is necessary to set the DIP switch to the ON state during parallel operation. +12V and RY-OUT are used to control external relay switches and cannot be used for other functions.

10. Meter Connection

The inverter supports the wiring of various types of electricity meters, including direct-connected meters, 3CT meters, and 6CT meters.

The definition of meter port pin is as follows:

Pin	1	2	3	4	5	6	7	8
Port	meter 485B	meter 485A	/	/	/	/	meter 485B	meter 485A

Pins 1 & 7 and pins 2 & 8 are internally linked, so only one needs to be connected. The dual-pin design ensures reliability in case of a faulty or broken wire.

The types of direct-connected energy meters

Meter Connection Diagram

Step 1:
Insert U1/L2/L3/N wires and RS485A/B cable into the meter. Please refer to the meter wiring diagram on side of meter itself.

Step 2:
Connect RS485A to pin 2/8 of the inverter METER/RS485 port. Connect RS485B to pin 1/7 of the inverter METER/RS485 port. Please use twisted pair cable.

Step 3:
Tighten the connector's nut by an open-ended wrench with a torque 1.2±0.2N·m.

Step 4:
Insert the sealing plug into the main body of RJ45 cable and connector.

Step 5:
Tighten the connector's nut by an open-ended wrench with a torque 1.2±0.2N·m.

14. Inverter Start-Up

Hybrid

Step 1:
Ensure the inverter fixed well.

Step 2:
Make sure the GRID and EPS wirings are completed.

Step 3:
Make sure the PV wirings is connected well.

Step 4:
Make sure the meter is connected well.

Step 5:
Make sure the battery is connected well.

Step 6:
Make sure the BMS buttons and battery switch are on.

Step 7:
Ensure accurate installation of the monitoring module to the inverter. (Refer to the installation of the monitoring module)

Step 8:
Turn on the PV/DC switch (for Hybrid version only), AC breaker, EPS breaker and battery breaker. Before closing the DC switch at any time, ensure the machine is switched off; otherwise, the machine may be damaged.

Step 9:
Check whether each voltage is normal and within the operating range of the inverter through the screen on the inverter

Step 10:
If the main page shows "switch off", please long press "-" button to quickly go to the START/STOP page and set it to start. (Enter the settings page, default password is "0000").

NOTE
When starting inverter for the first time, the country code will be set by default to the local settings. Check if the country code is correct.
Set the time on the inverter using the button or by using the APP.

15. WiFi Stick Installation

1. Wifi Stick Installation

Alarm: The collector can only be plugged into the inverter, not any other device.

Step 1:
Please make sure the antenna is installed correctly.

Step 2:
Power on the inverter (in accordance with the start-up procedure detailed in the inverter installation manual).

NOTE
Do not use an external Wi-Fi/4G collector while the built-in Wi-Fi is enabled.

2. App Installation and WiFi Configuration

Scan the QR Code below to download and install the Cloud APP on your smartphone, refer to the "APP2.0 QUICK GUIDE" page for WiFi distribution network instructions.

NOTE
Contains app download path, configuration process, etc.

4. EPS Connection

EPS wiring diagram

For countries such as China, Germany, the Czech Republic, Italy, etc, please follow local wiring regulations. This diagram is an example for an application in which neutral is separated from the PE in the distribution box.

For countries such as Australia, New Zealand, South Africa, etc, please follow local wiring regulations. According to Australian safety requirements, the N cables of the GRID side and EPS side must be connected together. Otherwise, the EPS function will not work.

Step 1:
Prepare PV wire. Choose 2.5mm² wire to connect the PV module. Trim 6mm of insulation from the wire end.

Step 2:
Separate the PV connector as below.

Step 3:
To insert terminal. Press the wire and terminal tightly with a wire clamp. Rivet terminal. Ensure the concentricity of metal parts and cable at same level/crimped metal parts and cable pull tension 230N.

Step 4:
Insert pin into the male or female plug. Until hear a "click". Tighten the nut on the terminal.

NOTE
When disconnecting the PV side terminals, please use the unlocking tool from the accessory pack.
① Align it with the buckle slot and press downward.
② then pull the terminal outward.

6. BAT Connection

Step 1:
Prepare BAT wire.

We recommend to use the original Bat-Inverter power cable and communication cable from Battery's accessory bag. If require a longer cable, please contact our sales representative to purchase.

Step 2:
Connect the power line and communication line between the BMS and the inverter.

NOTE
When the standard cable harness of the battery is connected to the BMS port of the inverter, the waterproof connector on the battery side may not be compatible and needs to be replaced with the RJ45 waterproof connector from the inverter accessory kit. In this case, the original connector should be moved down and replaced with the one provided with the inverter. If the RJ45 connector on the inverter side is consistent with the one in the accessory kit, no replacement is required.

Step 3:
Connect the grounding cable to ensure that all batteries are grounded. Wiring should be connected in the sequence as shown in below.

NOTE
The number of battery packs cannot be less than 2 pcs. (for Battery vision pack 21)

12. DRM Connection

The definition of DRM port pin is as follows:
white rubber ring - old version DRM interface

Pin	1	2	3	4	5	6	7	8
Port	REF	GEN	DRM1/5	DRM2/6	DRM3/7	DRM4/8	COM LOAD/0	END GND
DRM								

Note
To achieve the DRM0 function, pins 1 and 6 need to be short-circuited.
The distributors will provide external adapter harnesses which function to convert the old pinout to the new pin definition.

Note
The old version of the pin requires an external adapter cable (P/N: 99-100-03722-00) to be compatible with GSD devices.

Red rubber ring - new version DRM interface

Pin	1	2	3	4	5	6	7	8
Port	DRM	DRM1/5	DRM2/6	DRM3/7	DRM4/8	REF GEN/0	COM LOAD/0	END GND
DRM								

Note
To achieve the DRM0 function, pins 5 and 6 need to be short-circuited.

Note
The new version supports the 568B cable standard and is directly compatible with GSD devices, eliminating the need for an external converter.

14. Inverter Start-Up

Hybrid

Step 1:
Ensure the inverter fixed well.

Step 2:
Make sure the GRID and EPS wirings are completed.

Step 3:
Make sure the PV wirings is connected well.

Step 4:
Make sure the meter is connected well.

Step 5:
Make sure the battery is connected well.

Step 6:
Make sure the BMS buttons and battery switch are on.

Step 7:
Ensure accurate installation of the monitoring module to the inverter. (Refer to the installation of the monitoring module)

Step 8:
Turn on the PV/DC switch (for Hybrid version only), AC breaker, EPS breaker and battery breaker. Before closing the DC switch at any time, ensure the machine is switched off; otherwise, the machine may be damaged.

Step 9:
Check whether each voltage is normal and within the operating range of the inverter through the screen on the inverter

Step 10:
If the main page shows "switch off", please long press "-" button to quickly go to the START/STOP page and set it to start. (Enter the settings page, default password is "0000").

NOTE
When starting inverter for the first time, the country code will be set by default to the local settings. Check if the country code is correct.
Set the time on the inverter using the button or by using the APP.

15. WiFi Stick Installation

1. Wifi Stick Installation

Alarm: The collector can only be plugged into the inverter, not any other device.

Step 1:
Please make sure the antenna is installed correctly.

Step 2:
Power on the inverter (in accordance with the start-up procedure detailed in the inverter installation manual).

NOTE
Do not use an external Wi-Fi/4G collector while the built-in Wi-Fi is enabled.

2. App Installation and WiFi Configuration

Scan the QR Code below to download and install the Cloud APP on your smartphone, refer to the "APP2.0 QUICK GUIDE" page for WiFi distribution network instructions.

NOTE
Contains app download path, configuration process, etc.

16. PV Connection

PV Wiring (For Hybrid Only)

Step 1:
Prepare PV wire. Choose 2.5mm² wire to connect the PV module. Trim 6mm of insulation from the wire end.

Step 2:
Separate the PV connector as below.

Step 3:
To insert terminal. Press the wire and terminal tightly with a wire clamp. Rivet terminal. Ensure the concentricity of metal parts and cable at same level/crimped metal parts and cable pull tension 230N.

Step 4:
Insert pin into the male or female plug. Until hear a "click". Tighten the nut on the terminal.

NOTE
When disconnecting the PV side terminals, please use the unlocking tool from the accessory pack.
① Align it with the buckle slot and press downward.
② then pull the terminal outward.

17. Ethernet Connection

The definition of Ethernet port pin is as follows:

Pin	1	2	3	4	5	6	7	8
Port	TX+	TX-	RX+	/	/	/	RX-	/
Ethernet								

Introduction to Ethernet port:
The network port is mainly used for communication, transmitting data from the inverter to the network for detecting the daily operation status of the inverter, and can control the inverter's wake-up through EMS.

The device supports zero configuration network discovery through the mDNS (Multicast DNS) protocol. Users can directly access device services through standard format hostnames in the same LAN environment.
1. Service identification format:
The device will broadcast the mDNS service in mDNS - < SN > format (e.g., mDNS _12345678), and SN is the unique serial number of the device. (see fuselage nameplate label)
Protocol Type: TCP
Open port: 502 (default for Modbus TCP industrial communication protocol)
2. Precautions:
Please make sure the device is on the same subnet as the client.
Please close the firewall or release UDP 5353 (mDNS) and TCP 502 ports.
Please refer to the SN number of the equipment for serial number.

Ethernet connection Diagram

LAN

T568B Cable-CAT7 Distance <100m

EMS

18. Inverter Start-Up

Hybrid

Step 1:
Ensure the inverter fixed well.

Step 2:
Make sure the GRID and EPS wirings are completed.

Step 3:
Make sure the PV wirings is connected well.

Step 4:
Make sure the meter is connected well.

Step 5:
Make sure the battery is connected well.

Step 6:
Make sure the BMS buttons and battery switch are on.

Step 7:
Ensure accurate installation of the monitoring module to the inverter. (Refer to the installation of the monitoring module)

Step 8:
Turn on the PV/DC switch (for Hybrid version only), AC breaker, EPS breaker and battery breaker. Before closing the DC switch at any time, ensure the machine is switched off; otherwise, the machine may be damaged.

Step 9:
Check whether each voltage is normal and within the operating range of the inverter through the screen on the inverter

Step 10:
If the main page shows "switch off", please long press "-" button to quickly go to the START/STOP page and set it to start. (Enter the settings page, default password is "0000").

NOTE
When starting inverter for the first time, the country code will be set by default to the local settings. Check if the country code is correct.
Set the time on the inverter using the button or by using the APP.

19. WiFi Stick Installation

1. Wifi Stick Installation

Alarm: The collector can only be plugged into the inverter, not any other device.

Step 1:
Please make sure the antenna is installed correctly.

Step 2:
Power on the inverter (in accordance with the start-up procedure detailed in the inverter installation manual).

NOTE
Do not use an external Wi-Fi/4G collector while the built-in Wi-Fi is enabled.

2. App Installation and WiFi Configuration

Scan the QR Code below to download and install the Cloud APP on your smartphone, refer to the "APP2.0 QUICK GUIDE" page for WiFi distribution network instructions.

NOTE
Contains app download path, configuration process, etc.

20. Inverter Start-Up

Hybrid

Step 1:
Ensure the inverter fixed well.

Step 2:
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Step 3:
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Step 4:
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Step 6:
Make sure the BMS buttons and battery switch are on.

Step 7:
Ensure accurate installation of the monitoring module to the inverter. (Refer to the installation of the monitoring module)

Step 8:
Turn on the PV/DC switch (for Hybrid version only), AC breaker, EPS breaker and battery breaker. Before closing the DC switch at any time, ensure the machine is switched off; otherwise, the machine may be damaged.

Step 9:
Check whether each voltage is normal and within the operating range of the inverter through the screen on the inverter

Step 10:
If the main page shows "switch off", please long press "-" button to quickly go to the START/STOP page and set it to start. (Enter the settings page, default password is "0000").

NOTE
When starting inverter for the first time, the country code will be set by default to the local settings. Check if the country code is correct.
Set the time on the inverter using the button or by using the APP.

21. WiFi Stick Installation

1. Wifi Stick Installation

Alarm: The collector can only be plugged into the inverter, not any other device.

Step 1:
Please make sure the antenna is installed correctly.

Step 2:
Power on the inverter (in accordance with the start-up procedure detailed in the inverter installation manual).

NOTE
Do not use an external Wi-Fi/4G collector while the built-in Wi-Fi is enabled.

2. App Installation and WiFi Configuration

Scan the QR Code below to download and install the Cloud APP on your smartphone, refer to the "APP2.0 QUICK GUIDE" page for WiFi distribution network instructions.

NOTE
Contains app download path, configuration process, etc.

22. Inverter Start-Up

Hybrid

Step 1:
Ensure the inverter fixed well.

Step 2:
Make sure the GRID and EPS wirings are completed.

Step 3:
Make sure the PV wirings is connected well.

Step 4:
Make sure the meter is connected well.

Step 5:
Make sure the battery is connected well.

Step 6:
Make sure the BMS buttons and battery switch are on.

Step 7:
Ensure accurate installation of the monitoring module to the inverter. (Refer to the installation of the monitoring module)

Step 8:
Turn on the PV/DC switch (for Hybrid version only), AC breaker, EPS breaker and battery breaker. Before closing the DC switch at any time, ensure the machine is switched off; otherwise, the machine may be damaged.

Step 9:
Check whether each voltage is normal and within the operating range of the inverter through the screen on the inverter

Step 10:
If the main page shows "switch off", please long press "-" button to quickly go to the START/STOP page and set it to start. (Enter the settings page, default password is "0000").

NOTE
When starting inverter for the first time, the country code will be set by default to the local settings. Check if the country code is correct.
Set the time on the inverter using the button or by using the APP.