Power™

WHISPR

USER
MANUAL

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About This Manual

This manual mainly describes the product information, installation, operation, and maintenance guidelines of the PowerPlus Energy Whispr Series.

Please read this manual carefully before using this product and store the manual in a safe place.

PowerPlus Energy will not notify the user of any changes to this manual.

This manual applies to the Whispr Series.

Installation must be carried out by a suitably qualified and experienced person who can specify the correct cables, DC bus arrangement and additional external circuit protection.

It is crucial that this system is installed in accordance with all necessary local and international standards.

We strongly recommend that installers read this manual carefully.

The manual includes the guidance on product installation, maintenance, troubleshooting, communication and other aspects of the Whispr system.

Contents

1. Safety

1.1 Important Safety Instructions

The Whispr has been designed and tested strictly according to international safety regulations. Read all safety instructions carefully prior to any work and always observe them when working with the Whispr.

Incorrect Operation or Work May Cause:

- Injury or death to the operator or third party.
- Damage to the inverter and other property or third party.

Safety Instructions

(a) Do not open this product due to the risk of electric shock.

(b) Maintenance should be carried out by a professional licensed technician or appropriately qualified person.

(c) Read this manual before operating the system. PowerPlus Energy is not responsible for failure or loss arising from improper operation.

(d) All wiring, installation, commissioning, and other work should be done by a suitably licensed, qualified, and experienced person.

(e) Install the EPS plug even if the EPS cable is not connected.

(f) Ensure that the storage unit is not installed or used in the following locations:

- Poorly ventilated room
- Places with inflammable gases or corrosive materials and large amounts of dust
- High or low environment temperature (above 55°C or below -20°C), or high humidity (greater than 90%)
- In direct sunlight or near heating equipment
- Do not use anything to cover the inverter and battery
- High saline or polluted environments.

In case of fire, use dry powder fire extinguishers instead of liquid fire extinguishers.

All electrical connections are subject to the local grid safety regulations and the storage system should be reconnected to the grid under conditions of approval.

Table 1-1 - Warnings

WARNING Removal of any protection, incorrect use, incorrect installation, or incorrect operation may result in death/serious personal injury or device damage. Transportation, loading and unloading, installation, start-up and maintenance must be carried out by qualified or trained person.
WARNING Before maintenance or touching any parts, or installation, make sure that the energy storage unit is disconnected and wait at least 5 minutes to ensure that the internal capacitor is discharged.
WARNING Installation must be in full compliance with national and local laws and regulations.
WARNING Ensure that the system is positioned correctly and is correctly secured to an appropriate surface.
WARNING Do not change the internal circuit of the machine without permission.
WARNING Before connecting to the grid, system the must be connected to the Ground. Follow the instructions. Improper operation may cause serious damage.
NOTICE There is a WIFI device connecting to the inverter, do not place the system in an environment where there is no WIFI signal.

WARNING

Do not open.

This Product does not contain maintainable or user serviceable components and must not be disassembled or opened for repair.

WARNING

When installing the PV, install a circuit breaker between the PV and the inverter and between the inverter and the power grid according to local regulations.

When the photovoltaic array is exposed to light, it supplies a DC voltage to the PCE.

To ensure a safe work environment, keep the whole surface of the photovoltaic panel covered with opaque material to solar radiation before connecting panel to equipment.

2 Product Introduction

2.1 System Diagram

The Whispr is a hybrid inverter combined with PV inputs and energy storage systems.

It utilises solar power and battery power to ensure continuous power supply even during a grid outage, the unused power can also be fed into the power grid.

It also provides additional expansion ports and expansion ports for compatible connections.

Anti-Islanding Effect

Islanding effect is a special phenomenon that prevents grid-connected PV systems from supplying power to the nearby grid when voltage loss occurs in the power system, as this is dangerous for maintenance personnel and the public.

The Whispr provides Island Active Disturbance to prevent islanding effect.

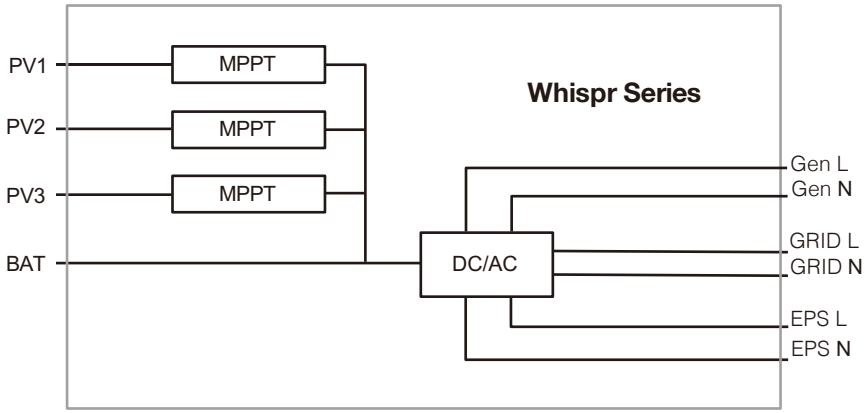


Figure 2.1.1 - The internal system diagram

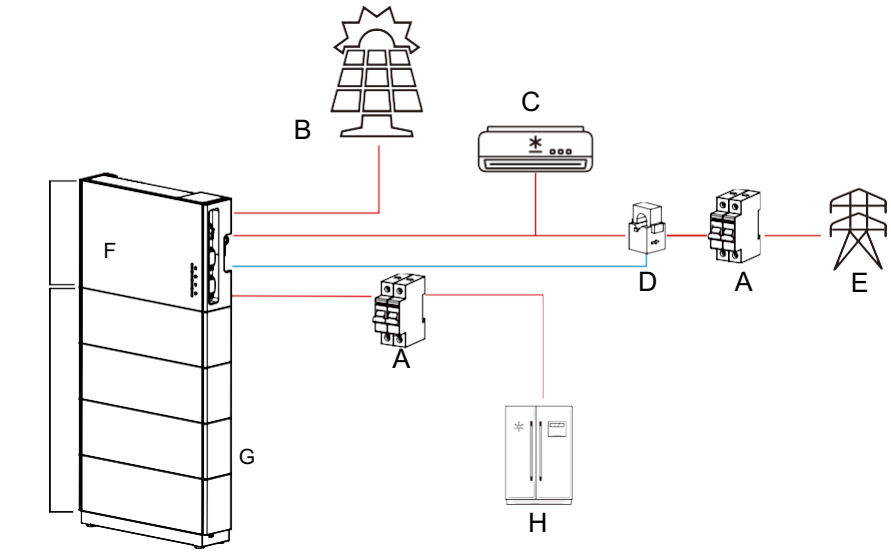


Figure 2.1.2 Whispr application

Red indicates a power cable, Blue indicates a signal cable

Table 2.1.2 - Diagram elements explained

Letter	Name
A	Circuit Breaker
B	PV Panel
C	Regular Loads
D	Smart meter / CT
E	Grid
F	Whispr Series Hybrid Inverter
G	Four Battery Modules
H	Backup Loads

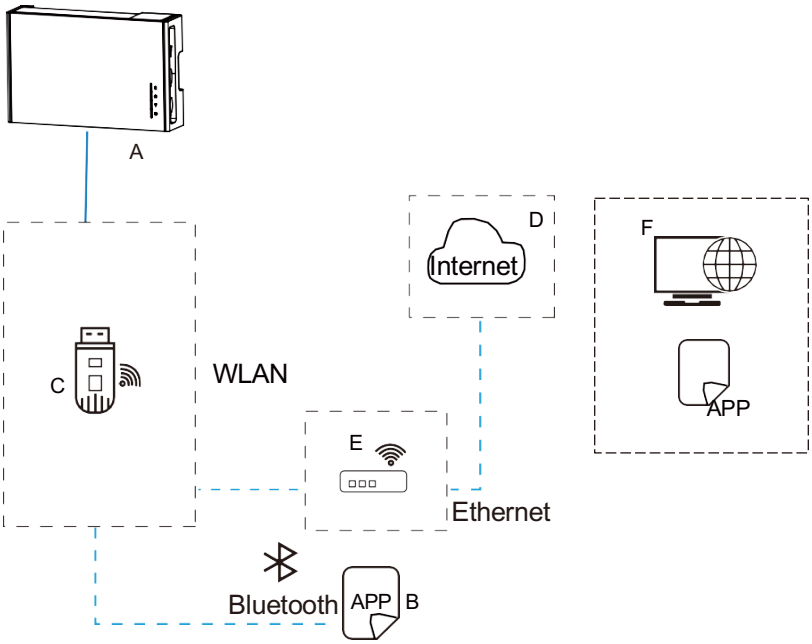


Figure 2.1.3 The communication components (dashed boxes indicate optional components) of the Whispr.

Blue indicates a signal cable

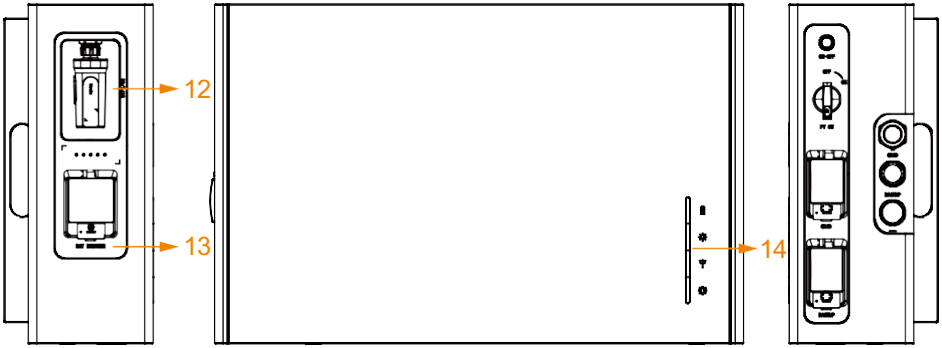
Blue dotted indicates wireless communication.

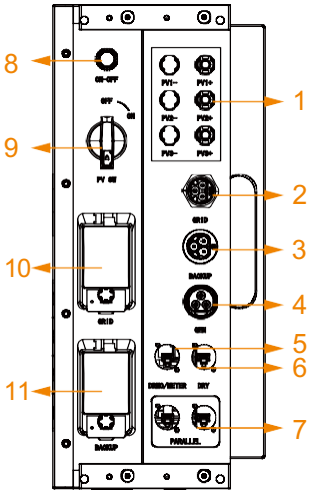
Table 2.1.3 - Diagram elements explained

Letter	Name
A	Whispr
B	Power App
C	Wi-Fi Module
D	Internet
E	Wi-Fi Router
F	Cloud Server

2.2 Product Details

2.2.1 Appearance and Dimensions





Items	Name
1	PV
2	GRID
3	BACKUP
4	GEN
5	DRMO / METER
6	DRY
7	PARALLEL
8	ON-OFF
9	PV SWITCH
10	GRID BREAKER
11	BACKUP BREAKER
12	WIFI
13	BAT BREAKER
14	LED

Table 2.2.1 - Diagram elements explained

2.2.2 Dimensions

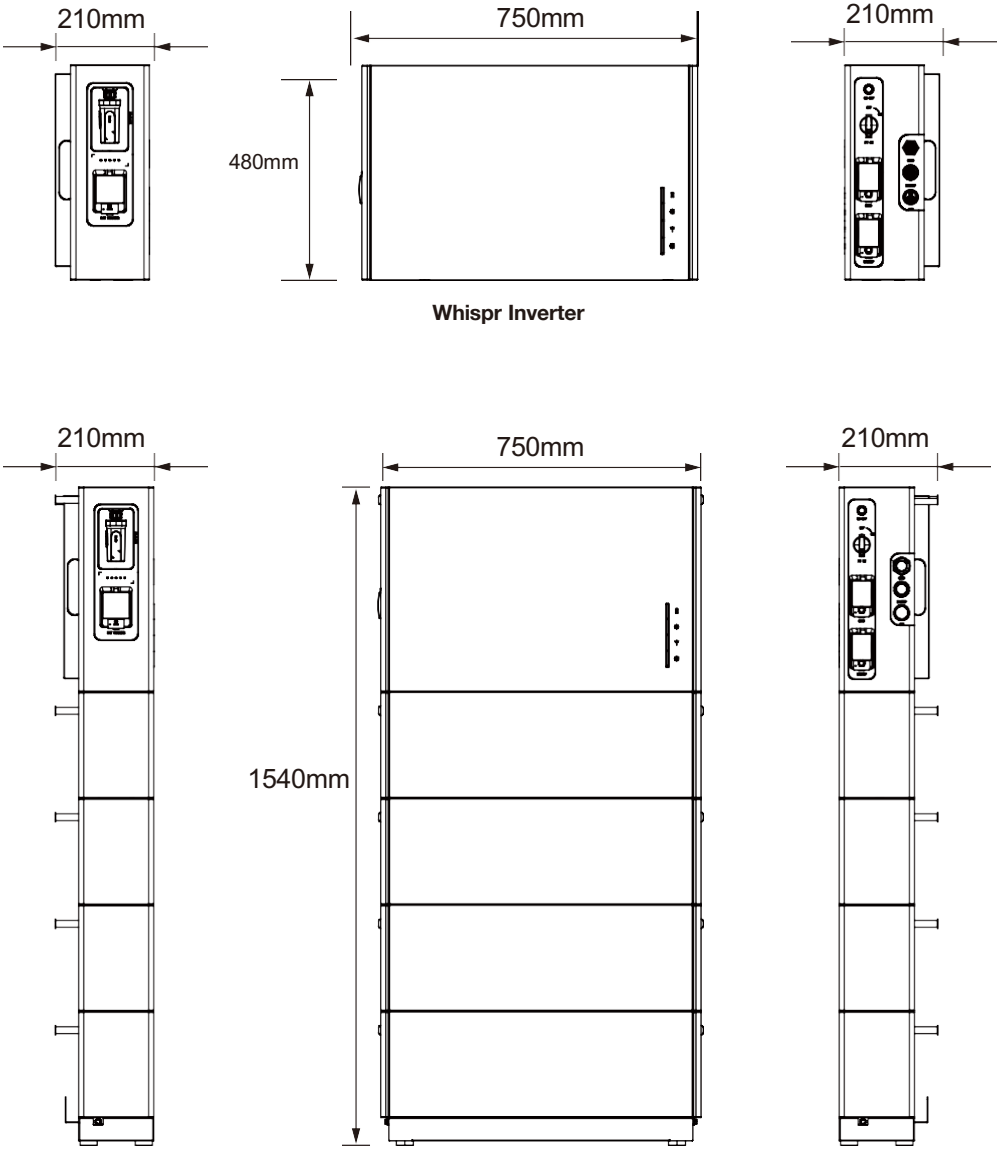


Figure 2.2.2 Whispr Dimensions

2.3 LED Indicator Panel and Switches

Main power switch

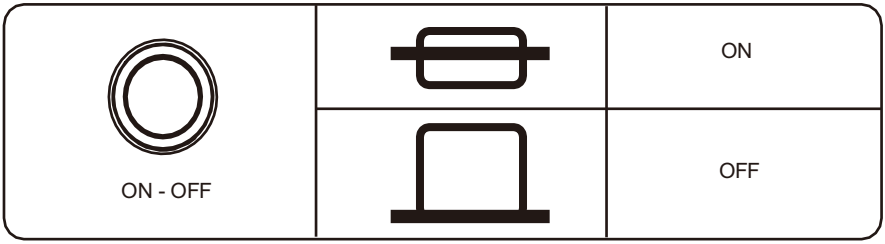


Figure 2.3.1 Whispr On-Off switch

Table 2.3.1 - Status LED elements explained

SOC LED Indicator					
Charging					
S0C	**L1** ●	**L2** ●	**L3** ●	**L4** ●	**L5** ●
0-20%	flash	off	off	off	off
21-40%	on	flash	off	off	off
41-60%	on	on	flash	off	off
61-80%	on	on	on	flash	off
81-100%	on	on	on	on	flash
Normal					
S0C	**L1** ●	**L2** ●	**L3** ●	**L4** ●	**L5** ●
0-20%	on	off	off	off	off
21-40%	on	on	off	off	off
41-60%	on	on	on	off	off
61-80%	on	on	on	on	off
81-100%	on	on	on	on	on

System Status	System Information	Display Logic			
		LED1 Battery	LED2 PV	LED3 Grid/Gen	Bi-colour LED4(Green/RED) Wifi/Ethernet/Fault
Normal information	Power on	▲	▲	▲	▲
	Power off	■	■	■	■
	Promote update	/	/	/	★
	Promote update success	★	★	★	★
Battery	Battery not connected	■	/	/	■
	Battery connected & discharge	●	/	/	/
	Battery low (Battery connected & discharge)	★	/	/	/
	Battery charge	■	/	/	/
	Battery fault	■	/	/	●
PV	PV not connected	/	/	/	/
	PV connected & work	/	●	/	/
	PV fault	/	■	/	●
Grid-Generator	Grid-Generator not connected	/	/	/	/
	Grid-Generator connected & work	/	/	●	/
	Grid-Generator fault	/	/	■	●
External communication	Wifi-Ethernet not connected	/	/	/	■
	Wifi-Ethernet connecting				
	Wifi-Ethernet success connect & work	/	/	/	●
Other important information	SOH low	/	/	/	■
	Permanent fault	■	■	■	■
	Idle	/	/	/	/
	System fault	/	/	/	●

Remark：

1、lamp-comment：

/：LED off/LED

●/●/●：LED on/LED

■/■/■：LED flash display-1Hz/LED-1Hz

★/★/★：LED flash display-2Hz/LED-2Hz

▲/▲/▲：LED light water display-2Hz/-2Hz

2、 LED1/LED2/LED3/LED4 are displayed independently of each other during normal operation, and their functions can be stacked. If a fault is triggered, display it according to the faulty part.

2.4 Technical Data

Figure 2.3.2 – Whispr Series Specifications

	Whispr-5	Whispr-7
AC Inputs		
AC Input Voltage	180V - 250V	
AC Input Nominal Line Frequency	45 - 55Hz	
Switching Time (On Grid - Backup)	< 20ms	
Nominal Current	30.5A	
Generator Control & Input	Yes	
PV		
Max. PV Input Current	16A / 16A / 16A	
Max. PV Input Voltage	550V	
Max. PV Power	200%	
MPPT Voltage range	120V - 500V	
No. of Independent MPPT Inputs	3	
MPPT Power Rating	3kW / 3kW / 3kW	
DC Short-Circuit Current	20A / 20A / 20A	
Max. PV Isc	23A / 23A / 23A	
PV Input Start-Up Voltage	120V	
AC Output		
Nominal Grid Voltage	180V - 250V	
Nominal Current	22A	30.5A
Grid Frequency Range	45 - 55Hz	
Nominal Output Power	5kW	7kW
Nominal Backup Power 7kW	5kW	7kW
Nominal Generator Power	5kW	7kW
Total Harmonic Distortion (THD)	< 5%	
Power Factor Nominal Range	0.8 leading to 0.8 lagging	
Battery		
Capacity	13.37kWh	
Recommended Depth of Discharge (DOD)	95%	
Usable Capacity	100%	
Battery Life	> 5000 Cycles @ 70% End of Life	
Min / Max Voltage (DC)	320 - 460.8V	

Nominal Voltage (DC)	409.6V
Max. Charge / Discharge	32A
Battery Chemistry	LFP
Max. Efficiency	98%

General

Part Number	RX-5013Plus	RX-7013Plus
Internal On-Grid / Backup Switching	Yes	
Surge protection	Type 3	
Communication	Modbus/Ethernet/RS485/Wifi/4G/GPRS	
External Communication Port	RS485	
Status Indicator Display	Yes	
VPP-Ready/Remote Control	Yes	
Total Weight	191kg	
Inverter Weight	43kg	
Individual Battery Weight	37kg	
Dimensions (H x W x D)	1540mm x 750mm x 210mm	

Environmental / Operational Range

Ingress Rating	IP65
Operating Temperature Range	-20°C - 55°C
Altitude	≤ 3000m
Cooling	Natural cooling
Relative Humidity	5 - 95%

Certification, Safety, EMC & Warranty

System Standard	IEC62619, IEC62040, IEC62109-1/2
Grid Connection Standard	AS4777.2 + CSIP-AUS
EMC Standard	IEC 61000-6-1/3
Warranty	5 + 5 years

2.5 Product Features

a. Backup power supply
b. Noiseless with no fan inside
c. Intelligent management
d. Remote scheduling
e. Multiple protection
g Stacked battery
h Long product life without electrolytic capacitor

3 Installation

Storage

- Store the storage unit properly when the unit is not installed immediately
- Store the unit in the original packaging box
- Storage temperature should be always between 0°c and 50°C
- The packaging box should be upright.

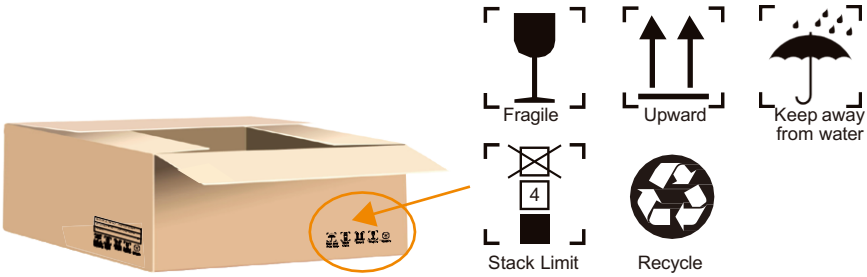


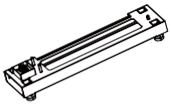
Figure 3.0.1 - Packaging

Scope of Delivery

Please check the condition of the packing before unpacking. If any parts are damaged or missing, contact your local supplier for help.

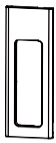
Whispr Series Standard Accessories

Hybrid Inverter
1PCS

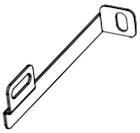


Base Components
1PCS

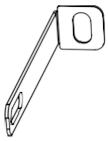
Side cover(right)
1PCS



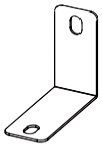
Side cover(left)
1PCS



PCS bracket A
1PCS

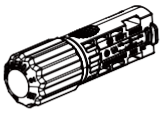


PCS bracket B
1PCS

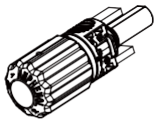


Base bracket
2PCS

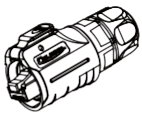
Battery Connecting buckle
2PCS



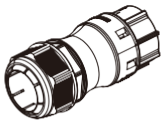
PV output connector
3PCS



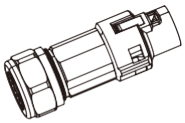
PV input connector
3PCS



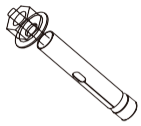
RJ45 waterproof plug
4PCS



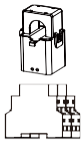
Generator Connector
2PCS



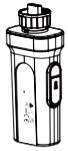
Grid Connector
1PCS



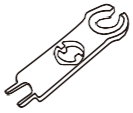
Expansion Bolts
4PCS



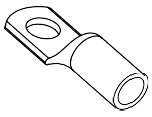
Smartmeter+CT
1PCS



WI-FI Dongle
1PCS



PV Tools
1PCS



SC6-6
1PCS

Document
4PCS

Figure 3.0.2 – Whispr Series Components

3.1 Installation Preparation

a. Not to be installed in direct sunlight. Vertical mounting only.

b. Install in a ventilated location.
There must be enough clearance to ensure that the module operates in the optimal heat dissipation state.

c. Install at suitable distance from any restricted areas,
please review AS/NZS 5139:2019.

d. Install on a sturdy supported surface.

e. The location must fit the weight and size of the module.

f. The environmental temperature must be between -20°C to +55°C, and the relative humidity between 0% and 90% (without condensation)

g. Location shall be dry with adequate air flow (Pollution Degree < PD3) .

h. Installation is prohibited to in any of the following environments

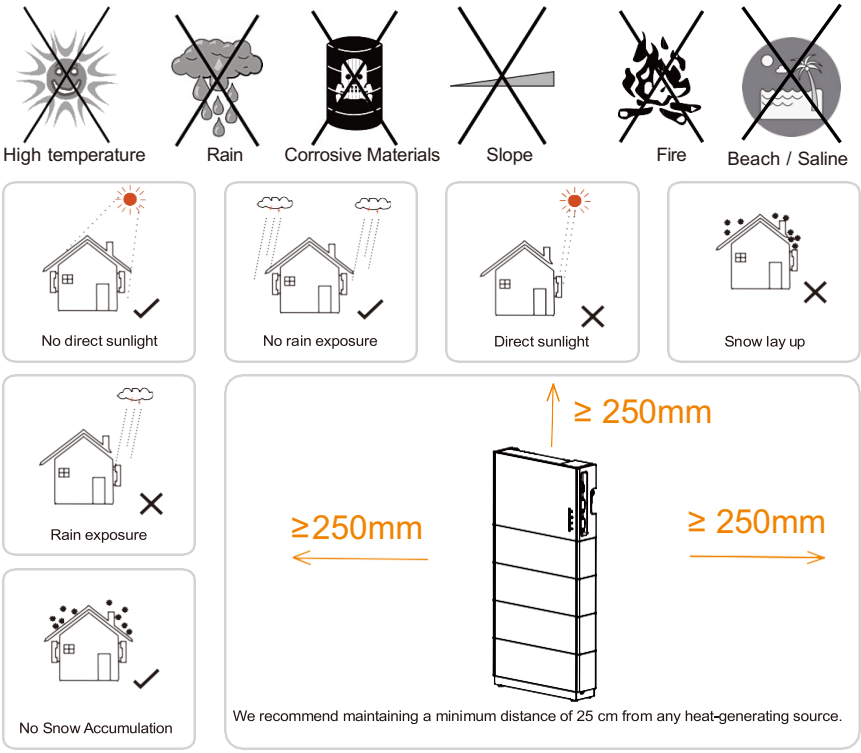


Figure 3.1.1 - Installation locations

a. The minimum clearance on the sides must be maintained at least 250mm.
b. Installation location of the inverter should be easy for operator to turn off at any time.
c. Do not install the inverter near signal transmitters.
d. Do not install the inverter in habitable spaces.
e. Do not install the inverter at location where children can easily access.

3.2 Installation Tools

Prepare the following tools before installation:

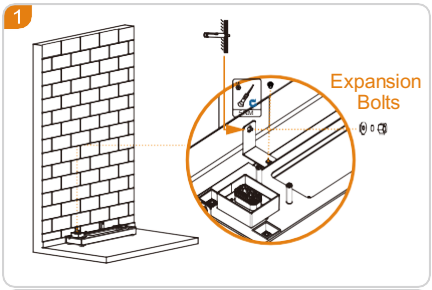
Figure 3.2.1 - Installation tools

Type	Tool			
General tools	 Packaging tape	 Marker	 Measuring tape	 Level
	 Utility knife	 Multimeter Measurement range: ≥ 1100Vdc	 Protective clothing	 Wrist strap
	 Protective gloves	 Dust mask	 Earplugs	 Goggles
	 Insulated shoes	 Vacuum cleaner		
Installation tools	 Hammer drill bit	 Rubber mallet	 Slotted screwdriver	 Phillips screwdriver Specification: M4, M6
	 Wire stripper	 Hydraulic clamp	 Crimping pliers	 Wire nippers
	 Crystal head crimping pliers	 Percussion drill	 Square pliers	

4 Installation Guide

4.1 Physical Installation

1



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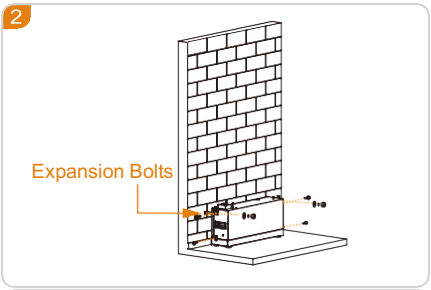

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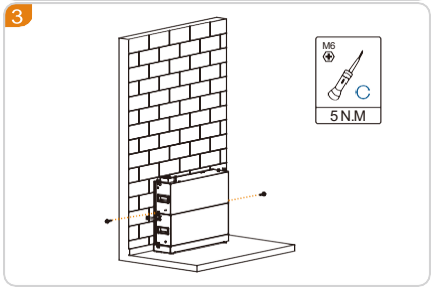

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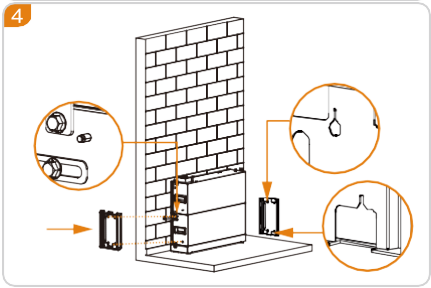

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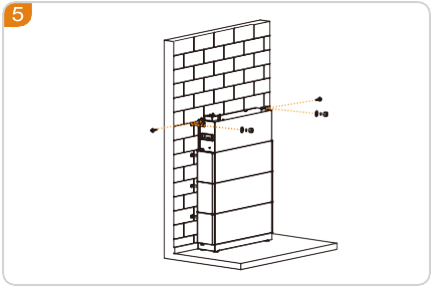

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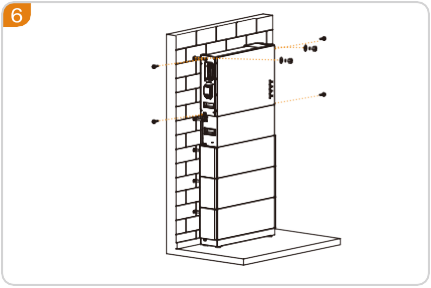
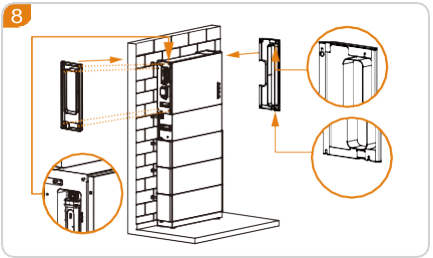


7 Refer to the electrical connection section for wiring

8



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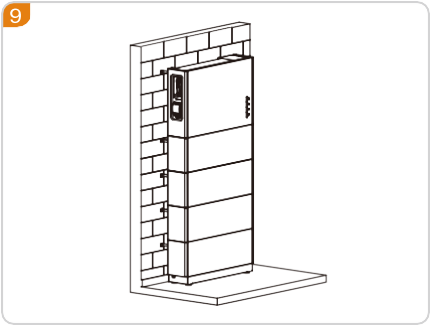


5 Electrical Connection

An independent circuit breaker must be configured for each power interface.

The table below is a recommendation for cable selection and the recommended specifications of circuit breaker. Installers should refer to local standards to select cables. Cable length is generally 2 to 10 meters.

Installers should refer to local standards for installation and electrical safety.

Power Interface	Circuit Breaker Suggestion
LOAD	>32A
GRID	>32A
PV	>16A
GENERATOR	>32A

Note: For details about the electrical connection, see Figure 2.1.2-2.1.3

5.1 Earth Connection

A secondary protection grounding terminal is added for the system.

Ensure that the grounding resistance is less than 10Ω and the grounding cable diameter is greater than 6 mm^2, refer to Australian Standard.

PE Wiring

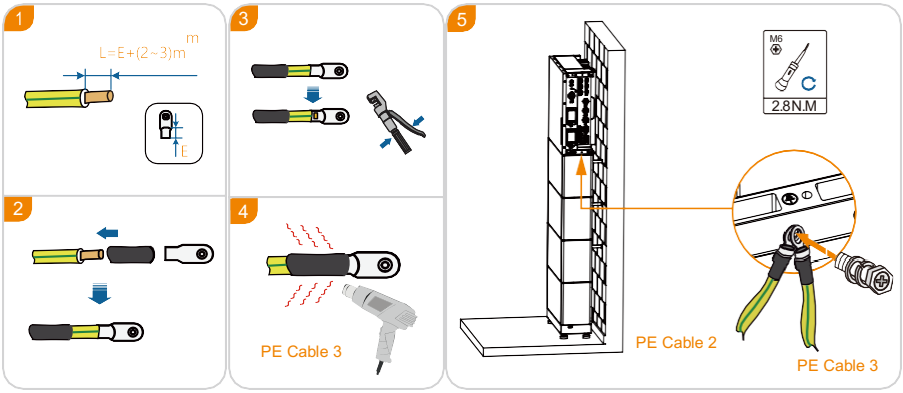


Figure 5.1.1 - Earthing connection

Note: If the array insulation resistance to ground is less than 18 KΩ, the inverter will turn on a red LED light Inspect and report ISO Fault on APP.

This inverter complies with IEC 62109-2 clause 13.9 for earth fault alarm monitoring.

5.2 PV Connection

The Whispr is equipped with 3 independent MPPT (maximum power tracking) PV inputs, each MPPT has a maximum power of 3kW. Ensure the PV input open-circuit voltage does not exceed 550V. Generally, the open circuit voltage of PV is about 15% higher in winter (-20°C) than in summer (30°C) .

Earth Fault Alarm

The inverter complies with IEC 62109-2 clause 13.9 for earth fault alarm monitoring.

If an Earth Fault Alarm occurs, the fault "IsoFault" will be displayed on the screen, the red light will be on. and the fault can be found in the history of device fault log. Devices that are connected to the Internet with Wi-Fi, the alarm information can be found through the system monitoring app, and also will be displayed in the Power app.

PV Connection

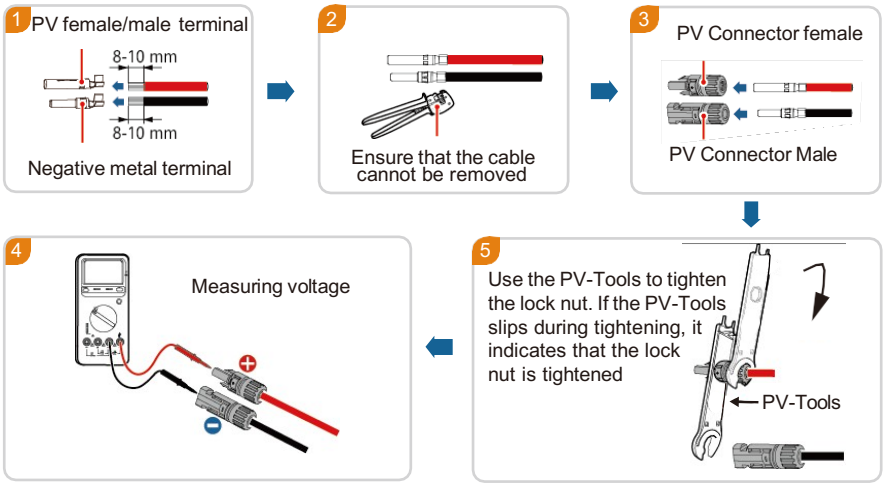


Figure 5.2.1 - PV connector

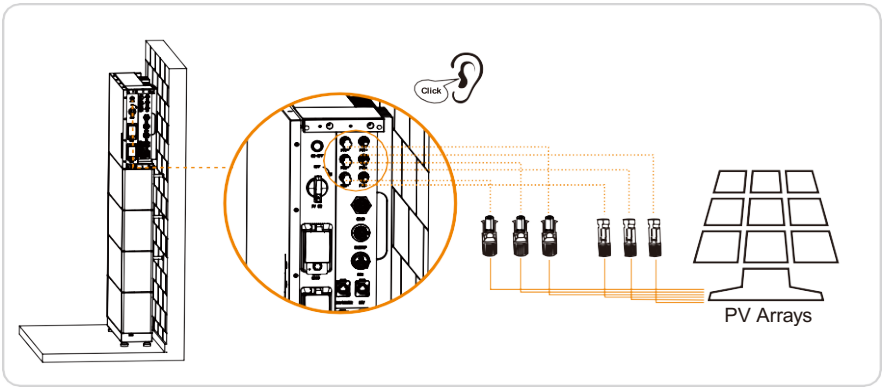
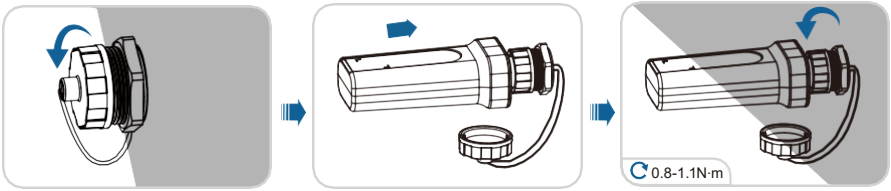
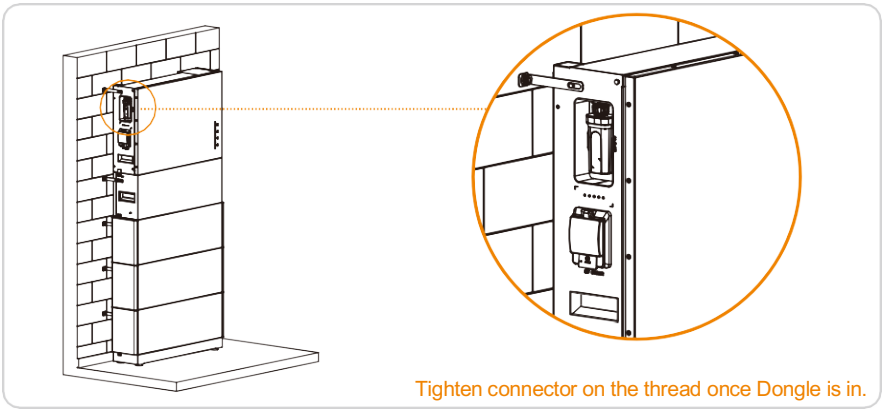


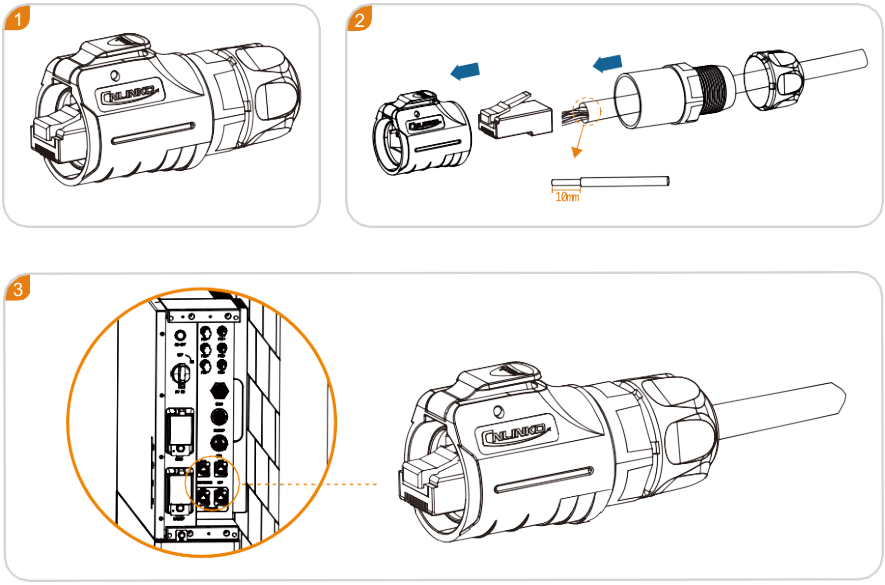
Figure 5.2.2 - Whispr PV connection

5.3 WiFi Dongle



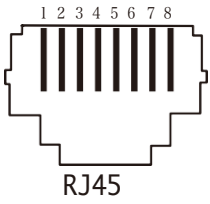


5.4 Communication Connection



5.4.1 Dry Contact Connection

The dry contact is connected based on customer requirements Dry nodes are used to control the start and stop of the generator.

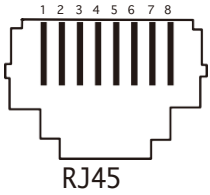
Dry Contact			
Connect with weak current			
Pin	**Group**	**Definition**	
1	A1	NC	
2	A2	DRY_1_NC	
3	A3	NC	
4	A4	NC	
5	A5	DRY_1_COM	
6	A6	NC	
7	A7	NC	
8	A8	DRY_1_NO	

5.4.2 CT/METER/DRM0 Terminal Connection

The CT/METER is used to monitor the status of the energy consumption.

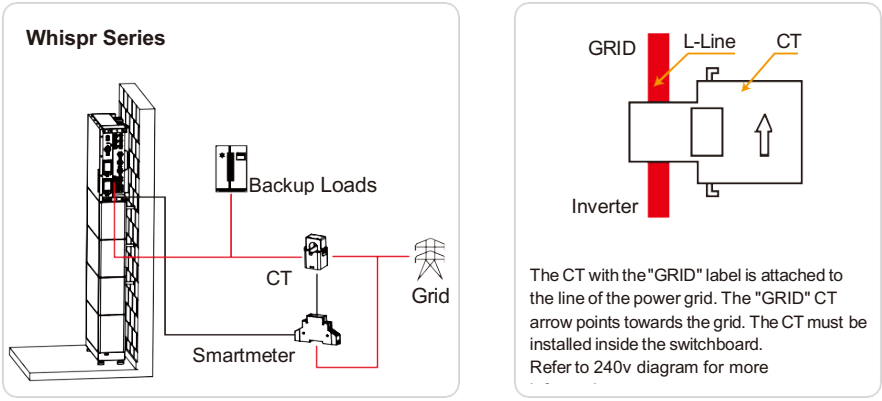
When the Whispr is installed in some states of Australia, the DRMO terminal needs to be connected.

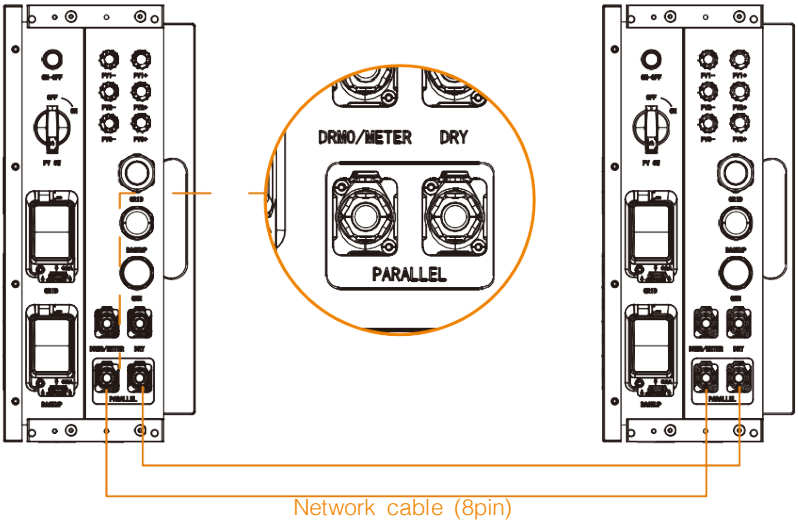
The connection method is as follows:

CT / Smart meter / DRM0			
Smart meter 485, DRM0 signal, external CT			
Pin	**Group**	**Definition**	
1	A1	I_CT_IN-	
2	A2	I_CT_IN+	
3	A3	485_C_A	
4	A4	485_C_B	
5	A5	DMR0-	
6	A6	DMR0+	
7	A7	Connect	
8	A8		

CT cable specifications: if the cable is not long enough, adding an extension cable (max 10m), contact the local supplier in advance.
The direction of CT installation as shown in Figure 5.5.2.
The arrow direction on the CT must point to the power grid.

Figure 5.4.2





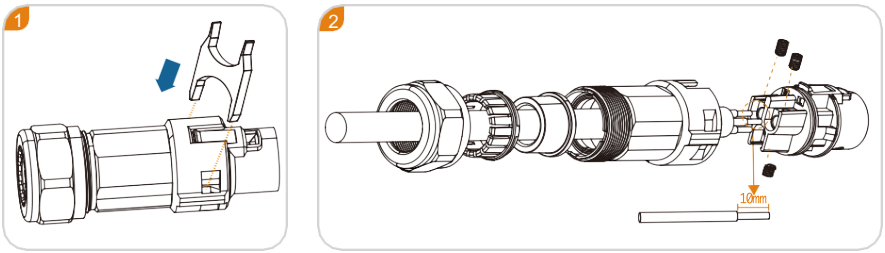
① The parallel function allows additional Whispr to be connected together.

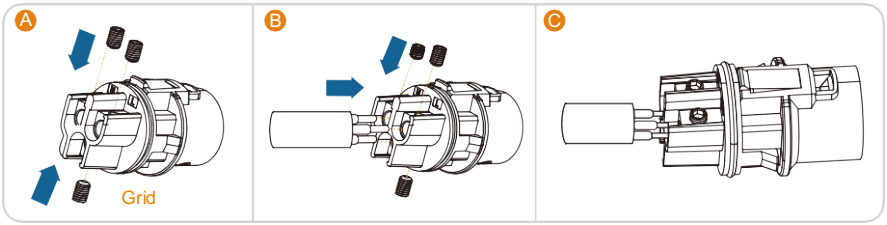
② The parallel ports are RJ45 terminals and are connected using conventional 8-pin network cables

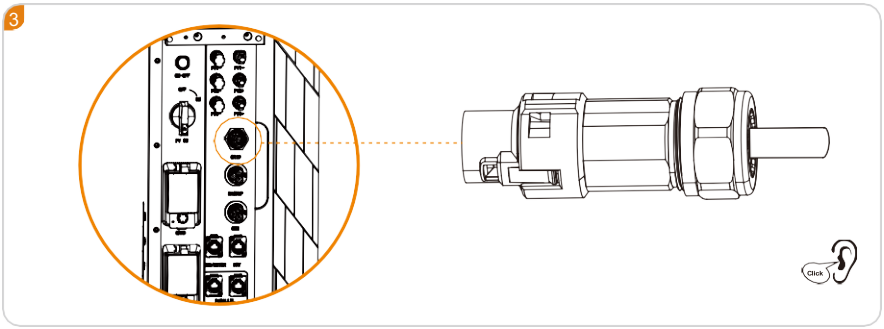
5.5 Grid Connection

Requirements

1. Install an AC circuit breaker between the inverter and the grid, before connecting the system to the grid.
2. Grid voltage and grid frequency should be within the allowable range of inverter operation.





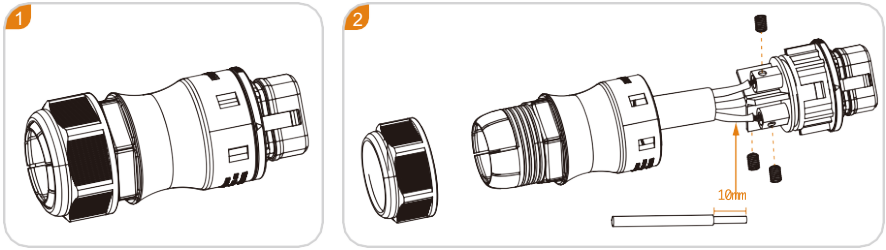


Note: for details about the electrical connection, see Figure 2.1.2-2.1.3

1. The GRID terminal and off-grid (EPS LOAD) terminal cannot be connected together, otherwise the system will be damaged.
2. The battery needs to be activated by the grid when the system starts for the first time.

5.6 EPS Load / Generator Connection

Both grid neutral and eps neutral connect to main neutral bar



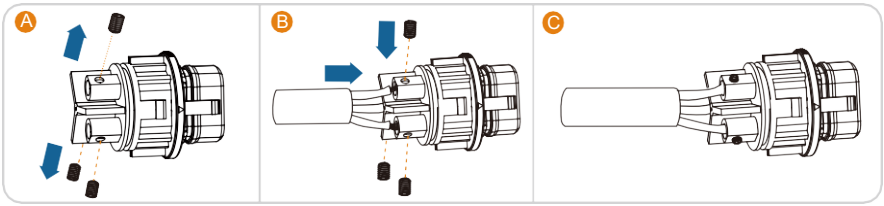
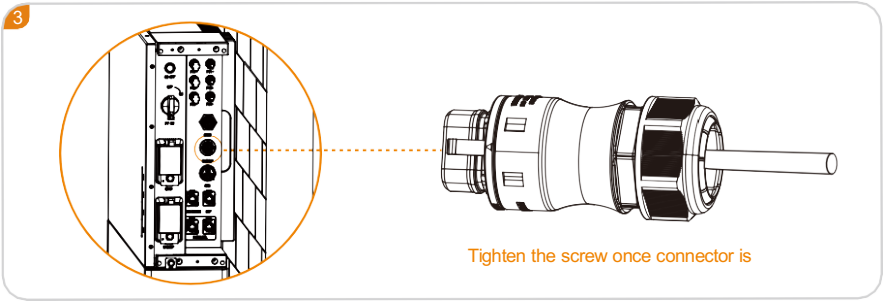


Figure 5.6.1 - EPS connector assembly



Do not connect the port to other power supplies. Otherwise, the inverter may be damaged, causing risks.

6 Operation

6.1 Checklist Before Operation

1. Check whether the system is firmly secured, and the installed position allows easy access for operation and maintenance.
2. All cables are correctly connected, properly distributed, and well protected, and no mechanical damage is caused.
3. The selection of AC circuit breakers is correct.
4. The wiring terminals are securely installed, and the vacant terminals are sealed.
5. All safety signs and warning labels on the system are firmly and clearly visible
6. The installer must select/verify the correct regional settings for the inverter. The Whispr is preprogrammed to country code AS4777.2

The installer will be able to select the correct regional settings in the app during commissioning. Selecting the customer's relevant Grid Operator will automatically allocate the relevant regional settings. Alternatively, the installer can login to www.redxpower.com with their installer credentials. Then they must navigate to Devices page, find their device by typing in the device serial number in the search field, then click on the device serial number and select the correct region in the Deploy section. The installer can also edit the Generation and Export Limit Control Settings on the Deploy page.

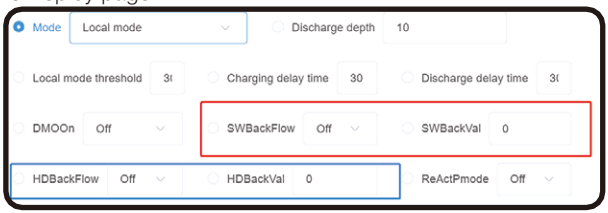


Figure 6-1 - Export Soft and Hard Limit settings on Deploy page

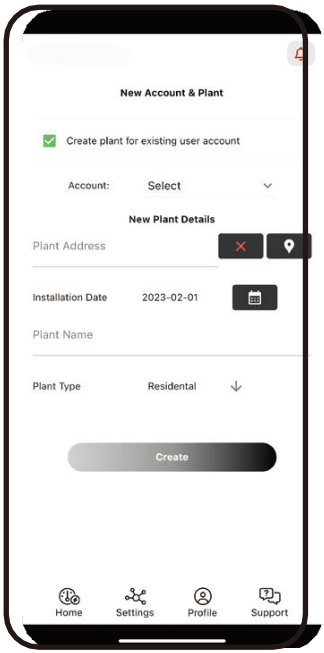


Figure 6-2- Region selector in the Power App

Turning SWBackFlow and HDBackflow settings to "On" sets the soft export limit to the value of SWBackVal, and the hard export limit to the value of HDBackVal respectively. Turning both SWBackFlow and HDBackFlow parameters to "On" enables generation limit control to these values.

6.2 Operation Checks

1. Confirm that the above checklist meets the guidelines.
2. Turn on grid circuit breakers
3. After the AC circuit breaker is turned on and the LED on the system is on, perform the following tasks:

(a) If the LED indicator does not light up, check if voltage is present on grid input terminals. If there is voltage on the grid terminals, but unit is still not illuminating the LEDs– please contact local PowerPlus Energy dealer.

(b) Install the Power APP or open web page according to the attached instructions, and then configure the WIFI connection.

(c) Turn on the battery circuit breaker on the side of the system.

(d) Turn on the PV circuit breaker on the side of the system.

(e) Turn on the EPS circuit breakers on the side of the system.

(f) Press the power button on the side of the system, then the system is in passthrough state and EPS port has output.

(g) Set the needed parameters through the web or APP. The battery LED indicator on the panel lights up, and the other LED indicators will light up according to the actual working status.

(h) If the operation fails, troubleshooting fault by referring to Chapter 8 in this manual Note: Use grid and the App to activate the battery for the first-time operation.

6.3 Operation Modes

6.3.1 Operating Modes

The unit has 3 main modes: Auto, VPP or Timed mode. The default is VPP mode, most units should be configured as Auto mode. The Auto mode includes on- grid and off-grid functions. By default the Anti - backflow function is enabled.

A. On Grid Functionality

1. **Anti-backflow function enabled:**

In Auto Mode – the unit can provide power from the Grid and EPS terminals to any loads (max 7000W). When anti-backflow is enabled, the unit will not send power back to the grid. In VPP mode: Whispr works as per the commands sent from the cloud platform. The unit can be fully customised with charging times and discharging times and set power levels in Timed mode.

2. **Anti-backflow function disabled:**

In Auto Mode – the unit can provide power from the Grid and EPS terminals to any loads (max 7000W). When the system detects that there is excess power available from solar and not being used by the loads and the battery is full, then power can be sent to the grid. In VPP mode: Whispr works as per the commands sent from the cloud platform. The unit can be fully customised with charging times and discharging times and set power levels in Timed mode.

B. Off - Grid / EPS Functionality

When the power grid is cut off, the system will automatically switch to off-grid mode. The system will supply power to the load from the battery via the EPS terminals. Note: in off-grid mode, the maximum system output power using only the battery is 7000W, meaning the load power of the EPS circuit should not exceed 5000W. When the system detects a low battery status, the battery will stop discharging automatically and will be charged if there is solar or other power supplied.

6.3.2 Fault State

The Whispr has a smart control system that continuously monitors and regulates system status. When there is a system fault or equipment fault, fault information will be displayed on the web page /APP, and the LED light will also be on in fault mode.

Notes:

(1) For details about fault information, see Chapter 9.

(2) The fault details inform users of internal faults' possible reasons and rectifications.

6.3.3 Firmware Update

When the system is upgrading firmware, do not power off the unit. When the upgrade is complete, the system will automatically revert to normal working mode.

6.3.4 Self - check Status

Before entering normal operation mode, the Whispr will enter self-check mode. If all checks pass successfully, the system will return to normal working mode; otherwise, the system goes into the fault state.

6.3.5 Standby Status

When the system does not fault but certain operating conditions are not met, the system will turn to standby mode.

6.3.6 Protection Mode

Connecting an oversize load to the EPS terminal will trip the unit and trigger protection mode. The unit will try to restart 5 times, if the load is still present, the unit will revert to protection mode. Remove the oversize load and clear the overload fault in the app or desktop platform. If any circuit breakers have tripped – contact your installation partner.

6.3.7 Shutdown Status

Disconnect all power supply, turn everything off and the system will automatically enter the Off state. The specific steps are as follows:

1. Turn off the power button.
2. Turn off the PV button switch.
3. Turn off the battery switch.
4. Disconnect the grid supply, the LED light and the battery power display LED light will be turned off.

7 System Turn On and Turn Off

7.1 Turn on Whispr Series

(1) Connect to the grid.

(2) Turn on the battery circuit breaker.

(3) Turn on the PV circuit breaker.

(4) Turn on the power button.

(5) When the LED display is normal, the system starts normally.

7.2 Turn off Whispr Series

(1) Turn off the power button.

(2) Turn off the battery circuit breaker.

(3) Turn off the PV circuit breaker

(4) Turn off the AC and all other circuit breaker.

(5) When the LED display is off, the system is completely off.

(6) Wait at least 60 seconds before performing further operations.

8 Troubleshooting & Maintenance

8.1 Troubleshooting

Once a fault occurs in the storage unit, the fault information will be displayed on the APP/web interface.

Suggestion	Fault reason	Suggestion
The battery connection error	No battery is detected	Check whether the battery circuit breaker is on.
Battery under voltage or over voltage	If the battery voltage is abnormal, the internal circuit protection is triggered	1. Check whether the battery is correctly connected and whether the battery voltage is normal. 2. Ensure the battery is in good condition and restart the module.
No grid	No grid is detected	If the grid is connected, check whether the grid terminal is securely connected and the grid voltage is normal.
DC Bus under-voltage	The input is suddenly disconnected	1. When the fault is recovered, the inverter will automatically return to normal working state; 2. If the external environment does not change and the alarm remains after the system is restarted, contact PowerPlus Energy.
DC Bus over-voltage	The rapid change of power grid voltage may cause high energy input to the inverter. Internal dc-dc converter or charging electronics may have a fault.	After the fault error is recovered, the inverter automatically restores to the normal working state.
Inverter overvoltage	The output voltage of the inverter is out of the range.	Check whether the external load exceeds the specification range of the inverter. After the fault is recovered, the inverter automatically recovers to the normal working state.
Inverter undervoltage		

Islanding protection	Islanding protection check	1. Check whether the AC circuit breaker of the grid is disconnected and whether the connecting cables are securely connected. 2. Check whether the grid has power.
Grid overvoltage	When the grid detects an error, the inverter automatically switches to the off-grid mode. When the error disappears, the inverter automatically resumes to the grid mode	Check the grid voltage or frequency; If the power grid voltage or frequency exceeds the allowable range of converter protection parameters, please report to the DNSP.
Grid under voltage		
Grid over frequency		
Grid under frequency		
Relay fault	Detect the fault of relay	Wait for the inverter to recover automatically.
Bus soft start failed	Bus voltage setup timeout	Wait for the inverter to recover automatically.
The inverter soft start failed	Inverter output setup timeout	
Inverter phase lock failure	Inverter phase lock fault	Wait for the inverter to recover automatically.
EEPROM read failure	EEPROM read fault	Disconnect power and restart the system
The grid is connected to the EPS terminals	The AC input and load output cables are incorrectly connected	1. Shut down the inverter and turn off all circuit breakers. 2. Check whether the AC input cable (power grid cable)is connected to the load (EPS) output terminal. If the connection is incorrect, reconnect the cable.

Output overload	Overloaded outputs	1. Remove some loads. Ensure that the load is smaller than the maximum output power of the inverter. 2. Restart the inverter.
Radiator over temperature	1. The inverter installation location is not ventilated. 2. The ambient temperature is too high.	1. Check whether the operating environment exceeds the operating temperature range of the inverter. If yes, improve the operating environment.
The communication between the host computer is error	1. The address and baud rate are incorrectly set. 2. The communication cable is loose.	1. Check the communication address and baud rate Settings (please change the baud rate to 2400). 2. Check whether the communication cable is loose.
DSP communication error		
Grid Short Circuit	The AC input is short circuit.	Check whether the AC input cable of the inverter is short- circuited.
Load short circuit	Output short circuit.	1. Remove load. 2. Restart system.
IsoFault	The PV panel is installed abnormally	1. Check whether the PV panel is installed correctly 2. Check the PV insulation resistance to the ground

8.2 Maintenance

WARNING

Do not place Whispr near fire, there may be an explosion risk

Do not open Whispr without permission

WARNING

Please read the following carefully before installation:

(a) Remove watches, rings, or other metallic objects.

(b) Use tools with insulated handles.

(c) Wear rubber gloves and insulated shoes.

NOTICE

No Serviceable Components
Maintenance of batteries should be carried out or supervised by authorised personnel and necessary protection measures should be taken.
Do not mix batteries of different types and capacities.
All batteries in the system should be the same model.

8.3 Routine Maintenance

Item	Method	Period
System Clean	Check the temperature and dust off the Unit. Clean the unit if necessary.	6 Months
Cable Entry	Check whether the cable entry is insufficiently sealed or if the gap is excessively large; and reseal the entry when necessary.	12 Months
Electrical Connection	Check whether all cables are firmly in place. Check whether a cable is damaged (rodents. Physical damage, weather etc).	12 Months

9 Power App

The Power APP can establish communication connection to the energy storage unit via WIFI and or 4G (optional) network. Users can use the APP to view basic information, alarms, and events, set parameters, or download logs etc.

Note: Install the APP or open web page according to the attached instructions, and then configure the WIFI connection.

10 Warranty

When a product faults during the warranty period. PowerPlus Energy will provide a new product.

Evidence

During the warranty period, the customer shall provide the product purchase invoice and date. Since the date of purchase by the user from PowerPlus Energy (hereinafter referred to as the manufacturer), the user will enjoy the following after-sales warranty service:

A 5+5-year warranty commences from the date of shipment from, during the warranty period the company provides free repair or replacement of new products.

Disclaimer: Product faults caused by the following reasons are not within the scope of the manufacturer's 10 years warranty commitment:

(a) The user does not perform the correct operation according to the procedures listed in the product specification.

(b) Repairing the product without communicating with the manufacturer or changes the product without permission.

(c) Users not following the manual, local regulations, or standards.

(d) The fault of the module caused by unsuitable environment.

(e) Due to earthquake, fire, natural disasters, lightning strike, abnormal voltage raise, ionizing radiation or other natural disasters caused by external factors.

4. Under the following circumstances, the manufacturer has the right not to provide warranty service.

(a) Brand, trademark, serial number, nameplate and other marks marked by the manufacturer in the product are damaged or cannot be identified.

(b) The customer fails to pay off the products according to the Purchase and Sales Contract.

(c) The user intentionally conceals the improper use of the product during installation, wiring, operation, maintenance or other processes to the after-sales service provider of the manufacturer.

(d) PowerPlus Energy reserve the right to change the contents of this specification and product performance without informing users.

11 Appendix

11.1 Optional Accessories

The following table lists the optional accessories of the system, contact the manufacturer or distributor for further information.

Name	Notes / Purpose
Data Collector	Data Collector (Wi-Fi)
Data Collector	Data Collector (4G)
Smart Meter	Single phase smart meter

12 Contact

If you have any questions about our products, please contact our technical support team. Please provide the following information when inquiring:

1. System serial number
2. System model
3. Fault code/Name
4. Briefly describe the fault symptom

For more information, please visit:
www.powerplus-energy.com.au

Download the Power App with the above QR Code

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