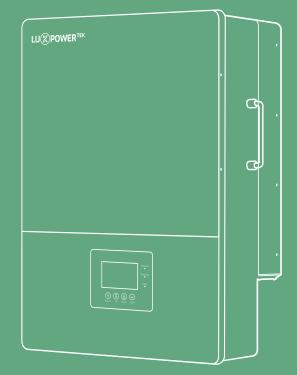
Hybrid Inverter User Manual

LXP-LB-EU 12K





Version: UM-GLXP02002

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Revision History

Version	Date	Description
UM-LXP02002	2024.08.06	First official release.

1. Safety

1.1 Safety Instruction

General Safety Instructions

The inverter has been designed and tested strictly according to international safety regulations. Read all safety instructions carefully prior to any work and observe them at all times when working on or with the inverter. The operator must be qualified personnel and the installation must be capable with relevant national or international standards or regulations.

Incorrect operation or work may cause:

- injury or death to the operator or a third party.
- damage to the inverter and other properties belonging to the operator or a third party.

Important Safety Notifications

There are many safety issues need to be carefully notified before, during and after the installation, and also in future operation and maintenance, following is important safety notifications to operator, owner and user of this product in appropriate usage.

Dangers of High Voltages and Large Current

- Beware of high PV voltage. Please turn-off the DC switch of PV Panel output before and during the installation to avoid electric shock.
- Beware of high grid voltage. Please turn-off the AC switch of grid connection before and during the installation to avoid electric shock.
- Beware of large current of the battery output. Please turn-off the battery module before and during the installation to avoid electric shock.
- Do not open the inverter when it's working to avoid electric shock and damages from live voltage and current from the system.
- Do not operate the inverter when it's working, only the LCD and buttons can be touched in limited cases by qualified personnel, other parts of the inverter can be touched when the inverter is under a safe state (e.g. fully shut-down).
- Do not connect or disconnect any connections (PV, battery, grid, communication etc.) of the inverter when it's working.
- Make sure the inverter is well grounding, an operator should make sure himself is good protected by reasonable and professional insulation measurements (e.g. personal protective equipment (PPE)).
- Inspect relevant existed wiring on-site of the installation is under good condition before installation, operation or maintenance.
- Inspect the connections are good between inverter and PV, battery and grid during installation to prevent damages or injuries caused by bad connections.

Avoid misoperation and Inappropriate Usage

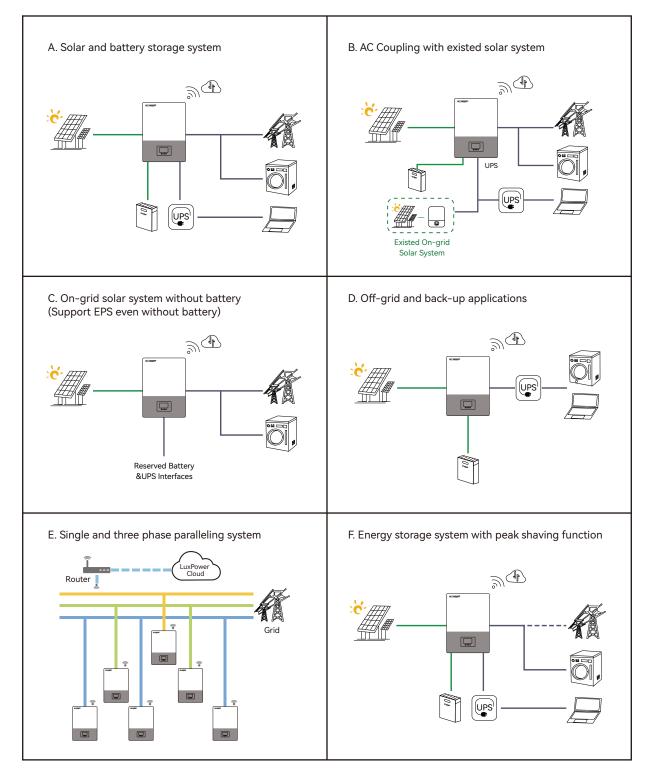
- All the work of this product (system design, installation, operation, setting, configuration and maintenance must be carried out by qualified personnel as required.
- All connections must be in accordance with local and national regulations and standards.
- The inverter and system can inter-connected with the utility grid only if the utility grid permits it.
- All the warning labels or nameplates on the inverter must be clearly visible and must not be removed, covered or pasted.
- The installation should consider the safety of future users when choosing the right position and location as specified in this manual.
- Please keep the children away from touching or misusing the inverter and relevant systems.
- Beware of burning hurt, the inverter and some parts of the system could be hot when working, please do not touch the inverter surface or most of the parts when they are working. During inverter working states, only the LCD and buttons could be touched.

- Please carefully read this manual before any work is carried out on this inverter, the installation, please keep this manual carefully stored and easy to access at any time.
- The qualified personnel should have had training in the installation and commissioning of the electrical system as well as dealing with hazards, also they should have the knowledge of the manual and other related documents. As the installer or operator they are required to be familiar with local regulations and directives.

2. Brief Introduction

2.1 System Solution

This product and relevant system is suitable for following system applications (system diagram):

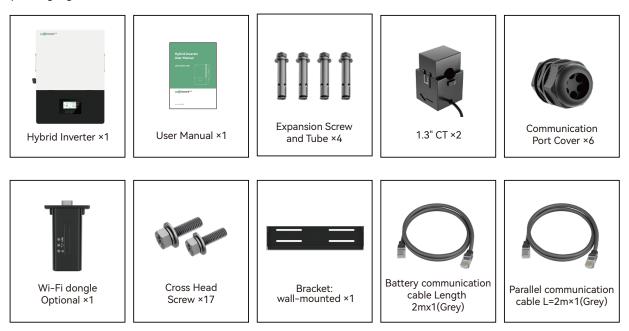


3. Installation

3.1 Packaging List & Storing

Packaging List

When the packaging is unpacked, the inner components should be the same as described in below packaging list.

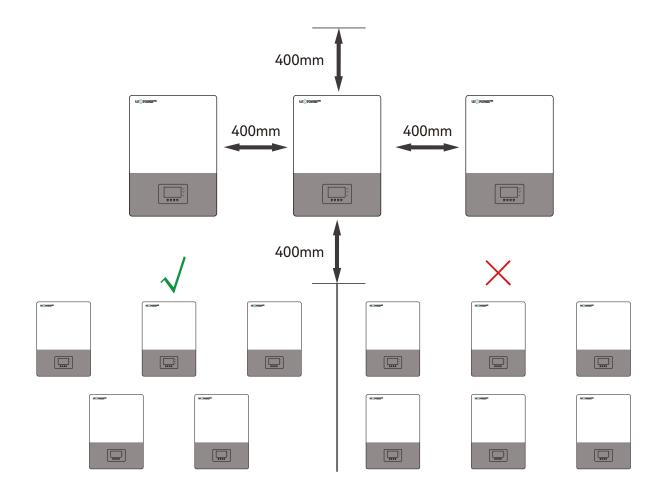


3.2 Location Selection and Installation

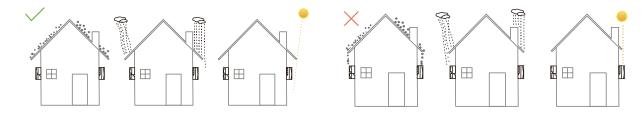
3.2.1 Requirements for installation location

a. The wall for mounting should be strong enough to bear the weight of inverter.

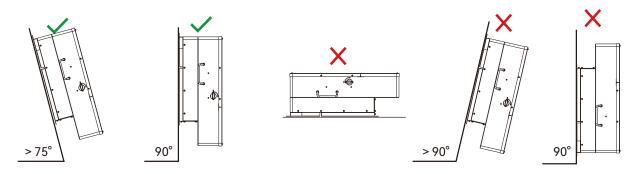
b. Please maintain the minimum clearances below for adequate heat dissipation.



c. Never install the inverter in a place with direct sunlight, rain or snow. Please refer to below figure and select a well shaded place or install a shed to protect the inverter from direct sunlight, rain and snow etc. PROTECT the LCD screen from excessive UV exposure.

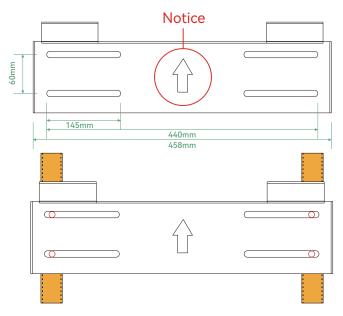


d. The inverter should be installed upright on a vertical surface.



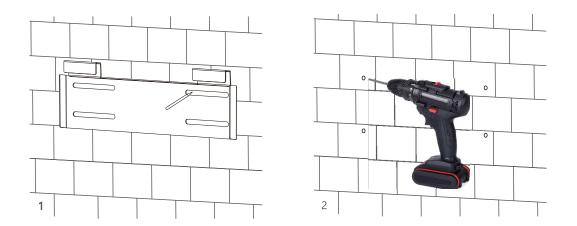
3.2.2 Installing the inverter

The inverter is wall-mounted type and, should be installed on a vertical, solid mounting surface, such as wood studs, brick or concrete wall. Two or more persons may be needed to install the inverter due to its weight. The slots on the mounting bracket can accommodate various stud spacings from 305mm to 406mm.

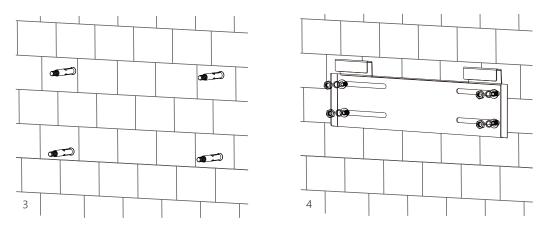


The mounting steps are as below: (Use brick wall as example)

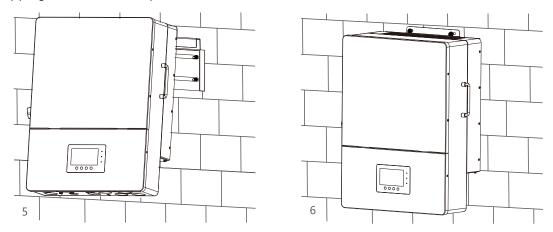
Step 1. Mark the positions of drill holes with the mounting bracket, then drill 4 holes of 8mm (5/16inch) diameter and make sure the depth of the holes is deeper than 50mm(2inch).



Step 2. Install and tighten the expansion bolts into the holes. Then use the corresponding nuts and washers (packaged together with the expansion bolts) to install and fix the wall-mounting bracket on the wall.



Step 3. Hang the inverter onto the wall-mounting bracket and lock the inverter on the wall using 2 self-tapping screws on the top of the inverter.



For installation on wood studs

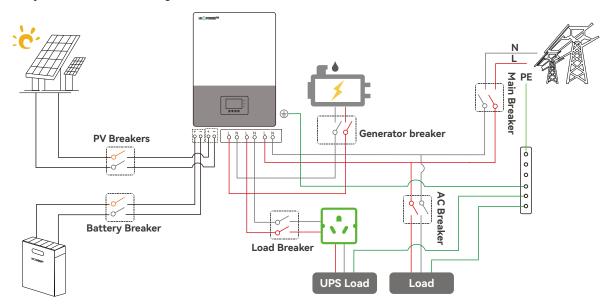
Fasten the mounting bracket on the studs with 4 wood screws, then hang the inverter onto the bracket and lock the inverter on the wall with 2 self-tapping screws.

Please note that the wood screws and self-tapping screws are not provided with the inverter. Installers need to prepare the screws before installation.

3.3 Connection Overview

3.3.1 System Connection

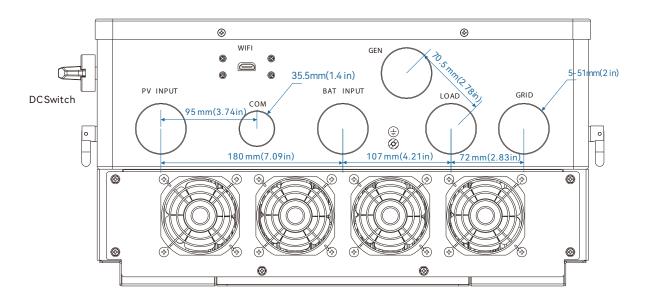
The system connection diagram is as below.



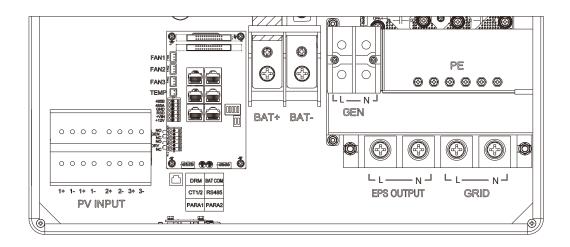
Please prepare the breakers before connetion, breakers selection recommendation for both DC and AC

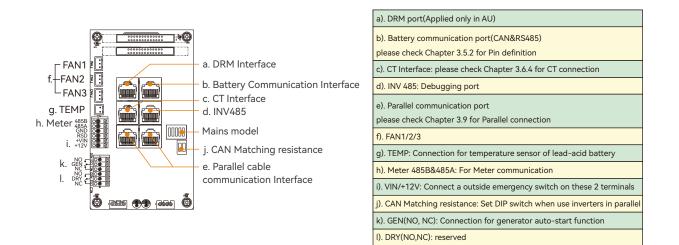
Inverter model	12К
PV Breakers(2P×4)	MPPT1 string 1: 600V/20A MPPT1 string 2: 600V/20A MPPT2 : 600V/20A MPPT3 : 600V/20A
Battery Breaker(2P)	100V/300A
Main Breaker(2P)	200A/240Vac when ups is used for whole home backup 100A/240Vac when ups is used for partial load backup
Load Breaker(2P)	200A/240Vac when ups is used for whole home backup 100A/240Vac when ups is used for partial load backup
Generator Breaker	100A

Overview of Connection Ports



Overview of the cable box





3.4 PV Connection

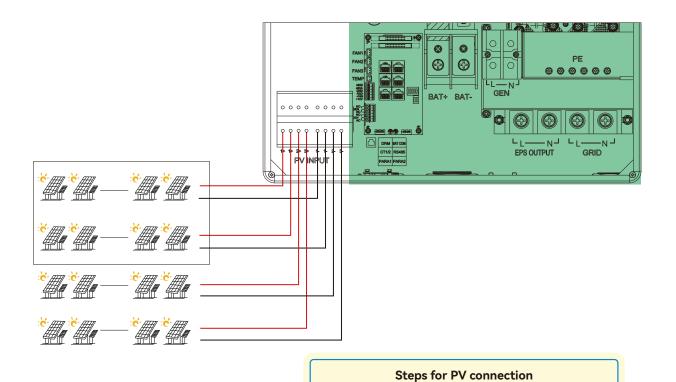
PV connection of this hybrid inverter is same as traditional on-grid solar inverter (string inverter).

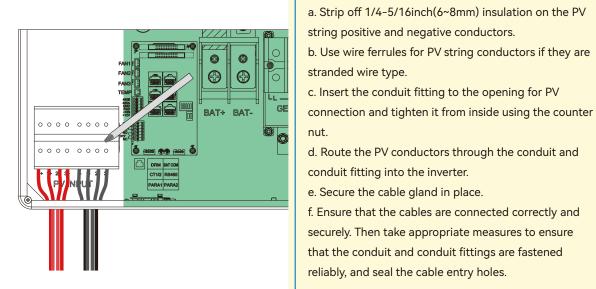
* Please double check the lowest ambient temperature of the installation location. The rated Voc on solar panel nameplate is obtained at 25°C. As the ambient temperature drops, the Solar panel Voc increases. Please ensure the Maximum solar string voltage corrected at the lowest temperature does not exceed the inverter's maximum input voltage of 550V.

Cable Requirement:

Cable Size	Minimum Voltage
10-8 AWG(5-8 mm ²)	600V

- The inverters has triple MPPTs. For MPPT1, users can connect two strings. For MPPT2 and MPPT3, users can connect one string.
- When users connect 2 strings to MPPT1, make sure the two strings has same quantity of solar panels. The inverter will limit the total MPPT1/MPPT2/MPPT3 input current to 25A/15A/15A automatically.
- The inverter will limit the max solar input power to 18kW totally.





3.5 Battery Connection

3.5.1 Battery power cable connection Cable Requirement:

Model	Cable Size	Minimum Voltage	Torque for cable connection	OT ring
12K	3/0-4/0 AWG(85-100 mm ²)	600V	20(N·m)	RNB100-10

Step 1. Strip 1/4-5/16inch(6-8mm) insulation from the cable end and crimp OT rings for the cable ends.

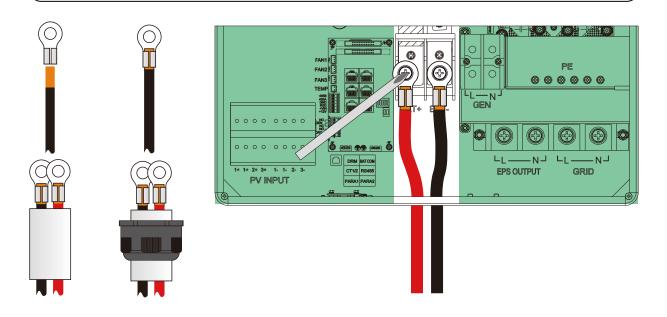
Step 2. Route the battery power cable through the cable gland, connect positive to BAT+, negative to BAT-.

Step 3. Secure the conduit fitting to the enclosure using the counter nut.

Step 4. Fasten the OT rings of battery positive and negative cables to the lugs according to the marking.

Step 5. Fix the cable gland in place.

- Polarity reverse will damage the inverter!
- Install a DC isolator between battery and inverter can avoid potential damages caused by electric arc.

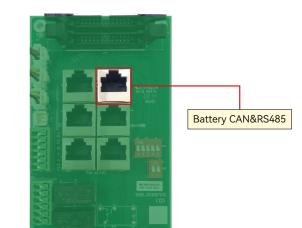


3.5.2 Battery communication cable connection

A correct battery communication cable must be used to connect the battery to the inverter when users choose lithium-ion battery type. Please select 'Lead-acid ' type if the lithium battery can not communicate with inverter. The battery communication port on inverter is a RJ45 socket, Pin for the RJ45 plug of the communication cable is as below. Make the communication cable according to the below inverter Pin and the correct pinout of communication port on battery. The inverter supports both CAN and RS485 communication.

Pin	Description			
1	NC			
2	GND			
3	NC			
4	BAT CAN H			
5	BAT CAN L			
6	NC			
7	BAT RS485 A			
8	BAT RS485 B			





After battery power cable and communication cable connection, users need to enter Advanced setting and choose Battery type and brand on the inverter LCD.

For Li-ion battery

- Please make sure the lithium-ion battery to be used is compatible with Luxpower inverters. Please contact your distributor for updated battery compatible list.
- If you are using multiple battery modules with the inverter, the inverter communication cable must be connected to the master battery. Please check with your battery supplier for battery master and slave settings.

For Lead-acid battery

- The temperature sensor for lead-acid battery is optional. If you need it, please contact distributor for purchasing.
- There are three stages for lead-acid battery charging. For charging/discharge related parameters, please check charge/discharge setting page.

Basic	Grid type 230V ~ Gird Freq 50 ~ Set	Basic Charge first(PV)	Set
	Grid regulation 5: VDE0126 V Reconnect time(S)	Time 1 Charge first power(kW)	
Charge	HV1 V S HV2 V S HV3 V S	Charge Time 2 Stop charge first SOC(%)	
Discharge		Discharge Time 3 Stop charge first Volt(V)	
	HF1 Hz S HF2 Hz S HF3 Hz S	Lead-acid	
Advanced	LF1 Hz S LF2 Hz S LF3 Hz S	Advanced Absorb voltage(V) Float voltage(V)	Set
Debug	Battery type 1: Lead-acid V Set	Debug Start derate Volt(V)	^
	Battery type 1: Lead-acid ~ Set		
Device info.	Lithium brand 6: Lux V Bat capacity(Ah)	Device info.	\sim

3.6 Grid&EPS load Connection

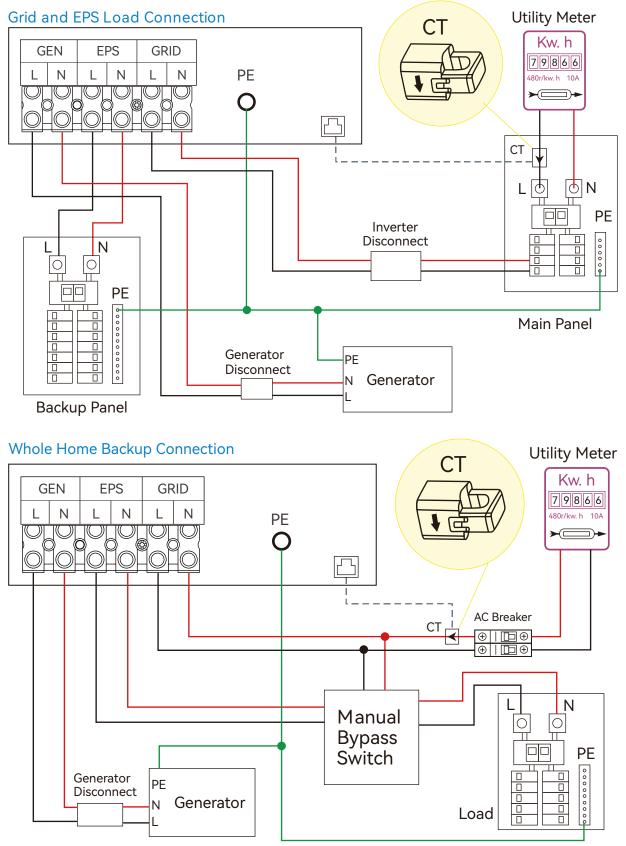
3.6.1 Grid type and regulation selection

The inverter has passed the main grid-connection regulations NRS097:

Basic	Grid type	2	30V	~	Gird Free	7	[50 ~	Set
Charge	Grid regu	lation 3	: Sou	thAfrica∽	Reconne	ct tir	ne(S)		
	HV1	V [S	HV2	V	S	HV3	V	S
Discharge	LV1	V	S	LV2	V	S	LV3	V	S
Advanced	HF1	Hz	S	HF2	Hz	S	HF3	Hz	S
Advanced	LF1	Hz	S	LF2	Hz	S	LF3	Hz	S
Debug	Battery ty	pe 1:	Lea	d-acid	~			Set	
Device info.	Lithium b	rand 6	Lux		→ Bat c	apac	ty(Al	ı)	^

3.6.2 Grid and EPS load connection

The inverter can be connected to the load side of the service disconnecting means if the busbar rating in the main panel can meet the NEC705.12(B)(3) requirements. Otherwise, a Line side connection can be made to avoid an expensive main panel upgrade.



Main Panel

3.6.3 AC cable connection

Cable Requirement:

Current	Cross-section	Cable Diameter	Minimum Voltage	Torque for cable connection	OT ring
100A	3-2AWG(25-35mm²)	6-7mm	600V	41(N·m)	RNB38-10S
200A	2/0-3/0AWG(70-85mm ²)	9-10mm	600V	41(N · m)	RNB100-10

a. Strip off 5/16-3/8inch (8~10mm) insulation sleeve on the cables.

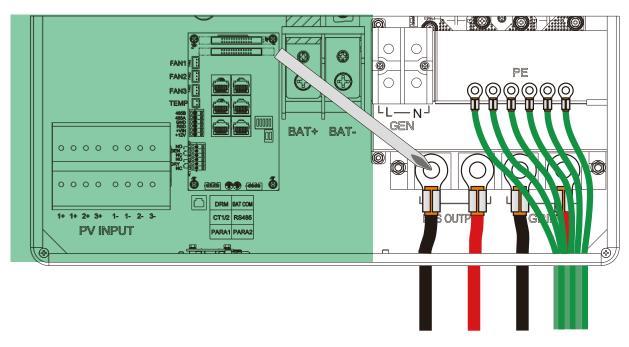
b. Use wire ferrules if the cables are made of fine stranded wires.

c. Secure the conduit fitting to the enclosure using the counter nut of the fitting.

d. Fasten the grid and EPS load cables to the terminal block in accordance with the markings.

e. Secure conduit to the conduit fitting.

f. Check that the cables are connected correctly and securely, then take appropriate measures to ensure that the conduit and conduit fitting are secured reliably, and seal the cable entry holes.



3.6.4 CT/Meter Connection

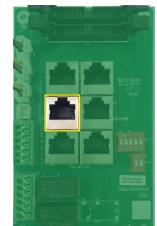
To measure the power import from and export to the grid, a pair of CTs or one triphase meter must be installed at the service entry point in or near the main service panel. We standard supply 2 CT for one inverter.

CT Port Pin definition

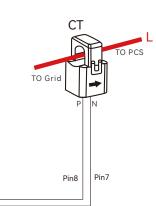
The CT interface for 1 CT connection is a RJ45 port, we have made a RJ45 plug on those 1 CT in advance, so you can connect it to port directly.

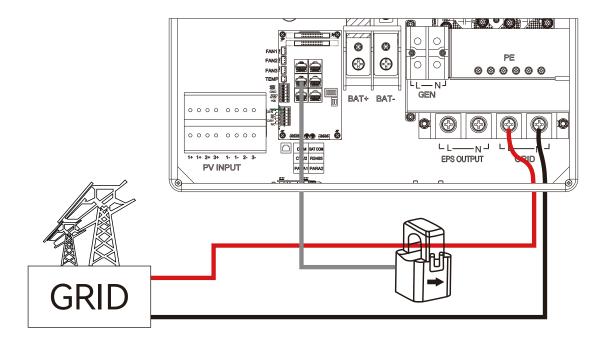
Pin	Description			
1-4	reserved			
5	CT2N			
6	CT2P			
7	CT1N			
8	CT1P			











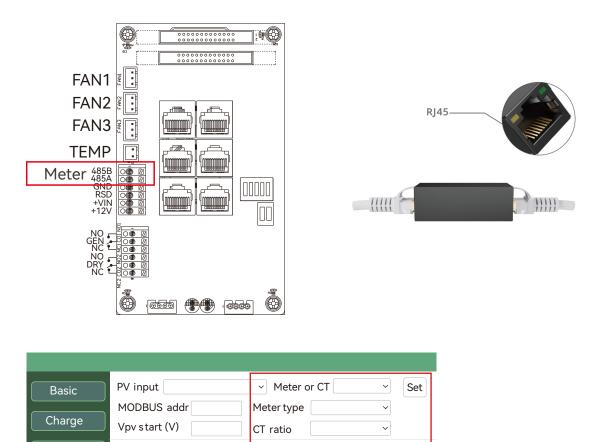
Please refer to the above connection diagram for the correct positions of CTs. The arrows on the CTs must point to inverter side.

CT Clamp Ratio

The Luxpower inverters support two ratios of CT clamp-1000:1 and 3000:1. The CT ratio of the CTs in the accessory bag is 1000:1. If you are using a 3rd party CT, please ensure the CT ratio is either 1000:1 or 3000:1, and then select the correct CT ratio setting in the inverter monitor page or on inverter LCD.

Extend CT clamp cable

The CT wires can be extended with a common ethernet cable if the length is not enough. A RJ45 adapter is needed for the extending. The CT wires can be extended up to 300ft(around 100m).



EPS output without Battery

CT direction reversed

Charge last

PV Arc fault clear

Meter Connection

C

Discharge

Advanced

Debug

Device info.

A

Offgrid output

Seamless switch AC couple

Smart load

PV Arc

Currently only EASTRON SDM630-Modbus meters can be used. If you need to use meter for import /export detection instead of CTs, you need to connect it to the Meter 485A and 485B terminals on the inverter, please contact Luxpowertek for detailed guideline.

Micro-grid

Set

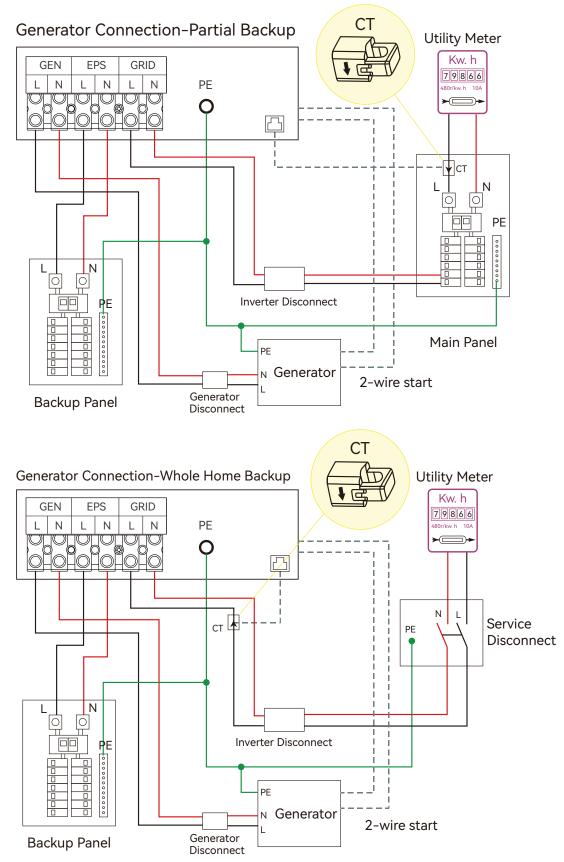
RSD disable

Set

3.7 Working with Generator

3.7.1 Generator system connection

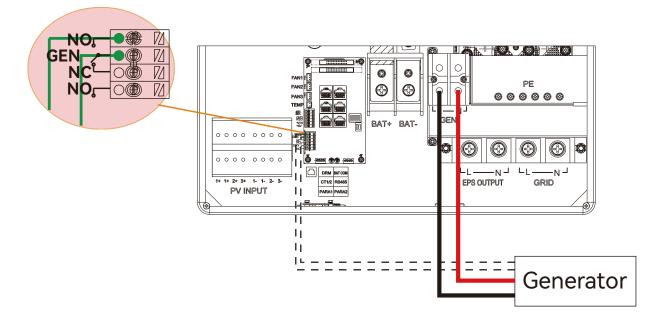
This hybrid inverter can work with generator. There are Gen ports on the inverter for generator connection.



When generator is started, all the loads connected to EPS will be supplied by the generator. Meanwhile battery will be charged.

The pass-through relay on the generator port is 90A. When generator is on, please ensure the total load and charge current will not exceed 90A.

The generator start signal shall connect to COM board GEN(NO, NC port) if users want to start generator remotely.



3.7.2 Generator Startup and Stop settings

Basic	Bat charge control Use SOC % 🖌 Use Bat V 📃 Set	Basic Generator Charge current limit(A) Gen rated power(kW) Set
Charge	Bat charge current limit(A)	Charge Charge start Volt(V) Charge start SOC(%)
Discharge	AC charge 🗸 Set	Discharge Charge end Volt(V) Charge end SOC(%)
Advanced	Time 1 AC c harge power(kW)	Advanced
Debug	Time 2 Stop AC charge SOC(%)	Debug
	Time 3 Stop AC charge Volt (V)	
Device info.		Device info.

Depends on the Bat charge control setting, system will use either battery SOC or battery voltage to judge if system need to start or stop the generator.

Generator Start Conditions

When utility fails and

- When battery is discharged to cut-off settings
- or there is force charge request from battery.

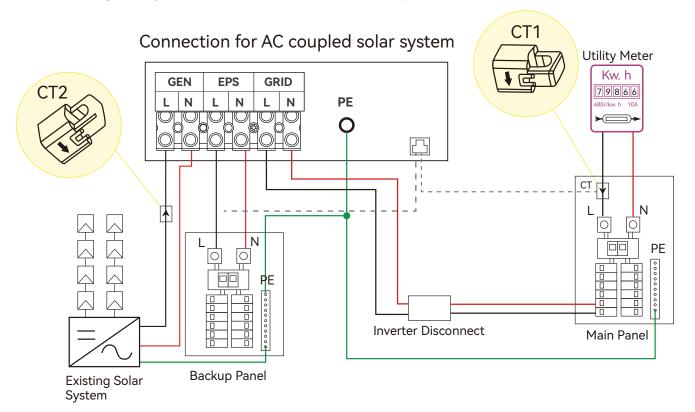
or when the battery voltage or SOC is lower than the Generator Charge start Volt/SOC settings.

Generator Stop Conditions

When battery voltage or SOC is higher than Charge end Volt/SOC settings value.

3.8 AC Coupling Installation Connection

The inverter supports AC coupling connection with the existing grid-interactive solar system. The existing solar system is connected to the inverter's EPS port.



When grid is on, the EPS terminal is connected to grid terminal inside inverter by a passthrough relay. so the hybrid inverter will bypass the interactive inverter AC to grid in this situation. The spec of the passthrough relay is 200A.

When grid is off, the hybrid inverter will work as a power source for the grid interactive inverter to synchronize and feed power to the micro-grid. The loads will be first supplied by solar power. If solar panels are generating more power than load consumption, the excess solar power will be stored to the battery. When solar power exceeds the sum of load power and max battery charging power, e.g. when battery is nearly full. The inverter will signal the grid interactive inverter to reduce power via the frequency shifting power reduction mechanism, thus to maintain the balance of generation and consumption of the microgrid system.

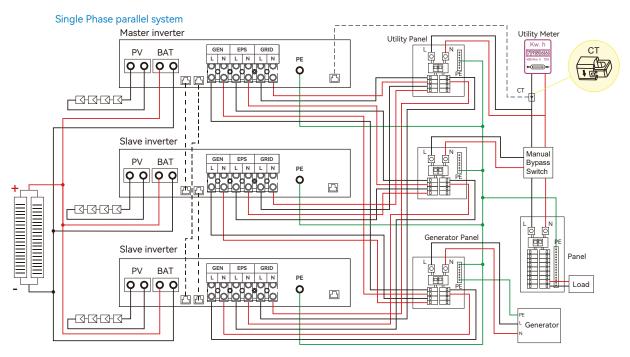
Users need to enable AC coupling function when they connect existing on grid system to EPS terminal.

Basic	PV input	✓ Meter or CT ✓ Set
	MODBUS addr	Meter type V
Charge	Vpv start (V)	CT ratio ~
Discharge	Offgrid output 🛛 🗸	EPS output vithout Battery Micro-grid Set
Advanced	Seamless switch	Charge last RSD disable
Debug	AC couple	CT direction reversed
	Smart load	
Device info.	PV Arc 🗹 🛛 PV Arc fa	ault clear Set

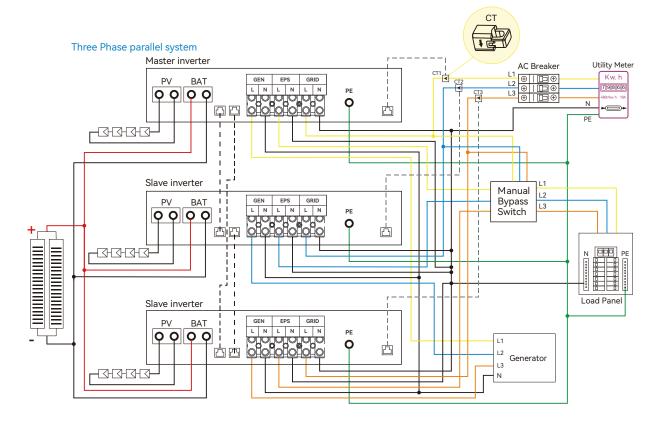
3.9 Parallel System Connection

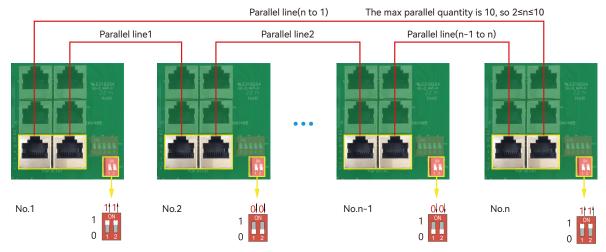
3.9.1 Connection for paralleling system

The hybrid inverter supports parallel connection to expand power and energy capacity to suit different using scenarios. Up to 10 units can be paralleled to reach a capacity of 120kW. Wiring diagram is as below, the manual bypass switch connect loads to EPS panel for default. When inverters fail, users can switch the loads to utility.



Please put the 2-bit CAN balancing resistor switch to ON status for the first and end inverter of the daisy chain loop.





Please put the CAN communication PIN to on status for the first and the end inverter.

If the parallel cable is not enough or long enough, please make a straight pin to pin cable.

Setting for paralleling function in monitor system

1. Set up monitoring for the system, add all dongles into one station. Users can login to visit the monitor system, Configuration->Station->Station Management->Add dongle to add dongles.

	Ø Monit) Data		က္လိ juration	00 Overview	문 Maintena	nce 🖈		🏚 English 🗸	
Stations	+ 4	dd Stati	ion							Search by static	n name 🗙
Dongles	Plant r	name	Installe	r	End User	Cou	ntry	Timezone	Daylight saving time	Create date	Action
Devices	1 Genes	is			Aspergo Ins	stall Sou	th Africa	GMT+2	No	2019-03-14	Station Management
Users	2 Butler	Home	Elange	ni	johnbutler	Sou	th Africa	GMT+2	No	2019-03-25	Plant Management
Operation Record	3 Office					Sou	th Africa	GMT+2	No	2019-06-03	Plant Management
	4 Cronje	Home	Broom	head	cronje	Sou	th Africa	GMT+2	No	2019-07-16	Plant Management

2. Enable share battery for the system if the system share one battery bank, otherwise disable the shared battery function.

3. Set the system as a parallel group in the monitor system.

		⊘ Monitor) Data		uration			nance	*		🕼 English			
Stations Overview	Ē	Station Nar	ne]							Search b	y inverter SN	×	
Device Overview	-	Serial number	Status	Solar Power	Charge Power	Discharge Power	Load	Solar Yield	Battery Dischar	Feed Energy	ConsumptionEr	Station name	Parallel	Action
	1	0272011008	Normal	228 W	42 W	0 W	182 W	215.3 kWh	39.6 kWh	0 kWh	551.2 kWh	Dragonview	A-1	Parallel
	2	0272011011		35 W	32 W	0 W	0 W	158.7 kWh	21.1 kWh	0 kWh	160.5 kWh	Dragonview	A-2	Parallel
	3	0272011012		1 kW	129 W	0 W	1 kW	170.3 kWh	49.9 kWh	0 kWh	434.5 kWh	Dragonview	A-3	Parallel
	4	0272011017		79 W	48 W	0 W	106 W	99 kWh	85.6 kWh	0 kWh	257.1 kWh	Dragonview	A-4	Parallel

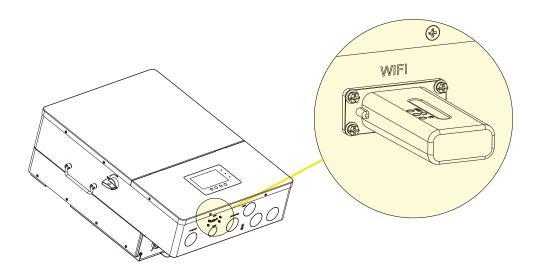
Please contact your inverter supplier for more detailed guidance for paralleling system.

3.10 Monitor System Setup

3.10.1 WiFi/GPRS/4G/WLAN dongle connection

Users can use a WiFi/ WLAN /4G /2G dongle to monitor their inverter, and view the monitoring data on computer or smart phone remotely.

To view data on smart phone, please download the LuxPowerView APP from Google Play or Apple APP store, then login with their user account.



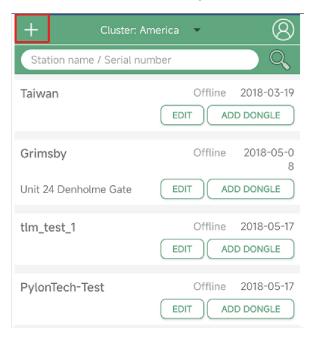
3.10.2 Setup the monitor system

1. Sign up an account on the mobile phone APP or Website

The "customer code" is a code we assigned to your distributor or installer. You can contact your supplier for their code.

 └Station name * Cluster North America * Username * E-mail * Station name 	North Am	nerica ▼
□ User name □ Pass word □ Pass word □ Remember username □ Auto login ■ Real name ■ Eorget password?	North Am	nerica ▼
Coser name Pass word Pass word Pass word Password Password Password Password Password Repeat password Real name E-mail Tel number		
Pass word * Repeat password ✓ Remember username Auto login LOGIN * E-mail Forget password? Tel number		
Remember username Auto login Real name LOGIN *E-mail Forget password? Tel number		
LOGIN *E-mail Forget password? Tel number		
Forget password? Tel number		
Forget password ?		
* Station name		
* Daylight saving time		
- or - * Continent North America	orth Americ	ica 🔻
* Region North America	orth Americ	ica 🔻
* Country United States of America	s of Americ	ica 🔻
* Time zone GMT - 5	GMT -	-5 🔻
REGISTER *Address		
DONGLE CONNECT * Customer code (Distributor/Installer code)		
PRODUCT WARRANTY) (LOCAL CONNECT)		
DOWNLOAD FIRMWARE DOWNLOAD FIRMWARE		
Version 2.9.4 REGISTER		

2. Create station and add dongle for the station



3.10.3 Set homewifi password to dongle

1. Connect your mobile phone to the "BAxxxxxxx" wireless network where "BAxxxxxxx" is the serial number of the WiFi dongle.

2. Click the "WiFi MODULE CONNECT" button on the APP.

3. Select the home WiFi that the WiFi dongle is to be connected to, enter the WiFi's password. And then click "HomeWifi Connect". The WiFi dongle will restart and try to connect to our server automatically.

4. Check the LEDs' status on the WiFi dongle. The middle light should be solid lit when the WiFi dongle connects to our server successfully.

	0		Connect WIFI module to the home WIFI
🔶 WI-FI		User name	Home Wifi: unknown ssid
BA 19520257 Obtaining address		Pass word	Password: Please input password
Luxpower	A 🛜		
Luxpowertek_5g	8 🛜	LOGIN	Homewifi Connect
Luxpowertek	A 🛜	Forget password?	
ChinaNet-wG49	A 🛜		© Connect your mobile phone to the Baxxxxxxx wireless network first. Then
CMCC-BAKR	A 🛜	- or -	enter the HomeWifi and password of homeWifi, and click HomeWifi Connect.
HF-WIFI	A 🛜		
ChinaNet-EWP	A 🔶		Set with Bluetooth
Luxpower_5G	A 🛜	REGISTER	
		DONGLE CONNECT	
		(PRODUCT WARRANTY) (LOCAL CONNECT)	
MORE SETTINGS	DONE	DOWNLOAD FIRMWARE Version 2.9.4	

5. Now you can disconnect your mobile phone from the "BAxxxxxxx" wireless network. Login on the APP with your account, you'll find the inverter information already appears. Now you'll be able to monitor and control the inverter remotely on any smart phone or computer that has Internet connection.

Please download the following guides for setting up WiFi dongle and monitoring account at

Document Reference:

1. Wifi Quick Guidance

Quick guidance for setting connection of WiFi module to home WiFi, you can also find a printed version in the packaging of the WiFi module.

2. Monitor system setup for Distributors and Monitor system setup for endusers

Account registration, the description of each items and parameters, setting parameters

3.Lux_Monitor_Ul_Introduction

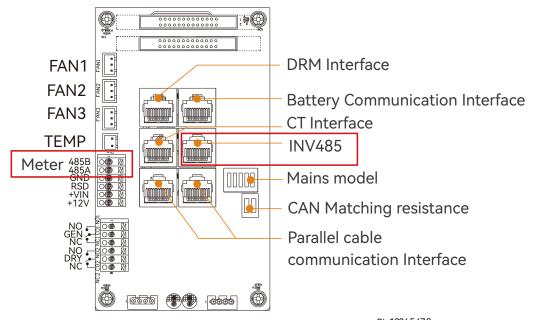
Introduction of monitor interface

3.10.4 Third party RS485 communication

Meter 485B&485A: when the Meter is not connected. These two pin can be used to communicate with inverter using our RS485 modbus protocol.

INV485: This interface is shared with the WiFi module. If WiFi module is not in use, users can use this interface to communicate with inverter.

Please contact your distributor to get the protocol for third party APP development.



Pin	Description
1	485B
2	485A
3-8	/



4. Operation Guide

4.1 Operation Mode and Function

The inverter has different working mode to meet customers' various demands, the working modes are as below.

4.1.1 Self-usage Mode(Default)

In this mode, the priority order of load supply source is Solar>Battery> Grid. The priority order of solar power usage is Load> Battery> Grid.

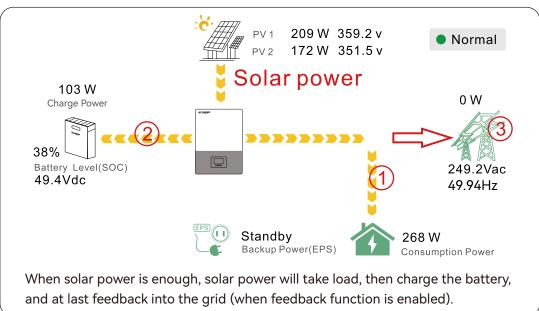
• Application Scenarios

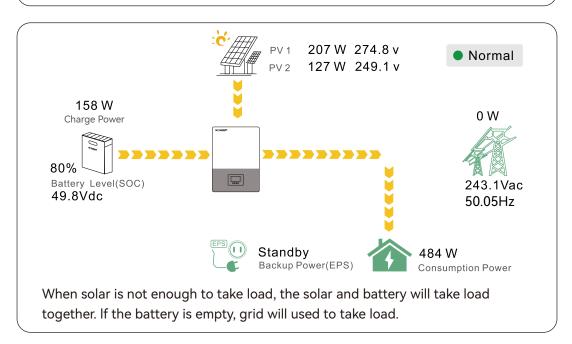
Self consumption mode will increase the self consumption rate of solar power and reduce the energy bill significantly.

• Related Settings

Effective when Charge Priority, AC Charge, and Forced discharge are disabled.

• Example





4.1.2 Charge First Mode

The priority order of solar power usage will be Battery > Load > Grid. During the Charge Priority time period, load is first supplied with grid power. If there is excess solar power after battery charging, the excess solar power will take load together with grid power.

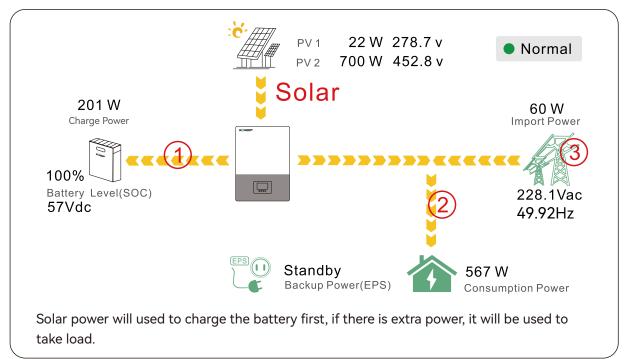
• Application Scenarios

When users want to use solar power to charge battery, grid power to supply load.

• Related Settings

Basic	Charge first(PV) 🗸	Set
	Time 1 Charge first power(kW)	
Charge	Time 2 Stop charge first SOC(%)	
Discharge	Time 3	
	Lead-acid	
Advanced	Absorb voltage(V) Float voltage(V)	Set
Debug	Start derate Volt(V)	~
Device info.		~

• Example



4.1.3 AC Charge Mode

Basic Charge	Bat charge control Use SOC % 🔽 Use Bat V 📃 Set Bat charge current limit(A)	Users can charge battery with grid power when electricity price is cheap, and discharge battery power to supply
Discharge Advanced Debug	AC charge Set Time 1 AC charge power(kW) Time 2 Stop AC charge SOC(%) Time 3 Stop AC charge Volt (V)	 Ioad or export to the grid when electricity price is high. Application Scenarios When users have a Time of Use (TOU) rate plan.
Device info.		Related Settings

4.1.4 Grid peak-shaving Function

Basic	Grid peak-shaving 🖌 Peak-shaving power(kW) Set
Charge	Time 1 Stop peak-shaving SOC
Discharge	Time 2 Stop peak-shaving Volt
Advanced	Smart load
	Start PV power (kW) Smart load start Volt(V) Smart load start SOC(%)
Debug	Smart load end Volt(V) Smart load end SOC(%)
Device info.	

• Grid peak-shaving & Grid peak-shaving power(kW): Is used to set the maximum power that the inverter wil draw from its grid power.

4.1.5 Smart load Function

Basic	Grid peak-shaving 🔽 Peak-shaving power(kW) Set
Charge	Time 1 Start SOC1 Start Volt1
Discharge	Time 2 Start SOC2 Start Volt2
	Smart load
Advanced	Start PV power (kW) On Grid always on
Debug	Smart load start Volt(V) Smart load start SOC(%)
Device info.	Smart load end Volt(V) Smart load end SOC(%)
Basic	PV input Veter or CT Veter Set
	MODBUS addr Meter type ~
Charge	Vpv start (V) CT ratio
Discharge	Offgrid output Version Set
Advanced	Seamless switch Charge last RSD disable
	AC couple CT direction reversed
Debug	Smart load
Device info.	PV Arc 🖌 PV Arc fault clear Set

 Smart Load: This function is to make the Gen input connection point as an load connection point, if you enable it, inverter will supply power to this load when the battery SOC and PV power is above a user setup value. e.g. Smart load start SOC=90%, Smart load end SOC=85%, Start PV power=300W, it means: When the PV power exceeds 300W, and battery system SOC gets to 90%, Smart Load Port will switch on automatically to supply the load which is connected on this side. When the battery SOC<85% or PV power<300w, the Smart Load Port will switch off automatically.

Note:

If you enable the Smart load function, it's forbidden to connect the generator at the same time, otherwise the device will be damaged!

4.2 LCD Display

Users can view inverter running status, real time power, daily and accumulated energy information conveniently on inverter LCD. In addition to the above information, users can also check alarm and fault record on the display for troubleshooting.

- 4.2.1 Viewing information and alarm/fault record
- Home Page

Touch the screen to light it up if it's in sleep mode. The Home page will appear on the display. Users will see a system overview diagram along with the real time information of each component, such as battery SOC, battery charging/discharging power, grid import/export power, load power, etc. On the right part of the screen, users can check daily and accumulated solar energy, battery charged/discharged energy, grid imported/exported energy, as well as load consumption.

PV Energy	
Today: Total:	Ť
Charge Energy	
Today: Total:	
Export	
Today: Total:	A
Consumption	
Today: Total:	

• Detailed System Information

Click on the pie icon at the bottom of the screen and, you'll be able to view the detailed real time solar information, battery information, grid information and EPS output information.

Vpv1	Ppv1		Vbat	Ibat
		Solar	Pchg	Pdischg
Vpv2	Ppv2	Battery	Vbat_Inv	BatState
		Dattery	SOC/SOH	CycleCnt
Vpv3	Ppv3	Grid	Vchgref	VcutVolt
			l maxchg	l maxdischg
Epv1_day	Epv1_all	UPS	Vcellmax	Vcellmin
			Tcellmax	Tcellmin
Epv2_day	Epv2_all	Other	BMSEvent1	BMSEvent2
			Echg_day	Edischg_day
Epv3_day	Epv3_all		Echg_all	Edischg_all
	Enrid			Func
Vgrid	Fgrid Voridi 2N	Solar	Vups	Fups Vupi 2N
Vgrid VgridL1N Vaen	Fgrid VgridL2N Fgen	Solar		Fups VupsL2N Sups
Vgrid VgridL1N Vaen	VgridL2N		Vups VupsL1N	VupsL2N
Vgrid VgridL1N Vgen	VgridL2N Fgen	Solar Battery	Vups VupsL1N Pups	VupsL2N Sups
Vgrid VgridL1N Vgen Pimport	VgridL2N Fgen Pexport	Solar	Vups VupsL1N Pups PupsL1N	VupsL2N Sups SupsL1N
Vgrid VgridL1N Vgen Pimport Pinv	VgridL2N Fgen Pexport	Solar Battery	Vups VupsL1N Pups PupsL1N PupsL2N	VupsL2N Sups SupsL1N SupsL2N
Vgrid VgridL1N Vgen Pimport Pinv Pload	VgridL2N Fgen Pexport Prec	Solar Battery Grid UPS	Vups S VupsL1N Pups PupsL1N PupsL1N PupsL2N Eus_day S	VupsL2N Sups SupsL1N SupsL2N Eups_all
Vgrid VgridL1N Vgen Pimport Pinv Pload Eimport_day Eexport_all	VgridL2N Fgen Pexport Prec Eexport_day	Solar Battery Grid	Vups VupsL1N Pups PupsL1N PupsL1N PupsL1N PupsL1N PupsL2N Eups_day EupsL1N_day PupsL1N_day PupsPupsPupsPupsPupsPupsPupsPupsPupsPups	VupsL2N Sups SupsL1N SupsL2N Eups_all EupsL1N_all
Vgrid VgridL1N Vgen Pimport Pinv Pload Eimport_day Eexport_all	VgridL2N Fgen Pexport Prec Eexport_day Eexport_all	Solar Battery Grid UPS	Vups VupsL1N Pups PupsL1N PupsL1N PupsL1N PupsL1N PupsL2N Eups_day EupsL1N_day PupsL1N_day PupsPupsPupsPupsPupsPupsPupsPupsPupsPups	VupsL2N Sups SupsL1N SupsL2N Eups_all EupsL1N_all

	Status	StatusPre
Solar	SubStatus	SubStatusPre
Battery	FaultCode	AlarmCode
Dattery	Vbus1	Vbus2
Grid	VbusP	VbusN
	TO	T1
UPS	T2	тз
	OCPCnt	GridOnOffSWCnt
Other	InnerFlag	RunTrace
	NoChgReason	NoDischgReason
	ExitReason1	ExitReason2

• Fault/Alarm Information

Touching the bell icon at the bottom of the screen, you'll see all current and historical fault&warning information on this page.

Fault status	 M3 Rx failure 	Model fault	Eps short circuit	Fault status	 Bat com failure 	 AFCI com failure 	 AFCI high
	 Eps power reverse 	d • Busshort circuit	Relay fault		 Meter com failure 	● Bat Fault	 Auto test failure
Alarm status	 M8 Tx failure 	 M3Tx failure 	Vbus over range	Alarm status	 Lcd com failure 	• Fwmmismatch	 Fan stuck
Fault record	 Eps connect fault 	 PV volt high 	 Hard over curr 	Fault record	 Batreversed 	 Trip by no AC 	 Trip by Vac abnorm
	 Neutral fault 	• PV short circuit	• Temperature fault	Fault record	 Trip by Fac abnorm 	al • Trip by iso low	 Trip by gfci high
Alarm record	 Bussample fault 	Inconsistant	 M8 Rx fault 	Alarm record	 Trip by dci high 	PV short circuit	 GFCI module fault
	Reserved A	 ReservedB 	 ReservedC 		 Bat volt high 	Bat volt low	 Bat open
	 ReservedD 	 ReservedE 	 ReservedF 		 Offgrid overload 	 Offgrid overvolt 	 Meter reversed
	ReservedG	 ReservedH 	 ReservedI 		 Offgrid dcv high 	RSD Active	 Arc fault
	ReservedJ	 ReservedK 	ReservedL		 ReservedP 	ReservedQ	ReservedR
			F - 1				A 1
Fault status	Error cod	e	Error time	Fault status	Alarm coc	de	Alarm time
Fault status	Error cod	e	Error time	Fault status	Alarm coo	de	Alarm time
Fault status	Error cod	e	Error time		Alarm coc	de e	Alarm time
Fault status	Error cod	e	Error time	Fault status	Alarm coc 1 2	ie e	Alarm time
Fault status	Error cod 1 2 3	8	Error time	Fault status Alarm status	Alarm coo 1 2 3	ie and a second s	Alarm time
Fault status) Alarm status) Fault record	Error cod 1 2 3 4	8	Error time	Fault status Alarm status	Alarm coc 1 2 3 4	je	Alarm time
Fault status) Alarm status) Fault record	Error cod	8	Error time	Fault status Alarm status Fault record	Alarm coo 1 2 3 4 5 6 7	je	Alarm time
	Error cod		Error time	Fault status Alarm status Fault record	Alarm coc 1 2 3 4 5 6 7 8	je	Alarm time
Fault status) Alarm status) Fault record	Error cod	8	Error time	Fault status Alarm status Fault record Alarm record	Alarm coo 1 2 3 4 5 6 7	je	Alarm time

4.2.2 Setting Parameters

Clicking on the gear icon at the bottom of the screen, you'll get into the parameter setting page of the inverter.

a. Basic settings

Basic	Standby:		Restart inverter	Reset
Charge	Feed-in grid	\checkmark	Feed-in power(kW)	Set
Discharge	Fast zero export	\checkmark		
Advanced				
Debug				
Device info.				

- Feed-in Grid: Is for users to set zero export function. If exporting solar power is not allowed, users need to disable "Feed-in Grid" option. If users' utility meter will be tripped with even a little solar export, "Fast zero export" can be enabled thus the export detection and adjustment will take place every 20mS, which will effectively avoid any solar power being exported. If export is allowed, users can enable "Feed-in Grid" and set a maximum allowable export limit in "Feed-in Power" (kW).
- **Standby:** Is for users to set the inverter to normal status or to standby status. In standby status, the inverter will stop any charging or discharging operation, as well as solar-feed-in.
- **Restart inverter:** Restart the system, please note the power maybe interrupted when restart.

b. Charge setting

		•
Basic	Bat charge control Use SOC % 🗹 Use Bat V 📃 Set	
Charge	Bat charge current limit(A)	•
Discharge	AC charge 🖌 Set	
Advanced	Time 1 AC charge power(kW)	•
Debug	Time 2 Stop AC charge SOC(%) Time 3 Stop AC charge Volt (V)	
Device info.		
		_
		•
Basic	Charge first(PV) V Time 1 Charge first power(kW)	
Charge	Time 2 Stop charge first SOC(%)	
Discharge	Time 3 Stop charge first Volt(V)	
	Lead-acid	
Advanced	Ab sorb voltage (V) Float voltage(V) Set	
Debug	Start derate Volt(V)	
Device info.	~	•
	Constant	G
Basic	Generator Charge current limit(A) Gen rated power(kW) Set	•
Charge	Charge start Volt(V) Charge start SOC(%)	
Discharge	Charge end Volt(V) Charge end SOC(%)	
Advanced		
Debug		•
Debug Device info.	^	•

- Bat charge control: Users can decide to use SOC or BatV to control charge and discharge logic depends on battery type.
- Bat charge current lim it(A): users can set Max charge current.
- AC Charge: Setting for utility charge. If users want to use grid power to charge battery, then they can enable "AC Charge", set time periods when AC charging can happen, AC Charge power(kW) to limit utility charging power, and "Stop AC Charge SOC(%)" as the target SOC for utility charging. "Stop AC Volt(V)" as the target battery voltage for utility charging.
- Charge first: Setting for PV charge. When uses enable Charge first, PV will charge the battery as priority, set time periods when PV charge can happen, Charge first power(kW) to limit PV charge power, and "Charge first SOC(%)" as the target SOC for PV charge first. "Charge first Volt(V)" as the target battery voltage for PV Charge first.
- Lead acid: When uses connect Lead-acid battery, need set parameter in these programs, follow the battery manufacturer's recommendation.

Generator

- Bat charge current limit(A): Set the Max. battery charge current from the Generator. The Generator will start charging according to the Charge start Volt /SOC, and stop charging when the battery voltage or SOC reaches the Charge end Volt/SOC value.
- Gen rated power: Maximun allowable power from generator.

c. Discharge setting

Basic	Bat discharge control Use SOC % 🖌 Use Bat V Set
Charge	Discharge current limit(A) Discharge start power(W)
	On-grid EOD (%) Off-grid EOD (%)
Discharge	On-grid Cut-off(V) Off-grid Cut-off(V)
Advanced	Forced di scharge 🖌 Set
Debug	Time 1 Discharge power(kW)
Debug	Time 2 Stop discharge SOC(%)
Device info.	Time 3 Stop discharge Volt(V)
a C	
• Bat disch	narge control
You can o	choose "Use SOC %" or Use Bat V" to control the

- **Discharge current limit(A):** The Max. discharge current from battery.
- Discharge start power(W): The Min. value can be set to 50. When the inverter detects the import power is higher than this value, battery start discharging, otherwise battery will keep standby.
- On-grid EOD(%) and Off-grid EOD(%) /On-grid Cut-off(V) and Off-grid Cut off(V): End of discharge SOC/Cut off voltage in on-grid and off-grid condition respectively.
- Forced discharge: Settings for battery force discharge within certain time period. In the preset time period, the inverter will discharge battery at the power set by "discharge power", until battery SOC or voltage reaches "Stop discharge "value.

d. Advanced setting

battery discharge state

Advanced setting is mainly by installer after installation.

Basic	Grid type 230 V V	Gird Freq 50 v Set	• Grid type: You can choose by yourself, 230V
	Grid regulation 3: SouthAfrica 🗸	Reconnect time(S)	• Grid regulation: Please choose SouthAfrica or Gen
Charge	HV1 V S HV2 V	S HV3 V S	• Battery type: No battery, lead-acid or lithium-ion.
Discharge	LV1 V S LV2 V	S LV3 V S	
Advanced	HF1 Hz S HF2 Hz	S HF3 Hz S	 If lead-acid battery is selected, please input correct
Advanced	LF1 Hz S LF2 Hz	S LF3 Hz S	battery capacity
Debug	Battery type 1:Lead-acid 🗸	Set	• If lithium-ion battery is selected, please choose the
Device info.	Lithium brand 6:Lux v BA	AT capacity(Ah)	battery brand in the Lithium brand drop down list.
			-

Basic	PV input V Meter or CT V Set
	MODBUS addr Meter type
Charge	Vpv start (V) CT ratio ~
Discharge	Offgrid output Version EPS output Version Micro-grid Set
Advanced	Seamless switch Charge last RSD disable
Debug	AC couple CT direction reversed
Device info.	PV Arc 🗸 PV Arc fault clear Set

The supported CT ratio is 1000:1 and 3000:1. default CT ratio is 1000:1. If 3rd party CT is to be used, please ensure its CT ratio is either 1000:1 or 3000:1, and set it accordingly. the battery brand in the Lithium brand drop down list.

- Meter type: Please select it according to the meter that's to be installed.
- Offgrid output: Is for users to set if the inverter provides backup power or not when the grid is lost. If users want load to be seamlessly transferred to inverter backup power, "Seamless switch" must be enabled. If customers don't have battery installed yet, but still wish to have inverter backup power with only solar panels connected, "PV Grid Off" can be enabled to use solar power to supply load when grid fails or load-shedding happens. Micro-grid: only needs to be set when generator is connected at the inverters grid port. With this option enabled, the inverter will use AC power to charge battery and won't export any power through grid port if AC power is present at inverter grid port.
- Charge last: When users want to use solar power in the order of loads -- grid export -- battery charging.
- AC couple: When you want to use the inverter as an ac coupled model, you can enable
- CT direction reversed: When the CT is installed on the wrong direction, installer can modify it by selecting it, no need reconnect. er in the order of loads -- grid export -- battery charging.

4.3 Start-up and shut down the inverter

4.3.1 Start up the inverter

Step 1. Turn on the battery system firstly, then turn on the DC breaker between battery and inverter. Step 2. Make sure the PV voltage of the strings are higher than 120V, and check if the inverter works in PV charge or PV charge back-up mode.

Step 3. Make sure step1and 2 above work properly before turning on the grid power or generator breaker, and check if the inverter can go to bypass mode and on-grid mode normally.

4.3.2 Shut down the inverter

Danger: Do not disconnect the battery , PV and AC input power under load.

If there is emergency issue , and you have to shut down the inverter ,please follow the steps as below.

Step 1. Turn off the Grid breaker of the inverter.

Step 2. Switch off the load breaker.

Step 3. Turn off PV breaker and then battery breaker, waiting for the LCD to go off.

5. Troubleshooting&Maintenance

5.1 Regular Maintenance

• Inverter Maintenance

a. Check the inverter every 6 months or 1 year to verify if there are damages on cables, accessories, terminals and the inverter itself.

b. Check the inverter every 6 months to verify if the operating parameter is normal and there is no abnormal heating or noise from the inverter.

c. Check the inverter every 6 months to confirm there is nothing that covers the inverter heat sink, if there is, shut-down the inverter and clear the heat sink.

Battery Maintenance

Follow the manufacturer's requirements on maintenance. When you carry out these works on batteries, please make sure to fully shut-down the inverter for safety consideration.

5.2 LED Displays

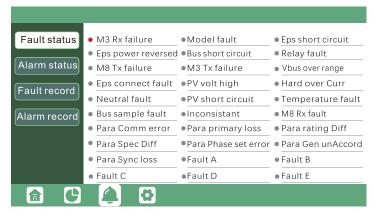
LED	Display	Description	Suggestion
Green LED	Solid lit	Working normally	
Green LLD	Flashing	Firmware upgrading	Wait till upgrading complete
Yellow LED	Solid lit	Warning, inverter working	Need troubleshooting
Red LED	Solid lit	Fault, inverter stop work	Need troubleshooting

5.3 Troubleshooting Based On LCD Displays

Once there is any warning or fault occurring, users can troubleshoot according to the LED status and the warning/fault information on the LCD.

1. Fault on the LCD

If the dot on the left of fault item is red, it means the fault is active. When it is grey, it means the fault is defective.



Fault	Meaning	Troubleshooting	
M3 Rx failure	M3 microprocessor fails to receive data from DSP	Restart inverter, if the error still exists, contact	
Model fault	Incorrect model value	— your supplier.	
EPS short circuit	Inverter detected short-circuit on EPS output terminals	 Check if the L1, L2 and N wires are connected correctly at inverter EPS output port; Disconnect the EPS breaker to see if fault remains. If fault persists, contact your supplier. 	
Eps power reversed	Inverter detected power flowing into EPS port		
Bus short circuit	DC Bus is short circuited	-	
Relay fault	Relay abnormal	Restart inverter, if the error still exists, contact Luxpower service or your inverter supplier.	
M8 Tx failure	DSP fails to receive data from M8 microprocessor		
M3 Tx failure	DSP fails to receive data from M3 microprocessor	_	
Vbus over range	DC Bus voltage too high	Please check if the PV string voltage is within the inverter specification. If string voltage is within range, and this fault still appears, contact Luxpower service or your inverter supplier.	
Eps connect fault	EPS port and grid port are connected mixed up	Check if the wires on EPS port and grid port are connected correctly. If the error exists, contact Luxpower service or your inverter supplier.	
PV volt high	PV voltage is too high	Please check if the PV string voltage is within the inverter specification. If string voltage is within range, and this fault still appears, contact Luxpower service o your inverter supplier.	
Hard over curr	Hardware level over current protection triggered	Restart inverter, if the error still exists, contact Luxpower service or your inverter supplier.	
Neutral fault	Voltage between N and PE is greater than 30V	Check if the neutral wire is connected correctly.	
PV short circuit	Short circuit detected on PV input	Disconnect all PV strings from the inverter. If the error persists, contact Luxpower service or your inverter supplier.	
Temperature fault	Heat sink temperature too high	Install the inverter in a place with good ventilation and having no direct sunlight. If the installation site is okay, please check if the NTC connector inside the inverter is loose.	
Bus sample fault	Inverter detected DC bus voltage lower than PV input voltage		
Inconsistant	Sampled grid voltage values of DSP and M8 microprocessor are inconsistent	Restart inverter, if the error still exists, contact Luxpower service or your inverter supplier.	
M8 Rx fault	M8 microprocessor fails to receive data from DSP		

2. Alarm on the LCD

If the dot on the left of fault item is yellow, it means the fault is active. When it is grey, it means the fault is deactive

Fault status	 Bat com failure 	 AFCI com failure 	 AFCI high
	 Meter com failure 	 Bat Fault 	 Auto test failure
Alarm status	 Lcd com failure 	 Fwm mismatch 	 Fan stuck
Fault record	 Bat reversed 	 Trip by no AC 	 Trip by Vac abnormal
Fault record	 Trip by Fac abnorm 	al• Trip by iso low	 Trip by gfci high
Alarm record	 Trip by dci high 	 PV short circuit 	 GFCI module fault
	 Bat volt high 	 Bat volt low 	 Bat open
	 Offgrid overload 	 Offgrid overvolt 	 Meter reversed
	 Offgrid dcv high 	 RSD Active 	 Arc fault
	 ReservedP 	 ReservedQ 	 ReservedR

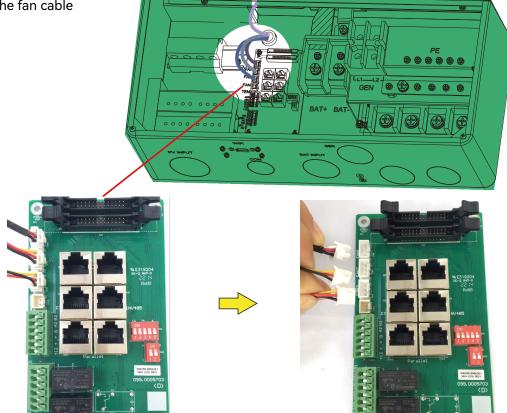
Alarm	Meaning	Troubleshooting
Bat com failure	Inverter fails to communicate with battery	Check if communication cable is correct, and if you have chosen the correct battery brand on inverter LCD. If all is correct but this error persists, please contact Luxpower service or your inverter supplier.
Meter com failure	Inverter fails to communicate with the meter	 Check if the communication cable is connected correctly and in good condition. Restart inverter. If the fault persists, contact Luxpower service or your inverter supplier.
Bat Fault	Battery cannot charge or discharge	 Check the battery communication cable for correct pinout on both inverter and battery end; Check if you have chosen an incorrect battery brand; Check if there is fault on battery's indicator. If there is fault, please contact your battery supplier.
Auto test failure	Auto test failed	Only applied to Italy model
Lcd com failure	LCD fails to communicate with M3 microprocessor	
Fwm mismatch	Firmware version mismatch between the microprocessors	Restart inverter. If fault still exists, contact Luxpower service or your inverter supplier.
Fan stuck	Cooling fan(s) are stuck	
Trip by gfci high	Inverter detected leakage current on AC side	 Check if there is ground fault on grid and load side; Restart inverter. If the fault remains, contact Luxpower service or your inverter supplier.
Trip by dci high	Inverter detected high DC injection current on grid port	Restart inverter. If the fault remains, contact Luxpower service or your inverter supplier.
PV short circuit	Inverter detected short circuited PV input	 Check if each PV string is connected correctly; Restart inverter. If the fault remains, contact Luxpower service or your inverter supplier.
GFCI module fault	GFCI module is abnormal	Restart inverter. If fault still exists, contact Luxpower service or your inverter supplier.
Bat volt high	Battery voltage too high	Check if battery voltage exceeds 59.9V, battery voltage should be within inverter specification.
Bat volt low	Battery voltage too low	Check if battery voltage is under 40V, battery voltage should be within inverter specification.

Bat open	Battery is disconnected from inverter	Check battery breaker or battery fuse.
Offgrid overload	Overload on EPS port	Check if load power on inverter EPS port is within inverter specification.
Offgrid overvolt	EPS voltage is too high	Restart inverter. If fault still exists, contact Luxpower service or your inverter supplier.
Meter reversed	Meter is connected reversely	Check if meter communication cable is connected correctly on inverter and meter side.
Offgrid dcv high	High DC voltage component on EPS output when running off-grid	Restart inverter. If fault still exists, contact Luxpower service or your inverter supplier.

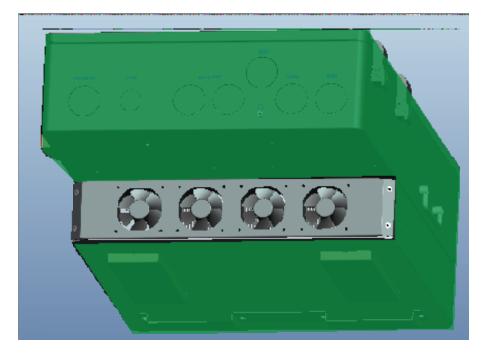
5.4 Fan replacement

Please check and clean the fans regularly. The recommended period is 6 months. Please replace the fan following up the below diagram if there is problem with the fans. Turn off the system and wait for more than 5 minutes before disassembling the machine.

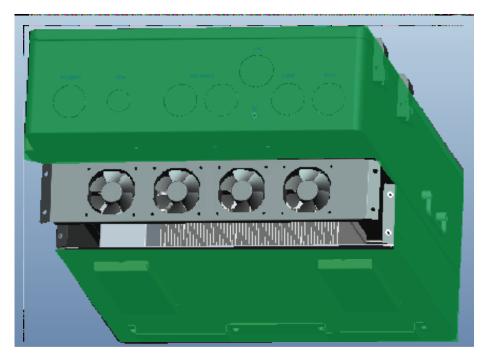
- a. Open the wiring cover
- b. Unplug the fan cable



c. Loosen the screws and remove them



d. Remove the fan fixing



- e. Loosen the waterproof connector
- f. Remove the fan and replace it
- g. After the fan is installed, follow the steps just now to push back and assemble it back

Max. usable input current(A) 25/15/15 Max. short circuit input current(A) 34/17/17 Start input voltage(V) 100 Start input voltage(V) 140 Full power MPPT voltage range(V) 230-500 DC nominal voltage(V) MPPT tracker 360 DC voltage range(V) 100-600 MPP operating voltage range(V) 120-500 Max. power(W) 18000 Number of MPPT 3 Inputs per MPPT 2/1/1 AC Grid output data 50 Max. Output Current(A) 50 Rated voltage(V) 230 Operating voltage range(V) 230 Operating voltage range(V) 50 Max. Dutput Current(A) 50 Rated voltage(V) 230 Operating voltage range(V) 180-270 Nominal power output(W) 11500 Operating frequency (Hz) 50 Phase shift 0.99@full load Reactive power adjust range -0.8+-0.8 leading Adjustable THDI <3% Sync inrush curent(A) 35 <th>PV Input data</th> <th>12K</th>	PV Input data	12K
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Reverse polarity protectionYesDC switch rating for each MPPTYesOutput over-voltage protection varistorYesOutput over current protectionYesGround fault monitoringYesGrid monitoringYesDe sensitive leakage current Monitoring unitYesDimensions(mm)670*490*265mm(22.8*19.3*10.4inch)Weight(kg)50kg(96.8 lbs)Degee of protectionFANTopologyTransformer-lessRelative humidity0-100%Altitude(m)<2000m		DC switch
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Output over-voltage protection varistorYesOutput over current protectionYesGround fault monitoringYesGrid monitoringYesPole sensitive leakage current Monitoring unitYesDimensions(mm)670*490*265mm(22.8*19.3*10.4inch)Weight(kg)50kg(96.8 lbs)Degree of protectionNEMA4X / IP 65Cooling conceptFANTopologyTransformer-lessRelative humidity0-100%Altitude(m)<2000m		
Output over current protectionYesGround fault monitoringYesGrid monitoringYesPole sensitive leakage current Monitoring unitYesDimensions(mm)670*490*265mm(22.8*19.3*10.4inch)Weight(kg)50kg(96.8 lbs)Degree of protectionNEMA4X / IP 65Cooling conceptFANTopologyTransformer-lessRelative humidity0-100%Altitude(m)<2000m	-	
Ground fault monitoringYesGrid monitoringYesPole sensitive leakage current Monitoring unitYesDimensions(mm)670*490*265mm(22.8*19.3*10.4inch)Weight(kg)50kg(96.8 lbs)Degree of protectionNEMA4X / IP 65Cooling conceptFANTopologyTransformer-lessRelative humidity0-100%Altitude(m)<2000m		
Grid monitoringYesPole sensitive leakage current Monitoring unitYesDimensions(mm)670*490*265mm(22.8*19.3*10.4inch)Weight(kg)50kg(96.8 lbs)Degree of protectionNEMA4X / IP 65Cooling conceptFANTopologyTransformer-lessRelative humidity0-100%Altitude(m)<2000m		
Pole sensitive leakage current Monitoring unitYesDimensions(mm)670*490*265mm(22.8*19.3*10.4inch)Weight(kg)50kg(96.8 lbs)Degree of protectionNEMA4X / IP 65Cooling conceptFANTopologyTransformer-lessRelative humidity0-100%Altitude(m)<2000m	-	
Dimensions(mm)670*490*265mm(22.8*19.3*10.4inch)Weight(kg)50kg(96.8 lbs)Degree of protectionNEMA4X / IP 65Cooling conceptFANTopologyTransformer-lessRelative humidity0-100%Altitude(m)<2000m		
Weight(kg)50kg(96.8 lbs)Degree of protectionNEMA4X / IP 65Cooling conceptFANTopologyTransformer-lessRelative humidity0-100%Altitude(m)<2000m		
Degree of protectionNEMA4X / IP 65Cooling conceptFANTopologyTransformer-lessRelative humidity0-100%Altitude(m)< 2000m		
Cooling conceptFANTopologyTransformer-lessRelative humidity0-100%Altitude(m)<2000m		
TopologyTransformer-lessRelative humidity0-100%Altitude(m)<2000m		
Relative humidity 0-100% Altitude(m) < 2000m		
Altitude(m) < 2000m		Transformer-less
Operating temperature range (°C) -25~60°C, > 45°C Derating Noise emission(dB) <50dB	-	0-100%
Noise emission(dB) <50dB		< 2000m
Internal consumption(W) <15W		-25~60°C, > 45°C Derating
Display Touch color screen Communication interface RS485/ Wi-Fi/ CAN	Noise emission(dB)	<50dB
Communication interface RS485/ Wi-Fi/ CAN	Internal consumption(W)	<15W
Communication interface RS485/ Wi-Fi/ CAN	Display	
	Communication interface	

Note	



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