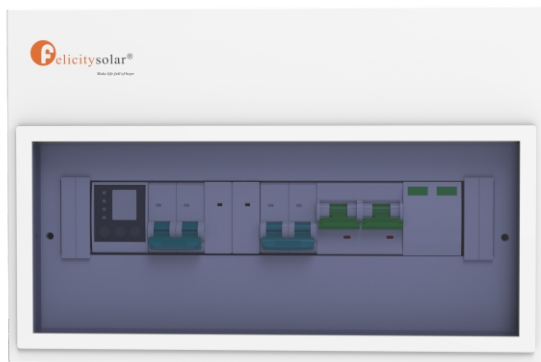


USER MANUAL

Ebox-63A/Ebox-100A



(Ebox-63A)



(Ebox-100A)

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Revision History

Revision No.	Revision Date	Revision Reason
1.0	2026.6	First Published

About This Manual

The manual mainly describes the product information, guidelines for installation, operation and maintenance.

Reader

Installation and maintenance must be performed by qualified electricians or trained technical personnel. Only authorized professionals are allowed to install the equipment, connect cables, and perform maintenance.

How to Use This Manual

Read the manual and other related documents before any wiring connection. Documents must be stored carefully and be available at all times. Contents may be periodically updated or revised due to product development. The information in this manual is subject to change without notice. The latest manual can be acquired via our website at <https://www.felicitysolar.com> for latest version.

1. Electrical Safety Introductions

Danger of electric shock. Always turn off the upstream circuit breaker and ensure that the system is de-energized before installation or maintenance. Do not connect or disconnect cables when the system is energized. Use insulated tools and wear appropriate personal protective equipment (PPE).

- **Grounding Requirements:** The EBox must be properly grounded. Connect the PE cable to the grounding terminal inside the box. Ensure the grounding resistance complies with local electrical standards. Improper grounding may cause electric shock or equipment malfunction.
- **Environment Requirements:** Install the protection box in a dry, well-ventilated environment. Avoid locations exposed to direct sunlight, water leakage, corrosive gases, or flammable materials. Operating temperature range: -25°C to +60°C.

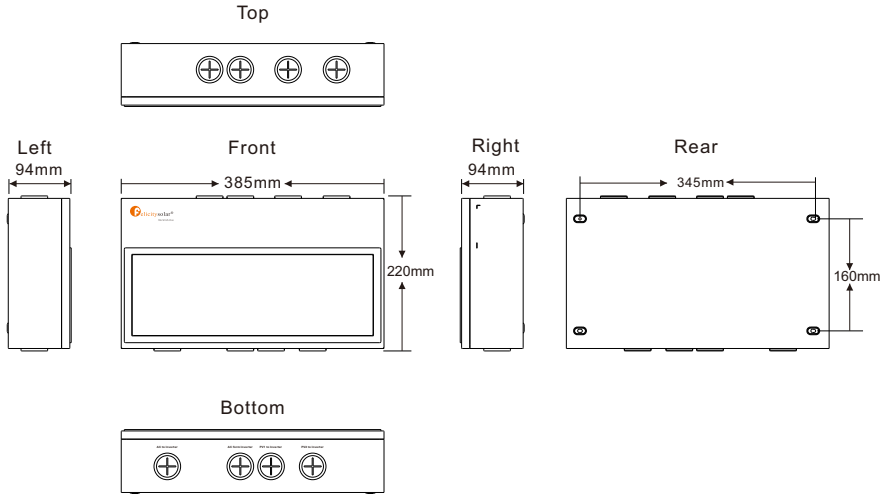
2. Product Appearance and Configuration

2.1 Product Overview

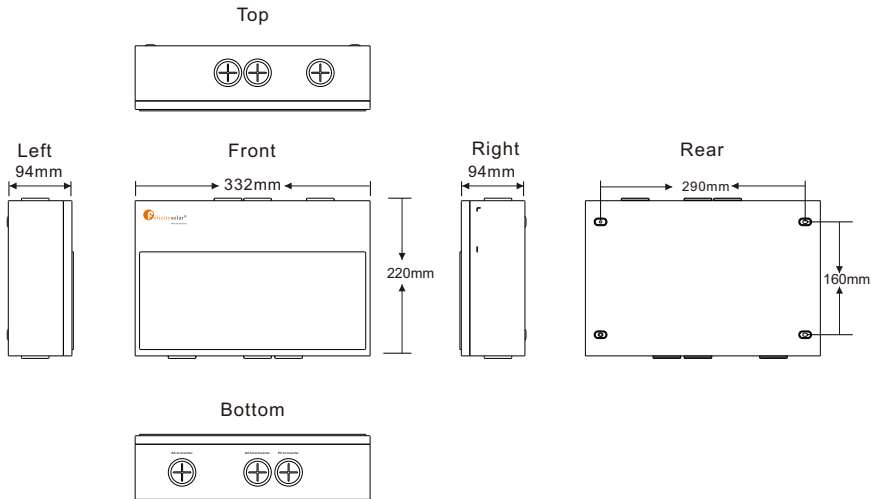
The EBox is designed for photovoltaic and energy storage systems to provide electrical protection and safe connection between the inverter, grid, and loads. It integrates circuit protection and surge protection components to improve system safety and reliability.

Overview:

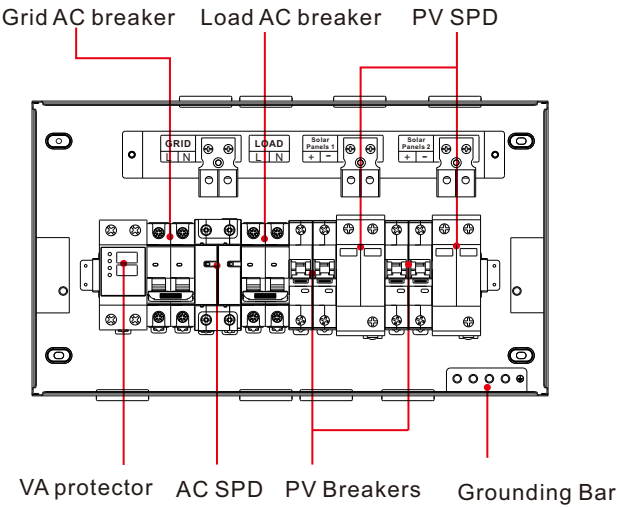
Ebox-63A:



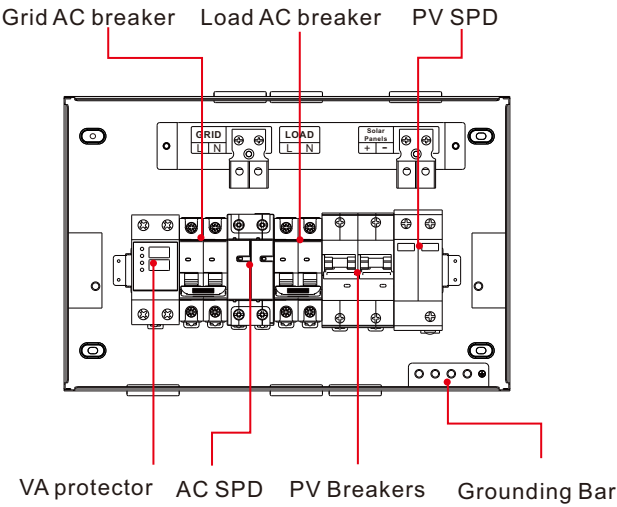
Ebox-100A:



Internal devices: Ebox-63A



Internal devices: Ebox-100A



2.2 Internal Configuration

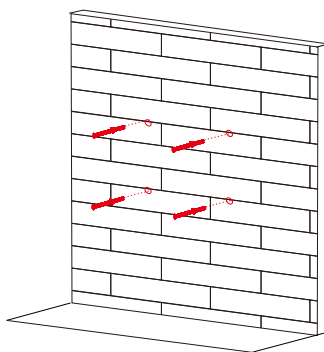
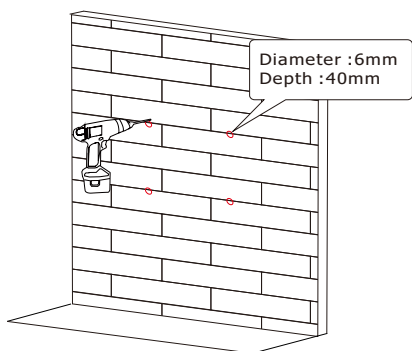
Component	Function
AC Circuit Breakers	Provides over-current and short-circuit protection
AC Surge Protection Device (SPD)	Protects equipment from lightning and surge voltage at AC side
VA protection devices	Protect loads from Grid high voltage or Low voltage input
DC Circuit Breakers	Connect to PV strings Provides over-current and short-circuit protection
DC Surge Protection Device (SPD)	Protects equipment from lightning and surge voltage at DC side

2.3 Technical Specifications

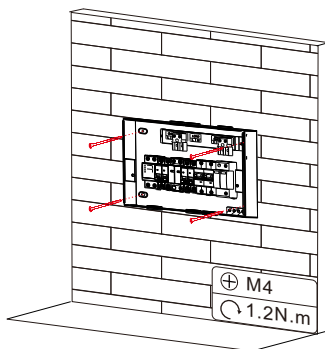
Model	Ebox-63A	Ebox-100A
Rated Voltage	230 VAC	
Rated Current	63A / 100A (depending on model)	
Frequency	50Hz	
SPD Type	Type II	
Protection Level	IP20	
Operating Temperature	-25°C ~ +60°C	
Net Weight(kg)	4kg	3.4kg
Gross Weight	4.8kg	4.2kg
Product Dimension(mm)	385×220×94	332×220×94
Package Dimension(mm)	447×282×158	395×282×158

3.Installation Steps

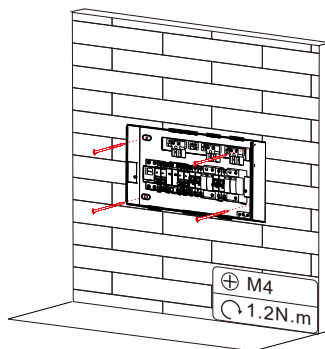
Lift the cover of the distribution box upwards, unscrew the two exposed screws and remove the cover. Follow the illustration to complete the wall-mounted fixation of the box. After the wiring work is completed, reinstall the front cover and tighten the screws with a torque of $2\text{N}\cdot\text{m}$.



Ebox-100A:



Ebox-63A:



4. Wiring connection instructions

All wiring operations must be performed by qualified electricians. Ensure that all power sources are turned OFF before wiring.

Diagram for Grid AC connection:

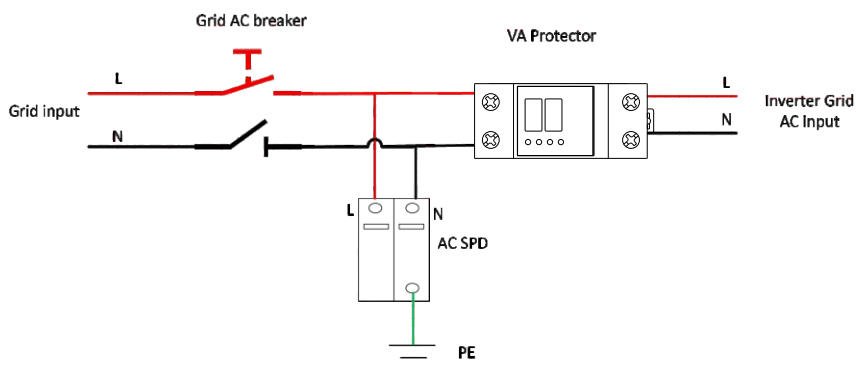


Diagram for Load AC connection:

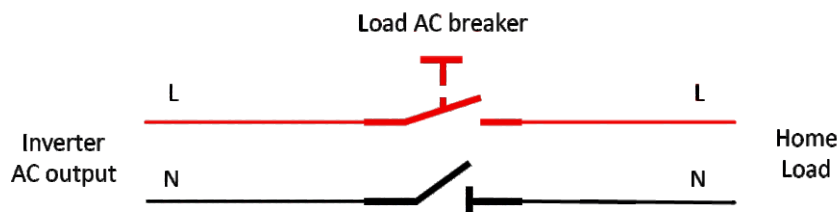
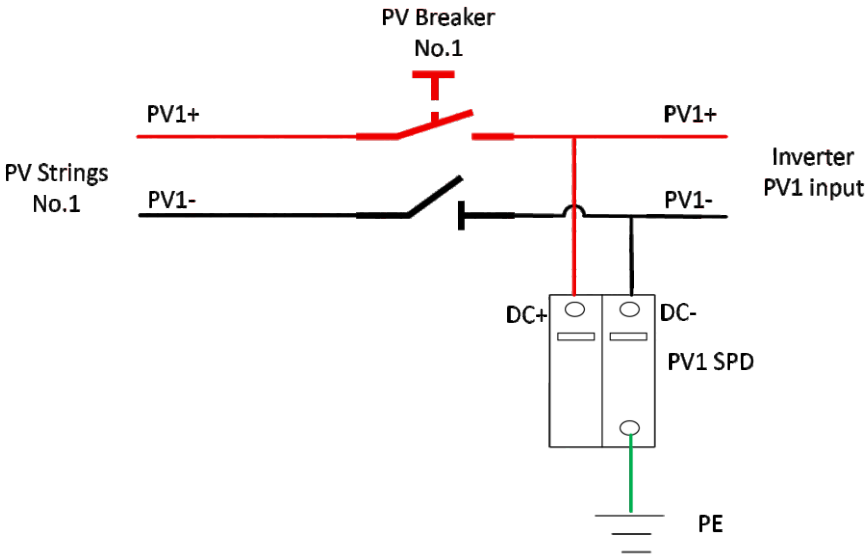


Diagram for PV strings connection:



4.1 Cable Requirements

All wiring operations must be performed by qualified electricians. Ensure that all power sources are turned OFF before wiring.

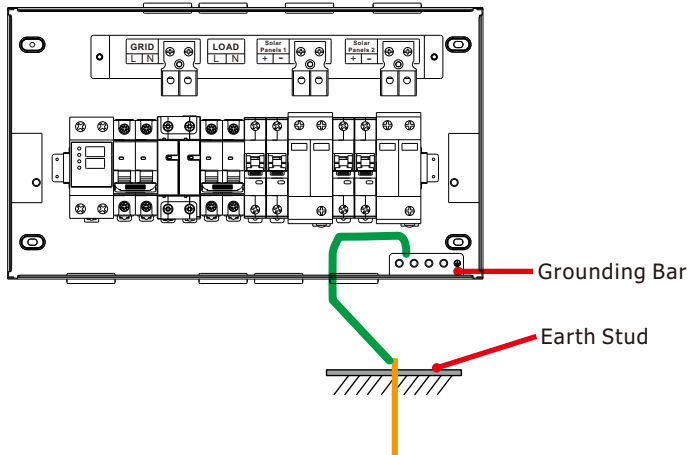
Mode	Circuit	Breaker Rating	Recommended Cable Size
Ebox-63A	AC	63A	16 mm²Cu
EBox-63A	DC	40A	10mm²Cu
Ebox-100A	AC	80A	25mm² Cu
Ebox-100A	DC	100A	25mm² Cu

4.2 Ground Connection

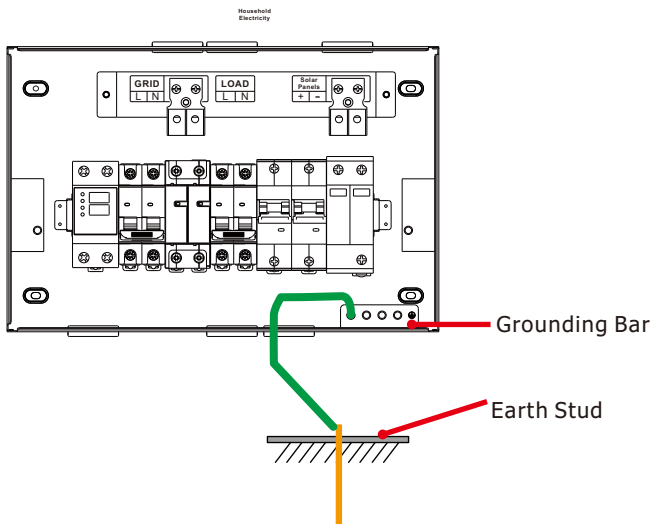
The Ebox Grounding bar is only for SPD grounding connection, do not connect the inverter or home load to this grounding bar, otherwise the EBox 63 can not provide protection from lighting.

1. Connect the PE cable to the grounding terminal inside the protection box.
2. Ensure the grounding cable is securely fastened.
3. Verify grounding continuity and resistance before system startup.

Ebox-63A:



Ebox-100A:



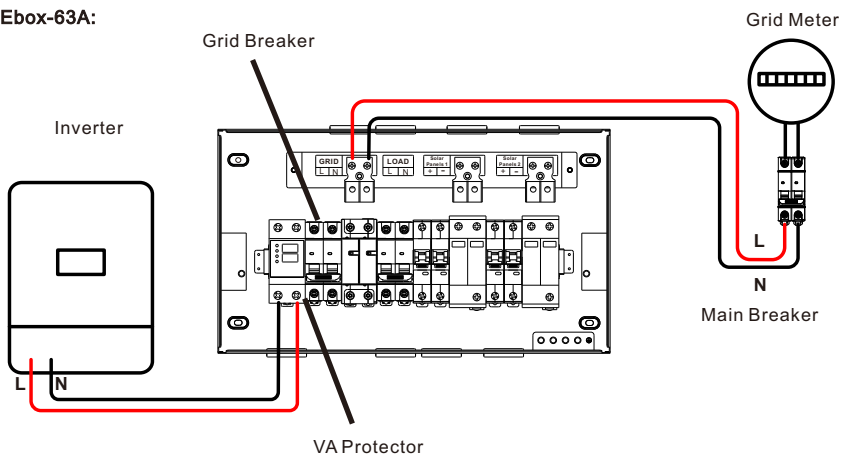
4.3 Grid Connection

1. Connect the AC grid cable to the input terminals of the protection box.
2. Ensure correct wiring of Line (L), Neutral (N).
3. Tighten all terminals with the recommended torque.

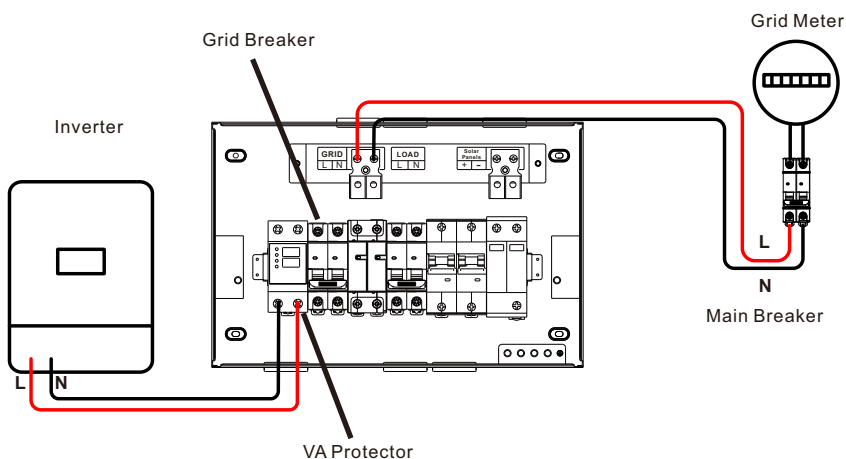
4.4 Inverter Connection

1. Connect the output terminals of the protection box to the AC input of the inverter.
2. Confirm cable polarity and ensure firm connections.
3. Check that cables are properly routed and secured.

Ebox-63A:

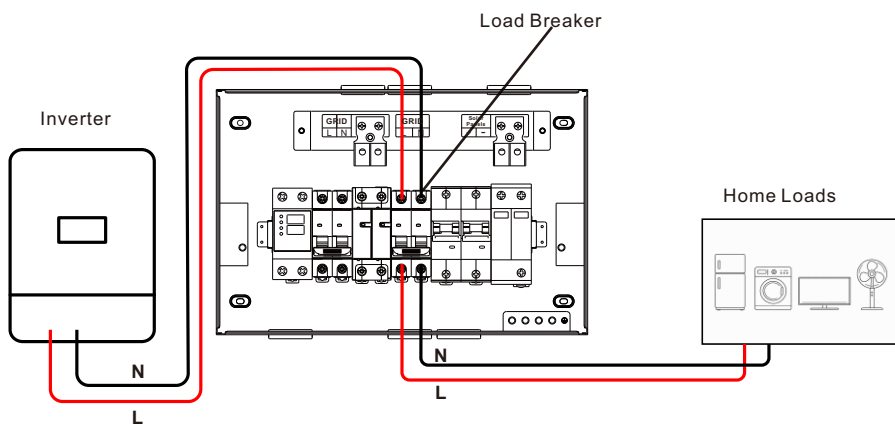
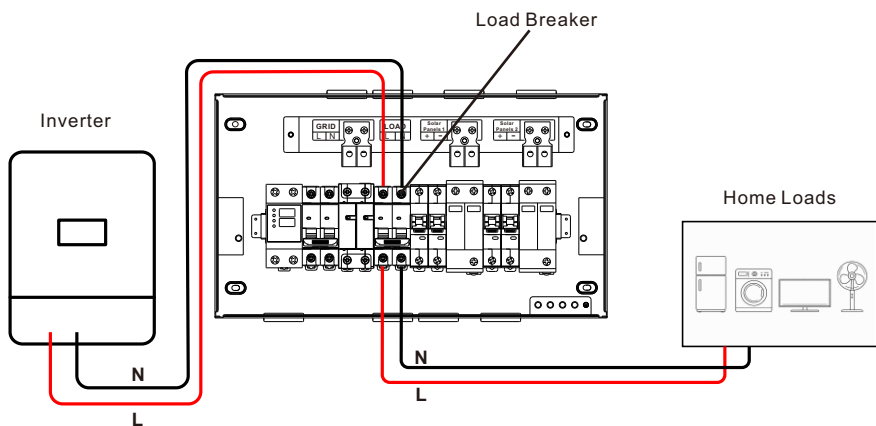


Ebox-100A:



4.5 Home loads Connection

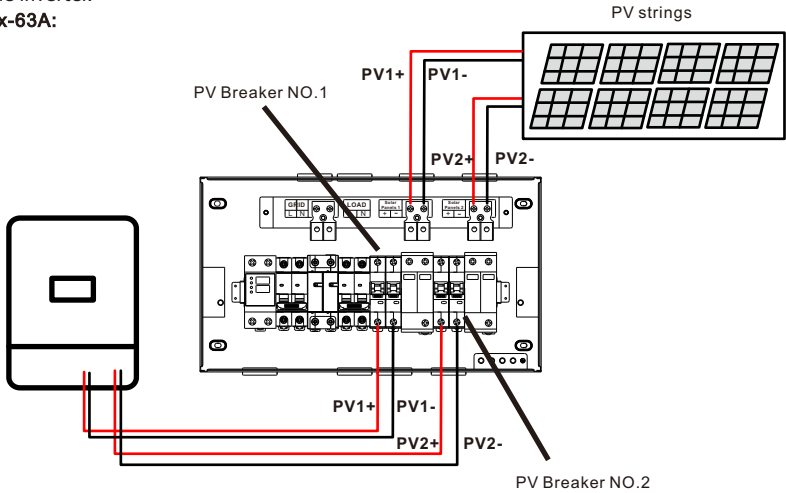
1. Connect the AC output of the inverter to the Load AC breaker input side.
2. Connect the home loads to the Load AC breaker output side.
3. Check that cables are properly routed and secured.



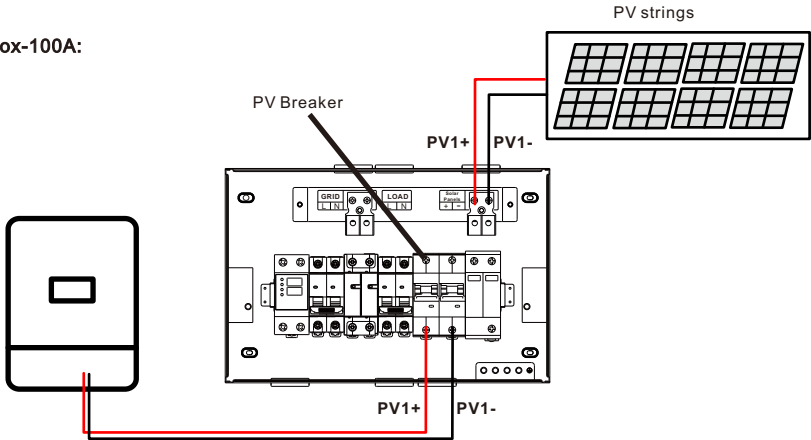
4.6 PV string Connection

1. Turn OFF the DC breaker before connecting PV cables.
2. Connect PV positive (+) and negative (–) cables to the PV input terminals.
3. Ensure correct polarity during installation.
4. Tighten terminals securely to ensure reliable electrical contact.
5. After completing the connection, switch the DC breaker ON to enable PV power transmission to the inverter.

Ebox-63A:



Ebox-100A:



5. Troubleshooting

Issue	Possible Cause	Solution
Circuit breaker trips	Overload or short circuit	Check load power and wiring
SPD indicator red	SPD failure	Replace SPD module

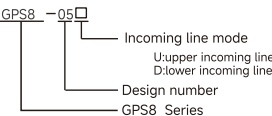
Appendix I: VA protection devices setting guidance

VA protection devices:



General

- Applications
 - Overvoltage ,undervoltage and overcurrent protection for household equipment.
- Function Features
 - Voltage / current monitoring and protection.
 - Special metering chips are used to detect voltage, current, electricity, and power.
 - Double bus wiring design stronger ability.
 - Over / under voltage value and over-current value can be set.
 - Self reset after fault.
 - Digital display voltage, current value, fault status can be displayed by LED.
 - DIN rail mounting.
- Model and connotation



Technical parameters

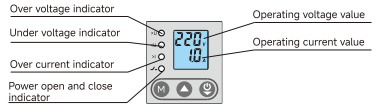
	GPS8-05
Function	Over voltage, under voltage and over current
Rated supply voltage	AC220V(L-N)
Rated supply frequency	45~65Hz
Operation voltage range	80V~400V(L-N)
Rated operational current	32A,40A,50A,63A,80A (AC1)
Burden	AC max.3VA
Over voltage operation value	OFF,230V~300V
Under voltage operation value	140V~210V,OFF
Over/under voltage action delay	0.1s~10s
Over current operation value	1~32A,40A,50A,63A,80A
Over current action delay	2s~600s
Power-up delay	2s~600s
Reset time	2s~900s
Measurement error	≤1%
Electrical life(AC1)	1×10 ⁴
Mechanical life	1×10 ⁵
Operating temperature	-20°C ~ +60°C
Storage temperature	-35°C ~ +75°C
Mounting/DIN rail	Din rail EN/IEC 60715
Protection degree	IP40 for front panel/IP20 terminals
Operating position	any
Overvoltage catgory	III.
Pollution degree	2
Dimensions	82× 36× 68mm
Weight	135g

Parameter setting

Parameter	Range	Step value	Factory settings
Over voltage value	OFF,230V~300V	1V	275V
Over voltage recovery value	225V~295V	1V	265V
Under voltage value	140V~210V,OFF	1V	175V
Under voltage recovery value	145V~215V	1V	180V
Voltage fault action time	0.1s~10s	0.1s	0.5s
Over current value	OFF,1A~32/40/50/63A	0.1A	32A/40/50/63A
Over current action delay	2s~600s	1s	5s
Power on delay time	2s~600s	1s	5s
Reset time	2s~900s	1s	30s
Fault reset	ON-OFF	—	ON
LCD backlight time	10s~900s,ON	1s	60s

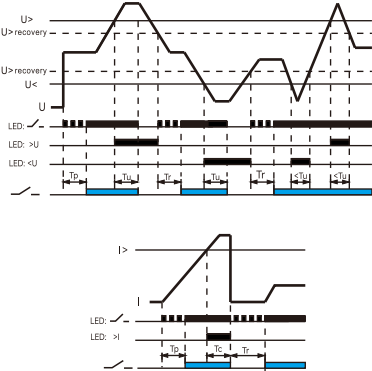
NOTE:
In the power off state, press and hold +, and then power on again to restore the factory settings.

Panel Diagram



	Press and hold the setting key for 3 seconds to enter the setting. After modifying the setting, press and hold for 3 seconds to save the setting.
	Used to increase the value when setting parameters.
	1.Used to reduce the value when setting parameters. 2.After exiting the setting, it can be used to manually turn on or off the load. 3.If the automatic fault reset function is turned off, this button can be used for manual reset when the fault occurs.

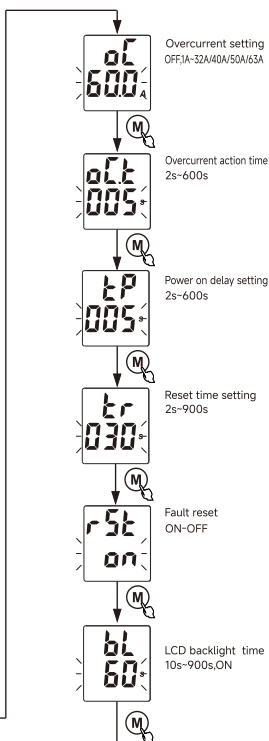
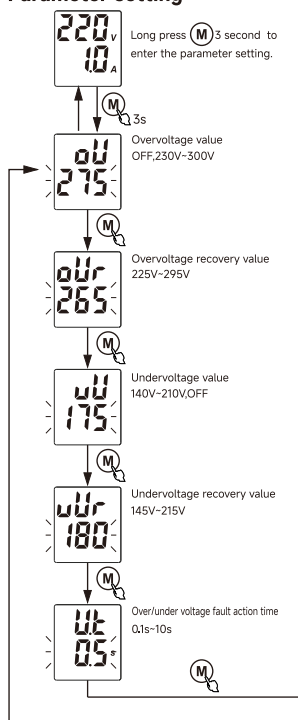
Functions Diagram



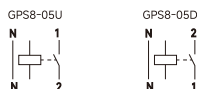
Tp: Power-up delay(2~600s)
Tr: Reset delay time(2~900s)
Tu: Over/under voltage fault action time(0.1~10s)
Tc: Overcurrent fault action time(2~600s)

Setup Menu

Parameter setting



Wiring Diagram

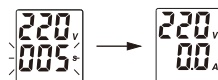


Open and close manually



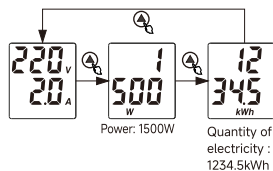
Under normal operation, the load can be switched on or off manually by pressing the power key for 0.5 seconds.

Power-on and reset delay



During the power-on and fault reset of the product, the product will count down and display according to the set delay time, and will enter the running state when the countdown ends.

Query electricity and power



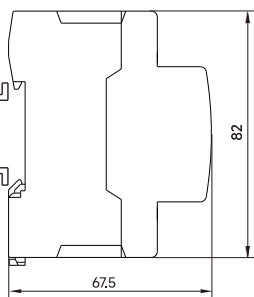
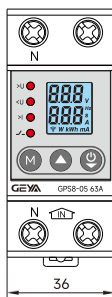
Dimensions(mm)

NOTE:

Short press (M) to increase or decrease the value, long press can be quickly set. If 60 seconds does not operate the key, it will exit automatically. You can press the (M) for 3 seconds at any time to exit the and save the setting.



This product does not have isolation function. Please disconnect the superior MCB during maintenance!!!



Disposal of Electrical Waste
All electrical waste should be disposed of in compliance with current WEEE regulations.



Caution

The products must be installed by qualified electricians. All and any electrical connections of the product shall comply with the appropriate safety standards.

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