SR-EOT Series

All-in-one Solar Storage System

User Manual

V4.0





SR-EOT01S

SR-EOT02S

1. Instructions

Thank you very much for choosing the EOT series household energy storage system developed and produced by our company. Please read and understand all contents of the Manual carefully before installing and using the product. If you have any suggestions during the use, please do not hesitate to give us feedback.

1.1 Range of Application

The installation and user manual of SR-EOT series is applicable to the installation and use of the following products:

No.	Model	Rated energy	Rated Output Power
1	SR-EOT01S	1.28kWh	1500W
2	SR-EOT02S	2.56kWh	3000W

The product should be used in compliance with local standards, laws and regulations, because any non-compliance with the use may lead to personal injuries and property loss.

The drawings provided in this Manual are used to explain the concepts related to the product, including product information,electrical connection, system debugging, safety information, common problems and maintenance, etc.

The internal parameters of this product have been adjusted before delivery. No internal parameters can be changed without permission. Any unauthorized changes to the settings will invalidate the warranty, and the Company will not be liable for any loss resulting therefrom.

This Manual and other related documents are an integral part of the product and should be kept properly for onsite installation personnel and related technical personnel to consult.

1.2 Meaning of Abbreviations

AC	Alternating Current
DC	Direct Current
PV	Photovoltaic
BMS	Battery Management System
PCS	Power Conversion System
RJ45	Registered Jack 45

SOC	State Of Charge
C	Charge C-rate
RS485	RS485 Communication Interface
CAN	Controller Area Network

1.3 Symbol Stipulations

There may be following symbols herein, and their meanings are as follows.

Symbols	Description
	Indicate a hazard with a high level of risk which, if not avoided, will result in death or serious injuries.
	Indicate a hazard with a medium level of risk which, if not avoided, could result in death or serious injuries.
	Indicate a hazard with a low level of risk which, if not avoided, could result in minor or moderate injuries.
	Warning information about device or environment safety. If not avoided, equipment damage, data loss, performance degradation or other unanticipated results may be resulted in. The "NOTICE" does not involve any personal injuries.

2 Safety Precautions

2.1 Safety Symbols

This product contains the following symbols, please pay attention to identifying.

Symbols	Description
	Observe enclosed documentation
	Danger. Risk of electric shock!
	Danger of high voltages. Danger to life due to high voltages in the Energy storage system
	Hot surface
	CE certification
	Do not touch the product in 5mins after shutdown
	Comply with RoHS standard
	The Energy storage system should not be disposed together with the household waste.

2.2 General Safety

2.2.1 Important Notice

Before installing, operating and maintaining the device, please read this Manual first and follow the symbols on the device and all the safety precautions in this Manual.

The matters indicated with "DANGER", "CAUTION", "ATTENTION" and "NOTICE" in this Manual do not represent all the safety matters to be observed, but are only the supplements to all the safety precautions. The Company will not be liable for any violation of general safety operating requirements, or any violation of safety standards for the design, production and use of the device. The device must be used in an environment that meets the requirements of the design specifications. Otherwise, the device may fail, and the abnormal device function or component damage, personal safety accident, and property loss arising from this are not covered within the quality assurance scope of the device. When installing, operating, and maintaining the device, the local laws, regulations, and codes shall be followed. The safety precautions in this Manual are only supplements to local laws, regulations, and codes. The Company shall not be liable for any of the following circumstances.

- The device is not run under the conditions of operating described in this Manual.

- The installation and operating environment is beyond the requirements of relevant international or national standards.
- The product is disassembled or changed, or the software code is modified without authorization.
- The operation instructions and safety warnings related with the product and in the documents are not followed.
- Damage of the device is caused by abnormal natural environment (force majeure, such as earthquake, fire, and storm).
- Transportation damage is caused during customer's own transportation.
- The storage condition does not meet the requirements of the product related documents and causes damage.

2.2.2 General Requirements

	Operating when the power is on is strictly prohibited during installation.
	It is strictly prohibited to install, use, and operate any outdoor equipment or cables (including but not limited to transporting equipment, operating equipment and cables, plugging and removing signal ports connected to the outdoor, working at altitude, and outdoor installation) in severe weather, such as thunder, rain, snow, and gale level 6.
	In case of any fire, evacuate the building or equipment area and press the fire alarm bell or dial the fire call. Under any circumstances, re-entry into a burning building is strictly prohibited.
	Under no circumstances should the structure and installation sequence of the device be changed without the manufacturer's permission.
	The battery terminal components shall not be affected during transportation. And, the battery terminal bolts shall not be lifted or transported.
	It is strictly prohibited to alter, damage or block the marks and nameplates on the device.
	The composition and working principle of the entire photovoltaic power generation system, as well as the relevant standards of the country/region where the project is located shall be known fully.
	After the device is installed, the empty packing materials, such as cartons, foam, plastics, and cable ties, shall be removed from the device area.

2.2.3 Personnel Safety

- When operating the device, appropriate personal protective equipment shall be worn. If any fault that may lead to personal injury or damage of the device is found, immediately terminate the operation, report to the responsible person, and take effective protective measures.
- Before using any tools, learn the correct method of using the tool to avoid injuries and damage of the device.
- In order to ensure personal safety and normal use, reliable grounding should be carried out before use.
- Do not open or damage the battery. The electrolyte released is harmful to skin and eyes, so avoid touch it.
- Do not place irrelevant items on the top of the device or insert them into any part of the device.
- Do not place flammable items around the device.
- Never place the battery in the fire to avoid explosion and prevent the personal safety from being endangered.
- Do not short-circuit the battery terminals, because short-circuiting of the battery may cause combustion.
- The battery may pose a risk of causing electric shocks and large short-circuit currents. When using the battery, the following precautions should be paid attention to:

a) The metal objects, such as watch and rings, shall be removed.

b) Tools with insulated handles should be used.

c) Rubber gloves and shoes should be worn.

d) The charging power supply shall be disconnected before connecting or disconnecting terminals of the battery.

e) Check whether the battery is accidentally grounded. If the battery is accidentally grounded, remove the power supply from the ground.

- Do not clean the internal and external electrical components of the cabinet with water or detergent.
- Do not stand, lean or sit on the device.
- Do not damage any modules of the device.

2.3 Personnel Requirements

- The personnel in charge of installation and maintenance must be strictly trained to understand all safety precautions and master proper operation methods.
- Only qualified professionals or trained personnel are allowed to install, operate and maintain the device.

- The personnel who operate the device, including the operators, trained personnel and professionals, must have special operation qualifications required by the local country, such as high voltage operation, working high above the ground, and special equipment operation qualification.
- The replacement of device or components (including software) must be carried out by professionals or authorized personnel.

2.4 Electrical Safety

2.4.1 General Requirements



Before carrying out electrical connections, ensure that the device is not damaged, or an electric shock or fire may occur.



Never install or remove any power cables when the power is on. The electric arcs or sparks may be generated at the moment when the power cable contacts with the conductor, which may cause fire or personal injuries.

- All the electrical connections must meet the electrical standards of the country/region where the project is located.
- The cables prepared by users themselves shall comply with local laws and regulations.
- Special insulating tools should be used in high-voltage operations.
- Before connecting the power cord, ensure that the label identification on the power cord is correct.
- Operations on the device are allowed only five minutes after the device is completely powered off.
- The insulation layer of the cable may be aged or damaged when the cable is used in a high temperature environment. Therefore, the distance between the cable and the heat source must be at least 30mm.
- Cables of the same type should be bundled together. Whereas, the cables of different types should be routed at least 30mm apart, and shall not be wrapped together or crossed.

2.4.2 Grounding Requirements

- When installing the device to be grounded, the protective grounding wire must be installed first; when removing the device, the protective grounding wire must be removed at last.
- It is forbidden to destroy the grounding conductor.
- It is forbidden to operate the device without a grounding conductor installed.
- The device shall be permanently connected to the protective grounding wire. Before operating the device, electrical connection of the device shall be checked to ensure that the device is reliably grounded.

2.5 Installation Environment Requirements

- This product is for indoor use only, and is strictly prohibited to be used in outdoor environment.
- Do not install or use this product in an environment where the temperature is lower than -10℃ or higher than 45℃.
- It should be installed in a dry and well-ventilated environment to ensure good heat dissipation performance.
- The product can be installed at a maximum altitude of 2,000m.
- The installation position should be away from the fire source.
- The product should be installed and used away from children and animals.
- The installation position should be far away from water sources, such as faucets, sewer pipes, and sprinklers, to avoid entering of water.
- The device should be placed on a firm and flat supporting surface.
- Do not place any inflammable or explosive items around the device.
- When the device is running, do not block the ventilation vent or heat dissipation system to prevent fire caused by high temperature.



The operation and service life of the energy storage is related to the operating temperature. The energy storage should be installed at a temperature equal to or better than the ambient temperature.



3 Product Introduction

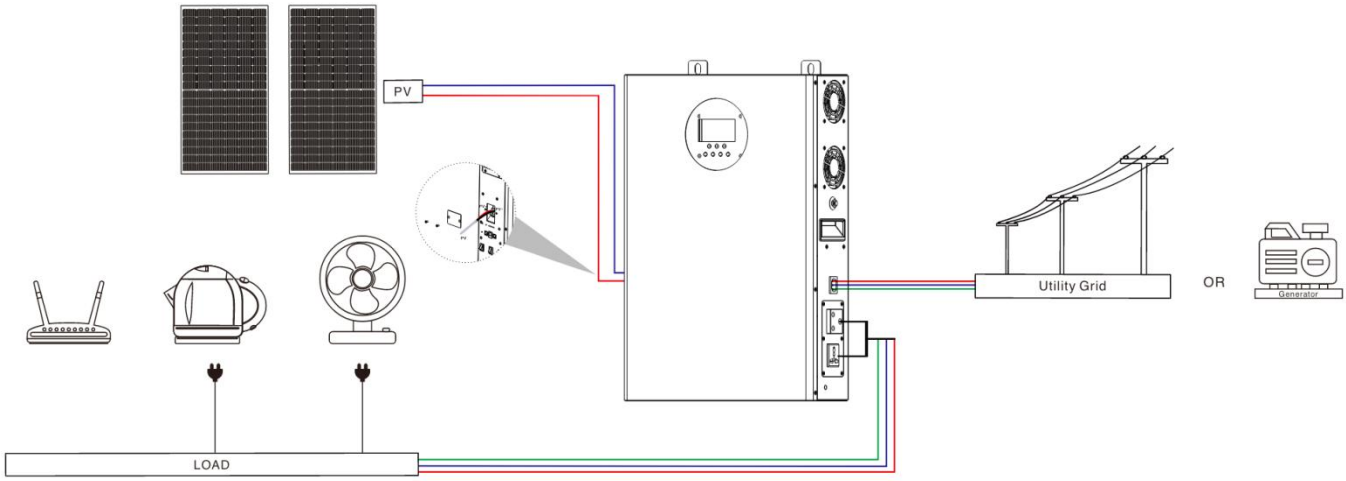
3.1 Brief Introduction to Product

SR-EOT is a new generation of household energy storage system with two output specifications of 220V and 110V, which can meet the diversified needs of global users. This product is a professional indoor mobile power, compact size, universal wheel design can be easily moved, charging and discharging extremely quiet.

The lithium iron phosphate batteries with high performance and long service life are used in the energy storage module. Meanwhile, the modular structure design is adopted. Each energy storage module is internally integrated with the intelligent BMS system。

The brand new topological circuit design is adopted in the power module, which can realize the energy exchange between photovoltaic, mains, battery and loads, and has the function of photovoltaic and mains charging. The photovoltaic charging module adopts the latest optimized MPPT tracking technology, which can quickly track the maximum power point of the photovoltaic array in any environment, and obtain the maximum energy of the solar panel in real time. In addition, MPPT has a wide voltage range. The advanced control algorithm is adopted in the mains charging module to realize the fully-digital double closed-loop control of voltage and current, so the control precision is high and the volume is small. The AC voltage input range is wide, and the input/output protection functions are complete, which can realize the stable and reliable charging and protection of batteries. The inverter module is based on the full-digital intelligent design, adopts the advanced SPWM technology, outputs pure sine wave, converts direct current into alternating current, and is applicable for household appliances, power tools and other AC loads.

The typical topological diagram for application of the system is as follows:



3.2 System Specifications

Product model	Rated Output Power	Rated Output Voltage (Vac)	Frequency	Charge Current	Max. PV Power	Battery
SR-EOT01S	1500W	230Vac	50Hz/60Hz	0 ~ 100A	700W	1.28kwh
SR-EOT02S	3000W	230Vac	50Hz/60Hz	0 ~ 100A	1500W	2.56kwh

3.3 Model Coding

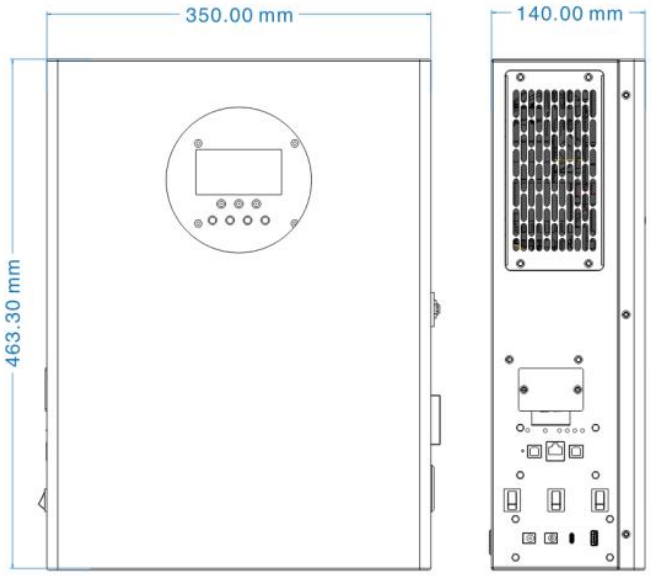
The model coding of the energy storage battery is as follows:

SR-EOT01S
① ② ③

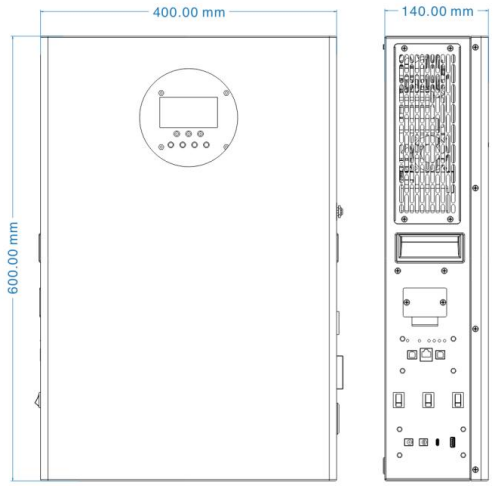
Identifier	Meaning	Value
①	Product type	EOH: horizontally-mounted EOV: vertically-mounted EOS: wall-mounted EOC: Stack,Rack EOT: All In One storage system
②	Energy storage capacity level	01: The battery capacity is 1.28kWh 02: The battery capacity is 2.56kWh 05: The battery capacity is 5.12kWh 10: The battery capacity is 10.24kWh
③	Product category	B: Energy storage battery C: Power conversion module S: Energy storage system

3.4 Appearance Description

3.4.1 Dimentions

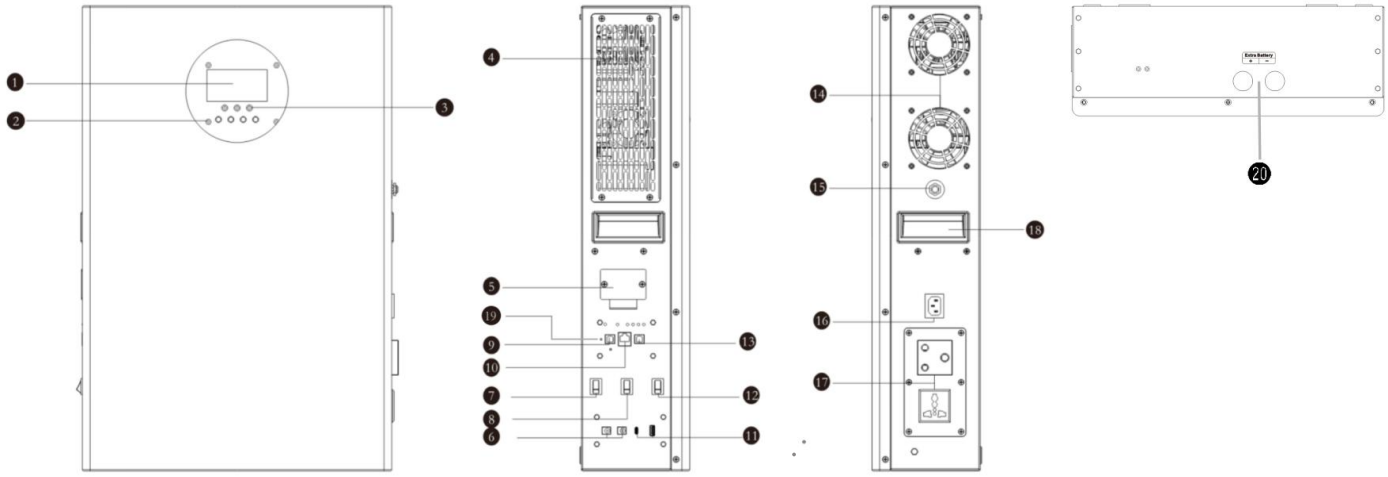


SR-EOT01S is 465*350*140mm.



SR-EOT02S is 600*400*140mm.

3.4.2 Appearance Description



① LCD screen	② Operation buttons	③Inverter LED Indicator	④ Air intake
⑤ PV input	⑥ DC12V Output	⑦ BAT Switch	⑧ DC/USB Switch
⑨ BMS communications port	⑩ Wi-Fi port	⑪ USB output port	⑫ Inverter Switch
⑬ Inverter communications port	⑭ Cooling fan	⑮ Input Breaker	⑯ AC input
⑰ AC output port	⑱ Handle (EOT01S without handle)	⑲ Reset Switch	⑳Battery parallel interface

4 Application Scenarios

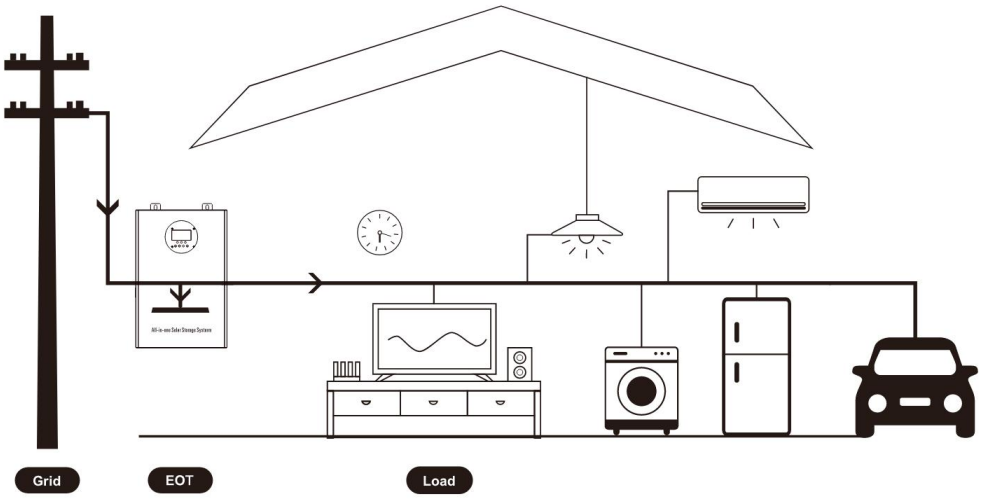
The lithium iron phosphate batteries with high performance and long service life are used in the energy storage module. Meanwhile, the modular structure design is adopted. Each energy storage module is internally integrated with the intelligent BMS system, which can be easily expanded.

The battery storage can be combined with SRNE brand inverter to form an off-grid photovoltaic system, which can solve the problem of electricity consumption in areas without electricity.

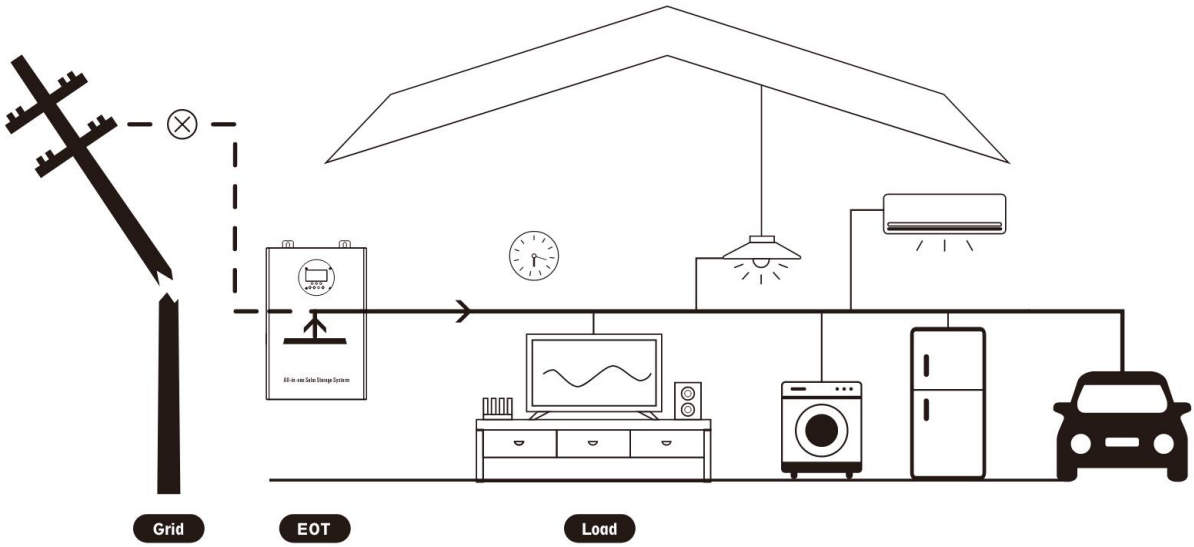
4.1 Application Scenarios

4.1.1 Application Scenarios with Only Mains Power but No Photovoltaic

When the mains is normal, it charges the battery and supplies power to the loads.

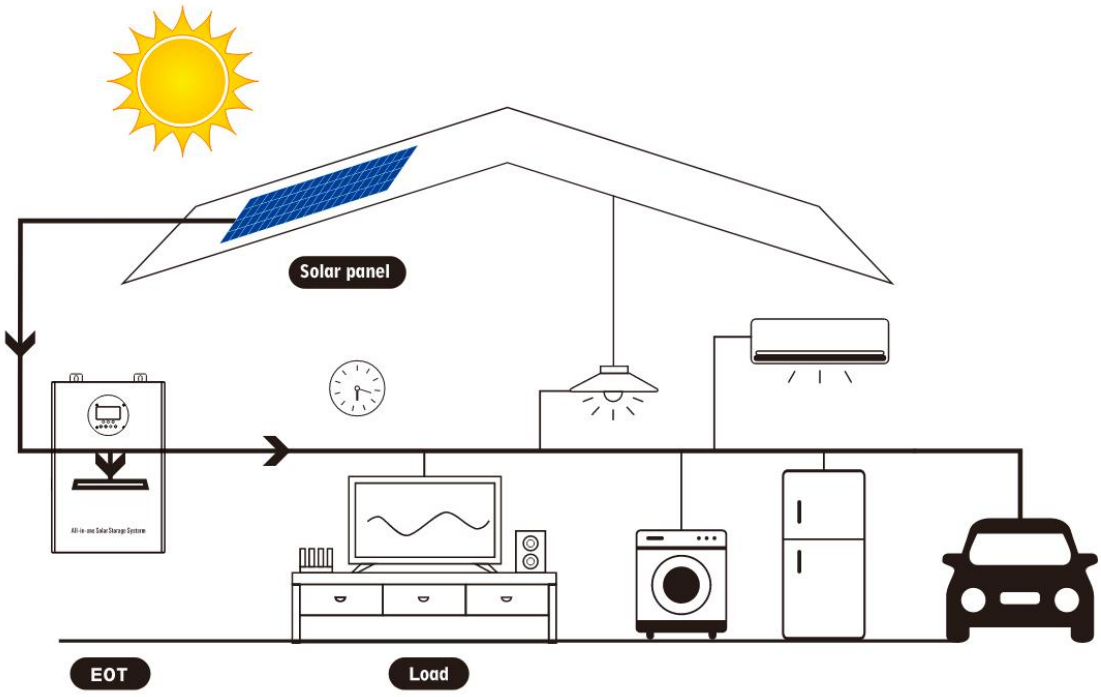


When the mains is disconnected or stops working, the battery supplies power to the load through the power module.

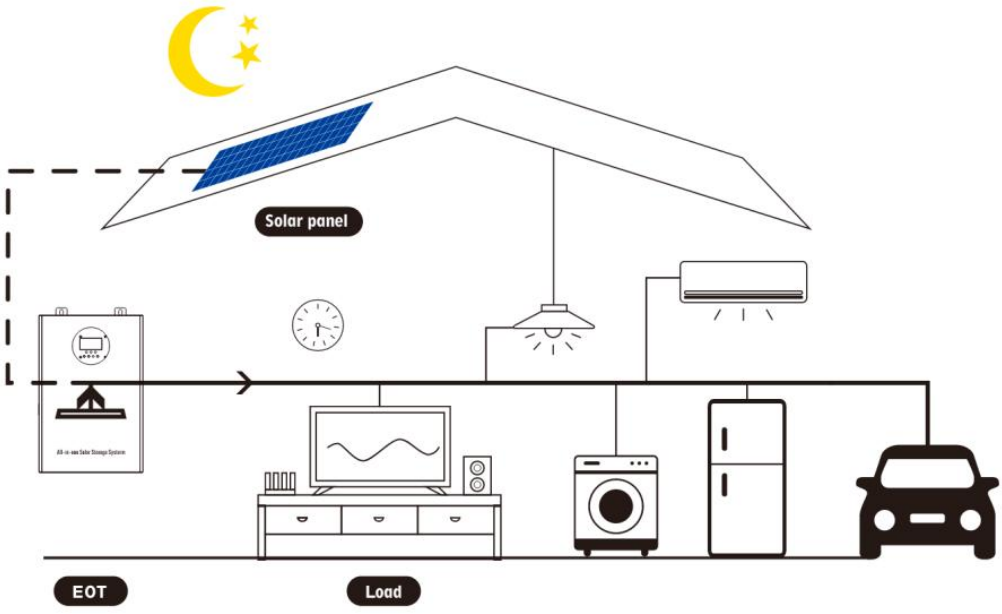


4.1.2 Application Scenarios with Only Photovoltaic but No Mains Power

During the day, the photovoltaic directly supplies power to the loads while charging the battery.

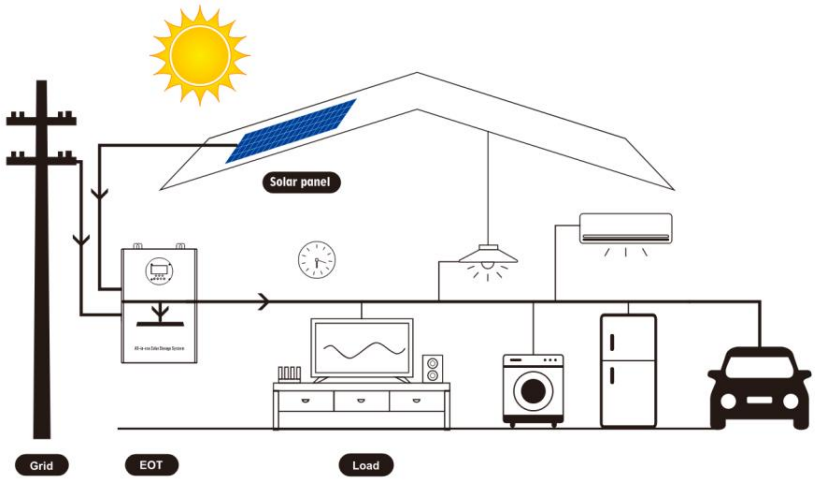


At night, the battery supplies power to the loads through the power module.

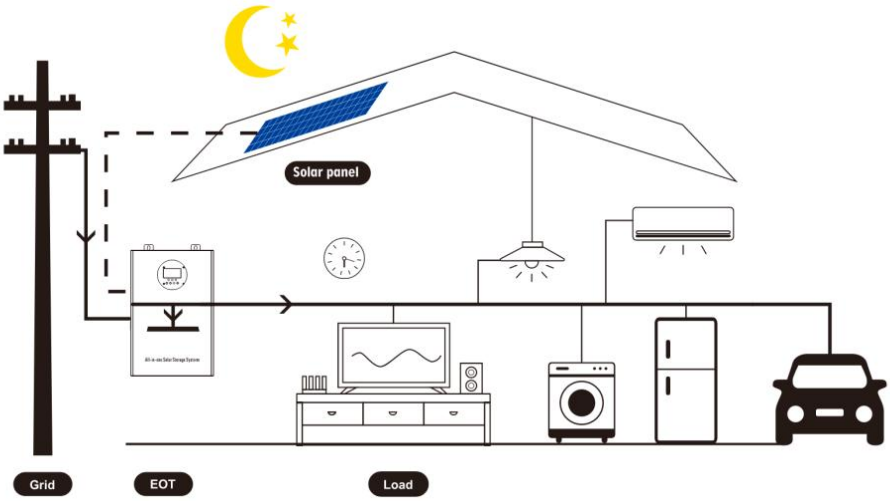


4.1.3 Complete Application Scenarios

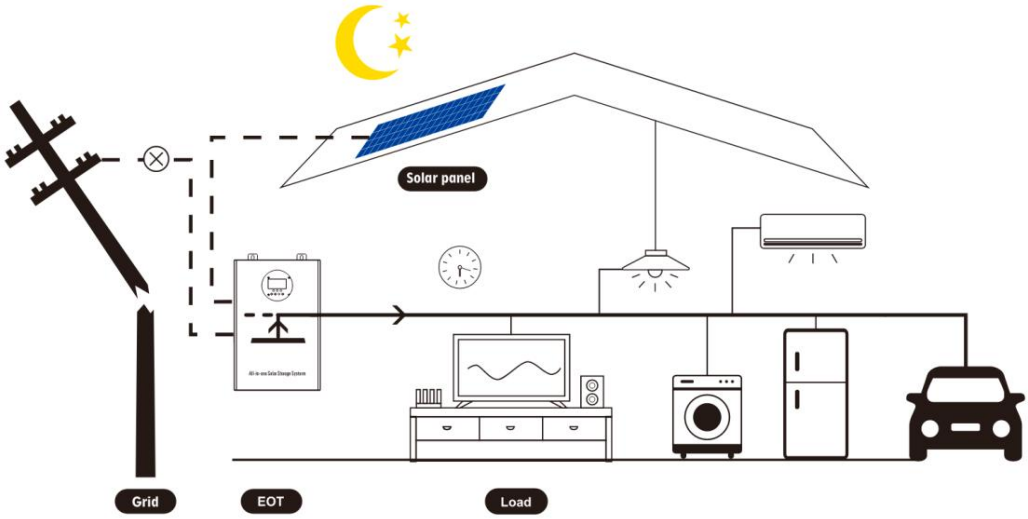
During the day, the mains and photovoltaic simultaneously charge the battery and supply power to the loads.



At night, the mains supplies power to the loads, and continues to charge the battery, if the battery is not fully charged.



If the mains is disconnected, the battery supplies power to the loads.



4.2 Load Working Mode

Load working mode	Inverter setting	Description
PV priority mode	PV 1ST SOL	switching to the Mains when the PV fails or the battery is lower than the set value of parameter
Mains priority mode (Default)	AC 1ST UTI	Mains priority mode, switching to inverter only when the mains fails.When the battery is full, the load power is supplied by the hybrid of PV and the utility.
Battery priority mode	BT 1ST SBU	switching to the mains only when the battery is under voltage or lower than the set value of parameter

5 System Installation

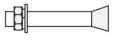
5.1 Inspections before Installation

Inspection of outer package

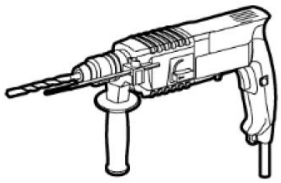
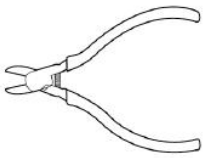
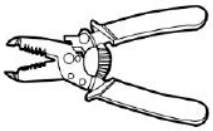
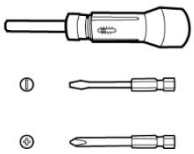
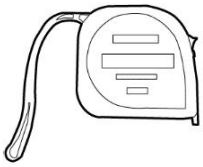
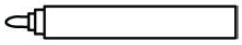
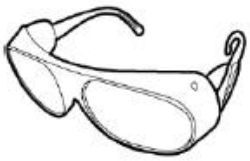
Before opening outer package of the energy storage, check if there is any visible damage on the outer package, such as holes, cracks or other signs of possible internal damage, and check the type of energy storage. If there is any abnormality on the package or model of the energy storage is inconsistent, do not open it and contact us as soon as possible.

Inspection of deliverables

After opening outer package of the energy storage, check if the deliverable is complete and whether there is any visible external damage. If any items are missing or damaged, please contact us.

NO.	Picture	Item	Quantity	Specification
1		All-in-one Solar Storage System	1	1.28kW/2.56kWh
2		Mounting Frame Screw	2	M8*60 expansion bolt
3		Wall-Mounted Bracket	2	55*40*2mm
4		MK Screw	4	M4*8

5.2 Preparation of Tools and Meters

Types	Tools and meters		
Installation tool			
			
			
Personal protective equipment			
			

5.3 Selection of Installation Location

5.3.1 Basic Requirements

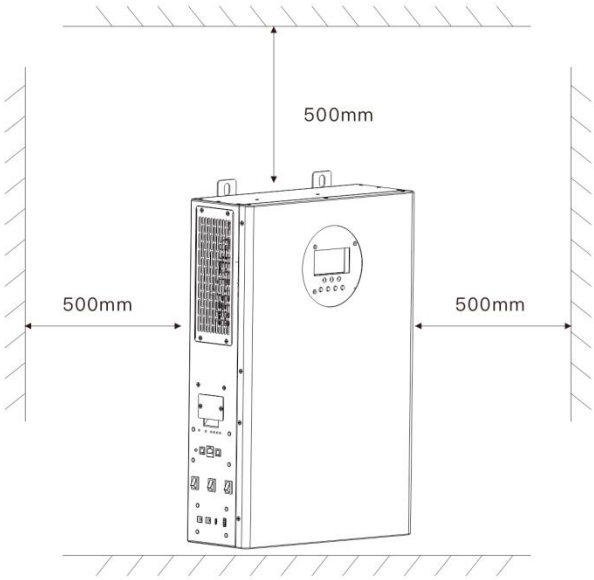
- Do not install in areas where flammable and explosive materials are stored.
- If the energy storage is installed in areas with salt damage, it will be corroded and may cause fire.

Therefore, do not install it outdoors in areas with salt damage. The areas with salt damage are defined as the areas which are not 500m away from shore or will be affected by sea breezes. The areas affected by the sea breezes vary depending on meteorological conditions (e.g. typhoons, monsoons) or topographical conditions (dams, hills).

- Do not install in the place where children can touch.
- The energy storage cannot be installed forwardly, horizontally, inversely, backwardly or sideways.
- When handling the device by hand, wear protective gloves to avoid injury.

5.3.2 Installation Space Requirements

When installing the energy storage, certain space shall be left around it to ensure sufficient space for installation and heat dissipation.

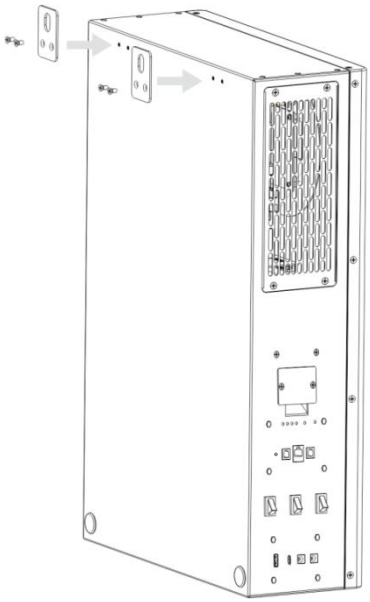


5.4 Device Installation

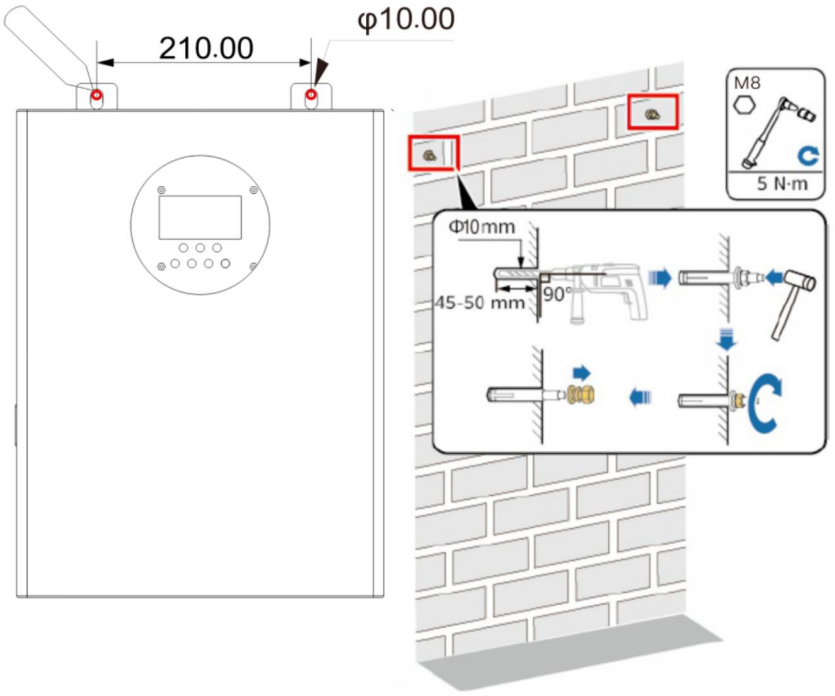
5.4.1 Wall mount

5.4.1.1 Installation Location Selection

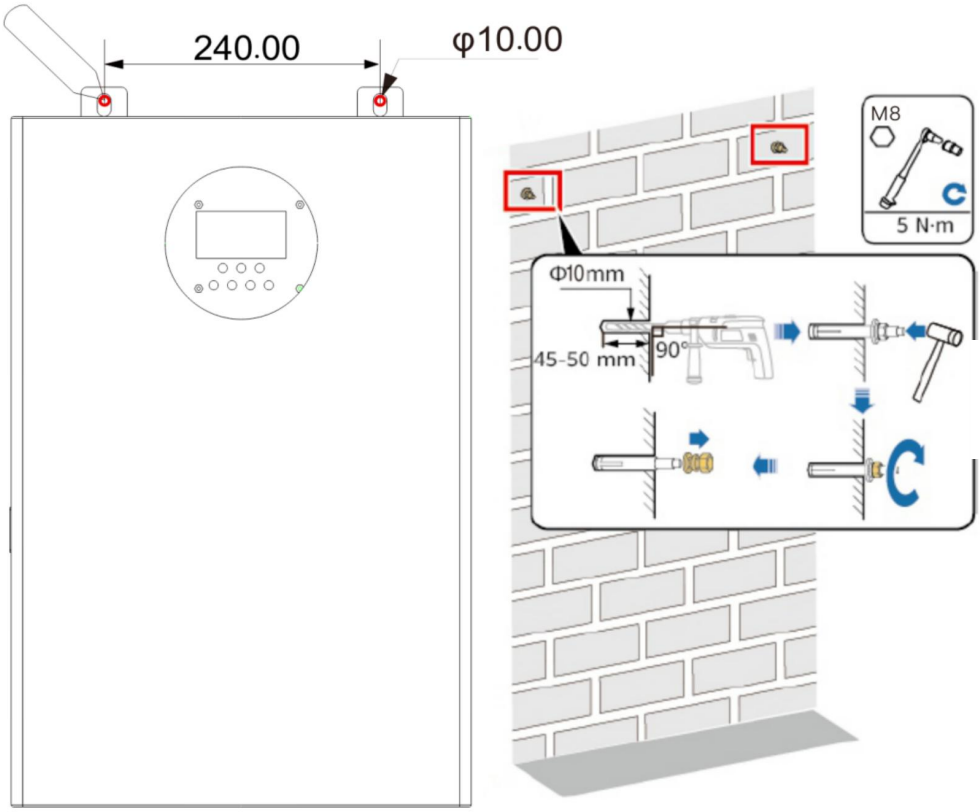
1.Place the wall mounting bracket on the corresponding position of the machine and fix the bracket with screws (M4*8).



2. Determine the location of the installation and mark where holes need to be punched;

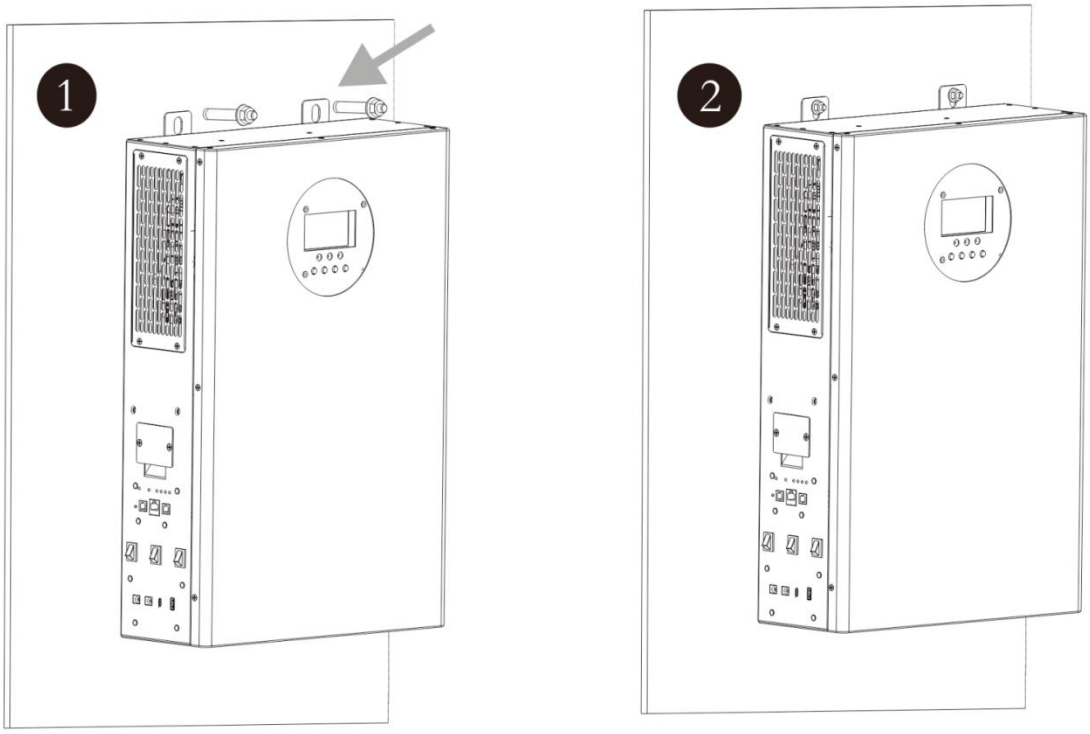


EOT0 EOT01S



EOT02S

3. Place the machine in the corresponding position and fix the bracket with screws (M8*60).



6 System Debugging

6.1 Inspections Before Power-On

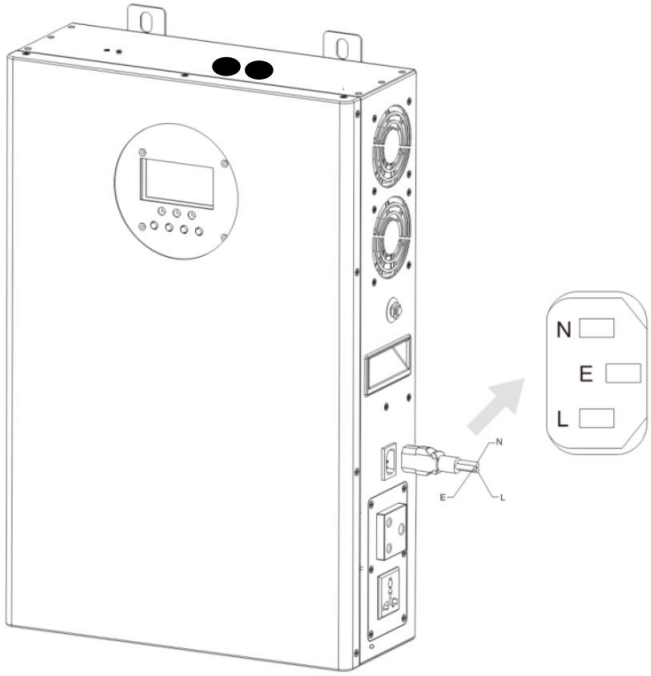
No.	Inspection items	Acceptance criteria	Validation
1	The installation environment meets requirements	The installation space is reasonable and the environment is clean and tidy without any construction	□Yes □No
2	Photovoltaic connecting wires are correct	The positive and negative terminals are connected correctly without any missing.	□Yes □No
3	AC output connection wires are correct	The positive and negative terminals are connected correctly without any missing.	□Yes □No
4	AC input connection wires are correct	The positive and negative terminals are connected correctly without any missing.	□Yes □No

6.2 Preparation of Cables

No.	Cables	Description	Recommended specifications
1	Photovoltaic input line	Cable between the photovoltaic panel and power module	Note that the cable specification is not less than 6mm^2/9AWG
2	AC input line (assembled)	Cable between AC input and power module	Note that the cable specification is not less than 2.5mm^2/13AWG
3	AC output line	Cable between AC output and power module	Note that the cable specification is not less than 2.5mm^2/13AWG

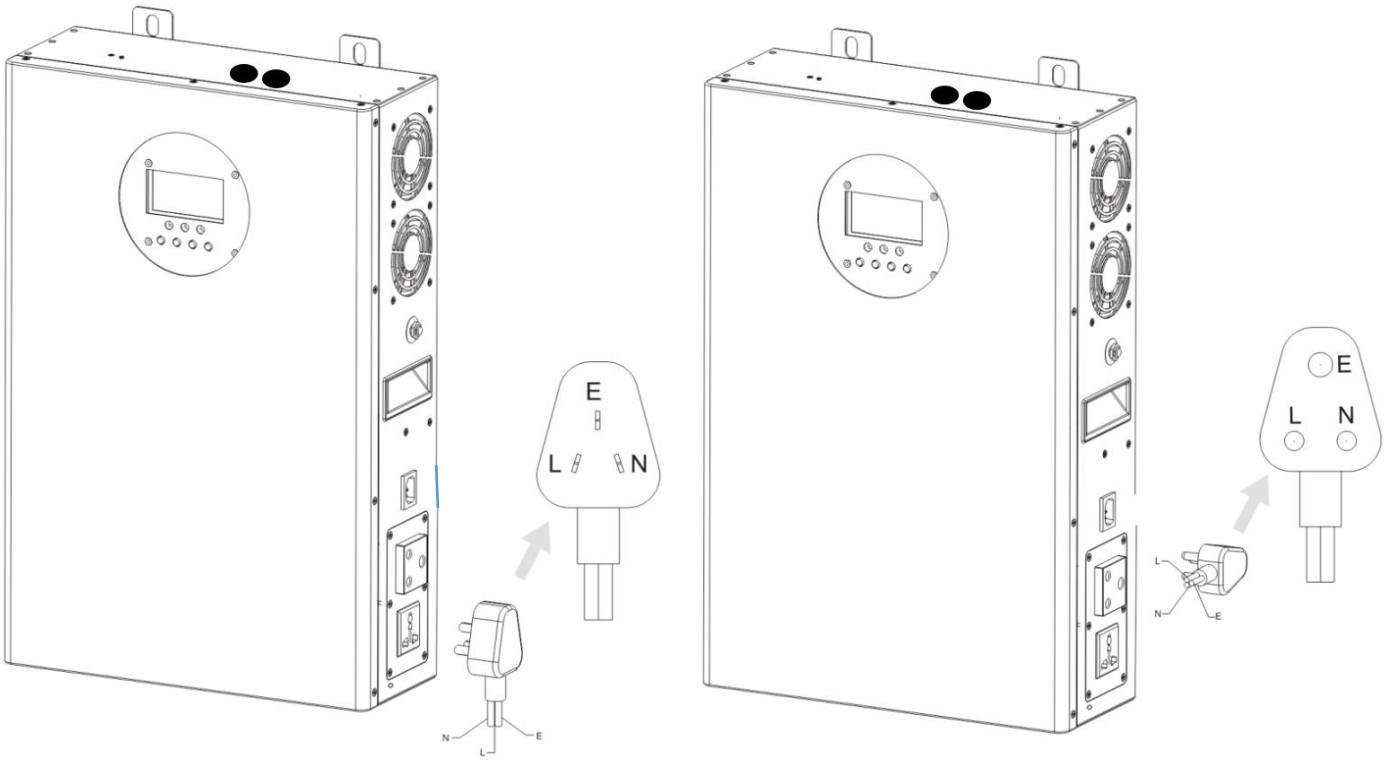
6.2.1 Connecting AC Input

According to the cable terminal position shown in the figure below, correctly connect the AC input line.

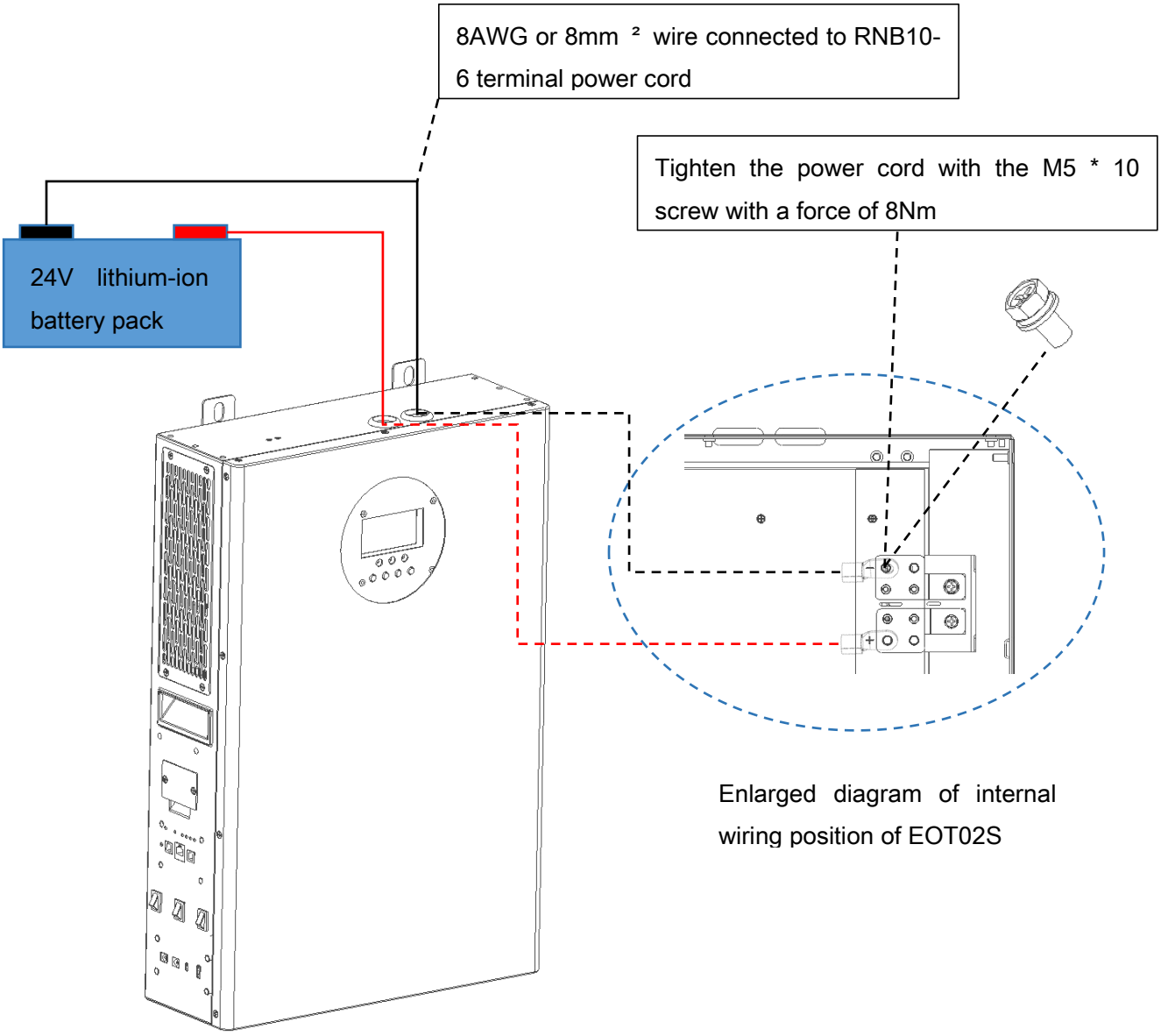


6.2.2 Connecting AC Output

According to the cable sequence and terminal position shown in the figure below, correctly connect the AC output cable.



6.2.3 EOT02S Parallel 24V Lithium Battery Operation Guide

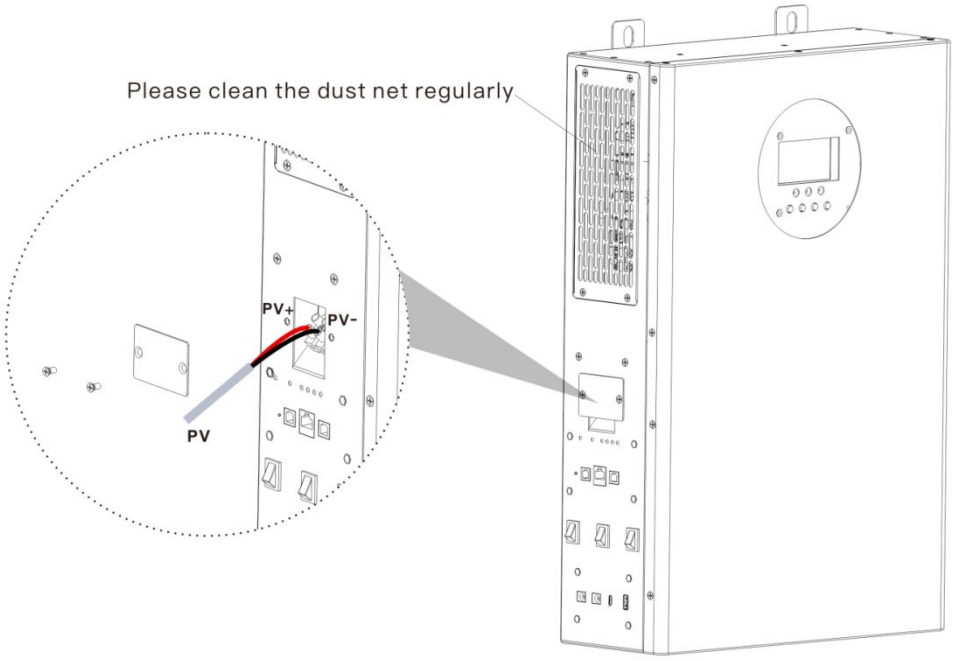


CAUTION

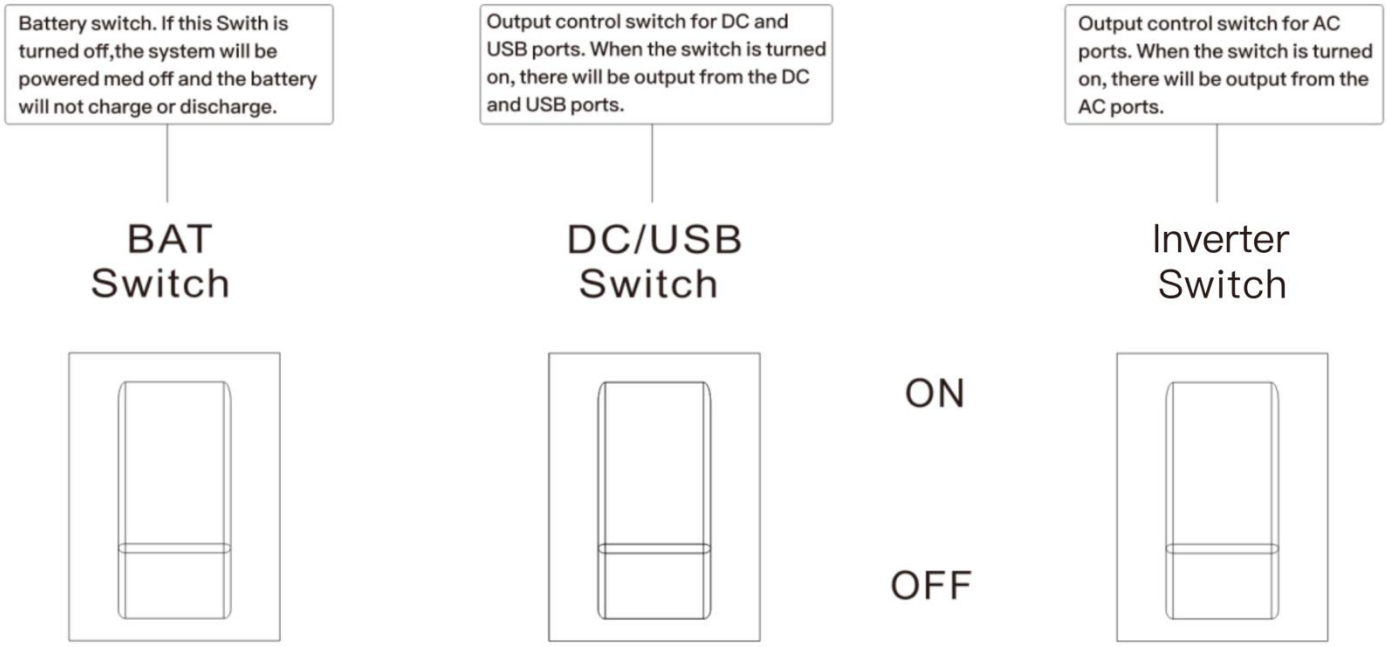
Attention: The parallel connection of 24V lithium-ion battery pack EOT02S must be operated by professionals. For detailed operation, please refer to the diagram or consult our technical personnel.

6.2.4 Connecting Photovoltaic Input

According to the cable sequence and terminal position shown in the figure below, correctly connect the PV input cable. When wiring, please pay attention to the positive and negative poles and avoid short-circuit.



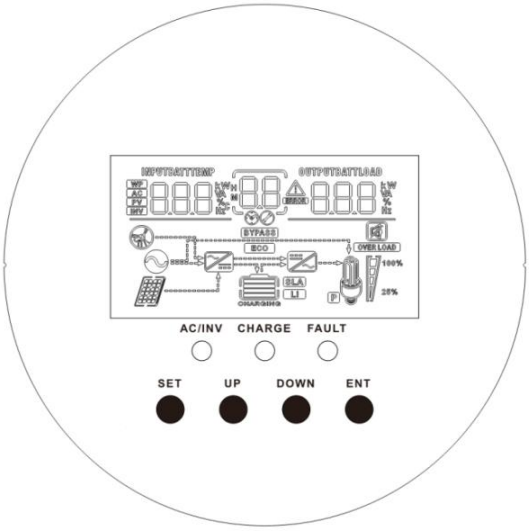
6.2.5 Turn On Switch



6.3 LCD Screen Operating Instructions

6.3.1 Page Introduction

After switch is turned on, the LED indicator will light up or flash. The meaning of the LED indicator is as follows.



Operation buttons introduction

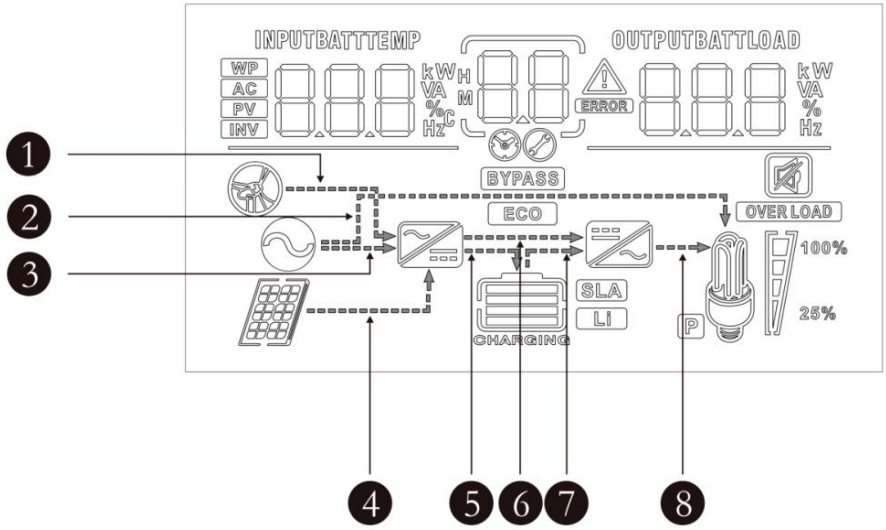
Function buttons	Description
SET	Enter/Exit Settings menu
UP	Previous choice
DOWN	Next choice
ENT	Confirm/Enter Options under the settings menu

LED blinking description

Indicators	Colors	Description
AC/INV	Yellow	Steady on: Mains output
		Flash: Inverter output
CHARGE	Green	Flash: Battery charging
		Steady on: Charging completed
FAULT	Red	Steady on: Fault state

6.3.2 LCD Screen

6.3.2.1 Page Introduction

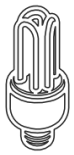
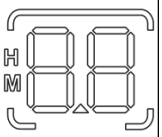


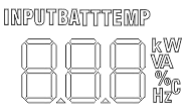
Serial number meaning

① The arrow is not displayed	⑤ Indicates the charging circuit charging the battery terminal
② Indicates the grid supplying power to the load	⑥ The arrow is not displayed
③ Indicates grid supplying power to the charging circuit	⑦ Indicates the battery terminal supplying power to the inverter circuit
④ Indicates PV module supplying power to the charging circuit	⑧ Indicates the inverter circuit supplying power to the load

Icon Meaning

Icons	Functions	Icons	Functions
	Indicates that the AC input terminal has been connected to the grid		Indicates that the inverter circuit is working
	Indicates that the AC input mode in APL mode (wide voltage range)	BYPASS	Indicates that the machine is in the Mains Bypass mode
	Indicates that the PV input terminal has been connected to the solar panel	OVER LOAD	Indicates that the AC output is in an overload state
CHARGING	indicates that the remaining battery is 0%~24%	100% 25%	indicates that the load percentage is 0%~24%
CHARGING	indicates that the remaining battery is 25%~49%	100% 25%	indicates that the load percentage is 25%~49%

	indicates that the remaining battery is 50%~74%		indicates that the load percentage is 50%~74%
	indicates that the remaining battery is 75%~100%		indicates that the load percentage is ≥75%
	Indicates that the battery type of the machine is a lithium battery		Indicates that the buzzer is not enabled
	Indicates that the current battery type of the machine is a lead-acid battery		Indicates that the machine has an alarm
	Indicates that the battery is in charging state		Indicates that the machine is in a fault condition
	Indicates that the AC/PV charging circuit is working		Indicates that the machine is in setup mode
	Indicates that the AC output terminal has an AC voltage output		The parameters displayed in the middle of the screen: 1. In the non-setup mode, the alarm or fault code is displayed. 2. In the setup mode, the currently set parameter item code is displayed.

Parameters display on the left side of the screen: input parameters	
	Indicates AC input
	Indicates PV input
	Indicates inverter circuit
	This icon is not displayed
	Display battery voltage, battery charge total current, mains charge power, AC input voltage, AC input frequency, PV input voltage, internal heat sink temperature, software version
Parameters display on the right side of the screen: Output parameters	
	Indicates output voltage, output current, output active power, output apparent power, battery discharge current, software version; in setup mode, displays the set parameters under the currently set parameter item code

Real-time data viewing method

On the LCD main screen, press the "UP" and "DOWN" buttons to scroll through the real-time data of the machine.

N0.	Parameters on the left side of the screen	Parameters in the middle of the screen	Parameters on the right side of the screen
1	INPUT BATT V (Battery input voltage)	Fault code	OUTPUT LOAD V (Output load voltage)
2	BMS Battery Voltage		BMS Battery SOC
3	PV TEMP ℃ (PV charger heatsink temperature)		PV OUTPUT KW (PV output power)
4	PV INPUT V (PV input voltage)		PV OUTPUT A (PV output current)
5	INPUT BATT A (Input battery current)		OUTPUT BATT A (Battery output current)
6	INPUT BATT KW (Battery input power)		OUTPUT BATT KW (Battery output power)
7	AC INPUT Hz (AC input frequency)		AC OUTPUT LOAD Hz (AC output frequency)
8	AC INPUT V (AC input voltage)		AC OUTPUT LOAD A (AC output load current)
9	INPUT V (For maintain)		OUTPUT LOAD KVA (Load apparent power)
10	INV TEMP ℃ (AC charge or battery discharge heatsink temperature)		INV OUTPUT LOAD KW (Load active power)
11	APP software version		Bootloader software version
12	Model Battery Voltage Rating		Model Output Power Rating
13	Model PV Voltage Rating		Model PV Current Rating

6.3.3 Setup parameters description

Buttons operation instructions: Press the "SET" button to enter the setup menu and exit the setup menu. After entering the setup menu, the parameter number [00] will flash. At this point, press the "UP"and "DOWN" buttons to select the code of parameter item to be set. Then, press the "ENT" button to enter the parameter editing mode, and the value of the parameter is flashing. Adjust the value of the parameter with the "UP" and "DOWN" buttons. Finally, press the "ENT" button to complete the parameter editing and return to the parameter selection state.

No.	Name	Options	Description
00	Exit setting menu	[00] ESC	Exit the setup menu.
01	Work priority mode	[01] SOL	PV priority mode, switching to mains when PV is ineffective or the battery is below the value set in parameter [04].
		[01] UTI default	Utility priority mode, switching to inverter only when utility power is not available.
		[01] SBU	Inverter priority mode, switching to mains only when the battery is under voltage or below the value set in parameter [04].
02	Output frequency	**[02] 50.0 default**	Bypass Adaptive, when there is mains power, it automatically adapts to the frequency when it is first connected to the mains. When there is no mains power, you can set the output frequency through this menu. 230V machine default 50HZ.
		[02] 60.0	
03	AC input voltage range	[03] APL	230V machine wide range mains input voltage range: 90~280V.
		[03] UPS default	230V machine narrow range mains input voltage range: 170~280V.
04	Battery to mains	**[04] 12/24V default**	Parameter [01] = SOL/SBU, the battery voltage is lower than this setting value, the output is switched from inverter to mains.
05	Mains to battery	**[05] 13.4/26.6V default**	Parameter [01] = SOL/SBU, the battery voltage is higher than this setting value, the output is switched from mains to inverter.
06	Charging mode	[06] CSO	PV priority, mains charging only when PV is not effective.
		[06] CUB	Mains priority charging; only when the mains charging fails, the PV charging is started.

No.	Name	Options	Description
		[06] SNU default	Hybrid charging with PV and utility, prioritizing PV charging, and when PV energy is insufficient, utility charging supplements. When the PV energy is sufficient, the utility stops charging. Note: Only when the utility bypass supply power to the load can the PV and utility be charged at the same time, when the inverter is working, only the PV charging can be started.
		[06] OSO	PV charging only, no mains charging.
07	Max. charging current	**[07] 100A default**	S series: 230V machine setting range 0~100A;
08	Battery type	[08] USE	User-defined. All battery parameters can be set.
		[08] SLd	Sealed lead-acid battery
		[08] FLd	Flooded lead-acid battery
		[08] GEL	Gel lead-acid battery
		[08] LF04/LF08 default	LF04/LF08 lithium iron phosphate batteries, corresponding to lithium iron phosphate batteries 4-series, 8-series The default constant voltage charging voltage of 4-series is 14.2V. The default constant voltage charging voltage of 8-series is 28.4V.
		[08] NCA	Ternary lithium battery, default constant voltage charging voltage is 28.4V, adjustable.
09	Boost charging voltage	**[09] 14.2/28.4V default**	Boost charging voltage setting
10	Boost charging maximum time	**[10] 120 default**	Boost charging maximum time setting, refers to the constant voltage charging when the voltage reaches the parameter [09] setting voltage maximum charging time, set the range of 5min~900min, step of 5 minutes, valid when battery type is user-defined and lithium battery.
11	Float charging voltage	**[11] 14.2/28.4V default**	Float charging voltage, when battery type is user-defined.

No.	Name	Options	Description
12	Over-discharge voltage	**[12] 11.8/23.4V default**	Over-discharge voltage, the battery voltage is lower than this judgement point, delay the time set by parameter [13], and then shut down the inverter output.
13	Over-discharge delay time	**[13] 5S default**	Over-discharge delay time, when the battery voltage is lower than the parameter [12], the inverter output will shut down after delaying the time set in this parameter. The setting range is 5S~50S, step of 5S. Valid when battery type is user-defined and lithium battery.
14	Battery under-voltage alarm point	**[14] 12.4/24.8V default**	Battery under-voltage alarm point, when the battery voltage is lower than the judgment point, report under-voltage alarm, the output does not shut down.
15	Battery discharging limit voltage	**[15] 11.6/23.2V default**	Battery discharging limit voltage, battery voltage is lower than this judgment point, the output will shut down immediately.
16	Equalization charging	[16] DIS	Disable equalization charging.
		[16] ENA default	Enable equalization charging, only for open lead-acid batteries and sealed lead-acid batteries
17	Equalize charging voltage	**[17] 14.2/29.2V default**	Equalized charging voltage. Valid when battery type is flooded lead-acid battery and sealed lead-acid battery.
18	Equalize charging time	**[18] 120 default**	Equalized charging time, setting range 5min~900min, step of 5 minutes. Valid when battery type is flooded lead-acid battery and sealed lead-acid battery.
19	Equalize charging delay	**[19] 120 default**	Equalized charging delay, setting range 5min~900min, step of 5 minutes. Valid when battery type is flooded lead-acid battery and sealed lead-acid battery.
20	Equalize charging derating time	**[20] 30 default**	Equalized charging derating time, 0~30days in 1 day steps, valid when battery type is flooded lead-acid battery and sealed lead-acid battery.
21	Equalize charging enable	**[21] DIS default**	Stop equalizing charge immediately.
		[21] ENA	Start equalizing charge immediately.

No.	Name	Options	Description
22	Energy-saving Mode	**[22] DIS default**	Disable energy-saving mode.
		[22] ENA	After enabling the energy-saving mode, if the load is empty or lower than 50W, the inverter output will shut down the output after delaying for a period of time. When the load is higher than 50W, the inverter will start automatically.
23	Automatic overload restart	[23] DIS	Disable automatic overload restart. If an overload occurs shutting down the output, the machine will no longer power up.
		[23] ENA default	Enable automatic overload restart. If overload occurs to shut down the output, the machine delays for 3 minutes and then restarts the output. After accumulating 5 times, it will not restart the machine again.
24	Automatic over-temperature restart	[24] DIS	Disable automatic restart in case of over-temperature, if over-temperature occurs to shut down the output the machine will no longer switch on the output.
		[24] ENA default	Enable automatic over-temperature restart, if over-temperature occurs to shut down the output, it will restart to switch on the output when the temperature drops down.
25	Buzzer alarm	**[25] DIS default**	Disable alarm.
		[25] ENA	Enable alarm.
26	Mode change alert	[26] DIS	Disable alarm when the state of the main input source changes.
		[26] ENA default	Enable alarm when the state of the main input source changes.
27	Inverter overload to bypass	[27] DIS	Disable automatic switching to mains when the inverter is overloaded.
		[27] ENA default	Enable automatic switching to mains when inverter is overloaded.
28	Max. AC charging current	**[28] 60A default**	Max. charging current setting for AC charging: 0~80A.
29	Output split-phase function	**[29] DIS default**	Disable this function.
		[29] ENA	Enable output with IF transformer.
30	Machine address settings	**[30] 1**	Setting range: 1-254.
32	BMS	[32] SLA	BMS communication disable.

No.	Name	Options	Description
	communication	[32] 485	RS485 port for BMS communication function.
		[32] CAN default	CAN port for BMS communication function.
33	BMS communication protocols	When [32] setting item = CAN , the protocol are: **USZ (default)** .	
		When [32] = 485, the protocol are: PAC=PACE，RDA=RITAR，AOG=ALLGRAND BATTERY，OLT=OLITER， XWD=SUNWODA, DAQ=DYNESS, WOW=SRNE （default），PYL=PYLONTECH，SHO=FOX ESS，POW=POWMR	
35	Battery under-voltage recovery point	**[35] 13/26V default**	When the battery is under-voltage, the battery voltage needs to be greater than this setting to restore the battery inverter AC output.
36	Max. PV charging current	**[36] 60A default**	Max. PV charging current setting range：0~60A.
37	Recharge recovery point after battery is full	**[37] 13.2/26.4V default**	When the battery is fully charged, the inverter stops charging and resumes charging when the battery voltage falls below this voltage value.
38	AC output voltage setting (standby mode only)	**[38] 230Vac default**	**S series models：** 200/208/220/230/240Vac can be set, default 230Vac. AC output power = rated power * (setting voltage value/230)
39	Charge current limiting method (when BMS is enabled)	[38] LC SET	Max. battery charging current not greater than the value of setting 【07】
		[38] LC BMS Default	Max. battery charging current not greater than the limit value of BMS
		[38] LC INV	Max. battery charging current not greater than the logic judgments value of the inverter.
57	Stop charging current	**[57] 2A default**	Charging stops when the default charging current is less than this setting
58	Discharge alarm SOC setting	**[58] 15% default**	SOC alarm when capacity is less than this set value
59	Cut-off discharge SOC Settings	**[59] 5% default**	Stops discharging when the capacity is less than this setting
60	Cut-off charge SOC Settings	**[60] 100% default**	Stops charging when capacity is greater than or equal to this setting

No.	Name	Options	Description
61	Switch to mains SOC Settings	[61] 10% default	Switch to mains when capacity is less than this setting
62	Switch to inverter output SOC Settings	[62] 95% default	Switches to inverter output mode when capacity is greater than or equal to this setting

7 Protection

7.1 Protective function

No.	Protections	Description
1	PV current/power limiting protection	When charging current or power of the PV array configured exceeds the PV rated, it will charge at the rated.
2	PV night reverse-current protection	At night, the battery is prevented from discharging through the PV module because the battery voltage is greater than the voltage of PV module.
3	Mains input over voltage protection	When the mains voltage exceeds 280V (230V model) , the mains charging will be stopped and switched to the inverter mode.
4	Mains input under voltage protection	When the mains voltage is lower than 170V (230V model / UPS mode), the mains charging will be stopped and switched to the inverter mode.
5	Battery over voltage protection	When the battery voltage reaches the overvoltage disconnection point, the PV and the mains will be automatically stopped to charge the battery to prevent the battery from being overcharged and damaged.
6	Battery low voltage protection	When the battery voltage reaches the low voltage disconnection point, the battery discharging will be automatically stopped to prevent the battery from being over-discharged and damaged.
7	Load output short circuit protection	When a short-circuit fault occurs at the load output terminal, the AC output is immediately turned off and turned on again after 1 second.
8	Heat sink over temperature protection	When the internal temperature is too high, the machine will stop charging and discharging; when the temperature returns to normal, charging and discharging will resume.
9	Overload protection	Output again 3 minutes after an overload protection, and turn the output off after 5 consecutive times of overload protection until the machine is re-powered. For the specific overload level and duration, refer to the technical parameters table in the manual.
10	PV reverse polarity protection	When the PV polarity is reversed, the machine will not be damaged.
11	AC reverse protection	Prevent battery inverter AC current from being reversely input to bypass.

12	Bypass over current protection	Built-in AC input overcurrent protection circuit breaker.
13	Battery input over current protection	When the discharge output current of the battery is greater than the maximum value and lasts for 1 minute, the AC input would switched to load.
14	Battery input protection	When the battery is reversely connected or the inverter is short-circuited, the battery input fuse in the inverter will blow out to prevent the battery from being damaged or causing a fire.
15	Charge short-circuit protection	When the external battery port is short-circuited in the PV or AC charging state, the inverter will protect and stop the output current.

7.2 Fault code

Fault code	Fault name	Whether it affects the output or not	Description
【01】	BatVoltLow	Yes	Battery undervoltage alarm
【02】	BatOverCurrSw	Yes	Battery discharge average current overcurrent software protection
【03】	BatOpen	Yes	Battery not-connected alarm
【04】	BatLowEod	Yes	Battery undervoltage stop discharge alarm
【05】	BatOverCurrHw	Yes	Battery overcurrent hardware protection
【06】	BatOverVolt	Yes	Charging overvoltage protection
【07】	BusOverVoltHw	Yes	Bus overvoltage hardware protection
【08】	BusOverVoltSw	Yes	Bus overvoltage software protection
【09】	PvVoltHigh	No	PV overvoltage protection
【10】	PvBuckOCSw	No	Buck overcurrent software protection
【11】	PvBuckOCHw	No	Buck overcurrent hardware protection
【12】	bLineLoss	No	Mains power down
【13】	OverloadBypass	Yes	Bypass overload protection
【14】	OverloadInverter	Yes	Inverter overload protection
【15】	AcOverCurrHw	Yes	Inverter overcurrent hardware protection
【17】	InvShort	Yes	Inverter short circuit protection
【19】	OverTemperMppt	No	Buck heat sink over temperature protection
【20】	OverTemperInv	Yes	Inverter heat sink over temperature protection
【21】	FanFail	Yes	Fan failure
【22】	EEPROM	Yes	Memory failure
【23】	ModelNumErr	Yes	Model setting error
【26】	RlyShort	Yes	Inverted AC output backfills to bypass AC input

【29】	BusShort	Yes	Internal battery boost circuit failure
【30】	BatCapacityLow1	No	Battery capacity below 10% alarm (valid when BMS is enabled)
【31】	BatCapacityLow2	No	Battery capacity below 5% alarm (valid when BMS is enabled)
【32】	BatCapacityLowStop	Yes	Battery low capacity shutdown (valid when BMS is enabled)
【58】	BMS communication fault	NO	Check whether the communication cable is connected correctly and whether item [33] is set to the corresponding lithium battery communication protocol.
【60】	BMS battery low-temperature alarm	NO	Li-ion battery BMS low-temperature alarm
【61】	BMS battery over-temperature alarm	NO	Li-ion battery BMS over-temperature alarm
【62】	BMS battery over-current alarm	NO	Li-ion battery BMS over-current alarm
【63】	BMS battery under-voltage alarm	NO	Li-ion battery BMS under-voltage alarm
【64】	BMS battery over-voltage alarm	NO	Li-ion battery BMS over-voltage alarm

7.3 Troubleshooting

Fault code	Fault	Measures
Display	No display on the screen	Check if the battery air switch or the PV air switch has been closed; if the switch is in the "ON" state; press any button on the screen to exit the screen sleep mode.
【06】	Battery overvoltage protection	Measure if the battery voltage exceeds rated, and turn off the PV array air switch and mains air switch.
【01】 【04】	Battery undervoltage protection	Charge the battery until it returns to the low voltage disconnection recovery voltage.
【30】 【31】 【32】 【63】	Battery low capacity alarm	Charge the battery until it returns to the recovery capacity.
【21】	Fan failure	Check if the fan is not turning or blocked by foreign object.
【19】 【20】	Heat sink over temperature protection	When the temperature of the device is cooled below the recovery temperature, normal charge and discharge control is resumed.

【13】【14】	Bypass overload protection, Inverter overload protection	① Reduce the use of power equipment; ② Restart the unit to resume load output.
【17】	Inverter short-circuit protection	① Check the load connection carefully and clear the short-circuit fault points; ② Re-power up to resume load output.
【09】	PV over-voltage	Use a multimeter to check if the PV input voltage exceeds the maximum allowable input voltage rated.
【03】	Battery disconnected alarm	Check if the battery is not connected or if the battery circuit-breaker is not closed.
【26】	Inverted AC output backfills to bypass AC input	Disconnect the AC input, PV input and battery input. After the screen is off, only connect the battery and start up. If fault 26 is reported, it indicates that the AC input relay switch is short-circuited, and you need to contact the manufacturer to replace it.

8 System Maintenance

8.1 System Power-Off



After the system is powered off, the case still has residual power and heat, which may cause electric shocks or burns. Therefore, protective gloves should be worn before operating the energy storage 5 minutes after the system is powered off. Maintenance operations on energy storage should be performed only after ensuring that all indicator lights of the energy storage are off.

Power-off operation steps of the system:

Step 1 Turn off the AC OUT switch breaker

Step 2 Turn off the breaker switch between the inverter unit and AC input(If installed).

Step 3 Turn off the breaker switch between the inverter unit and the PV string(If installed).

Step 4 Turn off the AC switch

Step 5 Turn off the DC switch and the energy storage is powered off successfully.

8.2 Routine Maintenance

To ensure the long-term and good operation of the energy storage system, it is recommended to perform the routine maintenance as described in this section.

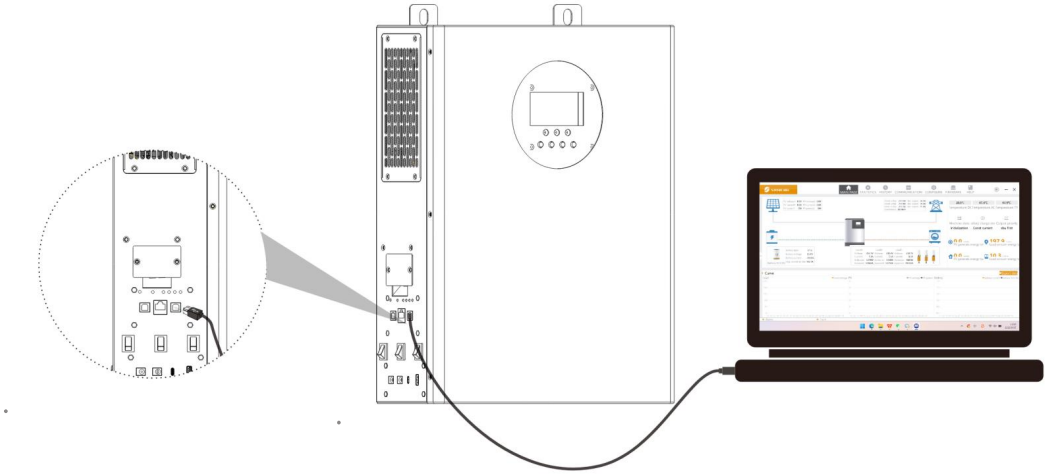
Items	Methods	Maintenance interval
System cleanliness	Check if the radiator is covered or dirt on a regular basis.	Once every six months to one year.
Running status of system	• Observe whether the energy storage appearance is damaged or deformed. • Listen to whether the energy storage has any abnormal sound during running. • When the energy storage is running, check whether the indicator of the energy storage battery is correct.	Once every six months.
Electrical connection	• Check if any cable connection is off or loose. • Check if any cable is damaged, and especially if there are cuts on the sheath where the cable contacts with the metal surface. • Check if the unused DC input terminals, energy storage terminals, COM ports, and covers are locked.	Half a year after first debugging and testing, and once every six months to one year thereafter.
Grounding reliability	Check if the grounding cable is grounded reliably.	Half a year after first debugging and testing, and once every six months to one year thereafter.

8.3 Device Cleaning

It is recommended to clean and maintain the product from time to time. When cleaning, the dust and stains on the product shall be removed with a piece of soft dry cloth or vacuum cleaner.The product shall not be cleaned with organic solvents, corrosive liquids and other cleaning products.

8.4 Debug or Upgrade The Firmware

Users can upgrade their BMS or inverter using a USB cable without the need for other tools (such as a USB to RS485 cable).



9 Technical Data

Product model	SR-EOT01S	SR-EOT02S
Inverter Output		
Rated Output Power	1,500W	3,000W
Max.Peak Power	3,000VA	6,000VA
Rated Output Voltage	230Vac	
Waveform	Pure Sine Wave	
Power Factor	1	
Frequency	50/60Hz	
Auto Switch Period	< 10ms (typical)	
THD	3%	
Battery		
Battery Type	LiFePO4	
Battery Energy	1.28kWh	2.56kWh
Battery Capacity	100Ah	100Ah
Battery Rated Voltage	12.8V	25.6V
Battery Working Voltage Range	11.2 ~ 14.4V	22.4 ~ 28.8V
Standard Charge current	50A	
Max. Charge Current	100A	
Cycle Lifespan	6000	

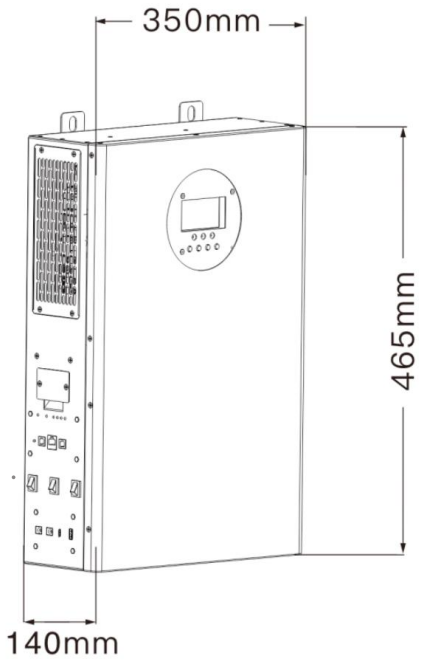
PV Charge		
Solar Charge Type	MPPT	
Max. Output Power	700W	1,500W
Max. MPPT Charging Current	50A	60A
Max. Voltage of Open Circuit	108V	
MPPT Voltage Range	30~95Vdc	
AC Charge		
Max. AC Charge Power	750W	1,500W
Max. AC Charging Current	60A	60A
Rated Input Voltage	220/230Vac	
Input Voltage Range	90 ~ 280Vac	
AC Bypass Output		
Auto Bypass Rated Output Power	2,000W	4,000W
Input Voltage Range	90 ~ 280Vac	
AC Input Breaker	20A	30A
DC OUTPUT		
Rated Output Power	36W	
Rated Output Voltage	12V	
Rated Output Current	3A	
Interface	DC5521*2	
USB CHARGE		
Fast charging protocol	DCP、FCP、QC2.0、QC3.0、AFC、PD2.0、PD3.0	
USB-A	Max 18W：5V-2A ; 5V-3A; 9V-2A; 12V-1.5A;	
USB-C	Max 24W：5V-2A ; 5V-3A; 9V-2A; 12V-1.5A; 12V-2A	
General		
Communication	USB-Type B	
Protection Degree	IP20，Indoor Only	
Charging temperature range	0℃~45℃	
Noise	≤40dB	
Storage time / temperature	6 months @25℃;3 months @35℃;1 months @45℃	
Cooling Method	Forced Air Cooling	
Dimensions	465*350*140mm	600*400*140mm
Weight	30kg	40kg

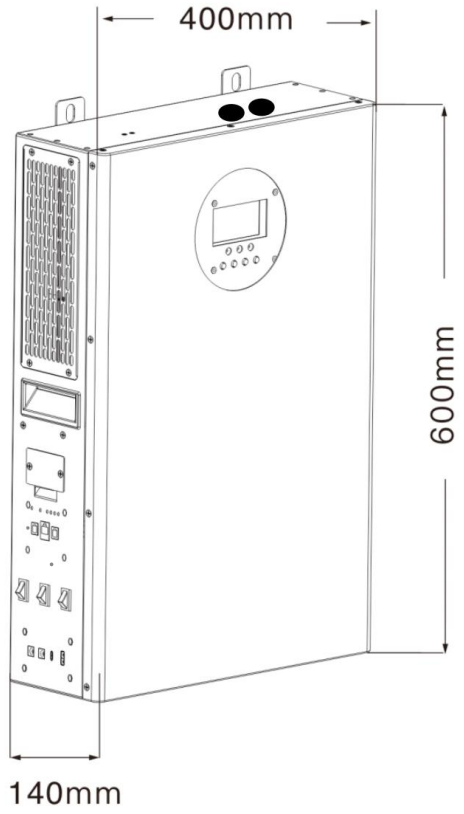
10 Product Dimensions and Packaging

10.1 Product Dimensions

SR-EOT01S is 465*350*140mm.

SR-EOT02S is 600*400*140mm.

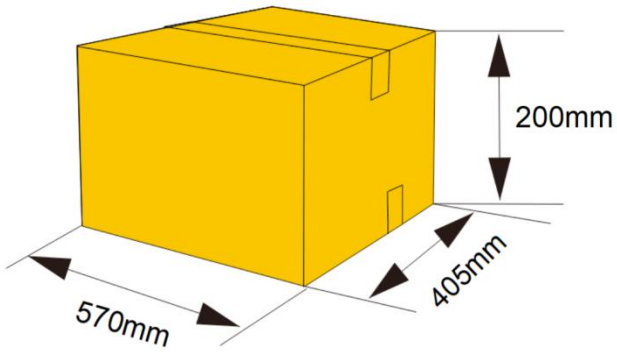


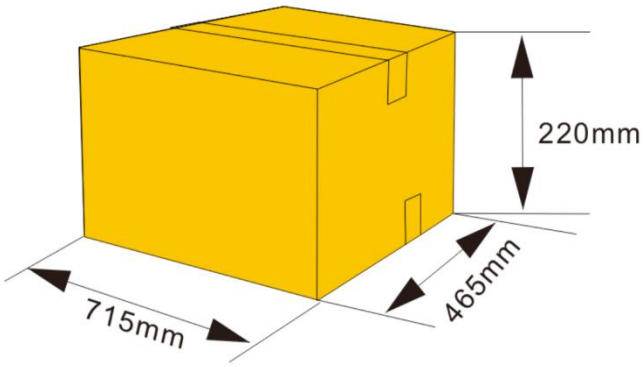


10.2 Package Dimensions

All-in-one Solar Storage System，The outer package size of EOT01S is 570*405*200mm.

All-in-one Solar Storage System，The outer package size of EOT02S is 715*465*220mm.





10.3 Accessories

NO.	Picture	materials	Quantity	Remark
1		All-in-one Solar Storage System	1	Standard
2		Mounting Frame Screw	2	Standard
3		Wall-Mounted Bracket	2	Standard
4		MK Screw	4	Standard
3		AC Power Cable	1	Standard
4		User Manual	1	Standard