

Installation & Operation Manual



Download
Manual



Growatt New Energy

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Contents

1 Introduction

2 Safety

2.1 General installation warnings
2.2 Assembly Warnings
2.3 Warnings in this document

3 General Information

3.1 Backup box overview
3.2 Dimensions and weight
3.3 Storage of the Product

4 Unpacking

4.1 Unpacking and inspection

5 Installation and Electrical Connection

- 5.1 Selecting the installation location
- 5.2 Backup box wiring diagram
- 5.3 Installation
- 5.4 Electrical Connection

6 Decommissioning

- 6.1 Packing the Backup box
- 6.2 Storing the Backup box
- 6.3 Disposing of the Backup box


7 Troubleshooting

8 Specification

9 Caution

1 Introduction

The Backup box is used with energy storage system (with Min 2500-6000 TL-XH inverter) to make the energy storage system have off-grid function. Configured with Backup box, when the power outage, the energy storage system can automatically switch to the off-grid state, it can continue to supply power to the EPS load, and the load can continue to run.



Observe the operating instructions
Read the product's documentation before working on it. Follow all safety precautions and instructions as described in the documentation.

2 Safety

2.1 General installation warnings



Certain safety precautions must be observed when installing and operating this product. Read and follow all instructions, cautions and warnings in this installation manual. All operations regarding transport, installation, and maintenance must be carried out by qualified, trained personnel and in compliance with all prevailing local codes and regulations. These connections must be made only by qualified technical personnel. Wiring methods used should be in accordance with the National Electric Code or any prevailing local codes and regulations.

2.2 Assembly Warnings

Prior to installation, inspect the unit to ensure the absence of any transport or handling damage which could affect the integrity of the product; the failure to do so could result in safety hazards. Unauthorized removal of necessary protection features, improper use, incorrect installation or operation may lead to serious safety and shock hazards and/or equipment damage.

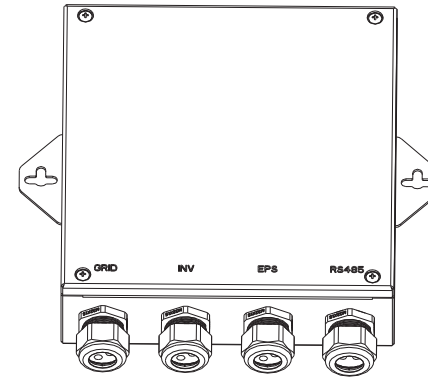
2.3 Warnings in this document

Below is a list of special safety symbols used in this manual that highlight potential safety risks and/or provide useful information. The symbol usage is described below:

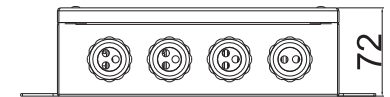
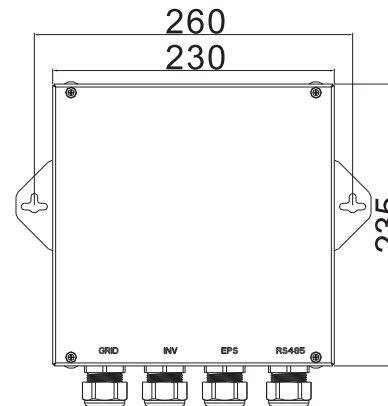
Symbol	Description
	CAUTION The reader should stop, use caution and fully understand the operations explained before proceeding.
	Dangerous voltage The product works with high voltages. All work on the energy storage system must follow the described documentation and must comply with all prevailing codes and regulations associated with high voltages.

3 General Information

3.1 Backup box overview



3.2 Dimensions and weight



Dimension (W x H x D): 230/235/72mm
Weight : 2.2KG

Installation and Electrical Connection 5

3.3 Storage of the Product

If you want to storage the Backup box in your warehouse, you should choose an appropriate location to store.

- The storage temperature should be always between -35°C and $+60^{\circ}\text{C}$. And the storage relative humidity should be always between 0 and 100% (without condensation).
- If there are batch products need to be stored, the max layers for original carton is ten.
- After long term storage, local installer or service department of Growatt should perform a comprehensive test before installation.

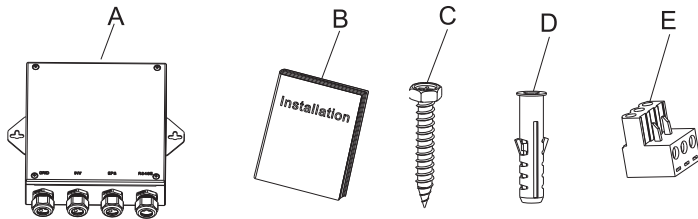
4 Unpacking

4.1 Unpacking and inspection

Thoroughly inspect the packaging upon received. If any damage to the carton is visible, or if you find that the unit is damaged after unpacking, please contact the shipping company and Inverter supplier immediately.

Meanwhile please check the delivery for completeness and for visible external damages of Backup box. If there are anything damaged or missing, please contact your dealer. Don't dispose its original package. If you want to transport the product, it is better to store the unit into the original package.

Completed delivery should contain as follows:

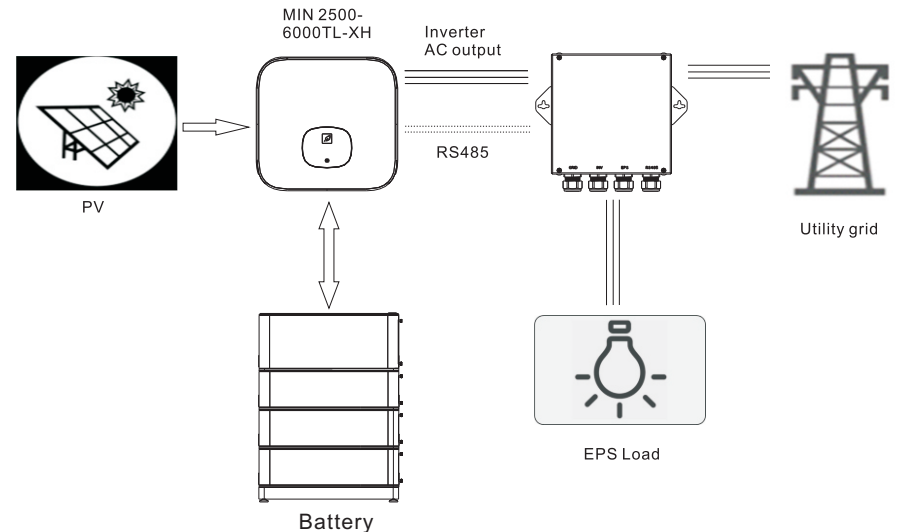


A	Backup box	1
B	Manual	1
C	Self-tapping screw	2
D	Plastic expansion pipe	2
E	Signal connector	1

5.1 Selecting the installation location

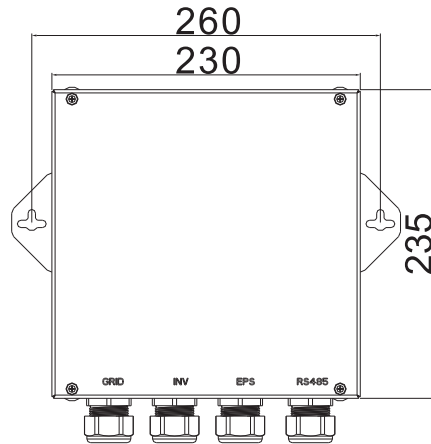
- This is guidance for installer to choose a suitable installation location, to avoid potential damages to device and operators.
- The Backup box must be installed by qualified installers and/or licensed electricians according to the applicable local code regulations (NEC, CEC, and other). Once physically mounted, The breaker (AC) must be open in order to isolate the power supply.
- See technical data in section 8, and check the environmental parameters to be observed (degree of protection, temperature, etc.).
 - a) The maximum operational ambient air temperature ($+60^{\circ}\text{C}/140^{\circ}\text{F}$) must be considered when choosing the Backup box installation location.
 - b) To avoid overheating, always make sure the flow of air around the Backup box is not blocked.
 - c) Do not install in places where gases or flammable substances may be present.
 - d) The humidity of the installation location should be 0~100% without condensation.

5.2 Backup box wiring diagram



5.3 Installation

The dimension of Backup box is shown below:

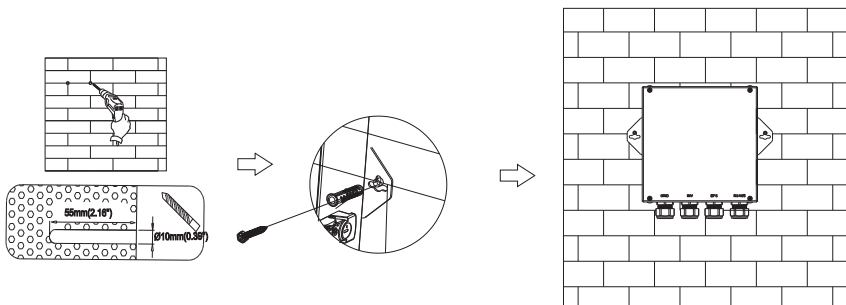


5.3.1 Mounting on the wall



In order to avoid electrical shock or other injury, inspect existing electronic or plumbing installations before drilling holes.

Mounting Backup box



5.4 Electrical Connection

5.4.1 Safety



Danger to life due to lethal voltages!

High voltages which may cause electric shocks are present in the conductive parts of the unit. Prior to performing any work on the energy storage system, disconnect the energy storage system on the AC and DC sides.



Grounding

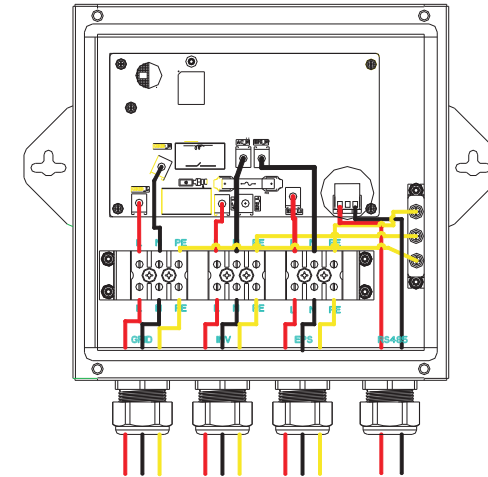
Before connecting the power cables, you must connect the ground wire.



Use only solid or stranded wire but not fine stranded wire.
Use cables with high ambient temperatures.
Use cables with a large cross-section.

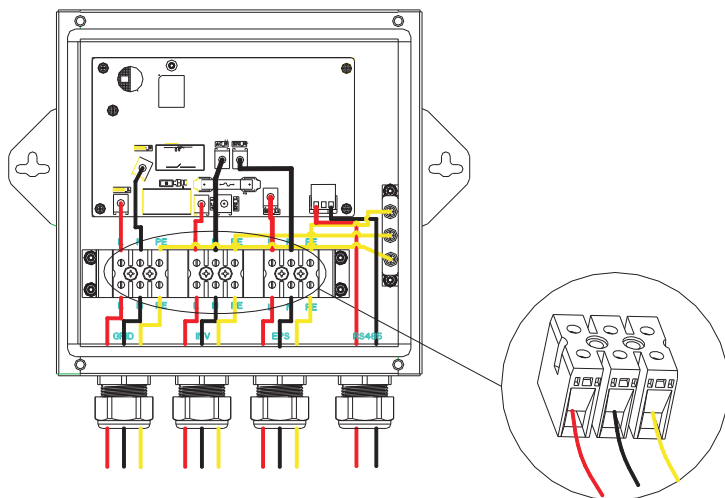
5.4.2 The AC wiring

Backup box port is shown below:



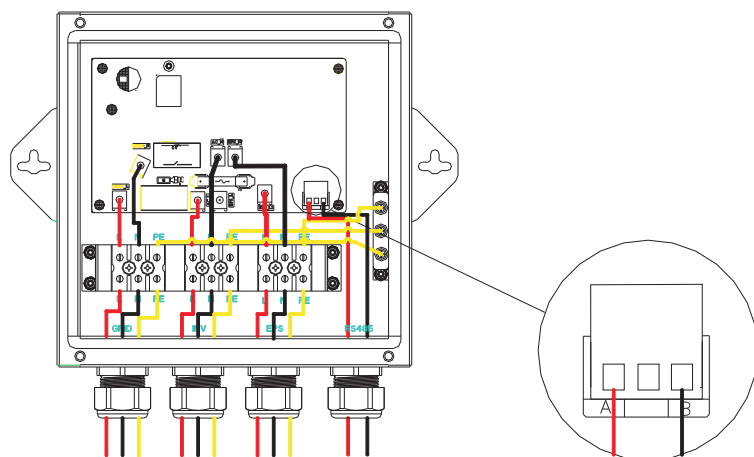
Port	Description	Conductor size
Grid	Connect Electrical Grid	8-10 AWG
INV	Connect Min2500-6000TL-XH AC Output port	8-10 AWG
EPS	Connect EPS load	8-10 AWG
Rs485	Connect Min2500-6000TL-XH SYS COM port	24-16 AWG

AC wiring is shown below:



5.4.3 Single control cable wiring

Single control cable wiring is shown below:



Port	Description
485A	Connect Min2500-6000TL-XH SYS COM port 485A2
485B	Connect Min2500-6000TL-XH SYS COM port 485B2

5.4.4 Checking

Please make sure that all wiring in the Backup box is tightened, check the connection diagram with section 5.2.

6 Decommissioning

6.1 Unpacking the Backup box

Pack the Backup box. Use the original packaging or packaging that is suitable for the weight and dimensions of the products.

6.2 Storing the Backup box

Store the Backup box in a dry place where ambient temperatures are always between -35°C and $+60^{\circ}\text{C}$.

6.3 Disposing of the Backup box



Do not dispose of faulty Backup box or accessories together with household waste. Please accordance with the disposal regulations for electronic waste which apply at the installation site at that time. Ensure that the old unit and, where applicable, any accessories are disposed of in a proper manner.

7 Troubleshooting

After the initial installation, if the system cannot be connected to the grid, refer to 5.4 check whether the GRID, INV, EPS lines correspond to the Backup box port. During use, if the EPS load does not receive power during a power outage, turn off the system and check if the Rs485, GRID, INV, EPS lines are properly connected.

8 Specification

Caution 9

Specifications	Backup box
Grid	
Rated AC power output	6000W
Normal Voltage	230V
Normal frequency	50/60Hz
Max current	26A
EPS	
Rated AC power output	6000VA
Normal Voltage	230V
Normal frequency	50/60Hz
Max current	26A
Automatic switchover time	<2s
General data	
Dimensions (W / H / D) in mm	230/235/72mm
Weight	2.2kg
Operating temperature range	- 25 °C ... +60 °C
Noise emission (typical)	≤ 25 dB(A)
Altitude	3000m(>2000 derating)
Cooling	Nature Convection
Ingress Protection	IP65
Installation	Wall Mountable
INV connection	connector
Grid connection	
EPS connection	
Communication	RS485

Please use the equipment within the scope of specification. Excessive current or voltage may cause device damage.

To avoid personal injury due to energy hazard, remove wristwatches and jewelry when repairing. Use tools with insulated handles. Repair are to be performed only by qualified technical personal authorized by Growatt.

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