

hinen

SmartBox

Suitable for Inverter



Quick Installation Manual

Disclaimer

SmartBox needs to be transported, used and operated under suitable environmental and electrical conditions. In the following cases, the manufacturer has the right not to provide after-sales service or assistance: Before installing the device, please read the user manual carefully to understand product information and safety precautions.

All installation operations of the equipment must be carried out by well-trained professional electrical technicians. Operators must wear personal protective equipment. Operations that violate any international policies and regulations or local policies and regulations are not covered by the equipment warranty. Before installing the equipment, please check whether the delivery is complete and complete, and whether there is any obvious external damage according to the "Packing List". If anything is missing or damaged, please contact your dealer.

Equipment damage caused by failure to follow the documentation is not covered by the equipment warranty. The cable colors mentioned in this document are for reference only, and the selection of cables should comply with local cable standards.

Note: Due to product version upgrades or other reasons, the content of this document will be updated from time to time. Unless otherwise agreed, this document is only used as a guide, and all statements, information and suggestions in the document do not constitute any express or implied guarantee.

Safety and Warnings

SmartBox strictly abides by relevant safety regulations for product design and testing. During installation, operation or maintenance, please carefully read and follow all instructions and precautions in the user manual, any improper operation may cause personal or property damage.

Any installation and operation must be done by a qualified electrician in accordance with local grid or company standards, wiring rules or requirements.

This product has been tested for insulation before leaving the factory, and the wrong dielectric test will destroy the control system. It is strictly forbidden to carry ATS for dielectric test.

Symbol Definition and Explanation



Warning!
Failure to follow the warning signs in this manual could result in personal injury.



High voltage and electric shock hazard!



Hot surface!



Product components are recyclable.



This side up! Arrows must always point upwards during transport, handling and storage.



Disposal as domestic rubbish is prohibited.



See operating instructions.



Stay dry! Please store product in a dry and protected place, avoid excessive moisture.



After the inverter is powered off, there is a delay in the discharge of internal components. Please wait for 5 minutes until the device is fully discharged.

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3. Instructions for use

1. Introduction

1.1 Product introduction

Function

The off-grid control box is used in the household rooftop power station system. The system switches the off-grid state of the inverter through the off-grid control box. When the power grid is cut off, the system switches to the off-grid state and supplies power to the off-grid load through the backup mode.

Product appearance



1. Front panel
2. Lock
3. Mounting plate
4. [GRID] interface
5. [LOAD] interface
6. Inverter [EPS] port
7. Automatic/manual mode switch
8. Switch handle
9. ATS
10. Power grid circuit breaker
11. Heavy load circuit breaker
12. EPS circuit breaker

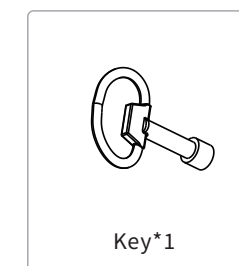
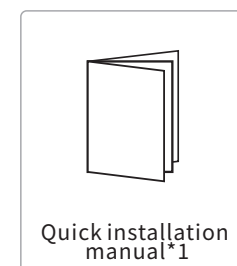
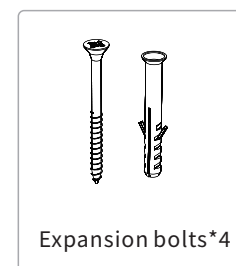
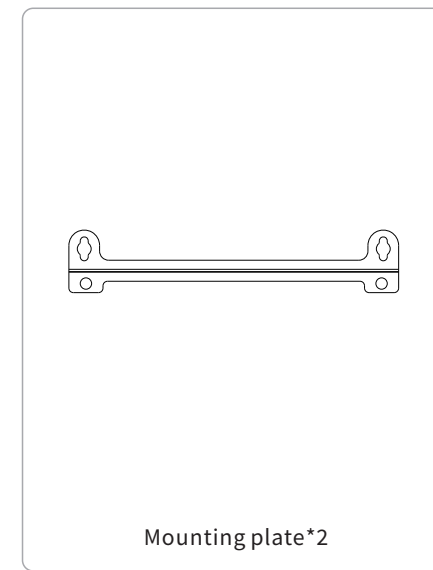
1.2 Technical data

EPS (Input From Inverter)	
Rated AC Power	8000W
Max. AC Input Overcurrent Protection	40A
Max. Continuous Input Current	35A
AC Input Voltage(Nominal)	230V
AC Input Voltage Range	187-253V
AC Frequency(Nominal)	50Hz/60Hz
GRID (Input From Grid)	
Rated AC Power	8000W
Max. AC Input Overcurrent Protection	40A
Max. Continuous Input Current	35A
AC Input Voltage(Nominal)	230V
AC Input Voltage Range	187-253V
AC Frequency(Nominal)	50Hz/60Hz

LOAD (Output to Load)	
Rated AC Power	8000W
Max. AC Output Overcurrent Protection	40A
Max. Continuous Output Current	35A
AC Output Voltage(Nominal)	230V
AC Output Voltage Range	187-253V
AC Frequency(Nominal)	50Hz/60Hz
Additional Features	
Operating Temperature Range	-25 °C~60 °C
Protection Rating	IP65
Operating Humidity(RH)	Up to 100%
Maximum Elevation	3000m
Mounting options	Wall mounted
Weight	7kg
Dimensions(H/W/D)	300/350/100mm
Manual Control Bypass Switch	Yes
Grid Disconnection Switch Time	<70ms
Grid recovery Switch Time	<20ms
Surge Class	5kA/10kV

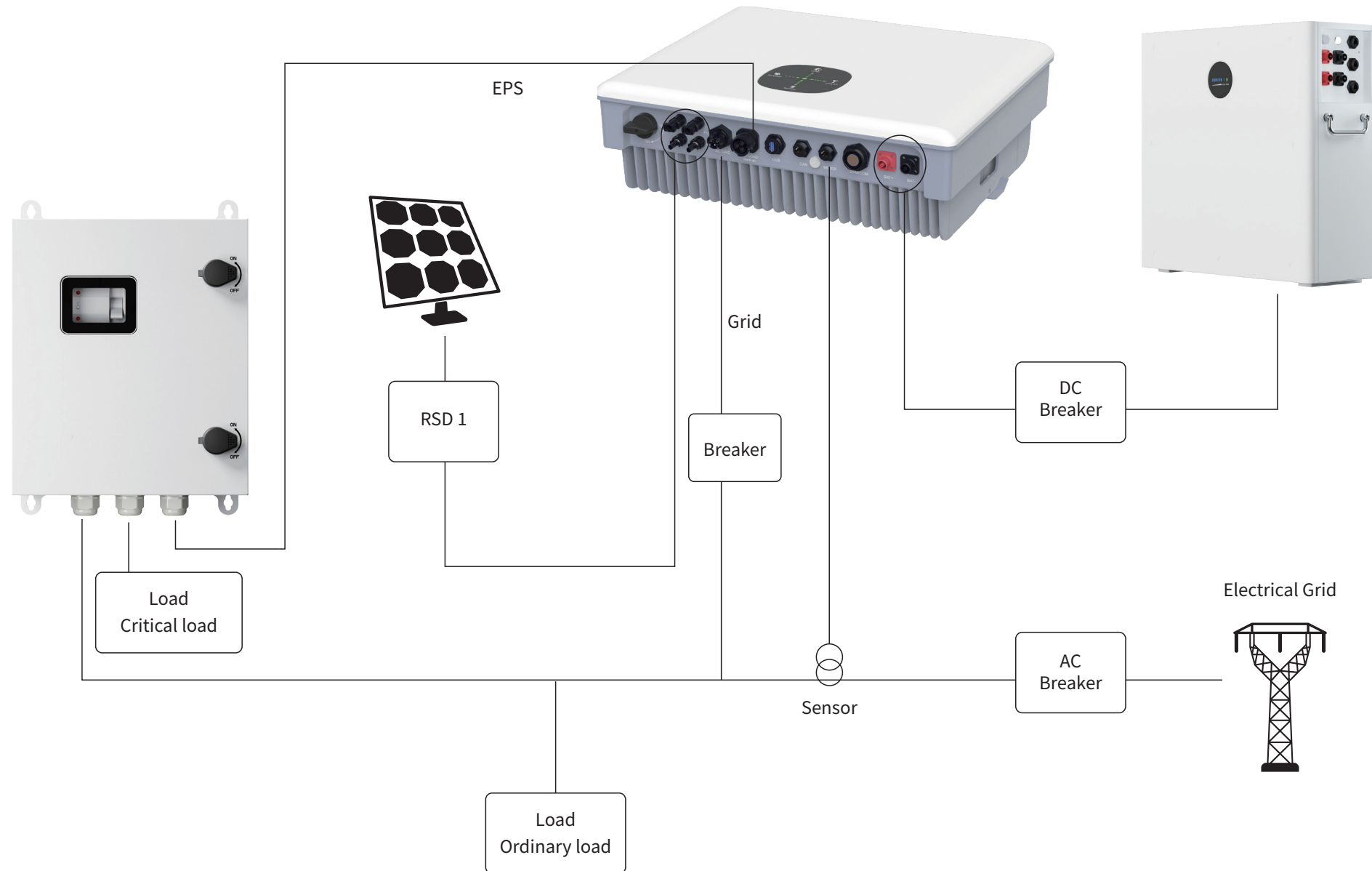
2. Equipment installation

2.1 Packing list



2.2 System Components

The off-grid system of a household rooftop power station is generally composed of photovoltaic series, energy storage system, inverter, off-grid control box, management system, AC switch and distribution unit.



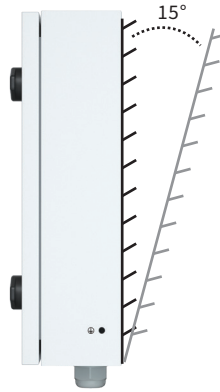
2.3 Device installation

2.3.1 Installation requirements

Danger

1. When installed outdoors, avoid direct sunlight, choose a sheltered installation site, or set up an awning.
2. Install a lightning arrester on the side where the off-grid control box is connected to the power grid.

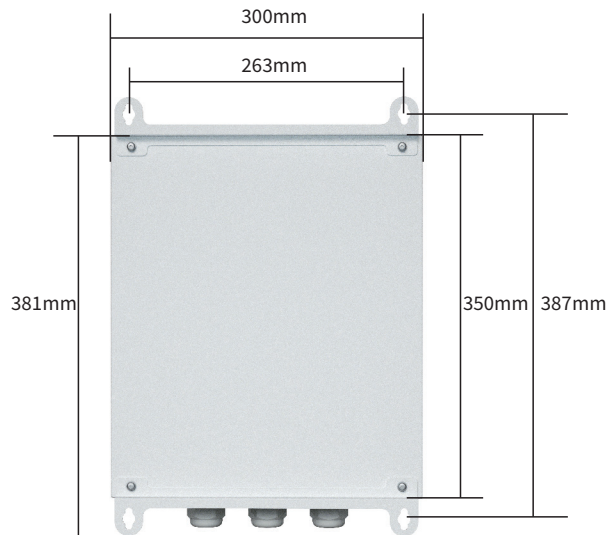
Installation space Angle



Installation hole positions and dimensions

Danger

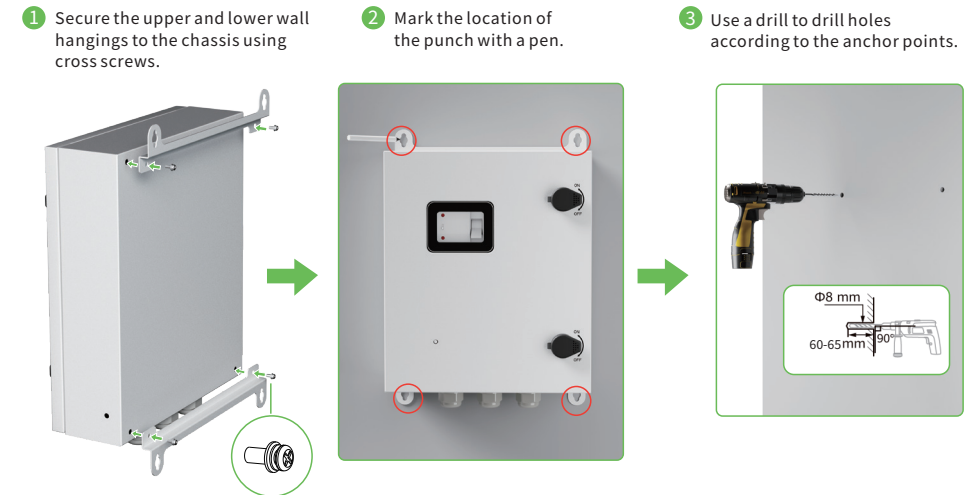
Before drilling, make sure to avoid the embedded water and electricity lines in the wall to avoid danger.



2.3.2 Install the Smart Box

Description:

- The M6 x 60 expansion bolts are delivered with the container. If the length or quantity cannot meet the installation requirements, Please prepare M6 stainless steel expansion bolts for yourself.
- The expansion bolts delivered with the container are mainly used for walls of solid brick and concrete structure. If you choose other types of walls, ensure that the installation bolts meet the bearing requirements of the inverter and select the installation bolts by yourself.
- In residential areas, do not install the inverter on gypsum board walls or similar walls with poor sound insulation, so that the noise generated by the inverter will not disturb the residents in the living area.



2.4 Device installation

2.4.1 Preparation before installation

Notice

- Connections must comply with the installation regulations of the country/region where the equipment is located.
- Before electrical connection, ensure that the circuit breaker of the off-grid control box and all switches connected to the device are in the "OFF" state. Otherwise, high voltage may lead to electric shock.

Users should prepare cables based on actual application scenarios.

Items	Cables	Type	Conductor cross-sectional area range	Outside diameter
1	Protective ground wire	Single-core outdoor copper cable	4mm ² ~10mm ²	—
2	Off-grid load	Outdoor copper core cable	4mm ² ~6mm ²	10mm~21mm
3	Ac power grid output line	Outdoor copper core cable	4mm ² ~6mm ²	10mm~21mm
4	Inverter AC input line	Outdoor copper core cable	4mm ² ~6mm ²	10mm~21mm

2.4.2 Installing the protective ground cable



Danger

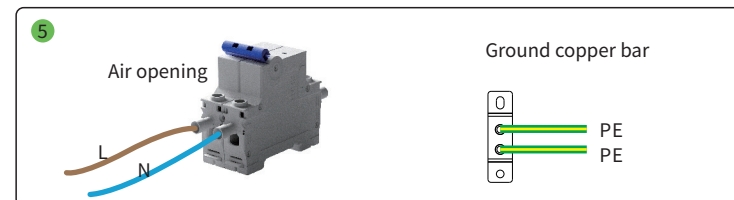
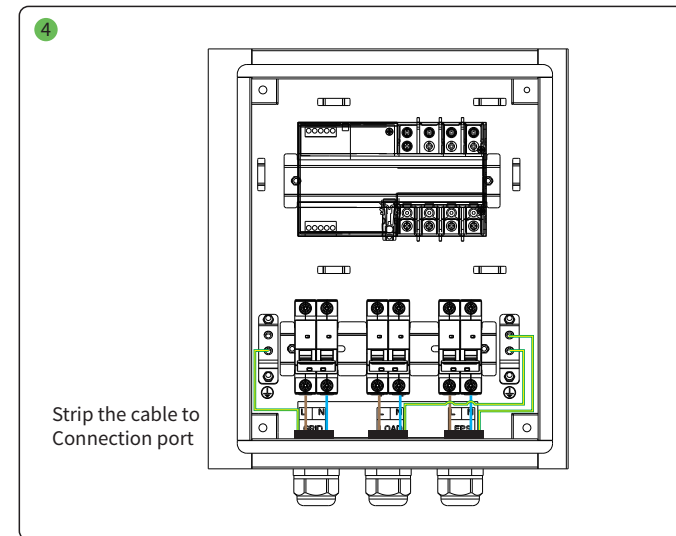
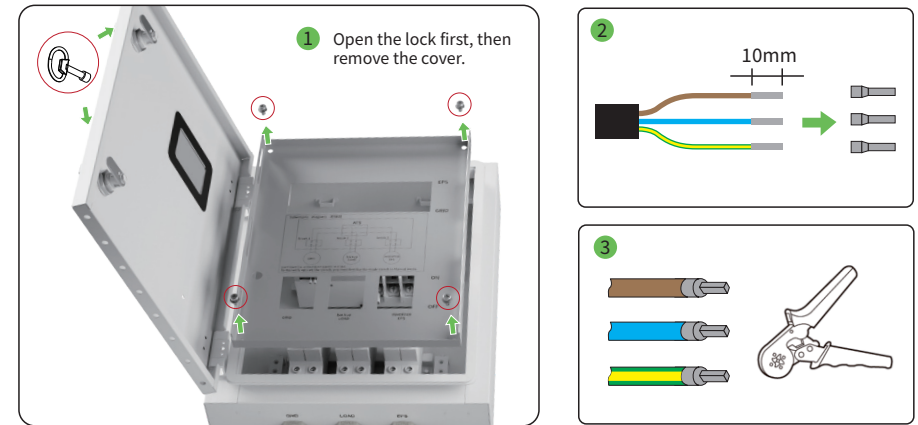
Do not connect the N cable to the chassis as a protective ground cable. Otherwise, electric shocks may occur.

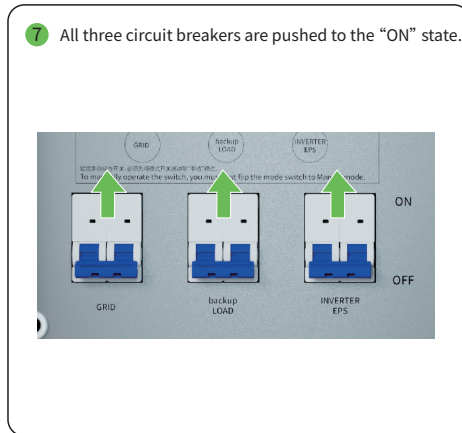
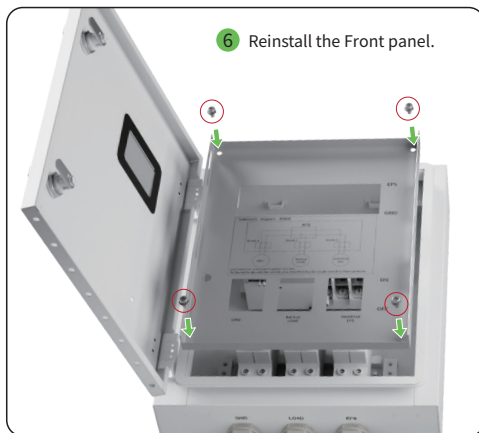


2.4.3 Installation power line

Description

Before installing cables, open the panel of the Smart Box and connect cables through the cable port. After all cables are installed, reinstall the panel.





Precautions

- In order to prevent dust and dirt from causing malfunctions, please remove them in time.
- Please check whether the electrical contact parts are deformed or damaged, and remove metal particles and burn marks on and around the contact surface of the contacts.
- Rust, acidification and dust on the contact surface can cause poor contact, please manually operate the ATS several times, and measure the contact resistance when necessary.
- After removing dust and dirt, use a 500V megohmmeter to measure the insulation resistance between the common, standby, load terminals and their poles, including all live parts and the installation guide rail. The insulation resistance should not be lower than 10MΩ before use.

3. Instructions for use

1. Before operation, please check whether the voltage input meets the requirements. The control voltage is AC230V, and the voltage range required for normal operation of the switch is AC187V~AC253V.
2. Please test whether the ATS can work normally in the manual state, and then put the toggle switch in the automatic position for testing, and it can be put into use after passing the test.
3. If you need to manually operate the switch, you must first toggle the mode switch to "manual" mode.

