Moes BAT-80A Smart Automatic Transfer Switch for Off Grid Solar Wind System User Manual

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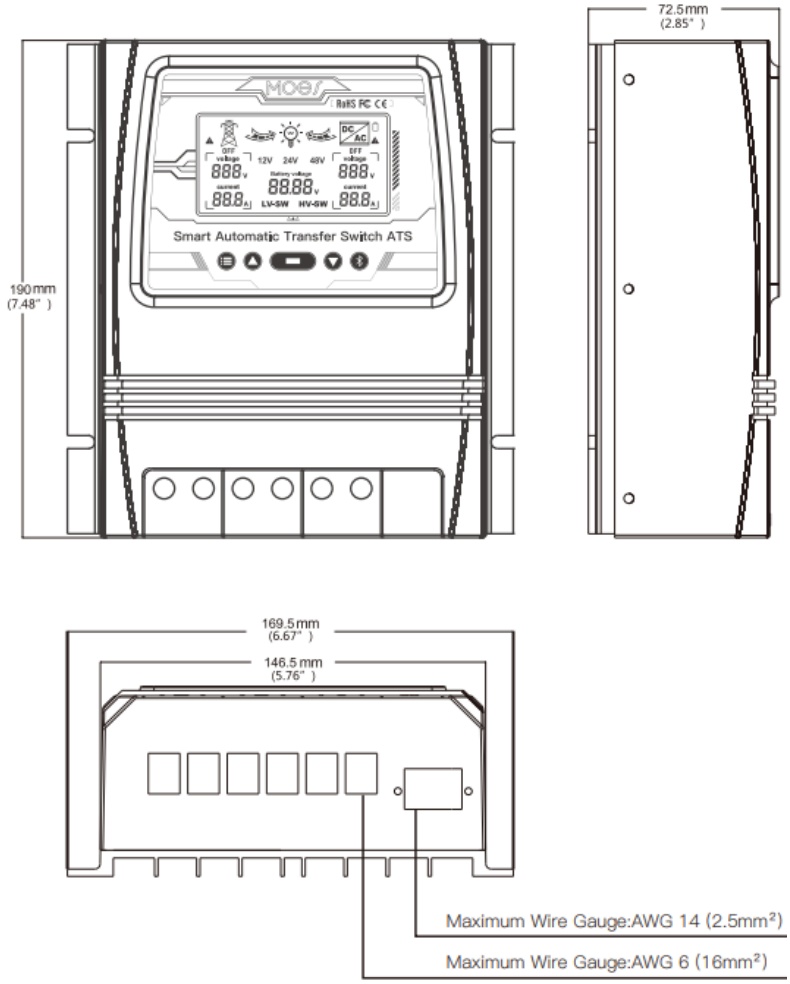
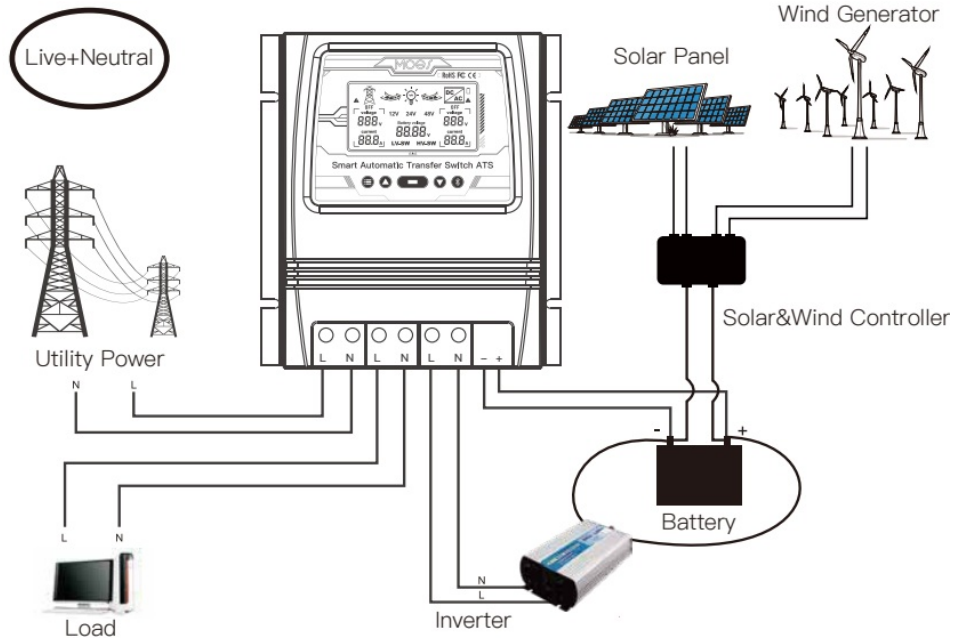
Contents

Product dimensions

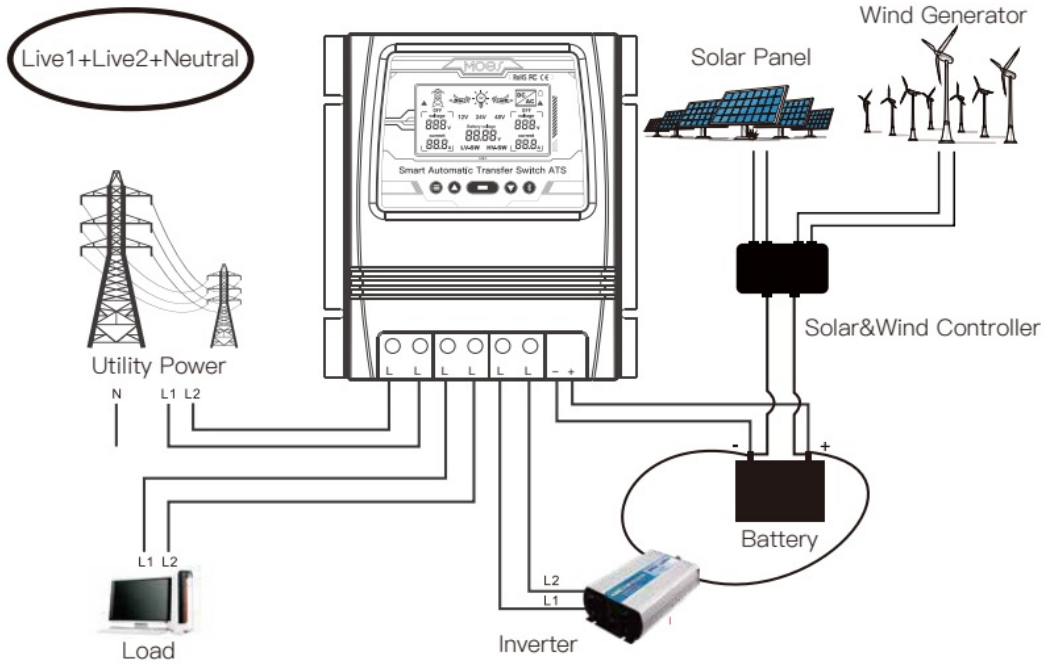


L+N Connection diagram



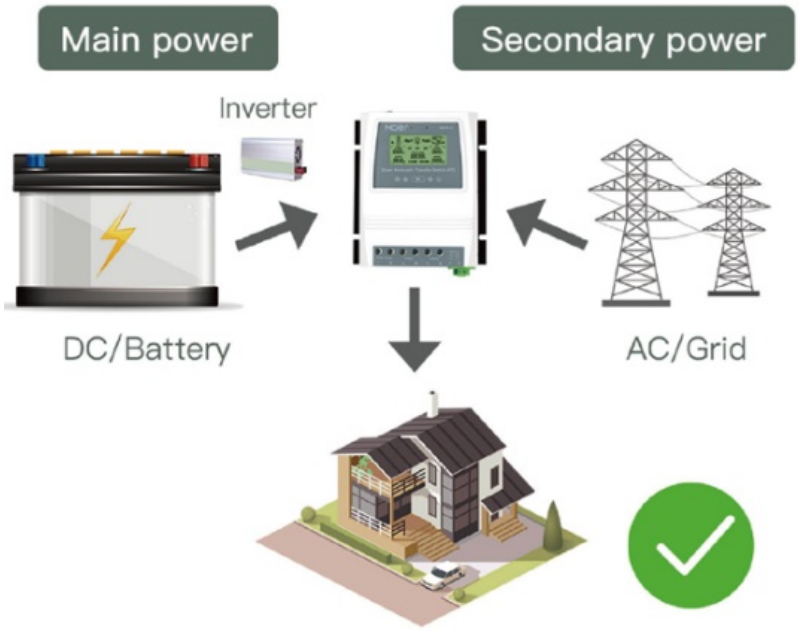
Note:
The battery is a must for power supply

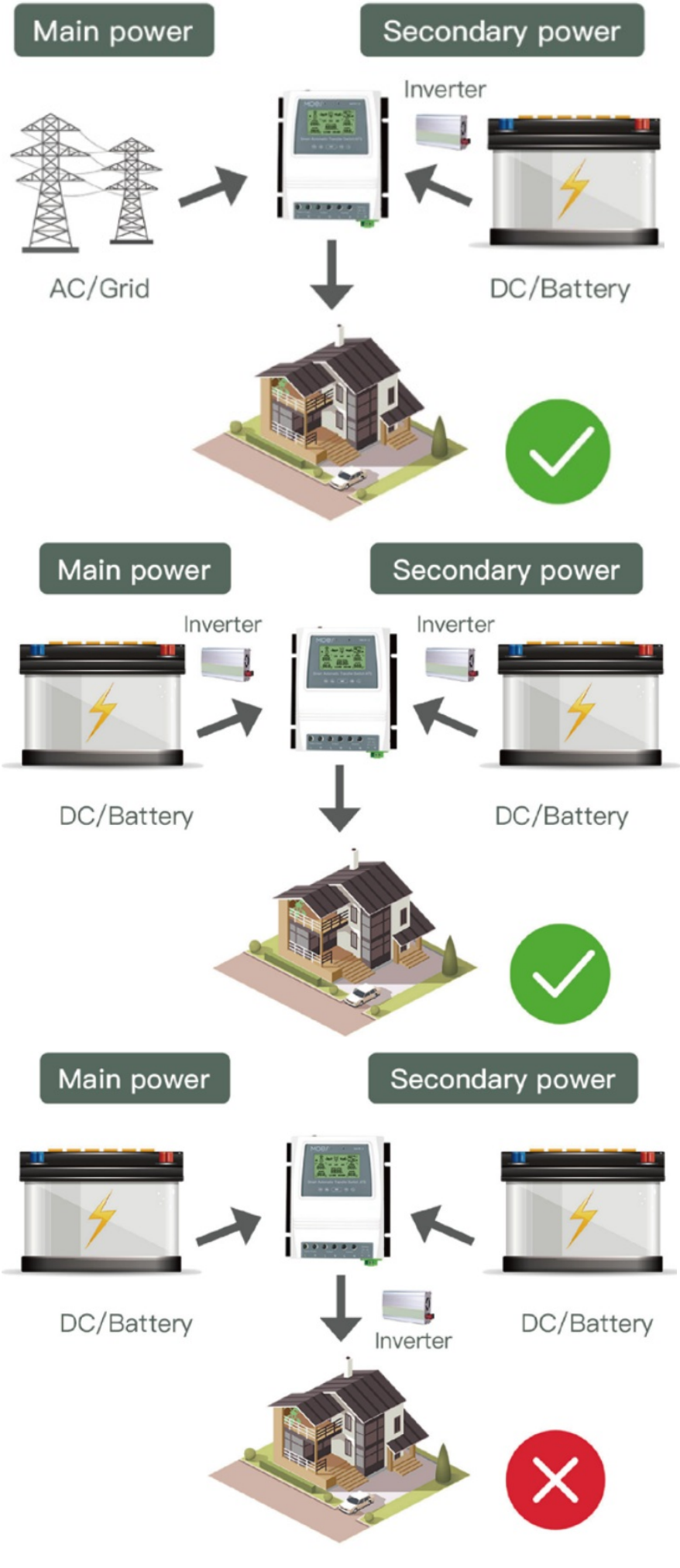
L1+L2+N Connection diagram

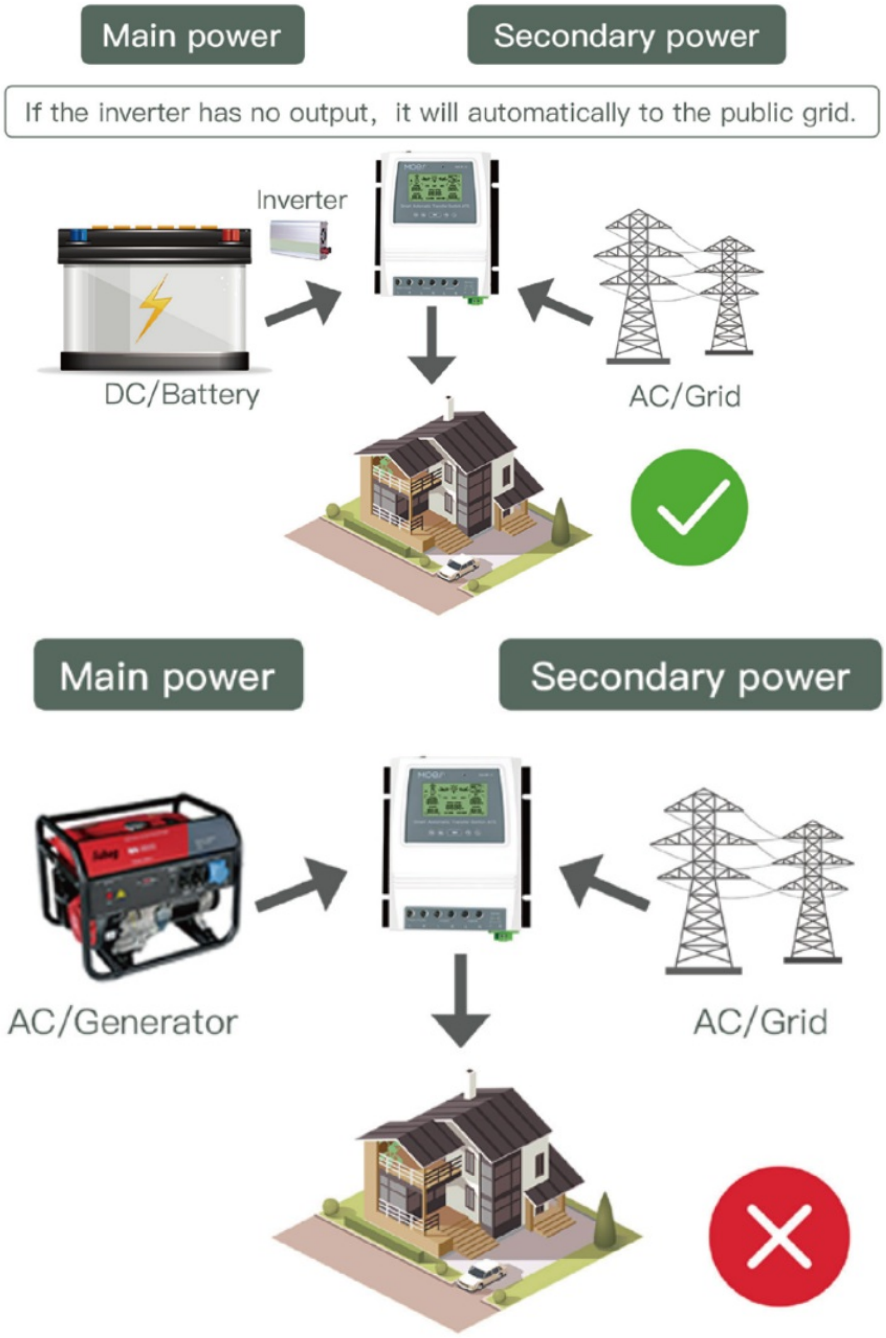


Note:
The battery is a must for power supply.

Installation Notes




Main power
Secondary power
Inverter
AC/Grid
DC/Battery
Main power
Secondary power
Inverter
Inverter
DC/Battery
DC/Battery
Main power
Secondary power
DC/Battery
DC/Battery
Inverter



Note: Not use as a DC inverter, will NOT affect the voltage of DC power

Technical Specifications

Model	BAT-80A
Rated Power	8kw (Utility Power 100-120V) 16kw (Utility Power 220-240V)
Input Voltage	Auto Selection:AC 100-120V or AC 220-240V
Output Voltage	Auto Selection:AC 100-120V or AC 220-240V
Transfer time	Inverter transfer time to utility power ≦ 10ms Utility power transfer time to i nverter ≦ 16ms
LCD Display	Battery voltage; Power source: Utility power or battery-inverter.
System Voltage	Auto Select: 12V or 24V or 48V
Battery low voltage transfer setpoints	Default: 10.5v/21v/42v, adjustable
Battery recovery Setpoints	Default: 12.5v/25v/50v, adjustable
Application	Off grid solar system;Wind generator; Hydro generator
Product Size	19*17*7.25cm(7.4”*6.7”*2.8”in)
N.W/PC	1.32KG(2.9lbs)

Application

The ATS power transfer controller provides reliable operation of an inverter and AC utility power in one compact device. The ATS switches automatically between the AC utility power and the inverter, while protecting the inverter against external voltages.

Product introduction

The Dual Power Transfer Controller is used between an Off-Grid Power System and the Public Utility Power Supply. The ATS Controller connects separately to 1) Utility Power 2) Inverter 3) Battery 4) Load. The User Interface allows for both Monitoring of the ATS Operating State and Adjusting Voltage Setpoints. The Master ON/OFF Switch is located at the top of the controller for easy access.

Installation

1. The design of your off-grid system and installation of this transfer switch should only be performed by qualified end users, electricians or technicians authorized and licensed where required by local codes.
2. Before installation of this device, please review this manual in its entirety before beginning.
3. Install / mount the ATS controller to a clean, and dry surface, and in a suitable location that will allow free air circulation around the ATS at all times. Insure all cables are of adequate length to allow for proper strain relief at the ATS connection block.
4. Insure all safety protocols are followed. Check all ac power supplies are off and secured with a safety lock-out tag system to prevent inadvertent power actuation.
5. All power connection cables must meet minimum wire gauge recommendations set by standard electrical requirements and your local codes.
6. Verify all connections are connected and tightened properly! Loose electrical connections will overheat and can damage the ATS and can cause fires. Do not connect the neutral connector on the user side to ground

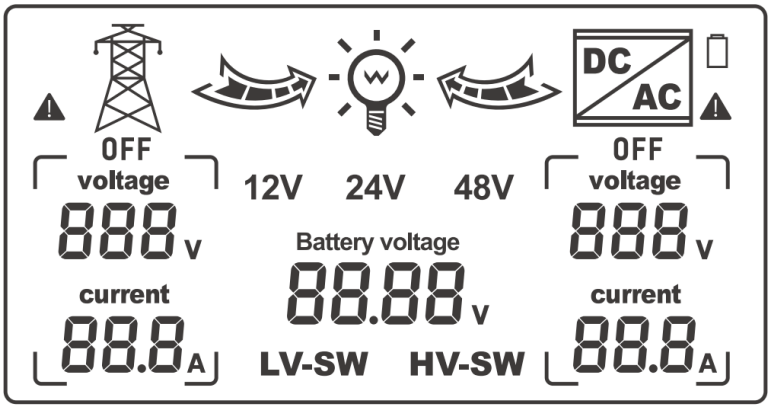
connection or to a

7. protective ground connector, as the user outlets have no protective multiple grounding.
   Note! Do not connect the “pe” grounding wire (protective earth) to the neutral connector.
8. After insuring the above steps are complied with and you have verified all the connections are properly terminated, proceed with the final connections to the utility power, inverter, battery, and load (s).
9. Turn on the master switch located at the top of the ATS.
10. Perform voltage & ammeter checks on your newly installed system to verify your ATS is operating within the specified operating parameters.

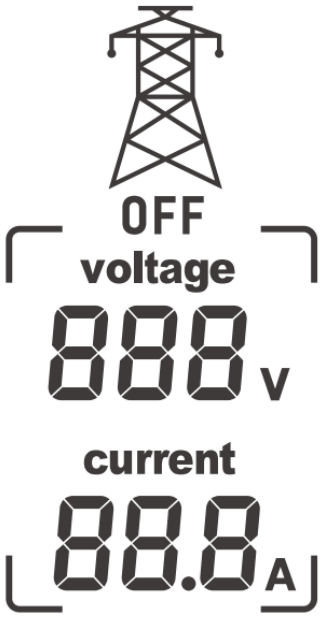
Auto-Select Voltage Range

- 12V system detection voltage range 9V-17V
- 24V system detection voltage range 18V-30V
- 48V system detection voltage range 30V-60V

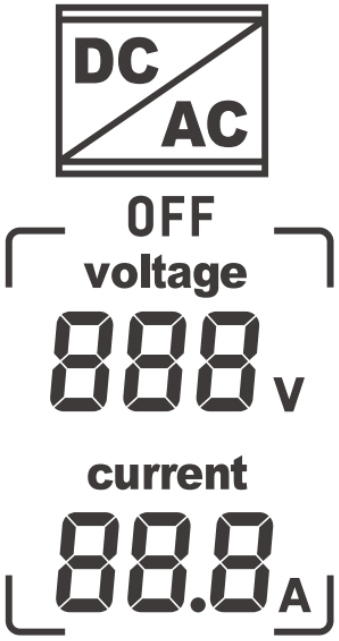
LCD Display



1. When LV-SW is displayed, it is the function interface for setting battery low voltage switching voltage.
2. When HV-SW is displayed, it is the function interface for setting the battery low voltage recovery voltage.
3. 12V, 24V, 48V is the corresponding display voltages after respectively identified by the system.
4.  The right arrow shows switching to the public power, and the internal grid lashes to display the current output station display when no current output.
5.  The left arrow shows switching to the inverter, and the internal grid flashes to display the current output state, no display when no current output.
6.  The battery icon displays the low voltage switching state with flashing performance.
7.  Displayed with flashing performance when there is the failure of non-voltage AC current.
8. Corresponding grid display on AC voltage and current.

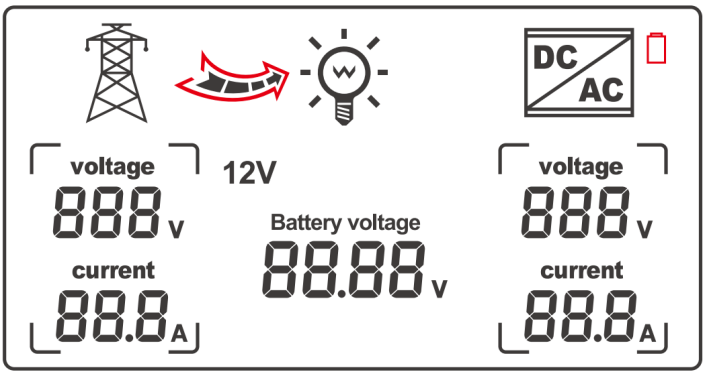
8. 

9. Corresponding inverter display on AC voltage and current.

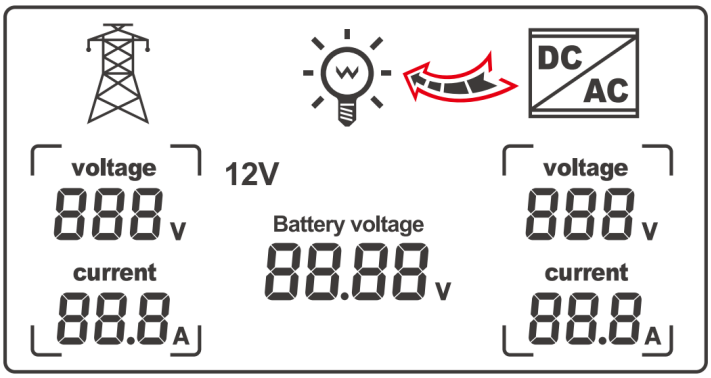


Model

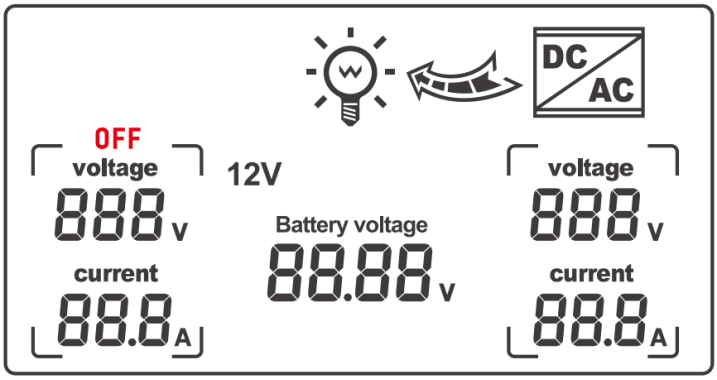
- Automatic mode switching grid status



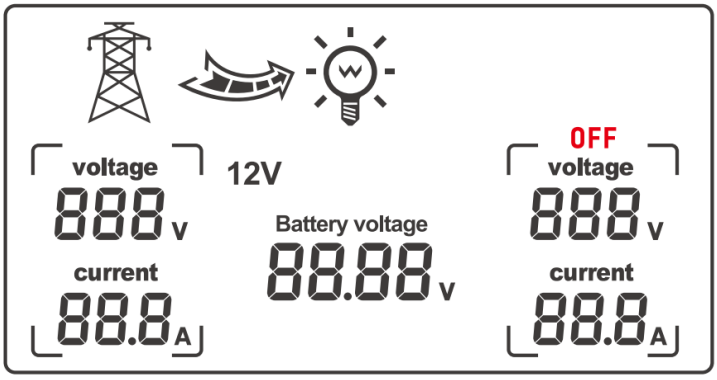
- Automatic mode switching inverte



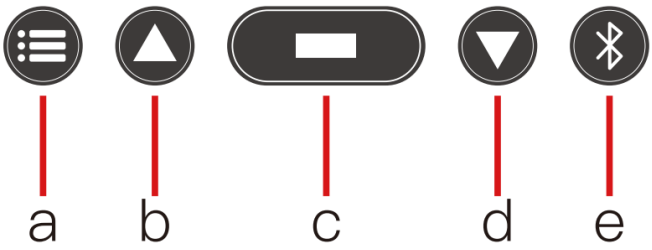
- Inverter power supply status



- Utility power status



Button Functions



Front Panel Key Buttons:

- **a.** Mode button
- **b.** Plus button
- **c.** Function button
- **d.** Minus button
- **e.** APP Configuratin Button
    - a.Mode button: switch between automatic mode, grid power supply mode, and inverter power supply

mode.

- b. The plus button is only valid for voltage setting (0.1V per trigger).
- c.Function button: set the LV-SW voltage, HV-SW voltage and battery voltage, which will be displayed in a cycle when the button is presse .The battery voltage is dis- played by default when the device is power on; When there is no trigger signal on the setting interface, the default display interface will be restored after 10 seconds.
- d.The minus button is only valid for voltage setting (0.1V per trigger).
- e.APP Configuration Button: press and hold for 6s to enter the network distribution state, the blue indicator flashes.

Error Adjustment

If any error voltage value occurs, press and hold the add button and the minus button at the same time for 3 seconds to release the 0.0V voltage flicker. Press the add or minus button to modify the detection error voltage value. Press and hold the function button for 3 seconds after modification to save the modified value.

Display Function Selection

1. When function setting display the BAT-V interface, (system default display) the LCD digital display system is real-time tracking battery voltage.
2. When function setting display the LV-SW interface, the LED digital display low-voltage switch voltage(default value), then press the button to increase or to modify the default value, pressing and holding the function button for 3 seconds to save and modify the value, after the LCD changing to the default BAT-V interface.
3. When function setting display the HV-SW interface, the LED digital display low-voltage recovery voltage (default value), then press the button to increase or to modify the default value, long pressing the function button for 3 seconds to save the modified value, after the LCD changing to the default BAT-V interface.

LCD Backlight

The LCD Display Backlight will Automatically Turn OFF if NO Button Activity is sensed after 60 Seconds.

Pressing Any Button will again illuminate the LCD Display for 60 Seconds.

Please Note! The LCD Panel will NOT Display / Illuminate or Function until the ATS is Properly Connected to the Required DC Power Battery Source Circuit of Minimum Detected Voltage.

This is a Safety Function of the ATS.

12V System Working Specification

a. Battery level-LCD display.
b. Detection cut off and recovery point voltage

When it is detected that the battery voltage is lower than 10.5V for 2 seconds (system default 11V), it is the low-voltage switching voltage, and the switching action is:

LCD- Right arrow flashes, LCD- Left arrow display turned off, battery icon flashes.

When detecting the battery voltage rise 12.5V for 2 seconds (system default 13.5V), it is the low-voltage recovery voltage, and the switching action is:

LCD- Right arrow display turned off, LCD- Left arrow shows flashing, battery icon flashes off.

24V System Working Specification

a. Battery level-LCD display.
b. Detection cut off and recovery point voltage

When it is detected that the battery voltage is lower than 21V for 2 seconds (system default 22V), it is the low-voltage switching voltage, and the switching action is:

LCD- Right arrow flashes, LCD- Left arrow display turned off, battery icon flashes.

When detecting the battery voltage rise 25V for 2 seconds(system default 27V), it is the low-voltage recovery voltage, and the switching action is:

LCD- Right arrow display turned off, LCD- Left arrow shows flashing, battery icon flashes off.

48V System Working Specification

a. Battery level-LCD display.
b. Detection cut off and recovery point voltage

When it is detected that the battery voltage is lower than 42V for 2 seconds (system default 44V), it is the low-voltage switching voltage, and the switching action is:

LCD- Right arrow flashes, LCD- Left arrow display turned off, battery icon flashes.

When detecting the battery voltage rise 50V for 2 seconds(system default 54V), it is the low-voltage recovery voltage, and the switching action is:

LCD- Right arrow display turned off, LCD- Left arrow shows flashing, battery icon flashes of.

Add Devices

1. Download MOES App on App store or scan the QR code

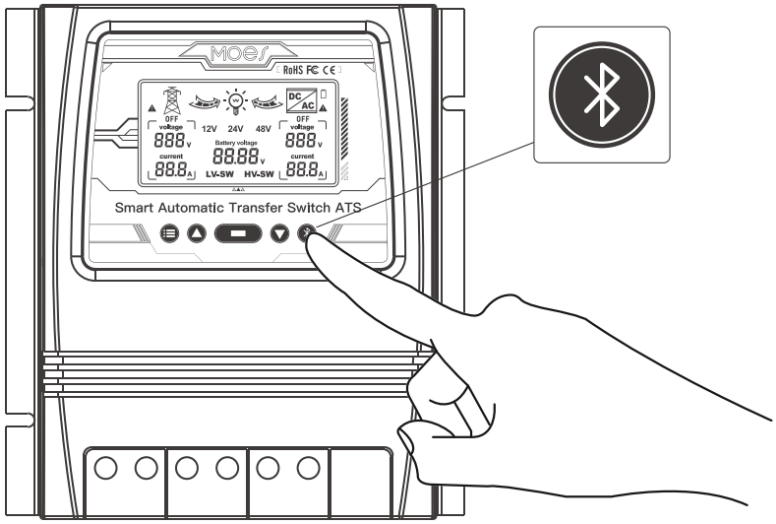
MOES App is upgraded as much more compatibility than Tuya Smart/Smart Life App, functional well for scene controlled by Siri, widget and scene recommendations as the fully new customized service.

(Note: Tuya Smart/Smart Life App still works, but MOES App is highly recommended)

2. Registration or Log in.
    - Download “MOES” Application.
    - Enter the Register/Login interface; tap “Register” to create an account by entering your phone number to get verification code and “Set password”. Choose “Log in” if you already have a MOES account.
3. Configure the APP to the switch.
    - Preparation: Ensure the switch has been connected with electricity; ensure your phone has been connected to Wi-Fi and is able to connect to the Internet.

Device Reset

Press and hold the button for about 6 seconds, the blue indicator on the switch flashes fast after 3 seconds. Re-pair is successful.



Device Pairing

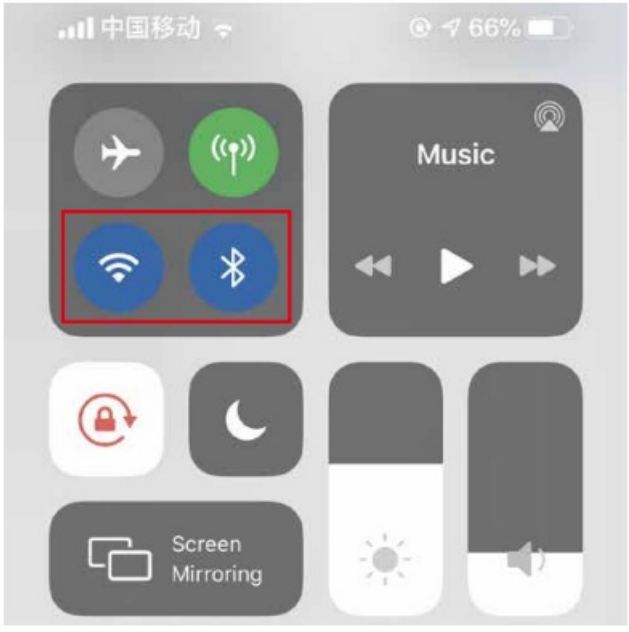
Please connect the device according to the configuration process.

Method one:

Scan the QR code to configure the network guide

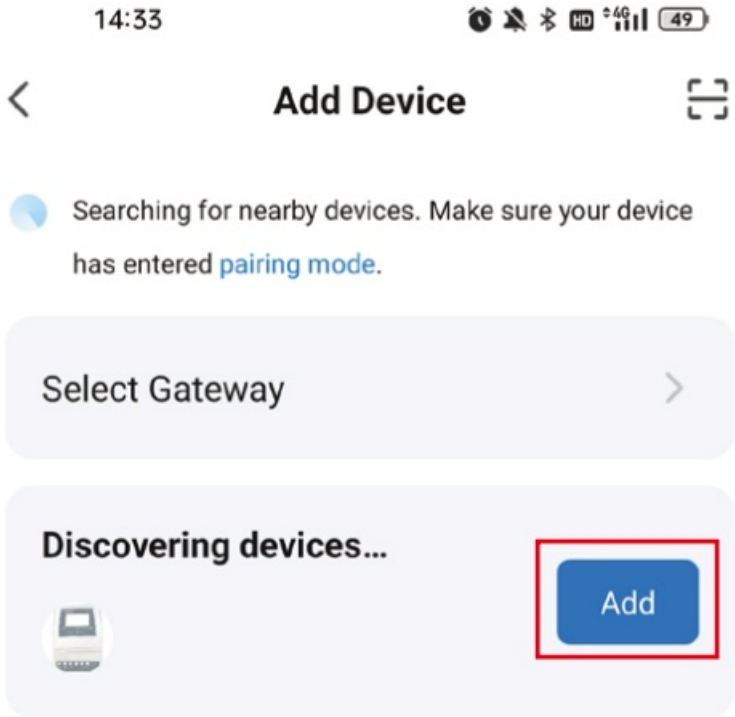
Method two:

1. Make sure the device has been reset

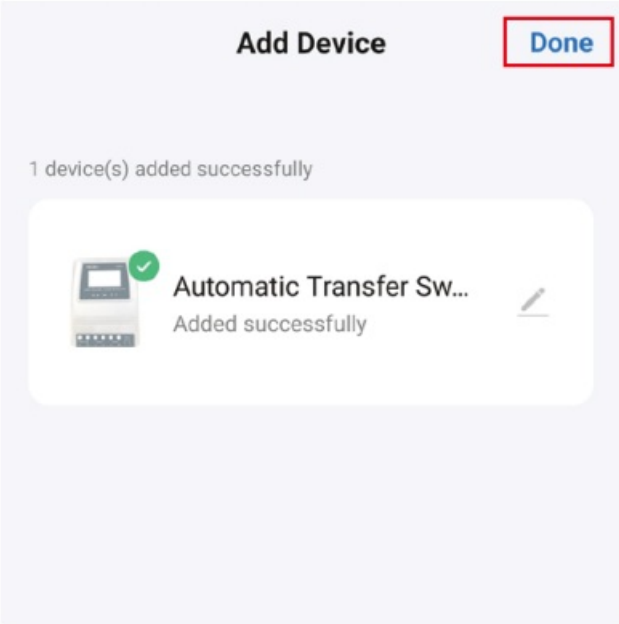


2. Make sure your phone is connected to Wi-Fi and Bluetooth.

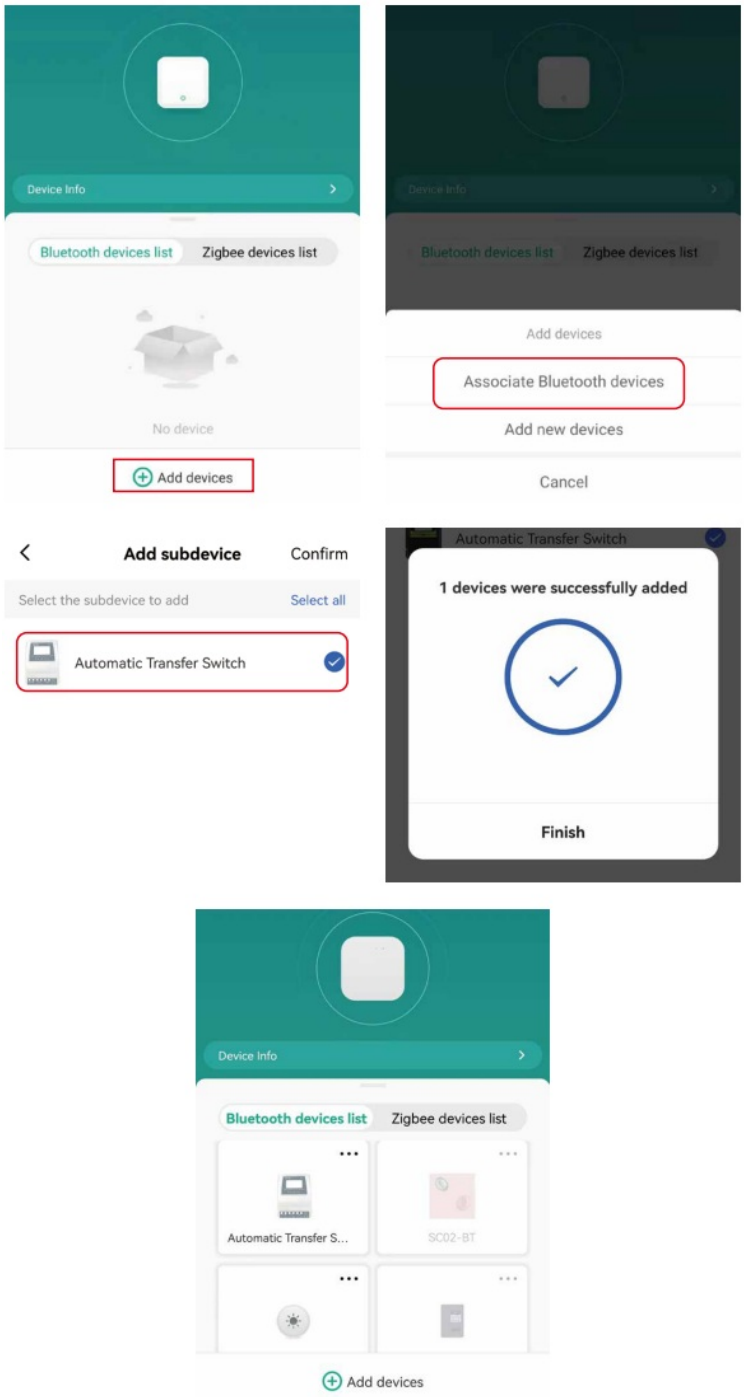
3. Open Smart Life/Tuya App and Click “+”, then the prompt page will automatically show on the screen. Click “Go to add”.



4. Add the device successfully, you can edit the name of the device to enter the device page by click “Done”.



5. Open the Bluetooth gateway, click “Add devices”, click “Associate Bluetooth devices”, select the device, and click “Add finish”.



SAFETY RECOMENDATIONS

THE FOLLOWING SAFETY RECOMENDATIONS AND HAZARD WARNINGS PROVIDE FOR THE PROTECTION OF THE ATS CONTROLLER AND THE SAFETY OF THE USER

1. Failure to install and use this ATS Controller in a safe and proper manner, and failing to adhere to all required Electrical Standards may result in Electrocution and/or Death. Consult a Licensed/Experienced Electrician for any Questions regarding the Safe and Correct Installation and continued use of this product.
2. This Power Controller should be mounted in a secure location and only authorized individuals should be granted access to it.
3. Check the power transfer controller in connection cables before starting operation, and periodically. If you detect any damage (i.e. transport or shipping damage) to the power transfer controller, do not install or attempt to use. Notify your shipper immediately. Damaged connection cables must be replaced immediately.

4. When installing and using this ATS controller, it must not be subjected to or exposed to the following conditions at any time. Electrical Shock/Fire/Explosion/Internal and/or External Damage to the Device can occur.
    - a) ambient temperatures above 50°C (122°F).
    - b) presence of flammable gases.
    - c) flammable solvents.
    - d) ignitable vapors
    - e) relative humidity in excess of 80%.
    - f) moisture contact and or water spray of any type.
5. Do not install or use the ATS controller near ignition sources, open fire or other heat sources such as heaters, gas stoves or direct solar radiation. The manufacturer reserves the right to make alterations, modifications and or additions to both this manual and to the product.

Environmental Protection

At the end of its useful life, this product must not be disposed of together with normal household waste, but has to be dropped off at a collection center for the recycling of electrical devices.

The materials of this product are recyclable. With the reuse, the recycling of the materials or other forms of scrap usage, you are making an important contribution to protect the environment.

Documents / Resources

	Moes BAT-80A Smart Automatic Transfer Switch for Off Grid Solar Wind System [pdf] User Manual BAT-80A Smart Automatic Transfer Switch for Off Grid Solar Wind System, BAT-80A, Smart Automatic Transfer Switch for Off Grid Solar Wind System, Transfer Switch for Off Grid Solar Wind System, Grid Solar Wind System, Solar Wind System

References

- User Manual