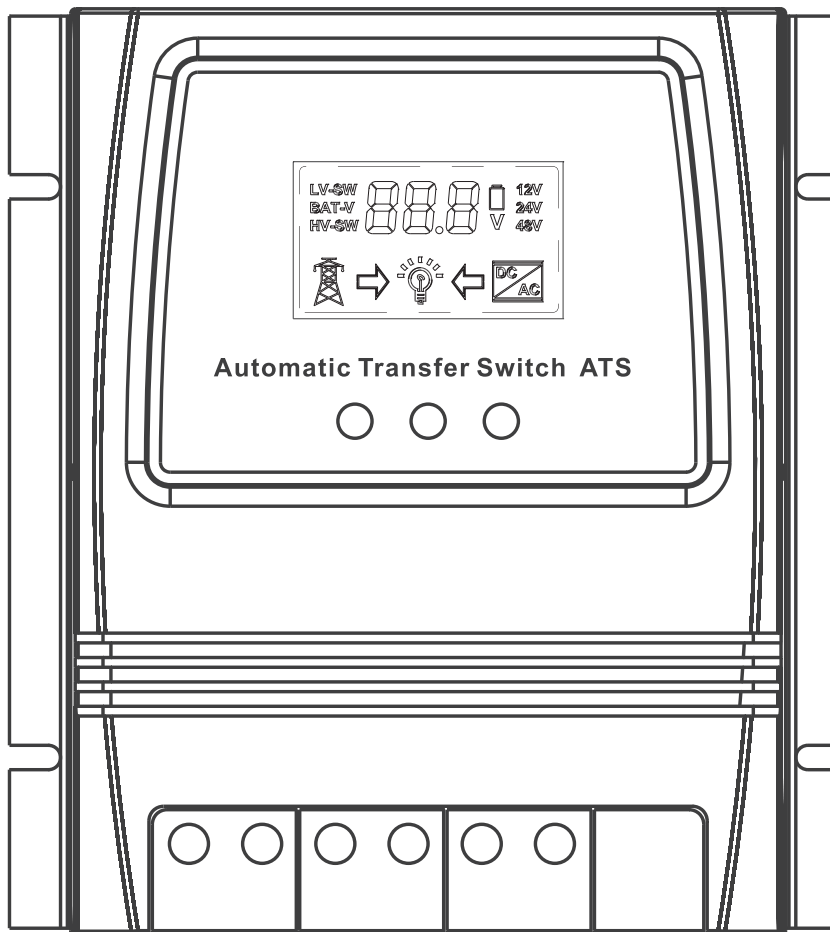


Automatic Transfer Switch

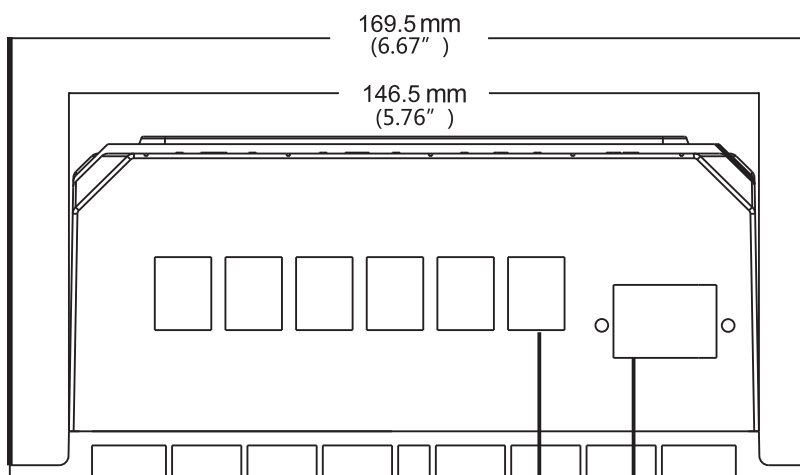
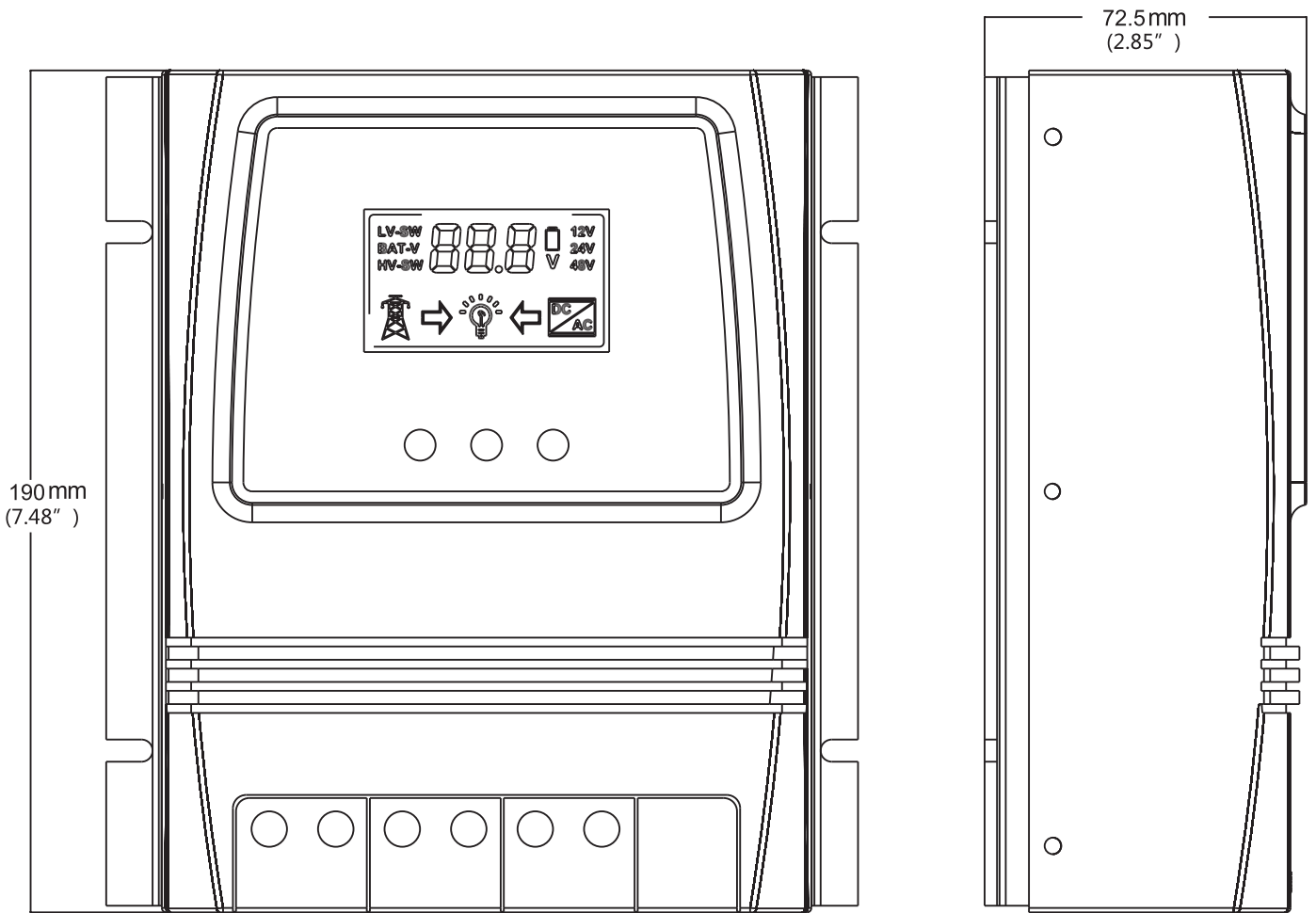
User Manual



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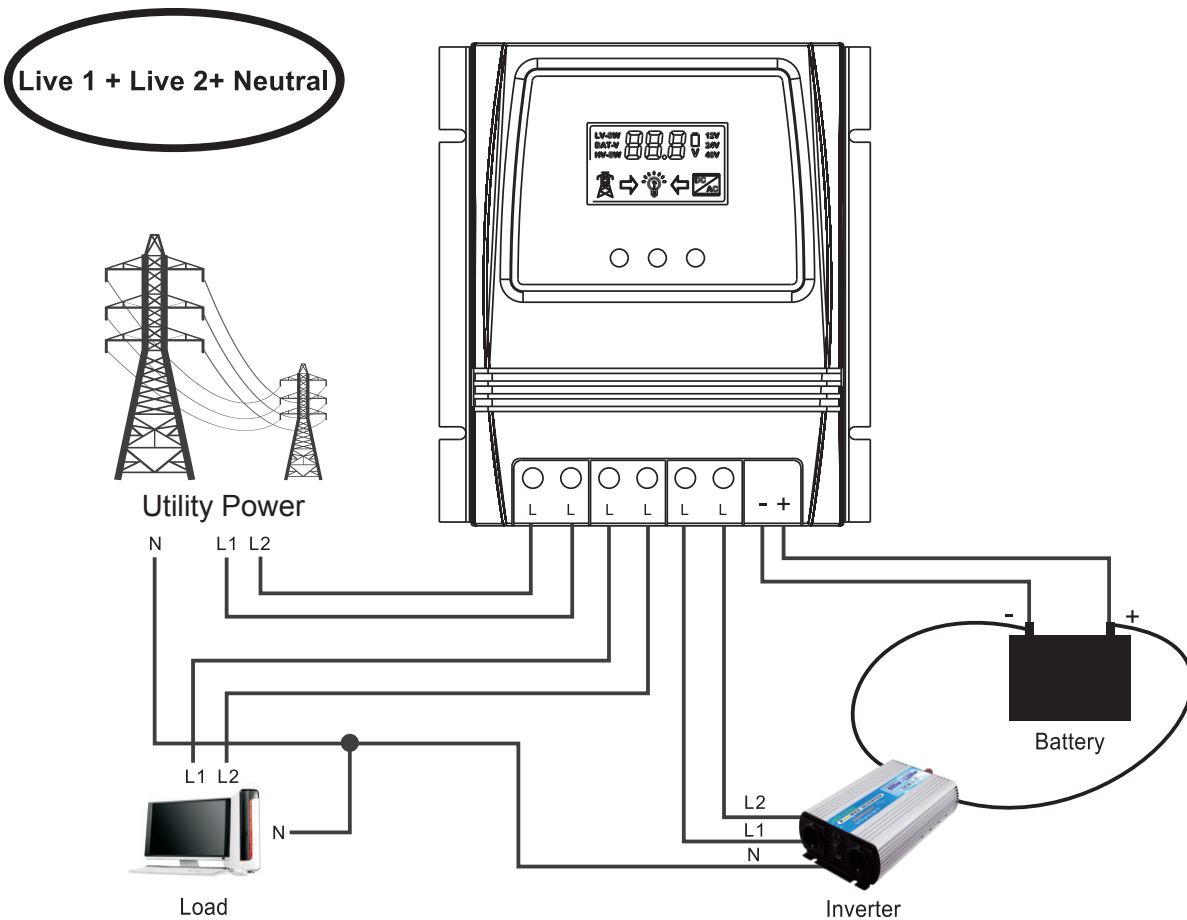
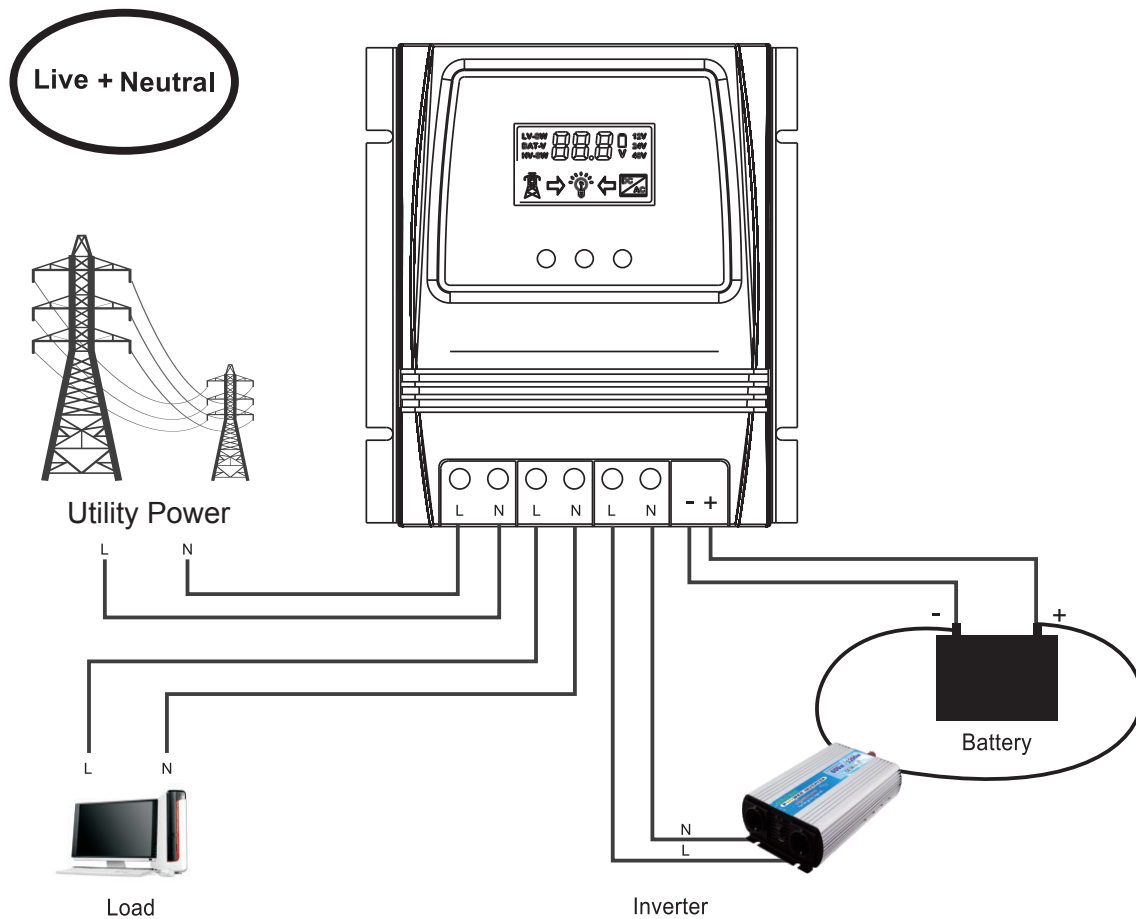
**Thank you very much for selecting our products.
Please review this manual carefully before installing and
operating the Automatic Dual Power Smart Switcher.
Please note ALL safety recomendtions.**



Maximum Wire Gauge:AWG 14/2.5mm²

Maximum Wire Gauge:AWG 6/16mm²

Connection diagram



Technical Specifications

Model	ATS-11KW
Rated Power	5.5kw(Utility Power 100-120V) 11kw(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 transfers time to utility power $\leq 10\text{ms}$ Utility power transfers time to inverter $\leq 16\text{ms}$
LCD Display	Battery voltage; Power source: utility power or battery-inverter. Inverter and Battery
System Voltage	Auto Select: 12V or 24V or 48V
Battery Low Voltage Charge Setpoints	default:11V/22V/44V, adjustable
Battery Maximum Charge Cut Off Setpoints	default:13.5V/27V/54V, 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	1.26KG(2.8lbs)
G.W/PC	1.63KG(3.6lbs)

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 Moes 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 and the 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 installation should only be carried out by persons having relevant professional skills. If there is any doubt, always contact an authorized expert.
2. Before installation, ensure that the inverter output as well as AC mains supply are voltage free and equipped with a safety lock system to prevent unintentional start of the ATS.
3. The cross sections of the used cables must be selected and secured in compliance with applicable law.
4. Ensure that the connection cables are connected properly and have good contact, as loose contacts may cause smoldering fire.
5. Do not connect the neutral conductor on the consumer side to earth or protective earth conductor; as the consumer sockets in particular have no protective multiple earthing (i.e. connection of PE-grounding wire with the neutral connector).
6. After ensuring all the steps above, connect the ATS separately with utility power, inverter, load and battery.
7. Turn on the switch after all the cables are well connected.

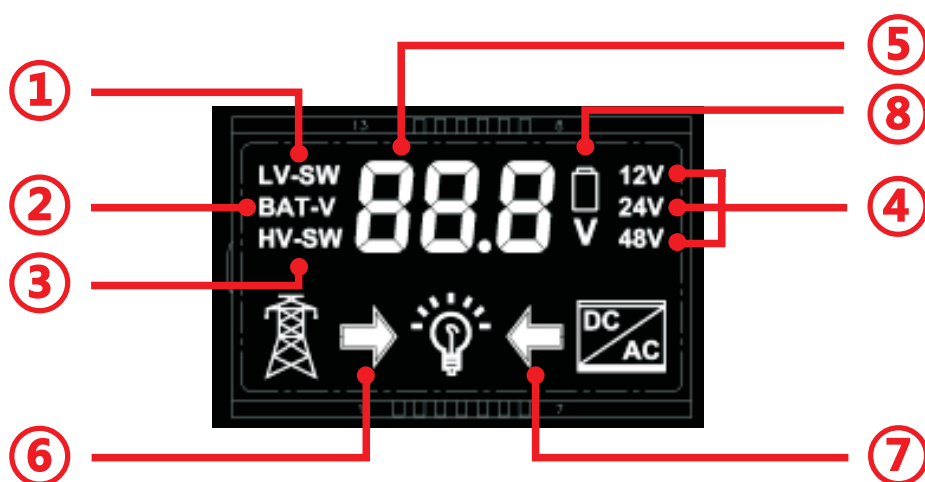
Auto-Select Voltage Range

12V system detection voltage range 9V-17V

24V system detection voltage range 18V-30V

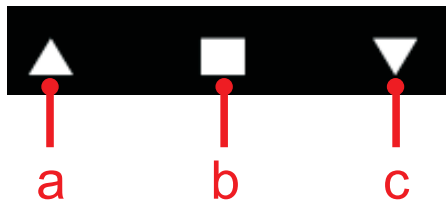
48V system detection voltage range 30V-60V

LCD Display



- ① LV-SW interface--setting the switching voltage function
- ② BAT-V interface--normal displaying battery voltage
- ③ HV-SW interface--setting the recovery voltage
- ④ 12V, 24V, 48V Interface - Displayed after ATS Identifies Voltage Supplied
- ⑤ LCD digital :
 - a. battery voltage
 - b. low voltage setting switching voltage
 - c. low voltage recovery to set switching voltage
- ⑥ ➡ Right arrow shows low voltage switchover to utility status
- ⑦ ⬅ Left arrow shows low voltage is restored to the inverter
- ⑧ LCD red no function control display, fixed display after power on.
 - 🔋 The battery icon indicates low battery status

Key function



Front Panel Key Buttons:

- a. add button
- b. function button
- c. minus button

- a. The **add button** is only valid in function setting voltage (0.1V per trigger).
- b. The **function button** have respectively 3 kinds of independent display interface state BAT-V LV-SW HV-SW, pressing the button to display circularly in order, the power-on system default display BAT-V. When the other function interface do not display trigger signal, 10 seconds to restore the system default display BAT-V interface.
- c. The **minus button** is only valid in the function setting voltage (0.1V change per trigger).
- d. 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 BAT-V interface, (system default display) LCD digital display system is real-time tracking battery voltage.
- ② When function setting display the LV-SW interface, the LCD digital display low-voltage switch voltage (default value), then pressing 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 change to the default BAT-V interface.
- ③ When function setting display the HV-SW interface, the LCD 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 Key Activity is sensed after 60 Seconds.

Pressing Any Key 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 specifications

a. Battery level- LCD display

b. Detection cut off and recovery point voltage

When it is detected that the battery voltage is lower than 11 V for 2 seconds (system default 11 V), 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 13.5V for 2 seconds (system default 13.5V), it is the low-voltage recovery voltage, switching action:

LCD - ➡ Right arrow display turned off, LCD - ⬅ Left arrow shows flashing, Battery icon flashes off.

24V system working specifications

a. Battery level- LCD display

b. Detection cut off and recovery point voltage

When it is detected that the battery voltage is lower than 22V 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 27V for 2 seconds (system default 27V), it is the low-voltage recovery voltage, switching action:

LCD - ➡ Right arrow display turned off, LCD - ⬅ Left arrow shows flashing, Battery icon flashes off.

48V system working specifications

a. Battery level- LCD display

b. Detection cut off and recovery point voltage

When it is detected that the battery voltage is lower than 44V 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 54V for 2 seconds (system default 54V), it is the low-voltage recovery voltage, switching action:

LCD - ➡ Right arrow display turned off, LCD - ⬅ Left arrow shows flashing, Battery icon flashes off.

Safety Instructions

The following safety notes and hazard warnings serve not only for the protection of the but also for the protection of your health.

In case of property damage or personal injuries caused by improper handling or non-observance of these operating instructions or the safety notes stated herein, the warranty will expire. We assume no liability for any consequential damages.

1. For safety and technical approval reasons, the unauthorized conversion and/or modification of the product is not permitted.

2. This ATS is not a toy and must not be used by children!

Please ensure childproof operation and storage of the power transfer controller at any time. Don't leave packaging material heedlessly.

It could become a hazardous toy for children!

3. Check the ATS and connection cables before starting operation. If you detect any damages (e.g. transport damages) on the ATS, do not start operation. Damaged connection cables must be replaced immediately.

4. The ATS may only be operated in a dry environment to avoid getting humid or wet, otherwise there is a risk of life-threatening electrical shocks.

5. The use of the product under unfavorable environmental conditions must be avoided under all circumstances.

Unfavorable environmental conditions include: ambient temperatures above 50°C, flammable gases, solvents, vapours, dust, relative humidity in excess of 80%, and moisture.

6. Do not use the switching station near ignition sources, open fire or other heat sources (heating, gas stoves or strong solar radiation).

7. Service and repairs may only be carried out by authorized and qualified personnel. Use only original spare parts for repair work. The use of any other spare parts may lead to serious damage to property and personal injury!

Environmental Protection Notes

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.

Warranty

The manufacturer guarantees the ATS for a period of One (1) Year against defects in workmanship and materials.

THE FOLLOWING SAFETY RECOMENDATIONS AND HAZARD WARNINGS PROVIDE FOR THE PROECTION OF THE ATS AND THE SAFETY OF THE USER.

1. Failure to install and use this ATS in a safe and Proper manner, adhering to all required codes and 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. The purchaser assumes ANY and ALL liabilities for all aspects and use of this ATS.
3. This ATS should be mounted in a secure location and only authorized individuals should be granted access to it.
4. Check the ATS in connection cables before starting operation, and Periodically. If you detect any damage (i.e. transport or shipping damage) to the ATS, do not install or attempt to use. Notify your shipper immediately. Damaged connection cables must be replaced immediately.
5. Using the ATS in environments that do not meet the following conditions can result in damage to the ATS and / or create an electrical shock condition.
 - a) ambient temperatures above 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
6. Do not install or use the ATS near ignition sources, open fire or other heat sources such as heaters, gas stoves or direct solar radiation.
7. Service and repairs to this ATS may only be carried out by factory authorized agents and personnel Use only original spare parts for repair work. The use of any other spare parts not authorized by the manufacturer may lead to serious damage to the ATS and or adjacent property and can result in personal injury.

The following conditions will VOID the warranty of the ATS , and the customer will be responsible for any and all repair costs and shipping:

1. Failure to install & operate the ATS according to the supplied user manual.
2. Failure to use the ATS within the standards and technical requirements.
3. Disassembly and / or attempted repairs by any unauthorized individual.
4. Environmental conditions that cause the premature failure of the device.
5. Improper installation, storage and of transport.

Please note:

- All repairs and replacement return authorizations are at the discretion of the manufacturer. Please contact us for any questions.
- All inspections of in-warranty and out-of-warranty ATS must be returned to the factory for inspection and determination of warranty status.
- If your unit is authorized to be returned for repair or replacement, it is your responsibility to properly disconnect the ATS and make all electrical live connections safe.
- The manufacturer reserves the right to deem an ATS unrepairable after inspection.