



VOLTAGE SENSITIVE RELAY USER MANUAL

K-VABI001A-AP

Prior to installation and operation, it is essential to carefully read the manual and keep it for future reference.

V1.0

ABOUT US

Founded in 2018, the San Hima brand stands for passion and enthusiasm for exploring the spectacular nature of the great outdoors. Since its inception, the trusted solutions and proven designs that San Hima offers to the market have made adventure and travelling flexible and enjoyable!

Based in Australia, San Hima has under its umbrella a wide selection of outdoor solutions, including cargo systems, vehicle protection accessories and tow & trailer parts, that are designed to help you carry your gear wherever your passion takes you and boost your performance when conquering the peaks!

At San Hima, we have wild souls and we are committed to designing products that are tough enough to take on any adventures and at the same time, making them safe and easy to use. These values in our conviction are what drive us to make innovations. Since pursuit your passion shouldn't be complicated.

Live the Peak, Conquer the Everest, San Hima is your brand of choice!

PACKING LIST

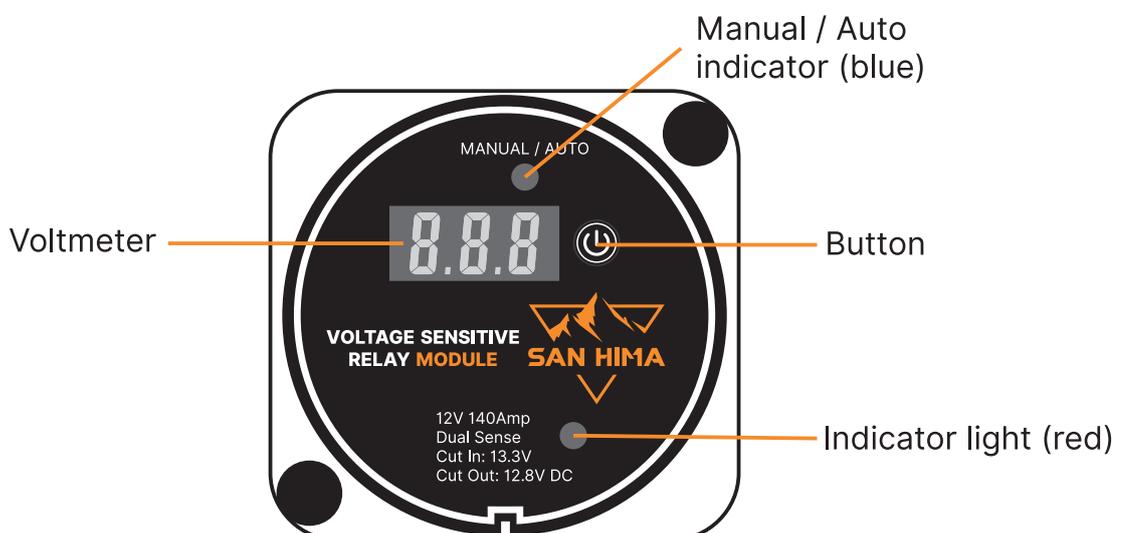
- 1 PC(s) SAN HIMA 12V Voltage Sensitive Relay
- 1 PC(s) 6AWG x 600cm Red Battery Cable
- 1 PC(s) 5AWG x 60cm Black Battery Cable
- 1 PC(s) 25-8 Lug Cable End
- 2 PC(s) 16-8 Lug Cable Ends
- 1 PC(s) Blue Ring Terminal
- 2 PC(s) Red Heat Shrink Tubing
- 6 PC(s) Cable Ties
- 2 PC(s) M4 x 40mm Screws
- 2 PC(s) M4 x 20mm Screws
- 3 PC(s) Battery Terminals
- 1 PC(s) User Manual



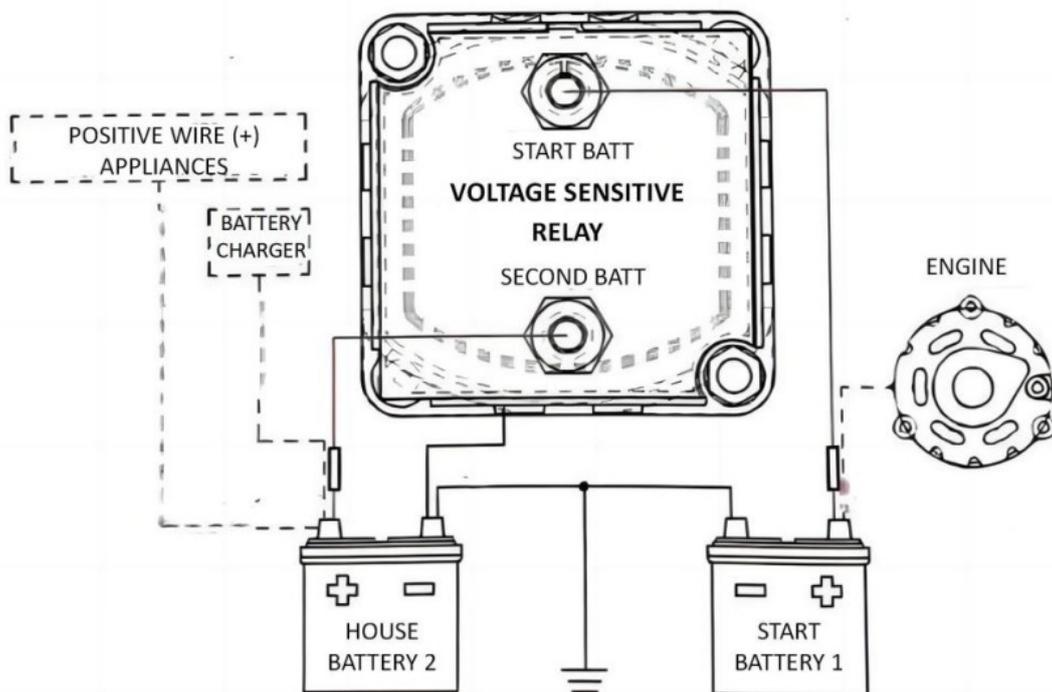
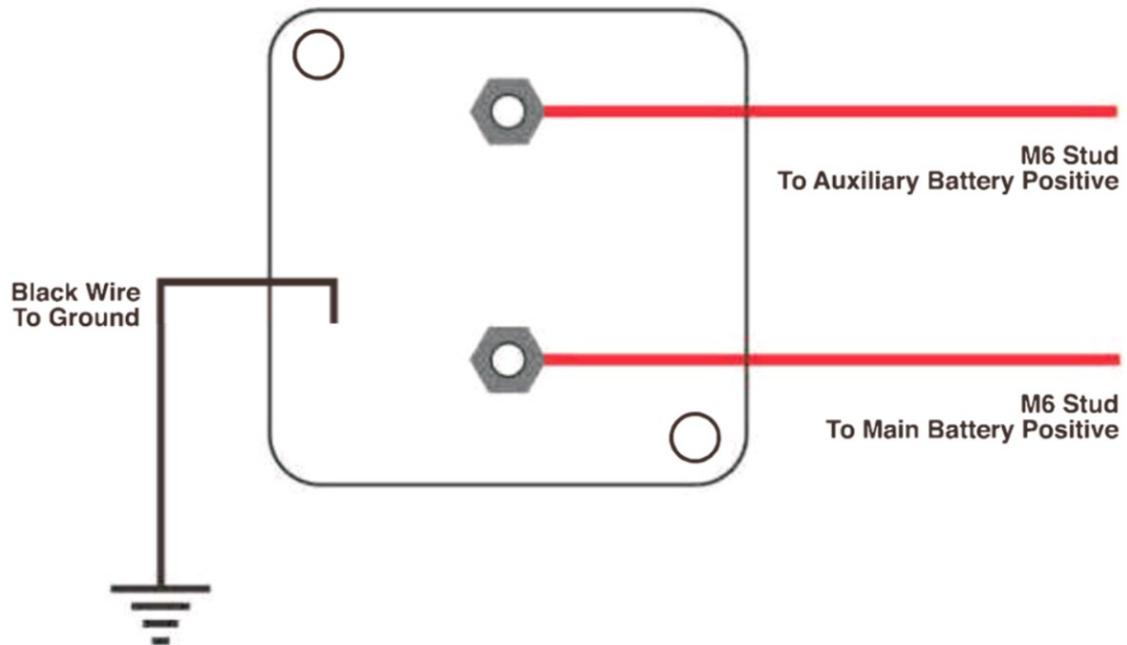
IMPORTANT NOTES

- Before installation or use, it is imperative that users thoroughly read and comprehend all warning and safety messages provided with the product.
- For optimal safety, it is advisable to install a fuse between the Start Battery and the VSR.
- The VSR incorporates a built-in delay, allowing 3-5 seconds for the connection or disconnection process.
- The VSR is equipped with an integrated red indicator that illuminates when the VSR is engaged, indicating both batteries are connected.
- If the VSR fails to disconnect when turning off the vehicle's engine, try manual mode to turn it off.
- Individuals under the influence of alcohol or drugs, lacking experience, or lacking professional knowledge are prohibited from using this unit.
- Avoid using or storing this VSR near heat sources, open flames, or exposure to flammable chemicals, vapors, or corrosive gases.
- Avoid disassembling the charger, as this may not only cause potential harm to you and the unit but also void the warranty.
- Disconnect the charger before engaging in maintenance or cleaning.
- Wear proper eye protection before initiating the charging process.
- Keep fresh water and soap on hand in case battery acid contacts the eyes. In such an event, cleanse immediately with soap and water for a minimum of 15 minutes and seek medical attention.
- Avoid smoking or having an open spark or fire near this unit.
- Regularly inspect the VSR for any damage. If damaged, avoid using it until repairs have been conducted.

IDENTIFICATION OF PARTS



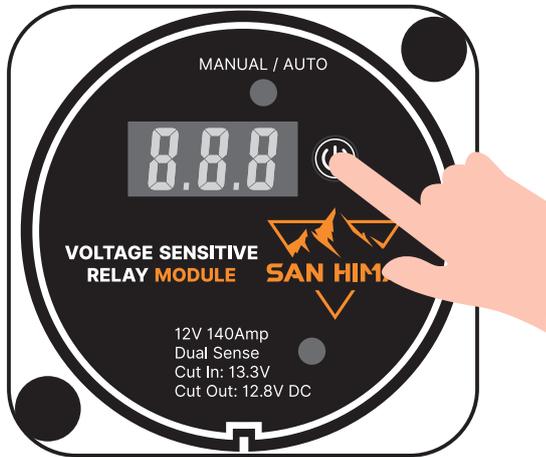
WIRING INSTRUCTIONS



HOW TO USE

Automatic to Manual

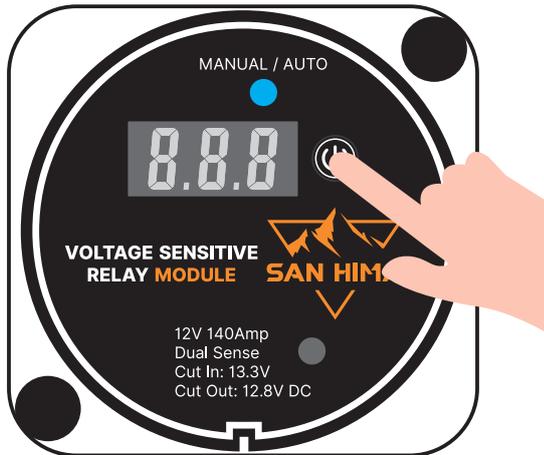
Press the switch button for 3 seconds.



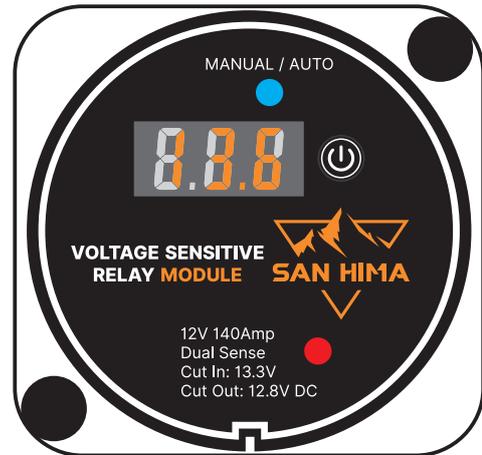
Manual indicator is on.



Press the switch button again, the indicator at the bottom right will go out, indicating a disconnection.

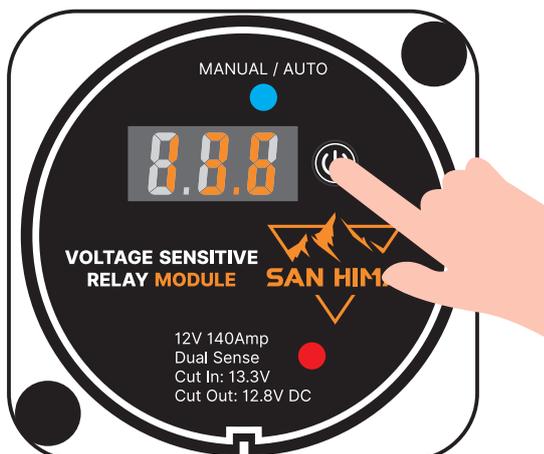


Press the switch button once, the indicator at the bottom right will turn red, indicating a connection.

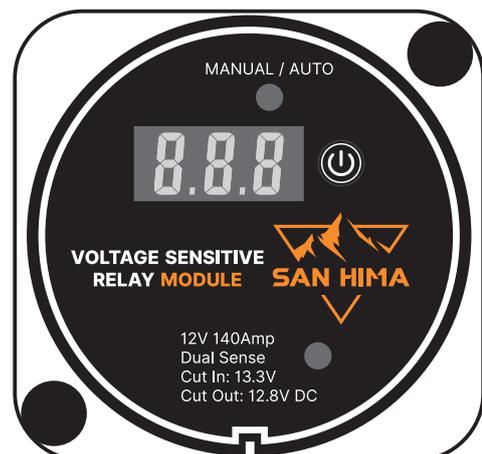


Manual to Automatic

Press the switch button for 3 seconds.



The manual indicator is off and the automatic mode is on.



Automatic State

- ① When the input voltage exceeds 13.3V, the circuit will be connected automatically. The voltmeter and red (LED) indicator will also be ON.
- ② When the input voltage drops below 12.8V, the circuit will be disconnected automatically. The voltmeter and red (LED) indicator will also be OFF.

High & Low Voltage Protection

- ① When the input voltage reaches lower than 11V, the circuit will be disconnected automatically to protect the main battery from over discharging.
- ② When the input voltage exceeds 17V, the circuit will automatically disconnect to prevent potential damage to the auxiliary battery.

Voltmeter Display

- ① If two batteries are connected, then the voltage displayed on the voltmeter is the battery that has higher voltage.
- ② Only connect the battery that you would like to test the voltage and disconnect the other battery.
- ③ When the voltmeter is not working, press the button once, the voltmeter will display the value for 2 seconds.

TECHNICAL SPECIFICATIONS

Voltage	12V
Charging Current	90-120Amp Continuous, 160Amp Max
Current Draw	Charging 330mA
Cut-in Voltage	13.3V
Cut-out Voltage	12.8V
Cut-out Delay	3-5 Seconds
IP Rating	IP67

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SUGGESTED SOLUTION
The LED stays off after engine is turned on	The negative wire of the LED is not connected.	Connect the negative wire of the LED.
The LED stays on after engine is turned off	System voltage has not dropped below 12.8V DC due to battery charging. VSR will disengage once residual battery voltage drops below 12.8 V DC.	Give it a few seconds, and the LED light will automatically switch off.
The VSR 'chatters'	Due to an undersized charging system for the batteries, the VSR faces operational challenges. When the start battery reaches the correct voltage and connects to the house battery, the system voltage momentarily drops below 12.8 volts, prompting the relay to automatically disconnect. Subsequently, as the voltage rises, the relay reengages, only to disengage again when the voltage drops, resulting in the distinctive 'chattering' sound as the relay rapidly switches in and out.	Replace the charging system.

WARRANTY

San Hima ("Manufacturer") warrants to the original purchaser("User") that its voltage sensitive relay, if purchased from manufacturer or an authorized distributor or dealer, will be free of defects in material and workmanship under normal usage from the date sold and for the duration (the "Warranty Period") of 1 YEAR.

This warranty shall ONLY be effective for the original purchaser and apply ONLY to the San Hima voltage sensitive relay that is correctly installed on the vehicle for which it is intended.

San Hima will either replace the product or provide you with a refund at our discretion provided that the fault is found to have been caused by a design or manufacturing defect that results in its failure to perform correctly as described. The limited warranty is the only one that applies to this product, and it sets forth all the responsibilities of San Hima.

EXCLUSIONS:

This warranty does not cover defects that are caused by inadequate maintenance, transportation, faulty repair, misuse, neglect, accident or abuse. It is recommended that the installation be performed by suitably qualified technicians. Failure to do so will void the warranty. For further clarity, this warranty is also void if the VSR:

- is used for applications other than which it was designed and intended for.
- is not properly installed in accordance with the user manual.
- is damaged due to the non-observance of any of the instructions supplied by San Hima.
- is disassembled, altered, or repaired by someone other than an authorized Manufacturer's agent.
- has been subject to adverse weather, extreme temperature, or physical damage.
- has been damaged by force majeure(e. g., flash of lightning, overvoltage, storm, fire).
- is not of the correct size or specification for the intended application.

CLAIMS:

If a San Hima product is suspected of being defective, you'll need to provide proof of purchase (e. g. a screenshot of the order) and a picture and a video of the damaged goods in their entirety to sales@sanhima.com . If the product is found to be defective and covered by this limited warranty, the remedy is replacement or refund, at San Hima's option. No charges will be accepted for external labour or materials.