PROJECTA

12 VOLT

PROGRAMMABLE ELECTRONIC BATTERY ISOLATOR

P/No. VSR150

WARNINGS

- PLEASE READ THESE INSTRUCTIONS COMPLETELY PRIOR TO INSTALLATION.
- BATTERIES PRODUCE EXPLOSIVE GASES – Ensure no sparks or flames are present.
- Wear eye protection during installation.
- Vehicles must be in "NEUTRAL" or "PARK", park brakes "ON" during installation.
- Follow all vehicle manufacturer's instructions.
- Beware of moving parts during installation.
- Battery isolators are designed for negative ground alternator systems with batteries of the same nominal voltage.
- Do not use batteries with different voltages. Ensure both the starter and auxiliary batteries are of the same voltage system.

FEATURES

- Easy to install – The VSR150 electronic isolator does not require any changes to the vehicle's existing wiring. It can be to all 12V vehicle types.
- Programmable – The VSR150 is with adjustable voltage and delay time.
- Dual voltage display – VSR150 displays starter (main) and auxiliary battery voltage in real-time.
- Automatic charging – VSR150 will engage and disengage charging the primary and auxiliary battery automatically.
- Delay on/off function – VSR150 has a delay on/off function to avoid peak and surge shock during ignition and large transients.

SPECIFICATIONS

P/No.	VSR150
Voltage	12V
Charging Current	125A Continuous / 150A Peak
Cut-in Voltage	13.3Vdc, 10 second delay (default)
Cut-out Voltage	12.8Vdc, 10 second delay (default)
High Voltage Protection	15.5Vdc (default)
Operating Voltage Range	10-32Vdc
Operating Current	300mA
Standby Current	5mA max
Surge Protection	Built in
Mounting	Surface / firewall / battery side

ITEMS NEEDED

Thank you for purchasing P/No. VSR150. To complete the installation, you will also need:

- Charged auxiliary battery – deep cycle recommended for most applications
- Auxiliary battery cradle & battery clamp
- Battery terminals & lugs
- 150A fuse or circuit breaker
- Battery Cable
  – 13mm^2 (6AWG) minimum for engine bay mounted auxiliary batteries (up to 3m)

If you have purchased the Projecta Electronic Dual Battery System (P/No. VSR150K), you will only need:

- Charge auxiliary battery – Deep cycle recommended for most applications
- Auxiliary battery cradle & battery clamp

For all 'dual battery systems', follow the instructions supplemented in the kit.

INSTALLATION – MOUNTING

1. Disconnect the negative battery cable (EARTH) from the vehicle's starter battery.

   NOTE: To prevent the loss of the vehicle electronic memories, radio pre-sets & security codes, it is recommended that an "Electrical System Memory Protector" be used.

2. Mount the auxiliary battery cradle and fit the auxiliary battery.

3. Mount the VSR150 in a convenient location as close to the starter battery as possible and no further than 3m. Keep the isolator as far as possible from the exhaust manifold, turbo or any other high temperature components. Do not mount on the engine.

   Surface mounting – Using the supplied template (page 6), select a location which offers a flat plastic or thin metal surface to mount, mark and drill 4 x 5.5mm (0.2") holes and mount the isolator with the screws provided.

INSTALLATION – CONNECTION

To make the electrical connections, the supplied cables will need to be made to the correct length using cable lugs and heat shrink. Cable lugs should be crimped or soldered to the stripped battery cable and then protected with the heat shrink.

1. Disconnect the negative battery cable (Earth) from the vehicle's starter battery.

   Note: To prevent the loss of vehicle electronic memories, radio presets & security codes, it is recommended that an "Electrical System Memory Protector" be used.

2. Connect a length of the red cable from the left "BATT POSITIVE+" (+) terminal on the isolator to the positive battery terminal of the starter battery (main). The connection at the Starter battery should be fused using a Projecta 'Fused' battery terminal (P/No.BT950-P1) or a 150 Amp fuse or circuit breaker mounted inline. If using the BT950-P (Fused distribution terminal) the connection from the battery isolator should be made to main (large) fuse stud. Do not over-tighten the terminal studs on the electronic isolator.

3. Connect a length of the red cable from the right "BATT POSITIVE+" (+) terminal on the isolator to the positive battery terminal of the auxiliary battery. The connection at the Auxiliary battery should be fused using a Projecta 'Fused' battery terminal (P/No.BT950-P1) or a 150 Amp fuse or circuit breaker mounted inline. If using the BT950-P (Fused distribution terminal) the connection from the battery isolator should be made to main (large) fuse stud.

   Do not over-tighten the terminal studs on the electronic isolator.

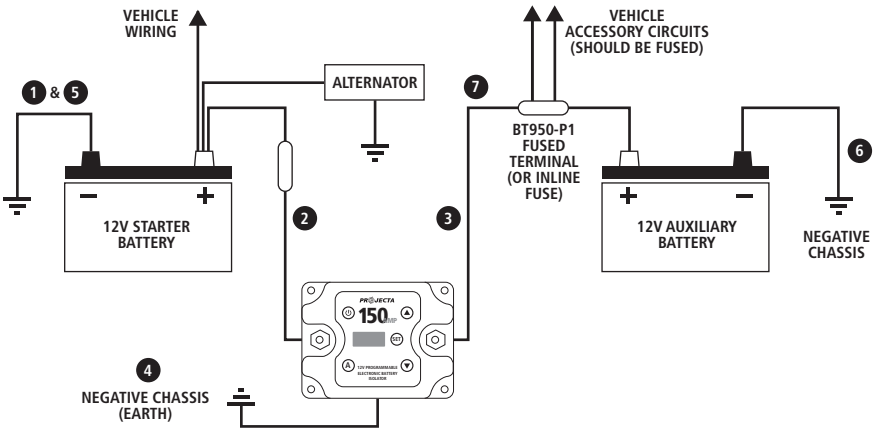
4. Connect the isolator's 'Earth' wire (small black wire with ring terminal) to a suitable chassis bolt or screw, ensure the ring terminal will make a good electrical connection by removing any paint.

5. Reconnect the starter (main) battery's negative cable (Earth).

6. Connect a length of the black cable from the vehicle's chassis or engine block to the negative terminal of the auxiliary battery as a ground cable (Earth).

7. Connect all the auxiliary loads (phone, lights, stereo, refrigerator, etc.) to the positive battery terminal of the auxiliary battery, use appropriate circuit protection fuses. If using the Projecta BT950-P1 terminal this includes 2 x 30A fused accessory circuits.

NUMBERS REFER TO THE STEPS IN THE INSTRUCTION TEXT



TESTING FOR NORMAL OPERATION

1. With the installation complete and the engine "OFF", the LED display will show two battery voltages sequentially when you press the SET button once. If there is no display, the unit is in Sleep mode. Press the "On/Off' button first to wake it up, then press 'SET" for the display to show.
2. Start the vehicle's engine. Within a few seconds the LED display will turn on indicating the combined voltage in real time and the isolator will start charging the auxiliary battery.
3. If the isolator does not go into 'Charging mode' within a few seconds, increase the engine RMP to fast idle. This will allow the alternator to generate more current.
4. Once the Isolator is in 'Charging mode,' turn the engine 'Off', then switch the headlights and other accessories 'On'. The isolator will now detect that the batteries are being used. 10 seconds (Default, can be adjusted via the parameters menu) after the voltage falls below 12.8V, the LED display will turn off and the isolator will disconnect the two batteries from each other.

OPERATION

AUTOMATIC

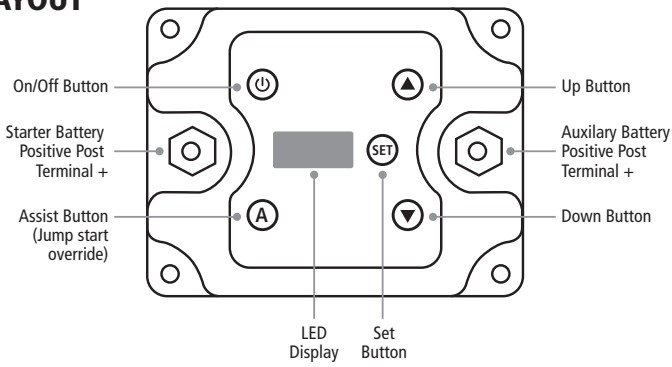
Once the battery isolator has been correctly installed and tested it will function automatically to charge the auxiliary battery.

MANUAL OVERRIDE

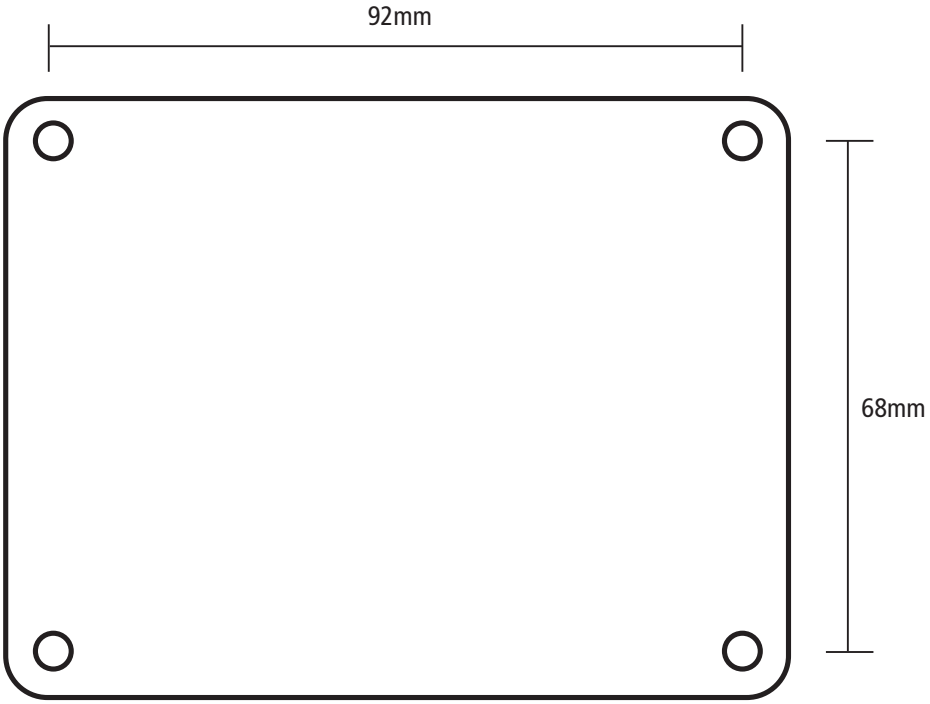
If the starter battery is flat and the auxiliary battery is charged, the battery isolator can be used to connect both batteries to allow jumpstarting.

1. Press and hold the A on the unit for 3 seconds, the LED display will show the combined voltage and the VSR150 will be override mode for 60 seconds.
2. Crank the engine. Once the engine has started the unit will automatically cancel the override function and return to the automatic charging function.

VSR150 LAYOUT



BATTERY ISOLATOR MOUNTING



ACTUAL SIZE HOLE TEMPLATE

HOW TO ADJUST VSR150 PARAMETERS

The VSR150 is an adjustable battery isolator and allows the user to adjust the desired charging voltage and delay time to suit their battery charging application.

VSR150 ADJUSTABLE PARAMETERS

Display Value	Display Description	Range	Step/Increment	Default Setting
U1	Cut-in Voltage	10-32 V	0.1 V	13.3 V
t1	Cut-in Delay	0-99 seconds	5 seconds	10 seconds
U2	Cut-out Voltage	10-32 V	0.1 V	12.8 V
t2	Cut-out Delay	0-99 seconds	5 seconds	10 seconds
Uh	High voltage protection	10-32 V	0.1 V	15.5 V

VSR150 ADJUSTABLE PARAMETERS

1. Press and hold the SET button for more than 3 seconds to enter the parameters menu.
2. Press ▲ or ▼ buttons to select the parameters you want to change; refer to above table on adjustable parameters.
3. Press the SET button once to adjust the parameter of your choice.
4. Press the ▲ or ▼ buttons to adjust the parameter value.
5. Press the SET button once to save and return back to the menu.
6. The adjusted parameter value will be saved automatically and return to normal display after 10 seconds.

HOW TO DISPLAY VOLTAGE ON VSR150 SCREEN:

DISENGAGE STATE:

Press the SET button once, the LED screen will display the characters in sequence; "U1" – U1 voltage value, "U2" – U2 voltage value.

ENGAGE STATE:

The VSR150 LED screen displays the combined voltage all the time.

FREQUENTLY ASKED QUESTIONS

Q. Is the VSR150 waterproof?

A. The VSR150 is designed to be dust and splash proof. Normal use including river crossings and light engine washing will not pose any problems. Direct high pressure washing of the battery isolator or if the vehicle is submerged for a period of the time may cause some water damage and this will not be covered under warranty.

Q. Why does the positive cable from the Isolator to the Auxiliary battery need to be fused?

A. 12V batteries can produce large amounts of power and are capable of melting cable insulation in the case of a short circuit. Since a dual battery system contains two batteries connected together, the cabling needs to be protected for short circuit at each battery. The battery isolator has inbuilt over-temperature protection which will prevent the unit from overheating and failing.

To protect the cable from the auxiliary battery an inline fuse or fused battery terminal is needed.

Q. Is the VSR150 safe to use with modern 'electronic' vehicles?

A. The VSR150 have been designed to work with all vehicles, especially new vehicles with onboard computers. In fact, the isolator itself has a small microprocessor that intelligently controls the charging. The isolator has in-built surge suppression and over-temperature protection for extra safety.

Q. Can I use a charger to recharge my batteries with a Dual Battery System?

A. You can charge the auxiliary battery with a battery charger without affecting the battery isolator at any time. When charging the starter battery, the isolator will automatically connect the auxiliary battery when the starter battery reaches 13.3V (default setting, about 75% charged) and will then be charged also. This is not an ideal way to fully charge the batteries. It is recommended that when charging the starter battery, the auxiliary battery is disconnected, or the isolator is disabled.

WARRANTY STATEMENT

Brown & Watson International Pty. Ltd. ("BWI") of 1500 Ferntree Gully Road, Knoxfield, Vic., telephone (03) 9730 6000, fax (03) 9730 6050, warrants that all products described in its current catalogue will under normal use and service be free of failures in material and workmanship for a period of one (1) year from the date of the original purchase by the customer as marked on the invoice (see elsewhere for specific warranty period). This warranty does not cover ordinary wear and tear, abuse, alteration of products or damage caused by the purchaser.

To make a warranty claim the consumer must deliver the product at their cost to the original place of purchase or to any other place which may be nominated by either BWI or the retailer from where the product was bought in order that a warranty assessment may be performed. The consumer must also deliver the original invoice evidencing the date and place of purchase together with an explanation in writing as to the nature of the claim.

If the claim is determined to be for a minor failure of the product then BWI reserves the right to repair or replace it at its discretion. If a major failure is determined the consumer will be entitled to a replacement or a refund as well as compensation for any other reasonably foreseeable loss or damage.

This warranty is in addition to any other rights or remedies that the consumer may have under State or Federal legislation.

IMPORTANT NOTE

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

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