ZERO EMISSION
VEHICLES AUSTRALIA

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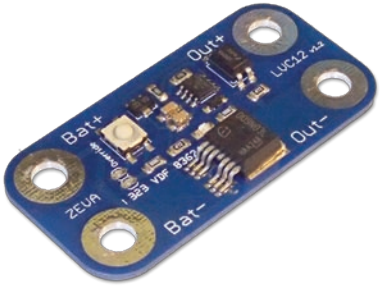


12V Low Voltage Cutout

Simple, economical over-discharge protection for your 12V battery.

PROTECTING YOUR 12V BATTERY

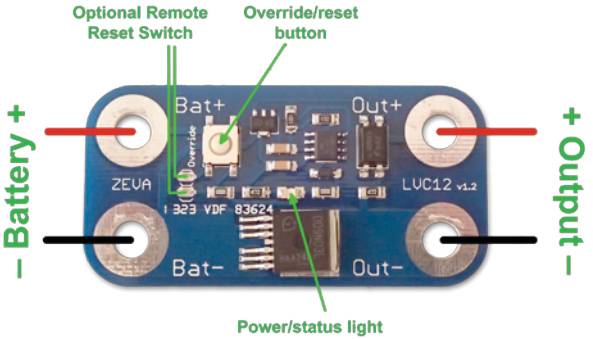
Many EV builders prefer to use a smaller auxiliary battery, often Lithium chemistry, for their 12V systems to save space and weight. Unfortunately these smaller batteries tend to go flat more quickly if the vehicle is left unattended, which can damage cells.

The ZEVA LVC12 will automatically isolate your 12V battery if its voltage gets low to protect it from further discharge – but leaving enough charge to allow the vehicle to get going again when you return. It uses little power while monitoring, and by switching its own power supply off upon low voltage detection, has true zero current draw once tripped to avoid further discharge, no matter how long the battery is left.

A green LED indicates whether the 12V battery is enabled (on) or disabled (off). The onboard reset button (or remote reset switch terminals) are used to re-enable the battery, and after pressing will give you a 10-second window to start the vehicle or commence recharging.

INSTALLATION AND RECOMMENDED WIRING

A typical wiring diagram for the LVC12 is shown below:



For up to 50A continuous current rating, 8AWG wire or larger is recommended. The power connections have been designed to suit 6mm or 1/4" ring terminals. Ensure you use either spring washers or Nyloc nuts with terminal bolts to ensure they will not loosen from vibration. Alternatively, power wires may be soldered directly to the circuit board.

A fuse up to 100A is recommended before or after the device if your vehicle does not already have a master fuse on its 12V system (though most do).

Once your power terminals are connected, wrapping the device with insulation tape or heat-shrink is usually sufficient to avoid short circuits from terminals touching the vehicle chassis. Alternatively, some installers choose to mount the board inside a small plastic hobby box.

CONNECTIONS

- **Bat+** and **Bat–** are connected to the positive and negative terminals of your battery respectively.
- **Out+** and **Out–** are connected to your vehicle's 12V circuit.
- Optionally, the two small terminals next to the **Override** button may be connected to a remote normally-open momentary switch (e.g mounted in your vehicle dash) to allow more convenient resetting.

TECH NOTE

This device is based on a MOSFET switch interrupting the negative battery wire. The MOSFET can only block discharge current, hence even if the low voltage cutout has tripped, the device will allow charge current to flow.

However since it disables its own power supply after tripping, the device can **not** automatically turn itself back on even if the voltage gets back within safe range. Furthermore the intrinsic reverse diode in MOSFETs are relatively inefficient, so you may notice the device gets hot if you try to charge the battery while the device is off.

As such it is strongly recommended that you ensure the LVC12 is always enabled whenever the battery is being used, either charging or discharging.

SPECIFICATIONS

- Voltage Range: 8-20VDC
- Low voltage trip threshold: 11.5VDC
- Trip delay / reset window: 10 seconds

- Current rating: 50A continuous, 100A intermittent
- Power consumption: 4mA when active, 0mA when tripped
- On-resistance: 0.001Ω
- Dimensions: 66x33x8mm
- Weight: 15g

TECHNICAL SUPPORT

If you have any queries not covered by these intructions, feel free to contact us via our website: **www.zeva.com.au**

Products are covered against manufacturing faults for a period of 12 months from date of purchase. If you believe your product may be faulty, please contact us for RMA information.

ZEVA is a 100% carbon neutral business. All products proudly designed and manufactured in Australia.