Sterling Power Products

IP68 Waterproof Voltage Sensitive Relay A

Analogue voltage sensitive relay

Bidirectional

English
French
Deutsch

Product number:
VSRA

Enclosed Product	
12V / 80A rating	☐
12V / 160A rating	☐
24V / 80A rating	☐
24V / 160A rating	☐

For simultaneous deep charging and discharging a **digital** voltage sensitive relay should be used (VSRB).

Always ensure the continuous rating of this product is greater than the maximum current available from the current generating device (i.e. alternator or charger) otherwise the unit would/could be overloaded
The battery bank size is not relevant

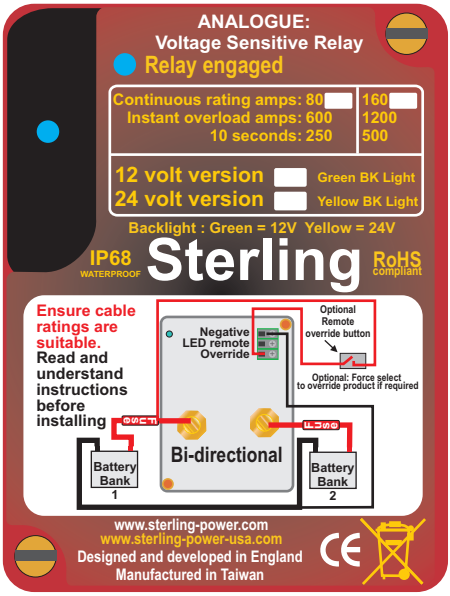
Models available (amps)	80	160
Relay continuous rating (amps)	80	160
Instant overload amps	600	1200

Power consumption in off position = 0 Amps

Preset voltage engage 13.5 V (12 V) (27.0V for 24 V) +/- 0.25V
Preset voltage disengage 12.8 V (12 V) (25.6V for 24 V) +/- 0.25V

Bespoke models available upon request

STERLING POWER



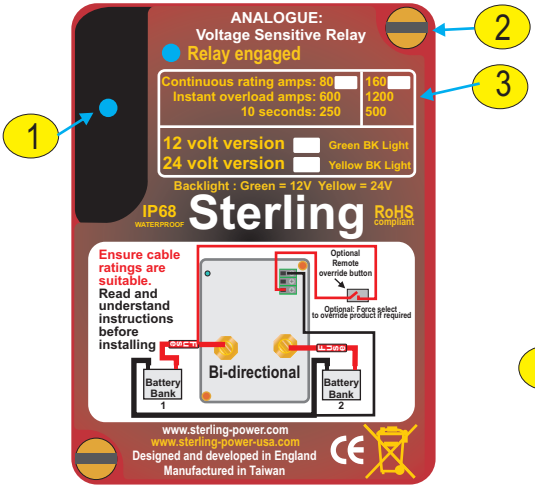
AQUANAUTIC
Water proof range

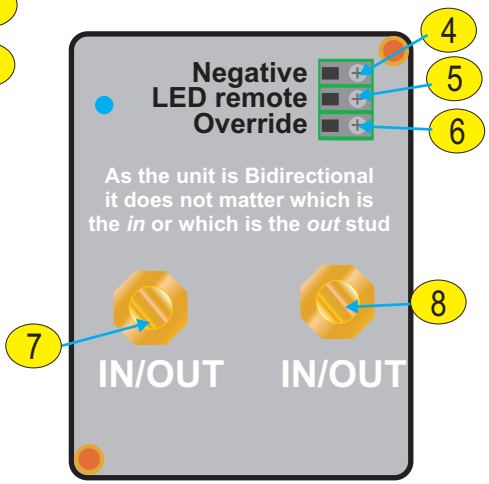
Designed and developed in England

CE RoHS compliant

www.sterling-power.com
www.sterling-power-usa.com

Warranty:
2 years return to factory
conditional warranty





Product Information:

1: Relay engaged LED; if the blue LED is lit then the relay circuit is in the closed or contact position, the relay is on.
2: Stainless steel screw connector for lid
3: Front label.
4: Battery **Negative** connection, connect to battery neg.
5: **LED remote,** optional LED for remote viewing of relay engagement.
6: Override, allows you to tap onto a 12V or 24V supply to allow override of the voltage sensing function converting the unit into a signal fed relay.
7: **Input power connection, main D/C input cable. M8 stud.**
8: **Output connection, main output D/C cable. M8 stud.**

WHAT CABLE TO USE IN mm sq

Current required	Cable run 0-1.5 mtr	1.5 – 4 mtr
0-25 amps	6 mm sq	10 mm sq
25-45 amps	16 mm sq	25 mm sq
45-85 amps	25 mm sq	35 mm sq
85-125 amps	35 mm sq	50 mm sq
125- 180 amps	50 mm sq	70 mm sq
180-330 amps	70 mm sq	90 mm sq

Please note that if there is a problem obtaining for example 90 mm sq cable, simply Use 2 x 50 mm sq , or 3 x 35 mm sq , the cable is simply copper, and all you require. It is not always possible to get thick cable and sometimes only thinner than required cable is available, so simply double it up this does not matter if it is one cable or 10 cables as long as the square area adds up. The performance of any product can be improved by thicker cable, so if in doubt round up.

Installation

The actual installation of this device is very straight forward.
For different models (higher current) please use the correct cables (as per the above chart) for the larger current rated device. The current ratings are on the lid of the device. Also, please fuse all cables which go directly to the battery, Fuses , use about a 30% larger fuse than that of the product rating. **If there are any doubts or problems please contact a professional to install this unit. Sterling Power Products assumes our customers have a level of electric knowledge which would enable them to safely fit and use this product, it is not possible to design instructions to cover all possible misunderstandings which a non expert person could conjure up. So, if you are not capable of fitting this product safely then please do not attempt it.**

Before starting this installation, disconnect the negative and positive cables from the batteries and ensure the circuit is isolated. This is to prevent any short circuits when running the new cables, a short circuit on a battery can easily cause a fire, or the battery in question could explode.
Always work from the unit to the battery bank. i.e. fit the cables onto the unit, then the fuse, then connect them to the battery. This method is much safer than connecting cables to the batteries then connecting to the unit.
Always bear in mind that even with 12 or 24V if you are wet enough you can get an electrical shock and it could kill you, so, treat with care and ensure you are as dry as possible.

Bidirectional (IN/OUT)

As the unit is bidirectional either stud can be used as the input or the output. Thus, the relay measures the voltage at both studs and the relay engages and disengages with respect to these voltages.

Fuses

It is recommended to place fuses as close to the batteries as possible. Also, fit them first as they can protect against any accidents during installation. The fuses are there to protect the cables in the event of the positive cable coming into contact with the chassis of a vehicle, a steel hull (on a narrow boat) or a bonding system on a boat or vehicle. In some cases this is a statutory requirement. All wires going directly onto a battery should be fused. A rough guide for a fuse required for the D/C power cables is about 30-50% larger amp rating than the products rated ability. I.e. a product which takes about 100 amps would need about a 130-150 amp fuse.

After installation, what to expect:

What does the LED mean.

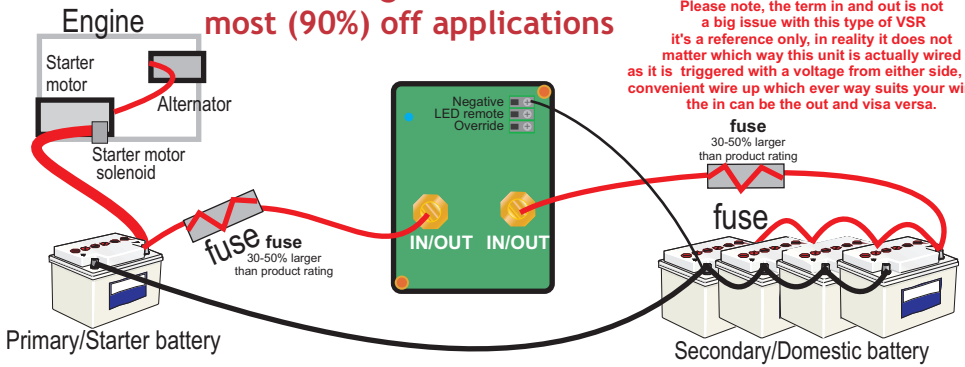
There is only 1 LED. This blue LED shows that the relay is engaged, if the blue light is on relay is closed circuited, if the blue light is off then the relay is open circuited (disengaged).

Starting engine for first time.

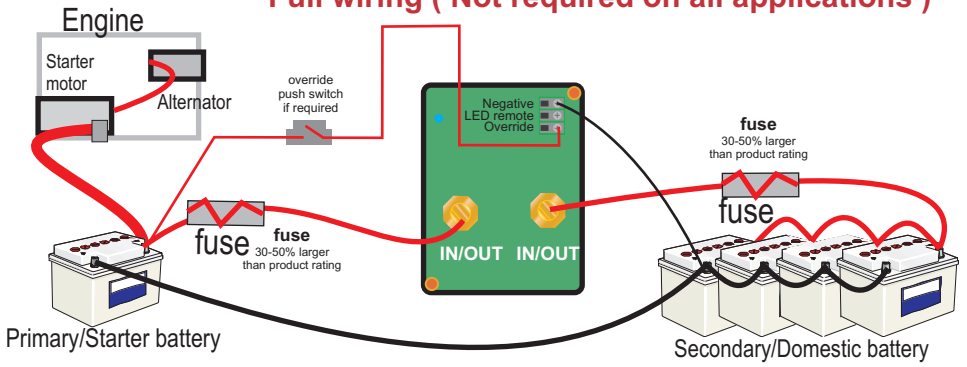
Assuming the alternator or battery charger is working correctly, on start up we would expect to see the starter batteries voltage rise to about 14V, (x 2 for 24V) our preset 'engage relay' voltage setting is 13.5V (27.0V at 24V). On first time installation of the relay once this voltage has been reached there is a delay of approximately 30 seconds until the relay close circuits. From then on the delay between the **on** and **off** voltages are between 5-10 seconds. This is to limit frequent opening and closing of the relay.

Basic wiring. suitable for most (90%) off applications

Please note, the term in and out is not a big issue with this type of VSR it's a reference only, in reality it does not matter which way this unit is actually wired as it is triggered with a voltage from either side, so if convenient wire up which ever way suits your wiring, the in can be the out and visa versa.



Full wiring (Not required on all applications)



Simple but effective total 0.0 volt drop charging solution