

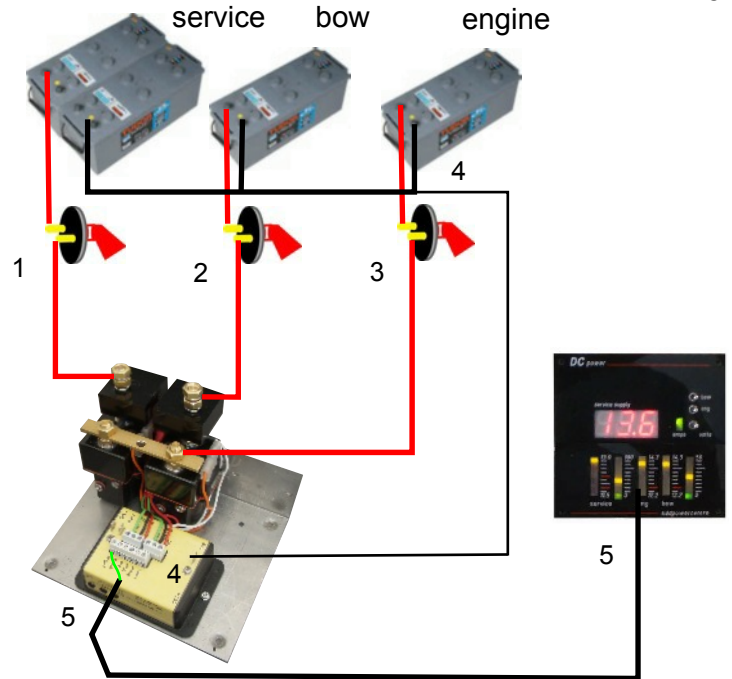
Mounting

Mount the VSR module to a flat surface in the same area as the battery isolator switches. This will give short charging cables with low volt drop.

Connecting up

Power connection are only required between the isolator switch and VSR module as shown at 1, 2, and 3 on diagram. Fuses should not be required as the main power fuse at the battery will provide protection, but check for any requirements for your country. Where long cables runs are used, or cables below the rating of the main fuses, local fuse protection should be used to provide cable protection, the contactors should normally have adequate power reserve.

Negative connection is required for control systems, this should be 2.5 sq mm between negative terminal on control module and common battery negative. The control unit has internal PTC fuses (auto reset) that protect electronics and contactor coils, remote fuses are not required.

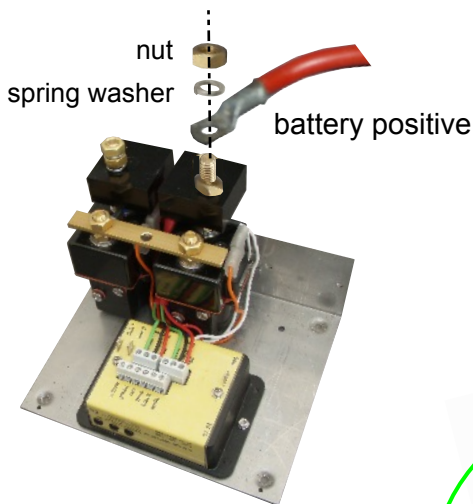


Display connection is a 4, 6, or 8 way cable between the control module and display, the connector at each end are marked with appropriate cable colour. The cable can be cut to length, or coiled, the cable should be fixed to the bulkhead to avoid movement. The control module provides PTC fuse protection to display and connecting cable, once any fault is removed power will be restored.

Amperage indication, the system allows for two options for current display, charge amps displays only the charging current to the battery, net amps displays actual charge current to the battery and current drawn from the battery.

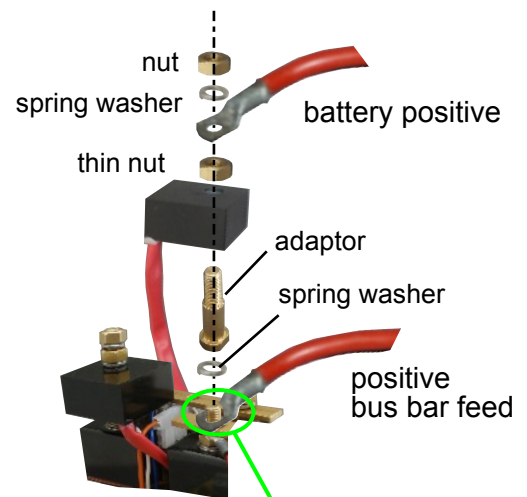
charge amps

Remove nut and spring washer, do not remove thin nut above the shunt sensor. Fit cable from isolator switch onto stud, fit spring washer and nut, tighten nut against thin nut do not over tighten nut.



net amps

Remove nut, spring washer, thin nut, lift off shunt sensor, unscrew adapter and spring washer. Fit positive bus bar supply cable terminal over stud, fit spring washer, fit and tighten adapter, refit shunt sensor and thin nut, tighten thin nut, fit cable from isolator onto stud, fit spring washer, nut and tighten. Do not over tighten nuts.



shunt must be clear of the crimp on the terminal



inverted cable terminal gives flat top for better clearance with shunt.

1 engine 2 bank shunt mounting

The shunt is fitted by passing the power cable through the sensor ring, note the position of the arrow should point **to** the battery positive terminal.

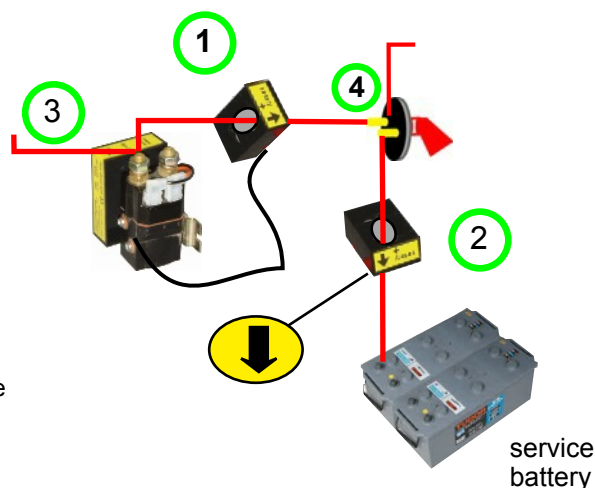
charge amps only mount sensor in position **1**

net amps, both charge amps into battery and discharge amps out can be monitored by fitting sensor at position **2**,

Use position **4** for the feed to positive bus bar, connect all equipment to the bus-bar.

The positive bus bar feed may also be taken from position **3**

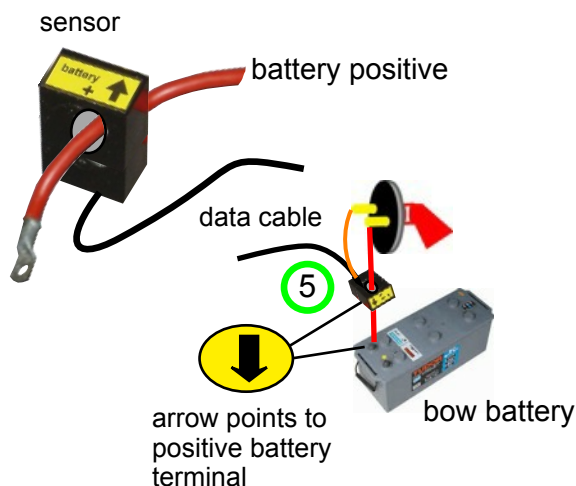
The sensor should be positioned at **1**, note arrow.



Remote bow / stern battery shunt

A remote shunt can be located at the remote battery to monitor net amp and pick up battery voltage.

The sensor is located on the cable from battery switch to battery **5** note direction of the arrow, this must point to the battery positive terminal. Connect voltage pick-up cable to the switched side of the isolator, i.e. no voltage when off. The pick-up and feed to the display are protected by a PTC fuse in sensor, it will re-set once the fault s removed.



Link start, single engine / twin engine

single engine depending on the display supplied the link start start button may be pre-installed, if not the remote water protected button must be fitted in a suitable position and wired back the the two 0.25" spade terminals. Pressing the button will link batteries for approximately 2 minutes.

twin engine installation use a separate link start contactor, this links engine start batteries only, avoiding spikes and volt drop to electronics connected to the service bank during engine starting. If the contactor is not pre-installed, it should be connected between the two engine isolators with suitable rated cable, the coil of the contactor is then connected to the terminal block on the control module.

Engine start / thruster interface

Modules are fitted with, or can be as a option, interface connection that monitors engine start or thruster use. This drops out the contactor if engaged due to bi-direction charge operation, isolating the charging system from high loads, low voltage and spikes to electronic equipment from the starter motor, or thruster use.

The system picks up a signal from the feed between to the starter motor solenoid to key switch, or bow / stern thruster control circuit. The thruster inter-face allows for both positive or negative control control signals

If the starter motor or thrusters do not have a suitable pick-up voltage, a remote current sensor can be fitted that monitors for high amperage and sends an appropriate signal. This also can be used should a inverter be retro-fitted, by monitoring it's use the charge circuit can be isolated to avoid high load being drawn from the engine battery and alternator, due to low service battery level. The contactors are rated to break at a amperage greater than their rated capacity, so check inverter load, where rating is exceeded look at fitting a chargeguard, or phone us for technical advise.

Adjustment

VSR both the voltage that the contactor is engaged and the drop out voltage can be adjusted from factory setting, see paperwork that was supplied with the unit.

Shunsen module can be adjusted for both high amperage trip and low current rest values, again this may vary with module, check paperwork with unit or contact **Powercentre** technical.