

# **2SB – 4SB SINGLE BATTERY VOLTAGE REGULATOR INSTRUCTIONS** **CE**

These instructions cover the following models 2SB12 : 2SB24 : 2SB12-T : 2SB24-T : 4SB12 :4SB24 : 4SB12-T : 4SB24-T

Models 2SB12-T : 2SB24-T : 4SB12-T : 4SB24-T have built in temperature compensation –  
25mV/degC (12v model) and 50mV/degC (24v model)

**Before installing this regulator please check you have bought the correct unit. See table below.**

The single battery regulator is simply connected to the battery terminals of the battery being charged by the Aerogen, Solargen, It includes a voltage monitoring / PWM circuit, a Power Mosfet and a high wattage dump resistor.

It is designed to sense and limit the battery terminal voltage, if the battery voltage reaches 14.2v (12v systems) or 28.4 (24v systems) the regulator diverts power to a high wattage wire wound dump resistor and thus prevents the battery becoming overcharged. This regulator should **NOT** be used if you have any other form of charging system connected to the battery ie. Mains charger/ shore power, engine driven alternator.

**THESE REGULATORS ARE NOT SUITABLE FOR YACHT INSTALLATIONS.**

**WARNING !** The SB regulators are potted to fully protect the electronics, so the warnings below must be carefully followed as **THE UNITS ARE NOT REPAIRABLE.**

Whilst initially wiring in the Aerogen, or Solargen and SB regulator or carrying out future maintenance ie. removing battery terminals for cleaning or replacing battery, it is MOST IMPORTANT THAT THE AEROGEN FAN IS STATIONARY so it produces no output.

**IF THE BATTERY VOLTAGE LEADS ARE CONNECTED THE WRONG WAY ROUND (REVERSE POLARITY) TO THE BATTERY IT WILL DESTROY THE SB REGULATOR**

FOLLOW THE WIRING DIAGRAM OVERLEAF WHEN CONNECTING THE SB REGULATOR

The dump resistor can become VERY HOT when switched on, but this will only occur when the batteries are fully charged, and the Aerogen, or Solargen is at its maximum output. The dump resistor should be mounted horizontally on a heat resistant surface in a well ventilated position. The SB regulator should be positioned as close as possible to the batteries. If the SB regulator output cables require extending over 1 metre in length, then a cable with a larger cross sectional area must be used to reduce voltage drop. With the regulator now positioned and connected to the batteries, the dump resistor can be connected to it via the grey cables.

The SB regulator MUST be attached directly to the battery terminals as shown in the wiring diagrams. It MUST NOT be wired indirectly to the batteries via change over/isolating switches

Note: The SB regulator draws a continuous small standby current of around 10mA – 15mA.

**INTERFERENCE:** All aerial or sensitive electronic cables should be routed a minimum of one Metre from the Aerogen and regulator/dump resistor cables to avoid interference on Telemetry equipment, Radar, Radio, etc.

**NOTE:** The dump resistor will make a very slight buzzing sound when operating ie. dissipating current.

## **VOLTAGE REGULATOR TABLE**

<b>SYSTEM</b>	<b>REGULATOR</b>
1 x Aero2gen	2SB
1 x Aero2gen + 5w Solargen panel	2SB
1 x Aero2gen + 10w Solargen panel	2SB
1 x Aero2gen + 17w Solargen panel	4SB
1 x Aero2gen + 25w Solargen panel	4SB
1 x Aero2gen + 35w Solargen panel	4SB
1 x Aero2gen + 50w Solargen panel	4SB

1 x Aero4gen	4SB
1 x Aero4gen + 5w Solargen panel	4SB
1 x Aero4gen + 10w Solargen panel	4SB
1 x Aero4gen + 17w Solargen panel	4SB
1 x Aero4gen + 25w Solargen panel	4SB
1 x Aero4gen + 35w Solargen panel	4SB
1 x Aero4gen + 50w Solargen panel	4SB
1 x Aero4gen + up to 60w Solargen panels	4SB

1 x Aero6gen-F	4SB
----------------	-----

<b>SYSTEM</b>	<b>REGULATOR</b>
1 x Aero4gen-F	4SB
1 x Aero4gen-F + 5w Solargen panel	4SB
1 x Aero4gen-F + 10w Solargen panel	4SB
1 x Aero4gen-F + 17w Solargen panel	4SB
1 x Aero4gen-F + 25w Solargen panel	4SB
1 x Aero4gen-F + 35w Solargen panel	4SB
1 x Aero4gen-F + 50w Solargen panel	4SB
1 x Aero4gen-F + up to 120w Solargen panels	4SB

5w Solargen panel	SR50
10w Solargen panel	SR50
17w Solargen panel	SR50
25w Solargen panel	SR50
35w Solargen panel	SR50
50w Solargen panel	SR50
2 x 35w Solargen panels	4SB
2 x 50w Solargen panels	4SB

# SINGLE BATTERY VOLTAGE REGULATOR WIRING DIAGRAM

FILE SBDIAG

\* TEMPERATURE SENSOR MODELS 2SB12-T, 2SB24-T, 4SB12-T, 4SB24-T

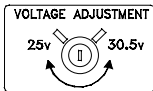
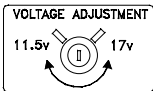
FUSE TABLE	
LVM MODEL	FUSE RATING
212	5 AMP
224	3 AMP
412	20 AMP
424	15 AMP
412F	20 AMP
424F	15 AMP
612F	30 AMP
624F	20 AMP
SOLAR PANELS	20 AMP

Model	Voltage	Dump Amps
2SB12	12	5.0
2SB24	24	2.5
4SB12	12	20.0
4SB24	24	10.0

NOTE : ALL REGULATORS ARE FACTORY SET TO -  
(14.2 for 12v MODELS)  
(28.4 for 24v MODELS)

12v Unit

24v Unit

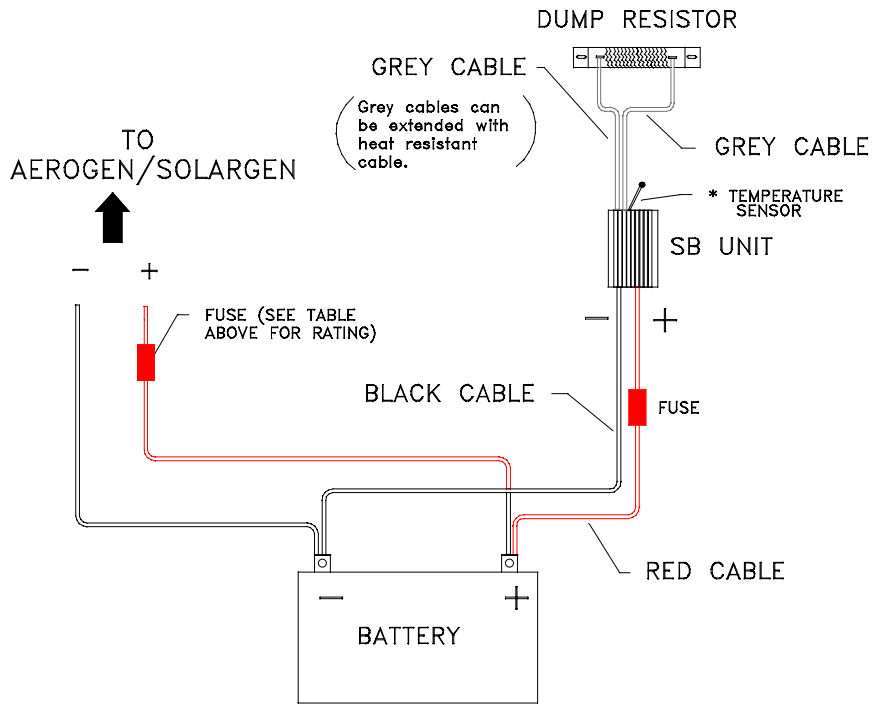


IF YOU ARE CHARGING SPECIAL BATTERIES WHICH REQUIRE A DIFFERENT VOLTAGE SETTING ADJUSTMENTS CAN BE MADE AS FOLLOWS.

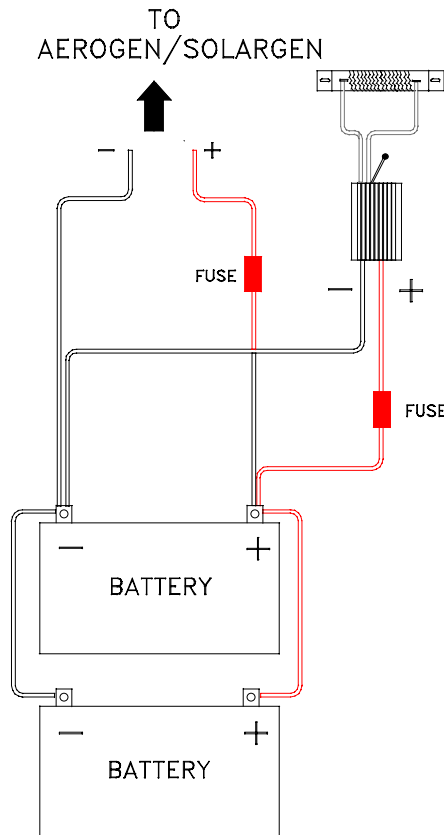
On the underside of the unit (potted side) is a hole which allows a small screwdriver to pass through and adjust the trimmer to change the voltage setting of the regulator. It is advisable to make a note of the original setting position of the trimmer before making any adjustments. Adjustment should only be carried out whilst the wind generator is charging a fully charged battery and the dump resistor can be heard emitting a slight bussing sound as it starts to cut in, (this indicates the voltage setting of the regulator). Gradually make very small adjustments whilst monitoring the battery voltage with a multimeter.

LVM LTD. AEROGEN HOUSE,  
OLD OAK CLOSE, ARLESEY,  
BEDS. SG15 6XD.  
TEL 01462 733336  
FAX. 01462 730466

E-Mail : lvm.ltd@dial.pipex.com  
www.lvm-ltd.com



ONE BATTERY CONNECTION



TWO BATTERIES CONNECTED IN PARALLEL