



## OPERATING INSTRUCTIONS

### **Battery Shunt Regulator**

#### **INTRODUCTION:**

During use, batteries in a series string will become uneven during charge and discharge cycles. The shunt regulators are designed to eliminate overcharging of batteries in the string while allowing lagging batteries to accept the current that is offered until they become fully charged. This helps increase battery life and overall performance.

**IMPORTANT: DO NOT USE THIS REGULATOR UNTIL YOU HAVE READ ALL THE INSTRUCTIONS. THIS REGULATOR SHOULD ONLY BE USED BY PERSONS WITH A GOOD UNDERSTANDING OF SERIES CHARGING.**

**⚠ CAUTION:** Always wear protective eye shields and clothing when working with batteries. Batteries contain acids which can cause bodily harm. Do not put wrenches or other metal objects across the battery terminal or battery top. Arcing or explosion of the battery can result. Do not wear jewelry when working around batteries. Arcing can cause severe burns.

#### **DO NOT USE THIS REGULATOR IF:**

It shows any signs of physical damage. The DC output leads are worn, have cuts, exposed wires, or feel hot when used.

#### **PRE INSTALLATION INFORMATION:**

The shunt regulator is designed for chargers having an output current **not to exceed 25 amps**.

Each shunt regulator is designed for a specific number of batteries and voltage. For example, (6) 6 volt batteries, (6) 12 volt batteries, (4) 6 volt batteries and so on. Make sure the model number, located on the back paper insulator matches your battery string.

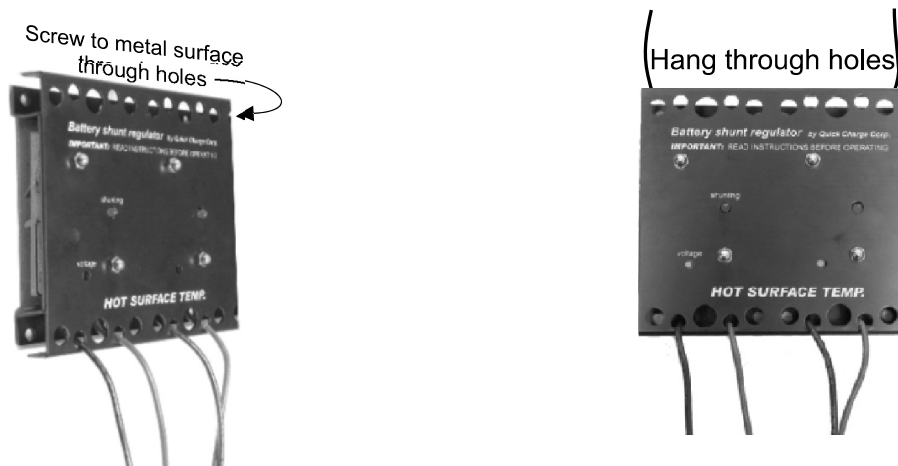
**⚠ CAUTION:** The charger must have a charge profile suitable for the batteries in use. For example, wet deep cycle batteries require a charger with a voltage limit of approx. 2.55 volts per cell. If you are charging AGM batteries, you must not use a charger designed for wet cell batteries, instead, the charger must have a voltage limit applicable for AGM batteries which is typically 2.45 volts per cell. Gel batteries require a charger not exceeding 2.33 volts per cell. **DANGER:** Use of a charger with a higher potential than is required by the batteries will cause overheating and possible damage to the regulator and batteries.

## INSTALLATION:

If the type of batteries were known by the factory at time of order, the regulator was pre-calibrated. Shortening wires will require re-calibration. It is best to coil up un-needed wire.

Provide adequate ventilation for the batteries and regulator. Do not obstruct the flow of cooling air around the regulator. Do not allow clothing, blankets or other material to cover the regulator. The surface of the regulator will become hot when in use. **DO NOT** mount it against a wood surface.

Mount the regulator using one of the two methods shown.



Carefully observing polarity, connect a set of wires to each battery, red to positive, black to negative. If the wire lead sparks at the battery terminal STOP and reverse polarity. Connecting the leads wrong polarity will discharge the battery continuously.

Charge batteries as normal. Towards the end of the charge cycle one or more LED's will illuminate indicating those batteries have reached the pre-set limit and the surface temperature will begin to warm. Using a volt meter across the battery, double check that the voltage limit approximately corresponds with the table below. If an adjustment is necessary, use a small jewelers screwdriver in the hole marked "voltage adjust". Do not adjust voltage much lower than the recommended settings or overheating will result. Check other batteries as desired, if voltage limits are exceeded, adjust pot lower. It is possible that some charge cycles will not reach over voltage on any batteries and the regulator will not do anything. Again, calibration was set at the factory, but if a recalibration is needed it only needs to be done once.

### Recommended settings

Battery voltage	Gel	AGM	Wet deep cycle
<b>6V</b>	7.0	7.35	7.74
<b>8V</b>	9.32	9.80	10.32
<b>12V</b>	13.80	14.70	15.50

## **TROUBLE SHOOTING:**

### **OVERHEATING:**

The surface temp of the regulator will vary depending on how many batteries are shunting, and at what current. Temperatures of 160-230 degrees are safe, but may feel very hot to the touch. If temperature runs higher it maybe because you have the limit voltage set too low. As already mentioned, if you are using a charger with a wet cell profile on an AGM or gel battery, too much current will have to be shunted creating excessive heat.

### **SOME LED'S NEVER COME ON:**

Battery position in the series string can determine which batteries will receive an over charge and which will always be undercharged. It is a good idea to periodically swap positions of batteries to help even them out.

## **QUICK CHARGE SHUNT REGULATORS "LIMITED WARRANTY"**

Quick Charge corporation warrants shunt regulators for (3) years from the date of purchase.

After the warranty period, chargers returned to the factory for repair will be charged a minimum rate of \$25.00. Charger will be returned, freight and repair charges, C.O.D. unless other arrangements have been made

This warranty covers all defects in manufacture and performance, provided the unit is operated in compliance with manufacture's operating instructions.

For repairs to be made at the Quick Charge factory, a charger and/or component(s) should be sent, freight prepaid to Quick Charge at:

Quick Charge Corp.  
1032 S.W. 22nd St.  
Oklahoma City, OK. 73109

Quick Charge, will at it's option, repair or replace the charger or component in question. The repaired item will then be returned, freight prepaid by Quick Charge. This warranty is void if the charger or component have been altered, changed, or repaired by anyone not authorized by Quick Charge, or if the charger or component, have been subjected to misuse, negligence, or harsh environmental conditions. (Except those chargers designed for such conditions)

If returning the charger to the factory is not practical, replacement parts may be shipped to the customer for field repair at no charge. On parts such as circuit boards, the customer will be required to return the board suspected to be defective to Quick Charge, freight prepaid. If such defective parts are not returned, the customer will be invoiced for the repair parts.

Field repairs are made at the user's own risk. "Authorization" by Quick Charge to repair refers to maintaining the warranty only. Quick Charge assumes no responsibility or liability for field servicing, and shall not be responsible for incurred travel or labor charges.

Quick Charge corporation shall not in any event be liable for the cost of any special, indirect or consequential damages to anyone, product or thing.

This warranty is in lieu of all other warranties expressed or implied. Quick Charge neither assumes nor authorizes any representative or other person to assume for us any liability in connection with the sale of this product.