

**24V to 12V**  
**Switchmode Battery Chargers**  
Operating Instructions  
Please read these instructions before use



Congratulations on purchasing your new GSL Electronics 3 stage 24V to 12V Battery Charger. This product utilises Switchmode and Microprocessor technology for the charging of 12Volt Lead Acid batteries. The charger provides a safe and fast method of restoring discharged batteries and maintaining them. This is achieved via precisely controlled Bulk, Absorption and Float charging states. Both models are fully protected against overload, short circuit, over temperature, reverse polarity connection, over voltage and with a bulk charge timeout for additional safety. The models are built in a compact and strong aluminium extrusion which can be easily secured to both vertical and horizontal surfaces. Before starting the charge cycle the battery voltages are evaluated to detect faulty batteries.

**Bulk Mode** – This mode of the battery charger delivers bulk charging current regulated to 40 / 60 Amps into the battery being charged. After the battery voltage rises to approximately 70% charge. The charger will switch automatically into Absorption Mode.

**Absorption Mode** – In this mode the battery charger output voltage is maintained at 14.5V until the current drops below a controlled threshold. The battery is brought up to a 90% charge then enters float mode.

**Float Mode** - The voltage is reduced to 13.5V and maintained at that level with the charger supplying just enough current to maintain the battery at full capacity.

**Installation & Safety Precautions:**

1. The following connection sequence is to be followed:

Ground (BLACK), Input (BLUE), Output (RED) and Control (WHITE).

2. Preferably mount the unit inside the vehicle. Avoid locations where external heat is produced e.g. exhaust system or where the batteries are located.

3. Choose a position with good ventilation where air can pass freely around the unit.

4. Ensure the unit is protected from water spray and other sources of contamination e.g. oil, grease and dust.

5. Ensure that unit is installed away from any flammable fumes, liquids or materials.

6. During charging process, do not use a naked flame near a battery, due to gases emitted from the battery, which may ignite and explode.

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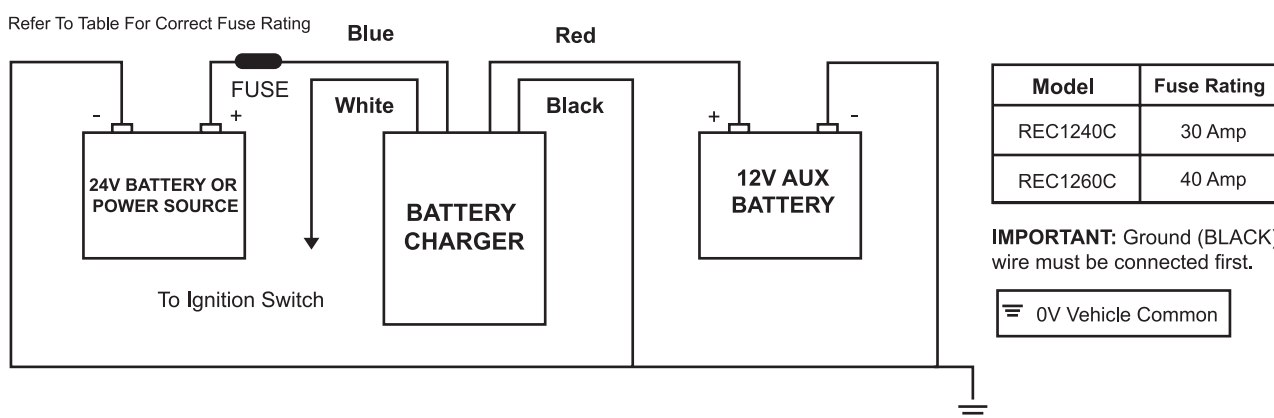
7. Never smoke or light cigarettes near a battery.
8. Do not place tools on top of battery or allow tools to fall on battery.
9. Always wear eye protection near a charging battery.
10. Ensure a “well” ventilated area is used when testing or re-charging batteries.
11. Ensure ventilation is adequate and venting holes are not obstructed. Inadequate ventilation may over-heat the unit and cause inefficient operation.
12. If skin or clothing comes into contact with acid, flush the area(s) with water immediately.  
Seek medical attention if necessary.

**Should product require service, return it to your place of purchase for Warranty Advice.**

If the unit is in one of the following conditions. reset as follows:

- **Battery Reversal Protection:** If the unit is hooked up in reverse then simply reconnect the unit as per Fig.1
- **Output Over Voltage:** If the output over voltage protection has been tripped then there will be no operation from the unit. Contact supplier or GSL Electronics for Warranty Advice.
- **Thermal Protection:** For your safety and for the longevity of your purchase, the unit will shut down to protect itself and your batteries when the unit exceeds it nominal operating temperature. To reset this condition the unit must be disconnected from the battery for at least one minute to allow cooling and for the microprocessor to reset.

**Fig 1. Typical Installation Diagram**



**WARNINGS: External Input Fuse must be fitted!**

If a battery isolation switch is used, both ground and input must be connected to the isolated side of the switch.

### **Battery Charging Times:**

The question of “how long will my battery take to re-charge” is always asked. Firstly, the charge rate (CR) of a battery is rated in Amps and the battery capacity (C) in Amp Hours. The battery manufacturer for each battery type normally states this CR. As a rule of thumb, a lead acid battery generally should be charged under approximately 1/5 of C. For example if you have a 100Ah battery, the recommended charging current is:  $100 / 5 = 20A$ .

The majority of the battery capacity would normally be charged in 5 hours using a 20 Amp battery charger. Similarly it would take approximately 10 hours to charge the battery with a 10 Amp battery charger.

\*Please note the figures quoted above could vary depending on the battery condition.

### **LED Indicators:**

Your new charger is fitted with a microprocessor which evaluates the state of the charge and displays the operating mode of the unit via two LED indicators.

#### **Input LED:**

Nominal operation is indicated by the Input LED remaining solid.

Flashing Input LED indicates that input is below 25V. If the input voltage drops below 22V charger will switch off. When the voltage returns to above 23V the unit will return to normal operation.

#### **Output LED:**

This LED indicates the charge state of the battery charger

When the LED is flashing this indicates that the charger is in a charge state.

A solid output LED indicates a charged battery and that the charger is in float mode.

The LED will remain off when either:-

- A)** The charger's battery sensing technology does not sense a battery on the output.
- B)** The battery has been detected to be faulty. Check 12V with a meter to establish if the battery is with in the range of 7V to 13V.
- C)** The Ignition Wire is disconnected.
- D)** Output Over Voltage or Thermal Protection



Specifications	REC – 1240C	REC – 1260 C
Input Voltage [ VDC ]	23VDC to 30VDC	23VDC to 30VDC
Output Voltage (Absorption/Float) [ VDC ]	13.5VDC $\pm$ 1%	13.5VDC $\pm$ 1%
Output Voltage (Bulk) [ VDC ]	14.5VDC $\pm$ 1%	14.5VDC $\pm$ 1%
Typical Efficiency	Greater than 85%	Greater than 85%
Bulk Charge Current [A]	40A	60A
Stand – By Current [mADC]	20mA	20mA
Features	Short Circuit Protection Battery Reversal Protection Over Voltage and Thermal Protection	
Dimensions [ L x W x H]	285mm x 175mm x 65mm	285mm x 175mm x 65mm
Weight	2.5Kg	2.6Kg

**Warranty Conditions:** The product is warranted to be free from defects in materials and workmanship under normal use and service for a period of 24 months from the date of sale. This warranty covers defective parts and workmanship provided that the product is shipped prepaid to the seller within 24 months of purchase of goods. This warranty is limited to the repair or replacement (at the manufacturers' discretion) of parts and shipping prepaid to the original despatch destination. We regret that no liability can be accepted for consequential or special damages of any kind howsoever arising in connection with products supplied by the seller. This warranty is in lieu of all other warranties expressed or implied. No representative is authorised to assume for the seller any other liability in connection with the seller's products.