



Congratulations on purchasing your new GSL Electronics 24V to 12V Reducer/Equalizer/Charger. This product utilises Switchmode and Microprocessor technology giving you the ability to have a fixed voltage output or the ability to charge Lead based battery chemistries in the one product. The battery charging can either be as a straight 12V charger or a equalization charger for a 12V battery in a 24V bank which is being used as a center tapped 12V supply. 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. The unit is fully protected against overload, short circuit, over temperature, battery reverse polarity connection(Charger mode only), 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.

Installation & Safety Precautions:

1. The following connection sequence is to be followed:

Ground, Input, Output and Control.

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.
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 the following conditions. reset as follows:

- **Battery Reversal Protection (Charger Mode Only):** 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 its 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.

Changing Operating Modes:

Located on the rear of the unit, the opposite end to the output terminals. The switch is used for adjusting the mode of operation. Caution : This should only be done before installing the unit. Do not change modes with out reconfiguring the wiring as per the diagrams below. Fig.1 for Charger, Fig 2. for Reducer and Fig 3. for Equalizer

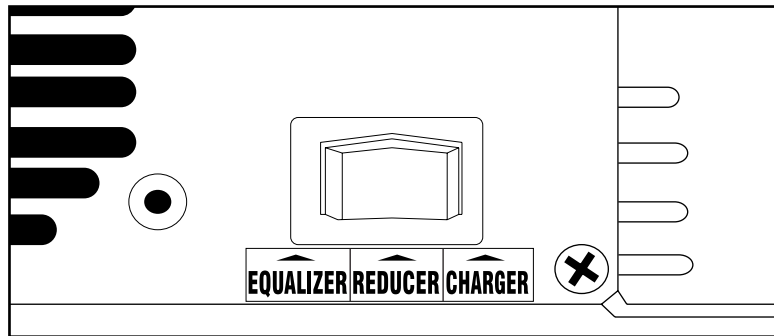
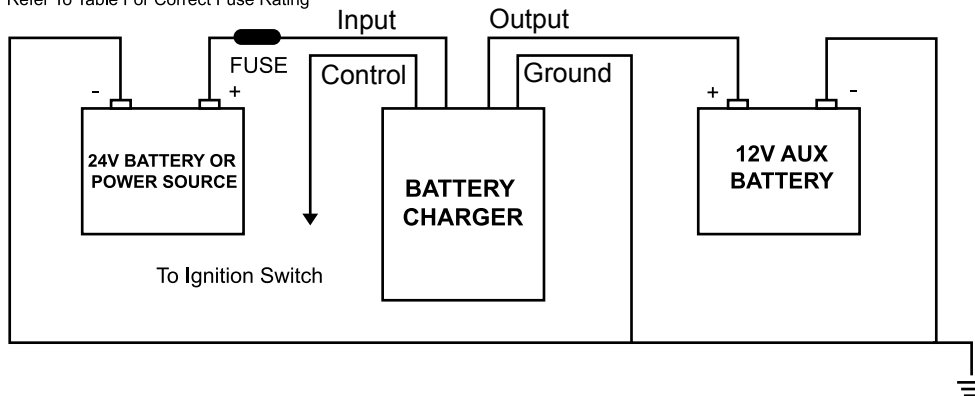


Fig 1. Typical Installation Diagram for Battery Charger Mode

Refer To Table For Correct Fuse Rating



Model	Fuse Rating
REC1240	30 Amp
REC1260	40 Amp

IMPORTANT: Ground (BLACK) wire must be connected first.

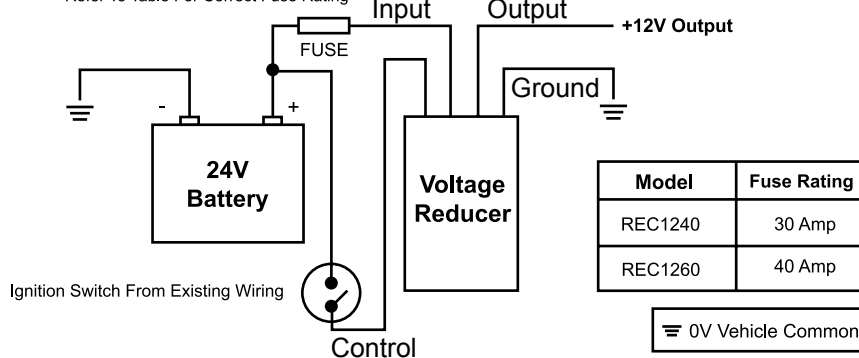
≡ 0V Vehicle Common

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.

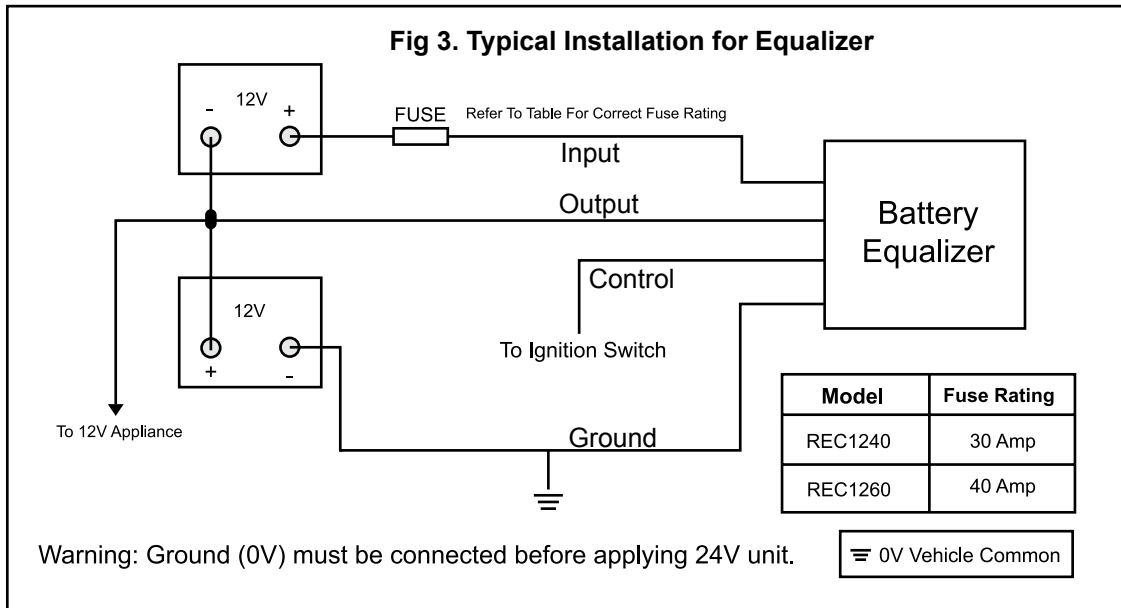
Fig 2. Typical Installation Diagram for Reducer Mode

Refer To Table For Correct Fuse Rating



Model	Fuse Rating
REC1240	30 Amp
REC1260	40 Amp

≡ 0V Vehicle Common



LED Indicators:

Your new charger is fitted with a microprocessor which evaluates the state of charge and other features and displays them via two LED's.

Charger Mode -

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 within the range of 7V to 13V.
- C)** The Ignition Wire is disconnected.
- D)** Output Over Voltage or Thermal Protection

Reducer Mode-

Output LED: This LED indicates the power output of the Reducer.

When the LED is flashing this indicates that the Reducer either:-

- A)** Current output less than 1 Amp
- B)** Or the unit has just entered current limit

A solid output LED indicates that the unit is operating within the nominal range.

The LED will remain off when either:

- A)** The Ignition Wire is disconnected
- B)** Output Over Voltage or Thermal Protection



Equalizer Mode -

Output LED: This LED indicates the power output of the Equalizer

When the LED is flashing this indicates that the Equalizer either:-

- A)** Current output less than 1amp. This would indicate that the battery is equalized
- B)** or the unit has just entered current limit. A solid output LED indicates that the unit is operating with in the nominal range.

The LED will remain off when either:-

- A)** The Ignition Wire is disconnected.
- B)** Output Over Voltage or Thermal Protection

Specifications	REC - 1240	REC – 1260
Input Voltage [VDC]	23VDC to 30VDC	
Charger Mode		
Output Voltage (Absorption/Float) [VDC]	13.5VDC ± 1%	
Output Voltage (Bulk) [VDC]	14.5VDC ± 1%	
Equalizer Mode		
Output Voltage	½ Input Voltage ± 3%	
Reducer Mode		
Output Voltage	13.5VDC ± 1%	
Typical Efficiency	Greater than 85%	
Bulk Charge Current [A]	40A	60A
Stand – By Current [mADC]	20mA	
Features	Short Circuit Protection Battery Reversal Protection Over Voltage and Thermal Protection	
Dimensions [L x W x H]	313mm x 175mm x 65mm	313mm x 175mm x 65mm
Weight	2.5Kg	2.6Kg

Warranty Conditions: Our products come with guarantees that cannot be excluded under the Australian Consumer Law. The customer is entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. The customer is also entitled to have the products repaired or replaced if the products fail to be of acceptable quality and the failure does not amount to a major failure.

GSL Electronics (GSL) warrants that its products will, under normal use and service, be free of defects in material and workmanship for a period of two (2) years from the date of the original purchase by the customer as marked on the customer's original invoice. Please refer to our website for full warranty and return information which can be found at <http://www.gsl.com.au/faq.html>

