

## 25A High Voltage Reducer / Charger

Operating Instructions  
Please read these instructions before use



Congratulations on purchasing your new GSL Electronics High Voltage Reducer/Charger. This product utilises Switchmode and Microprocessor technology for the charging of 12V and 24V Batteries(Lithium,AGM,GEL and Flooded Cell). As well as charging functionality it is also able to act as a standard **Reducer** from inputs as high as 80V to either 12V or 24V. 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. It is fully protected against overload, short circuit, over temperature, 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 25 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 / 29V 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 / 27V and maintained at that level with the charger supplying just enough current to maintain the battery at full capacity.

**Fixed Mode(Reducer Mode Only)** : When the unit is set to REDUCER mode the unit will output a fixed voltage of either 13.5V or 27V.

### Installation & Safety Precautions:

1. Before mounting ensure that you have set the internal jumpers to suit your batteries and your system. Refer to Page 3 for how to access and set the jumpers.
2. The following connection sequence is to be followed after the Batteries have been disconnected and isolated from the installation:  
Ground (BLACK), Input (WHITE), Output (RED) and Control (BLUE).
3. Preferably mount the unit inside the vehicle. Avoid locations where external heat is produced e.g. exhaust system or where the batteries are located.
4. Choose a position with good ventilation where air can pass freely around the unit.
5. Ensure the unit is protected from water spray and other sources of contamination e.g. oil, grease and dust.
6. Ensure that unit is installed away from any flammable fumes, liquids or materials.
7. 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 the following conditions. reset as follows:

- **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.

### 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 23V/46V. If the input voltage drops below 22V/44V charger will switch off. When the voltage returns to above 23V/46V 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:-

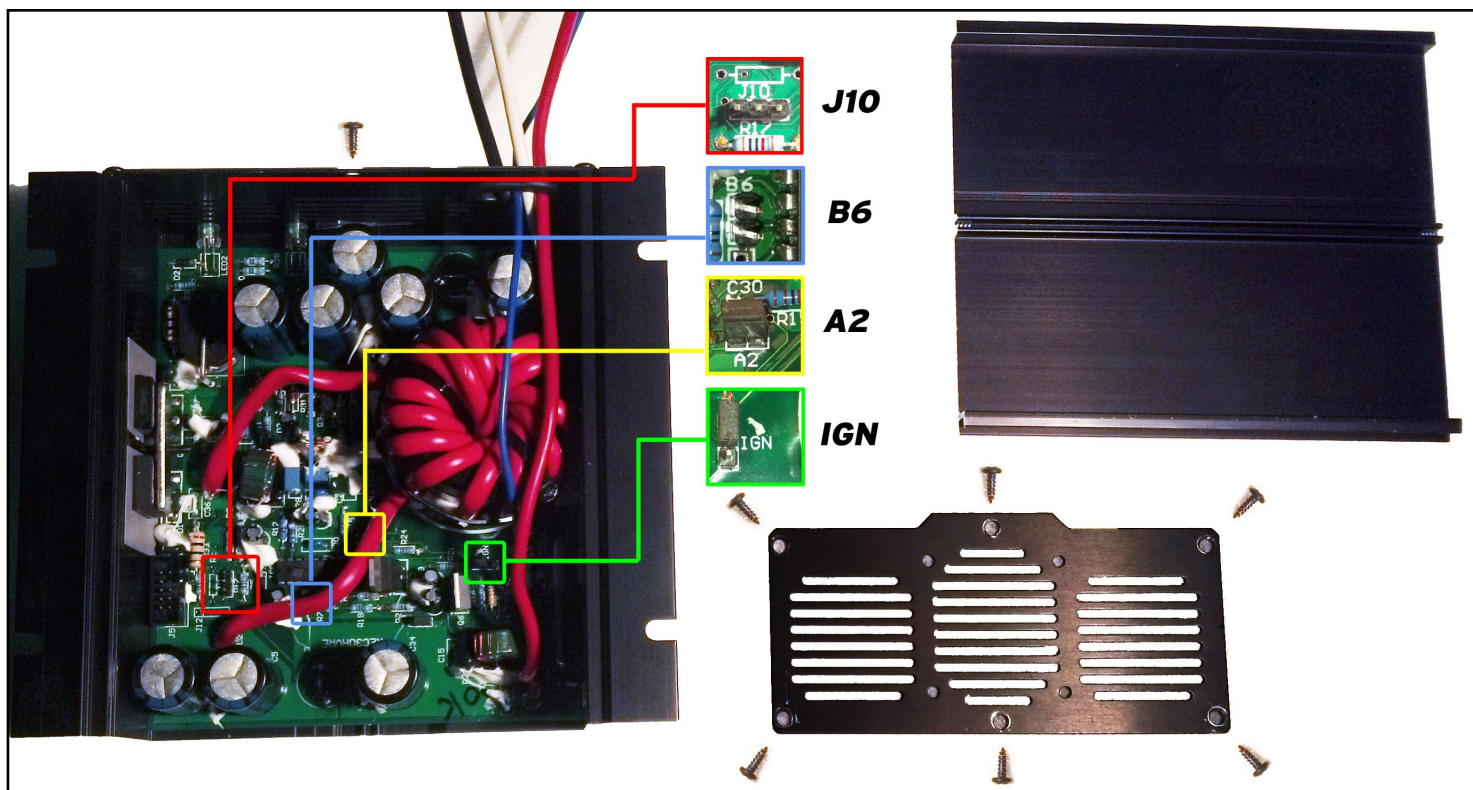
- A) The charger's battery sensing technology does not sense a battery on the output.
- B) The Ignition Wire is disconnected.
- C) Output Over Voltage or Thermal Protection

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### Setting the Jumpers:



Remove the vented back plate from the unit by unscrewing the 7 screws as pictured above.  
Slide out the bottom plate and set aside.  
Locate the desired jumper to be changed in the above image.  
Reassemble in reverse order to above after changing the desired jumper settings.

The positions are as follows:

**J10** - No Link - (Factory Default) AGM / GEL. Absorption 14.3V/28.6V , Float 13.5V/27V  
Link 1&2 - Lithium. Absorption 14.6V/29.2V , Float 12.6V/25.2V  
Link 2&3 - Vented Lead Acid. Absorption 14.5V/29V, Float 13.5V/27V

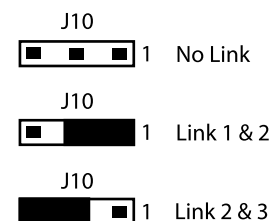
**B6** - Linked - 12V Mode (Factory Default)  
No Link - 24V Mode

**A2** - Linked - Charger mode (Chemistry set by J10)  
No Link - Reducer Mode, Fixed output 13.5V/27V (Voltage set by B6)

**IGN** - Link 1&2 - Constant ON - Where the ignition wire is not used and alternative arrangements are made to turn the unit on and off via input. With no battery to charge or no load Constant ON will draw <70mA.

Link 2&3 - Ignition Controlled - A Positive feed to the ignition wire of the unit is required to activate unit. No current drain (less than 1mA) whilst the ignition is off.

Unlinked - Unit OFF - Unit will remain off no matter the condition of the ignition wire or input to the unit.



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Specifications	REC25HV	
Input Voltage Range [ VDC ] 12V Mode	Shutdown : 18V $\pm$ 5%	Turn On : 22V $\pm$ 5%
24V Mode	Shutdown : 36V $\pm$ 5%	Turn On : 44V $\pm$ 5%
Typical Efficiency	Greater than 85%	
Bulk Charge Current [A]	25A	
Stand – By Current [mADC]	<70mA Ignition On , <1mA Ignition Off	
Features	Short Circuit Protection Over Voltage and Thermal Protection	
Dimensions [ L x W x H ]	155mm x 177mm x 68mm	
Weight	1.4Kg	

**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.