



The new GSL Battery Chargers are revolutionary 4 Stage charger conditioners, utilising Switchmode technology and microprocessor control and designed to charge 12Volt (BC240-1230) or 24Volt (BC240-2418) Lead Acid and Calcium Batteries. The battery charger provides a safe and fast method of restoring discharged batteries and maintaining them, via precisely controlled Bulk, Absorption, Float and Pulse stages.

The chargers feature a high operating efficiency of above 80% and virtually no power consumption during standby without a battery connected. The chargers are fully protected against overload, short circuit, over temperature, reverse polarity connection, over voltage and with a bulk charge timeout for additional safety. The chargers are built in a compact and strong aluminium extrusion which can be easily secured to both vertical and horizontal surfaces and will be fully operational with voltages as low as 190Vac or as high as 260Vac.

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 18/30 Amps into the battery being charged. When the battery voltage rises to approx. 14.3V/ 28.6V (15.3V/30.6V for Calcium) and the battery is approximately 70% recharged. The charger will switch automatically to Absorption Mode.

ASORPTION MODE – In this mode the battery charger output voltage is maintained at the same level until the current drops below a controlled threshold. The battery is brought up to a 90% recharge.

FLOAT MODE - The voltage is reduced to 13.5V/27V (14V/28V for Calcium) and maintained at that level with the charger supplying just enough current to maintain the battery at full capacity.

PULSE MODE – Periodic low current pulse to maintain maximum battery life.

Installation & Safety Precautions:

- a. This appliance is not meant for use by young children or infirm persons without supervision.
- b. During charging process, do not use a naked flame near a battery, due to gases emitted from the battery, which may ignite and explode.
- c. Never smoke or light cigarettes near a battery.
- d. Do not place tools on top of battery or allow tools to fall on battery.
- e. Always wear eye protection near a charging battery.
- f. Ensure a “well” ventilated area is used when testing or re-charging batteries.
- g. Ensure ventilation is adequate and venting holes are not obstructed. Inadequate ventilation may over-heat the unit and cause inefficient operation.
- h. The battery charger is intended for indoor use only. Do not expose it to outdoor weather conditions e.g. rain or dampness.
- i. If skin or clothing comes into contact with acid, flush the area(s) with water immediately. Seek medical attention if necessary.
- j. The battery charger contains hazardous voltages. There are no user serviceable components inside. If the AC supply cord is damaged, in order to avoid a hazard it must be replaced by the manufacturer or its service agent or a similarly qualified person.

Should product require service, return it to place of purchase for warranty advice.

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.***

Procedures for Charging a Battery:

The chargers are intended for 12V/24V lead acid and Calcium batteries with a capacity ranging from 50AH to 250AH. DO NOT attempt to recharge non-rechargeable batteries or non lead acid based chemistries.

1. Remove filler caps (for unsealed batteries) from battery and check electrolyte levels in each cell. If the level is low then top up with distilled water.
2. It is recommended to remove the battery from the vehicle or, if this is not practical, then disconnect the leads. If the battery has to remain connected then the battery lead not connected to the chassis has to be connected first. The other connection has to be made to the chassis remote from the battery and fuel line. Ensure that the clips bite firmly and are the correct polarity (+ Pos to + Pos & - Neg to - Neg).
3. Connect the battery charger to the supply mains.
4. Wait a few seconds until the [CHARGE] led starts flashing indicating the battery has been tested and the charge cycle has commenced.
5. If the battery is a Calcium type then press the [MODE] switch and the [CALCIUM] led will turn on indicating the Calcium charge mode.
6. When the charging is completed the [CHARGE] led will stop blinking and you may then disconnect the battery.
7. The batteries can remain connected indefinitely to the charger which will alternate between float and pulse modes for optimum long term battery maintenance.

NOTE: Colour coded clips are as follows : Red for (+) Positive pole and Black for (-) Negative pole.

Specifications		
Model	BC240 - 1230	BC240 - 2418
Input Voltage [V _{AC}]	240 V _{AC}	240 V _{AC}
Input Current [A _{RMS}]	5 A _{RMS}	4.5 A _{RMS}
Bulk Charge Output [V _{DC} ±1%] (Pb/ Ca)	14.5V _{DC} /15.5V _{DC}	29V _{DC} /31V _{DC}
Float Charge Output [V _{DC} ±1%] (Pb/ Ca)	13.5V _{DC} /14V _{DC}	27V _{DC} /28V _{DC}
Max Output Current		
[A _{DC} ±5%] (Pb/Ca)	30V _{DC} /28V _{DC}	18V _{DC} /16V _{DC}
Battery Voltage required for start-up	8V _{DC}	16V _{DC}
Dimensions [mm] (L x H x W)	250mm X 65mm X 160mm	
Weight [Kg]	2.2Kg	
E.M.I	AS2064 GR.1 A	
Safety Approval	Approval V071019, AS/NZS 3350.2.29	
Protections	Over Temperature, Over Current, Short Circuit, Over Voltage, Reverse Polarity, Bulk Charge Time-Out	
Cooling	Via Fan, Load Activated	
Efficiency (Typical)	Greater than 85%	

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>