

Fixed Connection Multi-Chemistry Automatic Battery Chargers

Operating Instructions
Please read these instructions before use



The new GSL Battery Chargers are revolutionary Multi Stage charger conditioners, utilising Switchmode and microprocessor technology and designed to charge 12 Volt Lead Acid Batteries. These new intuitive design chargers are suitable for use on GEL, AGM, VENTED and CALCIUM batteries capable of receiving a bulk charge current of 30Amps.

The unit provides a fast and efficient method for charging and maintaining batteries, via precisely controlled Bulk, Absorption and Float stages. The chargers are specifically designed for fixed battery connection and feature a very low battery drain of approximately 1mA. The charger is fully protected against overload, short circuit, over temperature, over voltage and have an absorption charge time out for additional safety.

The chargers are built in a compact and strong aluminum extrusion which can be easily secured to both vertical and horizontal surfaces and will be fully operational with voltages as low as 180VAC or as high as 260VAC.

When AC power is applied the battery voltage is evaluated to detect faulty batteries and evaluate State Of Charge. If a low SOC is detected a charge cycle is initiated and if a charged battery is detected then a Float mode is applied. While in Float mode a low SOC will initiate a charge cycle.

BULK MODE – This mode of the battery charger delivers bulk charging current regulated to 30 Amps into the battery being charged. When the battery voltage rises to approximately 14.3V / 14.6V and the battery is 70% recharged the charger will switch automatically to Absorption Mode.

ABSORPTION MODE – In this mode the battery charger output voltage is maintained at 14.3V / 14.6V until the current drops below a controlled output current threshold or the time out is reached. The battery is brought up to a 90% recharge.

FLOAT MODE - The voltage is reduced to 13.3V / 13.5V and maintained at that level with the charger supplying just enough current to maintain the battery at full capacity. This mode can be safely maintained in a permanent way.

Installation & Safety Precautions:

- a. **Caution** – always insure correct polarity for connection to battery.
- b. Wiring sequence – connect batteries first before applying the mains (AC) power.
- c. The battery type will be set as a factory default in GEL/AGM mode.
- d. Once the battery type has been set the charger will remain on that setting even if the mains power and or the battery is disconnected.
- e. This appliance is not meant for use by young children or in firm persons without supervision.
- f. During charging process, do not use a naked flame near a battery, due to gases emitted from the battery, which may ignite and explode.
- g. Never smoke or light cigarettes near a battery.
- h. Do not place tools on top of battery or allow tools to fall on battery.
- i. Always wear eye protection near a charging battery.
- j. Ensure a “well” ventilated area is used when testing or re-charging batteries.
- k. Ensure ventilation is adequate and venting holes are not obstructed. Inadequate ventilation may over-heat the unit and cause inefficient operation.
- l. The battery charger is intended for indoor use only. Do not expose it to extreme weather conditions e.g. rain or dampness.
- m. If skin or clothing comes into contact with acid, flush the area(s) with water immediately. Seek medical attention if necessary.
- n. 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.**

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Changing Chemistry Battery Type: Press and Hold the "TYPE" Push Button until both LEDs turn On and Then Reset The Charger By Disconnecting and Reconnecting The AC Power.

DO NOT Attempt to Recharge Non-Rechargeable Batteries or Non Lead Acid Based Chemistries.

CHARGE PROCEDURES:

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. Connect the battery charger to the supply mains.
3. After the mains has been connected the charger will test the battery condition, the test is indicated on the charger by way of the two LED's on simultaneously.
4. Once the charger has determined the battery's state of charge it will begin charging at the required stage necessary to bring the battery up to capacity indicated by a single blinking LED next to the selected chemistry.
6. When the charging is completed the LED will stop blinking and remain on.
7. The battery can remain connected indefinitely to the charger which will alternate between charge stages for optimum long term battery maintenance.

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

LED Status Table	
NO LEDS ON	No AC Input, check if AC is available, if AC is available please return product for repair.
BOTH LEDS BLINKING PERMANENTLY	Battery Damaged, Check and or Replace Battery.
BOTH LEDS BLINKING DURING STARTUP	Normal, Initial Battery Condition Test.
SINGLE LED FLASHING	Normal, Selected Chemistry Under Bulk Absorption.
SINGLE LED ON	Normal, Selected Chemistry Charged.
BOTH LEDS ON	Overvoltage or Over Temperature, disconnect power for 5 minutes, if the problem persists please return product for repair.

Product Specifications	
Model	BCAC1230RV
Input Voltage NOMINAL	240 VAC
Input Current MAXIMUM	5 ARMS
Bulk Charge Output [VDC±1%] GEL / AGM	14.3V
Bulk Charge Output [VDC±1%] Flooded/ CALCIUM	14.6V
Float Charge Output [VDC±1%] GEL / AGM	13.3V
Float Charge Output [VDC±1%] Flooded/ CALCIUM	13.5V
Max Output Current [ADC±5%]	30ADC
Battery Voltage Required For Start-up	6V
Protections	Over Temperature, Over Current, Short Circuit, Over Voltage, Bulk Charge Time-Out
Cooling	Via Fan, Load Activated
Efficiency (Typical)	Greater than 85%
Stand By Drain On Battery	1mA
Dimensions [mm] (L x H x W)	250mm X 65mm X 160mm
Weight [Kg]	2.2Kg

Safety Approval: E.M.I AS2064 GR.1 A | V071019 AS/NZS 3350.2.29

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>

