



DEEP SEA ELECTRONICS PLC

# 5103/5

## BATTERY CHARGER

Issue 2  
VH 5/7/01

### DESCRIPTION

The model 5100 series 3 Amp and 5 Amp **battery chargers** are designed for permanent connection to automotive batteries, maintaining them in a fully charged condition without overcharging. The chargers are also capable of rapidly recharging the batteries at a current up to the full rated output. The charger may also be used to supply a standing load attached to the battery. The charger output may be factory set to account for the standing load.

The charger is designed for reliability, ease of installation and accessibility during routine servicing. It features radio frequency suppression and its smooth output **linear mode design** has a low ripple voltage making the charger suitable for use with electronic equipment.

The charger has both **Overload** and **Short Circuit protection** features, achieved by limiting the current to a safe value during these conditions. It will automatically recover after the condition is removed.

If a short circuit or a severe overload is applied such that the voltage falls below four volts for longer than 10 seconds, then the **Charge Fail Alarm** relay will energise and the charge fail contact will close.

If the charger is inadvertently reverse connected to the battery then the fuse-link on the circuit board will rupture. This should be replaced with a 10A quick blow type.

The **electronic control** circuit ensures that the charger can remain operating during engine cranking and running, operating in parallel with the charge alternator where necessary.

The charger features a **boost charge** facility to enable rapid recharging of discharged batteries or to allow periodic equalisation of battery cells. When the 'boost mode select' terminals are connected together the charger output will rise by 0.35V per cell.

#### CAUTION!

**Boost mode must only be used in accordance with the battery manufacturers instructions otherwise cell damage or an increased maintenance requirement will occur.**

#### NOTE

**The 'Charger On' LED will illuminate even if the fuse has ruptured.**



### SPECIFICATION

#### DC OUTPUT:

12 V DC or 24V DC Nominal  
(specified on ordering)

#### AC INPUT:

220 - 250 V AC 50/60Hz  
(Specified on ordering)

#### OUTPUT CURRENT:

3Amps or 5Amps electronically limited  
(specified on ordering).

#### OPERATING TEMPERATURE RANGE:

-10 to +60°C

#### INDICATIONS:

'Charger On' LED.

#### PROTECTIONS:

Short Circuit, Over Voltage, Over-current, Reverse Polarity, Reverse Power

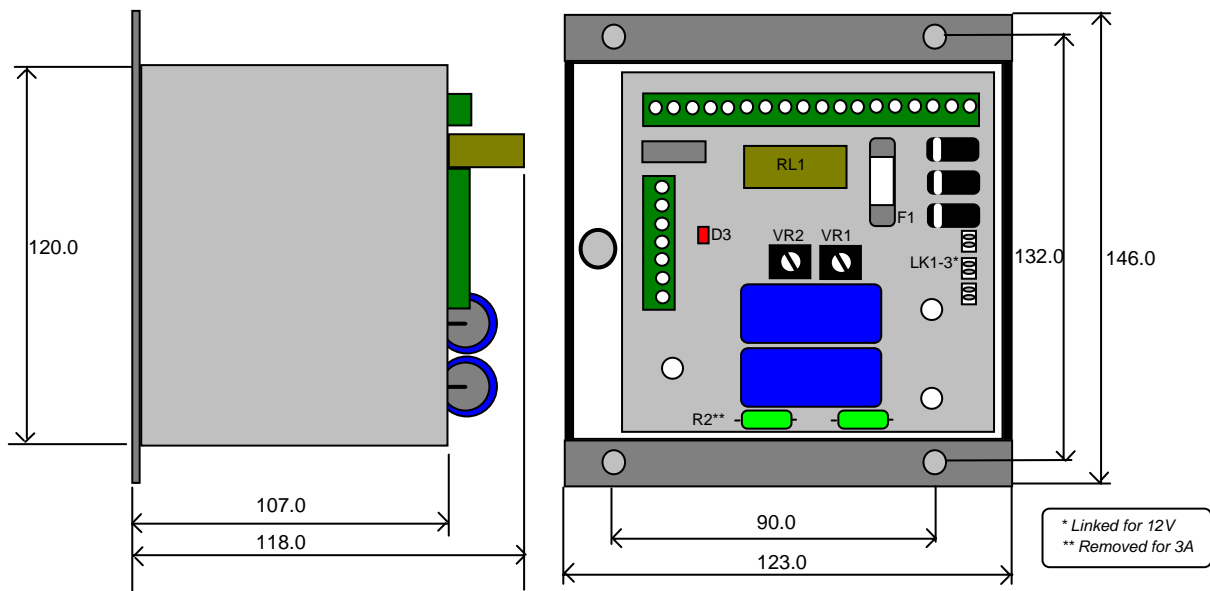
#### BOOST MODE:

+0.35V per Cell above Float voltage.

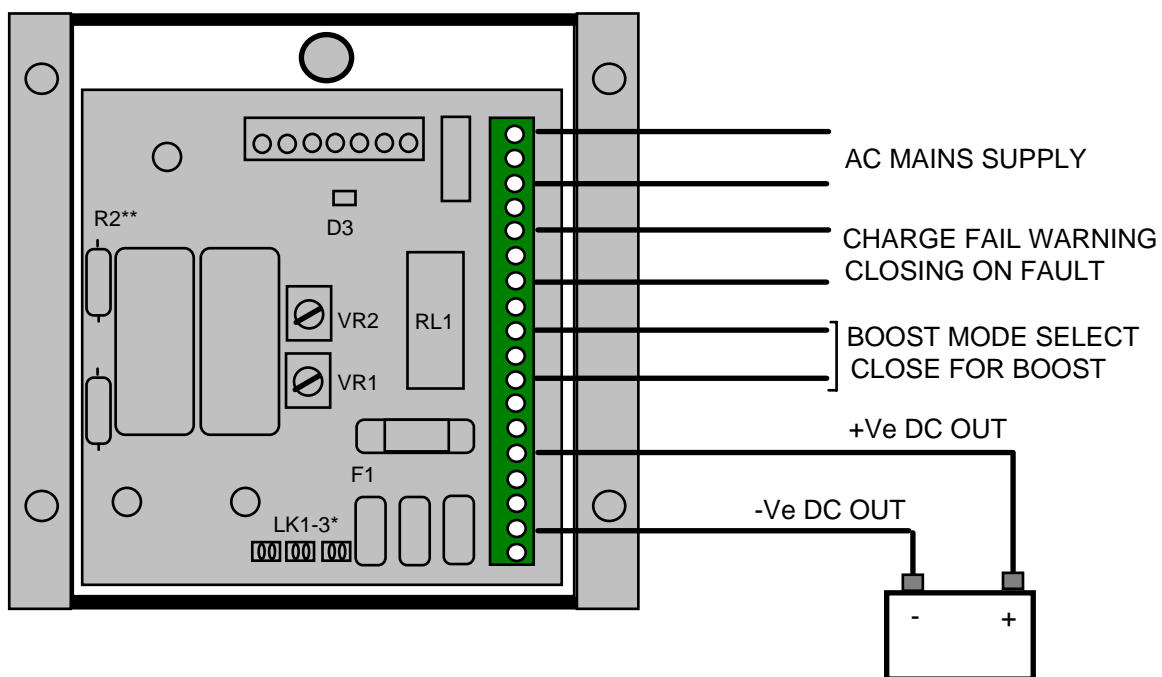
#### OPERATION:

The charger will supply current to the battery until the battery terminal voltage is equal to the set float voltage, at which point only a trickle charge current is present. When the battery voltage falls due to a load being applied and the battery being discharged, the charger will once again supply current to restore the voltage of the battery to the float voltage.

## CASE DIMENSIONS



## TYPICAL CONNECTIONS



Battery Type	12Volt	24Volt
Lead Acid	13.7V	27.4V
Planté	13.5V	27.0V
Sealed Lead Acid	13.6V	27.2V
Nicad (9 or 18 Cells)	13.0V	26.0V
Nicad (10 or 20 Cells)	14.5V	29.0V

*(These are standard settings. Please ensure that the quoted values are suitable for the intended battery. Refer to battery manufacturer for details.)*

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