

# SmartCharge DC 120-LC

## Hybrid Automatic Battery Charger

# INSTALLATION AND OPERATING INSTRUCTIONS

### IMPORTANT :

- This device is to be installed and operated by skilled and qualified personnel ONLY and in compliance with current standards to avoid damage and safety hazards.
- For use within specified parameters only.
- Ensure adequate air-flow over all sides of case.
- Do not install in proximity of explosive gasses or flammable materials.
- Isolate the DC input supply and battery before any connection or disconnection to the units terminals.

### INSTALLATION :

The charger should only be installed in electrical panels with covers or doors and adequate ventilation should be considered. The charger is mounted on symmetrical 35 x 7.5 or 35 x 15 mm DIN rail or screw fixing with optional brackets. Leave at least 25 mm of space on all sides for adequate heat dispersion and free air convection.

### CONNECTION :

Ensure that the DC supply and battery are isolated before connection. It is good practice to install the charger close to the battery and to use conductors of sufficient cross-section to minimise voltage drops (thus maximising the battery charge). The DC input should be protected by an MCB or fuse. An HRC DC output fuse should be fitted for battery protection.

### OPERATION :

#### Default Mode (3 Stage Charger With Battery Detection):

The SmartCharge DC 120-LC is designed for charging most battery types. The default configuration is 3 stage (bulk / absorb / float). When a battery is connected the chargers output switches on to charge the battery. Removal of the battery and all connected load switches the output off. The charger is protected against reverse battery polarity in this mode.

#### PSU Mode (PSU / 2 Stage Charger Without Battery Detection) :

Linking pins 7 and 8 of the signals connector 'C1' forces the charger into PSU mode (constant current / constant voltage output) where the chargers output is always on. The charger is not protected against reverse battery polarity in this mode.

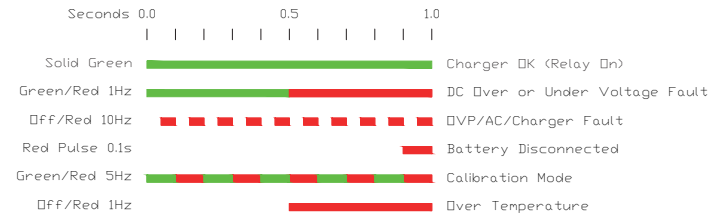
### OUTPUT VOLTAGE CALIBRATION :

The output float voltage is factory preset to 13.8V. The operator MUST ensure that the chargers output voltage is set in accordance with the battery manufacturers recommendations.

#### To set the output voltage:

- Disconnect the battery and all loads connected to the output terminals.
- Attach a calibrated DVM to the +/- output terminals.
- Turn the 'CAL' pot fully anti-clockwise (minimum). The LED is off.
- When the LED flashes Green / Red adjust the 'CAL' pot to the desired output voltage, displayed on the DVM.
- When the LED stops flashing Green / Red the unit is calibrated.

### STATUS LED MODES:



**DC INPUT RATING :** Voltage Range 34 - 67V DC. Input Current 2.8A @ 48V DC.

**DC OUTPUT RATING :** Voltage & Current 12V 10.0A  
Ripple & Noise ±0.5%  
Line Regulation ±0.5%  
Load Regulation ±1.0%  
Efficiency Up to 89%

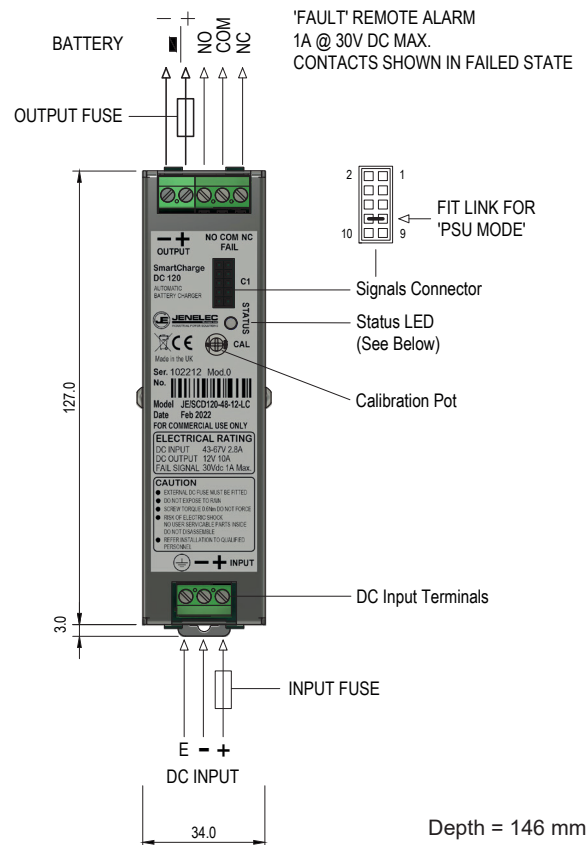
**OPERATING CONDITIONS :** Operating Temperature -10 to +50 °C  
Storage Temperature -20 to +85 °C

**CONNECTION :** Rising clamp terminals.  
Maximum cable cross-section = 2.5mm<sup>2</sup>.

**ENCLOSURE :** Metal, bare aluminium / RAL9005 black finish.

**WEIGHT :** 0.8 kgs.

### EXTERNAL CONNECTIONS & DIMENSIONS :



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