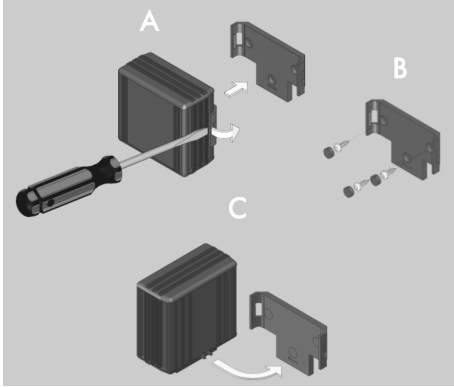


OPERATING & ASSEMBLY INSTRUCTIONS

IC Series Battery Chargers DC-DC



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SAFETY

- PACKING CONTENTS
 - 1 x IC Battery Charger
 - 1 x Mounting Clip
 - 3 x Screws
 - 3 x Screw Covers
 - 5 x Crimp Connectors
- SAFETY
 - The device must not be exposed to severe mechanical shocks.
 - The device must not be exposed to extreme temperature, direct sunlight or vigorous vibration.
 - The device may only be used within a dry environment, such as a vehicle.
 - During operation the unit can be hot to touch. Therefore it must be sited so that during operation it is not readily accessible.
 - Do not install this device on hot vehicle parts and ensure there is sufficient space around the device for air circulation and cooling.
 - The wiring harness should be protected by fuses.
 - Observe the magnitude and polarity of the input/output voltage when installing. Incorrect polarity of the output could damage the circuit.
 - Isolate the circuit before you connect or remove the device.
 - Ensure that the output of the device is not short-circuited.
 - Never open the device casing and never repair it. The device must be replaced if it is damaged.
- FEATURES
 - Click 'n' Fit mounting clip for fast installation.
 - Supplied with FASTON terminals.
 - Safety limiter for heat and current.
 - LED status indicator.

ASSEMBLY

- ASSEMBLY
 1. Carefully remove the mounting clip from the device using a screwdriver (A).
 2. Select a cool, dry and ventilated position to install the device which is not exposed to direct sunlight and where the device can be assembled vertically or horizontally.
 3. Isolate the power to the wiring before commencing installation.
 4. Using the mounting clip as a template, mark the fixing positions.
 5. Drill three holes Ø3.5mm for the screws. Before you start, ensure that any cables or other lines cannot be damaged when drilling.
 6. Attach the mounting clip with the screws provided.
 7. Cover the screw heads with the protective caps (B).
 8. Insert the device in the mounting clip and press down until it clicks into place. When doing so, make sure that the guide piece on the base of the device fits properly into the recess on the mounting clip (C).
 9. Correctly connect the lead.
 10. Reconnect the power to the wiring.
- THE CONNECTIONS

Isolate the circuit before you connect or disconnect the device. Connect the unit as detailed below (D).

 - (1) - Input Positive
 - (2) - Input Negative
 - (3) - Mode
 - (4) - Output Negative
 - (5) - Output Positive
 - (6) - Earth Wire
- FUSING

The input and output wiring must be fused appropriately.

INFORMATION

- TECHNICAL DATA

Part Number	Current	Rated Voltage	Dimensions	Weight
ICi12-12 072	6A	12V	165x87x45mm	0.6 Kg
ICi24-12 144	12A	12V	165x87x45mm	0.6 Kg
ICi24-24 144	6A	24V	165x87x45mm	0.6 Kg
 - BATTERY CHARGER STATUS LED
 - Amber

The charger is in Standby mode; please connect a battery to begin charging.
 - Green
 - 1 flash – The charger has detected a very depleted battery and is in Trickle mode, this will continue for 10 minutes maximum. If the battery voltage increases above the Good Battery voltage the charger will progress to the Bulk mode.
 - 2 flashes – The charger is in Bulk mode, the output current will be limited to the rated charge current (Ib). When the battery reaches the Bulk Voltage, the charger will progress to Top Off mode.
 - 3 flashes – The charger is in Top Off mode, the battery voltage will be held at the Bulk Voltage. When the charging current decays below one tenth of the normal charge current (Ib/10), the charger will progress to Float mode.
 - Constant – The charger is in Float mode, the charger output current will be limited to Ib/10. If the battery voltage drops below the Good Battery voltage the charger will go back to Bulk mode.
 - Red
 - 1 flash – The battery voltage is too high (> 14.1V).
 - 2 flashes – The battery voltage is too low (< 7.5V).
 - 3 flashes – The safety timeout has expired to prevent damage occurring to the battery.
 - Constant – The battery charger failed to start-up successfully.
- See E for operation flow chart
See F for charging curve

- MODE TERMINAL

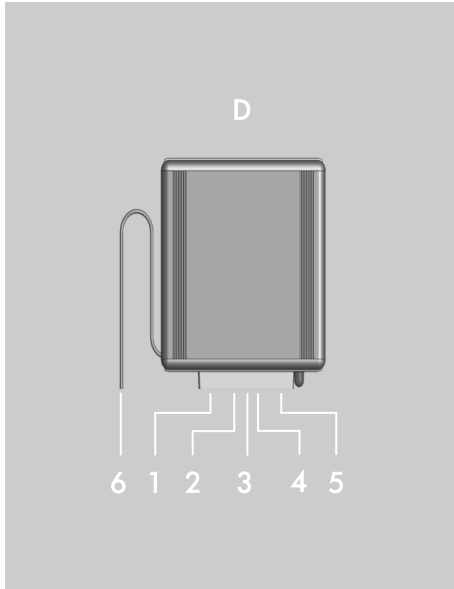
This terminal allows the charger to operate as a Float Mode charger, i.e. a constant 13.6V with no safety time-out. In this mode the current will be limited to the rated current.

To enable this mode, power-off the unit, connect the mode terminal to the battery negative and power-on the unit. To re-enable Intelligent Charge Mode, power-off the unit, disconnect the mode terminal from the battery negative and power-on the unit.

The mode terminal must **never** be connected to either of the units input terminals, doing so may damage the unit permanently.

To allow accurate battery measurement please use wire of sufficient area, no less than 2.5mm² is recommended for 6A charger or 4mm² for a 12A charger. Increase wire size if charger and battery are not in close proximity.
 - WARRANTY

Faulty units returned to us will be repaired or replaced free of charge without quibble. Usually, repaired faulty items are dispatched within 48 hours of being received. We have no control over the way the units are installed, the type of electrical system the units are installed on and the condition of such electrical systems, neither can we control the kind of load that is applied and the operating environment on which the units are used. So our guarantee is limited to the replacing of a failed unit, and we will not pay for any consequential damage.
- CE** This device complies with the EU directive 2004/108/EC. The type plate is located on the top of the device.



OPERATION DIAGRAMS

