

PROJECTA

**INTELLI-CHARGE LITHIUM
BATTERY CHARGER
12 VOLT, 5 STAGE SWITCHMODE**



P/No IC100L

IMPORTANT SAFETY INFORMATION

Please read this manual thoroughly before use and store in a safe place for future reference.

WARNING

- Explosive gases may be released by a battery when charging – it must be placed in a well-ventilated area, away from flames and sparks.
- Before charging, read the instructions.
- For indoor use. Do not expose to rain.
- Always keep the device at room temperature.
- For charging Lithium Iron Phosphate batteries and Lead Acid variations ONLY.
- Disconnect the 240V mains supply before making or breaking the connections to the battery.
- Connection to supply mains is to be in accordance with National wiring rules.
- Do not attempt to charge non-rechargeable batteries.
- Never charge a frozen battery.
- Corrosive substances may escape from the battery during charging and damage delicate surfaces. Store and charge in a suitable area.
- Ensure all vehicle accessories including lights, heaters, appliances etc are turned off prior to charging.
- This appliance can be used by children from 8 years and above and persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, only if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children shall not play with the appliance and should be supervised to ensure this. Cleaning and user maintenance shall not be made by children without supervision.
- Battery chargers for charging automobile batteries:
 - The battery terminal not connected to the chassis has to be connected first. The other connection is to be made to the chassis, remote from the battery and fuel line. The battery charger is then to be connected to the supply mains.
 - After charging, disconnect the battery charger from the supply mains. Then remove the chassis connection and then the battery connection.

FEATURES

5 STAGE AUTOMATIC CHARGING

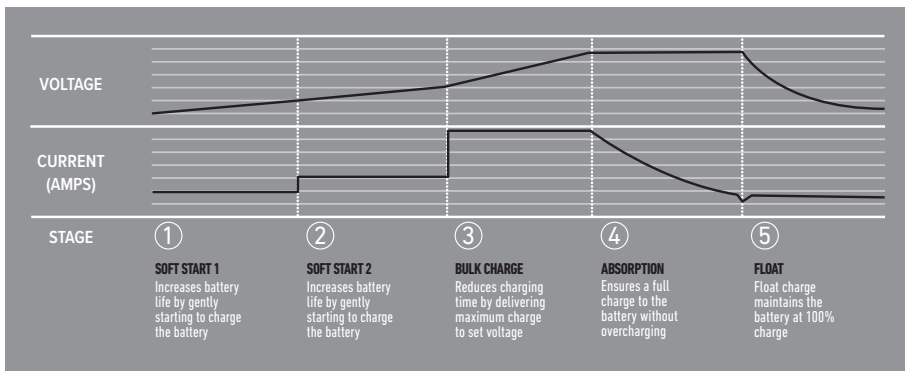
This is a fully automatic battery charger with 5 charge stages.

Automatic charging protects your battery from being overcharged so you can leave the charger connected to the battery indefinitely.

5 stage charging is a very comprehensive and accurate charging technique that gives your battery longer life and better performance compared to using traditional chargers.

The 5 charge stages are:

Soft Start 1, Soft Start 2, Bulk, Absorption and Float.



Soft Start 1

This is a preliminary charge that is for heavily discharged batteries where the voltage is between 2-8 Volts. Charge is limited to 0.5A.

Soft Start 2

This is a preliminary charge that is for discharged batteries where the voltage is between 8-10 Volts. Charge is limited to 0.8A.

Bulk (Constant Current)

The Bulk stage reduces charging time by charging the battery at the maximum rate (constant current) to a set voltage, at which point the battery is approximately 80% charged.

Absorption (Constant Voltage)

The absorption stage charges the battery to 100% by adjusting the charge rate allowing the battery to absorb more power.

Float

The Float stage maintains the battery at 100% charge without overcharging or damaging the battery. This means the charger can be left connected to the battery indefinitely.

CHARGE STATUS INDICATOR

The CHARGING and FULLY CHARGED LEDs will illuminate and flash in various patterns to indicate the different stages of charging. See below for flash patterns.

	Soft Start 1	Soft Start 2	Bulk	Absorption	Float
Green LED	----- (Fast Flash)	----- (Fast Flash)	— — — — (Slow Flash)	— — — — (Slow Flash)	————— (Solid On)
Red LED	Solid On: AC Power Connected Flashing: Fault (see Faults and Errors on page 9)				

Flashing GREEN LED: Charging

Solid GREEN LED: Charged

Flashing RED LED: Fault

Solid RED LED: Power on not connected

POLARITY PROTECTION

Prevents the output leads from sparking due to accidental reverse connection or short circuit making the charger safer to use around batteries.

OVER TEMPERATURE PROTECTION

If the temperature within the charger rises too high, the charger will begin reducing the power output. If still unsuccessful, the charger will shutdown until it cools down.

SWITCHMODE TECHNOLOGY

Using the latest technology in battery chargers, switchmode chargers convert 240VAC power to 12VDC power using electronic components unlike traditional battery chargers that rely on heavy transformers. This allows the charger to be lightweight and compact without sacrificing on performance.

SPECIFICATIONS

P/No.	IC100L
Type	5 stage
Input (Nominal)	240Va.c. 50Hz
Output Voltage	12V
Output Current	1A
Minimum Start Voltage	2.0V
Back Drain	1mA
CHARGE CONTROL	
Soft Start 1	0.5A, until the battery reaches 8.0V
Soft Start 2	0.8A, until the battery reaches 10.0V
Bulk	1.0A up to 14.5V
Absorption	Constant voltage 14.5V until current drops to 0.3A
Float	13.5V
BATTERY RANGE	
Lead Acid (AGM, Wet, Calcium)	100-320CCA
Lithium Iron Phosphate	2-10Ah
Types of Batteries	Lithium Iron Phosphate & Lead Acid (AGM, Wet, Calcium)

Premium Spark free clamps

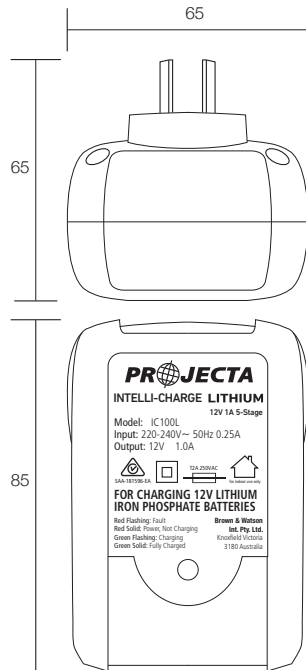
3 meters of cable



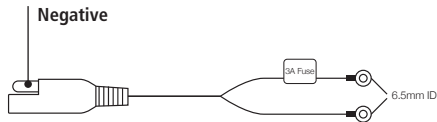
Fused wiring harness

5 Stage Charging

LED Indicator



Comes with a fused wiring harness (3A fuse and cover)

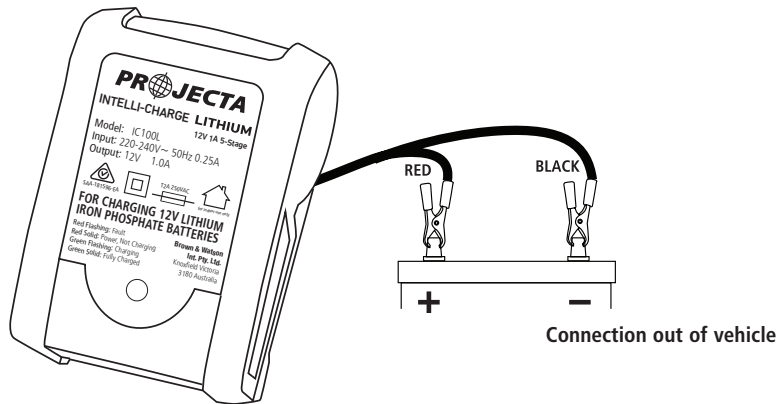


CHARGING INSTRUCTIONS

STEP 1A – CONNECTION OUT OF THE VEHICLE

Connect the RED lead (battery clip) from the charger to the Positive (+) battery post.

Connect the BLACK lead (battery clip) from the charger to the Negative (-) battery post.



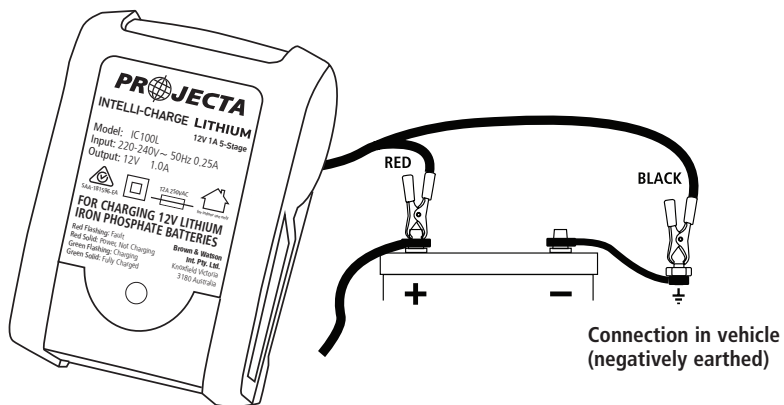
STEP 1B – CONNECTION IN VEHICLE

Determine if the vehicle is Positively (+) or Negatively (-) earthed. Negatively earthed vehicles have a cable (usually black) from the Negative battery terminal to the vehicle's chassis.

Negatively earthed (most vehicles)

Connect the RED lead (battery clip) from the charger to the Positive (+) battery terminal.

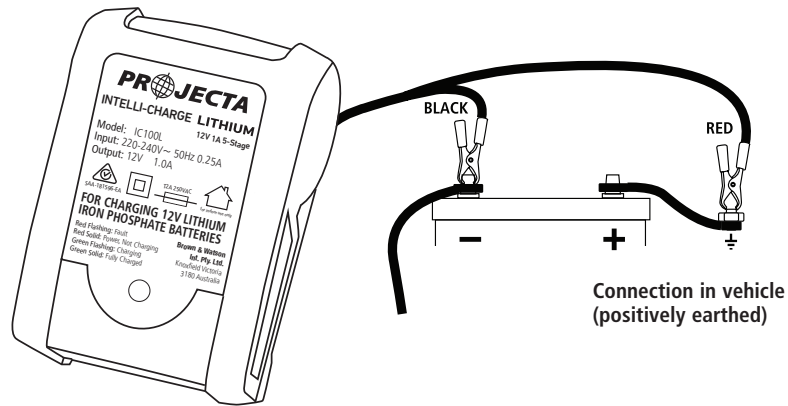
Connect the BLACK lead (battery clip) from the charger to the vehicle's chassis away from the fuel line or moving parts.



Positively earthed

Connect the BLACK lead (battery clip) from the charger to the Negative (-) battery terminal.

Connect the RED lead (battery clip) from the charger to the vehicle's chassis away from the fuel line or moving parts.



STEP 2 – CONNECT TO 240V MAINS POWER

Connect the battery charger to the 240V mains powered socket and turn on the mains power.

STEP 3 – CHARGING

During the charge process, the LED will flash various patterns. This is normal and indicates the various charge stages. Refer to "How can I tell what stage the battery charger is in" in the FAQ section, page 10.

When the LED is GREEN and remains on, this is known as the float stage and the charger can be left connected to the battery without over charging.

If the POWER LED is flashing RED, there is a fault.

STEP 4 – DISCONNECTION

Ensure the 240V mains switch is turned off and the charger is disconnected from the 240V mains power.

Battery out of vehicle

Remove the BLACK lead (battery clip) from the battery.

Remove the RED lead (battery clip) from battery.

Battery in vehicle

Remove the chassis connection.

Remove the battery terminal connection.

PERMANENT WIRING TO BATTERY

It is possible to connect the wiring harness permanently to the vehicle.

Use the wiring harness provided. It comes with 3A fuse.

Connection:

1. Connect the RED lead (with inline fuse and ring terminal) to the Positive (+) battery post.
2. Connect the BLACK lead (with ring terminal) to the Negative (-) battery post.
3. Connect the wiring harness to the charger.

If the charger is used in a Permanent/Hard Wired application and the vehicle will not be used for some time, it is best to leave the charger connected to mains power (turned 'On') so that it can maintain the battery fully charged.

FAULT CODES

Red LED has the following fault codes:

Red Solid On: AC Power Connected, Output disconnected

Red Slow Flashing: Battery clips shorted or reverse connected. Check to make sure the battery clamps are correctly connected to the battery or not shorted together.

Red Fast Flashing: Check the battery as it could be faulty or a load could be drawing power from it. A time out in Soft Start, Bulk or Absorption could cause this indication.

FREQUENTLY ASKED QUESTIONS

Q. How do I know if the battery is charged?

A. The charger's LED will be GREEN and solid ON.

Q. I have connected the charger properly but the 'CHARGING LED' does not come on?

A. In some cases batteries can be flattened to the point where they have very little or no voltage. This can occur if a small amount of power is used for a long time, for example a map reading light is left on for a week or more. Projecta 5 Stage chargers are designed to charge from as little as 2V.

If the voltage is less than 2.0V this is very low and the battery may not be rechargeable. You could try an electronic powersupply to gradually bring the battery voltage above 2.0V so the charger can then take over or take the battery back to the place of purchase so they can try and repair it.

Q. How can I tell what stage the battery charger is in?

A. Below are the conditions that are displayed by the LEDs for each of the charge stages.

	Soft Start 1	Soft Start 2	Bulk	Absorption	Float
Green LED	----- (Fast Flash)	----- (Fast Flash)	— — — — (Slow Flash)	— — — — (Slow Flash)	————— (Solid On)
Red LED	Solid On: AC Power Connected Flashing: Fault (see Faults and Errors on page 9)				

Q. What if I have an appliance connected to the battery whilst charging?

A. Powering an appliance while charging your battery will impact on the battery chargers ability to accurately measure the battery's response to the charge being applied. The battery charger has been designed to accommodate this situation although not recommended.

For optimum charging it is recommended to charge without any appliance load on the battery.

Q. Can I use my IC100L Lithium charger to charge or maintain my AGM battery.

A. Yes. The charging algorithm is suitable for AGM, Wet and Calcium Batteries and some Gel batteries as well as Lithium Iron Phosphate batteries. The IC100L is specifically designed for Lithium Iron Phosphate batteries but will charge or Maintain Lead Acid batteries within the required rating just fine.

NOTES

WARRANTY STATEMENT

Applicable only to product sold in Australia

Brown & Watson International Pty Ltd of 1500 Ferntree Gully Road, Knoxfield, Vic., telephone (03) 9730 6000, fax (03) 9730 6050, warrants that all products described in its current catalogue (save and except for all bulbs and lenses whether made of glass or some other substance) will under normal use and service be free of failures in material and workmanship for a period of one (1) year (unless this period has been extended as indicated elsewhere) from the date of the original purchase by the consumer as marked on the invoice. This warranty does not cover ordinary wear and tear, abuse, alteration of products or damage caused by the consumer.

To make a warranty claim the consumer must deliver the product at their cost to the original place of purchase or to any other place which may be nominated by either BWI or the retailer from where the product was bought in order that a warranty assessment may be performed. The consumer must also deliver the original invoice evidencing the date and place of purchase together with an explanation in writing as to the nature of the claim.

In the event that the claim is determined to be for a minor failure of the product then BWI reserves the right to repair or replace it at its discretion. In the event that a major failure is determined the consumer will be entitled to a replacement or a refund as well as compensation for any other reasonably foreseeable loss or damage.

This warranty is in addition to any other rights or remedies that the consumer may have under State or Federal legislation.

IMPORTANT NOTE

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

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