PROJECTA

CHARGE N' MAINTAIN
BATTERY CHARGER
8 STAGE SWITCHMODE

P/No's. AC040, AC080

IMPORTANT SAFETY INFORMATION

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

WARNINGS

- Explosive gases may escape from the battery during charging. Prevent flames and sparks. Provide adequate ventilation
- Before charging, read the instructions
- For charging 12 Volt lead acid batteries ONLY (AC040 6/12 Volt)
- Disconnect the 240V mains supply before making or breaking the connections to the battery
- The battery charger must be plugged into an earthed socket-outlet
- 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
- If the AC cord is damaged do not attempt to use. It must be replaced or repaired by a qualified person
- 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 is not intended for use by young children or infirm persons unless they have been adequately supervised by a responsible person to ensure that they can use the appliance safely
- Young children should be supervised to ensure that they do not play with the appliance

8-STAGE AUTOMATIC CHARGING

The AC040 and AC080 are fully automatic battery chargers with 8 charge stages.

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

8-stage charging is a sophisticated charging technique that gives your battery longer life and better performance compared to using traditional chargers.

Projecta's CHARGE N' MAINTAIN chargers are suitable for most 12V automotive, marine and deep cycle batteries. (AC040 also suits 6V batteries).

The 8 charge stages are:
Battery Rescue, Soft Pulse, Pulse Charge, Soft Start, Bulk, Absorption, Battery Test and Float.

BATTERY RESCUE
Applies a high voltage to break down the Lead Sulfate build up in heavily sulfated batteries.

SOFT PULSE
Pulses a small current as the battery is starting to take charge.

PULSE CHARGE
Increases the pulse current as the battery is starting to take charge.

SOFT START
This is a preliminary charge process that gently introduces power to the battery, protecting the battery and increasing battery life.

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.

BATTERY TEST
The analysis mode tests the battery to ensure that it has taken the charge; if the battery passes the test the charger will proceed to the float stage.

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.

FEATURES

MODE BUTTON

Toggles through the different features of the charger on the LCD display

Toogles through the following:

Battery voltage:	Shows the battery voltage.
12V Slow charging –	AC040 chargers to 14.4V/1.0A AC080 chargers to14.4V/2.0A
12V Fast charging –	AC040 chargers to 14.4V/4.0A AC080 chargers to14.4V/8.0A
12V Winter charging –	AC040 chargers to 14.7V/4.0A AC080 chargers to14.7V/8.0A
6V Charging (AC040 only) –	Chargers 6 Volt batteries

INTERACTIVE LCD SCREEN

The screen whilst charging will show the battery voltage and battery gauge. The screen is handy while setting up.

SWITCHMODE TECHNOLOGY

Using the latest technology in battery chargers, switchmode chargers convert 240V AC power to 12V DC 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.

SPARK-FREE AND POLARITY PROTECTED

All Projecta Charge 'N' Maintain battery chargers are spark-free and are protected against accidental reverse connection making them safer to use around batteries.

WEATHER PROOF IP65

The chargers are IP65 rated which means that can by used outside without getting damaged. Although the charger is a 240VAC device care should be taken that the plug is not submersed in water.

CHARGING INSTRUCTIONS

STEP 1 – CHECK THE ELECTROLYTE LEVEL

Prior to charging the battery, remove the vent caps and check the electrolyte level (not required on sealed & maintenance free batteries). The electrolyte should be 6mm (1/4") above the battery's plates. If low, top up with distilled water to the correct level and refit the vent caps.

STEP 2 – CONNECT TO BATTERY

There are three options for connecting to a battery.

Step 2A – Connecting to a battery that is out of the vehicle

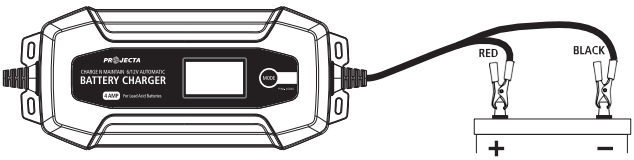
Step 2B – Connecting to a battery fitted to a vehicle

Step 2C – Permanent hard wiring connection to a battery

STEP 2A – BATTERY OUT OF 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.



Connection out of vehicle

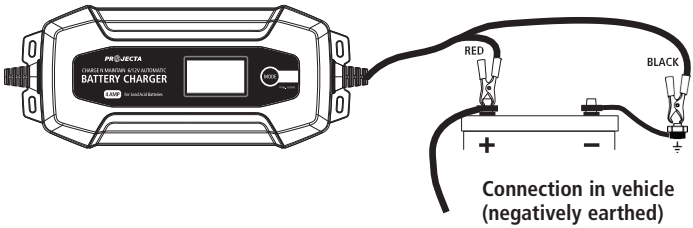
STEP 2B – BATTERY IN VEHICLE

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.

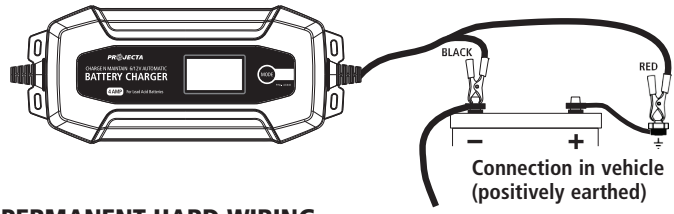


Connection in vehicle (negatively earthed)

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.

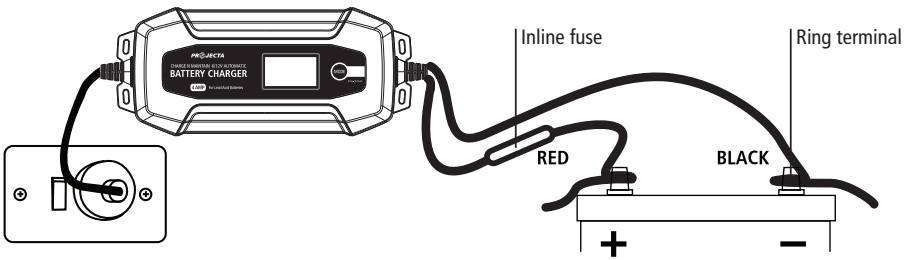


STEP 2C – PERMANENT HARD WIRING

It is possible to hard wire the DC charging leads to the battery for permanent installations. Use the supplied fused wiring harness.
AC040, uses 7.5A fuse
AC080, uses 10A fuse

Connection:

1. Connect the RED lead (with inline fuse and ring terminal) to the Positive (+) battery post, remove the supplied fuse.
2. Connect the BLACK lead (with ring terminal) to the Negative (-) battery post.



3. Fit the correctly rated fuse.

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.

Ensure any modification to the 240V mains lead is carried out by a qualified person and that connection to supply mains is in accordance with National wiring rules.

STEP 3 – CONNECT TO 240V MAINS POWER

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

STEP 4 – SET CHARGE RATE

The charge rate should be set according to the size of the battery. To set, press the MODE button repeatedly until desired setting is displayed. See the recommended charge rates for various battery sizes in the table at top of page 7. (Not all outputs are available on all models)

Amps	Deep Cycle (Ah)	Automotive (CCA)	Marine (MCA)	Time (Hrs)
1 Amp (AC040 Slow)	7–24	40–140	55–200	7–26
2 Amp (AC080 Slow)	14–50	80–300	110–400	7–26
4 Amp (AC040 Fast)	24–80	140–480	200–650	6–24
8 Amp (AC080 Fast)	50–160	300–1000	400–1300	6–24

STEP 5 – SET BATTERY TYPE

The AC040 & AC080 come with winter mode so when the temperature of the battery is close to 0°C degrees (<5°C) winter mode should be set.

Toggle through the Mode button to do this.

STEP 6 – CHARGING

Whilst Charging the LCD screen will show the battery voltage and a battery gauge at the bottom will show the status of Charge. When fully Charged the battery gauge will be fully highlighted and the word "FULL" will be displayed.

If the RECON symbol is shown on the display then the charger is trying to repair the battery. Which will take longer to charge.

If there are any faults during charging refer to the "Fault & Errors" explanation at the bottom of this page.

STEP 7 – 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.

FAULTS & ERRORS

There are 4 possible error signals that may be displayed. These are explained in the following table:

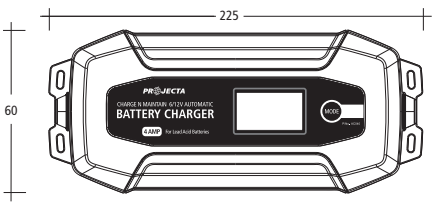
F1	1. No clamps connected. 2. Short circuit 3. Reverse polarity connection
F2	Loose clamps during charging
F3	Battery voltage is too high
F4	Bad battery

SPECIFICATIONS

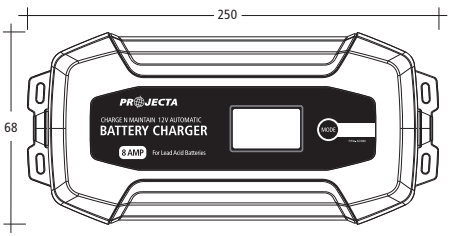
Part No.	AC040	AC080
Input (nominal)	240VAC, 50Hz	
Input Power	35.5W @ 6V, 63.5W @ 12V	128.5W
Output Voltage	6/12V	12V
Output Current	1, 4A	2, 8A
Minimum Start Voltage	2.0V	
Back Drain	2mA	
Charge Control		
Battery Rescue Part 1 Battery voltage increases >14.4V immediately	500mA up 16.0V for 5 seconds, until voltage reduces to 13.5V	600mA up 16.0V for 5 seconds, until voltage reduces to 13.5V
Battery Rescue Part 2 Battery voltage increases >14.4V after stage 1	500mA up to 17.0V, if voltage drops to 13.5V continue charging or 2 hour limit then fault.	600mA up to 17.0V, if voltage drops to 13.5V continue charging or 2 hour limit then fault.
Soft Pulse 2-6.0V	0.8A for 1 second then turn of for 2 seconds 2 hour limit then fault	
Pulse Charge part 2 6.0-10.5V	Set current to 0.8A for 5 seconds then 2A for 5 seconds. 2 hour limit then fault.	
Soft Start 10.5-12.0V 8 hour timeout then transits to bulk	1A	2A
Bulk	Set current to 13.6V (12V), 6.8V (6V)	Set current to 13.6V
Absorption	Constant voltage (12V) 14.4V (Normal), 14.7V (Winter), 7.2V (6V)	
Absorption transits at following set points	Slow(1A): <0.5A Fast(4A): <0.6A Winter(4A): <0.6A 6V(4A): <0.6A	Slow(2A): <0.5A Fast(8A): <1.2A Winter(8A): <1.2A
Absorption timeout, transits to Analysis	6 hours	
Analysis	60 second timeout, if battery drops <12.5V set F4 fault	
Float	(12V) 13.8V 2 min on, 2 min. off (6V) Cutout 7.2V, Cut in 6.5V	(12V) 13.8V 2 min on, 2 min. off
Battery Range		
Deep Cycle	7-80Ah	14-160Ah
Automotive	40-480CCA	80-1000CCA
Marine	55-650MCA	110-1300MCA
Size (mm)	225 x 60 x 90	250 x 68 x 95
Weight	0.66kg	0.87kg

PRODUCT OVERVIEW

P/No. AC040



P/No. AC080



FREQUENTLY ASKED QUESTIONS

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

A. The charger will indicate full on the display. Alternatively use a Battery Hydrometer (Projecta Part No. BH100). A reading of 1.250 or more in each cell indicates a fully charged battery.

Q. I have connected the charger properly but the Charger won't start charging?

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 8 Stage chargers are designed to charge from as little as little as 2.0 Volts.

If the voltage is lower than the voltages stated above use a pair of booster cables to connect between two batteries to provide more than 2.0 Volts to the battery being charged. The charger can then start to charge the battery and the booster cables can be removed.

Q. Can I use the charger as a power supply?

A. Projecta 8 Stage chargers are designed to only supply power to the battery clips when they are connected correctly to a battery. This is to prevent sparks during connection to the battery or if connected incorrectly by mistake. This safety feature prevents the charger from being used as a 'Power Supply'

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

A. Look at the gauge at the bottom of the display and voltage to determine at what point the charger is at.

Q. I have connected my charger to the battery and the display shows 0.00V.

A. Check to make sure the battery charger clamps are correctly connected to the battery posts or battery terminal.

Check to make sure the battery clamps are connected Positive (Red) clamp to the positive post of the battery and the Negative (Black) clamp is connected to the Negative post on the battery.

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 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.

Distributed by

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IS435
Issue 2 29.09.21