

# Clarke® Auto Charge



## 6V/12V INTELLIGENT BATTERY CHARGER MODEL NO: IBC4 PART NO: 6267030

### OPERATION & MAINTENANCE INSTRUCTIONS



ORIGINAL INSTRUCTIONS

DL0721

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## INTRODUCTION

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Thank you for purchasing this CLARKE Battery Charger.

Please read this manual thoroughly, before attempting to operate this product and carefully follow all instructions given.

It is vitally important that ALL precautions are taken, as specified, which will not only provide protection for yourself and that of others around you, but will also ensure that the battery charger will give you long and satisfactory service.

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## GUARANTEE

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This CLARKE product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

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## ENVIRONMENTAL RECYCLING POLICY

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Through purchase of this product, the customer is taking on the obligation to deal with the WEEE in accordance with the WEEE regulations in relation to the treatment, recycling & recovery and environmentally sound disposal of the WEEE.

In effect, this means that this product must not be disposed of with general household waste. It must be disposed of according to the laws governing Waste Electrical and Electronic Equipment (WEEE) at a recognised disposal facility.

## SPECIFICATIONS

Model Number	IBC4
Input Voltage / Current	230 V, 50Hz
Battery Charging Voltages:	6V & 12V
Power	Variable Power, 60W Max
Charging Current	6V: 1A, 12V: 1A/4A
Charging Steps	8 steps, (smart charger)
Charging Battery Size	6V: From 1.2 up to 40Ah
	12V: From 1.2 up to 120Ah
IP Rating	IP54
Operating Temperature Range	0 to 40°C
Dimensions (L x W x H)	190mm x 80mm x 50mm
Power Cable Length	1.8m
Charging Clamp Cable Length	1.32m
Weight	600g

## SAFETY SYMBOLS

	Before Use, Read The Instructions Fully		For Indoor Use Only
	Class II Appliance		Wear Eye Protection
	Wear a Protective Mask		Wear Protective Gloves

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# SAFETY PRECAUTIONS

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**WARNING: ALWAYS SWITCH OFF THE CHARGER WHEN CONNECTING OR DISCONNECTING LEADS TO AVOID SPARKING AS HIGHLY INFLAMMABLE HYDROGEN GAS CAN BE RELEASED IN THE PROCESS OF BATTERY CHARGING**

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## PLEASE READ BEFORE USING THIS UNIT

1. Batteries can generate explosive gases during normal operation. **ALWAYS** use in well ventilated area.
2. **DO NOT** smoke, strike a match or cause a spark in the vicinity of the battery or engine. Avoid explosive gas, flames and sparks.
3. Remove all personal jewellery, such as rings, bracelets, necklaces and watches while working with a vehicle battery. These items may produce a short circuit and could cause severe burns.
4. Be extra cautious to reduce the risk of dropping a metal tool onto the battery. It may spark or short circuit the battery or other electrical hardware which may cause an explosion or fire.
5. Wear complete eye protection, hand and clothing protection. **AVOID** touching eyes while working near a battery.
6. Study all battery manufacturers specific precautions, such as removing or not removing cell caps while charging and recommended rates of charge.
7. Clean battery terminals before connection with the charger. Be careful to keep corrosion from coming in to contact with eyes.
8. When it is necessary to remove the battery from the vehicle to charge, always remove grounded terminal from the battery first. Make sure all accessories in the vehicle are switched off in order to prevent an arc.
9. This charger is **NOT** intended to supply power to an extra low voltage electrical system or to charge dry cell batteries. Charging dry cell batteries may cause the battery to burst and cause injury to person or property.
10. **NEVER** charge a frozen, damaged, leaking or non rechargeable battery.
11. If battery electrolyte contacts skin or clothing, wash immediately with soap and water. If electrolyte enters your eye, immediately flood eye with running clean cold water for at least 15 minutes and seek medical attention immediately.
12. **DO NOT** place the charger in the engine compartment, near moving parts or near the battery. Place as far away from them as the cable permits.

**NEVER** place the charger directly above the battery being charged, gases or fluids from the battery will corrode and/or damage the charger.

13. **DO NOT** cover the charger while charging.
14. **DO NOT** expose to rain or wet conditions.
15. Connect and disconnect the DC output connections only after disconnecting the charger from the mains power supply.
16. Use of an attachment not recommended or sold by the manufacturer may result in a risk of fire, electric shock or injury to persons.
17. **DO NOT** overcharge batteries by selecting the wrong charge mode.
18. To reduce the risk of damage to the electric plug and cord, pull by the plug rather than the cord when disconnecting charger from mains power supply.
19. To reduce risk of electric shock, unplug charger from mains power supply before attempting any maintenance or cleaning.
20. Operate with caution if the charger has received a direct hit of force or been dropped. Have it checked and repaired if damaged.
21. **NEVER** attempt any repairs yourself. If you have a problem with your charger contact your local CLARKE dealer or contact [service@clarkeinternational.com](mailto:service@clarkeinternational.com)
22. When charging is complete, ensure that the vehicle battery leads are secured to the proper terminals which should be clean, and lightly smeared with petroleum jelly to prevent corrosion. Finally, re-check the electrolyte level.

# ELECTRICAL CONNECTIONS



**WARNING! READ THESE ELECTRICAL SAFETY INSTRUCTIONS THOROUGHLY BEFORE CONNECTING THE PRODUCT TO THE MAINS SUPPLY.**

Before switching the product on, make sure that the voltage of your electricity supply is the same as that indicated on the rating plate. This product is designed to operate on 230VAC 50Hz. Connecting it to any other power source may cause damage.

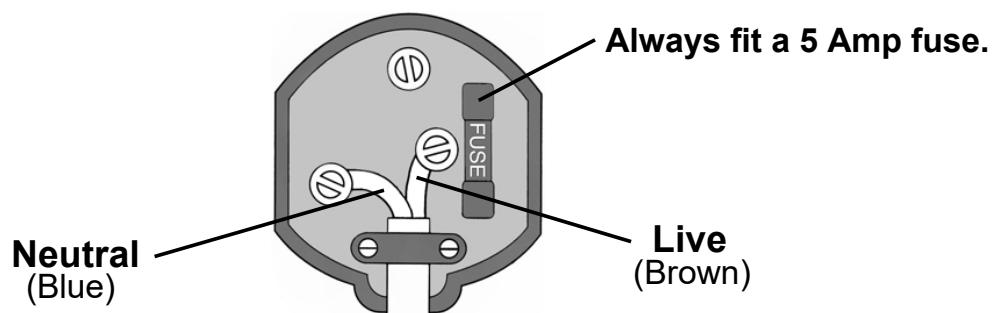
This product may be fitted with a non-rewireable plug. If it is necessary to change the fuse in the plug, the fuse cover must be refitted. If the fuse cover becomes lost or damaged, the plug must not be used until a suitable replacement is obtained.

If the plug has to be changed because it is not suitable for your socket, or due to damage, it should be cut off and a replacement fitted, following the wiring instructions shown below. The old plug must be disposed of safely, as insertion into a mains socket could cause an electrical hazard.

If the colours of the wires in the power cable of this product do not correspond with the markings on the terminals of your plug, proceed as follows.

- The **Blue** wire must be connected to the terminal marked **N** or coloured **Black**.
- The **Brown** wire must be connected to the terminal marked **L** or coloured **Red**.

**Plug must be BS1363/A approved.**



**Ensure that the outer sheath of the cable is firmly held by the clamp**

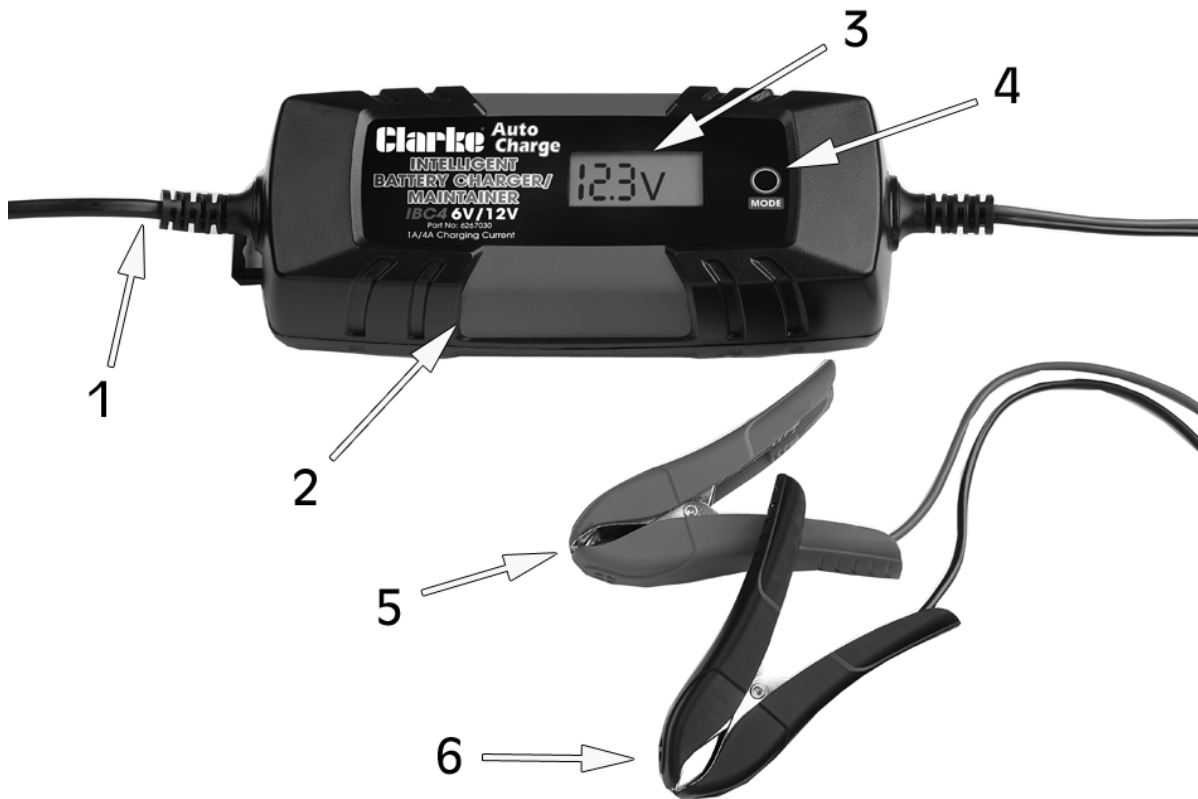
**We strongly recommend that this machine is connected to the mains supply via a Residual Current Device (RCD)**

If in any doubt, consult a qualified electrician. **DO NOT** attempt any repairs yourself.



**This symbol indicates that this is a Class II product, and does not require an earth connection.**

# OVERVIEW



1	Power Cable	4	Mode Button
2	Battery Charger Unit	5	Charging Clamp Positive (Red)
3	LCD Display Screen	6	Charging Clamp Negative (Black)

The IBC4 is designed to charge all types of 1.2-30AH 6V & 1.2-120AH 12V lead-acid batteries, including WET (Flooded), MF (Maintenance Free), EFB (Enhanced Flooded Battery), VRLA, Lead Calcium, SLA, GEL and AGM (Absorbed Glass Mat) batteries.

**DO NOT** use this product to charge other type of batteries like Nickel Cadmium (NiCad), Nickel-Metal Hydride (Ni-MH), Lithium-Ion, Dry Cell etc.

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## PREPARATION

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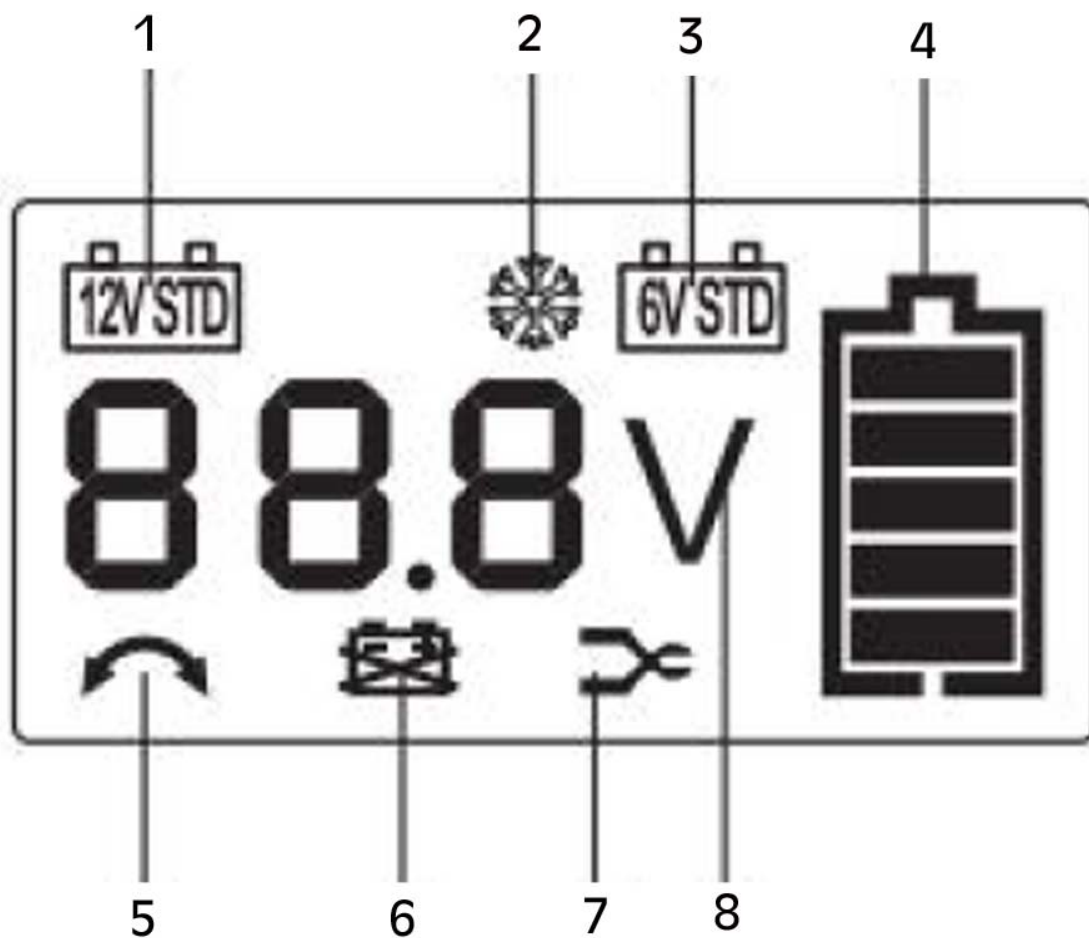
1. It may be necessary to remove the battery from a vehicle to charge it.
  - Always remove the grounded terminal from the battery first.
  - Ensure all accessories in the vehicle are switched off to prevent sparking.
2. Clean the battery terminals. Be careful to keep any corrosive matter from coming in contact with eyes. If corrosive matter enters your eye, immediately flood eye with running clean cold water for at least 15 minutes and seek medical attention immediately.
3. If the battery can be topped up, add distilled water to each cell until the battery acid reaches the level specified by the battery manufacturer. This helps remove unwanted gas from the cell. **DO NOT** overfill. For a battery without cell caps, follow the manufacturer's instructions.
4. Study all the battery manufacturer's specified precautions: for example, removing or not removing cell caps while being charged and recommended rates of charge.
5. Refer to the vehicle manual and battery rating plate to find the voltage of the battery and make sure that the output is set to the correct voltage.
6. If the charger has adjustable charge rate, charge the battery initially at the lowest rate.

## CHARGER LOCATION

1. Place the charger as far away from the battery as possible.
2. **DO NOT** position the charger above the battery during the charging procedure. Gases from the battery may corrode and damage the charger.
3. **DO NOT** let battery acid drip on the charger when reading a hydrometer for specific gravity or when you fill the battery.
4. **DO NOT** use the charger in an enclosed space with reduced airflow.










## BATTERY CHARGER DISPLAY INDICATORS



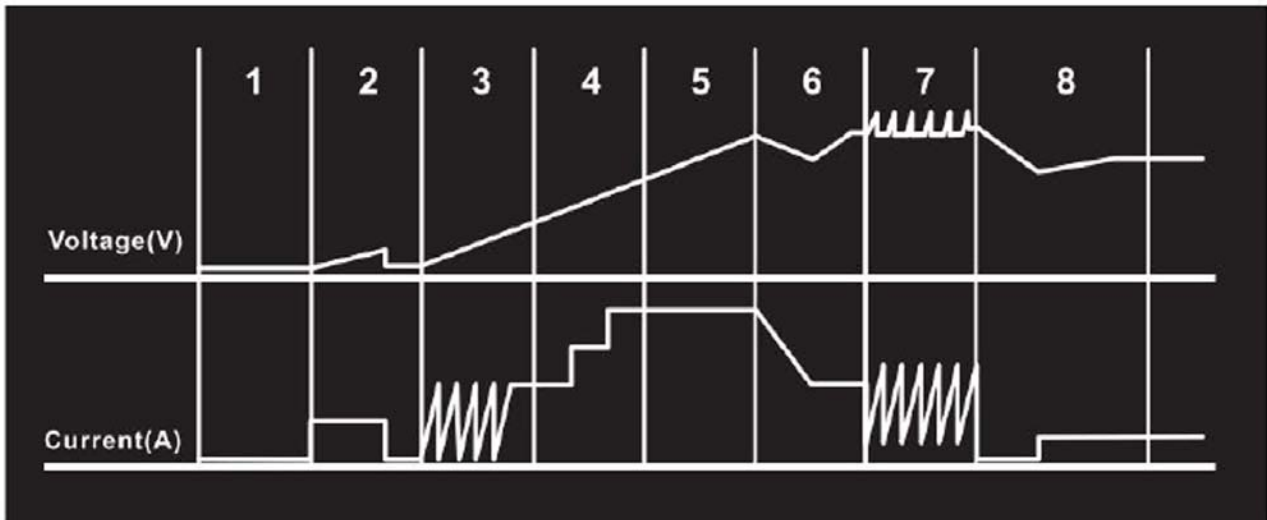
1	12V STD Mode	2	COLD Mode
3	6V STD Mode	4	Battery Charging Level Indicator (in 20% increments)
5	Reverse Polarity Connection Indicator	6	Faulty Battery Indicator (Battery voltage is lower than 1V/Battery can't hold the charge/Battery voltage can't reach to the threshold after after charging in the required period)
7	Clamp Indicator (Open Circuit/ Dirty Battery Posts/Dead Battery/ Output Short Circuit)	8	Battery Voltage Indicator (Press & Hold Mode button for 3 seconds to display the battery's voltage)

# CHARGING MODES

The IBC4 battery charger has the following five modes. **DO NOT** operate the charger until you have confirmed the appropriate charge mode for your battery.

MODE	ICON DISPLAY	BATTERY SIZE (AH)	EXPLANATION
1A 12V STD	A 1.0 	1.2 - 30	Charging 12V WET/GEL/MF/EFB Batteries
4A 12V STD	A 4.0 	2 - 120	Charging 12V WET/GEL/MF/EFB Batteries
1A 12V COLD	A 1.0  	1.2 - 30	Charging 12V WET/GEL/MF/EFB Batteries below 10°C (50°F) or AGM Batteries
4A 12V COLD	A 4.0  	2 - 120	Charging 12V WET/GEL/MF/EFB Batteries below 10°C (50°F) or AGM Batteries
1A 6V STD		1.2 - 30	Charging 6V WET/GEL/MF/EFB/AGM Batteries

# CHARGE CYCLES



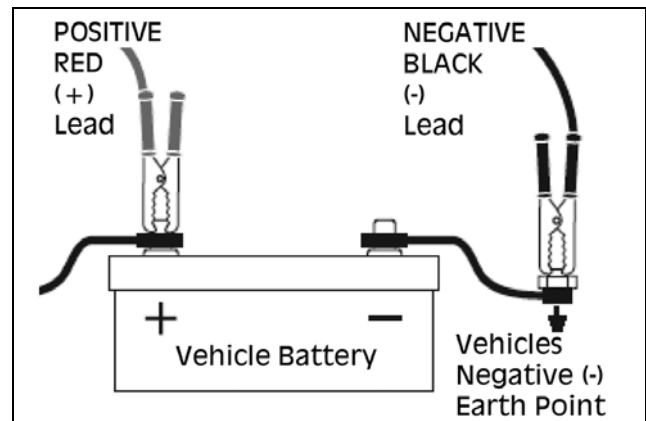
STAGE	FUNCTION	DESCRIPTION
1	Testing	Checking if battery has connected with the charger and also check battery voltage
2	Analysis	Will show the vehicle battery's voltage on the screen first. Analyse if the connected battery is 12v or 6V, and will enter into the corresponding charging mode in 1 minute
3	Desulphation	Desulphation process by pulsing
4	Soft-Start	Charge with echelon constant current
5	Bulk	Charge with constant maximum current until battery voltage has reached the threshold
6	Absorption	Provide gradually declining current charge for maximum battery voltage
7	Pulse Charge	Pulse with trickle current
8	Maintaining	Continuously monitor the battery, and once the voltage is lower than the threshold, the charge will enter trickle charge

# OPERATION

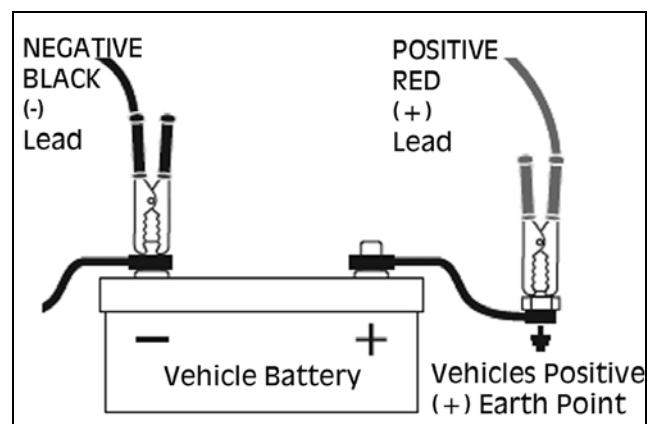
## CONNECTING TO THE BATTERY

1. Identify the polarity of the battery terminals. The positive battery terminal is typically marked by the letters or symbols (POS,P,+). The negative battery terminal is typically marked by the letters or symbols (NEG,N,-).
2. **DO NOT** make any connections to the carburetor, fuel lines or thin metal parts.
3. Identify if you have a negative or positive grounded vehicle. This can be done by identifying which battery post (POS or NEG) is connected to the vehicle chassis.

4. For a negative grounded vehicle (most common): Connect the RED POSITIVE battery clamp first to the positive battery terminal, then connect the BLACK NEGATIVE battery clamp to the negative battery terminal or vehicle chassis.



5. For a positive grounded vehicle (very uncommon): Connect the BLACK NEGATIVE battery clamp first to the negative battery terminal, then connect the RED POSITIVE battery clamp to the positive battery terminal or vehicle chassis.



6. When disconnecting, disconnect in the reverse sequence of points 4 or 5, depending if your vehicle is negatively or positively grounded.
7. A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

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## CARE & MAINTANENCE

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This battery charger requires minimal maintenance. As with any appliance or tool, a few common sense rules will prolong its working life.

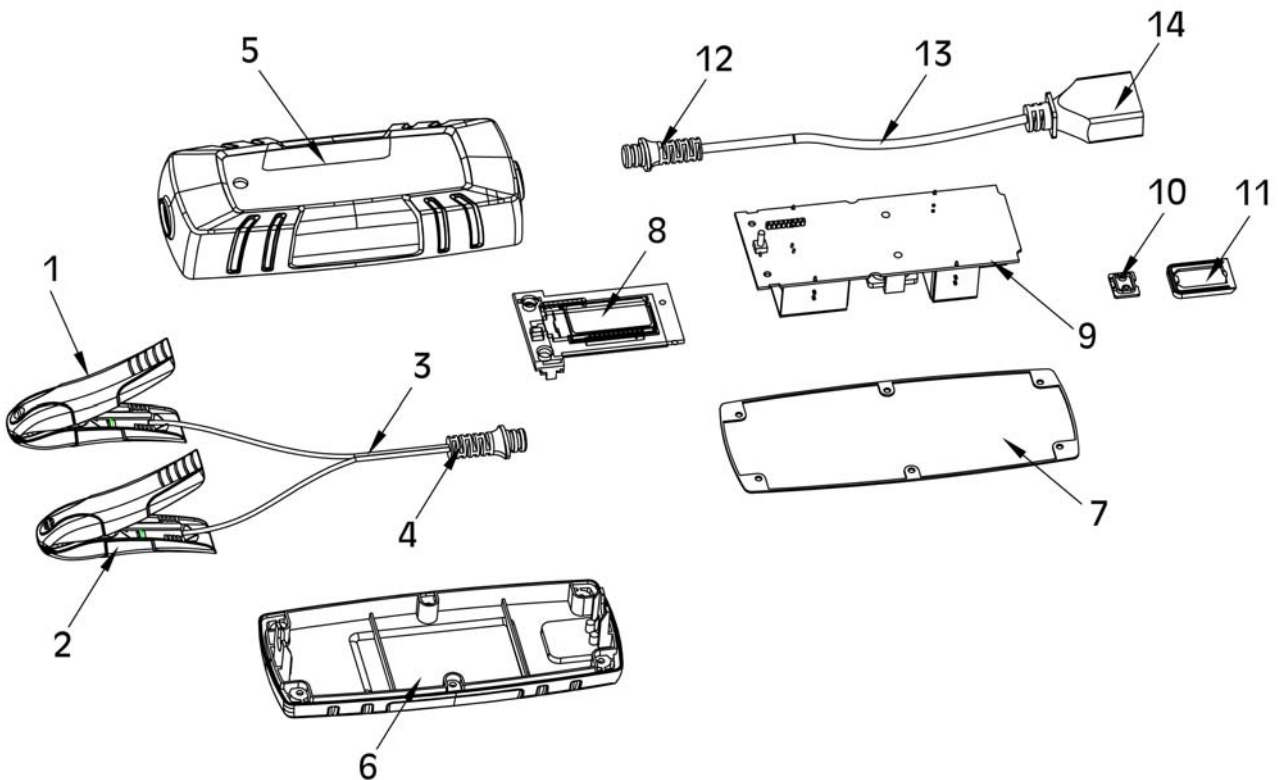


**WARNING: ALWAYS BE SURE THE CHARGER IS UNPLUGGED BEFORE PERFORMING ANY MAINTENANCE OR CLEANING. ANY REPAIRS MUST BE DONE BY A QUALIFIED SERVICE TECHNICIAN.**

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1. Wind up the leads when not in use. Examine the leads at regular intervals for damage and have them replaced if necessary.
2. Clean the case and leads if necessary with a moist cloth and clean any corrosion from the clamps with a solution of water and baking soda.



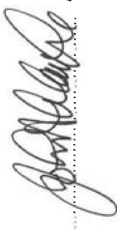
# PARTS DIAGRAM






# PARTS LIST

No	DESCRIPTION	No	DESCRIPTION
1	Charging Clamp Positive (Red)	8	LCD Display Screen
2	Charging Clamp Negative (Black)	9	Printed Circuit Board
3	Charging Cable	10	Hanging Hook Clamp
4	Grommet	11	Hanging Hook
5	Case Front Cover	12	Grommet
6	Case Back Cover	13	Power Cable
7	Case Seal	14	5A Fused 3 Pin Plug

# DECLARATION OF CONFORMITY

	 Hemnal Street, Epping, Essex CM16 4LG
<b>DECLARATION OF CONFORMITY</b> This is an important document and should be retained.	
<p>We hereby declare that this product(s) complies with the following statutory requirement(s):</p> <p><i>Electromagnetic Compatibility Regulations 2016</i> <i>Electrical Equipment (Safety) Regulations 2016</i> <i>The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012</i></p>	
<p>The following standards have been applied to the product(s):</p> <p><i>EN 55014-1:2006 +A1:2009 +A2:2011, EN 55014-2:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 60335-2-29:2004+A2:2010, EN 60335-1:2012 +A11:2014 + A13:2017, EN 62233:2008, IEC 62321-2:2013, IEC 62321-1:2013, IEC 62321-3-1:2013, IEC 62321-5:2013, IEC 62321-4:2013+A1:2017, IEC 62321-7-1:2015, IEC 62321-7-2:2017.</i></p>	
<p>The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.</p> <p style="text-align: right;">The UKCA mark was first applied in: 2021</p>	
<b>Product Description:</b>	12V intelligent battery charger 4A
<b>Model number(s):</b>	IBC4
<b>Serial / batch Number:</b>	N/A
<b>Date of issue:</b>	12/07/2021
<b>Signed:</b>	 J.A. Clarke Director
IBC4 UKCA Clarke DOC 071221 <span style="float: right;">Page 1 of 1</span>	

	 Fitzwilliam Hall, Fitzwilliam Place, Dublin 2
<b>DECLARATION OF CONFORMITY</b> This is an important document and should be retained.	
<p>We hereby declare that this product(s) complies with the following directive(s):</p> <p><i>2014/30/EU Electromagnetic Compatibility Directive.</i> <i>2014/35/EU Low Voltage Equipment Directive.</i> <i>2011/65/EU Restriction of Hazardous substances (Amendment EU 2015/863).</i></p>	
<p>The following standards have been applied to the product(s):</p> <p><i>EN 55014-1:2006 +A1:2009 +A2:2011, EN 55014-2:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 60335-2-29:2004+A2:2010, EN 60335-1:2012 +A11:2014 + A13:2017, EN 62233:2008, IEC 62321-2:2013, IEC 62321-1:2013, IEC 62321-3-1:2013, IEC 62321-5:2013, IEC 62321-4:2013+A1:2017, IEC 62321-7-1:2015, IEC 62321-7-2:2017.</i></p>	
<p>The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned directive(s) has been compiled and is available for inspection by the relevant enforcement authorities.</p> <p style="text-align: right;">The CE mark was first applied in: 2021</p>	
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IBC4 CE Clarke DOC 071221 <span style="float: right;">Page 1 of 1</span>	

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