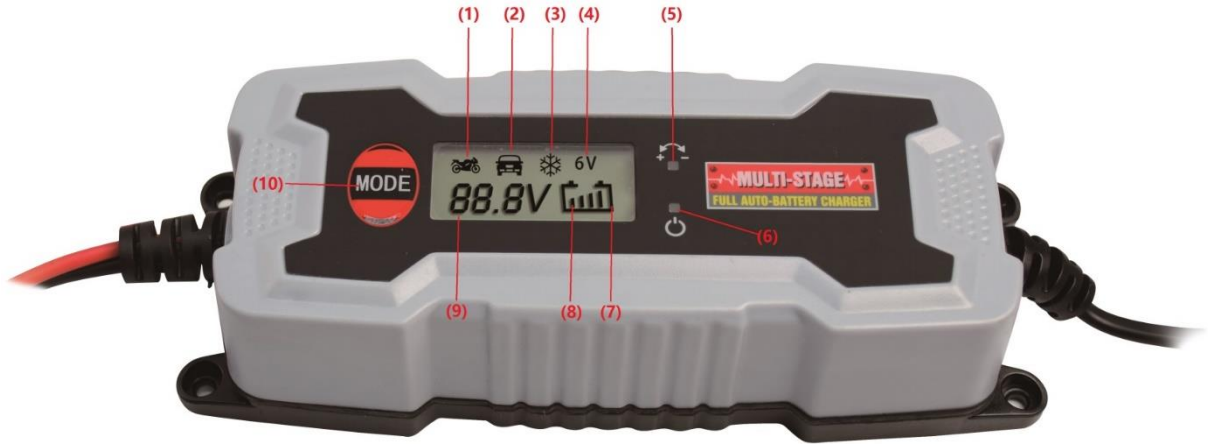
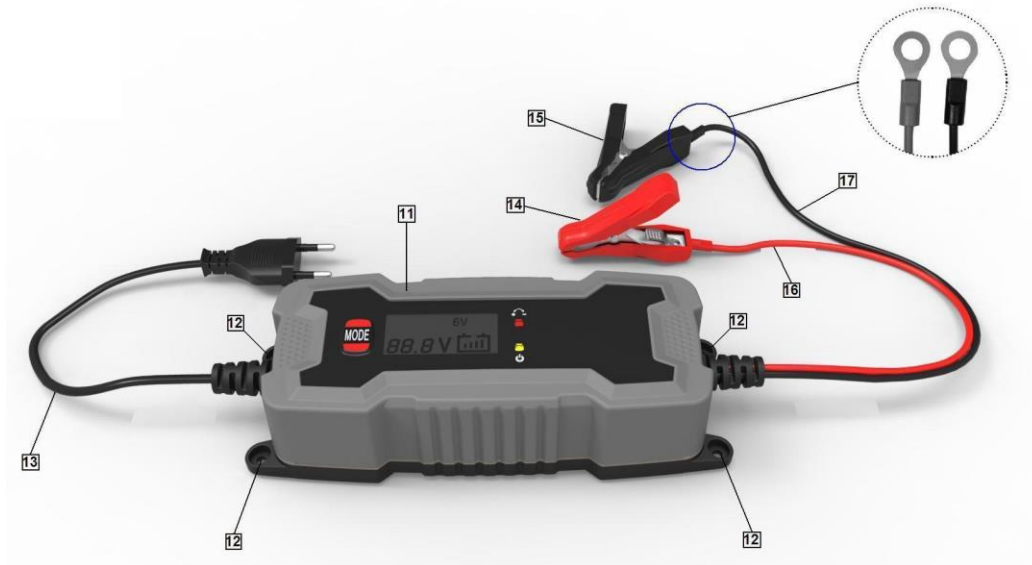


**Automatic Battery Charger  
6/12V 5A LCD**

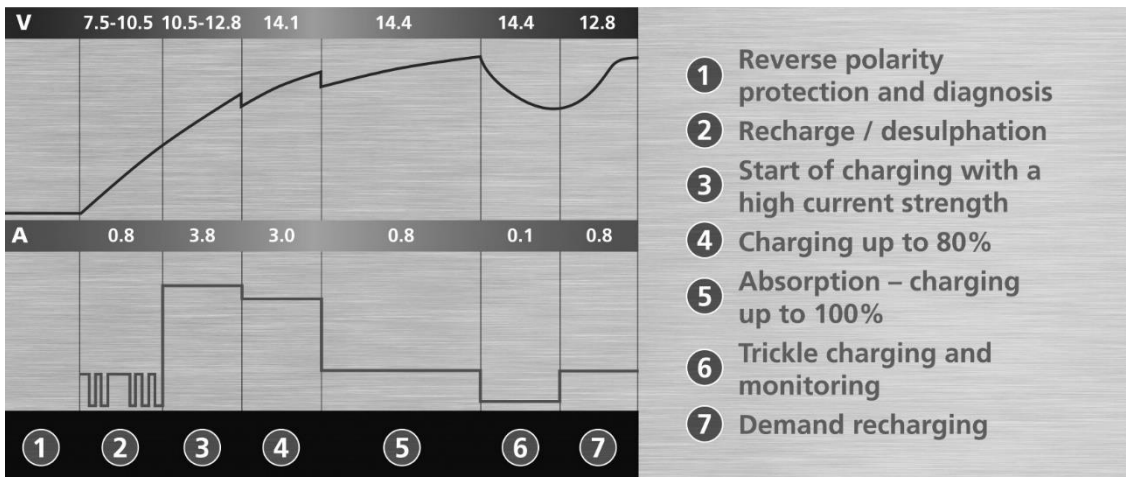
**Figure A:**



**Figure B:**



**Figure C:**



**△,WARNING** READ THE ENTIRE MANUAL BEFORE USING THIS PRODUCT.

**FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.**

**IMPORTANT: READ AND SAVE THIS SAFETY AND INSTRUCTION MANUAL.**

## ● INTRODUCTION

We congratulate you have chosen a high quality product. The instructions for use are part of the product. They contain important information concerning safety, use and disposal. Before using the product, please familiarize yourself with all of the safety information and instructions for use. Only use the unit as described and for the specified applications. If you pass the product on to anyone else, please ensure that you also pass on all the documentation with it.

### ● Intended use

This model is a multistep car battery charger (called appliance in the following) for charging and charge retention of 6V or 12V lead batteries (in the following called battery). These may be the types AGM-Ca/Ca-GEL-MF-VRLA with electrolyte solution or gel.

The manufacturer is not liable for damage caused by improper use. The device is not intended for commercial use, only be used indoors.

### ● Scope of delivery

1 Charger; 2 Clamps (1 red, 1 black); 1 Instructions for use

### ● Parts description

See Figure A:

1	12V 0.8A-(Programme 2)	2	12V 5A-(Programme 3)
3	12V 5A-(Programme 4)	4	6V 0.8A-(Programme 1)
5	LED reverse connection	6	LED stand-by
7	Charge display	8	Condition display
9	Voltage display	10	Programme selection button (MODE)

See Figure B:

11	Charger	12	Fastening eyelets
13	Mains lead	14	“+” pole clamp (red)
15	“-” pole clamp (black)	16	“+” pole connector cable (red) inc. lug
17	“-” pole connector cable (black) inc. lug		

### ● Technical Data

Input voltage:	220-240V~50/60Hz	Rated power:	60W
Rated voltage outgoing:	6V/12V	Rated output current:	0.8A/5A
Ambient temperature:	0°C to 40°C	Housing protection type:	IP 65
Protection class:	II/□		
Charging battery types:	6V Lead acid battery	1.2Ah-12Ah	
	12V Lead acid battery	1.2Ah-120Ah	

## ● SAFETY

### ● Safety instructions

Children or persons who lack the knowledge or experience to use the device or whose physical, sensory or intellectual capacities are limited must never be allowed to use the device without supervision or instruction by a person responsible for their safety. Children should be supervised in order to ensure that they do not play with the appliance.

**△,WARNING** Never use the charger for charging of non-rechargeable batteries.

During charging, place the removed battery on a well-aired surface.

The automatic operating mode and the restrictions in use are explained further below in these instructions.

**DANGER OF ELECTRIC SHOCK!** Do not operate the appliance if the cables, the mains cable or mains plug are damaged. A damaged mains cable indicates a life-threatening danger due to electric shock.

Before connecting to the power, ensure that the power connection is earthed, is 230V~50Hz, and is 16A fused and equipped with an RCCB switch (residual current circuit breaker) in accordance with the current regulations.

Disconnect the charger from the grid, before you make or break connections to the battery.

First, connect the clamp that is not connected to the bodywork. Then connect the other clamp to the bodywork, away from battery and fuel pipe. Only after this, connect the charger to the grid.

After charging, disconnect the charger from the grid. Only after this remove the clamp from the bodywork. Following this, remove the clamp from the battery

**DANGER OF EXPLOSION AND FIRE HAZARD!** Protect yourself from a highly explosive hydrogen-oxygen reaction.

Ensure that during charge and charge retention procedures, there are no naked lights (flames, cinders or sparks).

Ensure that the plus cable does not come into contact with fuel lines (e.g. petrol pipe).

Ensure that there is no possibility of ignition of explosive or flammable substances, such as petrol or solvents, while using charger.

**DANGER OF CHEMICAL BURNS!** Wear protective glasses! Wear protective gloves. If eyes or skin has come into contact with battery acid, rinse the affected body region off with a large amount of clean water and consult a doctor straight away.

Avoid causing a short circuit when connecting the charger to the battery. Connect the negative pole connector cable only to the negative battery or to the body work. Connect the positive pole connector cable only to the plus pole of the battery.

Do not place the charger close to fire, heat or to places with long-term exposure to temperatures over 50°C.

Ensure that no fuel lines, electric cables, hydraulic or water pipes are damaged by the screws during assembly of the charger.

Do not cover the charger with any objects. Protect the electrical contact surfaces of the battery from short circuiting.

Only use the charger for charging and for charge retention of 6V/12V lead batteries. Do not charge frozen batteries.

## ● OPERATION

### ● Before use

Before connecting the charger, the operating instructions must be observed. Furthermore, the instructions of the vehicle manufacturer regarding a permanently connected car battery must be observed. Secure the car, switch off the ignition.

Clean the battery poles. Take care that while doing so, your eyes do not come into contact with the dirt. Ensure sufficient ventilation.

### ● Connecting

Connect the “+” pole clamp (red) 14 of the charger to the “+” pole of the battery.

Connect the “-” pole clamp (black) 15 to the “-” pole of the battery.

Connect the mains cable 13 of the charger to the mains socket.

The battery voltage display 9 shows the current battery voltage.

Should the connection of the clamps be swapped, the LED “reverse connection” lights up 5.

### ● Disconnect

Disconnect the appliance from the mains supply.

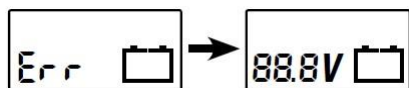
Remove the “-” pole clamp (black) 15 from the “-” pole of the battery.

Remove the “+” pole clamp (red) **14** from the “+” pole of the battery.

### ● Measuring Standby/Battery Voltage

After connection to the grid, the appliance is on Standby. The standby display **6** lights up. When the clamps are connected, the battery voltage is shown in the LCD (voltage display **9**). The segments of the condition display **8** are empty.

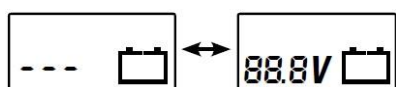
If the voltage is below 3.8V or above 15V, the battery will not be charged. The display briefly shows the error message “Err”. The appliance goes on standby.



**6V battery:** If the voltage range of the battery is measured as between 3.7-7.3V, only programme 1 can be selected.

**12V batteries:** If a battery is recognized in the critical voltage range of between 7.3-10.5V, the appliance checks whether a fully charged 6V battery, or a discharged 12V battery is present. After pressing the programme selection button **10** to select a programme, the appliance carries out a control measurement for about 90 sec.

The display shows:



If after about 90 sec. between 7.3-7.5V are detected, the 12V battery is defective. The appliance goes on standby.

### ● Revitalizing

If after about 90 sec. between 7.5-10.5V are detected, a 12V battery is present. Charging starts with a pulse charge for revitalizing. The voltage display **9** flashes. Once 10.5V are reached, the appliance switches to the other charge steps.

Revitalizing is the same for all the 12V charge programmes.




### ● Programme selection

**NOTES:** If a battery is detected in the voltage range of between 3.7-7.3V, the programmes 2-3-4 can not be selected.

The charging process takes place automatically.

Depending on the selected programme, the characteristic charge curve is monitored for voltage, time and temperature. Included are the diagnostics programme, revitalizing mode and retention charge.

(See principle representation programme 3 Fig. C)

Programme		Max.(V)	Max.(A)
1	6V	7.3V	0.8A
2	 *	14.4V	0.8A
3	 *	14.4V	5A
4	 *	14.7V	5A

### ● Programme 1 “6V” (7.3V/0.8A)


For charging 6V batteries with a capacity of less than 14Ah.

- Press the programme selection button **10**, to select programme 1. The symbol “6V” is displayed on the LCD. During charging, the charge display **7** flashes and shows the progress of the charge procedure (1-4 bars). When the battery is fully charged, the condition display **8** shows 4 bars. The flashing stops and the appliance automatically switches to

retention charge.


### ● Programme 2 \* "12V" (14.4V/0.8A)

For charging 12V batteries with a capacity of less than 14Ah.

- Press the programme selection button **10**, to select programme 2. The symbol \* is displayed on the LCD. During charging, the charge display **7** flashes and shows the progress of the charge procedure (1-4 bars). When the battery is fully charged, the condition display **8** shows 4 bars. The flashing stops and the appliance automatically switches to retention charge.

### ● Programme 3 \* "12V" (14.4V/5A)


For charging 12V batteries with a capacity of between 14 Ah-120 Ah.

- Press the programme selection button **10**, to select programme 3. The symbol \* is displayed on the LCD. During charging, the charge display **7** flashes and shows the progress of the charge procedure (1-4 bars). When the battery is fully charged, the condition display **8** shows 4 bars. The flashing stops and the appliance automatically switches to retention charge.

### ● Programme 4 \* "12V" (14.7V/5A)

For charging 12V batteries with a capacity of between 14Ah-120Ah under cold conditions or for charging AGM batteries.

- Press the programme selection button **10**, to select programme 4.

**NOTE:** The symbol \* is displayed on the LCD. During charging, the charge display **7** flashes and shows the progress of the charge procedure (1-4 bars). When the battery is fully charged, the condition display **8** shows 4 bars. The flashing stops and the appliance automatically switches to retention charge.

### ● Retention charge

As described under programmes, this appliance features the automatic retention charge. Depending on the voltage drop of the battery, caused by self-discharge, the appliance reacts with different charge currents.


The battery can remain connected to the charger for longer periods of time.

### ● Appliance protection function

The charger switches the electronics off and switches the system instantly to the basic setting, as soon as there is an abnormal situation, such as short circuit, critical voltage drop during charging, broken circuit or swapped connection of the connector clamps is detected.

Should the appliance become too hot during charging, the output current is automatically reduced. This protects the appliance from damage.

## ● MAINTENANCE AND CARE

 **WARNING** Before you carry out any work on the battery charger always pull the mains plug out of the mains socket.

The appliance is maintenance-free. Ensure that all of the battery charger components are in place and in good working condition. Do not under any circumstances use solvents or other aggressive cleaning agents. Clean the plastic surfaces of the device with a dry cloth. Servicing does not require opening the unit, as there are no user-serviceable parts.

Store the battery charger in an upright position. Store inside, in a cool, dry place.

If the battery charger is moved around the shop or transported to another location, take care to avoid/prevent damage to the battery charger components. Failure to do so could result in personal injury or property damage.

All other servicing should be performed by qualified service personnel.

## ● DISPOSAL



The packaging is wholly composed of environmentally-friendly materials that can be disposed of at a local recycling center.



### **Do not dispose of electrical appliances in household waste.**

In accordance with European Directive 2002/96/EC on used electrical and electronic appliances and its implementation in national law, used power tools must be collected separately and recycled in an ecologically compatible manner. Please return the tool via the available collection facilities. Information on options for disposing of electrical appliances after their useful life can be obtained from your local or city council.