

# SmartCharge



## RSC608 / RESC608

8A SmartCharge with Battery Analyser  
Up to 3.5L

## RSC612 / RESC612

12A SmartCharge with Battery Analyser  
Up to 5.0L

### Contents

GB P01	DK P61	CZ P121
F P11	NL P71	RO P131
D P21	S P81	H P141
I P31	FIN P91	UA P151
E P41	N P101	RU P161
P P51	PL P111	



## Instructions

Retain these instructions for future reference



[www.ringautomotive.co.uk](http://www.ringautomotive.co.uk)

Ensure area is well ventilated



# SmartCharge

## 1 Safety

### **RISK OF EXPLOSION**

Only connect the battery leads when the mains supply is disconnected.

Explosive gases may escape from the battery during the charging process. Prevent flames and sparks and provide adequate ventilation during charging.

Indoor use only.

Unplug the charger from the mains before breaking or making the connection to the battery.

Not suitable for use with non-rechargeable batteries.

In addition to the battery types and capacity detailed in the specifications, the charger is suitable for the following only:

- Charging only a single battery at any one time
- Charging rechargeable lead acid, Gel, EFB, AGM or calcium batteries with 6 cells

The Ring SmartCharger automatically adjusts the charge rate applied as the battery charges. With the battery fully charged the charging process stops, as the battery naturally discharges further charge is applied until the battery is again fully charged. This is an ongoing process to ensure a safe connection for an indefinite period.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge 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. Cleaning and user maintenance shall not be made by children without supervision.

The charger contains no serviceable replaceable parts.

Not for commercial use.

## 2 Contents

### RSC608 / RESC608



• AC Plug

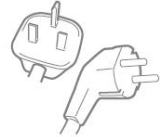


• Battery clips



• Instructions

### RSC612 / RESC612



• AC Plug









• Battery clips



• Instructions

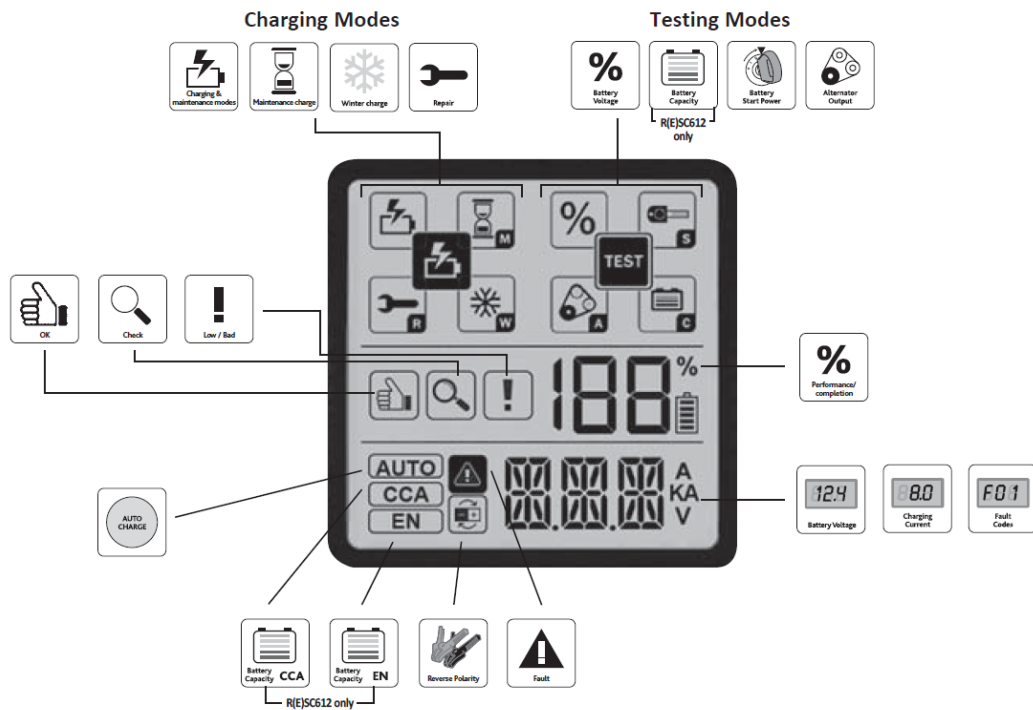
## 3 Features



-  1 LCD Display
-  2 Navigation Keys
-  3 AutoCharge /Memory Saver
-  4 Standard lead acid vehicle setting (14.4v)
-  5 Start Stop (AGM) vehicle setting (14.6v)
-  6 Fault / Incorrect Polarity

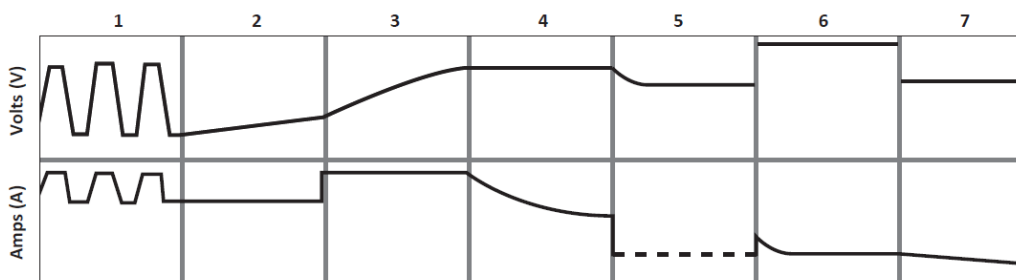
# SmartCharge

## 3 Features



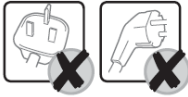
## 4 Charging stages

The Ring RSC608/RESC608/RSC612/RESC612 are all 7 stage chargers



1. Desulphation - The automatic desulphation stage pulse charges the battery to breakdown the build up of lead sulphate crystals. These crystals occur when a battery has been discharged or left unused for a period of time.
2. Soft Start - A slow steady build up of the charging process that limits the charging current applied until the battery voltage is above 12v.
3. Bulk Charge - The main part of the charging process where 80% of the required charge is applied
4. Absorption - Charged up to full capacity with a steady decline in charging current to allow the battery to absorb more power.
5. Battery Test - The SmartCharge conducts an automatic discharge test. If further charging is required the battery recondition function is automatically selected. If fully charged the battery goes into the float stage.
6. Recondition - An additional automatic charging stage to recover deeply discharged batteries.
7. Float - The float stage maintains the battery at 100% charge without overcharging or damaging the battery, allowing the charger to be left connected to the battery for an indefinite period. Ideal for batteries used only intermittently, such as seasonally used batteries including motorcycles, caravans, boats and classic cars.

## 5 Connection



1. Ensure AC mains plug is not connected to the AC mains supply



2. For batteries inside the vehicle:

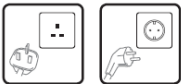
- Attach the red (+) battery clip to the red (+) terminal on the battery
- Attach the black (-) battery clip to a bolt or bracket on the engine block, away from the battery and fuel lines

For batteries outside the vehicle:

- Attach the red (+) battery clip to the red (+) terminal on the battery
- Attach the black (-) battery clip to the black (-) terminal on the battery



3. The polarity check LED illuminates if the charger is connected to the battery incorrectly. i.e. the red (+) clip connected to the black (-) battery terminal. Ensure connection is correct and the 'Polarity Check' LED is not illuminated



4. Connect mains plug to the AC mains supply and switch on.

5. After charging, disconnect the battery charger from the supply mains. Then remove the chassis connection and then the battery connection.

## 6 Operation - Battery Charging

Select the charging mode required

	Normal Battery Charging	Maintenance Charging	Winter Charging	Battery Recondition	Start/Stop Vehicles	Standard Vehicles
RSC608/RESC608	✓* (Up to 8A)	✓ (0.8A)	✓	✓	✓	✓*
RSC612/RESC612	✓* (Up to 12A)	✓ (0.8A)	✓	✓	✓	✓*

\* Default charging modes



1. Select the battery / vehicle type you are charging:

Standard vehicle – using traditional lead acid battery types (14.4v applied)

Start / Stop vehicle – using modern AGM battery types (14.6v applied)



SET

2. Press the navigation arrows to select the battery charging icon and press SET.



3. Press the navigation arrows to select the required charging mode and press SET.

Pressing EXIT at any stage takes you to the first stage of the menu process.



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## 6 Operation - Battery Charging



4 Pressing the Auto Charge function will automatically apply the fastest charge rate the battery connected can safely take. With this mode selected 'AUTO' is displayed on the LCD display

5. Charging is complete when 100% is displayed on the LCD screen



### Battery Charging Mode

For standard battery charging at temperatures over 5°C  
Increases the battery voltage to 14.4v (standard vehicle) or 14.6v (Start/Stop vehicle).



### Winter Mode

Used for charging batteries at low temperatures (-20°C to +5°C). Increases the battery voltage to 14.6v (standard vehicle) or 14.8v (Start/Stop vehicle).



### Recondition Mode

Applies a controlled increased charging voltage to allow recovery of deeply discharged batteries



### Maintenance Mode

Applies to low 0.8A charging rate, ideal for long term seasonal connection

## 7 Operation - Battery Analysing

	Battery Voltage	Battery Start Power	Alternator Output	Battery Capacity
RSC608/RESC608	✓*	✓	✓	-
RSC612/RESC612	✓*	✓	✓	✓

\* Default charging modes

Battery analysing modes operate with and without AC mains supply. Connecting the battery clips to the battery automatically activates the charger

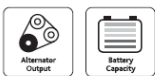


1. Press the navigation arrows to select the battery charging icon and press SET.



2. Press the navigation arrows to select the required charging mode and press SET.

Pressing EXIT at any stage takes you to the first stage of the menu process.



Battery Capacity is RSC612/RESC612 only.

## 7 Operation - Battery Analysing




### Battery Voltage Mode

Displays the battery voltage as a % of its capacity:

Press the navigation arrows to select the battery % icon and press SET.





12.7v – 100%	12.4v – 80%	12.2v – 60%	11.9v – 40%	11.6v – 20%
12.5v – 90%	12.3v – 70%	12.1v – 50%	11.8v – 30%	11.3v – 10%

1.  + 



### Battery Start Power






Assesses battery cranking power and recovery. Measures the voltage drop during engine starting to identify potential starting problems due to battery failure.

1.  + 
2. A1 +  With A1 displayed press SET - measures static battery voltage
3. A2 +  With A2 displayed start the vehicle engine.
4. Min battery voltage recorded during cranking displayed and good, check or bad status displayed  
Good >8v, check 7-8v and bad <7v



### Alternator Output

Assesses battery cranking power and recovery. Measures the voltage drop during engine starting to identify potential starting problems due to battery failure.

1.  +  = A1 displayed
2.  (Rev engine to 3000rpm\*) +  Maintain revs during 10 second countdown
3. A2 displayed (Rev engine to 2000rpm\*\*) +  Maintain revs during 10 second countdown
4. Battery voltages then displayed for both 3000rpm and 2000rpm tests  
Good or bad status displayed

\* 3000rpm with no battery loading. i.e. no lights AC, etc

\*\* 2000rpm with battery loading. i.e. lights AC, etc

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## 7 Operation - Battery Analysing



### Battery Capacity

Measures the cranking performance of the battery to determine engine starting ability and battery performance.

1. +
2. + CCA or EN + Set the battery standard CCA or EN\*\*\*
3. + CCA/EN value + Input the battery CCA or EN value \*\*\*

\*\*\* markings on a battery will state the battery standard and value

If CCA or EN values not stated, select CCA and use the following table



### CCA

<u>1000-1299cc</u>	<u>300 CCA</u>
<u>1300-1599cc</u>	<u>400 CCA</u>
<u>1600-1999cc</u>	<u>500 CCA</u>
<u>2000-2999cc</u>	<u>700 CCA</u>
<u>3000-3500cc</u>	<u>800 CCA</u>

4. Actual battery value is displayed plus capacity %  
Good, check or bad status displayed  
Good >74 %, check 50-74% and bad <50%

**This function will not operate if the battery voltage is less than 8v**

## 8 Operation - Memory Saver



### Memory Saver

The memory saver function allows the vehicle electrical and audio settings to be retained when the battery is removed.

1. Connect the SmartCharge battery clips to positive (+) and negative (-) cables on the vehicle that attached to the battery terminals
2. With the AC mains power connected press the Auto Charge button for 5 seconds. Memory Saver mode is activated when MEM is displayed on the LCD display
3. Remove the vehicle battery
4. Ensure the vehicle battery is connected correctly before disengaging the SmartCharger to ensure no loss of vehicle / audio settings



5 Seconds





## 9 Operation - Fault Codes

Code	Detail	Reason	Action
F01	Battery voltage below 12v after charging for 300mins	Battery is defective or Load maybe connected to the battery	Replace the battery Disconnect load from the battery
F01	If after 20 hours (five times in Recondition mode) due to a faulty battery, the battery does not enter the float stage	Battery is sulphated beyond reconditioning	Replace the battery
F02	Battery voltage too high	Battery rated above 12v	Check the battery rating
F03	Actual charging rate exceeds the charge rate set	Charger error or Interference from another device	Disconnect the charger and the AC supply, then reconnect, if error happens again charger faulty Turn off / disconnect other devices that may cause interference.
F04	Charger temperature too high	High ambient temperature or Poor ventilation	Select a lower charging current to charge Allow the charger to cool for 30mins Ensure enough space for adequate ventilation (10cm clearance)
F05	Does not enter float stage within 24hrs	Charge current too low or Load maybe connected to a battery or Battery is defective	Disconnect battery and AC supply. Reconnect and select a higher charging rate Disconnect load from battery Replace the battery
F06	Reverse polarity	Battery clips connected incorrectly	Re-connect the battery clips correctly
F07	Measured charging voltage is too high during the alternator test	Poor functioning regulator	Check regulator
F08	Measured charging voltage is too low during the alternator test	Belt maybe loose or Poor functioning alternator	Check belt and alternator

## 10 Specifications

	12v, 8A	12v, 12A
<b>Part Number</b>	RSC608/RESC608	RSC612/RESC612
<b>Input Voltage AC</b>	220-240VAC, 50Hz	220-240VAC, 50Hz
<b>Charging Voltage</b>	14.4v (winter 14.6v) – Standard vehicle 14.6v (winter 14.8v) – START/STOP (AGM)	14.4v (winter 14.6v) – Standard vehicle 14.6v (winter 14.8v) – START/STOP (AGM)
<b>Charging Current</b>	Up to 8A Max	Up to 12A Max
<b>Types of Battery</b>	Lead acid, Gel, Calcium, AGM, EFB 14-220Ah (Charging)	Lead acid, Gel, Calcium, AGM, EFB 25-300Ah (Charging)
<b>Dimensions</b>	195 x 138 x 78	195 x 138 x 78
<b>Weight</b>	1.51Kg	1.51Kg

# SmartCharge

## 11 Warranty

The RSC608/RESC608/RSC612/RESC612 SmartChargers come with a standard 12 months guarantee. Register your purchase either on the form attached or via the Ring website:

**[www.ringautomotive.co.uk/uk/contact/register-your-product](http://www.ringautomotive.co.uk/uk/contact/register-your-product)**

and you will receive an additional 4 years protection – free (as long as, within 4 weeks from date of purchase, an online registration is made, or we receive the completed registration form).

In the event of a warranty claim in the first instance contact our Technical Helpline: **+44(0)113 213 7339**