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# SmartCharge



RSC601/RESC601

Maintenance SmartCharge

RSC604 / RESC604

4A SmartCharge

Up to 2.0L

RSC605 / RESC605

5A SmartCharge

Up to 2.5L

## Contents

GB P1	DK P43	CZ P85
F P8	NL P50	RO P92
D P15	S P57	H P99
I P22	FIN P64	UA P106
E P29	N P71	RU P113
P P36	PL P78	

## 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, 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.

The supply cord cannot be replaced. If the cord is damaged the Smartcharger should be disposed of.

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.

The charger contains no serviceable replaceable parts.

Not for commercial use.

## 2 Contents

### RSC601/RESC601



• Charger



• AC Plug



• Battery clips

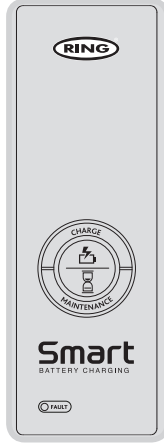


• Ring terminals



• Instructions

### RSC604/RESC604



• Charger



• AC Plug

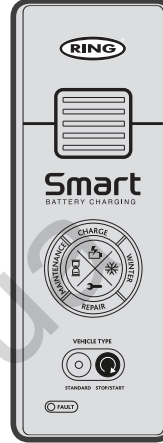


• Battery clips



• Instructions

### RSC605/RESC605



• Charger



• AC Plug



• Battery clips



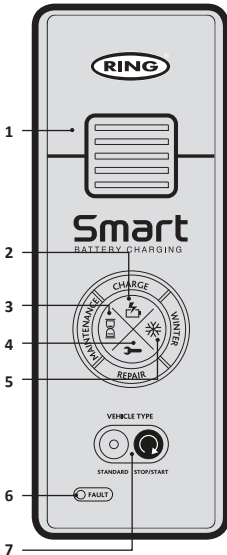
• Ring terminals



• Instructions

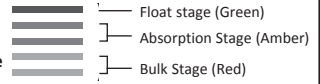
# SmartCharge

## 3 Features

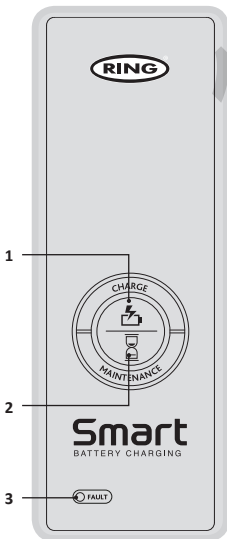


### RSC605/RESC605

- 1 Charge stage Indicator
- 2 Battery charging mode
- 3 Maintenance charging mode
- 4 Battery reconditioning (repair) mode
- 5 Winter charging mode
- 6 Polarity check/battery fault indicator
- 7 Vehicle type select – Standard or START/STOP



- 1 = Charge Stage
- 2 = Charging mode 5A (Max)  
Green Flashing = Charging  
Green Solid = Charged
- 3 = Maintenance mode 0.8A (Max)  
Green Flashing = Charging  
Green Solid = Charged
- 4 = Battery Recondition (repair) mode  
Green Flashing = Charging  
Green Solid = Charged
- 5 = Winter mode 14.6v (Max)  
Green Flashing = Charging  
Green Solid = Charged
- 6 = • Incorrect Battery Connection  
• Over temperature  
• Input voltage >17v
- 7 = Standard or Start/Stop vehicle type select  
Standard – 14.4v  
Start/Stop – 14.6v

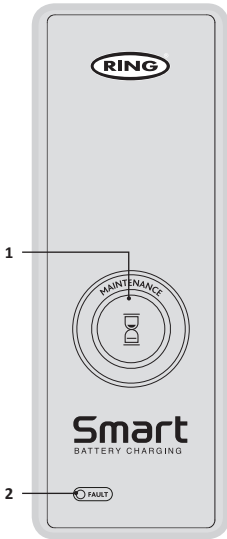


### RSC604/RESC604



- 1 Battery charging mode
- 2 Maintenance charging mode
- 3 Incorrect polarity/battery fault indicator


- 1 = Charging mode 4A (Max)  
Green Flashing = Charging  
Green Solid = Charged
- 2 = Maintenance mode 0.8A  
Green Flashing = Charging  
Green Solid = Charged
- 3 = • Incorrect Battery Connection  
• Over temperature

### 3 Features




#### RSC601/RESC601

-  1 Maintenance charging mode
-  2 Incorrect polarity/battery fault indicator

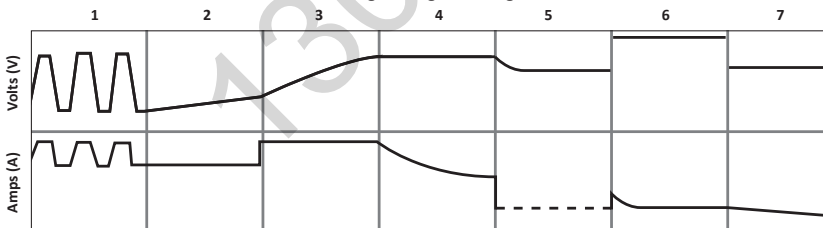
 = Maintenance charging mode 0.8A  
 Green Flashing = Charging  
 Green Solid = Charged



-  =
- Incorrect Battery Connection
  - Over temperature

### 4 Charging states

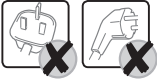
The Ring Automotive SmartCharger range are all multi-stage battery chargers:  
 RSC601/RESC601/RSC604/RESC604 are 3 stage chargers – stages 3,4 and 7. RSC605/RESC605 are full 7 stage chargers.



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.

# SmartCharge

## 5 Connection



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



2. For RSC601/RESC601/RSC605/RESC605

Select the appropriate lead for connecting the charger to the battery. Connect this lead to the charger. Ring terminals can be fitted to the battery (observing correct polarity) for easier and more frequent connection to the charger. When not in use, store the ring terminal securely inside the engine bay ensuring it will not come into contact with any moving parts. Ensure protective cover is placed over the connector when not in use.



3. For batteries inside the vehicle:

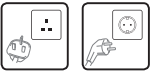
- Attach the red (+) battery clip to the red (+) terminal on the battery
- Attach the black (-) battery clip to a bolt or bracket on the engine block, away from the battery and fuel lines

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



4. 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



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

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

## 6 Operation

Select the charging mode required

	Normal Battery Charging	Maintenance Charging	Winter Charging	Battery Recondition	Start/Stop Vehicles	Standard Vehicles
RSC605/RESC605	✓* (5A)	✓ (0.8A)	✓	✓	✓	✓*
RSC604/RESC604	✓* (4A)	✓ (0.8A)	-	-	-	-
RSC601/RESC601	-	✓* (0.8A)	-	-	-	-

\* Default charging modes

### Charging LEDs



- Flashing green LED indicates charging
- Solid green LED indicates charged

RSC605/RESC605/RSC604/RESC604 – after connection select the charging mode required.

Charge stage indicator – RSC605/RESC605

The charge stage indicator shows how far through the battery charging process you are:

- LED solid green: In float stage
- LED solid amber: In battery test stage
- LED solid amber: In absorption stage
- LED solid red: In bulk stage, battery voltage 13.8v
- LED solid red: In bulk stage, battery voltage between 11.8v – 13.7v

## 6 Operation



### Battery Charging Mode – RSC604/RESC604/RSC605/RESC605:

For standard battery charging at temperatures over 5°  
Increases the battery voltage to 14.4v



### Winter Mode – RSC605/RESC605:

Used for charging batteries at low temperatures (-20° to +5°). Increases the battery voltage to 14.6v



### Recondition Mode – RSC605/RESC605:

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



### Maintenance Mode – RSC601/RESC601/RSC604/RESC604/RSC605/RESC605:

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

## 7 Specifications

	12v, 5A	12v, 4A	12v Maintenance
<b>Part Number</b>	RSC605/RESC605	RSC604/RESC604	RSC601/RESC601
<b>Input Voltage AC</b>	220-240VAC, 50Hz	220-240VAC, 50Hz	220-240VAC, 50Hz
<b>Charging Voltage</b>	14.4v – Std Vehicle 14.6v – START/STOP	14.4v	14.4v
<b>Charging Current</b>	5A Max	4A Max	0.8A Max
<b>Types of Battery</b>	Lead acid, Gel, Calcium, AGM, EFB 2-110Ah (Charging)	Lead acid, Gel, Calcium, AGM, EFB 2-90Ah (Charging)	Lead acid, Gel, Calcium, AGM, EFB 2-32Ah (Charging)
<b>Dimensions</b>	285x175x60	285x175x60	285x175x60
<b>Weight</b>	0.87kg	0.85kg	0.85kg
<b>Protection</b>	IP65	IP65	IP65

## 8 Warranty

The RSC601/RESC601/RSC604/RESC604/RSC605/RESC605 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**