

## ⚠ WARNING

THIS MANUAL CONTAINS IMPORTANT SAFETY INFORMATION AND INSTRUCTIONS. READ, UNDERSTAND AND FOLLOW ALL INSTRUCTIONS AND WARNINGS BEFORE USING THIS PRODUCT.

FAILURE TO FOLLOW ALL INSTRUCTIONS AND WARNINGS CAN CAUSE DEATH OR SERIOUS INJURY OR LIFE-THREATENING DELAYED LUNG DISEASE.

## ⚠ CAUTION!

### Safety Instructions:

- Do not open or dismantle batteries.
- Do not expose batteries to heat or fire. Avoid storage in direct sunlight.
- Do not short-circuit a battery.
- Do not store batteries haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects.
- Do not remove a battery from its original packaging until required for use.
- Do not subject batteries to mechanical shock.
- In the event of a battery leaking, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with copious amounts of water and seek medical advice.
- Do not use any charger other than that specifically provided for use with the equipment.
- Observe the plus (+) and minus (-) marks on battery and equipment and ensure correct use.
- Do not mix batteries of different manufacture, capacity, size or type within a device.
- Keep batteries out of the reach of children.
- Keep batteries clean and dry.
- Batteries need to be charged before each use.
- Use only the battery in the application for which it was intended.
- When possible, remove the battery from the equipment when not in use.
- Do not store batteries longer than 1 month in discharged state.
- Do not store batteries longer than 1 year without recharge.
- The battery must be recycled or disposed of properly.

### Operating Temperature:

For charge: 0°C to +45°C (32°F to 113°F)

For discharge: -20°C to +60°C (-4°F to 140°F)

### Recommendation:

Store the battery at below 20°C (68°F), low humidity, no dust and no corrosive gas atmosphere. Store the battery with a state of charge between 40-60%.

Charging: Charge only with a SMBUS compliant charger, e.g. RRC-SMB-MBC. Refer also to the manufacturer's instructions or equipment manual for proper charging instructions.

### Specifications:

|                        |                                   |
|------------------------|-----------------------------------|
| Type                   | RRC2057                           |
| Voltage                | 7.50V                             |
| Capacity               | 6.40Ah                            |
| Max. charge current    | 4.34A                             |
| Max. charge voltage    | 8.70V                             |
| Max. discharge current | 8.50A                             |
| Dimensions (L x W x H) | 85.35mm x 77.65mm x 23.0mm (max.) |
| Weight                 | 240g                              |

### Storage Temperature:

< 1 year: -20°C to +20°C (-4°F to 68°F)

< 3 month: -20°C to +45°C (-4°F to 113°F)

< 1 month: -20°C to +60°C (-4°F to 140°F)

















### Recycling:

Recycle batteries according to national and local regulations. Contact your local representative for assistance. The batteries must be in a discharged state to be disposed properly at the collection center. If batteries are not fully discharged, then the battery terminals must be isolated to prevent any possible short circuits before disposing of the batteries.

### Declaration of conformity:

CE: The battery complies with the current regulations of the EU guidelines.  
FCC: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### Symbols: Explanation of symbols which are on the battery and/or in this manual.

|   |  |   |   |
|---|--|---|---|
|  | Caution, consult accompanying documents                  |  | UN Transportation Test  |
|  | Operator's manual; operating instructions                |  | Recycling Symbol  |
|  | Mark of conformity to applicable European Directives     |  | Dispose of this product according to local regulations.                                     |
|  | Regulatory Compliance Mark of Australia and New Zealand. |  | For Canada & USA: Please call 1-800-822-8837 for information on how to recycle this battery |
|  | UL Recognized for Canadian and US market                 |  | China RoHS  |
|  | Recycling Symbol Taiwan                                  |  | Regulatory Compliance Mark of Japan   |
|  | KC   |  | EAC/Gost  |
|  | China CQC  |  | India BIS   |

## Introduction:

The smart battery charger is used to charge SMBUS batteries (Smart Batteries) with form factors RRC2040, 2040-2, 2054, 2057 or smart batteries with a similar footprint e.g. 204x range, 205x range, etc..

### ⚠ CAUTION!

Only batteries that comply with the Data Specification 1.0 or 1.1 can be charged with this battery charger. Other rechargeable batteries or conventional batteries may not be used.

### Tip:

Use smart batteries for as long as possible in your device before recharging. The more completely they are discharged, the more exact the charger can calculate capacity and charge requirements.

## Making Connections

1. Connect the cable from the AC Adapter Power Supply to the battery charger unit.
2. Connect the power cable to the AC Adapter Power Supply and plug it into a 120 Volt AC wall socket.
3. The LED is going out after the selftest of the battery charger. The battery charger is ready for use.
4. If the red control lamp remains on and no battery is in the charger, the battery charger is defective and must be replaced before charging any batteries.

## Charging Batteries

1. Connect up the battery charger as described above.
2. Place a discharged Smart Battery into the battery charger.
3. The battery charger should initialize the charger and recognize the battery.
4. The battery will begin charging. Leave the battery until the green control lamp lights continuously.
5. Remove the battery when fully charged. **DO NOT LEAVE A FULLY CHARGED BATTERY IN THE CHARGER FOR MORE THAN A WEEK.**

| LED Indications           |   |
|---------------------------|---|
| One time Red/Orange/Green | Self test: Charger is ready for use.  |
| Red/Green blinking        | The battery was not recognized as a Smart Battery. Either a conventional battery is inserted or an extremely discharged Smart Battery. If it is a Smart Battery, it will be reactivated within 15 minutes and recharged. If this is not the case, the LED will light red – see below. |
| Orange light              | The inserted battery is the correct type and is currently being charged.  |
| Green light               | The battery is charged and can be removed for use.  |
| Red blinking              | The battery is too hot or too cold to be charged without damage. If the battery is too cold it will be charged as soon as it has warmed up sufficiently. If the battery is too hot it should be removed to cool down.   |
| Red light                 | Either<br>- the battery is badly damaged and must be replaced, or<br>- it is a conventional battery which cannot be recharged.  |

## FCC Advice, valid in USA

### ⚠ WARNING

Do NOT locate this battery charger in the vicinity of a patient.

In accordance with EN60601-1-1, the horizontal distance must be at least 1.5 meters.

Do not insert a fully charged battery into the charger repeatedly. Due to the high initial charge, the battery could be overcharged which could lead to damage to the battery and its battery charger. Use the battery charger only in dry indoor environments! Wet and moisture covered products should not be used!

This product has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications of the device are not allowed.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN DAMAGE THE PRODUCT AND RENDER IT UNSAFE FOR USE. DEATH OR SERIOUS INJURY CAN OCCUR.

## Declaration of Conformity:

The battery charger complies to the current regulations of the EU guidelines.

| Symbols |   |
|---------|---|
|         | Caution / Warning   |
|         | Instructions for use  |
|         | Use only in enclosed spaces                                     |
|         | Sign of conformity to the applicable EC Directives              |
|         | The product should be disposed of according to local guidelines |
|         | RoHs (China)  |
|         | DC voltage  |

| Technical Specifications         | Battery Charger   | Power Supply                |                             |
|----------------------------------|---|-----------------------------|-----------------------------|
|                                  |   | RRC-SMB-MBC                 | RRC-SMB-MBC-M               |
| Input Voltage                    | 19 - 26VDC / 2.8A max.  | 100-240VAC / 50-60Hz        | 100-240VAC / 50-60Hz        |
| Charging and Output Voltages     | 0 - 17.4VDC / 0 - 4A  | 19VDC ± 5% / 3.4A           | 19VDC ± 5% / 3.43A          |
| Power                            | 50W max.  | 65W                         | 65W                         |
| Measurements (L x B x H)         | 120 x 64 x 43 mm  | 95 x 51 x 25.4 mm           | 119 x 60 x 36 mm            |
| Operating / Storage Temperature  | 0°C to 40°C / -10°C to 70°C   | 0°C to 40°C / -10°C to 70°C | 0°C to 40°C / -20°C to 80°C |
| Weight                           | 110g  | 270g                        | 310g                        |
| Safety Standards / EMC Standards | IEC/EN60950-1 UL60950-1* / EN55011 / EN55022 / EN55024* / FCC15 class B / IEC/EN61000-4-2,-3,-4,-5,-6,-8,-11* / EN61000-3-2,-3-3* |                             |                             |

\* valid only for power supply

**Bullard Center**  
2421 Fortune Drive  
Lexington, KY 40509 • USA  
877-BULLARD (285-5273)  
Tel: +1-859-234-6616  
Fax: +1-859-246-0243

**Americas Operations**  
1898 Safety Way  
Cynthiana, KY 41031 • USA  
877-BULLARD (285-5273)  
Tel: +1-859-234-6616  
Fax: +1-859-234-8987

**Bullard GmbH**  
Dieselstrasse 8a  
53424 Remagen • Germany  
Tel: +49-2642 999980  
Fax: +49-2642 9999829

**Bullard Asia Pacific Pte. Ltd.**  
51 Changi Business Park  
Central 2  
#03-04 The Signature  
Singapore 486066  
Tel: +65 6745 0556

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