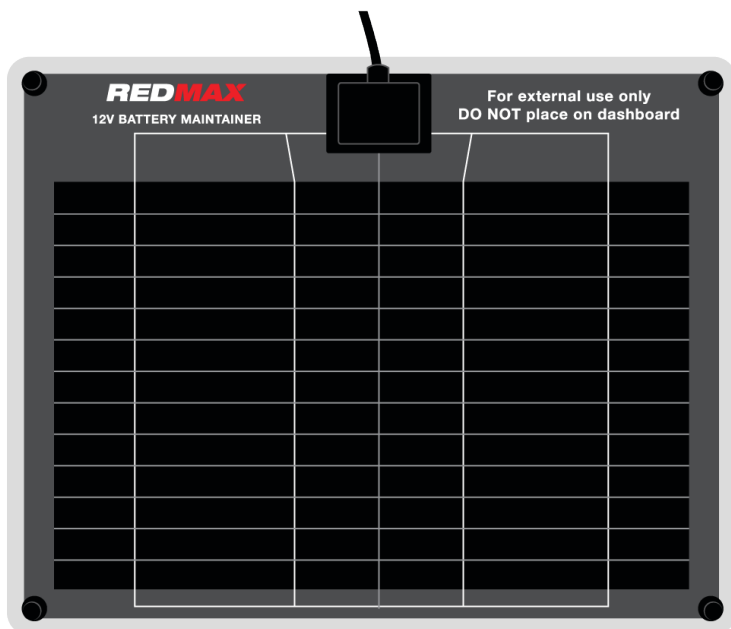


# **RED***MAX*

## **RMSBM1210**

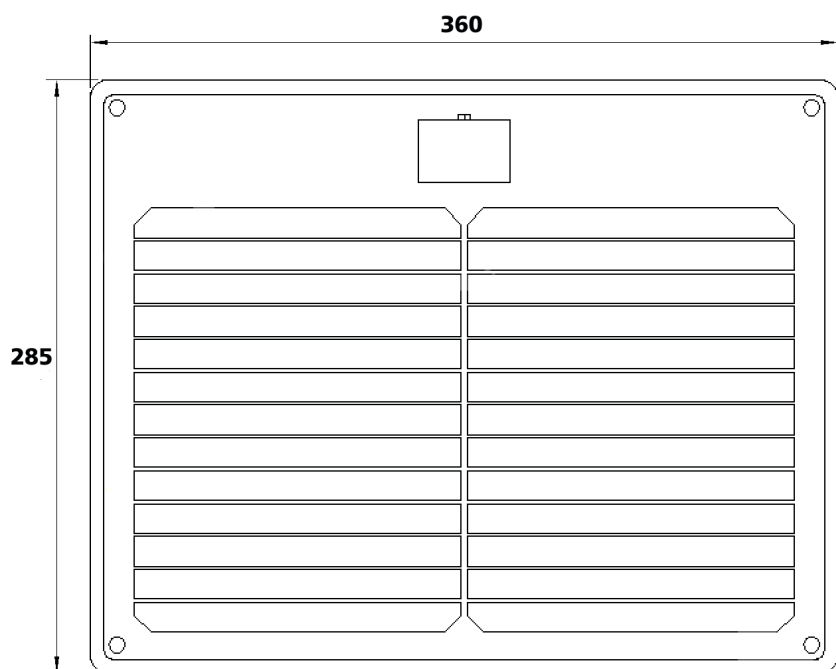
### **Solar Battery Maintainer**



# **USER MANUAL**

## Included in the box

- 12V 10W Battery Maintainer
- User Manual
- 12V Accessory Plug adapter cable
- Ring Terminal adapter cable



Congratulations on purchasing the **REDMAX RMSBM1210 12V, 10W Solar Battery Maintainer**. This device is designed to maintain a 12V lead acid battery for an extended period by providing a float charge to overcome the self-discharge characteristic of lead acid batteries. It is not designed to charge a battery. Please take the time to carefully read and understand this manual before using this product. Ensure that you store this manual in a safe place for future reference. A copy of this User Manual can also be downloaded from [www.rjbatt.com.au](http://www.rjbatt.com.au)

# IMPORTANT SAFETY ADVICE & WARNINGS

- This device is designed to maintain a 12V lead acid battery. Do not use this device with any other type of battery.
- If the battery is discharged, it must first be charged using a REDMAX RMBC1220 or similar battery charger.
- Lead acid batteries can produce explosive gases. You must ensure the battery is maintained in a ventilated area.
- NEVER smoke, use an open flame or create sparks near a battery during charging as this may cause an explosion.
- If battery acid contacts your skin or clothing, wash immediately with soap and water. If acid enters your eye, immediately flush the eye with running cold water for at least 10 minutes and seek medical attention.
- Do not attempt to use the 12V solar battery maintainer if the panel, cables or connectors have any physical damage.
- Never attempt to maintain a damaged, frozen, or non-rechargeable battery.
- The 12V solar battery maintainer is designed for external use only.
- Do not place the 12V solar battery maintainer on the dashboard or rear parcel shelf of a vehicle.
- When working with batteries, remove personal metal items such as rings, bracelets, necklaces and watches; ensure you don't short circuit the battery terminals with any type of metal tool or jewellery as this can cause personal injury or an explosion.
- Do not disassemble the 12V solar battery maintainer.
- The 12V solar battery maintainer is not a toy. Keep it away from children and pets.
- Do not flex or bend the solar panel as this may damage the PV cells or the encapsulation layers.

# FEATURES

## **EFFICIENT MONOCRYSTALLINE SOLAR CELLS**

26 PV cells connected in series.

## **DIRECT FLOAT CHARGING**

Additional charge controller is not required.

## **REVERSE CURRENT PROTECTION**

A blocking diode prevents current from flowing back into the panel during darkness. This allows the 12V solar battery maintainer to be continuously connected to a battery.

## **UV RESISTANT FLUOROPOLYMER TOP LAYER**

This allows for efficient light transmission and protects the cells from damage.

## **SEALED JUNCTION BOX WITH 3M OF UV RESISTANT CABLE**

UV resistant cable terminated with SAE connector to allow either adapter to be used.

## **WIDE OPERATING TEMPERATURE RANGE**

Weatherproof design with an operating range of -40°C to +85°C

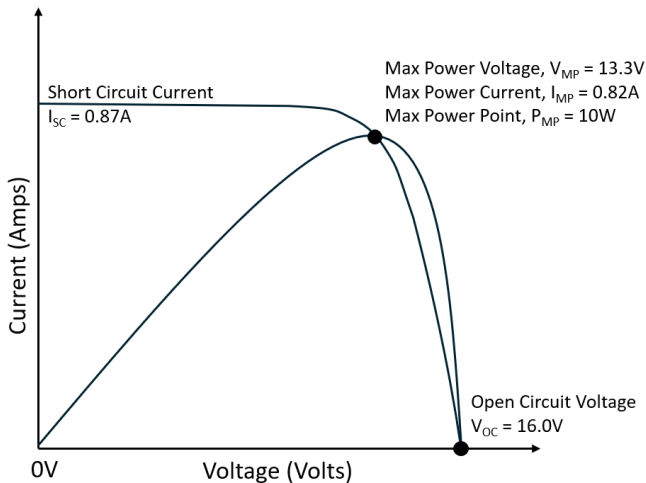
## **EASY INSTALLATION**

Attach to outside of vehicle windscreen or another flat surface using the supplied suction cups or carabiners.

# ELECTRICAL PARAMETERS

When exposed to direct sunlight, and without any load applied, the solar panel will generate an Open Circuit Voltage ( $V_{OC}$ ). As soon as a load is connected to the panel, the voltage will reduce. The voltage at the load will be determined by the current being drawn by the load.

This panel has an internal blocking diode with a forward voltage drop of 0.55V when conducting. The relationship between Voltage and Current shown in the graph in **Fig.1** below.



**Fig.1 - Current vs Voltage Graph**

# OPERATING INSTRUCTIONS

## **Before connecting a battery to the REDMAX Solar Maintainer**

1. Confirm that the battery being maintained is a 12V lead acid battery (i.e. Calcium, Maintenance Free, AGM, VRLA or EFB).
2. Confirm that the battery is charged

## **Connect the Solar Maintainer**

1. Plug in the 12V accessory plug adapter to the vehicle, or install the ring terminal adapter directly to the battery. Ensure that the correct polarity is observed (i.e. black to negative and red to positive)
2. Insert the connector at the end of the 3m cable attached to the solar panel into the connector of the adapter in use.
3. Place the solar panel in a location where it will be exposed to sunlight. Use the suction cups or carabiners to positively retain the panel. Do not place the panel in a shaded or semi shaded location as it may not generate sufficient power to maintain the battery. Do not place the panel inside a vehicle as it will not function correctly and is likely to overheat.
4. The solar maintainer will generate power whenever it is exposed to sunlight.

# SPECIFICATIONS

|                                              |                    |
|----------------------------------------------|--------------------|
| <b>PV Cell Type</b>                          | Monocrystalline    |
| <b>Number of Cells</b>                       | 26                 |
| <b>Cell Size</b>                             | 157mm x 14mm       |
| <b>Nominal Rated Power Output</b>            | 10W                |
| <b>Open Circuit Voltage (V<sub>oc</sub>)</b> | 16.0V              |
| <b>Maximum Power Voltage (PMP)</b>           | 13.3V              |
| <b>Short Circuit Current (ISC)</b>           | 0.87A              |
| <b>Maximum Power Current (IMP)</b>           | 0.82A              |
| <b>Cell Conversion Efficiency</b>            | 19.5%              |
| <b>Module Conversion Efficiency</b>          | 9.74%              |
| <b>Voltage Temperature Coeffiecient</b>      | -0.29% / °C        |
| <b>Current Temperature Coefficient</b>       | +0.05% / °C        |
| <b>Power Temperature Coefficient</b>         | -0.39% / °C        |
| <b>Blocking Diode</b>                        | 30V, 1A            |
| <b>Connecting Cable</b>                      | 3m, 18AWG, 105°C   |
| <b>Operating Temperature</b>                 | -40°C to +85°C     |
| <b>Ingress Protection</b>                    | IP67               |
| <b>Panel Dimensions (LxWxH)</b>              | 360 x 285 x 13.2mm |
| <b>Weight</b>                                | 0.55kg             |



*For more information on REDMAX products, visit your  
nearest R&J Batteries branch or distributor*

*// [rjbatt.com.au](http://rjbatt.com.au) // [rjbatt.co.nz](http://rjbatt.co.nz)*