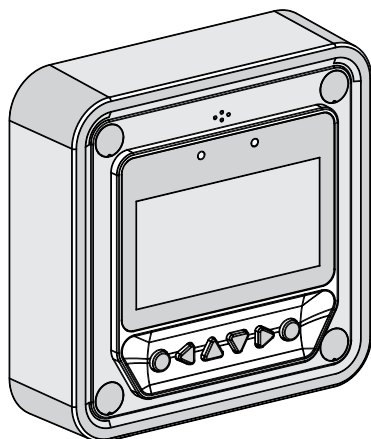THE POWER OF

REDARC ®

S/LAR

Remote Monitor for Solar Regulator

SRPA-RM

To suit SRPA0120, SRPA0240 & SRPA0360 Solar Regulators

THE SOLAR REGULATOR REMOTE MONITOR

The REDARC Solar Regulator Remote Monitor allows users to monitor how their solar panels are performing and keep track of the charge state of the battery/s being used.

The unit is simple to setup and control and provides an easy to read graphical interface, which can be modified to suit the users preferences.

WARNING & SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS — This manual contains IMPORTANT SAFETY INSTRUCTIONS for the REDARC Remote Monitor for REDARC Solar Regulators.

DO NOT OPERATE THE SOLAR REGULATOR UNLESS YOU HAVE READ AND UNDERSTOOD THIS MANUAL AND THE SYSTEM IS SETUP AS PER THESE INSTRUCTIONS. REDARC RECOMMENDS THAT ANY REGULATOR/CHARGER BE INSTALLED BY A SUITABLY QUALIFIED PERSON.

⚠ WARNING

RISK OF EXPLOSIVE GASES:

Working in the vicinity of a lead-acid battery is dangerous. Batteries generate explosive gases during normal operation. For this reason, it is of utmost importance that you follow the instructions each time you use the Regulator.

⚠ CAUTION

1. Solar Regulators should not be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are supervised or have been instructed on how to use the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the Solar Regulator.

2. Do NOT use the Solar Regulator to charge non-rechargeable batteries. Doing so may result in harm to the user and/or damage to the regulator and/or solar blanket. Only use the Solar Regulator for charging standard lead acid, calcium content, Gel & AGM type 12 V batteries.

3. Check the battery manufacturer's data for your battery and ensure that the voltage of the charging profile you select does not exceed the manufacturer's recommended maximum charging voltage. If the absorption and boost voltage for your battery type is too high, please select another charging profile. Do not change the original settings without confirming the battery manufacturer's recommendations or consulting the battery manufacturer.

4. The Solar Regulator is not intended to supply power to a low voltage electrical system other than to charge a battery.

5. NEVER smoke or allow a spark or flame in vicinity of battery or engine. This may cause the battery to explode.

6. The remote monitor is not waterproof or designed for installation under bonnet or outdoors. Ensure the monitor is installed in a cool and dry environment.

7. **PERSONAL SAFETY PRECAUTIONS**

To assist with the safe operation and use of the Solar Regulator:

a) Wear complete eye protection and clothing protection. Avoid touching eyes while working near a battery.

b) If Battery acid contacts your skin or clothing, remove the affected clothing and wash the affected area of your skin immediately with soap and water. If battery acid enters your eye, immediately flood the eye with running cold water for at least 10 minutes and seek medical assistance immediately.

INST126-1

WARNING & SAFETY INSTRUCTIONS

c) If Battery acid contacts your skin or clothing, remove the affected clothing and wash the affected area of your skin immediately with soap and water. If battery acid enters your eye, immediately flood the eye with running cold water for at least 10 minutes and seek medical assistance immediately.

NOTICE

1. Designed for use with the REDARC SRPA solar regulator only.
2. The screen backlight will increase the current draw. Timing and durations of the backlight can be adjusted to suit individual needs.
3. The communication data cable is an 8-Pin RJ45 type Ethernet cable. If a cable of different length is required. REDARC recommend buying a cable of the required length rather than shortening the supplied cable.
4. Do not forget your password. The factory default password is '000000'.
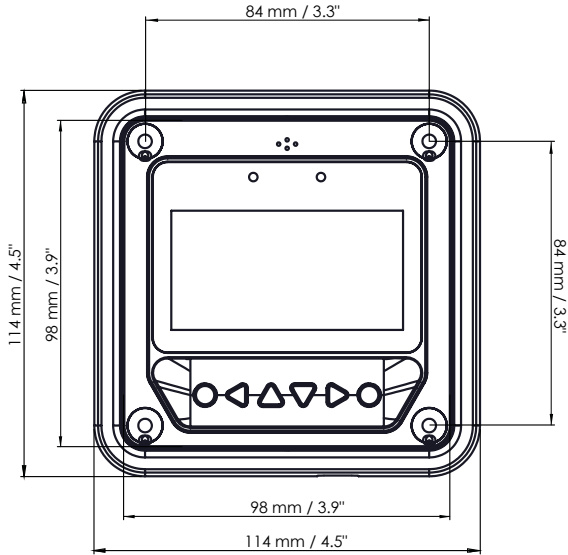5. This user manual is to be read in conjunction with the REDARC SRPA Solar Regulator user manual.
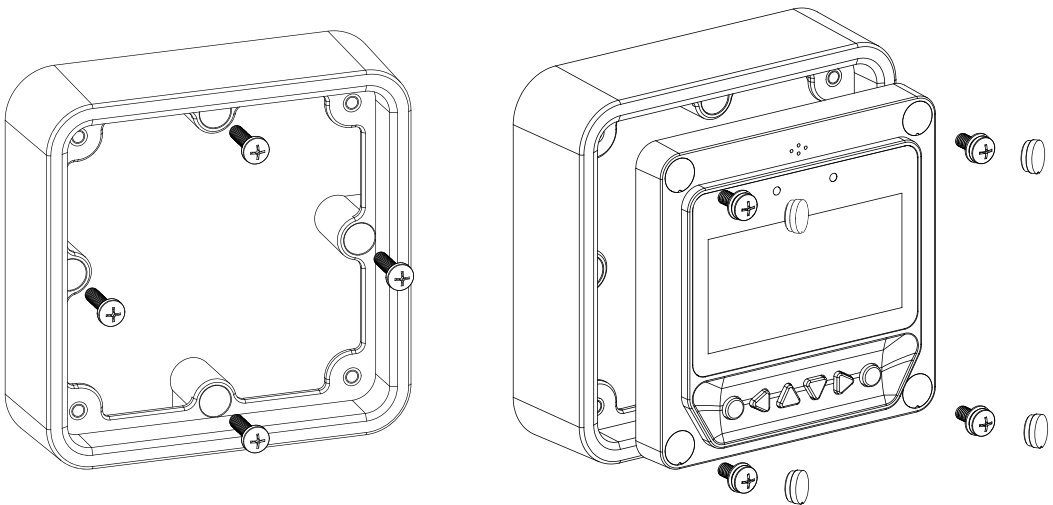
CONTENTS

1 INTRODUCTION

1.1 Dimensions

1.2 Mounting

⚠ CAUTION

The remote monitor is not waterproof or designed for installation under bonnet or outdoors. Ensure the monitor is installed in a cool and dry environment.

System Status

Volts Batt	14.6
Volts S-Pnl	16.2
Amps Charge	0.9

01 01 2013
09:39:54

ESC

1.Monitoring
2.Device Info.
3.Control Para.
4.Device Para.

5.Device PSW.
6.Failure Info.
7.Meter Para.

Charging Logs

Day:	0.0kWh
Month:	0.0kWh
Total:	0.0kWh

Battery Info 1/3

Mode:	Absorb
Status:	Normal
Fault:	No

Battery Info 2/3

Max Volts:	15.0
Min Volts:	12

Battery Info 3/3

Voltage:	14.6V
Current:	0.9A
S.O.Charge:	92%

S-Panel Info 1/2

Volts:	16.2
Amps:	0.9
Power:	16.8W

S-Panel Info 2/2

Status:	Normal

Regulator Info

Temp :	26.2°C
Status:	OK

3   MONITOR INFORMATION

3.1   Monitoring

System Status

This screen shows the essential voltage and charging status of your system:

Volts Batt	The voltage level of the battery
Volts S-Pnl	The input voltage from the solar panel
Amps Charge	The real time charging performance in amps

System Status	
Volts Batt	14.6
Volts S-Pnl	16.2
Amps Charge	0.9

Date and Time

This screen shows the date and time:

Date	MM – DD – YYYY format
Time	24hr HH : MM : SS format
Note: The date and clock can be set in the Device Parameter menu	

```
01 01 2013
09:39:54
```

Charging Logs

This screen shows the charging performance of the system since it was connected:

Day	Power supplied in the last 24 hours
Month	Power supplied in the last 30 days
Total	Total power supplied since connection

Charging Logs	
Day:	0.0kWh
Month:	0.0kWh
Total:	0.0kWh

Battery Information (3 screens)

These screens show detailed battery information:

Mode	The current charging stage/mode: No charge, Boost, Absorb or Float
Status	The battery status: Normal etc.
Fault	Fault diagnostics, if a fault has occurred

Battery Info 1/3	
Mode:	Absorb
Status:	Normal
Fault:	No

Max Volts	The maximum voltage the battery has reached
Min Volts	The minimum voltage the battery has reached

Voltage	The battery real time voltage
Current	The Charging current into the battery
S.O.Charge	The State of Charge of the battery in percentage

Solar Panel Information (2 Screens)

These screens show detailed solar panel information:

Volts	Solar panel real time voltage
Amps	Solar panel real time amperage from the panel
Power	The calculated power (watts) the panel is producing

```
     S-Panel  Info 1/2
Volts:              16.2
Amps:                0.9
Power:             16.8W
```

Status	The solar panels charging status (Normal, No Charge)
	Normal — Charging without error or fault
	No Charge — No solar panel or battery connected, check wiring or system

Regulator Information

This screen shows you detailed regulator information:

Temp	The regulators internal temperature (displayed in °C)
Status	The regulators status

```
     Regulator  Info

Temp:            26.2°C
Status:              OK
```

(ESC) Pressing the 'ESC' from any screen will take you to the 'MENU' list.

3.2   Menu

These screens show detailed battery information:

1. Monitoring	Performance indicators, scroll during normal operation
2. Device Info	Information about the manufacture of the unit
3. Control Parameters	Installation settings including battery type and size
4. Device Parameters	Allows backlight and date/time changes

```
1.Monitoring
2.Device Info.
3.Control Para.
4.Device Para.
```

5. Device Password	Set the device password, needed to change battery type
6. Failure Information	If faults occur they will be logged here
7. Meter parameters	Information on the unit

```
5.Device PSW.
6.Failure Info.
7.Meter Para.
```

3.3   Device Information

Device Information (2 Screens)

These screens show the regulators default ratings and serial number:

Rate. Vol	The regulators rated voltage 12 V or 24 V
Char. cur	The regulators rated charging current
SN	Internal serial number (REDARC use only)

```
Rate.Vol:        24V
Char.cur:        20A
```

3.4   Control Parameters

OK   To change settings, press the 'OK' button, enter the device password and press 'OK' again. Change the setting to the desired value and press 'OK' once more to save the setting.

⚠ CAUTION

Check the manufacturer's data for your battery and ensure that the 'Absorption' voltage of the profile selected does not exceed the manufacturer's recommended maximum charging voltage. If the 'Absorption' voltage for your battery type is too high, please select another charging profile. Do not change the original settings without confirming the battery manufacturer's recommendations or consulting the battery manufacturer.

Batt. Type

This screen shows and allows changes to the Battery Type & Battery size setting:

```
Batt. Type
AGM
Batt. AH
100AH
```

The Battery type can be selected from AGM, Standard and Calcium types:	
AGM	Is the low setting, with a maximum charge rate of 14.4 V, AGM batteries are a sealed deep cycle battery, similar to a Gel battery.
Standard	Is the medium setting, with a maximum charge rate of 14.6 V, Standard batteries are not sealed and have vents/caps to allow maintenance of the water levels in the cells
Calcium	Is the High setting, with a maximum charge rate of 14.8 V, Calcium batteries can be sealed or vented, they are constructed of a calcium/lead mix to improve its strength, heat and corrosion resistance, generally used for marine or 4wd starting batteries.

Batt AH	The Battery amp hours can be set to offer a state of charge percentage, the range is from 1 – 9999Ah.
	Note 1: This is a calculated guide based on the Battery Information on page 6.
	Note 2: This setting is a guide only, the battery size does not need to be set for correct function / charging.

Temp Comp. Coeff:

This screen shows and allows changes to the Temperature compensation coefficient and systems rated voltage:

Temp Comp.	The temperature coefficient is the reduction in voltage (millivolt) per degree Celsius rise in temperature. (displayed in °C)
Rated Voltage	The battery nominal voltage (12 V, 24 V or Auto)

Temp Comp. Coeff
–30mV/°C/12V
Rated Voltage
Auto

Over Volt Disc.

This screen shows the Over Voltage Disconnect and Charge voltage limit setting:

Over Volt. Disc	The battery voltage level that will disconnect the solar panel and stop charging the battery
Charge limit	The highest charging voltage allowed to be set.

Over Volt. Disc.
16.5V
Charge Limit
16.0V

Over Volt Rec.

This screen shows the Over Voltage Reconnect voltage setting and the Equalisation charge state:

Over Volt. Rec	The battery voltage level that will reconnect the solar panel to the battery and resume charging after a previous high voltage disconnection
Charge limit	The Equalisation charging stage voltage setting.

Over Volt. Rec.
15.8V
Equal. Charge
----V

Note: this will be zero for AGM battery setting and two 2 hours for Calcium and Standard battery types)

Absorb. Charge

This screen shows the Absorb & Float charging stage voltage levels:

Absorb. Change	The battery voltage limit for the Absorb Stage of charging, Absorb stage is when the battery is approaching full and the regulator is maintaining a constant output voltage.
Charge limit	The battery voltage limit for the Float stage of charging, Float stage is when the battery is full and will be trickle charged from the solar panel.

Absorb. Charge
14.4V
Float Charge
13.6V

Absorb. Rec.

This screen shows the Absorption Recover voltage setting and the Low Voltage Reconnect setting:

Absorb. Rec	The voltage level that will re-trigger the charger back into the Absorption stage of charge.
Low Volt. Rect.	Not applicable.

```
Absorb. Rec.
    13.2V
Low Volt. Rect.
    11.5V
```

Under Volt. Rect

This screen shows the Under Voltage Reconnect and Under Voltage Warning voltage levels:

Under Volt. Rect	The battery voltage level that will reconnect the solar panel to the battery and resume charging after a previous low voltage disconnection
Under Volt. Warn	The voltage level that will trigger the LED to turn yellow, warning you that the battery voltage is low. At this point you should manage your loads and disconnect or turn off non-essential loads to save battery power.

```
Under Volt. Rect
    11.8V
Under Volt. Warn
    11.5V
```

Low Volt. Disc

This screen shows the Low Voltage Disconnect and Discharge voltage limit for the battery:

Low Volt. Disc	Not applicable.
Discharge Limit	Not applicable.

```
Low Volt. Disc
    10.5V

Discharge Limit
    10.1V
```

Equalize Time

This screen shows the Equalize and Absorption charging stage time limits:

Low Volt. Disc	The time duration for the equalization charging stage, this stage is required for battery maintenance of permanent installations and will trigger every 28 days
Discharge Limit	This is the Absorb charging stage time duration, this setting is defaulted to 180 minutes, and can be adjusted from 10 – 180 minutes.

```
Equalize Time
    ---min
Absorb Time
    10min
```

Note: REDARC does not recommend changing this or any of the default settings.

3.5   Device Parameters

Device Parameter (Version)

This screen shows the Remote Monitors software version and ID number:

Ver.	The internal software version, this information is for REDARC use only.
ID	The internal software ID number, this information is for REDARC use only

```
Device  Parameter
Ver:     V02.32+V7.18
ID:      001
```

Device Parameter (Backlight)

This screen shows and allows you to set the backlight illumination timing and date/time settings:

⬛ *NOTICE*

The screen backlight will increase the current draw. Timing and durations of the backlight can be adjusted to suit individual needs.

Bklight	The led backlight illumination time duration, adjustable from 1 – 999 seconds.
Date	MM – DD – YYYY format
Time	24hr HH : MM : SS format

```
Device  Parameter
Bklight:            100S
     01 - 01 - 2013
        19:10:50
```

3.6   Device Password

This screen shows and allows you to set the password for Parameter changes:

OriPsw	This is the device password before setting.
NewPsw	This is the new device password.

```
     Device  PSW
OriPsw:            xxxxxx
NewPsw:            xxxxxx
```

⬛ *NOTICE*

Do not forget your password. The factory default password is '000000'.

If changed, REDARC recommend recording your new password in the box provided.

✎ *Password*

3.7   Failure Information

Failure Info
This screen shows any fault information that has occurred with the solar panel or battery connection and voltage limits:

Failure   Info.

3.8   Meter Parameters

Meter Parameters (Screen 1)

This screen shows the SRPA remote monitors model number, software version and serial number:

Type	The remote monitors part number (SRPA-RM)
Ver	The software version, for REDARC use only.
SN	The units serial number, for REDARC use only.

Meter Para.	
Type:	SRPA-RM
Ver:	H02.02+S02.02
SN:	201510160000001

Meter Parameters (Screen 2)

This screen shows and allows changes to the time duration of the display default screen switching and backlight time:

Sw — Pages	Timeout / time delay in seconds before the screen defaults back to the monitoring default page.
Bklight	The led backlight illumination time duration, adjustable from 1 – 999 seconds.

Meter Para.	
Sw-Pages:	000S
Bklight:	020S

ICES Declaration: CAN ICES-003 (B) / NMB-003(B)

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.

2.   This device must accept any interference received, including interference that may cause undesired operation.

This equipment 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 intro 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 not expressly approved by (the party responsible for compliance) could void the user's authority to operate the equipment

NOTICE

The Remote monitor cable is equipped with 2 different styles of plug (as shown above). In order to fit within the remote monitor's mounting bracket — Plug A should be connected to the remote monitor and Plug B to the regulator.

The communication data cable is an 8-Pin RJ45 type Ethernet cable. If a cable of different length is required, REDARC recommend buying a cable of the required length rather than shortening the supplied cable.

Plug A

Plug B

Plug B
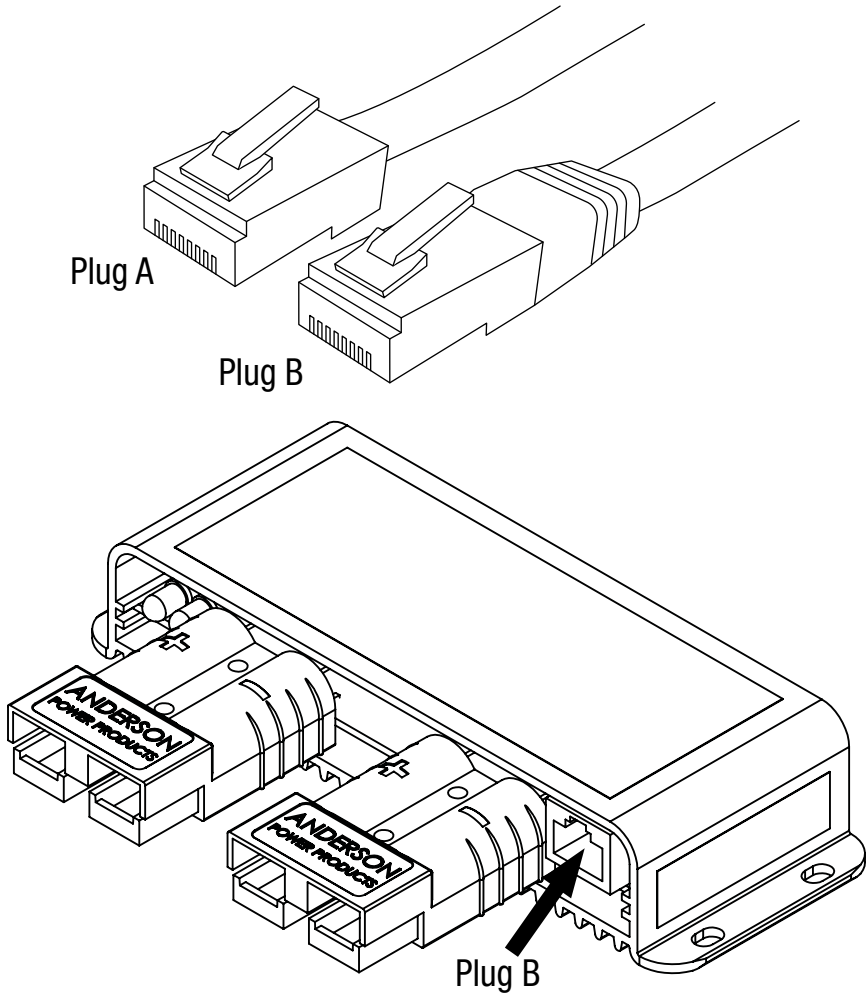
5 WARRANTY

Limited Warranty

For full warranty terms and conditions, visit the link below or refer to the contact details applicable to your region.

Australia and New Zealand

www.redarc.com.au/warranty

REDARC Electronics Pty Ltd
23 Brodie Road (North),
Lonsdale SA 5160
Australia

Australia	+61 8 8322 4848
New Zealand	+64 9 222 1024
UK/Europe	+44 (0)20 3930 8109

North America

www.redarcelectronics.com/warranty

REDARC Corporation
c/o Shallco, Inc.
308 Component Dr.
Smithfield, NC 27577
USA

USA	+1 (704) 247 5150
Canada	+1 (604) 260 5512
Mexico	+52 (558) 526 2898

THE POWER OF

REDARC ®

S�‍LAR

Australia
power@redarc.com.au
www.redarc.com.au
+61 8 8322 4848

New Zealand
power@redarcelectronics.co.nz
www.redarcelectronics.co.nz
+64 9 222 1024

North America
power@redarcelectronics.com
www.redarcelectronics.com

United States
+1 (704) 247 5150

Canada
+1 (604) 260 5512

Mexico
+52 (558) 526 2898

UK/Europe
power@redarcelectronics.eu
www.redarcelectronics.eu
+44 (0)20 3930 8109

www.redarc.com.au