

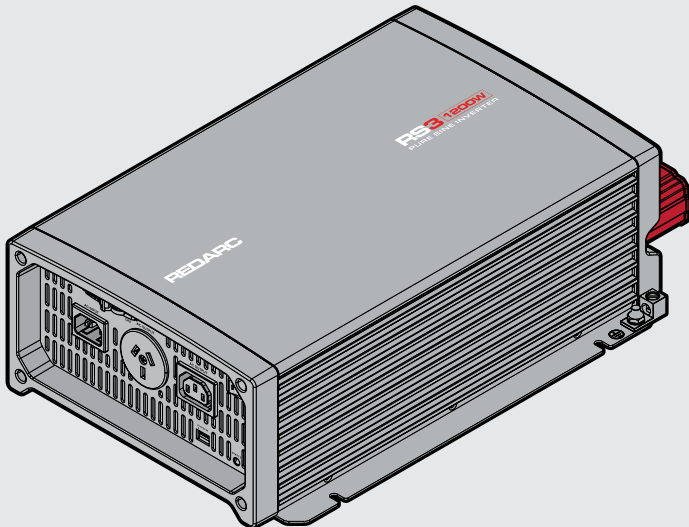
THE POWER OF

REDARC®

RS3 Pure Sine Wave Inverter

MODELS:

- R-12-1200RS3
- R-12-2000RS3
- R-12-3000RS3
- R-24-1200RS3
- R-24-2000RS3
- R-24-3000RS3



RS3 Pure Sine Wave Inverter

PRODUCT FUNCTION

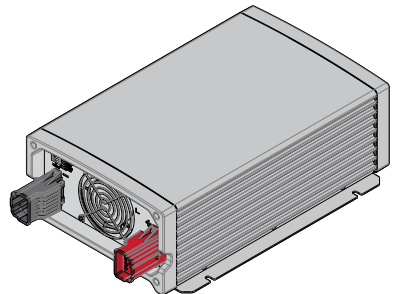
The REDARC RS3 range of Pure Sine Wave Inverters have been designed to provide safe, efficient, and reliable 230 VAC power for your electronic devices in remote environments.

Built with safety in mind, the RS3 Inverters feature a residual current circuit breaker with overcurrent protection (RCBO). This will safely and effectively shut-down power to a connected load in an over current or short circuit event whilst also protecting against electrocution, making it a safe and reliable choice for a wide range of applications.

Available in 12V and 24V input variants, the RS3 range is suitable for installations in a range of applications including caravans, camper trailers, motor homes, truck sleeper cabs, 4x4's and commercial vehicles.

RS3 Inverters are also equipped with an inbuilt Automatic Transfer Switch (ATS) to automatically switch from battery power to mains power when available.

Discover power and convenience on the go like you've never experienced before with 1200 W, 2000 W, 3000 W models available to power appliances such as laptops, power tool battery chargers, coffee machines, kettles, induction cookers and toasters.



CONTENTS

WARNINGS AND SAFETY INSTRUCTIONS	4
1 FRONT PANEL OVERVIEW	6
1.1 Main Switch	7
1.2 Status LED	7
1.3 Function Switch	7
2 REAR PANEL OVERVIEW	11
2.1 Communication and Remote Interface	12
2.2 Remote Control Terminal	12
2.3 Chassis Ground	13
3 INSTALLATION	14
3.1 Cable and Fuse Requirements	14
3.2 Lug Requirements	15
3.3 Mounting	16
3.4 Ventilation Fan	17
3.5 Safety Before DC Input Cable Connections	17
3.6 DC Input Cable Connections	19
3.7 Turning the Inverter on	20
3.8 AC Input and output Connections	21
3.9 Maintenance	21
4 SPECIFICATIONS	22
4.1 1200 W Specifications	23
4.2 2000 W Specifications	24
4.3 3000 W Specifications	25
4.4 Dimensions	26
5 WARRANTY	27

WARNINGS AND SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS — this manual contains important safety instructions. Do not operate the system unless you have read and understood this manual.

REDARC recommends that the Inverter referenced in this manual be installed by a suitably qualified person.

Disclaimer: REDARC accepts no liability for any injury, loss or property damage which may occur from the improper or unsafe installation or use of its products.

SAFETY MESSAGE CONVENTIONS

Safety messages in this manual include a signal word to indicate the level of the hazard as follows:

⚠ WARNING

Indicates a potentially hazardous situation which could result in death or serious injury to the operator or to bystanders.

⚠ CAUTION

Indicates a potentially hazardous situation which may result in moderate or minor injury to the operator or to bystanders.

NOTICE

Indicates a situation that may cause equipment damage.

⚠ WARNING

- Risk of electrical shock. Do not disassemble the inverter - the internal circuitry contains hazardous voltages. Attempting to service the unit yourself may result in electric shock or fire and could void the unit warranty.
- Risk of electrical shock. Do not expose the inverter to rain, snow, spray, liquid or dust. Doing so may result in damage to the inverter or other appliances installed in the system or result in electric shock or fire.
- Risk of electrical shock. Operation of the inverter without a proper ground connection may result in an electrical safety hazard. Ensure proper ground connection is made during installation. For fixed and/or transportable (vehicle) installations, install according to appropriate **AS/NZS** standard.
- Risk of electrical shock. Before proceeding, carefully check that the inverter is not connected to any batteries and that all cables are disconnected from any electrical sources.
- Do not connect the output terminals of the inverter to an incoming AC source.

⚠ CAUTION

- This appliance is not intended for use 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 appliance.
- Do not operate the inverter with damaged or substandard cabling. Selecting the wrong cable or fuse size could result in harm to the installer or user and/or damage to the inverter or other appliances installed in the system. The installer is responsible for ensuring that the correct cable and fuse sizes are used when installing this inverter. Refer to [Section 3.1 \(page 14\)](#) for more information.
- Ensure recommended torque values are observed and the DC Input connections to the Inverter are tight (torque to 11.7–13Nm (9–10 ft-lbs)). Any loose connections could result in overheating and can be a potential hazard.

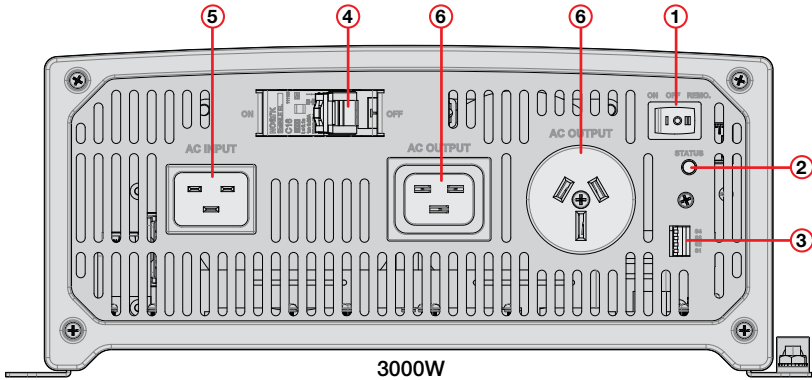
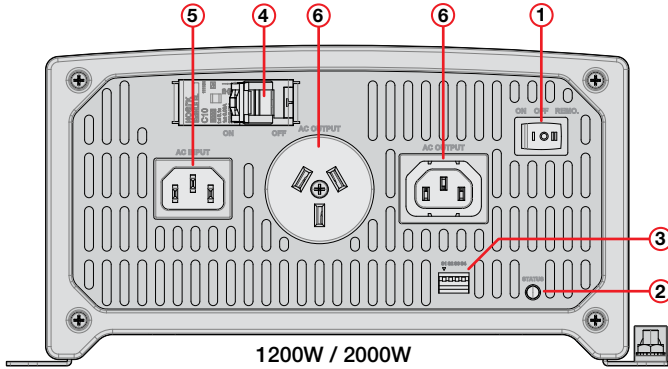
- Some components in the inverter can cause arcs and sparks. Do not put batteries, flammable materials, liquids, or anything that should be ignition-protected around the inverter. Doing so may result in fire or explosion.
- Be extra cautious to reduce the risk of dropping a metal tool onto a vehicle battery. Doing so might cause the battery to spark or might short-circuit the battery or other electrical parts that may cause an explosion.
- Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a battery. A battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.
- 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.
- NEVER smoke or allow a spark or flame in vicinity of battery. This may cause the battery to explode.
- Batteries are capable of providing very large currents in the case of a short circuit. A fuse must be installed on the positive supply cable as close as practical to the battery. Failure to do so provides inadequate protection against fire in the case of a short circuit. Only use high quality copper cable and keep the cable length short, refer to [Section 3.1 \(page 14\)](#) for more information.

NOTICE

- Upon receipt, examine the box for damage. If you have found any damage on the box, please notify the company you purchased this unit from.
- Install the inverter in a well-ventilated area with reasonable clearance. Do not install the inverter in a zero-clearance compartment or obstruct the ventilation openings. Doing so may result in the inverter overheating and ultimately damage the inverter.
- Reverse Polarity connection will blow the internal fuse and may damage the inverter permanently and could void the warranty.
- Do not operate appliances that may feed power back into the inverter. Damage to the inverter may occur as a result.
- The RS3 Inverters are fitted with RCBO, which incorporates both a residual current device as well as a circuit breaker. The RS3 Inverters comply with AS/NZS 4763 standard and can be used to power fixed wiring in accordance with AS/NZS 3001 when installed by a licensed electrician. A proper ground bond is required for the RCD to work as intended, see [page 18](#) for more information.
- Ensure that the frequency output of the inverter matches the frequency requirements of all loads attached to the inverter. Attempting to use appliances that requires an AC frequency different to the inverter output may result in damage to your appliances.
- All RS3 Series Inverters are suitable for indoor use only.
- When the ATS is passing grid power through the load(s), the RCD and over-current protection must be provided by the 'shore power' supply (refer to [Section 1.4 \(page 10\)](#)).
- When the ATS is passing through AC power from the AC Input connection, the integrated M.E.N. connection (Main Earth Neutral - required for correct operation of the RCD) is not in circuit. The external AC supply must provide the safety mechanism for the connected loads – consult a qualified electrician.

1 FRONT PANEL OVERVIEW

⚠ WARNING: Risk of electrical shock. Do not disassemble the inverter — the internal circuitry contains hazardous voltages. Attempting to service the unit yourself may result in electric shock or fire and could void the unit warranty.



1 Main Switch

2 Status LED

3 Function Switch

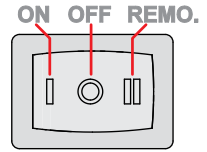
4 RCBO Safety Switch

5 AC Input Interface

6 AC Output Interface

1.1 MAIN SWITCH

The 3-stage Main Switch is used to toggle the Inverter ON and OFF or to select Remote Control mode. In the ON position, the inverter will be active, and the Status LED will light up. In the OFF position, the Inverter will be powered off and the Status LED will also be turned off.



In the REMO position, the Inverter will be switched ON and OFF via the REMOTE-RS connected to the Remote Interface (RJ-11) or via the Remote Control Terminal (see [Section 2.1](#)).

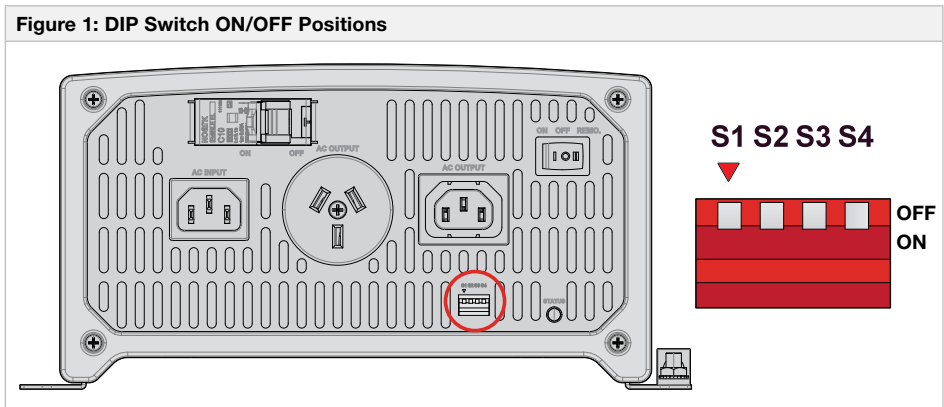
1.2 STATUS LED

The Status LED displays the operating mode of the Inverter.

LED Flash Sequence		Inverter Status
Constantly Lit		Normal Mode
Quick Flash		Input Voltage for 12 V is < 11.0V or > 16.0V Input Voltage for 24 V is < 22.0V or > 32.0V
2 seconds lit, short interruption		Over heating Excessive load
Off		Other fault or Unit is switched off

1.3 FUNCTION SWITCH

Figure 1: DIP Switch ON/OFF Positions



S1 – DEFINING SETTINGS

Using the S1 DIP Switch you can choose between using the Inverter's default Voltage and Energy-Saving Mode settings or using the settings defined by S2, S3 and S4 DIP Switches.

With S1 in the OFF position, by default the Inverter output is set to 240 V/50 Hz with no power saving mode.

Parameter	S1 DIP Switch
Internal Default Setting	OFF
DIP Switches S2–S4 Enabled	ON

S2 – SELECTING OUTPUT VOLTAGE

The S2 DIP Switch is used to set the output voltage of the Inverter.

Inverter Output Voltage	S2 DIP Switch
230 V/50 Hz	OFF
240 V/50 Hz	ON

S3 AND S4 – SELECTING POWER-SAVING MODE

The S3 and S4 DIP Switches are used to set the conditions when the Inverter will operate in its Power-Saving Mode. This mode reduces the power consumption of the Inverter by reducing the Standby Current Consumption listed in [Section 4 \(page 22\)](#) for each model.

The Inverter operates in Power-Saving Mode if the required output power is below the set threshold. If the required power exceeds this threshold, the Inverter will operate in Normal Mode.

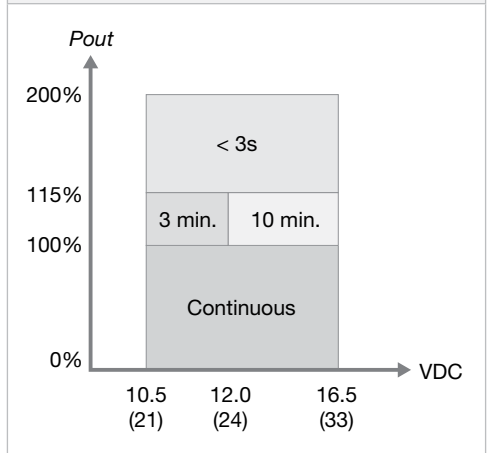
The Power-Saving Mode behaviour is set by S3 and S4 as found in the following table:

Saving Mode	DIP Switch S3	DIP Switch S4
<ul style="list-style-type: none">Saving mode activated when load < 5 WNormal mode activated when load > 5 W	OFF	OFF
<ul style="list-style-type: none">Saving mode activated when load < 5 WInverter shutdown automatically after 20 minutes in saving mode.Normal mode activated when load > 5 W	OFF	ON
<ul style="list-style-type: none">Saving mode activated when load < 45 WNormal mode activated when load > 45 W	ON	OFF
<ul style="list-style-type: none">Saving mode activated when load < 45 WInverter shutdown automatically after 20 minutes in saving mode.Normal mode activated when load > 45 W	ON	ON

OUTPUT POWER PERFORMANCE

Figure 2 displays the length of the time the Inverter can sustain a given Output Power (P_{out}) across the input voltage range for 12V and 24V variants.

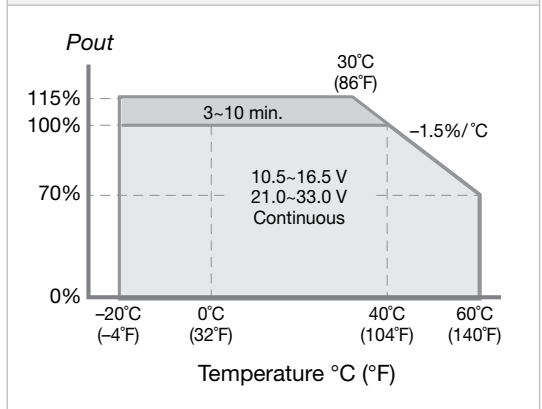
Figure 2: Input Voltage vs. Output Power



POWER VS TEMPERATURE PERFORMANCE

Figure 3 shows the derating of the Inverter output when ambient temperature exceeds 40°C (104°F), as well as the minimum operating ambient temperature of -20°C (-4°F).

Figure 3: Power vs. Temperature

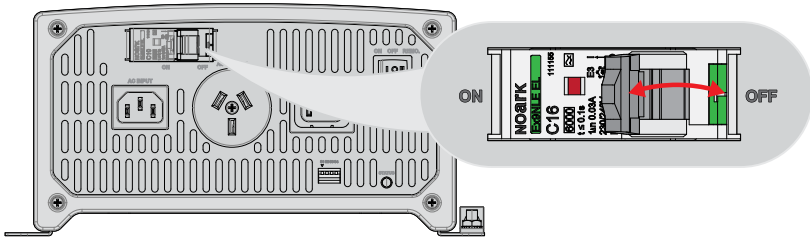


1.4 RCBO SAFETY SWITCH

NOTICE: When the ATS is passing through AC power from the AC Input connection, the integrated M.E.N. connection (Main Earth Neutral - required for correct operation of the RCD) is not in circuit. The external AC supply must provide the safety mechanism for the connected loads – consult a qualified electrician.

The RS3 Inverters are fitted with an RCBO which incorporates both a residual current device as well as a circuit breaker. The inclusion of the Type A RCBO complies with AS/NZS 4763 Standards and allows it to be used to power fixed connections of transportable structures and vehicles as per AS/NZS 3001 Standards, when installed by a licensed electrician.

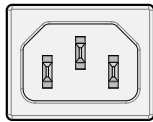
Figure 4: RCBO Safety Switch



1.5 AC INPUT INTERFACE

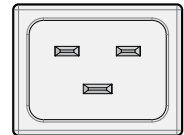
1200 W / 2000 W Models:

10A IEC C14 Input for connecting from AC Grid.



3000 W Models:

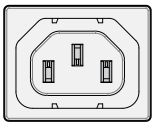
16A IEC C20 Input for connecting from AC Grid.



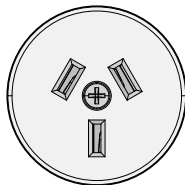
1.6 AC OUTPUT INTERFACE

1200 W / 2000 W Models:

10A IEC C13 Output Socket for connecting to AC appliances.

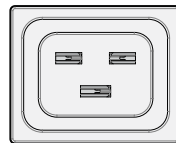


10A GPO Outlet Socket to plug in appliances directly.

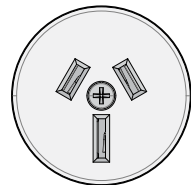


3000 W Models:

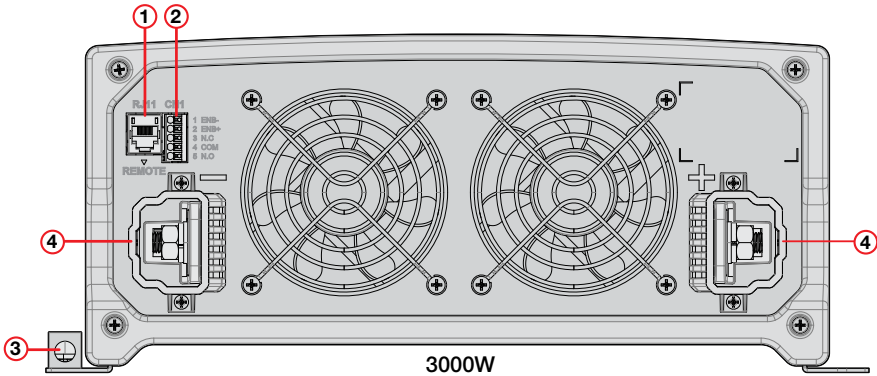
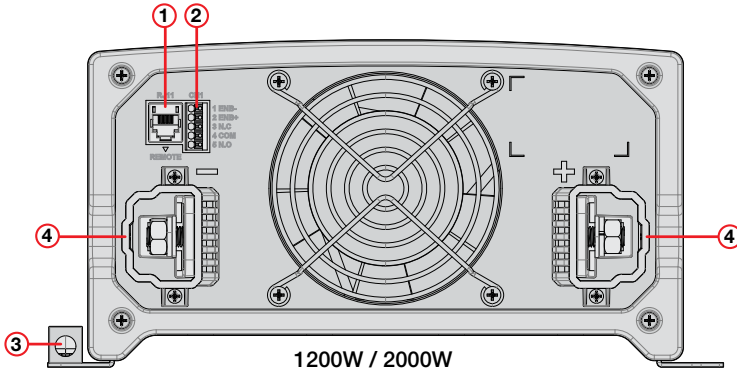
16A IEC C19 Output Socket for connecting to AC appliances.



15A GPO Outlet Socket to plug in appliances directly.



2 REAR PANEL OVERVIEW



- 1 Communication and Remote Interface (RJ11)
- 2 Remote Control Terminal (CN1) with dry contact function
- 3 Chassis Ground
- 4 DC Input Connectors

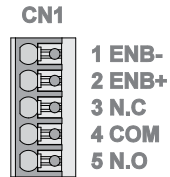
2.1 COMMUNICATION AND REMOTE INTERFACE

The RS3 Inverters can be controlled by compatible REDARC products including the REMOTE-RS Remote Control and the TVMS1280 via RS-232 communications using the RJ11 Interface. To enable this, set the Main Switch to the 'REMO' position.

Pin Number	Signal Description	
1	Reserved	--
2	GND	Same as Battery Negative
3	RXD	RS-232 RXD
4	TXD	RS-232 TXD
5	RMT	Remote Control panel (positive)
6	VCC (12V)	Internal power for Remote Control

2.2 REMOTE CONTROL TERMINAL

The Remote Control Terminal allows the installer to connect a remote ON/OFF switch and a remote fault indicator in applications where the inverter unit is mounted out of sight or is hard to access by the user.

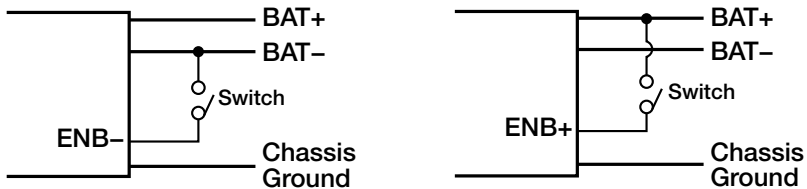


Pin Number	Signal Description	
1	ENB-	Enable -
2	ENB+	Enable +
3	N.C	Dry contact (by a relay), Normally closed (30VDC / 2A, surge current 7.5A)
4	COM	Dry contact (by a relay), Common
5	N.O	Dry contact (by a relay), Normally open (30VDC / 2A, surge current 7.5A)

PIN 1 (ENB-) AND PIN 2 (ENB+)

Pin 1 (ENB-) and Pin 2 (ENB+) can be connected to a toggle switch to provide remote switching.

Figure 5: Wiring configurations for Inverter Remote Switch



Switch ON: INV. ON
 Switch OFF: INV. OFF

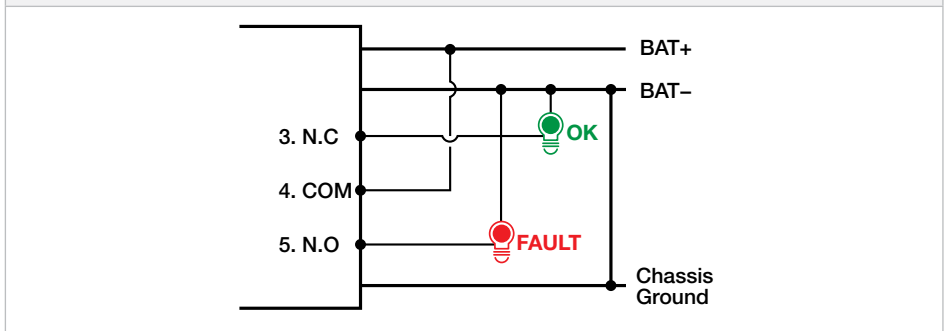
PIN 3 (N.C), PIN 4 (COM) AND PIN 5 (N.O)

Pins 3, 4 and 5 are contacts of a Form C relay circuit that can be used to connect remote status indicators such as LED's. The relay is rated up to 30VDC/2A. When the Inverter is in a "FAULT" condition, the relay will switch Pin 4 (COM) from Pin 3 (N.C) and make contact with Pin 5 (N.O). This relay is switched when a fault condition occurs including:

- Input Over/Under Voltage
- Output Short Circuit/Overload
- Under/Over Temperature

For example, the installer may want to connect LED indicators if the Inverter is operating normally or in a fault condition. To do this, the installer may connect Pin 4 (COM) to battery positive (BAT+), a "OK" LED to Pin 3 (N.C) and a "Fault" LED to Pin 5 (N.O).

Figure 6: Example Wiring Configuration for Inverter Remote Status Indication



2.3 CHASSIS GROUND

⚠ WARNING: Risk of electrical shock. Operation of the inverter without a proper ground connection may result in an electrical safety hazard. Ensure proper ground connection is made during installation. For fixed and/or transportable (vehicle) installations, install according to appropriate AS/NZS standard.

Always connect chassis ground to battery negative and use at least 2.5mm² (14 AWG) or a thicker cable. See [page 18](#) for guidance when installing the chassis ground connection.

3 INSTALLATION

3.1 CABLE AND FUSE REQUIREMENTS

⚠ WARNING: When exposed to high temperatures (such as found in engine bays and adjacent exhaust components), use suitably rated high-temperature cables and conduits. Avoid routing cables over sharp edges or where moving parts of the vehicle could adversely affect the cable. Conduit should also be used to protect cables against physical damage in vulnerable locations.

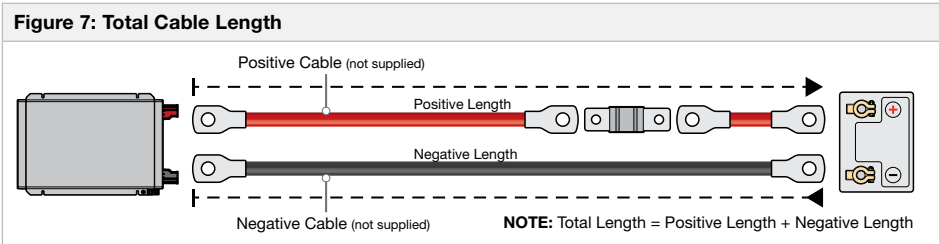
⚠ CAUTION: Batteries are capable of supplying very large currents. Fuses must be placed as close as possible to the positive battery terminal to protect the cable from damaging currents — failure to do so could cause fire or personal injury.

NOTICE: A cable size that is below the specification for the installation length, will result in an increased voltage drop when the inverter is under load. Common symptoms of incorrect cable size may include poor surge capability, low input voltage warnings, shutdowns, and overheating/melting of the cable.

For cable connections from the Inverter to the supply batteries refer to [Table 1](#) and [Table 3](#) for the correct cable size; and refer to [Table 2](#) and [Table 4](#) for correct fuse sizes.

REDARC recommend for the cables to be short as possible being no longer than the values in [Table 1](#) and [Table 3](#) and to apply heatshrink to the DC Input cables.

The cable between the Inverter and battery must be a large enough gauge to prevent excessive voltage drop over its length. As voltage drop occurs between battery positive and ground, the total cable install length of positive and negative cable combined must be considered (refer to [Figure 7](#)).



RECOMMENDED CABLE AND FUSE SIZING FOR A 12V INSTALL

Table 1: Recommended Cable Sizing for a 12V Install

Combined Positive and Negative Cable Length	R-12-1200RS3		R-12-2000RS3		R-12-3000RS3	
	mm ²	AWG	mm ²	AWG	mm ²	AWG
0 – 1 m (0 – 3.9')	25	4	50	1	55	1/0
1 – 2 m (3.9 – 6.6')	50	1	95	3/0	120	4/0
2 – 3 m (6.6 – 9.8')	70	2/0	120	4/0	-	-
3 – 4 m (9.8 – 13.1')	95	3/0	-	-	-	-

Table 2: Recommended Fuse Sizing for a 12V Install

12V Inverter	R-12-1200RS3	R-12-2000RS3	R-12-3000RS3
Fuse Size (A)	200	250	450
Fuse Type	MEGA	MEGA	MEGA

Fuse ratings are suitable to these recommended minimum cable sizes.

RECOMMENDED CABLE AND FUSE SIZING FOR A 24V INSTALL

Table 3: Recommended Cable Sizing for a 24V Install

Combined Positive and Negative Cable Length	R-24-1200RS3		R-24-2000RS3		R-24-3000RS3	
	mm ²	AWG	mm ²	AWG	mm ²	AWG
0 – 1 m (0 – 3.9')	16	6	25	4	35	2
1 – 2 m (3.9 – 6.6')	25	4	50	1	55	1/0
2 – 3 m (6.6 – 9.8')	35	2	55	1/0	95	3/0
3 – 4 m (9.8 – 13.1')	50	1	95	3/0	120	4/0
4 – 6 m (13.1 – 19.7')	70	2/0	120	4/0	-	-

Table 4: Recommended Fuse Sizing for a 24V Install

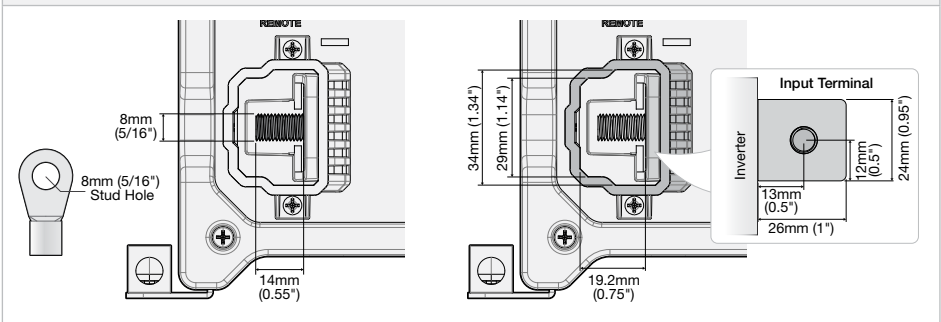
24V Inverter	R-24-1200RS3	R-24-2000RS3	R-24-3000RS3
Fuse Size (A)	100	150	225
Fuse Type	MIDI or MEGA	MIDI or MEGA	MEGA

Fuse ratings are suitable to these recommended minimum cable sizes.

3.2 LUG REQUIREMENTS

The DC Input terminals are equipped with M8 (5/16") studs. It essential to select a cable lug designed to suit an 8 mm (5/16") stud and the required cable gauge for your installation.

If your selected lug size doesn't allow for re-attachment of the shrouds use an alternative method to cover and protect the terminal studs.

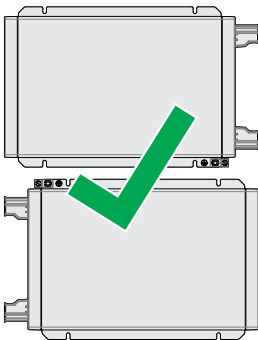
Figure 8: Lug Stud Hole Size

3.3 MOUNTING

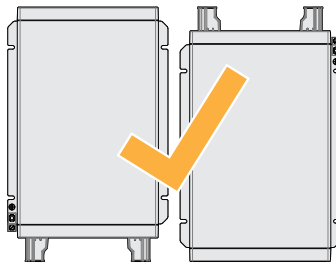
⚠ WARNING: Risk of electrical shock. Do not expose the inverter to rain, snow, spray, liquid, or dust. Doing so may result in damage to the Inverter, other appliances installed in the system or result in electric shock or fire.

The RS3 Inverter should be used in an environment that meets the following requirements:

- **The Inverter must be mounted on a structural surface using all four mounting holes with appropriate M6 fasteners.**
- **Dry** — Do not allow water to drip on or enter into the inverter.
- **Cool** — Ambient air temperature should be between 0°C to 40°C (32°F to 104°F).
- **Safe** — Do not install the inverter in a battery compartment or other areas where volatile fumes may exist, such as fuel storage areas or engine compartments.
- **Ventilated** — Keep the inverter at a distance (at least 25 mm (1")) away from surrounding objects. Ensure all ventilation openings are not obstructed.
- **Dust free** — Do not install the inverter in a dusty environment where the dust can enter into the unit, and especially not drawn into the product when the cooling fan is working.
- **Fused** — Batteries can supply very large currents; a fuse must be fitted between the battery and the inverter. The fuse must be located as close as possible to the battery's positive terminal to protect the cabling. Use the recommended cable and fuse sizes (see [page 14](#)).
- **Close to batteries** — Avoid excessive cable runs between battery and inverter to reduce the voltage drop across the cable. For safety reasons however, even when installed in a well ventilated area the inverter should not be installed within 300 mm (11.8") of the battery. The inverter must never be installed within the same enclosed compartment with the battery.
- Do not mount the inverter where it will be exposed to the gasses produced by the battery. These gasses are very corrosive, and prolonged exposure will damage the inverter.
- The Inverter should be mounted preferably horizontally but vertically is still acceptable. Do not mount the Inverter upside down.



Horizontal Wall Mount,
Base to Wall



Vertical Wall Mount,
Base to Wall



Horizontal Mount,
Base Down



Do not mount in a
Base Up configuration

3.4 VENTILATION FAN

The fan is load and temperature controlled and will engage when the AC Power Consumption reaches a certain level and when the unit gets hot. Ensure that the fan is not obstructed and is at least 25 mm (1") away from surrounding objects.

NOTICE: Install the inverter in a well-ventilated area with reasonable clearance. Do not install the inverter in a zero-clearance compartment or obstruct the ventilation openings. Doing so may result in the inverter overheating and ultimately damage the inverter.

3.5 SAFETY BEFORE DC INPUT CABLE CONNECTIONS

⚠ WARNING: Risk of electrical shock. Before proceeding, carefully check that the inverter is not connected to any batteries and that all cables are disconnected from any electrical sources. Do not connect the output terminals of the inverter to an incoming AC source.

⚠ CAUTION: Batteries are capable of providing very large currents in the case of a short circuit. A fuse must be installed on the positive supply cable as close as practical to the battery. Failure to do so provides inadequate protection against fire in the case of a short circuit. Only use high quality copper cable and keep the cable length short, refer to [Section 3.1 \(page 14\)](#) for more information.

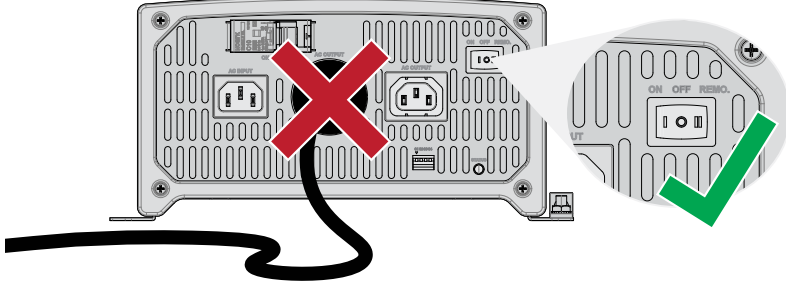
NOTICE:

- Reverse polarity connection will blow the internal fuse and may cause permanent damage to the inverter.
- The REDARC RS3 series Inverters come with a built in RCBO, which requires a good ground connection to function as intended. Any fixed wiring installations will need to be performed by a licensed electrician.

MAIN SWITCH AND AC OUTPUT REQUIREMENTS

Before making the DC Input cable connections, the Main Switch must be set to the “OFF” position and all loads are to be disconnected from the inverter's AC output.

Figure 9: Safety Before Installing DC Input Cable Connections



CHECK CABLE AND FUSE SIZE

Make sure to use suitably rated cables and fuses for your installation, for more information refer to [Section 3.1 \(page 14\)](#).

NOTICE

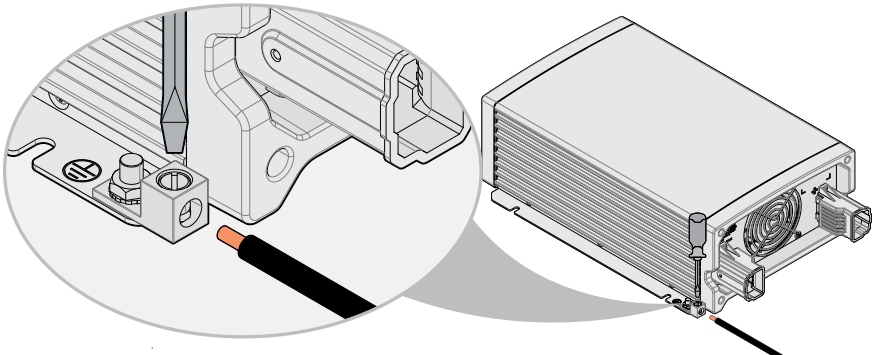
A cable size that is below the specification for the installation length, will result in an increased voltage drop when the inverter is under load. Common symptoms of incorrect cable size may include poor surge capability, low input voltage warnings, shutdowns, and overheating/melting of the cable.

CHASSIS GROUND CONNECTION

Connect Chassis Ground Terminal to the ground of vehicle, this applies to all negative ground vehicles. This connection must be made to the ground of the vehicle before making any other connections to the inverter.

Use at least 2.5 mm² (14 AWG) or a thicker cable and avoid using excessive cable length.

Figure 10: Chassis Ground Connection

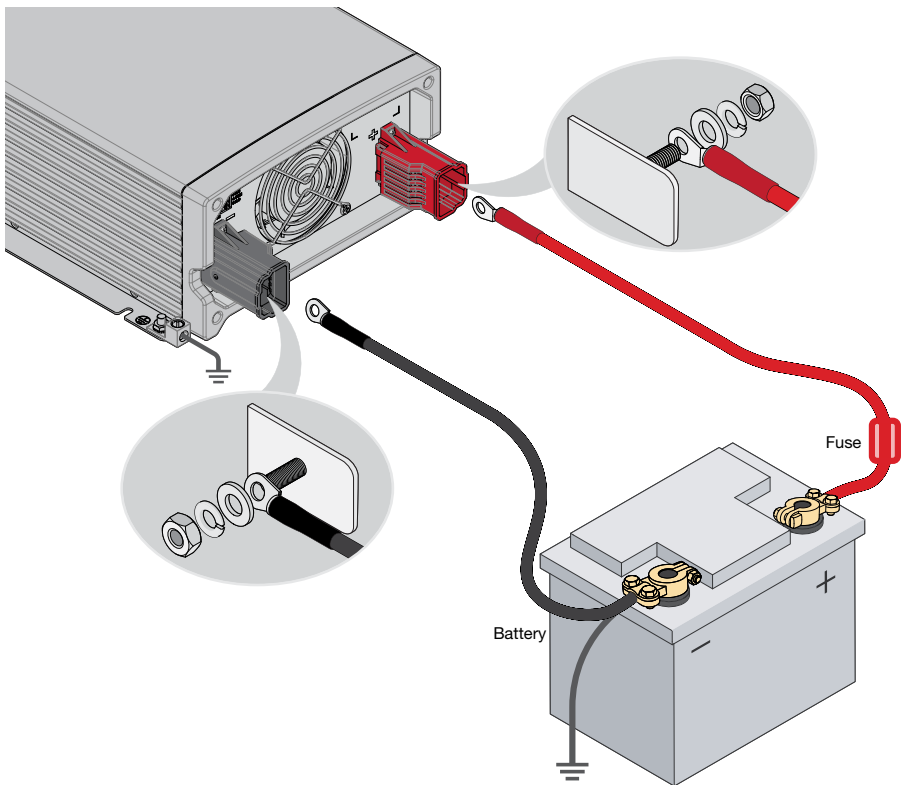


3.6 DC INPUT CABLE CONNECTIONS

To make the DC Input cable connections, refer to **Figure 11** and adhere to the following steps:

1. Before inserting DC Input cables make sure the main switch is "OFF" and the red and black shrouds are detached from the Inverter.
2. Remove the nuts and washers attached on the positive (+) and negative (-) terminals.
3. Insert the crimped/terminated DC Input cable lugs into the input terminals, ensuring that the DC Input cables are connected into the correct terminal. The positive DC Input cable into positive (+) terminal and negative DC Input cable into the negative (-) terminal. Ensure that the lug is flat against the face of the input terminal — DO NOT place washers between lug and terminal face.
4. Attach washers with spring washer adjacent the nut and torque to 11.7–13 Nm (9–10 ft-lbs).
5. Reattach the red and black shrouds.
6. Connect DC Input cables into an appropriate battery supply or DC power source. Ensure to connect the DC Input cables to the correct positive (+) and negative (-) terminal.

Figure 11: DC Input Cable Connections



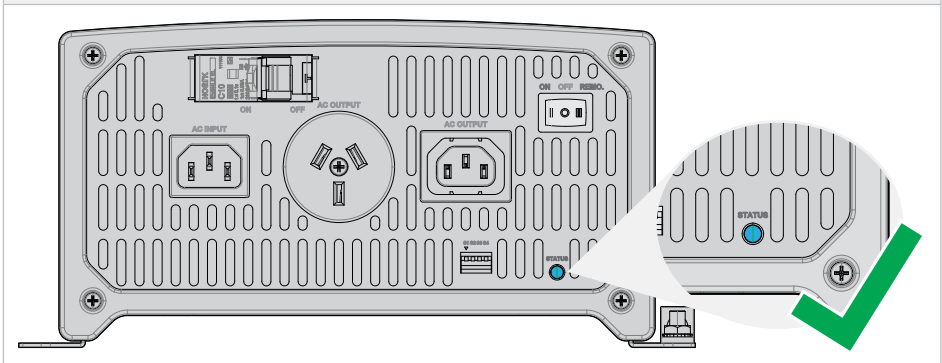
3.7 TURNING THE INVERTER ON

With the Chassis Ground point and DC Input cables installed, turn the switch to the 'ON' or 'REMO' position (the 'REMO' switch is to be used only when controlling the inverter via the RJ-11 Remote Interface or the Remote Control Terminal).

If the Status LED illuminates continuously blue, the inverter is ready for the AC input and output connections. Before making the AC input and output connections switch the inverter OFF (proceed to [Section 3.8 \(page 21\)](#)).

If the inverter status is not on or is flashing refer to [Section 1.2 \(page 7\)](#).

Figure 12: Turning the Inverter on



3.8 AC INPUT AND OUTPUT CONNECTIONS

If the status LED is blue, switch the unit OFF and plug in the AC cord(s) into the Inverter's AC input and output ports.

Once the AC Input and Output connections are made, the Inverter is ready for use. Switch the Main Switch to the 'ON' or 'REMO' position depending on your configuration.

Figure 13: Connecting AC Input

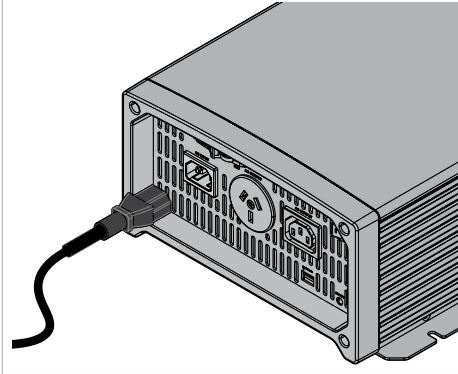
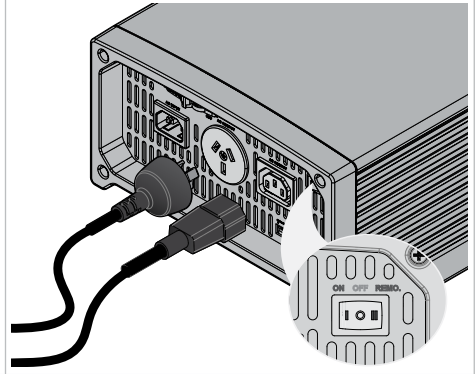


Figure 14: Connecting AC Output



3.9 MAINTENANCE

Turn the unit OFF before cleaning. Very little maintenance is required to keep the inverter operating correctly. The exterior of the inverter should be cleaned periodically with a damp cloth to prevent accumulation of dust and dirt. At the same time, tighten the screws on the DC Input and Chassis Ground terminals. A vacuum cleaner can be used to remove dust from ventilation openings and fan area.

4 SPECIFICATIONS

OUTPUT CHARACTERISTICS

Inverter Output Voltage	240 V (default) / 230 VAC $\pm 3\%$ (selected by DIP switch S2 or RS232)
Frequency	50 Hz ± 0.3 Hz
Output Waveform	Pure Sine Wave (THD $\leq 3\%$ @ Full Load & $> 12.5 / 25$ VDC)

PROTECTION

Battery Input	Over / Under voltage protection, Input reverse protection by Fuse
Inverter Output	Short-circuit (< 3 s shutdown) protection, Overload protection, Over current protection by RCBO, Residual current protection (> 30 mA) by RCBO
Over Temperature	Internal heatsink temperature $70^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ($158^{\circ}\text{F} \pm 9^{\circ}\text{F}$)
Over Temperature Recovery	Internal heatsink temperature $50^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ($122^{\circ}\text{F} \pm 9^{\circ}\text{F}$)

SIGNAL AND CONTROL

Remote Controller Panel Input	REMOTE-RS (optional)
Remote Control Terminal	Inverter ON/OFF and Fault Indication
Led Indicator	Blue LED

ENVIRONMENTAL

Operating Temperature	$-20 \sim +40^{\circ}\text{C}$ ($-4 \sim +104^{\circ}\text{F}$) (Derates up to 60°C (140°F))
Storage Temperature	$-30 \sim +70^{\circ}\text{C}$ ($-22 \sim +158^{\circ}\text{F}$)
Storage Temp. & Humidity	10~95% RH
Operating Altitude	3 km (1.9 mi)

SAFETY AND EMC

ATS Relay Standards	IEC 61810-1
Safety Standards	AS/NZS 4763
EMC Standards	UN ECE R10



Cooling	Temperature and Load Controlled Cooling Fan
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4.1 1200 W SPECIFICATIONS

INPUT CHARACTERISTICS

R-12-1200RS3

R-24-1200RS3

DC Input Characteristics

Battery Input Voltage	12VDC	24 VDC
Max. Rated Battery Input Current	135ADC	64 ADC
Battery Input Voltage Range	10.5 ~ 16.5VDC	21 ~ 33VDC
Over/Under Voltage Protection	16.5 / 10.5 ±0.3V	33 / 21 ±0.5V
Over/Under Voltage Restart	15.5 / 12.0 ±0.3V	31 / 24 ±0.5V
State Fuse Protection Requirement	200 A Fuse	100 A Fuse

Inverter Standby Characteristics

Standby Current Consumption	<2.5A	<1.35A
Current Consumption @ Saving Mode	<0.2A @ 12.5V	<0.1A @ 25.0V
Current Consumption @ Sleep Mode	<0.07A @ 10.4V	<0.03A @ 20.8V

Grid Input and Automatic Transfer Switch (ATS) Characteristics

Max. Rated Grid Input Current	10A AC Max.	
Grid Input Voltage Range	216 VAC – 254 VAC ±3% 50Hz	
Grid Voltage Restart	223 VAC – 247 VAC ±3%	
Out Of Grid Input Voltage Range	Inverter mode (power supply from battery)	
Transfer Time	<20ms	

OUTPUT CHARACTERISTICS

Continuous Output Power	1200 W (±3%)	
Maximum Power For 10 Min	1200 ~ 1380 W (@ > 12.0V & <30°C)	1200 ~ 1380 W (@ >24.0V & <30°C)
Maximum Power For 3 Min	1200 ~ 1380 W (@ > 10.5V & <30°C)	1200 ~ 1380 W (@ >21.0V & <30°C)
Maximum Power For 3 Sec.	1381 W < P < 2400 W	
Surge Power For 2 Sec.	2400 W	
Efficiency	87 ~ 90%	89~91%

Weight	6 kg (13.2lb)	
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4.2 2000 W SPECIFICATIONS

INPUT CHARACTERISTICS

R-12-2000RS3

R-24-2000RS3

DC Input Characteristics

Battery Input Voltage	12VDC	24VDC
Max. Rated Battery Input Current	224ADC	110ADC
Battery Input Voltage Range	10.5 ~ 16.5VDC	21 ~ 33VDC
Over/Under Voltage Protection	16.5 / 10.5 ±0.3V	33 / 21 ±0.5V
Over/Under Voltage Restart	15.5 / 12.0 ±0.3V	31 / 24 ±0.5V
State Fuse Protection Requirement	250A Fuse	150A Fuse

Inverter Standby Characteristics

Standby Current Consumption	<2.8A	<1.4A
Current Consumption @ Saving Mode	<0.2A @ 12.5V	<0.1A @ 25.0V
Current Consumption @ Sleep Mode	<0.07A @ 10.4V	<0.03A @ 20.8V

Grid Input and Automatic Transfer Switch (ATS) Characteristics

Max. Rated Grid Input Current	10A AC Max.	
Grid Input Voltage Range	216VAC – 254VAC ±3% 50Hz	
Grid Voltage Restart	223VAC – 247AC ±3%	
Out Of Grid Input Voltage Range	Inverter mode (power supply from battery)	
Transfer Time	<20m sec	

OUTPUT CHARACTERISTICS

Continuous Output Power	2000W (±3%)	
Maximum Power For 10 Min	2000 ~ 2300W (@ > 12.0V & <30°C)	2000 ~ 2300W (@ > 24.0V & <30°C)
Maximum Power For 3 Min	2000 ~ 2300W (@ > 10.5V & <30°C)	2000 ~ 2300W (@ > 21.0V & <30°C)
Maximum Power For 3 Sec.	2301W < P < 4000W	
Surge Power For 2 Sec.	4000W	
Efficiency	88 ~ 92%	91~93%

Weight	6.8 kg (15lb)	
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4.3 3000 W SPECIFICATIONS

INPUT CHARACTERISTICS

R-12-3000RS3

R-24-3000RS3

DC Input Characteristics

Battery Input Voltage	12VDC	24 VDC
Max. Rated Battery Input Current	336ADC	166ADC
Battery Input Voltage Range	10.5 ~ 16.5VDC	21 ~ 33VDC
Over/Under Voltage Protection	16.5 / 10.5 ±0.3V	33 / 21 ±0.5V
Over/Under Voltage Restart	15.5 / 12.0 ±0.3V	31 / 24 ±0.5V
State Fuse Protection Requirement	450 A Fuse	225 A Fuse

Inverter Standby Characteristics

Standby Current Consumption	<3.0A	<1.5A
Current Consumption @ Saving Mode	<0.2A @ 12.5V	<0.15A @ 25.0V
Current Consumption @ Sleep Mode	<0.07A @ 10.4V	<0.03A @ 20.8V

Grid Input and Automatic Transfer Switch (ATS) Characteristics

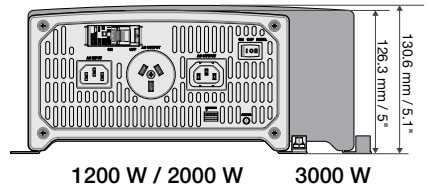
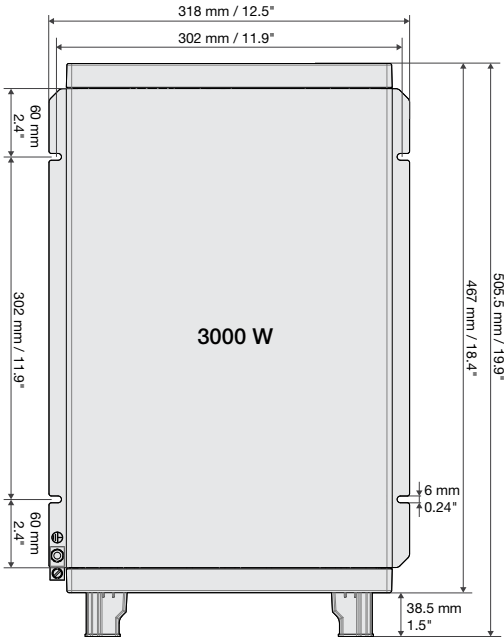
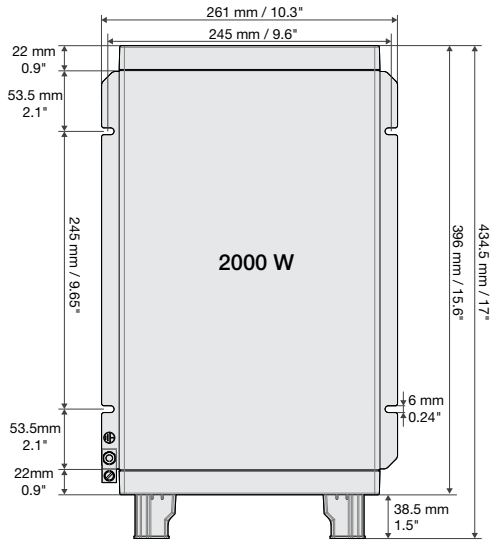
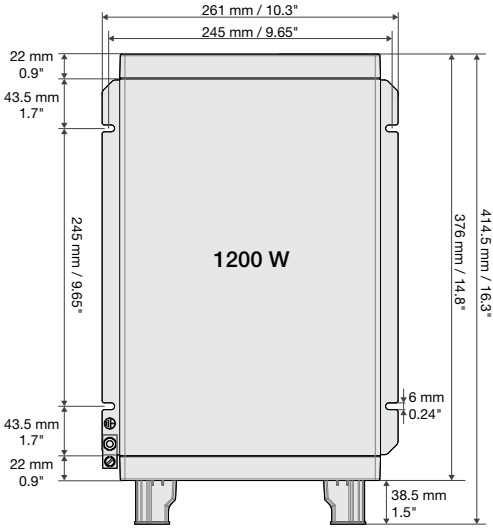
Max. Rated Grid Input Current	16A AC Max.	
Grid Input Voltage Range	216 VAC – 254 VAC ±3% 50Hz	
Grid Voltage Restart	223 VAC – 247 AC ±3%	
Out Of Grid Input Voltage Range	Inverter mode (power supply from battery)	
Transfer Time	<20m sec	

OUTPUT CHARACTERISTICS

Continuous Output Power	3000 W (±3%)	
Maximum Power For 10 Min	3000 ~ 3500 W (@ > 12.0V & <30°C)	3000 ~ 3500 W (@ >24.0V & <30°C)
Maximum Power For 3 Min	3000 ~ 3500 W (@ > 10.5V & <30°C)	3000 ~ 3500 W (@ >21.0V & <30°C)
Maximum Power For 3 Sec.	3501 W < P < 6000 W	
Surge Power For 2 Sec.	6000 W	
Efficiency	88 ~ 91%	90~92%

Weight	10.3kg (22.7lb)	
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4.4 DIMENSIONS



5 WARRANTY

LIMITED WARRANTY

For full warranty terms and conditions, visit the Warranty page of the REDARC website:

www.redarcelectronics.com/warranty

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