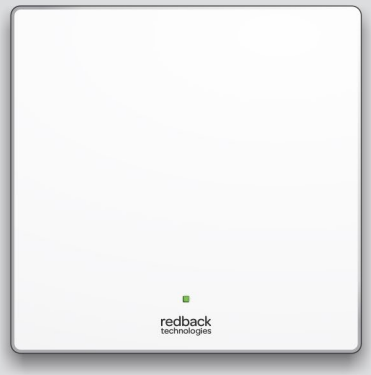
Owner's Manual

Redback Smart Inverter
SI5000-6000-8000-10000

v1.4



SI5000/SI6000

SI8000/SI10000

HISTORY

VERSION	ISSUED	COMMENTS
1.0	07-Jan-22	First edition
1.1	28-Feb-23	P5 Update Owner's contact process to raise case via portal; P6 Update Inverter Internet settings flow; P16, 17 Add Interlocked inverters behaviour under fault; P17 Add Earth fault information; P21 Add Maximum PV Input Power; P21 Correct Maximum Back Feed Current (was Feedback).
1.2	08-May-23	P6 Add Smart Load Control to System Overview diagram. P6, 11, 12 Add "RCD Type A 100mA" to diagrams. P7 Add Smart Load Control to FAB table. P10 Add "Use Smart Load Control".
1.3	23-May-23	P18 Removed 4G mentions.
1.4	10-Jul-23	P21 Update specifications: I_{MP}; I_{SC}; MPPT Operating Voltage (Range).

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NOTICE OF COPYRIGHT

PRIVACY NOTICE

Redback will use the personal information provided to us only for warranty purposes. Without this information we will not be able to process your warranty claim. If you require further information about our privacy policy, please visit our website at redbacktech.com.

Contents

1. Welcome

Congratulations on the purchase of your new Redback Smart Inverter. Our products are designed and manufactured to our high-quality standards and will provide years of service.

This manual describes the features, use and maintenance of your Smart Inverter.

2. Introduction

Your Redback Smart Inverter converts solar energy from rooftop PV to electricity, which can power your home and or be exported to the grid, when permitted*.

Following installation and setup by the installer, your inverter works quietly in the background. Apart from occasional maintenance, your inverter is set-and-forget, but you can stay involved if you wish.

The MyRedback app and the Redback portal provide a comprehensive view of the energy consumed by your home, including when you consume it. You can use this information to optimize your energy usage patterns and improve your usage of self-generated power.

*The electricity network operator in your area may limit the power you can export to the network, or the times at which it may be exported. Ask your installer or electricity retailer if any export restrictions apply to your location.

3. Getting help

Contact your installer first. You can usually find their contacts details on the inverter, inside the meter box, or inside the back cover of this booklet. If your installer is unable to assist, try one of the other resources below or open a case with our Customer Support Team at https://portal.redbacktech.com/supportrequest.

4. Other resources

SOURCE	COMMENT	LINK
Owner's guide	This document in pdf format	redback.link/siog
Redback Document Library	Password required	redback.link/docs

5. Transfer of ownership

If a Redback system is already installed in your new home, welcome to the Redback family. To get the best from your Redback system, and to receive important notifications from your system, you need to setup an account using a valid email address. You can then access the system using the Redback app or portal, see how the system is working for you, and gain insights to help maximise your consumption of self-generated energy.

When we setup your account, we'll also arrange for remaining warranty to be transferred to your name and we can answer any questions you may have about your system.

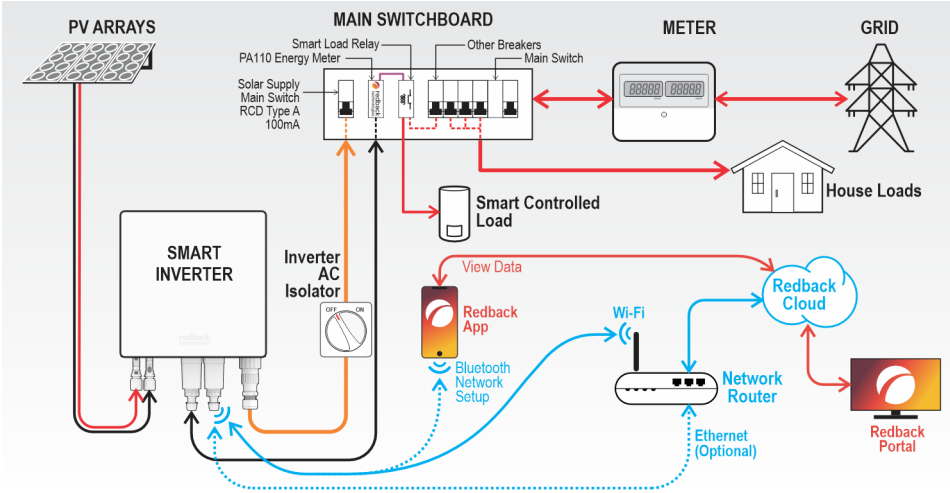
To get started, initiate a case with the Redback Customer Support Team at https://portal.redbacktech.com/supportrequest. We'll get back to you as soon as possible. We'll need some proof of ownership too, so be ready for that.

Important safety instructions – please read

This document contains important safety instructions for products produced by Redback Technologies. Please read all the instructions and cautionary markings on the product and on any accessories or additional equipment included in the installation. Failure to follow these instructions could result in severe shock or possible electrocution. Always use extreme caution to prevent accidents.

SYMBOL	DEFINITION
	WARNING: LETHAL VOLTAGE INSIDE Do not remove any system cover unless qualified to do so. Do not perform any servicing other than that specified in the maintenance instructions.
	DANGER. Risk of electrical shock. Proceed with caution.
	WARNING: Burn Hazard. External and internal parts may be hot. Do not remove covers during operation or touch any internal parts. The temperature of some parts may exceed 60°C during operation. After shutdown, allow the inverter to cool for at least 5 minutes before touching.
	CAUTION: Hazard to Equipment Only use components or accessories recommended or sold by Redback Technologies or its authorised agents. Handle all parts with care and follow instructions provided.
	WARNING: Fire hazard Do not keep combustible or flammable materials in the same room as the equipment. The Redback Smart Inverter contains relays and switches that are not ignition protected. Ensure clearance requirements are strictly enforced: Maintain 200mm of clear space around unit to ensure unobstructed airflow for convection cooling.
10m	**DELAY.** Wait specified time e.g., 10 minutes.
	This symbol indicates the information provided is important for the correct operation and or maintenance of the equipment. Failure to follow the recommendations may result in annulment of the product warranty.

6. System overview



7. Know your product

7.1 Features and benefits of your Redback system

SYSTEM FEATURE	BENEFIT	REQUIREMENT
Internet connected	System monitoring and management using the MyRedback app or the Redback portal. Remote viewing of system status.	Permanent internet connection using your Wi-Fi or ethernet based home network.
MyRedback app and the Redback portal	See your true usage patterns to find ways to increase your self-consumption and reduce your electricity bill. Share system access with family, tenants etc	
All-in-one design	Neat appearance; Easy to keep clean.	
Simple interface	Two or three LEDS notify system status and aid diagnostics.	
Integrated PV Isolator	Discrete, but easy to access and use if the solar panels need to be isolated.	
EMS	The Redback Energy Management System (EMS) is the system's internal controller.	Internet connection for occasional software updates.
Smart Load Control (optional)	Operate your large loads (e.g., pool pump or hot water system) to maximise your solar consumption	Suitable large load relay installed and configured.
Low maintenance	Owner can complete essential annual maintenance. Service person is not usually needed.	Basic cleaning skills.
Grid power quality monitoring	System can self-protect from poor quality grid power and recover when quality improves.	
Automatic grid disconnects during a power outage	For safety, the system automatically disconnects from the grid during a power outage to prevent PV being exported to the network.	
Internal overload protection	The system will self-protect if it detects excessive heat or excessive internal currents.	
Critical setting protection	Critical system settings may only be changed by electrically qualified personnel.	
Ground fault and insulation monitoring	Electrical safety for all parts of your system.	

7.2 System limitations

Your Smart Inverter will not operate during a power outage:

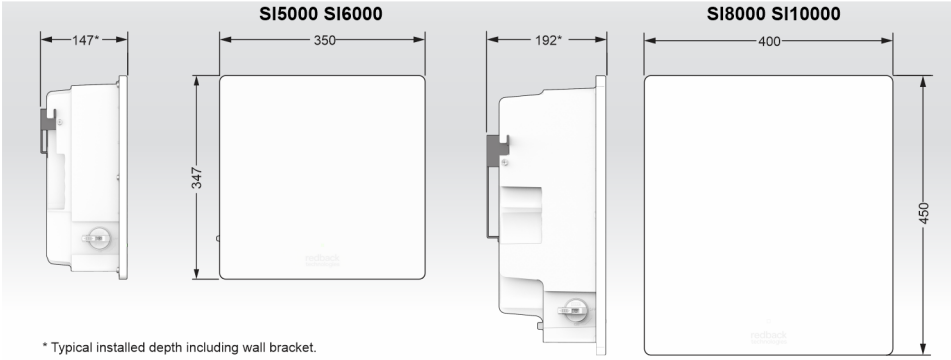
- If your inverter detects a grid power outage (a blackout) it automatically disconnects from the grid and deactivates itself. This is to protect from unexpected discharge into the grid which would pose a hazard to service personnel.
- During a blackout, PV is not available for household consumption.
- Your inverter will automatically restart when grid power is restored.

WARNING! This equipment is NOT intended for use with life support equipment or other medical equipment or devices.

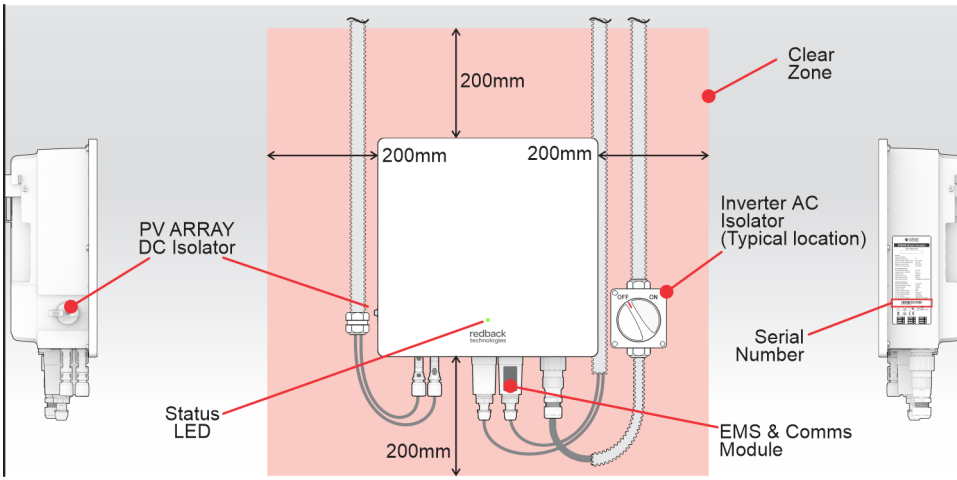
Your system is not suitable for:

- Off-Grid installations (where the grid is intentionally disconnected).
- Locations without internet access: the system can work off-line, but you will be unable to review consumption or performance; or make informed decisions about system settings or consumption patterns. Warranty support will also be affected.
- Prediction of your energy bills. The Redback meter is a Class 1 meter: it provides a good indication of energy consumption; however, readings may vary slightly from the Network meters used for billing.
- Use with generators.

7.3 Product dimensions

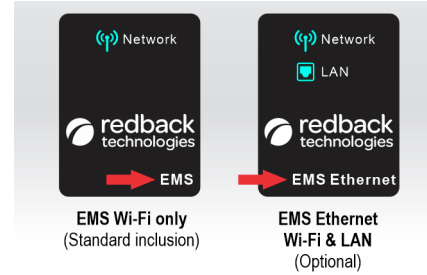


7.4 Typical installation



7.5 EMS module nameplates

Your inverter includes a Communications Module located at the bottom centre of the inverter. Modules are specified/optioned according to needs. The nameplate identifies the type of module fitted.



8. Getting the best from your system

Your Redback system is designed to operate autonomously – the level of interaction is up to you.

A set-and-forget approach will work fine: occasional maintenance is all that is required.

Alternatively, you can dive into your data and make informed decisions to optimize your system and lifestyle to maximize the return on your investment.

Either way, the first step is to look after your Redback.

8.1 Keep your system in good condition

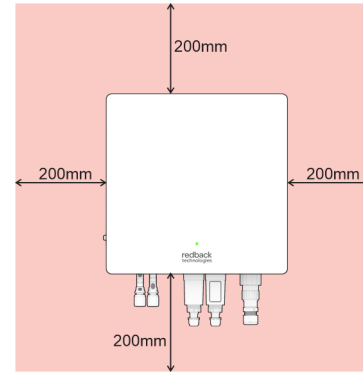
Keeping your system in good condition maintains efficiency, increases longevity, and helps us help you, if the need arises. There are three key items requiring your attention.

Cooling

Your system uses fresh air to cool the inverter. If your system becomes too hot its efficiency decreases, and it may even shut down.

There must always be 200mm of clear space adjacent, above, and below your system. Ensure no items are left near the base of the system or placed on top of the inverter, as air flow will be obstructed.

The system must not be enclosed i.e., do not build a cabinet around it.



Maintenance

Complete the annual maintenance items in Section 12. In very dusty conditions you may need to clean the filters more frequently.

Internet connection

Data is required to get the best out of your system. A permanent internet connection enables the system to send data to the Redback cloud, where the MyRedback app and Redback portal present helpful information, enabling you to see your system's performance. Your installer or Redback can also use the data to diagnose problems or suggest improvements, based on your actual usage.

Note: Your system will continue to function without an internet connection, but you will be unable to receive any fault notifications; no data will exist for the period of disconnection; software updates will not occur; and remote support will be limited. You may also affect your warranty coverage if the system is offline.

8.2 Use Smart Load Control (optional hardware is needed)

Redback's Smart Load Control feature enables you to make the best of your generated energy by only running your large loads (such as a pool pump or hot water system) when there is excess solar energy available.

Smart Load Control is a sophisticated system that aims to:

- Run the load using only excess PV energy.
- Avoid switching the load excessively (e.g., when a small cloud passes in front of the sun).
- Optionally, the system will ensure that the load runs for a nominated number of hours each day. This is useful for equipment like pool pumps or hot water systems which require a minimum daily run-time.

The Smart Load Control feature is available for compatible Redback SI-series Smart Inverters and requires that a relay is connected and controlled by the existing SI inverter energy meter. The relay switches the large load on and off.

The Smart Load Control can be over-ridden using Portal ON/OFF or scheduling commands or bypassed completely using an optional hardware switch.

Contact your installer to install or configure Smart Load Control and associated hardware that suits your needs.

8.3 Monitor performance

Redback offers two choices for monitoring the energy performance of your household.

8.3.1 MYREDBACK APP

MyRedback provides a simple, up-to-date view of what's happening at your place – it's great for quickly checking the energy flow at home. MyRedback is available for Android 7 or higher and iOS 12.1 or higher. Use the app to:

- Check your home energy usage.
- Reconnect your system to the internet.
- Review your system settings- but you'll need to contact your installer if changes are required.

8.3.2 REDBACK PORTAL

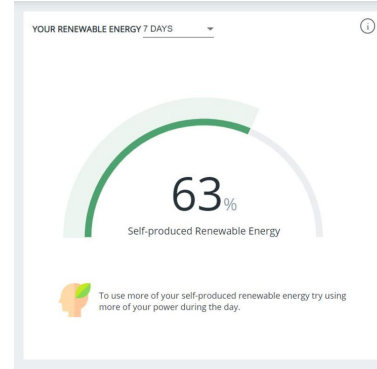
The Redback portal portal.redbacktech.com offers all the features of the MyRedback app plus a comprehensive history of your system's performance, much greater detail about your system, and direct access to support documents.

DASHBOARD

The dashboard view provides an overview of your system:

- Energy consumption trends
- Power demand
- Power being bought or exported

If nothing else, you should view the Renewable Energy Meter regularly; it shows the system's impact on your energy consumption during the past 7, 30 or 90 days. If it falls below 60%, it is worth reviewing your usage habits or your system size and settings.



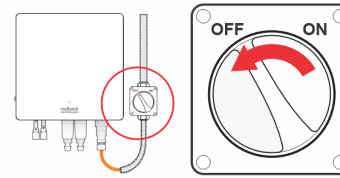
9. Inverter operation

9.1 Shutdown procedure

Occasionally, it may be necessary to shut down the inverter interrupting all inverter functions.

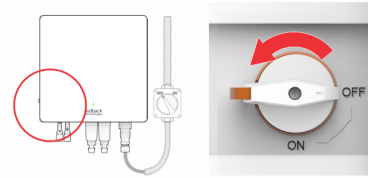
Near your inverter
Switch the AC isolator OFF

1



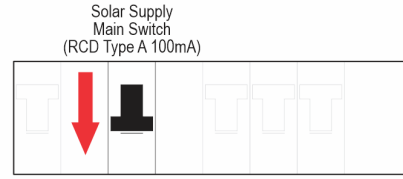
At your inverter
Turn the PV ARRAY DC isolator OFF

2



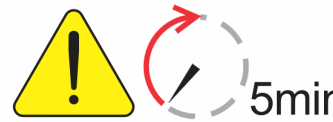
At your main Switchboard
Switch the SOLAR MAIN SUPPLY isolator OFF

3



Wait 5 minutes for your system to de-energize.

4



All done

5

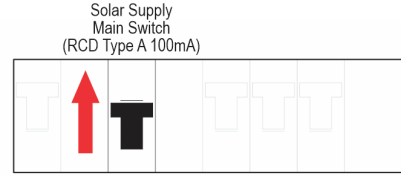
Your system is now shutdown.

9.2 Restart procedure

Restart your inverter as shown below.

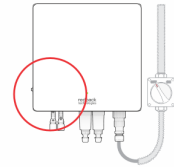
At your main Switchboard
Switch the SOLAR MAIN SUPPLY isolator ON

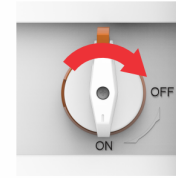
1



At your inverter
Turn the PV ARRAY DC isolator ON

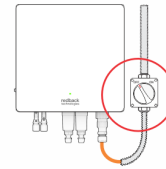
2

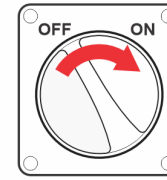




Near your inverter
Switch the AC isolator ON

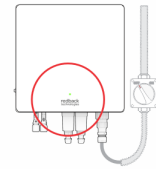
3





Wait for the Status LED
to begin flashing blue, indicating BLE is available.

4



All done

5

Your system has now restarted.

10. Connect your system to the internet

Onboarding connects your system to the internet using your network. Connection to the network is by Ethernet cable or Wi-Fi.

There are two easy ways to check if your system is online:

1. Login to the Redback portal. If your system is “Online” and refreshing data every 6o seconds, then it is connected.
2. Login to the MyRedback app. If data is refreshing every 60 seconds, then the system is connected.

Occasionally, it may be necessary to reconnect your inverter to the internet. This most frequently occurs after a significant disruption to your network such as replacing your router, changing passwords, or changing internet providers.

There are two onboarding processes: Ethernet or Bluetooth Low Energy (BT or BLE).

10.1 Ethernet

Ethernet is the preferred method of connection: onboarding occurs automatically, confirmed by:

- Inverter Status LED is BLUE
- Communications module LAN icon is blue.

To connect using ethernet, your system must have the optional “EMS Ethernet” communications module installed. Ask your installer for assistance if you would like to connect using ethernet.

10.2 Bluetooth

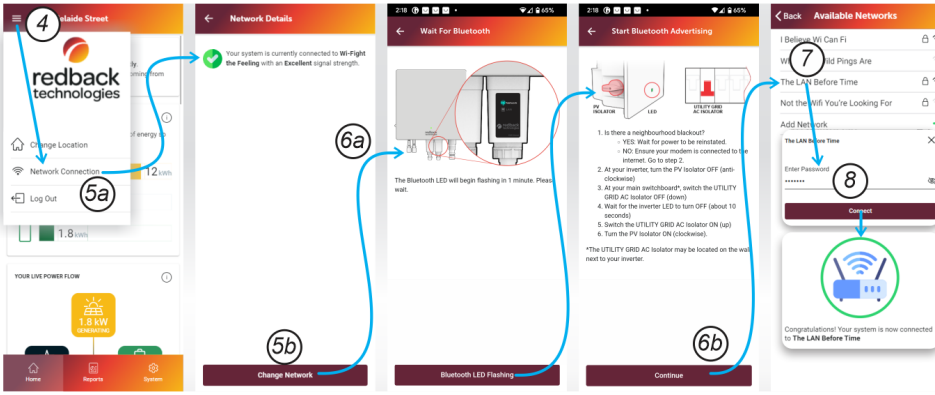
BLE onboarding is required if ethernet is not available–a Bluetooth connection is established between the inverter and the MyRedback app, and the app will guide you through the process of connecting the inverter to your Wi-Fi network.

To onboard using Bluetooth:

1. Go to your inverter. Ensure your home network signal is Good or better at this location.
2. Shutdown and restart your system, as described in sections 9.1 and 9.2.
3. Wait for the status LED to begin flashing continuously, indicating Bluetooth is advertising.
4. On your device, open MyRedback and login. Touch the **Hamburger** to display the flyout menu.
5. Select **Network Connection.** Note your system status and select **Change Network**.
6. You may be notified to start Bluetooth—follow the on-screen instructions, otherwise touch **Bluetooth LED Flashing** to continue.
7. Select **your Wi-Fi network** from the list.
8. Enter **Password** if asked, and touch **Connect**. A success message will appear.
9. Wait two minutes, then confirm onboarding success:

   On the MyRedback app, check that data is refreshing every 20 seconds;

   On the Portal, check that your system is online, and refreshing every 60 seconds.
10. If onboarding fails, try again, or contact Redback Customer Support for help.



11. Troubleshooting

11.1 Most frequent symptoms

SYMPTOM	PROBABLE CAUSE	SOLUTION	
No LEDs are illuminated	Local blackout	Contact your energy supplier for help.	
	No Grid Power to inverter	Near inverter, turn INVERTER AC isolator ON. At main switchboard, turn SOLAR SUPPLY MAIN Switch ON.	
	No Solar Generation	At the inverter, turn the PV ARRAY DC isolator ON.	
No solar generation	No Grid Power	As above.	
	PV turned is OFF	At the inverter, turn the PV ARRAY DC isolator ON.	
	Insufficient sunlight	Wait for daytime weather to improve.	
Lower solar generation than expected	PV Shading	Observe your panels throughout the day, and at different times of the year to see if shading is occurring. Over time, your panels may become partly shaded due to nearby trees or buildings.	
	Dirty PV Panels	Arrange for your PV Panels to be inspected and cleaned	
	Inverter overheating	On the Redback portal charts, check Inverter-Temperature.	Output is reduced if internal temperature exceeds 45˚C. Follow the suggestions below.
Inverter overheating *Note: your inverter is passively cooled and relies on a temperature difference between the inverter casing and ambient air. Air flow obstructions, or anything that reduces the temperature differential also reduces the inverter's self-cooling efficiency.*	Insufficient cooling	Is there 200mm clear space on all sides of the inverter?	Ensure 200mm on all sides of the inverter is free of obstructions.
		Are the cooling fins at the back of the unit obstructed by dust, insects, or other debris?	Clean the fins using a suitable brush e.g., a Bottle Brush.
	Very hot day	Wait for the temperature to drop.	If in full or part sun, shading the inverter may help. Contact your installer for advice.
	Ambient temperature is high	Is the inverter affected by nearby A/C outdoor units or other heat sources?	Contact your installer to discuss options.
		Is the inverter in a closed room or shed?	Ventilate or cool the room to reduce ambient temperature.
	External heat load is excessive	Is the inverter in a full sun location, or are there other heat sources e.g., reflected heat, or mounted on a metal wall?	Reduce the external heat load. Contact your installer to discuss options
Inverter operating abnormally	Unknown	Shutdown inverter as described in section 9.1. Wait 10 minutes then restart the inverter as in section 9.2 Contact your installer if inverter still does not operate correctly.	
Red Inverter Status LED	Error state exists	Contact your installer.	
Purple Flashing EMS Network LED	Error state exists	Contact your installer.	

11.2 Inverter unexpectedly or frequently shutting down

The inverter may shut down or isolate itself from the grid if it detects supply conditions that may cause damage to the inverter; or create an unsafe situation. Incident causes can be diagnosed by examining the data available on the portal. Unexpected shutdowns may occur in the following circumstances:

CAUSE	RELEVANT CHARTS FOR DIAGNOSIS (IN PORTAL) *	COMMENT
A grid outage (blackout) is occurring	Grid-Status	Wait for the grid to be restored. Your system will restart automatically.
Grid supply is not of acceptable quality, as defined by AS/NZS 4777.2.	Grid-Voltage Grid-Frequency Grid-Status	Ask your installer or electricity provider to investigate if grid supply is often poor.
If internal temperature is greater than 60˚C.	Inverter- Temperature Battery Cabinet-Temp.	Output is reduced above 45˚C.

*You may not have access to all chart parameters. Contact your installer or Redback if you require access.

11.3 Multiple inverter installations

Your installation may include 1-3 SI-series inverters, usually connected to different phases, and these inverters operate independently except in one situation: if any inverter encounters a fault and needs to shut down, then the other two inverters will also shut down immediately. When the first inverter recovers, or is isolated from PV and the Grid, the other two inverters will restart.

11.4 Internet connection problems

Occasionally, your inverter may lose internet connection and be reported as “offline”. Ethernet connected systems usually self-repair after a system restarts. Wi-Fi problems usually require that the system is re-onboarded. The most common causes of “offline” reports are:

INDICATION	CONNECTION AFFECTED		REMEDY
	ETHERNET	WI-FI	
Change of Internet Service Provider e.g., Telstra, Optus, TPG, Dodo etc	✓	✓	Ethernet: Restart the system. Wi-Fi: Restart the system and re-onboard.
New router or modem	✓	✓	
Change of Network name or SSID	✓	✓	
Changed settings in router or modem	✓	✓	
Changed Wi-Fi or Network password		✓	Wi-Fi: Restart and re-onboard
Too many users or devices on your home Wi-Fi network		✓	Limit users or devices; upgrade Wi-Fi router; connect inverter using ethernet.
Wi-Fi signal is weak or variable due to obstructions or distance between the inverter and your Wi-Fi router’s antenna.		✓	Experiment with Wi-Fi router locations; use a Wi-Fi extender; connect using ethernet.

11.5 Inverter Status LEDs

The Inverter is equipped with a status LED on the front panel, and a Network status LED on the communications module. The optional EMS Ethernet module also has an Ethernet status LED. The table below lists LED indications, probable cause, and rectification steps.

11.5.1 INVERTER STATUS LED

LED	COLOUR & PATTERN	MEANING	SOLUTION(S)
redback technologies	Green ON	Inverter is operating normally.	OK. No action required.
	Yellow ON	Inverter in Night Mode.	OK. No action needed. Night mode is de-activated automatically.
		Preparing to connect to grid	OK. Self-testing in progress. No action needed.
	Green Flashing	Inverter is starting up.	Wait for start up to complete (about one minute).
	Blue Flashing	Inverter is advertising BLE	Use Redback Install app to connect to the inverter.
		Network communications lost.	Use Redback Install app to reconnect to the inverter.
	Blue ON	Inverter is connected to Redback Install by BLE	Use Redback Install app to complete setup
	Red ON	A fault exists.	Restart system. If fault persists, contact Redback.
		Earth Fault Exists	Emails sent to Redback customer service team, the registered installer, and the system owner. **Installer to investigate.** Email is also sent when the alarm is cleared.
		Disconnected from grid due to interlocked inverter fault.	Deal with faulted inverter. See section 10.5.2 below.
	OFF	Grid failure	Wait for power to be restored
		No Power to Inverter	Enable Grid Supply to Inverter
		Internal failure	Contact Redback

11.5.2 INVERTER STATUS LED (MULTIPLE-INVERTER INSTALLATIONS)

Your system may include multiple SI series inverters. The inverters are interlocked to ensure a fault on any inverter causes the other inverters to shut down until the triggering fault is rectified, or the faulting inverter is completely powered off. Outside of a fault event, each inverter will run independently.

LED	COLOUR & PATTERN		MEANING	SOLUTION(S)
	One inverter	Other Inverters		
redback technologies			Unknown fault on one inverter and grid-disconnect on other inverters	Restart the faulting inverter. If it restarts the other inverters will automatically reconnect to the grid.
				If the faulting inverter does not restart, completely isolate the inverter (PV ARRAY DC isolator OFF and Grid AC isolator OFF). The other inverters will reconnect to the grid.

11.5.3 COMMS MODULE LEDS

INDICATION	COLOUR & PATTERN	MEANING	SOLUTION(S)
 *Note: LAN icon is found only on the optional EMS Ethernet module (illustrated)*	 Blue flashing	Advertising BLE	Use Redback Install app to connect to the inverter.
	 Blue ON	BLE Connected	Use Redback Install app to complete setup
	 Green ON	Connected to Cloud via Wi-Fi or Ethernet	OK. No action needed.
	 Red ON	No connection to cloud	Wi-Fi: Complete onboarding Ethernet: Check connection to local network.
	 Purple Flashing	Error state exists.	Contact Redback
	 White ON	Physical ethernet connection to a local network.	No action needed. Ethernet connection to LAN is automatic when available.
	 OFF	No ethernet connected	Connect if needed.
	 BOTH OFF	No Power to inverter	Enable Grid Supply to Inverter
		No power to module	Check module is correctly installed
		Module faulty	Contact Redback

11.6 PA110 Smart Meter diagnostics

The Redback PA110 Energy Meter is usually located at the main switchboard. It detects grid energy traffic and sends information to the Smart Inverter. This information informs inverter operation.

To function correctly, your system requires a working PA110. Contact your installer immediately if you suspect the PA110 is not working correctly.

LED	COLOUR & PATTERN	MEANING	SOLUTION(S)
	 OFF	No power to PA	During a blackout, this is normal.
			If the Grid is active and the house Main Switch is ON contact your installer.
	 Flashing	Device is communicating with the inverter.	OK. No action needed.
	 ON Continuosly	Communications failure	Contact your installer.

12. Maintenance schedule

WARNING: ELECTROCUTION HAZARD. Lethal voltages may be present. There are no user serviceable parts inside. Do not remove front covers.

Your Redback Smart Inverter is a low maintenance product. You should undertake the minor annual maintenance listed below. Internal maintenance must be conducted by a qualified person, such as your installer.

Note: Heatsink fins may require more frequent cleaning in dusty conditions.

ITEM	NAME	REASON	PROCEDURE	BY SERVICE PERSON	BY OWNER
1	Heatsink fins.	Cooling efficiency reduces when dust, dirt or debris accumulate on the heatsink.	Clean the heatsink fins using a small brush e.g., a bottle brush.	☑	☑
2	Enclosure	Enclosure may become soiled.	Wipe down the outside of the enclosure with a just-damp cloth. Immediately wipe dry with a microfibre cloth. Do not use cleaning agents as they may damage the finish.	☑	☑
3	Isolators	Ensures Isolators stay operable	Shut down and restart the inverter as described in sections 9.1 and 9.2.	☑	☑

13. Specifications

PRODUCT MODEL	SI5000	SI6000	SI8000	SI10000
PV PORT				
Number of MPPTs	2		2	
Strings per MPPT Input	1/1		2/1	
MPPT Operating Voltage (range)	DC 70 - 540V		DC 60 - 540V	
Maximum Input Voltage (Vmax)	DC 550V		DC 550V	
Maximum Current (Imp)[1]	DC 15/15A		DC 30/20A	
Short Circuit Current (Isc)[2]	DC 20/20A		DC 40/20A	
Maximum Back Feed Current	0A		0A	
Decisive Voltage Class (DVC)	DVC-C		DVC-C	
Maximum PV Input Power[3]	7500Wp	9000Wp	12000Wp	15000Wp

[1]With firmware 120602 or newer [2]Manufacturer's declared and tested Max Short Circuit Current (Isc Max) [3]Over-panelling benefits vary with location.

GRID INTERACTIVE PORT	SI5000	SI6000	SI8000	SI10000
Nominal Output Voltage	AC 230V		AC 230V	
Nominal Output Frequency	50Hz		50Hz	
Rated Output Current	AC 21.7A	AC 26.1A	AC 34.8A	AC 43.5A
Max. Output Current	AC 25A	AC 27.3A	AC 40A	AC 45.5A
Rated Output Active Power	AC 5000W	AC 6000W	AC 8000W	AC 10000W
Rated Output Apparent Power	5000VA	6000VA	8000VA	10000VA
Peak Output Apparent Power	5500VA	6000VA	8800VA	10000VA
Power Factor (range)	0.8 lagging to 0.8 leading		0.8 lagging to 0.8 leading	
Output Voltage THD	<3%		<3%	
Inrush Current	AC 52.92A/0.2ms		AC 95A/0.2ms	
Maximum Output Fault Current	AC 79.38A/0.5ms		AC 142.5A/0.5ms	
Maximum Output Overcurrent Protection	AC 52.92A		AC 95A	
Decisive Voltage Class (DVC)	DVC-C		DVC-C	
EFFICIENCY				
Maximum Efficiency	97.3%		97.5%	
European Efficiency	96.5%		96.8%	
PHYSICAL DATA				
Installed weight	8.6kg		16.6kg	
Shipping weight	10.7kg		20.6kg	
Dimensions (W x D x H)	350 x 137 x 372mm		400 x 170 x 468mm	
Dimensions Installed (W x D x H exc. cables)	350 x 147 x 407mm		400 x 192 x 531mm	
Dimensions – Shipping carton (W x D x H)	445 x 428 x 240mm		600 x 480 x 300mm	
Material	Aluminium		Aluminium	
Finish	Sealed and powder coated		Sealed and powder coated	
PV PORT ISOLATOR				
Manufacturer Part Number	PEDS150-HM55R-4		NDG3V-50	
Rated Insulation Voltage	1500V		1500V	
Rated Impulse Withstand Voltage	8kV		8kV	
Suitability for Isolation	C		C	
Rated Operational Current (Ie)(Ue=1000V)	32A		40A	
Utilization Category	DC-PV2		DC-PV2	
Rated Short-time Withstand Current (Icw)	780A		760A	
Rated Short-circuit Making Capacity (Icm)	1200A		1400A	
Rated Breaking Capacity	4x Ie		4x Ie	

COMMUNICATION PORTS AND PROTOCOLS			
Ethernet		RJ45; Straight-thru (optional)	
DRED		Direct IO; DRED	
Relays		Direct IO; on kWh Meter	
kWh Meter		Direct IO; RS485 MODBUS	
RS485		NA	
Wi-Fi		802.11b/g/n; 2.4GHz	
Interlock		Direct IO	
USER INTERFACE			
Front panel display		Coded, coloured LED	
Communications		Bluetooth for commissioning; Wi-Fi for remote access; Ethernet (Optional) NFC	
Remote access		Web Portal; MyRedback app	
Remote Firmware Updates		Supported	
Power/energy monitoring		Includes 1 x utility grade energy meter (class 1)	
GENERAL INFORMATION			
Operating Temperature Unconditioned without solar effects		-25°C to 60°C	
Operating Relative Humidity		0 – 100%	
Operating Altitude		0-4000m	
Protective Class		I	
Ingress Protection Rating		IP65	
AC Overvoltage Category		OVC III	
DC Overvoltage Category		OVC II	
Active Anti-islanding Method		Frequency Shift	
Moisture Location Category		4K4H	
External Environment Pollution Degree		Grade 1, 2 and 3	
Inverter Topology		Non-isolated	
Country of origin		China	
Demand Response Modes		DRM 0	
Standby Self-Consumption		<6W	
Noise Emissions		<30 dBm	
Warranty		10 Years	
CERTIFICATIONS, STANDARDS AND APPROVALS			
AS/NZS 4777.2:2020	IEC 62109-2: 2011	IEC 60529	CE Mark (LVD, EMC, RoHS)
IEC 62109-1: 2010	IEC 62116:2014	EN 61000	RCM Approval
DESIGNED WITH INSTALLATION STANDARDS CONSIDERED			
AS/NZS3000:2018	AS/NZS 5033:2021		

14. Redback installation details

SUPPLIER	INSTALLER
Company:	Company:
Address:	Address:
Telephone:	Telephone:
Email:	Email:
Date Installed:	

INSTALLATION DETAILS			
	Model		Serial number
Redback Smart Inverter	☐ SI5000 ☐ SI6000	☐ SI8000 ☐ SI10000	RB_ _ _ _ _ _ _ _ _ _ _ _ _ _

15. Installer's checklist

To get you started with Redback ownership, your installer should complete this checklist with you.

ITEM	DESCRIPTION
1.	Walk through the installation, ensuring the homeowner understands what has been installed (and where).
2.	Explain the limitations of the system, even when the grid is connected.
3.	Demonstrate how to recover after an overload event (trip).
4.	Demonstrate how and when to use the AC and DC Isolators
5.	Help owner to download the app, demonstrate features, and answer questions.
6.	Help owner to log on to the portal and demonstrate, including how to: • Download Owner's Guide • Review performance • Raise an on-line support request
7.	Handover documentation to the homeowner, including: • Owner's Guide • Warranty Booklet • Installation Manual (optional)