

DIY SMALL OFF-GRID ENERGY STORAGE

The RedEarth BlackMax is an all-in-one integrated power standalone system. It comprises of a lithium battery, solar PV charger that charges the battery bank, plus an inverter to provide power to AC loads from the battery bank. The BlackMax also includes an AC rectifier so that the battery can be charged from an AC input source and connection. An advanced **Digital Signal Processor (DSP)** in the PCU controls the power flow by maximizing solar power harvesting providing reliable power for sheds & workshops.

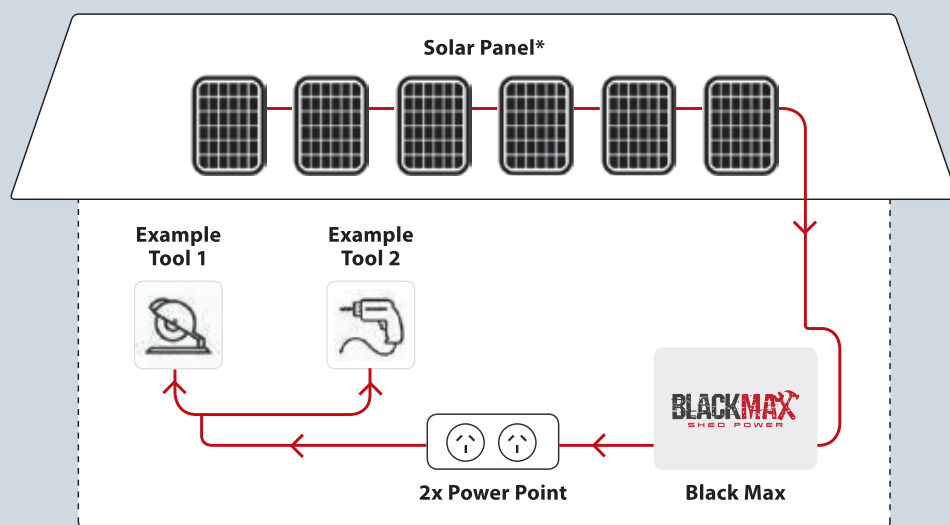
All-in-one Diy Stand Alone Power System
Designed To Power Off-grid, Sheds And Workshops



BlackMax ADVANTAGES:

- 3.3kVa power with 6kW surge to handle typical shed tools
- DIY connection – save installation costs
- 2.5kWp - connects to up to 6 solar panels*
Galvanic isolated transformer improves safety
- Intelligent charge management with 4 stage battery charging for improved battery performance and life
- All-in-one design with pre-wired battery and PV cables with MC4 connectors

* 6 solar panels sold separately. Speak to your retailer for more information



TECHNICAL SPECIFICATIONS:

Surge Power (0.5 sec)	6000VA
Continuous Power Rating (25°C)	3300VA
Self Consumption (sleep mode inactive)	<45W
Self Consumption (sleep mode active)	<10W
No Load Shutdown (sleep mode active, % of rated full load capacity)	<1.67%
No Load Recovery Time	4sec
Load Reconnect	>50V
Dimensions	600mm x 350mm x 880mm
Weight	60 kgs
Battery	3.3kWh LiFePo (useable)
Battery Voltage	48V
Module Terminals	MC4 male and female with pins
Ingress protection	IP56
Max VOC	90VDC
MPPT Range (60/72 cell modules)	48-72VDC
Recommended PV Module Configuration	2 modules in series per string
Max charging current	40A
Battery Charge Current from Mains	Upto 15A
Transfer Time (utility/generator to inverter)	<12ms

SMART LITHIUM FERRO PHOSPHATE BATTERY

NOMINAL VOLTAGE DC

48v

Nominal Capacity	3.3kWh/63.5ah
Maximum Current	60A (Limited by circuit breaker)
Charge/Discharge cycles	5000 @ 75% DoD, 25°C
Operating Temperature	Charge 0° to 55°C Discharge -20° to 60°C
Operating Humidity (non condensing)	85%
BMS Over Volt cut off (prog)	58V
BMS Under Volt cut off (prog)	40V
BMS Short Circuit cut off(prog)	Programmable
BMS Over Temp cut off	65°C
Circuit Breaker	2-pole 63Amp 500W
Lithium Composition	Lithium Ferro Phosphate (LiFePO4 or LFP)

SOLAR POWER INVERTER

PARAMETERS

Nominal Battery Voltage	48VDC
Nominal Power Rating (250)	3300VA
Nominal Output	230VAC/50Hz

ELECTRICAL - SOLAR

Charger Technology	MPPT
PV Charger Controller Rating	2.5kWp
Battery Input Range	36VDC to 64VDC
Absolute Maximum VOC	90VDC
MPPT Range	48VDC to 72VDC
Panel High Voltage Cut-off	>90VDC
Recommended PV Panel	72 & 60 cells solar panel**
Recommended PV Panel Configuration	2 panels in series per string and 5 panels in parallel**
Maximum Charging Current	40A
Charger Efficiency	>95%
MPPT Tracking Efficiency	>99%
Battery Type	Lithium Ion
Battery High Cut-Off	>64VDC
Type of Cooling	Forced

ELECTRICAL - GRID

Input Voltage Range	145VAC to 275VAC
Input Frequency Range	42Hz to 58Hz

** 72 cell PV panels typically have a higher VOC, please refer to the specification sheet for the impact of temperature on the VOC in the region of application. Open circuit voltage of PV array should never exceed absolute maximum voltage ratings specified or non-warrantable damage may result.

ELECTRICAL - GRID (CONT.)

AVR Input Range (Beyond Given Input Range, AVR Output Regulation is $\pm 20\%$)	165VAC to 275VAC
AVR Output Range	230VAC $\pm 10\%$
Typical Frequency	50Hz
Battery Charging Current from Mains	Up to 20A
Transfer Time(Utility/Generator to Inverter)	<12ms

ENVIRONMENTAL

Operating Temperature	0°C to 50°C
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PROTECTIONS

Over Temperature Protection	Inverter: >92°C PV charger: >92°C
Battery Protection	High and low voltage High

REGULATIONS AND DIRECTIVES

Compliance	IEC61683, IEC 60068-2 (1, 2, 14, 30), MNRE compliant
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DISPLAY AND LED INDICATIONS

LED Green	Input, battery, mains, bypass, AC output
LED Red (Fault Indication)	Short circuit, overload, over temperature, battery low, battery high

LCD Display Parameters	Software versions, PCU power, output frequency, PCR output current, SPV input power, load bypass, no load shutdown, battery Ah %, mains charging current, mains charging/mains charger off, PCR load %, SPV voltage and current, battery voltage and current, panel low, system off, priority (solar/grid), tariff per unit, battery type (tubular/SMF), savings, alarm status, factory reset, sleep mode ON/ OFF, AVR ON/OFF, temperature, SPV NTC fail
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Professional Energy
Storage Systems

ABOUT REDEARTH ENERGY STORAGE:

At RedEarth we pride ourselves on being Australian owned and operated with state-of-the-art products engineered and assembled on home soil. We are specialists in the field of energy storage, designing professional battery systems to improve sustainability, energy freedom and kerb appeal for homeowners, country and commercial clients in both on-grid and off-grid systems.



HIGH QUALITY

- Fully engineered, factory assembled and tested system
- High quality components
- Weather proof enclosure

EASY TO INSTALL

- Small all-in-one integrated unit
- No onsite preparation time
- Plug and play connection to PV modules or generator
- No need for battery room or concrete pad
- Permanent or portable solutions

LOW MAINTENANCE

- Powder coated steel enclosure
- Set and forget operation

WARRANTY

RedEarth's system use high quality components and are backed by upto 3 years replacement warranty

Redearth also offers larger systems to power your home or commercial site



Professional Energy Storage Systems



info@redearthenergystorage.com.au



www.redearthenergystorage.com.au



@RedEarthES