

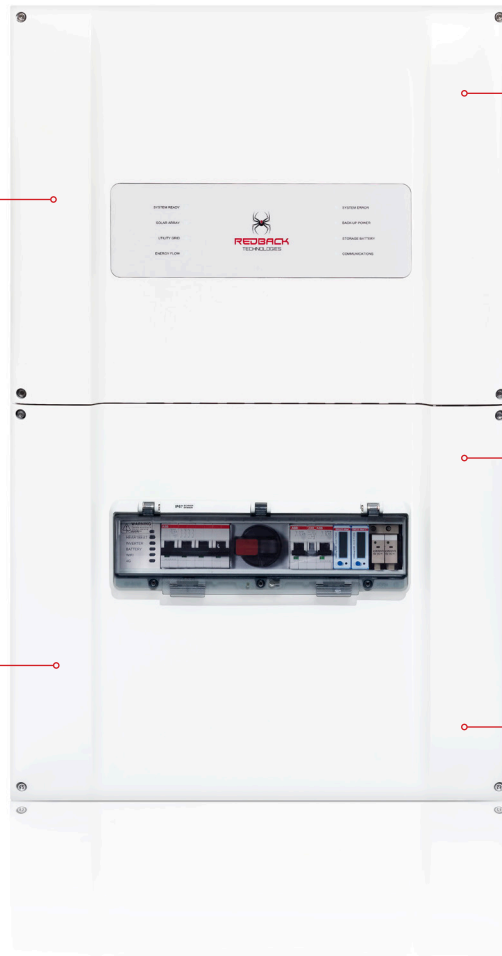
# Smart Hybrid Inverter SH5000

## Intelligent system

Maximise self-consumption through built in relays.

## Prewired BoS

For fast and low cost installation, including approved DC isolator.



## Uninterrupted power supply

Ensuring that your lights stay on, powered by your batteries.

## IP65 rated

Can be installed inside or outside.

## Monitoring

Generation and consumption monitoring via the cloud.

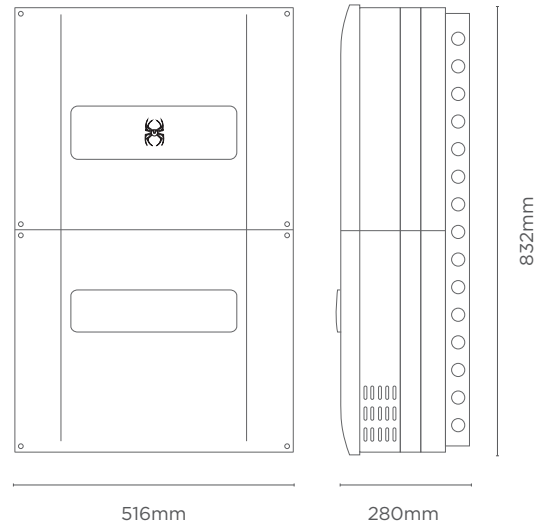
## Energy for the future

Redback Technologies has a vision to enable every household and business to be entirely powered by low cost renewable energy all day, every day. The Redback Smart Hybrid System is the platform which facilitates all energy users to participate in the network of the future through clean, efficient and smart energy management. Redback Technologies, helping the world switch on renewable energy today for a cleaner tomorrow.

## Energy flow



## Dimensions



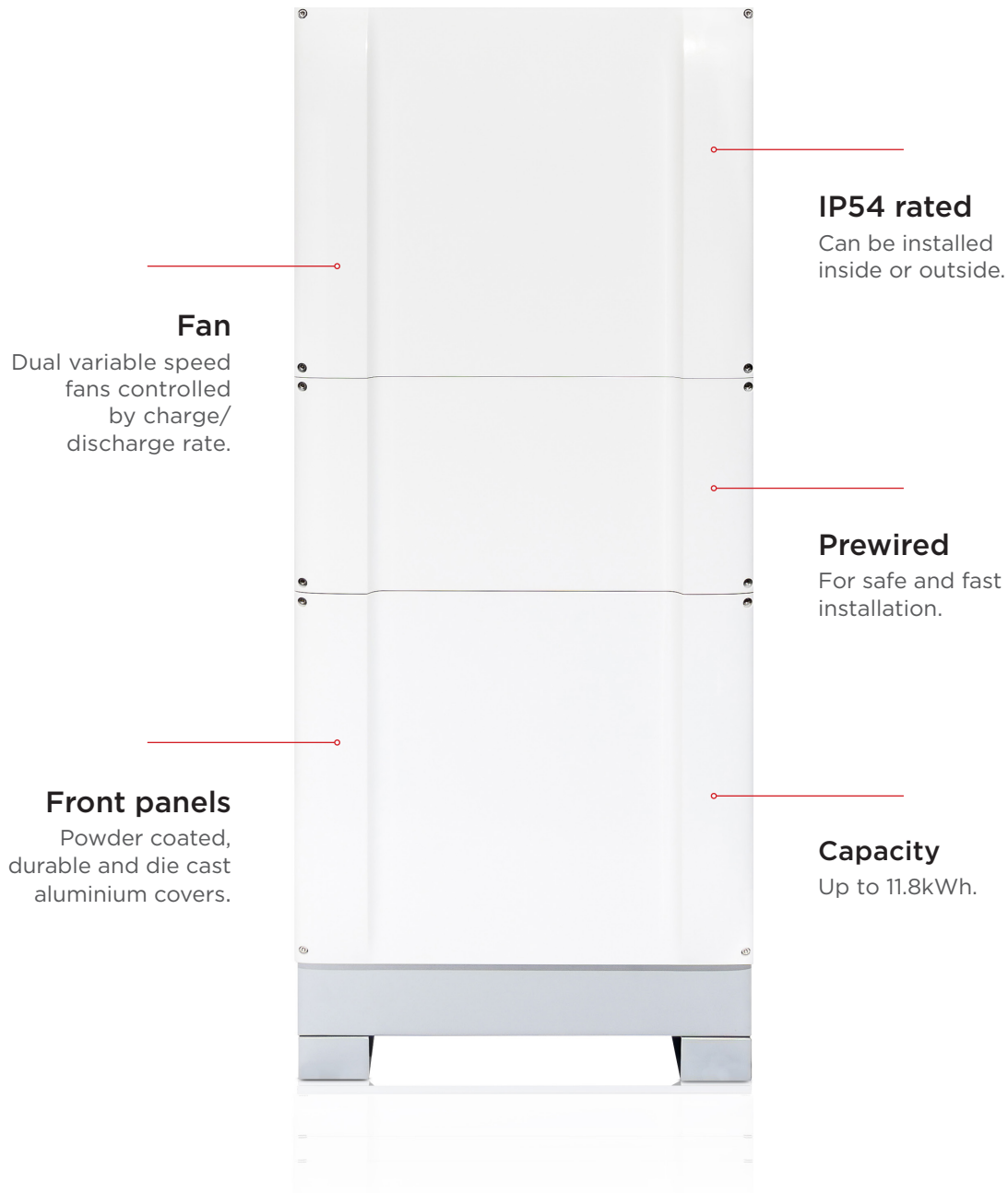
## Specifications

Grid regulation compliance: AS4777.2, AS4777.3 Safety certification: AS3100, IEC62109-1, IEC62109-2, IEC62040-1

<b>Solar array</b>	<b>SH5000</b>
Number of solar array inputs	2 (individual maximum power point tracking)
Maximum DC open circuit voltage	580V DC
MPPT operating range	125 – 550V
Starting voltage	125V DC
Maximum DC input current (for each solar array input)	11A DC
Solar array switch rating	1000V DC
Input connectors	H4
Residual current and insulation monitoring	Integrated
<b>Utility interface</b>	
Nominal AC voltage/frequency	230V AC, 50Hz, single phase
Continuous AC power rating	5000W AC
Maximum AC power to utility grid	5000W AC (derated over 45C ambient)
Maximum AC current to utility grid	21.7A AC
Maximum AC current from utility grid	40A AC
Nominal AC output range	180 to 270V AC, 45 to 55Hz (adjustable)
Current THD	Less than 1.5%
Power factor	0.8 leading to 0.8 lagging (adjustable)
AC overvoltage category	Category III
Anti-islanding and AC overcurrent protection	Integrated
Inverter topology	Transformerless (with HF transformer isolation for battery)
<b>Battery interface</b>	
Nominal DC voltage	48V DC
Battery compatibility	Refer to Redback Battery Enclosure datasheet
Maximum charging and discharge power (from battery)	4600W DC
Maximum charging current	85A DC
Maximum discharging current	100A DC
Battery charging method	BMS controlled
Typical charging voltage (bulk/absorption phase)	57.0V DC
Battery disconnect	Integrated 4 pole DC breaker 63A DC per pole
<b>Control interfaces</b>	
Signal relay outputs	4
DRM modes	0-8
Remote firmware updates	Supported
Relays	2 x 10A Omron

<b>Back up loads output</b>	
Nominal AC voltage/frequency	230V AC, 50Hz, single phase
Continuous AC power rating	4600W AC (derate over 45°C ambient)
Maximum AC power rating	6900W AC (10 seconds maximum)
Maximum AC current	21.7A continuous, 30A for 10 seconds maximum
Voltage THD	Less than 4.5% (with linear loads)
Back-up loads AC disconnect	25A MCB
Manual back-up load AC bypass switch	Integrated
<b>Efficiency</b>	
Maximum efficiency (to utility grid)	97.6%
European averaged efficiency	97.0%
Maximum power point tracking efficiency	99.9%
Efficiency (powering loads from battery)	90% typical
Standby losses	Less than 8W AC
<b>General data</b>	
Dimensions (W x H x D)	516 mm x 832 mm x 290 mm
Mounting and weight	Inverter 32kg, BoS 12kg, total 44kg
Ambient temperature range	-25 to 60°C derate above 45°C
Relative humidity	0 to 95%
DC overcurrent category	Category II
Moisture location category	4K4H
Environmental protection rating	IP65
Cooling	Natural convection
Noise emissions	Less than 25dB
Warranty	5 years
<b>User Interface</b>	
Front panel display	Multi-coloured LED indicators
Communications	Integrated WiFi + ethernet for smartphone and web monitoring
Remote access	Web and android/iOS application
Power/energy monitoring	Includes 3 x utility grade (class 1) meters

# Smart Hybrid Battery Enclosure BE13200



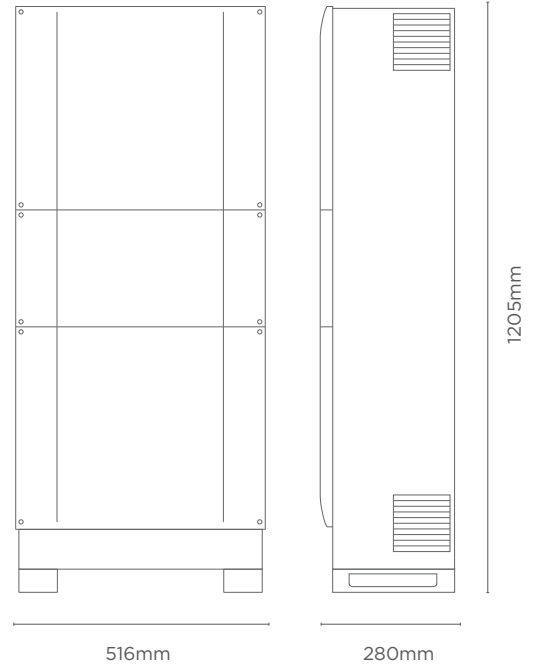
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## Energy flow



## Dimensions



## Specifications

<b>Battery enclosure</b>	<b>BE13200</b>
Number of battery units	Up to 4 x 19" rack mountable battery packs
Storage capacity	Up to 11.8kWh (2 x 2.4kWh + 2 x 3.55kWh Pylon Tech batteries)
Battery voltage	48V DC nominal / 60V DC maximum
Battery chemistry	Lithium-ion with BMS
Access type	Removable front panels
<b>Cable specification</b>	
Battery cable rating	4 x 65A
Battery cable type	8 AWG (8.36mm <sup>2</sup> )
Battery cable termination (battery enclosure)	Surlok amphenol connector
Battery cable termination (inverter)	Amphenol H4 (65A)
BMS cable type	Depends on battery type
BMS cable termination	Refer to battery enclosure installation manual
<b>Ventilation specification</b>	
Ventilation type	Passive and active cooling
Ventilation control	Smart temperature control
Number of fans	2
Fan power	48V DC / 0.13A per fan
Fan activation temperature	Variable depending on charge/discharge
Incoming ventilation aperture	288cm <sup>2</sup> with washable filter
Outgoing ventilation aperture	288cm <sup>2</sup> with washable filter
Passive airflow rate	30cm <sup>3</sup> /min
Active airflow rate	320cm <sup>3</sup> /min
<b>General Data</b>	
External dimension (W x H x D)	W 516mm x H 1205mm x D 280mm (with feet)
Mounting and weight - empty	32kg rear fixing
Mounting and weight - with batteries	130kg typical
Ambient temperature range	Based on battery specification
Environmental protection rating	IP54 - protected from rain, splashing and spraying
Noise emissions	Less than 25dB
Warranty	5 Years
Construction	Powder coated steel chassis
Finish	Sealed, powder coated front covers and chassis
Supply	Ships pre-assembled
Maintenance	Externally serviceable dust filters