

Intelligent System

Our unique software ensures the best use of your energy, controlling the inverters response, optimising the battery and directly controlling loads.

Pre-wired Balance of System

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

Uninterruptible Power Supply

Near instantaneous and automatic back up to selected circuits* when the mains power fails.

Indoor/Outdoor Rated

IP65 rated and designed for the Australian conditions

Smart Monitoring

Monitoring of PV generation, battery charge & usage made easy with our easy to use portal and apps.

*Back-up circuit wired at the time of install



SH5000



ST10000

Specifications

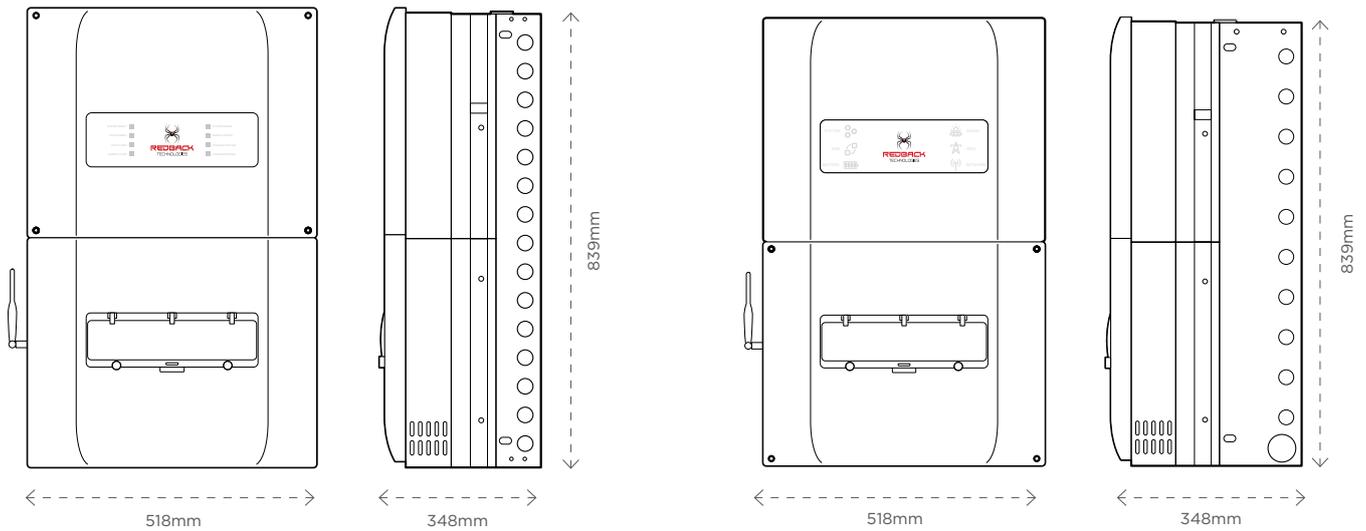
Grid regulation compliance: AS4777.2, AS5033 AMD 2 Safety certification: AS3100, IEC62109-1, IEC62109-2, IEC62040-1

| | SH5000 Smart Hybrid System | ST10000 Smart Three Phase System |
|-------------------------------------------------------|-------------------------------------------------------------|-------------------------------------|
| Compatible Battery Enclosure | BE14000 | BE-14000-HV |
| SOLAR ARRAY | | |
| Number of MPPT inputs | 2 | 2 |
| Strings per MPPT input | 1 / 1 | 1 / 2 |
| Maximum Recommended PV | 6.6kW | 13.3kW |
| Maximum DC open circuit voltage | 580V DC | 600V DC |
| MPPT operating range | 125 - 550V | 200 - 550V |
| Starting voltage | 150V DC | 180V DC |
| Maximum DC input current (for each solar array input) | 11A DC | 12.5/22A |
| Maximum short current (for each solar array input) | 13.8/13.8A | 15.2/27.6A |
| Solar array switch rating | 1000V DC | 1100V DC |
| Input connectors | MC4 | MC4 |
| Residual current and insulation monitoring | Integrated | |
| UTILITY INTERFACE | | |
| Nominal AC voltage/frequency | 230V AC, 50Hz | 400V, 50Hz |
| Continuous AC power rating | 5000W AC | 10kVA AC (derate over 45°C ambient) |
| Maximum AC power to utility grid | 5000W AC (derated over 45°C ambient) | 11kVA AC (derate over 45°C ambient) |
| Maximum AC current to utility grid | 21.7A AC | 16.5A |
| Maximum AC current from utility grid | 40A AC | 22.7A |
| Nominal AC output range | 230/240V 50Hz | 400V AC 50Hz |
| Current THD | Less than 1.5% | Less than 3% |
| 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) | |
| BATTERY INTERFACE | | |
| Nominal DC voltage | 48V DC | 180-600V DC |
| Battery compatibility | PylonTech US2000 & US3000 | PylonTech H48050 & H48074 |
| Maximum charging and discharge power (from battery) | 4600W DC* | 10kW DC* |
| Maximum charging current | 85A DC | 25A DC |
| Maximum discharging current | 100A DC | 25A DC |
| Battery charging method | Self-adaption to BMS | |
| Battery disconnect | Integrated 2 pole DC breaker 125A DC per pole | 2 pole DC isolator 32A DC per pole |

*Dependant on number of batteries installed

SH5000

ST10000



Specifications (cont.)

SH5000 Smart Hybrid System

ST10000 Smart Three Phase System

CONTROL INTERFACE

| | | |
|-------------------------|---------------|-------------------------|
| Signal relay outputs | 4 | 3 |
| DRM modes | 0-8 | 0 |
| Remote firmware updates | Supported | |
| Relays | 2 x 10A Omron | Optional RK-1 available |

BACK UP LOADS OUTPUT

| | | |
|----------------------------------------|-------------------------------------|-------------------------------------|
| Nominal AC voltage/frequency | 230V AC, 50Hz, L/N/PE | 400V AC, 50Hz, 3L/N/PE |
| Continuous AC power rating | 4600W AC (derate over 45°C ambient) | 10kVA AC (derate over 45°C ambient) |
| Maximum AC power rating | 6900W AC (10 seconds maximum) | 16.5kVA AC (60 seconds maximum) |
| Maximum AC current | 21.7A | 16.5A |
| Voltage THD | Less than 4.5% (with linear loads) | Less than 3.0% |
| Back-up loads AC disconnect / isolator | 25A MCB | 25A MCB |
| Manual back-up load AC bypass switch | Integrated | |

EFFICIENCY

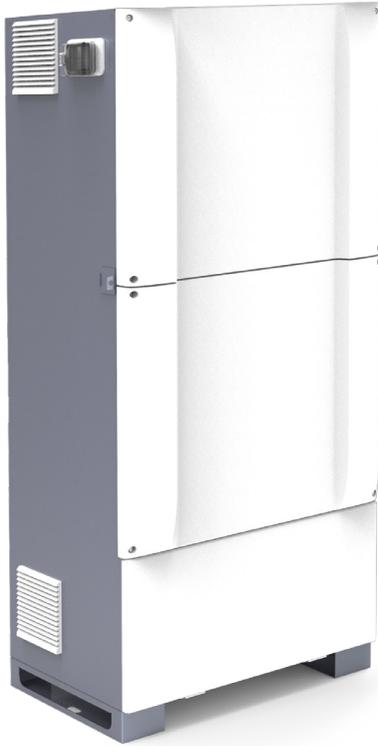
| | | |
|------------------------------------------|-----------------|---------------|
| Maximum efficiency (to utility grid) | 97.6% | |
| European averaged efficiency | 97.0% | 96.8% |
| Maximum power point tracking efficiency | 99.9% | |
| Efficiency (powering loads from battery) | 90% typical | 97.5% typical |
| Standby losses | Less than 8W AC | |

GENERAL DATA

| | | |
|---------------------------------|--------------------------------------------------------------|-----------------------------------------------------|
| Dimensions (W x H x D) | 518 mm x 839 mm x 348 mm | |
| Mounting and weight | Frame 3.5kg + Inverter 30.8kg + BoS 12.3kg = Total 46.6kg | Frame 4.5kg + Inverter 27.5kg + BoS 12.5kg = 44.5kg |
| Ambient temperature range | -25 to 60°C derate above 45°C | -35 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 | IP66 |
| Operating Altitude | <4000m | |
| Cooling | Natural convection | |
| Noise emissions | Less than 25dB | Less than 30dB |
| Warranty | 5 years | |

USER INTERFACE

| | | |
|-------------------------|--------------------------------------------------------------------------|--|
| Front panel display | Coded, coloured LEDs | |
| Communications | Bluetooth for onboarding, Wi-Fi or Ethernet for phone and web monitoring | |
| Remote access | Web and Android/iOS application | |
| Power/energy monitoring | Includes 1 x 3-Phase (class 1) meter | |

BE14000**Capacity**

4.8 - 14.2kWh

BE14000-HV**Capacity**

9.6 - 28.4kWh

Indoor/Outdoor Rated

Designed and tested to endure the harshest weather conditions throughout Australia, rated IP54.

Optimal Cooling

Dual variable speed fans controlled by our intelligent control software.

Plug and Play

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

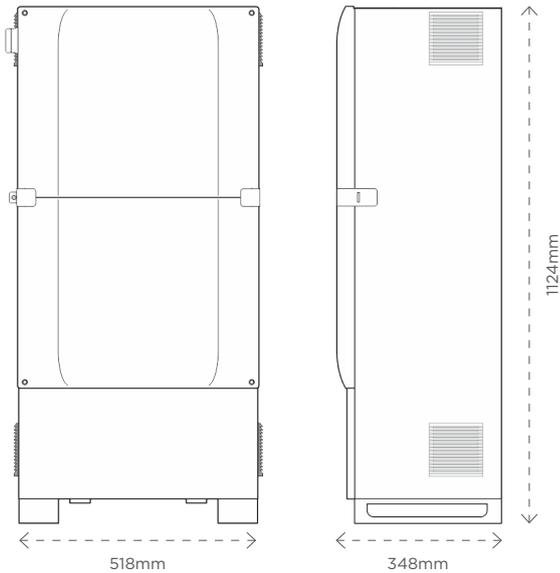
Front Panels

Powder-coated, durable and die-cast aluminium covers.

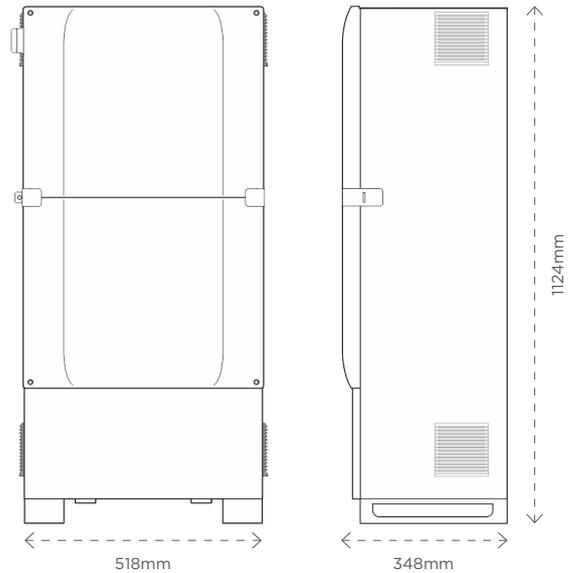
Energy for the future

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.

BE14000



BE14000-HV



Specifications

BATTERY ENCLOSURE

Compatible Smart Hybrid System

BE14000
SH5000

BE14000-HV
ST10000

| | | |
|-------------------------|-------------------------------------------------|----------------------------------------------------------|
| Number of battery units | 2-4 x 19" rack mountable battery packs | 4 x 19" rack mountable battery packs |
| Storage capacity | Up to 14.2kWh (4 x 3.55kWh PylonTech batteries) | Expandable from 9.6kWh up to 28.4kWh with expansion pack |
| Battery voltage | 48V DC nominal | 192V DC nominal |
| Battery chemistry | Lithium-ion Phosphate | |
| Access type | Removable front panels | |

CABLE SPECIFICATION

| | | |
|-----------------------------------------------|------------------------------|-----|
| Battery cable rating | 4 x 65A | 25A |
| Battery cable type | 8 AWG (8.36mm ²) | |
| Battery cable termination (battery enclosure) | Surlok Amphenol connector | |
| Battery cable termination (inverter) | Surlok Amphenol connector | |
| BMS cable type | Supplied | |

VENTILATION SPECIFICATION

| | | |
|-------------------------------|-----------------------------------------|------------------------|
| Ventilation type | Passive and active cooling | |
| Ventilation control | Smart temperature control | |
| Number of fans | 2 | |
| Fan power | 48V DC / 0.04A per fan | 12V DC / 0.13A per fan |
| Fan activation temperature | Variable depending on charge/discharge | |
| Incoming ventilation aperture | 288cm ² with washable filter | |
| Outgoing ventilation aperture | 288cm ² with washable filter | |
| Passive airflow rate | 30cm ³ /min | |
| Active airflow rate | 320cm ³ /min | |

GENERAL DATA

| | | |
|--------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------------|
| External dimension | W 518mm x H 1124mm x D 348mm (with feet) | W 518mm x H 1124mm x D 348mm (with feet) |
| Mounting and weight - empty | 32kg rear fixing | |
| Mounting and weight - with batteries | 128* - 160kg** *BE14000 + 4 x US2000 **BE14000 + 4 x US3000 | 128* - 160kg** *BE14000-HV + 4 x H48050, **BE14000-HV + 4 x H48074 |
| 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 (excluding batteries) | |
| Maintenance | Externally serviceable dust filters | |