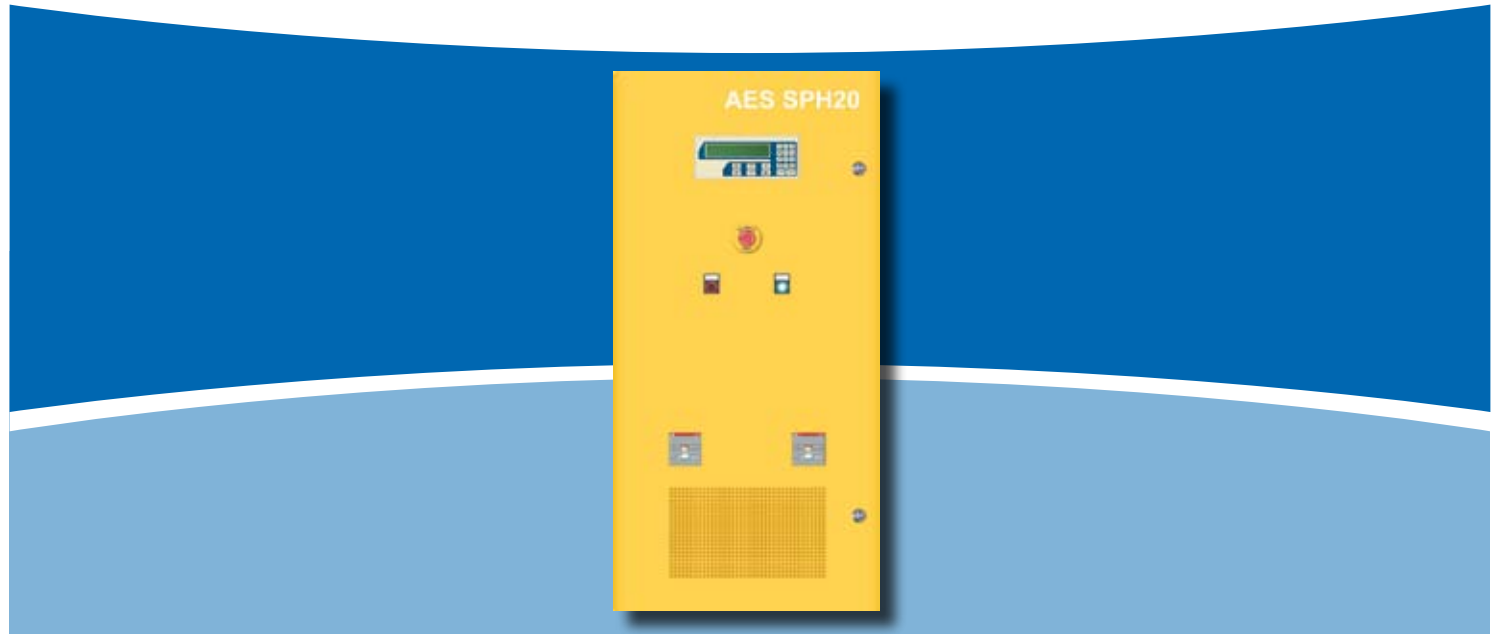


# Technical Specifications

## SunEnergy Single Phase - Hybrid



### SunEnergy Solar Inverters

SunEnergy Environmentally Hardened Solar Inverters are designed for the extreme temperatures of Australian deserts, the heat and humidity of Asia and the freezing conditions of North American winters – we build rugged inverters for the harshest environments on earth. At SunEnergy, we pioneered the design and development of large solar inverters to power entire remote communities and remote installations. Our products meet or exceed stringent military specifications with field hardened operating specifications of -20°F to + 140°F.

### SunEnergy Hybrid Solar Inverters

SunEnergy hybrid solar inverters are the industry standard for large-scale hybrid applications for remote applications. Our inverters integrate and manage solar PV, wind, diesel generators, fuel cells and batteries. We pioneered mobile hybrid systems in 1989 and rapidly deploy mobile hybrid systems for our global clients.

### SunEnergy Intelligent Architecture

SunEnergy solar inverters have many embedded processors that manage sophisticated data logging, diagnostics and peer-to-peer communications providing unparalleled reliability and performance.

SunEnergy solar inverters collect and archive data to manage and report on solar systems status, energy metering, solar tracking, battery status and performance, site access, self diagnostic results, inverter load sharing statistics, as well as user specified digital and analogue inputs.

Our system controllers use intelligent stage management to only operate sufficient power blocks to meet the immediate user current requirements.

This architecture guarantees optimal efficiency, maximises system reliability and results in extended equipment life.

SunEnergy inverters use multiple maximum power point (MMPT) tracking algorithms to ensure that power delivery is efficient and reliable.

SunEnergy client inverters are monitored 365X24 by the SunEnergy Network Management Centre.

### SunEnergy Performance

We have successfully designed and built inverters for over twenty (20) years. The world's most demanding clients, including power utilities and every branch of the U.S. Military use SunEnergy solar inverters.

SunEnergy solar inverters are your guarantee of performance. We offer high-energy conversion efficiencies, resource scheduling, maximum uptime and low cost of ownership.



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**sunenergy**  
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# Technical Specifications

## SunEnergy Single Phase - Hybrid



MODEL	AES SPH10	AES SPH15	AES SPH20
<b>Inverter output</b>			
Output voltage	230 V <sub>AC</sub> or 110 V <sub>AC</sub>		
Output frequency	50/60Hz (true sinewave)		
Distortion factor	<3% on linear loads		
Inverter efficiency	90-93%		
Power factor Cos Phi	-1...1 load dependent		
Continuous output power 40°C	10kVA	15kVA	20kVA
Continuous output power 50°C	8kVA	12kVA	16kVA
Peak output power 40°C (5 sec)	20kVA	30kVA	40kVA
Peak output power 50°C (10 sec)	20kVA	30kVA	40kVA
<b>Solar generator</b>			
Solar generator power (25°C recommended)	12kWp		
DC input power (40°C)	10kW		
Operation mode	MPP tracking (microprocessor)		
Solar generator voltage range (V <sub>p_min</sub> -Voc <sub>max</sub> )	170...400		
Charge controller efficiency	94-98%		
<b>Battery (Pb) 25°C</b>			
Battery configuration (cells in series)	60		
Battery voltage (nominal)	120*		
Inverter turn-off voltage	108*		
Gassing voltage	144*		
Overvoltage threshold	162*		
Temperature compensation	User adjustable setpoint		
Charge control	constant current/constant voltage with boost and equalise settings * user adjustable software setpoints		
<b>AC input</b>			
Voltage range	Nominal ±15%		
Frequency range	Nominal ±3Hz		
Charging capacity	10kW	15kW	20kW
Remote control	Diesel Start/Stop - setpoint changing		
Diesel generator power (recommended)	10kVA	15kVA	20kVA
Minimum recommended diesel	8kVA	12kVA	16kVA
Maximum diesel generator	18kVA	27kVA	36kVA
<b>Operation mode</b>			
Load supply from Inverter	yes		
Battery charging/load supply from diesel	yes		
Load supply from Inverter and diesel at peak loads	yes		
<b>General data</b>			
Overcurrent protection	Breakers		
Surge voltage protection (varistors & spark gaps)	On solar, load, diesel inputs		
Standards	Australian		
Ambient temperature range	0-40°C/40-60°C with derating (optional low temperature kit available)		
Humidity	0-95% non-condensing		
Protection type	IP20		
Dimensions (W x H x D)	1200x1800x800mm		
Weight (approx)	400kg		
Housing	Floor mounted		