



# PowerCore

## PC100

100kVA 96 - 676kWh

### The Battery System, designed for Microgrids.

Integrating SIEMENS battery inverter, solar inverters and microgrid controller to form the core of your renewable solution.



## Product Applications

### Microgrid

Take control of your energy autonomy. Connect and disconnect from the network seamlessly.

BASE ● SPS ●

### Solar Pumping

Renewable solution to provide 24/7 pumping from solar energy.

BASE ○ SPS ●

### Grid Connected Battery

Grid-connected BESS for community batteries, VPP & EV charging.

BASE ● SPS ●

### Off-Grid Hybrid

Stand-alone power system for remote infrastructure and communities.

BASE ○ SPS ●

### Solar Smoothing

Solar integration for constrained networks or diesel/gas power stations.

BASE ● SPS ○

### EV Charging

Battery-buffered electric vehicle charging solutions.

BASE ● SPS ●

### Safe

- Advanced Energy Management System for safety and performance.
- Safe battery management of LFP cells.
- Integral fire protection, safety & emergency stop mechanisms.

### Smart

- Graphical HMI Control Interface.
- SCADA / DNP3 Compatible.
- Fleet remote monitoring & report.
- Easy solar farm and generator power station integration.

### Strong

- Hot dip galvanised base.
- Ruggedised enclosure with thermal insulation.
- Sunshade 2nd skin.
- Durable powder coating.
- IP55 / IP56 Dual Zone rating.

### Simple Install

- Reduce project risk with pre-integrated microgrid controller and PV inverter.
- Quick on-site installation.
- Complete system factory tested, fast site commissioning.
- Flexible site placement.



Australia's most flexible & reliable energy control system.

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# POWERCORE PC100

Power Type	Three Phase
Max Power	100kVA
Max System Energy Capacity	676kWh
Max Integrated Solar AC	150kVA
Max Solar DC	225kWp

SPECIFICATIONS	UNIT	RANGE
Rated Power	kVA	100
Peak Power	kVA (3sec)	140
Reactive Power (Capacitive & inductive Capacity)	kVAr	80
Inverter Full Load Continuous	A	140
Fault Current / Output Breaker trip time		0.243kA for <100ms
Load Acceptance & Rejection Rate		50% <100ms, 100% <500ms
AC Voltage	V	400 – 430 (415V nominal)
Frequency	Hz	50
Drive Unit		Customised Siemens SINAMICS S120
Powertrain		Full four quadrant operation
Transformer		Galvanically Isolated
Inverter Efficiency		98%
Power Factor		-1 to 0 to +1
STATCOM Support Modes		Volt-VAr & fixed VAr
Communications		4G / Wi-Fi / Satellite
IP Rating		IP55
Operating Ambient Temperature	°C	-10°C – 60°C (40°C without de-rate)
Altitude (MASL)	m	<1000
Relative Humidity		0 - 95% (Non-Condensing)

ENERGY STORAGE OPTIONS	UNIT	A	B	C	D	E	F	G
Battery BOL	kWh	96	193	289	386	483	579	676
Battery EOL	kWh	70% after 10 years (90% DoD, 1 cycle per day)						
Depth of Discharge		90%						
Dimensions WxH	mm	1200 x 2400						
Dimensions L	mm	4700	4700	4700	9400 <sup>1</sup>	9400 <sup>1</sup>	9400 <sup>1</sup>	9400 <sup>1</sup>
Weight	kg	3600	4800	6000	8700	9900	11100	12300
Battery Type		Lithium-Iron Phosphate (LFP)						
Round Trip Efficiency		>96%						
Internal Temperature	°C	<35°C Battery Cell Temperature (Thermostatically Controlled)						

PV INVERTER OPTIONS	UNIT	SPS50	SPS100	SPS150
Maximum AC Output	kW	50	100	150
Maximum DC Power	kW	75	150	225
DC Input Voltage Range	V		580 - 1,000	
MPP Trackers	qty	1(3) <sup>2</sup>	2(6) <sup>2</sup>	2(4) <sup>2</sup>
Equipment Standards	IEC 62619:2017 IEC 62109-1:2010 IEC 62109-2:2010 IEC 61800-5-1:2007 AS/NZS 4777.2:2015 AS/NZS 4777.2:2020 (OEM Certified) AS61439, UL 1973 UL9540A, UN38.3			
System Level Standards	AS/NZS 3000:2018 AS/NZS 5139:2019 AS/NZS 4509.1:2009			

<sup>1</sup> Includes expansion Canopy

<sup>2</sup> Option for additional MPP Trackers



BENEFITS	SPECIFICATIONS	
<b>Safety &amp; Protection</b>	<ul style="list-style-type: none"> <li>• AC type II surge protection</li> <li>• AC short circuit protection</li> <li>• AC output overcurrent protection</li> <li>• AC output voltage protection</li> <li>• DC overcurrent protection</li> <li>• Over temperature protection &amp; air con monitoring</li> <li>• PV type II surge &amp; lightning protection</li> <li>• Early battery failure detection</li> <li>• Battery smoke and temperature alarms</li> <li>• Active battery module and cell management</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated system emergency stop</li> <li>• Integrated DC insulation monitoring</li> <li>• Monitored switchgear status</li> <li>• Configurable alarm event notifications</li> <li>• Semi-permeable membrane to prevent toxic fumes and explosive gas build up</li> </ul>
<b>Built to Endure</b>	<ul style="list-style-type: none"> <li>• Galvanised heavy-duty steel base frame</li> <li>• External sun shielding</li> <li>• Advanced temperature zone control</li> </ul>	<ul style="list-style-type: none"> <li>• Durable powder coat enclosure</li> <li>• Integrated lifting points &amp; forklift points</li> <li>• Lockable doors</li> </ul>
<b>Control &amp; Functionality</b>	<ul style="list-style-type: none"> <li>• PowerCore Microgrid Controller (Robust industrial-grade PLC)</li> <li>• PowerCore HMI interface</li> <li>• In-built AC coupled renewable controller</li> <li>• In-built generator synchronising system</li> <li>• Advanced generator load control algorithm</li> <li>• Machine-learning generator droop characterisation</li> <li>• Distributed sensor management system (DSMS)</li> <li>• Data acquisition microprocessor</li> <li>• MGS cloud-based monitoring platform with data historian</li> <li>• MGS remote service capability via secure VPN</li> <li>• Internal (control) and external (client/monitoring) segregated networks</li> </ul>	
<b>Built to Endure</b>	<ul style="list-style-type: none"> <li>• Exchangeable Modbus map to interface with existing generator controls (ComAp, DeepSea, Deif, Cummins PowerCommand, CAT EMCP, etc)</li> <li>• Expandable Modbus TCP/IP interface for external sensors (weather station)</li> <li>• Additional DSMS as required (fuel system)</li> </ul>	
<b>Warranty</b>	<ul style="list-style-type: none"> <li>• Integrated MGS product warranty</li> <li>• 5 years standard warranty</li> <li>• Additional 5 years extension available</li> </ul>	

