

# CAB1000 / AC

Up to 1250 VDC

Utility Grade Storage Inverter  
Scalable from 1 to 6 MW



## Return on Investment

- 99% max conversion efficiency
- Low shipping & installation cost
- Easy to move - no crane required



## Modular / flexible configuration

- Configurable up to 6 MW
- Individual AC connections or combined throat
- Modular 1-1.5 MW blocks



## Simple O&M

- Easy to maintain
- Modular design with low component count
- Extended warranty available



## Advanced Technology

- High DC side short circuit capability
- Advanced grid support features including 4-quadrant control and VSG
- Fast seamless transition and fast response time
- Blackstart
- Harmonic dampening



## One inverter for all uses

- Frequency regulation (FFR)
- Renewables capacity firming
- Load leveling (Energy time shifting)
- Parallel UPS functionality
- Synthetic inertia
- Micro-grids
- Bi-direction DC source

## CAB1000 Overview

The CAB1000 scalable platform has been developed to offer a straightforward and simple solution to developers of Utility-grade energy storage systems for both UL and IEC markets.

CAB1000 offers a scalable and modular building block for systems of all sizes. With world-class power density and easy to install design, your energy storage system will be commissioned quickly and safely.

# CAB1000/AC - 2L.1 | Model 50-100100

## Bidirectional Energy Storage & Microgrid PCS



AC	AC configuration   max. cables per phase (1)		3-wire (3P3W)   6 x 600 kcmil or 6 x 300 mm <sup>2</sup>				
	Nominal AC voltage (+/- 10%) (2)		208 VRMS	350 VRMS	400 VRMS	480 VRMS	600 VRMS
	Nominal AC current (export/import) (3)		1255 ARMS				
	AC export/import capacity @ 40°C (4)		452 kVA	761 kVA	869 kVA	1043 kVA	1304 kVA
	Max overload capacity @ 40°C, starting from 66% full load. (7)		115 % for 2 sec and 105 % for 5 min				
	Allowed grid short ckt. current ratios		Current mode: >4   Voltage mode: all				
	Max. fault current allowed from AC source		100 kA (AC RMS) throated version   180 kA (AC RMS) non-throated version				
	Nominal frequency range		50 / 60 Hz (configurable)				
	Harmonic distortion		UL1741 / IEEE 1547, <2% TDDi at rated power per IEEE 519 <3% according to VDE-AR-N 4110/4120				
	Efficiency (@ 480 VAC): Peak   CEC   Euro		98.5%   97.7%   98,1%				
DC	DC voltage range, maximum (5)		310 - 1250 VDC	522 - 1250 VDC	596 - 1250 VDC	715 - 1250 VDC	895 - 1250 VDC
	DC voltage range, at nominal power (5)		330 - 1150 VDC	555 - 1150 VDC	634 - 1150 VDC	760 - 1150 VDC	951 - 1150 VDC
	Recommended minimum battery voltage		1,65 x nominal AC voltage				
	Maximum DC current		1400 ADC				
	Max. fault current allowed from DC source		180 kA (with internal DC fuses, per input)				
	Number of DC inputs   max. cables per pole		1   8 x 600 kcmil or 8 x 300 mm <sup>2</sup>				
	Max. deviation of DC voltage between parallel units		75 VDC				
Environmental							
Ambient temperature (operation)		-20°C to 60°C (-40°C with option)					
Ambient temperature (storage)		-40°C to 60°C					
Relative humidity		5 to 100% non-condensing					
Protection degree		OUTDOOR: IP55 NEMA 3R. Salt fog kit available for coastal sites.					
Max elevation		3,000m+ [9,842 ft.+] (Consult EPC for any higher elevation)					
Max noise level (A-weighted equivalent)		<70 dBA @ 3m					
Seismic		ICC-ES AC 156 Sds @ 1.35 G					
Altitude derating (current)		10% per 1,000m above 1000m elevation					
Temperature de-rating		1.7% per degree °C from 40-55 °C					
Cabinet							
Maximum dimensions (H x W x D)		mm: [2281 x 1000 x 1636] in.: [89.8 x 39.4 x 64.4]					
Weight		1370 kg [3020 lb.]					
Mounting		Pad mount / skid mount					
Cooling		Hybrid liquid / air, temperature controlled					
Certifications							
Safety		UL 1741	C22.2 No. 107.1-16	IEC 62477-1, IEC 62909-1			
EMC		FCC Part 15 subpart B	IEC/EN 61000-6-2, 6-4	EN 55011	CISPR 32; CISPR 11	IEEE C37.90.2	
Utility interconnect		UL 1741 (SA)	IEEE 1547-2003	CA Rule 21   Hawaii Rule 14	AS4777.2	VDE-AR-N 4110/4120/4130   EN 50549-2	
Protections							
AC disconnection		Contactor					
DC disconnection		Motorized disconnect					
AC fuses   DC fuses (6)		2 x 1000 A, 200 kAIC (24kA SC min)			3 x 750 A, 180 kAIC (20kA SC min)		
AC   DC surge protection (SPD)		Type 2 (Optionally Type 1-heavy duty)			Type 1-heavy duty		
Safety features		F-stop, AC / DC overvoltage, AC timed overvoltage, inst. & timed overcurrent, overtemperature (both instantaneous and time-overload), condensation, etc.					
Ground fault detection (optional)		IMD					
Control							
Control interface		CAN, Modbus TCP/IP					
Command latency		1 ms (CAN), 3 ms (Modbus TCP/IP)					
Response time; (time to accomplish full power step)		down to 2 ms; adjustable longer via parameters					
On-off grid transitions (optional)		Yes   UPS mode available					
Black-start capable (optional)		Yes; requires external control power					
Grid-tied control modes		Voltage mode	PQ (power)	DQ (current)	cos φ (pf)	STATCOM	
Grid-support functions		Active/Reactive control	Volt/VAR	Hz/Watt	Volt/Watt	L/HVRT & L/HFRT   Inertia   ramp rate, etc.	
Islanded control modes		V&f	droop control	VSG	Ok to parallel with other sources		
Island overload avoidance		active inrush limiting for starting large loads					
Control power voltage		208 V 1-ph 60 Hz or 240 V 1-ph 50 Hz					
Self-consumption:							
Abs. Max.   Typ. 100% load, 30C   50% load, 30C		2400 W   1500 W   1200 W [160 W]					
[standby]							

- Throat connection available as an option. Max 4 unit parallel connection allowed with throat connection due to current limit. Up to 6 inverters parallel connection allowed when using cable connection for AC.
- Nominal voltage 208-690 VAC +/- 10%. Consult EPC Power for ratings of alternative AC voltages.
- AC current limited above 1150 VDC, for details see manual
- Power ratings at nominal line voltage and at cos φ = 1. Available power reduces in proportion to any AC voltage reduction from nominal.
- DC voltage range at nominal AC voltage and at cos φ = 1. Minimum DC voltage increases with higher AC voltage and if reactive power is required. See manual for details.
- Consult EPC Power for higher interrupt current requirements. Minimum available grid fault currents must be observed for proper operation of AC fuses.

