

CAB1000 / AC

Up to 1500 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 - 3L.2 | Model 50-100181

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 ²			
	Nominal AC voltage (+/- 10%) (2)	480 VRMS	600 VRMS	630 VRMS	660 VRMS	690 VRMS
	Nominal AC current (export/import)		1255 ARMS			
	AC export/import capacity @ 40°C (3)	1043 kW	1304 kW	1369 kW	1435 kW	1500 kW
	Max overload capacity @ 40°C, starting from 66% full load (8)		120 % for 2 sec and 110 % for 5 min			
	Reactive power capacity (4), (5)		Power Factor 0,8...1 leading/lagging			
	Allowed grid short ckt. current ratios		Current mode: >4 Voltage mode: all			
	Max. fault current allowed from AC source		100 kA (AC RMS) throttled version 180 kA (AC RMS) non-throated version			
	Normal 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 (@ 690 VAC): Peak CEC Euro		98.8% 98.4% 98.5%				
DC	DC voltage range, maximum (6)	720 - 1500 VDC	900 - 1500 VDC	945 - 1500 VDC	990 - 1500 VDC	1035 - 1500 VDC
	DC voltage range, at nominal power (6)	761 - 1200 VDC	951 - 1500 VDC	999 - 1500 VDC	1046 - 1500 VDC	1094 - 1500 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 ²			
	Max. deviation of DC voltage between parallel units		150 VDC			
Environmental						
Ambient temperature (operation)		-20°C to 60°C (-40°C as 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 dB @ 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 (SB)	IEEE 1547-2018	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 (7)		2 x 1000 A, 200 kA _{IC} (24kA SC min)		3 x 750 A, 210 kA _{IC} (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:		2400 W 1500 W 1200 W [160 W]				
Abs. Max. Typ. 100% load, 30C 50% load, 30C [standby]						

(1) 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.

(2) Nominal voltage 480-690 VAC +/- 10%. Consult EPC Power for ratings of alternative AC voltages.

(3) Power ratings at nominal line voltage and at cos φ = 1. Available power reduced in proportion to any AC voltage reduction from nominal.

(4) With nominal DC and nominal AC voltage. Reactive power capability will vary depending on DC and AC voltage range requirements at inverter terminals. Additional reactive power capability available as option.

(5) Overexcited (leading) is reactive power that increases AC voltage at inverter terminals. Under excited (lagging) is reactive power that decreases the reactive power at inverter terminals

(6) 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.

(7) Consult EPC Power for higher interrupt current requirements. Minimum available grid fault currents must be observed for proper operation of AC fuses.

(8) Overload capacity depends on used DC voltage, it is reduced in lower DC values. Contact EPC power for detailed overload capacity.