CAB1000 / AC

Up to 1500 VDC

Utility Grade Solar & 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 a 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)
- Renewable capacity firming
- Load leveling (Energy time shifting)
- Parallel UPS functionality
- Synthetic inertia
- Micro-grids
- Bidirectional 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.

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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	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) throated 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), (8)	720 - 1500 VDC	900 - 1500 VDC	945 - 1500 VDC	990 - 1500 VDC	1035 - 1500 VDC
	DC voltage range, at nominal power (6), (8)	761 - 1500 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	230 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	100 VDC				
Environmental	Ambient temperature (operation)	-20°C to 60°C (-40°C as option)				
	Ambient temperature (storage)	-40°C to 60°C				
	Relative humidity	4 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 de-rating (current)	10% per 1000m above 1000m elevation - from 1,000				
	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 1744] in: [89.8 x 39.4 x 68.7]				
	Weight	1550 kg [3420 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 kAIc (24kA SC min)	2 x 1100 A, 230 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 230 V 1-ph 50 Hz				
	Self-consumption: Abs. Max. | Typ. 100% load, 30C | 50% load, 30C [standby]	2400 W | 1770 W | 1650 W [160 W]				

(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 AC 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. Additonal reactive power capability available as option.

(5) Overexcited (leading) is reactive power that increases AC voltage at inverter terminals. Underexcited (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) DC minimum voltage may be higher to account for High Voltage Ride Through requirements of greater than 6%