

**CENTAURI ENERGY SERVER
TECHNICAL DATA - 160 kW POWER**

Chassis	Maximum power	160kW		
	Maximum current	250A		
	Rated input voltage	360V – 440VAC		
	Rated output voltage	380V – 440VAC		
	Battery pack voltage	+240VDC and -240VDC		
	Safeties	Input	MCCB: 800V, 250A, 8kA rupturing capacity Surge and Spike Filtration: Varistor 460VAC ±10%	
		Output	MCCB: 800V, 250A, 8kA rupturing capacity Surge and Spike Filtration: Varistor 460VAC ±10%	
	Environment	Operating temperature	0~40°C	
		Maximum relative humidity	90% (Non-condensing)	
		Maximum altitude	Rated power per 100m (1% reduced by rising 100m) Maximum 4000m	
	Others	Cooling	Forced ventilation (fan speed varies with load)	
		Noise	60 dB (changes with different load and temperature)	
		Mean time between failures (MTBF)	200,000 hours	
		Protection grade (EN60529)	IP20	
		Incoming line way	Lower wiring pattern	
		Standards	IEC62040-1-1, EN62109-1:2010, EN62109-2:2011	
		Dimensions (W*D*H)	980mm*800mm*1800mm	
		Packing (W*D*H)	1050mm*870mm*2030mm	
		Weight	~960 kg (all modules inserted)	
Inverter Module	Input Voltage – Lower Limit	≥200VDC and ≥-200VDC		
	Input Voltage – Upper Limit	≥290VDC and ≥-290VDC		
	Maximum Power	20kW		
	Maximum Input Current	100A		
	Output Voltage	380VAC – 440VAC (programmable / adjustable)		
	Output voltage accuracy	±1%		
	Transient voltage range	±5%		
	Transient recovery time	20ms		
	Rated frequency	50Hz/60Hz ±1Hz (pre-settable)		
	Frequency tracking range	50Hz/60Hz ±3 Hz		
	Crest factor	3:01		

	Waveform	High resolution pure sine wave 1024 bits per quarter cycle		
	Waveform distortion factor	≤3% (Linear load)		
	Voltage imbalance	±3% (100% unbalanced load)		
	Overload	≥105%-110%	1 hour, then switches to bypass mode	
		≥110%-125%	10 mins, then switches to bypass mode	
		≥125%-150%	60 secs, then switches to bypass mode	
		≥150%	10 secs after which system shuts down. Reduce load to boot	
		≥200%	8 secs after which the system shuts down. Reduce load to boot	
	Torque load handling	1000%	2 secs	
Short circuit	The system starts limited current operation & immediately shuts down, while the user should confirm boot			
Maximum efficiency	≥93%			
Bypass	Rated voltage	Three-phase-four-wire +G 380VAC		
	Voltage range	±20%		
	Rated frequency	50Hz/60Hz ±5Hz		
	Maximum current	30A		
PV Module	Maximum voltage range (Voc)	0 V - 750VDC		
	Best working voltage (Vmp)	450 - 550VDC		
	Maximum conversion efficiency	≥98%		
	Float charging voltage	414V ±1%		
	Equal charging pressure	428V ±1%		
	Maximum charging current	400A		
	Maximum working current	400A		
	Maximum power of solar panel (kW)	160 kW (extendable to 500kW)		
	PV input channels	1+1 (Reserved)		
	Proton Exchange / MPPT module	4 +2 (Reserved)		
Grid / AC Rectifier Module	Range of input voltage	Three phase 380V ±20%		
	Rated frequency	50Hz / 60Hz (Background Setting)		
	Frequency range	50Hz / 60Hz ±1Hz		
	Soft start	0-100% 10s		
	Power factor	Max. 0.8		
	Float charging voltage (20°C)	410V ±1%		
	Maximum voltage	415V ±1%		

	Maximum charging current within permitted range of battery capacity	120A	
Battery Management Module (Lead Acid all types, AGM, Gel, Carbon+ and Flooded batteries), Li Ion all types, Sirius all types	Over discharge limit	315VDC	
	Charging current Settings	Factory setting	0.15C10
		User Setting	0.07-0.3C10
	Intelligent battery management	Automatic conversion between even charging and floating charging; Automatic temperature compensation of battery pack (If the system is not connected with the detection line for the battery temperature, the temperature compensation is based on the ambient temperature)	
	Depth of discharge setting for off-peak discharging	330VDC-378VDC (Pre-settable)	
	Battery SOC Balancing	No. of channels	Maximum 20
Balancing time		1 – 3 hours	
Balancing accuracy		±1%	
Balancing topology		Cell to cell 12V / 2V	
Switching Module	Inverter / bypass conversion time	4ms	
	Bypass / inverter conversion time	4ms	
	Inverter / grid conversion time	0ms	
	Grid / inverter conversion time	0ms	
	DG / inverter conversion time	0ms	
	Inverter / DG conversion time	0ms	
	Energy blending	Available / programmable between all input modules (PV, wind, grid, DG)	
Communication and Automation Module	Remote control input	Battery self-check, Server ON/OFF, fault clear, emergency stop	
	Computer monitoring port	RS232, RS485 and SNMP	
	Dry contact output 12VDC/250Vac 1A max	Bypass input fault, rectifier input fault, system fault, system alarm, battery low voltage, output overload, fan fault and generator ON/OFF.	
Diesel Generator Module	Range of input voltage	Three phase 380V ±20%	
	Rated frequency	50Hz / 60Hz (Background Setting)	
	Frequency range	50Hz / 60Hz ±10Hz	
	Soft start	0-100% 25s	
	Power factor	Max. 0.8	
	Float charging voltage (20°C)	410V ±1%	
	Maximum voltage	415V ±1%	

	Maximum charging current within permitted range of battery capacity	120A		
	Maximum efficiency point tracking	Available with load, frequency, power and temperature input		
	Automatic switching	Engine switching and load switching available		
	Protections	Cranking battery charge maintenance		
	Shutdown	Overload		
		Over temperature		
Over voltage				
Frequency below and above permitted range				
Engine airlock prevention				
Wind Module	Rated Power	20kW		
	Wind turbine voltage	280VDC – 440VDC		
	Maximum current	75A		
	Load on voltage	280VDC		
	Maximum voltage	440VDC		
	Wind turbine automatic breaking voltage	500VDC after rectification		
	Recovery time after automatic breaking	10 mins (default adjustable)		
	No load loss	≤45mA		
	Buck & boost function	Available		
Grid-tied module	Maximum DC input	20kW		
	Max DC input Voltage	500VDC		
	Start Voltage	100VDC		
	Rated Voltage	380VDC		
	DC input voltage range	80VDC – 500VDC		
	Max input current	250A		
	MPPT ways	4-way		
	AC output parameters	Rated AC output power	20kW	
		Max rated AC output power	22kW	
		Max AC output current	100A	
Rated AC output voltage range		220V/230V/240V;180-270V		
Rated grid frequency		50HZ ±5Hz 60HZ ±5Hz		

		Power factor	1
		Output harmonics	<3%
		Max efficiency	97%
		European efficiency	96%
		MPPT efficiency	99.9%
	Safety protection devices	DC input reverse polarity protection	Yes
		Input DC impedance monitor	Yes
		Leak current protection	Yes
		AC short circuit protection	Yes
		Mains monitor	Yes
		Output DC component monitor	Yes
		Anti-islanding	Yes
	Environment	Operating temperature	-25°C – 75°C
		Relative humidity	0% - 95% non-condensable
		IP	IP20
		Night consumption	0.5W