

HEC

## Technical Characteristics

270VAC

## 270VAC - MPPT range 430Vdc-820Vdc

FREESUN HEC SERIES		FRAME 1 - FS		FRAME 2 - FS			FRAME 3 - FS								
NUMBER OF MODULES		2	3	4	5	6	7	8	9	10					
FREESUN HE		0200_H	0300_H	0400_H	0500_H	0600_H	0700_H	0800_H	900_H	1000_H					
OUTPUT	Nominal AC Output Power(kVA) <sup>[1]</sup>	200	300	400	500	600	700	800	900	1000					
	Rated Output Power (+10%) (kVA) <sup>[2]</sup>	220	330	440	550	660	770	880	990	1100					
	Operating Grid Voltage(VAC)	270VAC ( $\pm 10\%$ )													
	Operating Range, Grid Frequency	50Hz - 60Hz													
	Voltage Ripple, PV Voltage	< 3%													
INPUT	Current Harmonic Distortion (THDi)	< 3% at nominal power													
	Power Factor (cosine phi)	0.90 leading ... 0.90 lagging adjustable													
	DC Voltage Range MPPT (VDC) <sup>[3]</sup>	430V-820V													
EFFICIENCY	Max. permissible DC voltage	900V, 1000V(Optional)													
	Max. permissible DC current (A)	480	720	960	1200	1440	1680	1920	2160	2400					
	Max. Recommended PV peak power (kWp) (+20%)	240	360	480	600	720	840	960	1080	1200					
	Nº of DC connections (per pole)	8	12	16	20	24	28	32	36	40					
	Max. cable section (mm <sup>2</sup> ) <sup>[4]</sup>	240 mm <sup>2</sup>													
AUXILIARY SUPPLY	Max. Efficiency P <sub>AC</sub> , nom (η)	98.6%		98.6%		98.6%									
	Euroeta (η)	98.2%		98.3%		98.4%									
	Californian efficiency (η)	98.0%		98.1%		98.2%									
	Max. Standby Consumption (Pnight)	< approx. 120W		< approx. 240W		< approx. 400W									
CABINET	Control	HE Series	3 x 400V, 50 / 60Hz, (BDEW, PO12.3 inverters equipped with internal UPS)			5260 x 2150 x 1020									
	Power Supply	HEC Series	Internal 3x400VAC transformer, (BDEW, PO12.3 inverters equipped with internal UPS)			5600 x 2270 x 1319									
	Max. Power Consumption	1400W		2760W		4600W									
	Dimensions [WxHxD] mm	HE Series	2100 x 2150 x 1020	3372 x 2150 x 1020		5260 x 2150 x 1020									
ENVIRONMENT	Weight (kg)	HEC Series	2440 x 2270 x 1319	3712 x 2270 x 1319		5600 x 2270 x 1319									
	HE Series	1650	2900		4500										
	HEC Series	1815	3190		4950										
	Air Flow	Intake through rear lower part blown out through upper side													
CONTROL INTERFACE	Type of ventilation	Forced													
	Degree of protection	HE Series	Indoor IP21												
		HEC Series	Outdoor IP54												
	Permissible Ambient Temperature <sup>[5]</sup>	-20°C ...+50°C													
	Relative Humidity, non-condensing	10% to 95%													
PROTECTIONS	Max. Altitude (above sea level) <sup>[5]</sup>	1000m; >1000m power derating 1% Sn (kVA) per 100m													
	Noise level <sup>[6]</sup>	< 79 dBA													
	Communication	RS232 / RS485 / USB / Ethernet, (Modbus RTU Protocol, Modbus TCP/IP) Optional GSM/GPRS													
	Digital Inputs	2 programmable inputs. Galvanically isolated.													
	Analogue Inputs	2 programmable and differential inputs; (0-20mA or $\pm 10mV$ to $\pm 10V$ ) and PT100													
	String Supervisor Communication	RS485 /Modbus RTU													
	Digital Outputs	2 electrically-isolated programmable switched relays (250VAC, 8A or 30 VDC, 8A)													
	Analogue Outputs	1 Analogue. Output galvanically isolated.													
	Ground Fault Monitoring <sup>[7]</sup>	Standard built in													
	Heating Resistors	HE Series	Optional		Standard		Standard		Standard						
	Emergency Stop	Optional													
	General AC on-load switch disconn.	Standard													
	AC contactor	standard in each module													
	AC Circuit Breaker	standard in each module													
	DC Motorized Circuit Breaker	MCB. Motorized built in as standard in each module													
	General DC power switch	Optional													
	DC General Fuses	Optional													
	Overvoltage Protection	AC, DC Inverter and Auxiliary Supply type 2 - Internal Standard													
	Lightning Protections	Optional (Integrated in the inverter)													

## NOTES

[1] Values at 50°C.

[2] Maximum ambient temperature 40°C.

[3] Values at 105-Vac nom and cos φ = 1.

[4] Maximum DC cable section per connection and pole. The installer must also consider for the cable selection the factors such as length of cable for each installation, environmental conditions, aluminium conductors, installation methods and requirements set out in current regulations applicable in the country of installation.

[5] Other characteristics consult with Power Electronics.

[6] Sound pressure level at a distance of 1m from the rear part.

[7] In cases where the installation has the positive pole or the negative pole earth connected, this protection will be disconnected.