

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) ^[1]		200	300	400	500	600	700	800	900	1000
	Rated Output Power (+10%) (kVA) ^[2]		220	330	440	550	660	770	880	990	1100
	Operating Grid Voltage(VAC)		270VAC (± 10%)								
	Operating Range, Grid Frequency		50Hz - 60Hz								
	Voltage Ripple, PV Voltage		< 3%								
	Current Harmonic Distortion (THDi)		< 3% at nominal power								
	Power Factor (cosine phi)		0.90 leading ... 0.90 lagging adjustable								
INPUT	DC Voltage Range MPPT (VDC) ^[3]		430V-820V								
	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 ²) ^[4]		240 mm ²								
EFFICIENCY	Max. Efficiency P _{ac} , 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 (P _{night})		< approx. 120W		< approx. 240W			< approx. 400W			
AUXILIARY SUPPLY	Control	HE Series	3 x 400V, 50 / 60Hz, (BDEW, PO12.3 inverters equipped with internal UPS)								
	Power Supply	HEC Series	Internal 3x400VAC transformer, (BDEW, PO12.3 inverters equipped with internal UPS)								
	Max. Power Consumption		1400W		2760W			4600W			
CABINET	Dimensions	HE Series	2100 x 2150 x 1020		3372 x 2150 x 1020			5260 x 2150 x 1020			
	[WxHxD] mm	HEC Series	2440 x 2270 x 1319		3712 x 2270 x 1319			5600 x 2270 x 1319			
	Weight (kg)	HE Series	1650		2900			4500			
		HEC Series	1815		3190			4950			
	Air Flow		Intake through rear lower part blown out through upper side								
	Type of ventilation		Forced								
ENVIRON-MENT	Degree of protection	HE Series	Indoor IP21								
		HEC Series	Outdoor IP54								
	Permissible Ambient Temperature ^[5]		-20°C ...+50°C								
	Relative Humidity, non-condensing		10% to 95%								
	Max. Altitude (above sea level) ^[5]		1000m; >1000m power derating 1% S _n (kVA) per 100m								
	Noise level ^[6]		< 79 dBA								
CONTROL INTERFACE	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 ± 10mV to ± 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.								
PROTEC-TIONS	Ground Fault Monitoring ^[7]		Standard built in								
	Heating	HE Series	Optional								
	Resistors	HEC Series	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 1,05-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.