Freesun
SOLAR INVERTER

HEC | Technical Characteristics

300VAC

FREESUN HEC SERIES			300VAC - MPPt range 475Vdc-820Vdc								
			FRAME 1 - FS		FRAME 2 - FS			FRAME 3 - FS			
NUMBER OF MODULES			2	3	4	5	6	7	8	9	10
FREESUN HE			0230_H	0340_H	0460_H	0570_H	0680_H	0801_H	0910_H	1030_H	1140_H
OUTPUT	Nominal AC Output Power(kVA)[1]		230	340	460	570	680	800	910	1030	1140
	Rated Output Power (+10%) (kVA)[2]		250	380	500	630	750	880	1000	1130	1250
	Operating Grid Voltage(VAC)		300VAC (± 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]		475V-820V								
	Max. permissible DC voltage		1000V								
	Max. permissible DC current (A)		500A	750A	1000A	1250A	1500A	1750A	2000A	2250A	2500A
	Max. Recommended PV peak power (kWp) (+20%)		274	410	547	684	821	958	1094	1231	1368
	Nº of DC connections (per pole)		8	12	16	20	24	28	32	36	40
	Max. cable section (mm2)[4]		240 mm2								
EFFICIENCY	Max. Efficiency PAC, 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			
AUXILIARY SUPPLY	Control Power Supply	HE Series	3 x 400V, 50 / 60Hz, (BDEW, PO12.3 inverters equipped with internal UPS)								
		HEC Series	Internal 3x400VAC transformer (BDEW, PO12.3 inverters equipped with internal UPS)								
	Max. Power Consumption		1400W		2760W			4600W			
CABINET	Dimensions [WxHxD] mm	HE Series	2100 x 2150 x 1020		3372 x 2150 x 1020			5260 x 2150 x 1020			
		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]		-20ºC ...+50ºC								
	Relative Humidity	HE Series	10% to 95% Non condensing								
		HEC Series	4% to 100% Condensing								
	Max. Altitude (above sea level)[5]		1000m; >1000m power derating 1% Sn (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 Resistors	HE Series	Optional								
		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 50ºC.
[2] Maximum ambient temperature 40ºC.
[3] Values at 1,05·Vac nom and cos ⊠ = 1.

[4] Maximum DC cable section per connexion 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.