

TECHNICAL CHARACTERISTICS

FREEMAQ PCSK 690V

		FRAME 2	FRAME 3	FRAME 4
REFERENCES		FP2195K	FP3290K	FP4390K
AC	AC Output Power (kVA/kW) @40°C ^[1]	2195	3290	4390
	AC Output Power (kVA/kW) @50°C ^[1]	2035	3055	4075
	Max. AC Output Current (A) @40°C	1837	2756	3674
	Operating Grid Voltage (VAC)	690V ±10%		
	Operating Grid Frequency (Hz)	50/60Hz		
	Current Harmonic Distortion (THDi)	< 3% per IEEE519		
	Power Factor (cos phi) ^[2]	0.5 leading ... 0.5 lagging		
	Reactive Power Compensation	Four quadrant operation		
DC	DC Voltage Range ^[3]	976V - 1500V		
	Maximum DC Voltage	1500V		
	DC Voltage Ripple	< 3%		
	Max. DC Continuous Current (A)	2295	3443	4590
	Max. DC Short Circuit Current (kA)	250 kA with a time constant of 3 ms		
	Battery Technology	All type of batteries (BMS required)		
EFFICIENCY	Efficiency (Max) (η) ^[4]	98.94%		
	Euroeta (η) ^[4]	98.51%		
CABINET	Dimensions [WxDxH] (ft)	9.8 x 6.5 x 7.2		
	Dimensions [WxDxH] (m)	3.0 x 2.0 x 2.2		
	Weight (lbs)	11465	11795	12125
	Weight (kg)	5200	5350	5500
	Type of Ventilation	Forced air cooling		
ENVIRONMENT	Degree of Protection	NEMA 3R / IP55		
	Operating Temperature Range ^[5]	From -25°C to +60°C, >50°C power derating		
	Operating Relative Humidity Range	From 4% to 100% non-condensing		
	Storage Temperature Range	From -15°C to +40°C		
	Max. Altitude (above sea level)	2000m / >2000m power derating (Max. 4000m)		
CONTROL INTERFACE	Communication Protocol	Modbus TCP		
	Power Plant Controller	Optional. Third party SCADA systems supported.		
	Keyed ON/OFF Switch	Standard		
PROTECTIONS	Ground Fault Protection	Insulation monitoring device		
	Humidity Control	Active heating		
	General AC Protection & Disconn.	Circuit breaker		
	General DC Protection & Disconn.	DC switch-disconnectors ^[6]		
	Overvoltage Protection	Type II for AC and Type I+II for DC		
CERTIFICATIONS & STANDARDS	Safety	UL 1741 / CSA 22.2 No.107.1-16 / IEC 62109-1 / IEC 62109-2 / IEC 62477-1		
	Installation	NEC 2020 / IEC		
	Utility Interconnect ^[7]	IEEE 1547:2018 / UL 1741 SA & SB/ IEC 62116:2014		

[1] Values at 1.00-Vac nom and cos Φ= 1. Consult Power Electronics for derating curves. The maximum AC output power must be limited to meet the P-Q capability requirement at the inverter level of some grid codes.

[2] Consult P-Q charts available: $Q(kVar) = \sqrt{(S(kVA))^2 - P(kW)^2}$.

[3] Consult Power Electronics for derating curves.

[4] Consult Power Electronics for Frame 2 and Frame 3 efficiencies.

[5] Optional available for temperatures down to -35°C.

[6] Battery short circuit disconnection must be done on the battery side.

[7] Consult Power Electronics for other applicable standards / grid codes.