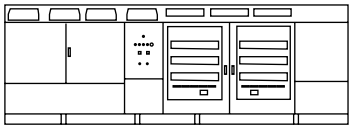
PCSM

IEC

Easy maintenance.
Integrated MV solution in the same enclosure.
Advanced grid support.
Compatible with all battery technologies.

Freemaq PCSM
IEC



REFERENCES		FP5150MH	FP5151MH	FP5152MH
AC	AC Output Power (kVA/kW) @30 °C [1]	5360		
	AC Output Power (kVA/kW) @35 °C [1]	5150		
	AC Output Power (kVA/kW) @40 °C [1]	4940		
	AC Output Power (kVA/kW) @50 °C [1]	4520		
	Operating Grid Voltage (kV)	34.5 kV ±10%	33 kV ±10%	30 kV ±10%
	Operating Grid Frequency (Hz)	60 Hz	50 Hz	50 Hz
	Current Harmonic Distortion (THDi)	<3% per IEEE 519		
	Power Factor (CosPhi) [2]	0.5 leading ... 0.5 lagging		
	Reactive Power Compensation	Four quadrant operation		
	Overload Capability	166% - 100 ms / 150% - 5 s / 120% - 8 s / 110% - 15 s		
DC	DC Voltage Range Full Power [3]	1019 V – 1500 V		
	Maximum DC Voltage	1500 V		
	DC Voltage Ripple	<3%		
	Max. DC Continuous Current (A)	5367		
	Max. DC Short Circuit Current (kA)	500 kA with a time constant of 1 ms		
	Battery Technology	All type of batteries (BMS required)		
EFFICIENCY & AUX. SUPPLY	Efficiency (Max) (η)	98.00% including MV transformer		
	CEC (η)	97.53% including MV transformer		
CABINET	Dimensions [WxDxH] (ft)	21.3 x 6.5 x 7.5		
	Dimensions [WxDxH] (m)	6.5 x 2.0 x 2.3		
	Weight (lbs)	30865		
	Weight (kg)	14000		
	Type of Ventilation	Forced air cooling		
ENVIRONMENT	Degree of Protection	IP55		
	Operating Temperature Range [4]	From -25 °C to +60 °C, >30 °C power derating		
	Operating Relative Humidity Range	From 4% to 100% non-condensing		
	Storage Temperature Range	From -40 °C to +60 °C		
	Max. Altitude (above sea level) [5]	2000 m	1000 m	
CONTROL INTERFACE	Communication Protocol	Modbus TCP		
	Power Plant Controller	Optional		
	Keyed ON/OFF Switch	Standard		
PROTECTIONS	Ground Fault Protection	Insulation monitoring device		
	Humidity Control	Active heating		
	General AC Protection & Disconnection	36 kV MV switchgear (2L+V)		
	General DC Protection & Disconnection	High-speed fuses, Motorized DC disconnect switches [6]		
	Overvoltage Protection	Type 2 for AC and Type 1+2 for DC		
CERTIFICATIONS & STANDARDS	Safety	IEC 62109-1 / IEC 62109-2 / IEC 62477-1 / IEC 62477-2		
	Utility Interconnect [7]	IEC 62116 / / G99 / VDE 4110-4120-4130 / CEI 0-16 / NTS 2.1 / EN 50549		

NOTES

[1] Values at 1.00·Vac nom and CosPhi=1.
Consult Power Electronics for derating curves.
[2] Consult P-Q charts available: $Q(kVAr)=\sqrt{(S(kVA)^2-P(kW)^2)}$.
[3] Consult Power Electronics for derating curves. In the event of overvoltage in the grid, the minimum DC voltage will vary proportionally with the AC voltage.
[4] Optional available for temperatures below -25 °C.
[5] Consult Power Electronics for altitudes above 1000 m.
[6] Battery short circuit disconnection must be done on the battery side.
[7] Consult Power Electronics for other applicable standards / grid codes.

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