

Multi PCSM

UL

Easy maintenance.

Integrated MV solution in the same enclosure.

Up to 4 independent DC inputs.

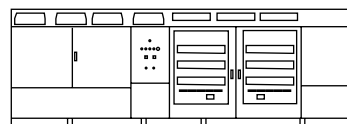
Advanced grid support.

Compatible with all battery technologies.



Freemaq Multi PCSM

UL



COMMON FEATURES

AC	Operating Grid Frequency (Hz)	60Hz
	Current Harmonic Distortion (THDi)	< 3% per IEEE519
	Power Factor (CosPhi) ^[1]	0.5 leading ... 0.5 lagging
	Reactive Power Compensation	Four quadrant operation
DC	Maximum DC Voltage	1500V
	DC Voltage Ripple	< 3%
	Max. DC Short Circuit Current per Input (kA)	500 kA with a time constant of 1 ms
	Battery Technology	All type of batteries (BMS required)
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	NEMA 3R
	Operating Temperature Range ^[2]	From -25°C to +60°C, >40°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) ^[3]	2000m
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.	38 kV MV switchgear (20 or 25 kA)
	General DC Protection & Disconn. ^[4]	High-speed fuses, Motorized DC disconnect switches
	Overvoltage Protection	Type II for AC and Type I+II for DC
CERTIFICATIONS & STANDARDS	Safety	UL 1741 / CSA 22.2 No.1071-16
	Installation	NEC 2023
	Utility Interconnect ^[5]	UL 1741 SA & SB / RULE 21 / RULE 14H / IEEE 1547:2020

REFERENCES		FP4200M2	FP4201M2	FP4204M2	FP4200M4	FP4201M4	FP4204M4
AC	AC Output Power (kVA/kW) @40°C ^[6]	4200					
	AC Output Power (kVA/kW) @50°C ^[6]	3900					
	Operating Grid Voltage (kV)	34.5 kV ±10%	13.8 kV ±10%	12.47 kV ±10%	34.5 kV ±10%	13.8 kV ±10%	12.47 kV ±10%
DC	DC Voltage Range ^[7]	934V - 1500V					
	Max. DC Continuous Current per Input (A)	2295			1148		
	Number of Separate DC Inputs	2			4		
EFFICIENCY	Efficiency (Max) (η)	98.00% including MV transformer					
	CEC (η)	97.53% including MV transformer					
REFERENCES		FP4105M2			FP4105M4		
AC	AC Output Power (kVA/kW) @40°C ^[6]	4105					
	AC Output Power (kVA/kW) @50°C ^[6]	3810					
	Operating Grid Voltage (kV)	34.5kV ±10%			34.5kV ±10%		
DC	DC Voltage Range ^[7]	913V - 1500V					
	Max. DC Continuous Current per Input (A)	2295			1148		
	Number of Separate DC Inputs	2			4		
EFFICIENCY	Efficiency (Max) (η)	97.93% including MV transformer					
	CEC (η)	97.50% including MV transformer					
REFERENCES		FP4010M2			FP4010M4		
AC	AC Output Power (kVA/kW) @40°C ^[6]	4010					
	AC Output Power (kVA/kW) @50°C ^[6]	3720					
	Operating Grid Voltage (kV)	34.5kV ±10%					
DC	DC Voltage Range ^[7]	891V - 1500V					
	Max. DC Continuous Current per Input (A)	2295			1148		
	Number of Separate DC Inputs	2			4		
EFFICIENCY	Efficiency (Max) (η)	97.91% including MV transformer					
	CEC (η)	97.49% including MV transformer					

NOTES

- [1] Consult P-Q charts available: $Q(kVar) = \sqrt{(S(kVA))^2 - P(kW)^2}$.
- [2] Optional available for temperatures down to -35°C.
- [3] Consult Power Electronics for altitudes above 1000m.
- [4] Battery short circuit disconnection must be done on the battery side.
- [5] Consult Power Electronics for other applicable standards / grid codes.
- [6] Values at 1.00-Vac nom and CosPhi=1. Consult Power Electronics for derating curves and overload capability in grid forming mode.
- [7] 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.