

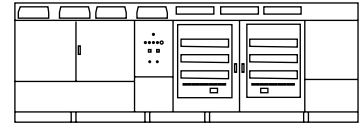
# HEM

UL

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**Easy maintenance.**  
**Advanced grid support.**  
**Integrated MV solution in the same enclosure.**  
**Econ Mode. Remove no-load losses.**  
**Bus Plus. Combines Solar and Storage.**





**COMMON FEATURES**

AC	Operating Grid Frequency (Hz)	60Hz		
	Current Harmonic Distortion (THDi)	< 3% per IEEE519		
	Power Factor (CosPhi) <sup>[1]</sup>	0.5 leading ... 0.5 lagging adjustable / Reactive power injection at night		
DC	Maximum DC Voltage	1500V		
	Number of Inputs	Up to 40		
	Max. DC Continuous Current (A) <sup>[2]</sup>	4590		
	Max. DC Short Circuit Current (A) <sup>[2]</sup>	6940		
CABINET	Number of Freemaq DC/DC <sup>[2]</sup>	Up to 4		
	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		
ENVIRONMENT	Type of Ventilation	Forced air cooling		
	Degree of Protection	NEMA 3R		
	Operating Temperature Range <sup>[3]</sup>	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		
CONTROL INTERFACE	Max. Altitude (above sea level) <sup>[4]</sup>	2000m		
	Communication Protocol	Modbus TCP		
	Power Plant Controller	Optional		
PROTECTIONS	Keyed ON/OFF Switch	Standard		
	Ground Fault Protection	GFDI and isolation monitoring device		
	Humidity Control	Active heating		
	General AC Protection & Disconn.	38 kV MV switchgear (20 or 25 kA)		
	General DC Protection & Disconn.	Fuses, Motorized DC disconnect switches		
CERTIFICATIONS & STANDARDS	Overvoltage Protection	Type 2 protection for AC and DC		
	Safety	UL 1741 / CSA 22.2 No.1071-16		
	Installation	NEC 2023		
REFERENCES	Utility Interconnect <sup>[5]</sup>	UL 1741 SA & SB / RULE 21 / RULE 14H / IEEE 1547.1:2020		
		<b>FS4200M</b>	<b>FS4201M</b>	<b>FS4204M</b>
	AC Output Power (kVA/kW) @40°C <sup>[6]</sup>	4200		
	AC Output Power (kVA/kW) @50°C <sup>[6]</sup>	3900		
DC	Operating Grid Voltage (kV) <sup>[7]</sup>	34.5kV ±10%	13.8kV ±10%	12.47 kV ±10%
	DC Voltage Range <sup>[8]</sup>	934V - 1500V		
EFFICIENCY	Efficiency (Max) (η)	98.00% including MV transformer		
	CEC (η)	97.53% including MV transformer		
REFERENCES		<b>FS4105M</b>		
	AC Output Power (kVA/kW) @40°C <sup>[6]</sup>	4105		
	AC Output Power (kVA/kW) @50°C <sup>[6]</sup>	3810		
	Operating Grid Voltage (kV) <sup>[7]</sup>	34.5kV ±10%		
DC	DC Voltage Range <sup>[8]</sup>	913V - 1500V		
	Efficiency (Max) (η)	97.93% including MV transformer		
EFFICIENCY	CEC (η)	97.50% including MV transformer		
		<b>FS4010M</b>		
AC	AC Output Power (kVA/kW) @40°C <sup>[6]</sup>	4010		
	AC Output Power (kVA/kW) @50°C <sup>[6]</sup>	3720		
	Operating Grid Voltage (kV) <sup>[7]</sup>	34.5kV ±10%		
DC	DC Voltage Range <sup>[8]</sup>	891V - 1500V		
	Efficiency (Max) (η)	97.91% including MV transformer		
EFFICIENCY	CEC (η)	97.49% including MV transformer		

NOTES

- [1] Consult P-Q charts available:  $Q(kVar) = \sqrt{(S(kVA))^2 - P(kW)^2}$ .
- [2] Consult Power Electronics for Freemaq DC/DC connection configurations.
- [3] Optional available for temperatures below to -25 °C.
- [4] Consult Power Electronics for altitudes above 1000m.
- [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.
- [7] Consult Power Electronics for other configurations.
- [8] 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.