

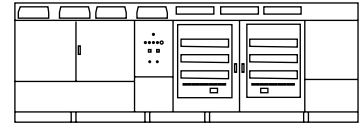
# HEM

IEC

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**Easy maintenance.**  
**Advanced grid support.**  
**Integrated MV solution in the same enclosure.**  
**Bus Plus. Combines Solar and Storage.**





**COMMON FEATURES**

AC	Current Harmonic Distortion (THDi)	< 3% per IEEE 519
	Power Factor (cos phi) <sup>[3]</sup>	0.5 leading ... 0.5 lagging adjustable / Reactive power injection at night
DC	Maximum DC Voltage	1500 V
	Number of Inputs	Up to 40
	Max. DC Continuous Current (A) <sup>[5]</sup>	4590
	Max. DC Short Circuit Current (A) <sup>[5]</sup>	6940
	Number of Freemaq DC/DC <sup>[5]</sup>	Up to 4
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
ENVIRONMENT	Type of Ventilation	Forced air cooling
	Degree of Protection	IP55
	Operating Temperature Range <sup>[6]</sup>	From -25 °C to +60 °C, >40 °C power derating
	Operating Relative Humidity Range	From 4% to 100% non-condensing
CONTROL INTERFACE	Storage Temperature Range	From -40 °C to +60 °C
	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.	MV switchgear (2L+V)
	General DC Protection & Disconn.	Fuses, Motorized DC disconnect switches
CERTIFICATIONS & STANDARDS	Overvoltage Protection	Type 2 protection for AC and DC
	Safety	IEC 62109-1 / IEC 62109-2

REFERENCES	FS4200MH	FS4202MH	FS4206MH
AC	AC Output Power (kVA/kW) @40°C <sup>[1]</sup>		
	4200		
	AC Output Power (kVA/kW) @50°C <sup>[1]</sup>		
	3900		
AC	Operating Grid Voltage (kV) <sup>[2]</sup>	34.5 kV ±10%	33 kV ±10%
	Operating Grid Frequency (Hz)	60 Hz	50 Hz
DC	DC Voltage Range <sup>[4]</sup>		
934 V - 1500 V			
EFFICIENCY	Efficiency (Max) (η) (preliminary)		
	97.8% including MV transformer		
ENVIRONMENT	Euroeta (η) (preliminary)		
	97.51% including MV transformer		
REFERENCES	Max. Altitude (above sea level) <sup>[7]</sup>	2000 m	1000 m
			2000 m

REFERENCES	FS4105MH		
AC	AC Output Power (kVA/kW) @40 °C <sup>[1]</sup>		
	4105		
	AC Output Power (kVA/kW) @50 °C <sup>[1]</sup>		
	3810		
DC	Operating Grid Voltage (kV) <sup>[2]</sup>	34.5 kV ±10%	
	Operating Grid Frequency (Hz)	60 Hz	
DC	DC Voltage Range <sup>[4]</sup>		
913 V - 1500 V			
EFFICIENCY	Efficiency (Max) (η) (preliminary)		
	97.76% including MV transformer		
ENVIRONMENT	Euroeta (η) (preliminary)		
	97.50% including MV transformer		
REFERENCES	Max. Altitude (above sea level) <sup>[7]</sup>	2000 m	

REFERENCES	FS4010MH		
AC	AC Output Power (kVA/kW) @40 °C <sup>[1]</sup>		
	4010		
	AC Output Power (kVA/kW) @50 °C <sup>[1]</sup>		
	3720		
DC	Operating Grid Voltage (kV) <sup>[2]</sup>	34.5 kV ±10%	
	Operating Grid Frequency (Hz)	60 Hz	
DC	DC Voltage Range <sup>[4]</sup>		
891 V - 1500 V			
EFFICIENCY	Efficiency (Max) (η) (preliminary)		
	97.75% including MV transformer		
ENVIRONMENT	Euroeta (η) (preliminary)		
	97.48% including MV transformer		
REFERENCES	Max. Altitude (above sea level)	2000 m	

NOTES

[1] Values at 1.00·Vac nom and cosφ=1.  
Consult Power Electronics for derating curves.

[2] Consult Power Electronics for other configurations.

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

[4] 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.

[5] Consult Power Electronics for Freemaq DC/DC connection configurations.

[6] Optional available for temperatures below -25 °C.

[7] Consult Power Electronics for altitudes above 1000 m.