Comune di : ROTELLO

Provincia di : CAMPOBASSO

Regione : MOLISE

Firmato digitalmente da

FERNANDO SONNINO

PROPONENTE

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OPERA

PROGETTO DEFINITIVO

IMPIANTO DI PRODUZIONE DI ENERGIA ELETTRICA DA FONTE RINNOVABILE AGROFOTOVOLTAICA DI POTENZA NOMINALE PARI A 63.628,80 kWp E POTENZA DI IMMISSIONE PARI A 62.698,00 KW E DELLE RELATIVE OPERE DI CONNESSIONE ALLA RETE RTN

"VERTICCHIO"

OGGETTO

TITOLO ELABORATO :

BROCHURE INVERTER

DATA : 20 novembre 2020

SCALA : -----

N°/CODICE ELABORATO : EL 040

Tipologia : EL (ELABORATI)

I TECNICI

PROGETTISTI:

EDILSAP s.r.l.
Via di Selva Candida, 452
00166 ROMA
Ing. Fernando SONNINO
Project Manager

TIMBRI E FIRME:

N° REVISIONE	Cod. STMG	OGGETTO DELLA REVISIONE	ELABORAZIONE	VERIFICA	APPROVAZIONE
01	201901325	Emissione per Progetto Definitivo . Richiesta V.I.A. e A.U.	EDILSAP srl	Ing. Fernando Sonnino	Ing. Fernando Sonnino
00	201901325	Emissione per Progetto Definitivo . Richiesta V.I.A. e A.U.	EDILSAP srl	Ing. Fernando Sonnino	Ing. Fernando Sonnino

HEMK

UTILITY SCALE CENTRAL STRING INVERTER

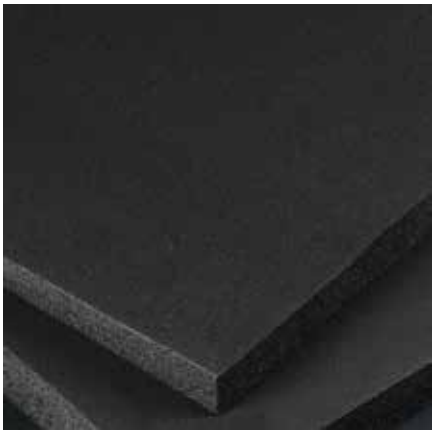
- **FIELD REPLACEABLE UNITS**
- **OUTDOOR DURABILITY**
- **NEMA 3R / IP54**
- **ICOOL 3**
- **ACTIVE HEATING**
- **3 LEVEL TOPOLOGY**
- **NEW RATINGS**

COMBINING THE BENEFITS OF CENTRAL AND STRING INVERTERS

The HEMK is the second generation 1500V inverter, based on the more than proven HEC V1500. This modular solar inverter offers the advantages of both central and string inverters. Reaching a very high power density, and an output power of 3.8MW at 40ºC, it is available in 6 different AC voltages, providing the flexibility to choose the best solution for each PV plant. The power stage architecture, composed of six field replaceable units (FRU), is designed to provide the highest availability and optimize yield production.

The innovative iCOOL3 cooling system allows the HEMK to be installed in the harshest environments, thanks to a degree of protection of up to IP54. This advanced air-cooling system, reduces the OPEX cost compared to other cooling solutions, that need the use of complex liquid-cooling systems.

Polymeric Painting



Closed-Cell Insulation

Galvanized Steel | Stainless Steel (Optional)

HEMK inverter modules have a design life of greater than 30 years of operation in harsh environments and extreme weather conditions. HEMK units are tested and ready to withstand conditions from the frozen Siberian tundra to the Californian Death Valley, featuring:

- Totally sealed electronics cabinet protects electronics against dust and moisture.
- Conformal coating on electronic boards shields PCBs from harsh atmospheres.
- Temperature and humidity controlled active heating prevents internal water condensation.
- C4 degree of protection according to ISO 12944.
  Up to C5-M optional.
- Closed-Cell insulation panel isolates the cabinet from solar heat gains.
- Roof cover designed to dissipate solar radiation, reduce heat build-up and avoid water leakages.
- The solid HEMK structure avoids the need of additional external structures.
- Random units selected to pass a Factory Water Tightness Test ensuring product quality.
- NEMA 3R / IP54.

COMPACT DESIGN - EASY TO SERVICE

By providing full front access the HEMK series simplifies the maintenance tasks, reducing the MTTR (and achieving a lower OPEX). The total access allows a fast swap of the FRUs without the need of qualified technical personnel.

With the HEMK, Power Electronics offers its most compact solution, achieving 3.8MW in just 12ft long, reducing installation costs and labor time.

STRING CONCEPT POWER STAGES

The HEMK combines the advantages of a central inverter with the modularity of the string inverters. Its power stages are designed to be easily replaceable on the field without the need of advanced technical service personnel, providing a safe, reliable and fast Plug&Play assembly system.

Following the modular philosophy of the Freesun series, the HEMK is composed of 6 FRUs (field replaceable units), where all the power stages are physically joined in the DC side and therefore, in the event of a fault, the faulty module is taken off-line and its power is distributed evenly among the remaining functioning FRUs.

INNOVATIVE COOLING SYSTEM

Based on more than 3 years of experience with our MV Variable Speed Drive, the iCOOL3 is the first air-cooling system allowing IP54 degree of protection in an outdoor solar inverter. iCOOL3 delivers a constant stream of clean air to the FRUs, being the most effective way of reaching up to IP54 degree of protection, without having to maintain cumbersome dust filters or having to use liquid-cooling systems, avoiding the commonly known inconveniences of it (complex maintenance, risk of leaks, higher number of components...), therefore resulting in an OPEX cost reduction.

VAR AT NIGHT

At night, the HEMK inverter can shift to reactive power compensation mode. The inverter can respond to an external c signal, a Power Plant Controller command or pre-set reactive power level (kVAr).

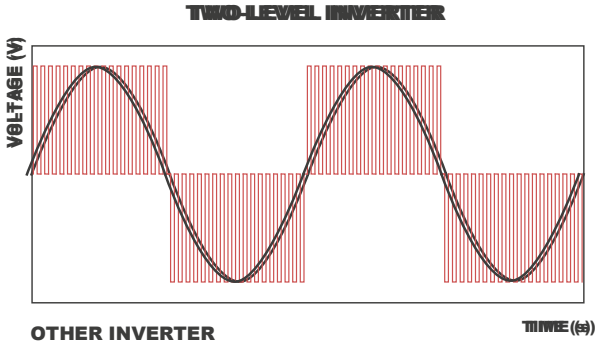
ACTIVE HEATING

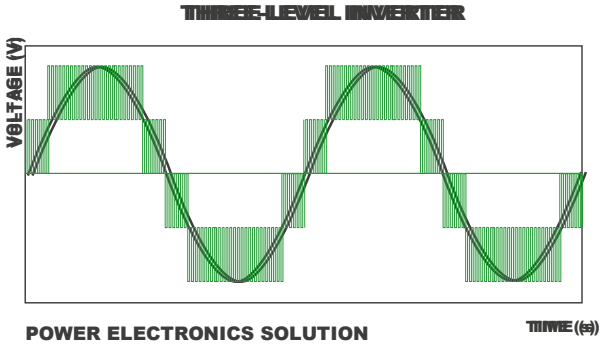
At night, when the unit is not actively exporting power, the inverter can import a small amount of power to keep the inverter internal ambient temperature above -20°C, without using external resistors. This autonomous heating system is the most efficient and homogeneous way to prevent condensation, increasing the inverters availability and reducing the maintenance.

PATENTED

MULTILEVEL TOPOLOGY

The multilevel IGBT topology is the most efficient approach to manage high DC link voltages and makes the difference in the 1,500 Vdc design. Power Electronics has many years of power design in both inverters and MV drives and the HEMK design is the result of our experience with 3 level topologies. The 3 level IGBT topology reduces stage losses, increases inverter efficiency and minimizes total harmonic distortion.

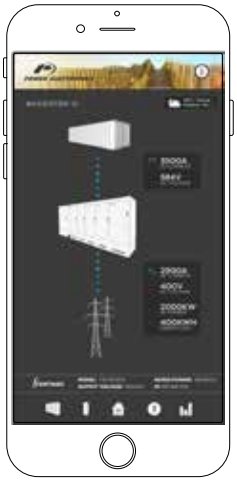




EASY TO MONITOR

The Freesun app is the easiest way to monitor the status of our inverters. All our inverters come with built-in wifi, allowing remote connectivity to any smart device for detailed updates and information without the need to open cabinet doors.

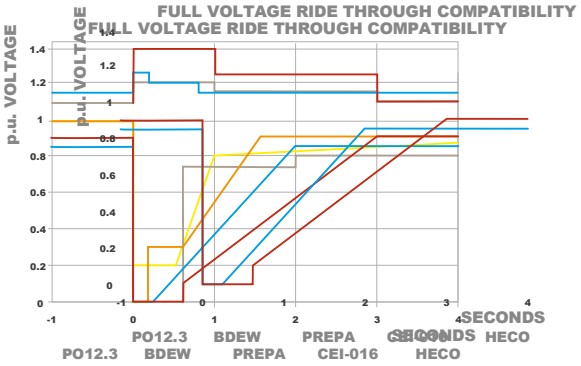
The app user friendly interface allows quick and easy access to critical information (energy registers, production and events).

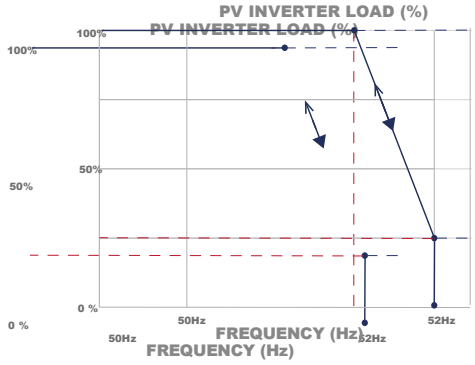


AVAILABLE INFORMATION	Grid and PV field data. Inverter and Power module data (Voltages, currents, power, temperatures, I/O status...). Weather conditions. Alarms and warnings events. Energy registers. Others.
FEATURES	Easy Wireless connection. Comprehensive interface. Real time data. Save and copy settings.
LANGUAGE	English, Spanish.
SYSTEM REQUIREMENTS	iOS or Android devices.
SETTINGS CONTROL	Yes

DYNAMIC GRID SUPPORT

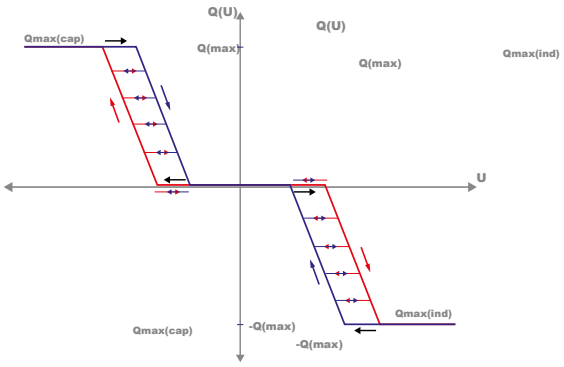
HEMK firmware includes the latest utility interactive features (LVRT, OVRT, FRS, FRT, Anti-islanding, active and reactive curtailment...), and can be configured to meet specific utility requirements.

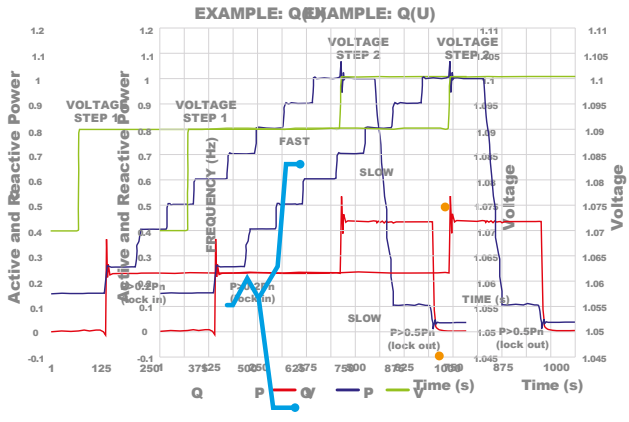




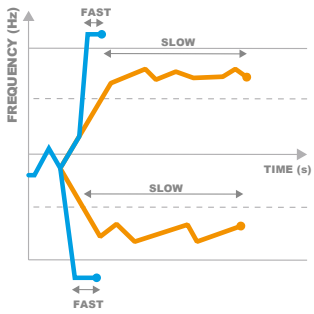
Low Voltage Ride Through (LVRT or ZVRT). Inverters can withstand any voltage dip or profile required by the local utility. The inverter can immediately feed the fault with full reactive current, as long as the protection limits are not exceeded.

Frequency Regulation System (FRS). Frequency droop algorithm curtails the active power along a preset characteristic curve supporting grid stabilization.



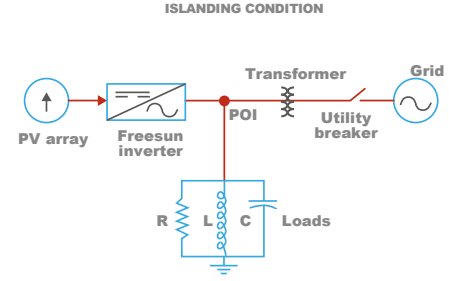


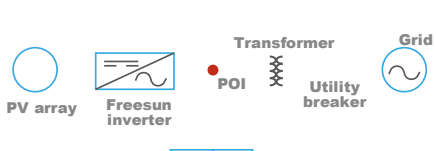
Q(V) curve. It is a dynamic voltage control function which provides reactive power in order to maintain the voltage as close as possible to its nominal valu



Frequency Ride Through (FRT). Freesun solar inverters have flexible frequency protection settings and can be easily adjusted to comply with future requirements.

Anti-islanding. This protection combines passive and active methods that eliminates nuisance tripping and reduces grid distortion according to IEC 62116 and IEEE1547.





TECHNICAL CHARACTERISTICS HEMK 690V

		FRAME 1	FRAME 2
REFERENCE		**FS2445K**	**FS3670K**
OUTPUT	AC Output Power(kVA/kW) @50°C [1]	2445	3670
	AC Output Power(kVA/kW) @40°C [1]	2530	3800
	Max. AC Output Current (A) @40°C	2117	3175
	Operating Grid Voltage(VAC) [2]	690V ±10%	
	Operating Grid Frequency(Hz)	50Hz/60Hz	
	Current Harmonic Distortion (THDi)	< 3% per IEEE519	
	Power Factor (cosine phi) [3]	0.5 leading ... 0.5 lagging adjustable / Reactive Power injection at night	
INPUT	MPPt @full power (VDC)	976V-1310V	
	Maximum DC voltage	1500V	
	Number of PV inputs [2]	Up to 36	
	Number of Freemaq DC/DC inputs	Up to 4	Up to 6
	Max. DC continuous current (A)	2645	3970
	Max. DC short circuit current (A)	4000	6000
EFFICIENCY & AUXILIARY SUPPLY	Efficiency (Max) (η)	98.9% (preliminary)	
	Euroeta (η)	98.5% (preliminary)	98.7% (preliminary)
	Max. Power Consumption (KVA)	8	10
CABINET	Dimensions [WxDxH] (ft)	12 x 7 x 7	
	Dimensions [WxDxH] (m)	3.7 x 2.2 x 2.2	
	Weight (lb)	10802	15432
	Weight (kg)	4900	7000
	Type of ventilation	Forced air cooling	
ENVIRONMENT	Degree of protection	NEMA 3R - IP54	
	Permissible Ambient Temperature	-35°C to +60°C / >50°C Active Power derating	
	Relative Humidity	4% to 100% non condensing	
	Max. Altitude (above sea level)	2000m; >2000m power derating (Max. 4000m)	
	Noise level [4]	< 79 dBA	
CONTROL INTERFACE	Interface	Graphic Display	
	Communication protocol	Modbus TCP	
	Plant Controller Communication	Optional	
	Keyed ON/OFF switch	Standard	
PROTECTIONS	Ground Fault Protection	GFDI and Isolation monitoring device	
	General AC Protection	Circuit Breaker	
	General DC Protection	Fuses	
	Overvoltage Protection	AC, DC Inverter and auxiliary supply type 2	
CERTIFICATIONS	Safety	UL1741, CSA 22.2 No.107.1-01, UL62109-1, IEC62109-1, IEC62109-2	
	Compliance	NEC 2014 / NEC 2017 (optional)	
	Utility interconnect	EEE 1547.1-2005 / UL1741SA-Sept. 2016	

[1] Values at 1.00•Vac nom and cos Φ= 1.
Consult Power Electronics for derating curves.
[2] Consult Power Electronics for other configurations.
[3] Consult P-Q charts available: Q(kVAr)=√(S(kVA)²-P(kW)²).
[4] Readings taken 1 meter from the back of the unit.

TECHNICAL CHARACTERISTICS

HEMK 660V

		FRAME 1	FRAME 2
REFERENCE		**FS2340K**	**FS3510K**
OUTPUT	AC Output Power(kVA/kW) @50°C	2340	3510
	AC Output Power(kVA/kW) @40°C	2420	3630
	Max. AC Output Current (A) @40°C	2117	3175
	Operating Grid Voltage(VAC)	660V ±10%	
	Operating Grid Frequency(Hz)	50Hz/60Hz	
	Current Harmonic Distortion (THDi)	< 3% per IEEE519	
	Power Factor (cosine phi)	0.5 leading ... 0.5 lagging adjustable / Reactive Power injection at night	
INPUT	MPPt @full power (VDC)	934V-1310V	
	Maximum DC voltage	1500V	
	Number of PV inputs	Up to 36	
	Number of Freemaq DC/DC inputs	Up to 4	Up to 6
	Max. DC continuous current (A)	2645	3970
	Max. DC short circuit current (A)	4000	6000
EFFICIENCY & AUXILIARY SUPPLY	Efficiency (Max) (η)	98.8% (preliminary)	98.9% (preliminary)
	Euroeta (η)	98.5% (preliminary)	98.6% (preliminary)
	Max. Power Consumption (KVA)	8	10
CABINET	Dimensions [WxDxH] (ft)	12 x 7 x 7	
	Dimensions [WxDxH] (m)	3.7 x 2.2 x 2.2	
	Weight (lb)	10802	15432
	Weight (kg)	4900	7000
	Type of ventilation	Forced air cooling	
ENVIRONMENT	Degree of protection	NEMA 3R - IP54	
	Permissible Ambient Temperature	-35°C to +60°C / >50°C Active Power derating	
	Relative Humidity	4% to 100% non condensing	
	Max. Altitude (above sea level)	2000m; >2000m power derating (Max. 4000m)	
	Noise level	< 79 dBA	
CONTROL INTERFACE	Interface	Graphic Display	
	Communication protocol	Modbus TCP	
	Plant Controller Communication	Optional	
	Keyed ON/OFF switch	Standard	
PROTECTIONS	Ground Fault Protection	GFDI and Isolation monitoring device	
	General AC Protection	Circuit Breaker	
	General DC Protection	Fuses	
	Overvoltage Protection	AC, DC Inverter and auxiliary supply type 2	
CERTIFICATIONS	Safety	UL1741, CSA 22.2 No.107.1-01, UL62109-1, IEC62109-1, IEC62109-2	
	Compliance	NEC 2014 / NEC 2017 (optional)	
	Utility interconnect	EEE 1547.1-2005 / UL1741SA-Sept. 2016	

[1] Values at 1.00•Vac nom and cos Φ= 1.
Consult Power Electronics for derating curves.
[2] Consult Power Electronics for other configurations.
[3] Consult P-Q charts available: Q(kVAr)=√(S(kVA)).
[4] Readings taken 1 meter from the back of the unit.

TECHNICAL CHARACTERISTICS HEMK 645V

		FRAME 1	FRAME 2
REFERENCE		**FS2285K**	**FS3430K**
OUTPUT	AC Output Power(kVA/kW) @50°C [1]	2285	3430
	AC Output Power(kVA/kW) @40°C [1]	2365	3550
	Max. AC Output Current (A) @40°C	2117	3175
	Operating Grid Voltage(VAC) [2]	645V ±10%	
	Operating Grid Frequency(Hz)	50Hz/60Hz	
	Current Harmonic Distortion (THDi)	< 3% per IEEE519	
	Power Factor (cosine phi) [3]	0.5 leading ... 0.5 lagging adjustable / Reactive Power injection at night	
INPUT	MPPt @full power (VDC)	913V-1310V	
	Maximum DC voltage	1500V	
	Number of PV inputs [2]	Up to 36	
	Number of Freemaq DC/DC inputs	Up to 4	Up to 6
	Max. DC continuous current (A)	2645	3970
	Max. DC short circuit current (A)	4000	6000
EFFICIENCY & AUXILIARY SUPPLY	Efficiency (Max) (η)	98.8% (preliminary)	98.9% (preliminary)
	Euroeta (η)	98.4% (preliminary)	98.6% (preliminary)
	Max. Power Consumption (KVA)	8	10
CABINET	Dimensions [WxDxH] (ft)	12 x 7 x 7	
	Dimensions [WxDxH] (m)	3.7 x 2.2 x 2.2	
	Weight (lb)	10802	15432
	Weight (kg)	4900	7000
	Type of ventilation	Forced air cooling	
ENVIRONMENT	Degree of protection	NEMA 3R - IP54	
	Permissible Ambient Temperature	-35°C to +60°C / >50°C Active Power derating	
	Relative Humidity	4% to 100% non condensing	
	Max. Altitude (above sea level)	2000m; >2000m power derating (Max. 4000m)	
	Noise level [4]	< 79 dBA	
CONTROL INTERFACE	Interface	Graphic Display	
	Communication protocol	Modbus TCP	
	Plant Controller Communication	Optional	
	Keyed ON/OFF switch	Standard	
PROTECTIONS	Ground Fault Protection	GFDI and Isolation monitoring device	
	General AC Protection	Circuit Breaker	
	General DC Protection	Fuses	
	Overvoltage Protection	AC, DC Inverter and auxiliary supply type 2	
CERTIFICATIONS	Safety	UL1741, CSA 22.2 No.107.1-01, UL62109-1, IEC62109-1, IEC62109-2	
	Compliance	NEC 2014 / NEC 2017 (optional)	
	Utility interconnect	EEE 1547.1-2005 / UL1741SA-Sept. 2016	

[1] Values at 1.00•Vac nom and cos Φ= 1.
Consult Power Electronics for derating curves.
[2] Consult Power Electronics for other configurations.
[3] Consult P-Q charts available: Q(kVAr)=√(S(kVA)²-P(kW)²).
[4] Readings taken 1 meter from the back of the unit.

TECHNICAL CHARACTERISTICS HEMK 630V

		FRAME 1	FRAME 2
REFERENCE		**FS2235K**	**FS3350K**
OUTPUT	AC Output Power(kVA/kW) @50°C[1]	2235	3350
	AC Output Power(kVA/kW) @40°C[1]	2310	3465
	Max. AC Output Current (A) @40°C	2117	3175
	Operating Grid Voltage(VAC)[2]	630V ±10%	
	Operating Grid Frequency(Hz)	50Hz/60Hz	
	Current Harmonic Distortion (THDi)	< 3% per IEEE519	
	Power Factor (cosine phi)[3]	0.5 leading ... 0.5 lagging adjustable / Reactive Power injection at night	
INPUT	MPPt @full power (VDC)	891V-1310V	
	Maximum DC voltage	1500V	
	Number of PV inputs[2]	Up to 36	
	Number of Freemaq DC/DC inputs	Up to 4	Up to 6
	Max. DC continuous current (A)	2645	3970
	Max. DC short circuit current (A)	4000	6000
EFFICIENCY & AUXILIARY SUPPLY	Efficiency (Max) (η)	98.8% (preliminary)	
	Euroeta (η)	98.4% (preliminary)	98.6% (preliminary)
	Max. Power Consumption (KVA)	8	10
CABINET	Dimensions [WxDxH] (ft)	12 x 7 x 7	
	Dimensions [WxDxH] (m)	3.7 x 2.2 x 2.2	
	Weight (lb)	10802	15432
	Weight (kg)	4900	7000
	Type of ventilation	Forced air cooling	
ENVIRONMENT	Degree of protection	NEMA 3R - IP54	
	Permissible Ambient Temperature	-35°C to +60°C / >50°C Active Power derating	
	Relative Humidity	4% to 100% non condensing	
	Max. Altitude (above sea level)	2000m; >2000m power derating (Max. 4000m)	
	Noise level[4]	< 79 dBA	
CONTROL INTERFACE	Interface	Graphic Display	
	Communication protocol	Modbus TCP	
	Plant Controller Communication	Optional	
	Keyed ON/OFF switch	Standard	
PROTECTIONS	Ground Fault Protection	GFDI and Isolation monitoring device	
	General AC Protection	Circuit Breaker	
	General DC Protection	Fuses	
	Overvoltage Protection	AC, DC Inverter and auxiliary supply type 2	
CERTIFICATIONS	Safety	UL1741, CSA 22.2 No.107.1-01, UL62109-1, IEC62109-1, IEC62109-2	
	Compliance	NEC 2014 / NEC 2017 (optional)	
	Utility interconnect	EEE 1547.1-2005 / UL1741SA-Sept. 2016	

[1] Values at 1.00•Vac nom and cos Φ= 1.
Consult Power Electronics for derating curves.
[2] Consult Power Electronics for other configurations.
[3] Consult P-Q charts available: Q(kVAr)=√(S(kVA)).
[4] Readings taken 1 meter from the back of the unit.

TECHNICAL CHARACTERISTICS HEMK 615V

		FRAME 1	FRAME 2
REFERENCE		**FS2180K**	**FS3270K**
OUTPUT	AC Output Power(kVA/kW) @50°C [1]	2180	3270
	AC Output Power(kVA/kW) @40°C [1]	2255	3380
	Max. AC Output Current (A) @40°C	2117	3175
	Operating Grid Voltage(VAC) [2]	615V ±10%	
	Operating Grid Frequency(Hz)	50Hz/60Hz	
	Current Harmonic Distortion (THDi)	< 3% per IEEE519	
	Power Factor (cosine phi) [3]	0.5 leading ... 0.5 lagging adjustable / Reactive Power injection at night	
INPUT	MPPt @full power (VDC)	870V-1310V	
	Maximum DC voltage	1500V	
	Number of PV inputs [2]	Up to 36	
	Number of Freemaq DC/DC inputs	Up to 4	Up to 6
	Max. DC continuous current (A)	2645	3970
	Max. DC short circuit current (A)	4000	6000
EFFICIENCY & AUXILIARY SUPPLY	Efficiency (Max) (η)	98.8% (preliminary)	
	Euroeta (η)	98.4% (preliminary)	98.6% (preliminary)
	Max. Power Consumption (KVA)	8	10
CABINET	Dimensions [WxDxH] (ft)	12 x 7 x 7	
	Dimensions [WxDxH] (m)	3.7 x 2.2 x 2.2	
	Weight (lb)	10802	15432
	Weight (kg)	4900	7000
	Type of ventilation	Forced air cooling	
ENVIRONMENT	Degree of protection	NEMA 3R - IP54	
	Permissible Ambient Temperature	-35°C to +60°C / >50°C Active Power derating	
	Relative Humidity	4% to 100% non condensing	
	Max. Altitude (above sea level)	2000m; >2000m power derating (Max. 4000m)	
	Noise level [4]	< 79 dBA	
CONTROL INTERFACE	Interface	Graphic Display	
	Communication protocol	Modbus TCP	
	Plant Controller Communication	Optional	
	Keyed ON/OFF switch	Standard	
PROTECTIONS	Ground Fault Protection	GFDI and Isolation monitoring device	
	General AC Protection	Circuit Breaker	
	General DC Protection	Fuses	
	Overvoltage Protection	AC, DC Inverter and auxiliary supply type 2	
CERTIFICATIONS	Safety	UL1741, CSA 22.2 No.107.1-01, UL62109-1, IEC62109-1, IEC62109-2	
	Compliance	NEC 2014 / NEC 2017 (optional)	
	Utility interconnect	EEE 1547.1-2005 / UL1741SA-Sept. 2016	

[1] Values at 1.00•Vac nom and cos Φ= 1.
Consult Power Electronics for derating curves.
[2] Consult Power Electronics for other configurations.
[3] Consult P-Q charts available: Q(kVAr)=√(S(kVA)²-P(kW)²).
[4] Readings taken 1 meter from the back of the unit.

TECHNICAL CHARACTERISTICS HEMK 600V

		FRAME 1	FRAME 2
REFERENCE		**FS2125K**	**FS3190K**
OUTPUT	AC Output Power(kVA/kW) @50°C	2125	3190
	AC Output Power(kVA/kW) @40°C	2200	3300
	Max. AC Output Current (A) @40°C	2117	3175
	Operating Grid Voltage(VAC)[1]	600V ±10%	
	Operating Grid Frequency(Hz)	50Hz/60Hz	
	Current Harmonic Distortion (THDi)	< 3% per IEEE519	
	Power Factor (cosine phi)[3]	0.5 leading ... 0.5 lagging adjustable / Reactive Power injection at night	
INPUT	MPPt @full power (VDC)	849V-1310V	
	Maximum DC voltage	1500V	
	Number of PV inputs[2]	Up to 36	
	Number of Freemaq DC/DC inputs	Up to 4	Up to 6
	Max. DC continuous current (A)	2645	3970
	Max. DC short circuit current (A)	4000	6000
EFFICIENCY & AUXILIARY SUPPLY	Efficiency (Max) (η)	98.8% (preliminary)	
	Euroeta (η)	98.4% (preliminary)	98.6% (preliminary)
	Max. Power Consumption (KVA)	8	10
CABINET	Dimensions [WxDxH] (ft)	12 x 7 x 7	
	Dimensions [WxDxH] (m)	3.7 x 2.2 x 2.2	
	Weight (lb)	10802	15432
	Weight (kg)	4900	7000
	Type of ventilation	Forced air cooling	
ENVIRONMENT	Degree of protection	NEMA 3R - IP54	
	Permissible Ambient Temperature	-35°C to +60°C / >50°C Active Power derating	
	Relative Humidity	4% to 100% non condensing	
	Max. Altitude (above sea level)	2000m; >2000m power derating (Max. 4000m)	
	Noise level[4]	< 79 dBA	
CONTROL INTERFACE	Interface	Graphic Display	
	Communication protocol	Modbus TCP	
	Plant Controller Communication	Optional	
	Keyed ON/OFF switch	Standard	
PROTECTIONS	Ground Fault Protection	GFDI and Isolation monitoring device	
	General AC Protection	Circuit Breaker	
	General DC Protection	Fuses	
	Overvoltage Protection	AC, DC Inverter and auxiliary supply type 2	
CERTIFICATIONS	Safety	UL1741, CSA 22.2 No.107.1-01, UL62109-1, IEC62109-1, IEC62109-2	
	Compliance	NEC 2014 / NEC 2017 (optional)	
	Utility interconnect	EEE 1547.1-2005 / UL1741SA-Sept. 2016	

[1] Values at 1.00•Vac nom and cos Φ= 1.
Consult Power Electronics for derating curves.
[2] Consult Power Electronics for other configurations.
[3] Consult P-Q charts available: Q(kVAr)=√(S(kVA)).
[4] Readings taken 1 meter from the back of the unit.