



CERTIFICATE OF COMPLIANCE

Certificate Number: SGSNA/23/TEC/00016

Contract Number: 710442

Certificate Project Number: TEC-CERT231210081

Certified Product: Energy Storage System
(Grid Support Utility Interactive Storage Inverter / DC-DC Bidirectional Converter & Battery Unit)

Trademarks: **FREEMAQ:** GSUI Storage Inverter & DC-DC Bidirectional Converter
CANADIAN SOLAR: Battery Unit

Type: **Grid Support Utility Interactive MV Battery Inverter (PCSM and Multi PCSM)**
Grid Support Utility Interactive LV Battery Inverter (PCSK and Multi PCSK)
DC-DC Bidirectional Converter
Battery Unit

Model(s): See all variant models in pages No. 2 to 8.

Additional Information: Certificate Holder is the entity that integrates the components that comprise the ESS.
Battery units not manufactured by Power Electronics.

Technical Data: See complete ratings in pages No. 2 to 8.

Certificate Holder: Power Electronics España S.L.
Ronda Camp d'Aviació, 4. Polígono Industrial Carrases
Llíria – 46160, Valencia (Spain)

This certificate supercedes previous certificates issued with the same certificate number. Certification is valid when products are indicated on the SGS directory of certified products at www.sgs.com or using the QR code below. The product is certified according to ISO/IEC Guide 17067, Conformity assessment - Fundamentals of product certification, System 3, and in accordance with:

ANSI/CAN/UL 9540, 2nd Ed. Rev. April 9, 2021

Authorized by:

Effective date: 24 April 2025



Daniel Arranz
Certifier



Certification Body

Connectivity & Products, a division of SGS North America Inc.
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GSUI Storage Inverters:

Family: PCSM

FREEMAQ models	FP4010MH	FP4105M	FP4200M	FP4201M
DC input				
Voltage range [V _{dc}]	891 - 1500	913 - 1500	934 - 1500	
Maximum voltage [V _{dc}]	1500			
Max. continuous current [A _{dc}]	4590			
Battery technology	All type of batteries (BMS required)			
AC output				
Output power (@40 °C) [kVA/kW]	4010	4105	4200	
Output power (@50 °C) [kVA/kW]	3720	3810	3900	
Operating grid voltage [kV _{ac}]	34.5 ±10 %			13.8 ±10 %
Operating grid frequency [Hz]	60			
Power factor	0.5 leading...0.5 lagging			
General data				
Operating temperature range [°C]	-25 ... +60 (>50 power derating)			
Maximum altitude [m]	2000 m			
Degree of protection	TYPE 3R			
Type of ventilation	Forced air cooling			

Family: MPCSM

FREEMAQ models	FP4010M2	FP4010M4	FP4105M2	FP4105M4
DC input				
Voltage range [V _{dc}]	891 - 1500		913 - 1500	
Maximum voltage [V _{dc}]	1500			
Max. continuous current per input [A _{dc}]	2295	1148	2295	1148
Number of separate DC inputs	2	4	2	4
Battery technology	All type of batteries (BMS required)			
AC output				
Output power (@40 °C) [kVA/kW]	4010		4105	
Output power (@50 °C) [kVA/kW]	3720		3810	
Operating grid voltage [kV _{ac}]	34.5 ±10 %			
Operating grid frequency [Hz]	60			
Power factor	0.5 leading...0.5 lagging			
General data				
Operating temperature range [°C]	-25 ... +60 (>50 power derating)			
Maximum altitude [m]	2000 m			
Degree of protection	TYPE 3R			
Type of ventilation	Forced air cooling			

FREEMAQ models	FP4200M2	FP4200M4	FP4201M2	FP4201M4
DC input				
Voltage range [V _{dc}]	934 - 1500			
Maximum voltage [V _{dc}]	1500			
Max. continuous current per input [A _{dc}]	2295	1148	2295	1148
Number of separate DC inputs	2	4	2	4
Battery technology	All type of batteries (BMS required)			
AC output				
Output power (@40 °C) [kVA/kW]	4200			
Output power (@50 °C) [kVA/kW]	3900			
Operating grid voltage [kV _{ac}]	34.5 ±10 %		13.8 ±10 %	
Operating grid frequency [Hz]	60		50	
Power factor	0.5 leading...0.5 lagging			
General data				
Operating temperature range [°C]	-25 ... +60 (>50 power derating)			
Maximum altitude [m]	2000 m			
Degree of protection	TYPE 3R			
Type of ventilation	Forced air cooling			

Certification Body

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Family: PCSK

FREEMAQ models	FP4390K	FP3290K	FP2195K	FP4200K	FP3151K	FP2101K
DC input						
Voltage range [V _{dc}]	976 - 1500			934 - 1500		
Maximum voltage [V _{dc}]	1500					
Max. continuous current [A _{dc}]	4590	3443	2295	4590	3443	2295
Battery technology	All type of batteries (BMS required)					
AC output						
Output power (@40 °C) [kVA/kW]	4390	3290	2195	4200	3150	2100
Output power (@50 °C) [kVA/kW]	4075	3055	2035	3900	2925	1950
Maximum output current (@40 °C) [A _{ac}]	3674	2756	1837	3674	2756	1837
Operating grid voltage [V _{ac}]	690 ±10 %			660 ±10 %		
Operating grid frequency [Hz]	50/60					
Power factor	0.5 leading...0.5 lagging					
General data						
Operating temperature range [°C]	-25 ... +60 (>50 power derating)					
Maximum altitude [m]	4000 m (>2000 power derating)					
Degree of protection	TYPE 3R					
Type of ventilation	Forced air cooling					

FREEMAQ models	FP4105K	FP3080K	FP2055K	FP4010K	FP3005K	FP2005K
DC input						
Voltage range [V _{dc}]	913 -1500			891 -1500		
Maximum voltage [V _{dc}]	1500					
Max. continuous current [A _{dc}]	4590	3443	2295	4590	3443	2295
Battery technology	All type of batteries (BMS required)					
AC output						
Output power (@40 °C) [kVA/kW]	4105	3080	2055	4010	3005	2005
Output power (@50 °C) [kVA/kW]	3810	2855	1905	3720	2790	1860
Maximum output current (@40 °C) [A _{ac}]	3674	2756	1837	3674	2756	1837
Operating grid voltage [V _{ac}]	645 ±10 %			630 ±10 %		
Operating grid frequency [Hz]	50/60					
Power factor	0.5 leading...0.5 lagging					
General data						
Operating temperature range [°C]	-25 ... +60 (>50 power derating)					
Maximum altitude [m]	4000 m (>2000 power derating)					
Degree of protection	TYPE 3R					
Type of ventilation	Forced air cooling					

FREEMAQ models	FP3915K	FP2935K	FP1955K	FP3820K	FP2865K	FP1910K
DC input						
Voltage range [V _{dc}]	870 -1500			849 -1500		
Maximum voltage [V _{dc}]	1500					
Max. continuous current [A _{dc}]	4590	3443	2295	4590	3443	2295
Battery technology	All type of batteries (BMS required)					
AC output						
Output power (@40 °C) [kVA/kW]	3915	2935	1955	3820	2865	1910
Output power (@50 °C) [kVA/kW]	3635	2725	1815	3545	2660	1775
Maximum output current (@40 °C) [A _{ac}]	3674	2756	1837	3674	2756	1837
Operating grid voltage [V _{ac}]	615 ±10 %			600 ±10 %		
Operating grid frequency [Hz]	50/60					
Power factor	0.5 leading...0.5 lagging					
General data						
Operating temperature range [°C]	-25 ... +60 (>50 power derating)					
Maximum altitude [m]	4000 m (>2000 power derating)					
Degree of protection	TYPE 3R					
Type of ventilation	Forced air cooling					

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Family: PCSK (cont.)

FREEMAQ models	FP3370K	FP2530K	FP1685K	FP3180K	FP2385K	FP1590K
DC input						
Voltage range [V _{dc}]	750 - 1300			708 - 1250		
Maximum voltage [V _{dc}]	1300			1250		
Max. continuous current [A _{dc}]	4590	3443	2295	4590	3443	2295
Battery technology	All type of batteries (BMS required)					
AC output						
Output power (@40 °C) [kVA/kW]	3370	2530	1685	3180	2385	1590
Output power (@50 °C) [kVA/kW]	3130	2350	1565	2955	2215	1475
Maximum output current (@40 °C) [A _{ac}]	3674	2756	1837	3674	2756	1837
Operating grid voltage [V _{ac}]	530 ±10 %			500 ±10 %		
Operating grid frequency [Hz]	50/60					
Power factor	0.5 leading...0.5 lagging					
General data						
Operating temperature range [°C]	-25 ... +60 (>50 power derating)					
Maximum altitude [m]	4000 m (>2000 power derating)					
Degree of protection	TYPE 3R					
Type of ventilation	Forced air cooling					

FREEMAQ models	FP3055K	FP2290K	FP1525K
DC input			
Voltage range [V _{dc}]	679 - 1200		
Maximum voltage [V _{dc}]	1200		
Max. continuous current [A _{dc}]	4590	3443	2295
Battery technology	All type of batteries (BMS required)		
AC output			
Output power (@40 °C) [kVA/kW]	3055	2290	1525
Output power (@50 °C) [kVA/kW]	2840	2125	1415
Maximum output current (@40 °C) [A _{ac}]	3674	2756	1837
Operating grid voltage [V _{ac}]	480 ±10 %		
Operating grid frequency [Hz]	50/60		
Power factor	0.5 leading...0.5 lagging		
General data			
Operating temperature range [°C]	-25 ... +60 (>50 power derating)		
Maximum altitude [m]	4000 m (>2000 power derating)		
Degree of protection	TYPE 3R		
Type of ventilation	Forced air cooling		

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Family: **MPCSK**

FREEMAQ models	FP4390K2	FP4390K4	FP3290K3	FP2195K2	FP4200K2	FP4200K4
DC input						
Voltage range [V _{dc}]	976 - 1500				934 - 1500	
Maximum voltage [V _{dc}]	1500					
Max. continuous current per input [A _{dc}]	2295	1148			2295	1148
Number of separate DC inputs	2	4	3	2	2	4
Battery technology	All type of batteries (BMS required)					
AC output						
Output power (@40 °C) [kVA/kW]	4390		3290	2195	4200	
Output power (@50 °C) [kVA/kW]	4075		3055	2035	3900	
Maximum output current (@40 °C) [A _{ac}]	3674		2756	1837	3674	
Operating grid voltage [V _{ac}]	690 ±10 %				660 ±10 %	
Operating grid frequency [Hz]	50/60					
Power factor	0.5 leading...0.5 lagging					
General data						
Operating temperature range [°C]	-25 ... +60 (>50 power derating)					
Maximum altitude [m]	4000 m (>2000 power derating)					
Degree of protection	TYPE 3R					
Type of ventilation	Forced air cooling					

FREEMAQ models	FP3151K3	FP2101K2	FP4105K2	FP4105K4	FP3080K3	FP2055K2
DC input						
Voltage range [V _{dc}]	934 - 1500			913 - 1500		
Maximum voltage [V _{dc}]	1500					
Max. continuous current per input [A _{dc}]	1148		2295	1148		
Number of separate DC inputs	3	2	2	4	3	2
Battery technology	All type of batteries (BMS required)					
AC output						
Output power (@40 °C) [kVA/kW]	3150	2100	4105		3080	2055
Output power (@50 °C) [kVA/kW]	2925	1950	3810		2855	1905
Maximum output current (@40 °C) [A _{ac}]	2756	1837	3674		2756	1837
Operating grid voltage [V _{ac}]	660 ±10 %			645 ±10 %		
Operating grid frequency [Hz]	50/60					
Power factor	0.5 leading...0.5 lagging					
General data						
Operating temperature range [°C]	-25 ... +60 (>50 power derating)					
Maximum altitude [m]	4000 m (>2000 power derating)					
Degree of protection	TYPE 3R					
Type of ventilation	Forced air cooling					

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Family: **MPCSK** (cont.)

FREEMAQ models	FP4010K2	FP4010K4	FP3005K3	FP2005K2	FP3915K2	FP3915K4
DC input						
Voltage range [V _{dc}]	891 - 1500				870 - 1500	
Maximum voltage [V _{dc}]	1500					
Max. continuous current per input [A _{dc}]	2295	1148			2295	1148
Number of separate DC inputs	2	4	3	2	2	4
Battery technology	All type of batteries (BMS required)					
AC output						
Output power (@40 °C) [kVA/kW]	4010	3005		2005	3915	
Output power (@50 °C) [kVA/kW]	3720	2790		1860	3635	
Maximum output current (@40 °C) [A _{ac}]	3674	2756		1837	3674	
Operating grid voltage [V _{ac}]	630 ±10 %				615 ±10 %	
Operating grid frequency [Hz]	50/60					
Power factor	0.5 leading...0.5 lagging					
General data						
Operating temperature range [°C]	-25 ... +60 (>50 power derating)					
Maximum altitude [m]	4000 m (>2000 power derating)					
Degree of protection	TYPE 3R					
Type of ventilation	Forced air cooling					

FREEMAQ models	FP2935K3	FP1955K2	FP3820K2	FP3820K4	FP2865K3	FP1910K2
DC input						
Voltage range [V _{dc}]	870 -1500			849 -1500		
Maximum voltage [V _{dc}]	1500					
Max. continuous current per input [A _{dc}]	1148		2295	1148		
Number of separate DC inputs	3	2	2	4	3	2
Battery technology	All type of batteries (BMS required)					
AC output						
Output power (@40 °C) [kVA/kW]	2935	1955	3820		2865	1910
Output power (@50 °C) [kVA/kW]	2725	1815	3545		2660	1775
Maximum output current (@40 °C) [A _{ac}]	2756	1837	3674		2756	1837
Operating grid voltage [V _{ac}]	615 ±10 %			600 ±10 %		
Operating grid frequency [Hz]	50/60					
Power factor	0.5 leading...0.5 lagging					
General data						
Operating temperature range [°C]	-25 ... +60 (>50 power derating)					
Maximum altitude [m]	4000 m (>2000 power derating)					
Degree of protection	TYPE 3R					
Type of ventilation	Forced air cooling					

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Family: **MPCSK** (cont.)

FREEMAQ models	FP3370K2	FP3370K4	FP2530K3	FP1685K2	FP3180K2	FP3180K4
DC input						
Voltage range [V _{dc}]	750 - 1300				708 - 1250	
Maximum voltage [V _{dc}]	1300				1250	
Max. continuous current per input [A _{dc}]	2295	1148			2295	1148
Number of separate DC inputs	2	4	3	2	2	4
Battery technology	All type of batteries (BMS required)					
AC output						
Output power (@40 °C) [kVA/kW]	3370		2530	1685	3180	
Output power (@50 °C) [kVA/kW]	3130		2350	1565	2955	
Maximum output current (@40 °C) [A _{ac}]	3674		2756	1837	3674	
Operating grid voltage [V _{ac}]	530 ±10 %				500 ±10 %	
Operating grid frequency [Hz]	50/60					
Power factor	0.5 leading...0.5 lagging					
General data						
Operating temperature range [°C]	-25 ... +60 (>50 power derating)					
Maximum altitude [m]	4000 m (>2000 power derating)					
Degree of protection	TYPE 3R					
Type of ventilation	Forced air cooling					

FREEMAQ models	FP2385K3	FP1590K2	FP3055K2	FP3055K4	FP2290K3	FP1525K2
DC input						
Voltage range [V _{dc}]	708 - 1250		679 - 1200			
Maximum voltage [V _{dc}]	1250		1200			
Max. continuous current per input [A _{dc}]	1148		2295	1148		
Number of separate DC inputs	3	2	2	4	3	2
Battery technology	All type of batteries (BMS required)					
AC output						
Output power (@40 °C) [kVA/kW]	2385	1590	3055		2290	1525
Output power (@50 °C) [kVA/kW]	2215	1475	2840		2125	1415
Maximum output current (@40 °C) [A _{ac}]	2756	1837	3674		2756	1837
Operating grid voltage [V _{ac}]	500 ±10 %		480 ±10 %			
Operating grid frequency [Hz]	50/60					
Power factor	0.5 leading...0.5 lagging					
General data						
Operating temperature range [°C]	-25 ... +60 (>50 power derating)					
Maximum altitude [m]	4000 m (>2000 power derating)					
Degree of protection	TYPE 3R					
Type of ventilation	Forced air cooling					

DC-DC Bidirectional Converter:

FREEMAQ model	FD1200
DC input & output	
Voltage range [V _{dc}]	850 - 1500
Maximum voltage [V _{dc}]	1500
Max. DC Output Current (@30°C) [A _{dc}]	1200
Max. DC Output Current (@40°C) [A _{dc}]	1120
Max. DC Output Current (@50°C) [A _{dc}]	1040
DC Rated Power (@30°C) [kW]	1200
DC Rated Power (@40°C) [kW]	1120
DC Rated Power (@50°C) [kW]	1040
Battery technology	All type of batteries (BMS required)
General data	
Operating temperature range [°C]	-25 ... +60 (>50 power derating)
Maximum altitude [m]	4000 m (>2000 power derating)
Degree of protection	TYPE 3R
Type of ventilation	Forced air cooling

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Battery Unit:

Canadian Solar models	CSI-SolBank-S-2967-2h-US	CSI-SolBank-S-2967-4h-US	CSI-SolBank-S-5016-2h-NA	CSI-SolBank-S-5016-4h-NA
Voltage range [V _{dc}]	1159.2 – 1490.4		1164.8 – 1497.6	
Rated DC Power [kW]	1375	700	2350	1200
Usable Energy Capacity [kWh]	2750	2800	4700	4800
Max. Short Circuit Current [kA]	75	70	120	
Battery chemistry	LiFePO4			
General data				
Operating temperature range [°C]	-30 ... +55			
Maximum altitude [m]	<2000 m (derating between 2000 m – 4000 m)		<4000 m (derating between 2000 m – 4000 m)	
Degree of protection	TYPE 3R			

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