

6kW V2G Charger Module

Based on years of experience PRE has developed a standard 6kW bidirectional Power Concept for EV chargers with EU Single Phase or US Split Phase AC Input. The charger has active PFC and is based on the latest techniques of HF power electronics based on SiC semiconductors and quasi-resonant technology which results in high efficiency and excellent overall performance. The Power Module can be configured as bidirectional V2G operation. Output Voltage and Current can be controlled and monitored by CAN-bus Interface.



Features

- Bidirectional V2G operation
- CAN-bus/BMS Control Interface
- CCS & CHAdeMO compatible
- Optional PV Input with MPP-Tracker

Applications

- V2G Home/Office Charger
- Industrial Battery Charger
- Smart Grid and Peak Shaving

Key Specifications

Model		V2G500V1 5A (Bidirectional)
DC Output (Battery)	Voltage Range	50 - 500Vdc
	Current Range	-15 - +15A (bidirectional)
	Rated Power (5)	6.000W
	Voltage Ripple + Noise (2)	500mVp-p
	Voltage & Current Tolerance (3)	±1%
	Line / Load Regulation (typ.)	±2%
	Current Ripple	<1Arms @ Rated Power (measured on a resistive Load)
AC Input (Mains)	Hold up Time (typ.)	10mSec. (TBD)
	AC Voltage Range (5)	230Vac ±10% 50Hz ±2% (6.5kVA max.) L-N-PE
	Total Harmonic Current	<5% @ 230Vac & Rated Power
	Power Factor	>0,95 @ 230Vac & Rated Power (-0.95 .. +0.95 Reactive Power Control)
	Efficiency (max.)	95% @ 230Vac
	Stand-by consumption	<1W @ Mains Relay Off / 8W @ Mains Relay On (Standby)
	AC Current (max.)	26A @ Rated Power
	Inrush Current (typ.)	<50A Cold Start @ 230Vac
Protection	Leakage Current	<3.5mA @ 230Vac
	Input UVP & OVP (OCP)	Voltage & Frequency Window (30A 250Vac Fuse 6.3x32mm)
	Output OVP (OCP)	550V (20A 600Vdc Fuse 14x38mm)
Control	Over Temperature	70°C at main Heatsink. Output Power derating at >50 °C temperature
	Control	CAN-bus with hardware Interlock (Charge Enable) (CANopen protocol / 500kbps)
General	Auxiliary supply (Input)	9V - 32V 100mA max. (TBD)
	Protection Class (Isolation)	Class 1 ⚡ (4kV In-Output/2kV PE-Input, PE-Output/4kV CAN/Interface)
	Cooling @ IP protection class	Air cooled, IP20
	Working (Storage) Temp. & Humi.	-20 .. 50°C (-20 .. 70°C) / 20 .. 90% Non Condensing
	Dimension & Weight	Approx. 400x300x150mm / 12kg
Safety & EMC(4)	Lifetime (MTBF)	>100.000 hours @ 25 °C (Designed to meet <0.1% / Year)
	Safety (LVD) / Vibration	low-voltage directive 2006/95/EC (EN60950) / IEC 60068
	EMC / Applicable Standards	EMC directive 2004/108/EC / EN55015, EN61000-4.2,3,4,5,6,8,11 (criterion: B)
CE	Grid connectivity	IEC62116 (EU), G59/3 (UK), DIN V VDE V 0126-1-1, VDE-AR-N-4105 (D), UL1741, IEEEp929, NEC690

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 20°C ambient temperature.

(TBD: To be determined)

2. Ripple & noise are measured at 20MHz bandwidth by using a standard probe.

3. Tolerance : includes set up tolerance, line regulation and load regulation.

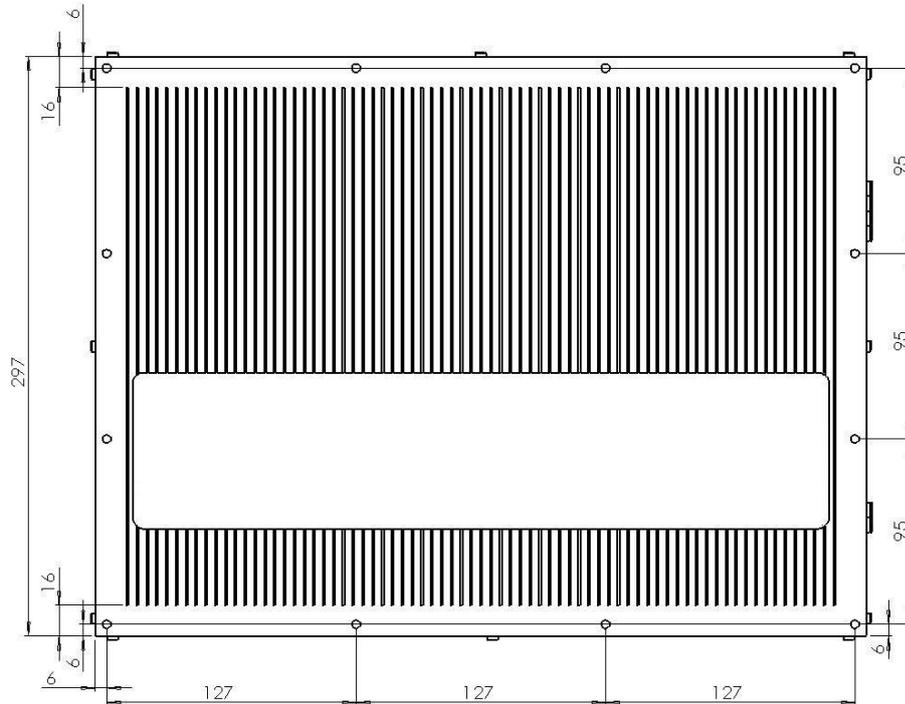
4. The Charger Module is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.

5. Derating may be needed under low input voltage and higher ambient temperature.

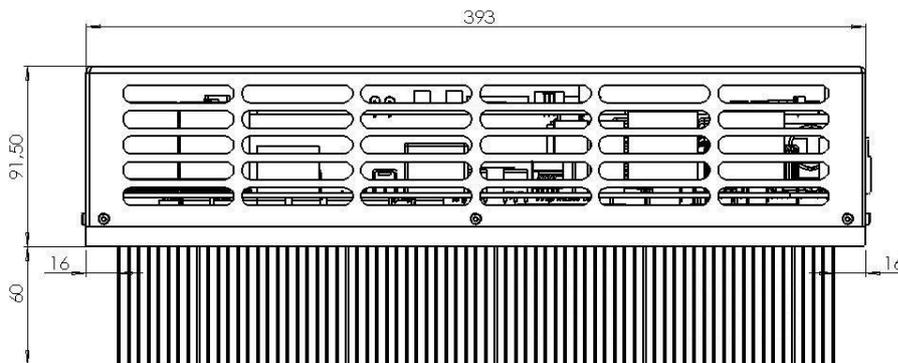
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Mechanical Dimensions

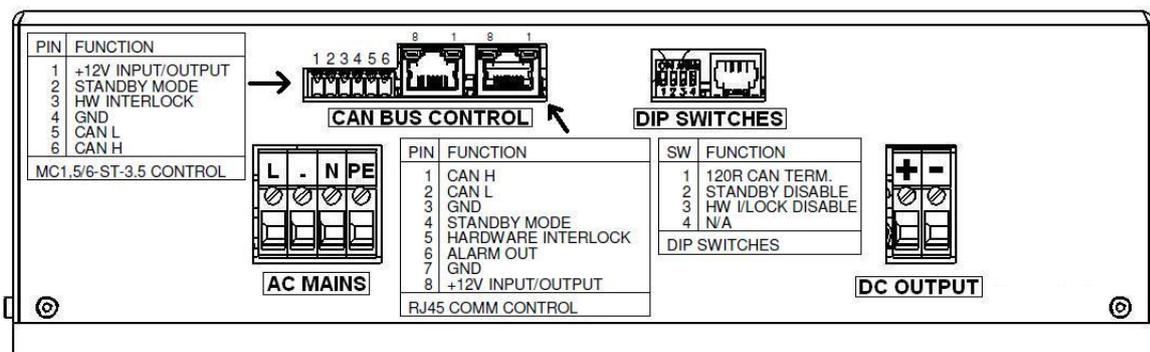
Bottom View



Side View



Electrical Connections



*) Pin 6 : Optional Alarm pull-down (open collector, 24V / 5mA max. Default : OVP function)

AC Mains Connector : 4mm² / 11 AWG (26Arms max.)
 DC Output Connector : 2.5 – 4mm² / 11 – 13 AWG (15Adc max)
 Control Connector : Phoenix Contact MC1,5/6–ST–3,5 or RJ45 Ethernet cable.