

12.5kW EV Charger Module

Based on years of experience PRE has developed a standard 12.5kW Power Concept for EV chargers with 3 phase Input. The charger has active PFC and is based on the latest techniques of HF power electronics based on resonant technology which results in high efficiency and excellent overall performance. Output Voltage and Current can be controlled by a CAN-bus Interface. Other controls and configurations are optional.



Features

- True 3 Phase Input with active PFC
- High Efficient Resonant Topology
- CAN-bus Control Interface
- Up to 25 units in parallel

Applications

- EV Fast Charger
- Industrial Battery Charger
- Industrial Current Source



CHAdeMO

Key Specifications

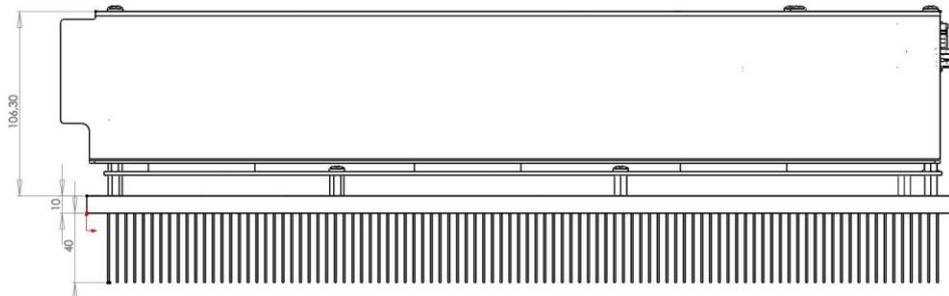
Model	EVC500V32A	EVC1000V16A*	
Output (Battery)	Voltage range	150–500Vdc	300–850Vdc
	Current Range	0 – 32A	0 – 16A
	Rated Power (5)	12.500W	
	Voltage Ripple + Noise (2)	500mVp-p	750mVp-p
	Voltage & Current Tolerance (3)	0.5% (typ.) 1% max.	
	Line / Load Regulation (typ.)	1%	
	Current Ripple (typ.)	<1Arms @ Rated Power (measured on a resistive Load)	
	Hold up Time (typ.)	10mSec.	
Input (Mains)	AC Voltage Range (5)	400Vac ±10% 47–63Hz (14kVA max.) 3ph + PE	
	Power Factor	>0,99 @ 400Vac & Rated Power (THD<5%)	
	Efficiency (Max.)	93,5%	94%
	Stand-by consumption	<8W @ 400Vac	
	AC Current (Max.)	20A @ 400Vac & Rated Power (22A max.)	
	Inrush Current (typ.)	50A Cold Start @ 400Vac	
	Leakage Current	<3.5mA @ 400Vac	
Protection	Input UVP & OVP	±20% @ 400Vac (external fuse)	
	Output OVP & OCP	550V (40A 700Vdc Fuse)	900V (20A 1000Vdc Fuse)
	Output RCP	Reverse Current Protection by 1200V Internal Diode	
	Over Temperature	70°C at main Heatsink. Output Power derating at >50 °C temperature	
Control	Control	CAN-bus with hardware Interlock (Charge Enable) (CANopen protocol / 500kbps)	
	Auxiliary supply (Input)	9V – 26V 100mA max. (for Control side circuits)	
General	Charge Interface	CHAdeMO & CCS compatible	
	Isolation	>100MΩ (4kV Input - Output / 2kV PE - Input & PE-Output / 4kV Output - Controls)	
	Cooling	Fan cooled.	
	IP protection class	IP00	
	Working (Storage) Temp. & Humid.	-20 .. 50°C (-20 .. 70°C) / 20 .. 90% Non Condensing	
	Dimension & Weight	Approx. 500x300x150mm / 20kg	
	Lifetime (MTBF)	>100.000 hours @ 25 °C (Designed to meet <0.1% / Year)	
Safety & EMC(4)	Safety	EN60950	
	Emission (Industrial)	EN55011, class A (optional B)	
	Immunity (Industrial)	EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11.	



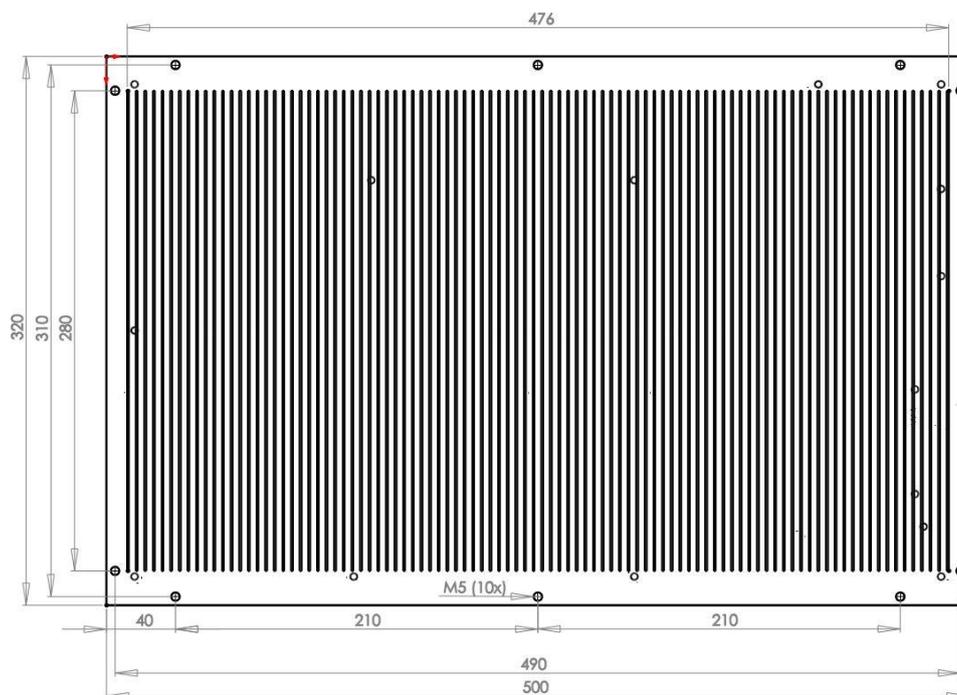
1. All parameters NOT specially mentioned are measured at 400VAC input, rated load and 20°C ambient temperature. *) on request.
 2. Ripple & noise are measured at 20MHz bandwidth by using a standard probe.
 3. Tolerance : includes set up tolerance, line regulation and load regulation.
 4. The Charger 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. Please check the derating curve for more details.
 6. © Copyright, All rights reserved. Specifications are subjected to change without notice.

Mechanical Dimensions

Side View

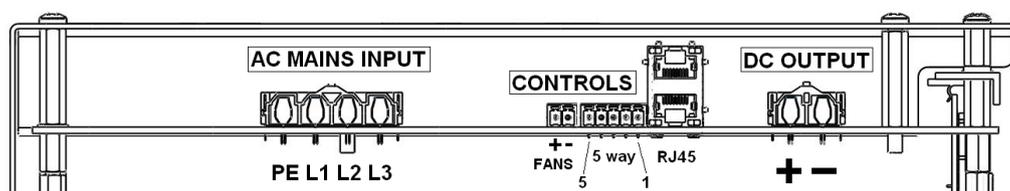


Bottom View



Electrical Connections

Front View



Connections

AC connector : Molex Mini-Fit Sr 4 Way Housing: 42816-0412
 Crimp Terminal : 42815-0012 (12-10 AWG/4-6mm²)

DC connector : Molex Mini-Fit Sr 2 Way Housing: 42816-0212
 Crimp Terminal : 42815-0012 (12-10 AWG/4-6mm²)

FAN connector : Phoenix Contact MC1,5/2-ST-3,81
 (12V/15W internal fans, optional 24V)

*) Pin 4 : Throughput link between the RJ45 connectors.

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

Pin	5 Way MC 1.5 /5-ST 3.81	RJ45 Connectors
1	CAN BUS H	CAN BUS H
2	CAN BUS L	CAN BUS L
3	GND	GND
4	INTERLOCK (H/W ENABLE)	IN-OUT LINK*
5	12V/24V AUX SUPPLY	INTERLOCK (H/W ENABLE)
6	-	OPT. ALARM OUTPUT#
7	-	GND
8	-	12V/24V AUX SUPPLY