

10kW EV Charger Module

Based on years of experience PRE has developed a standard 10kW 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



Key Specifications

Model	EVC500V25A		EVC850V16A*		EVC950V14A*	
Output (Battery)	Voltage range	150–550Vdc	300–850Vdc	200–950Vdc (wide range)		
	Current Range (Max.)	0 – 25A (28A)	0 – 16A (18A)	0 – 14A (15A)		
	Rated Power (Max.) (5)	10.000W (11kW)	10.000W (11kW)	10.000W (11kW)		
	Voltage Ripple + Noise (2)	500mVp-p	750mVp-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 $\pm 10\%$ 47–63Hz (12kVA max.) 3ph + PE				
	Power Factor	>0,99 @ 400Vac & Rated Power (THD<5%)				
	Efficiency (Max.)	93,5%	94%	94,5%		
	Stand-by consumption	<8W @ 400Vac				
	AC Current (Max.)	16A (17A) @ 400Vac & Rated Power				
	Inrush Current (typ.)	50A Cold Start @ 400Vac				
	Leakage Current	<3.5mA @ 400Vac				
Protection	Input UVP & OVP	$\pm 20\%$ @ 400Vac (external fuse)				
	Output OVP & OCP	580V (30A 1000Vdc Fuse)	900V (25A 1000Vdc Fuse)	1000V (20A 1000Vdc)		
	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 – 16V 100mA max. (for Control side circuits)				
General	Charge Interface	CHAdeMO & CCS compatible				
	Isolation	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.

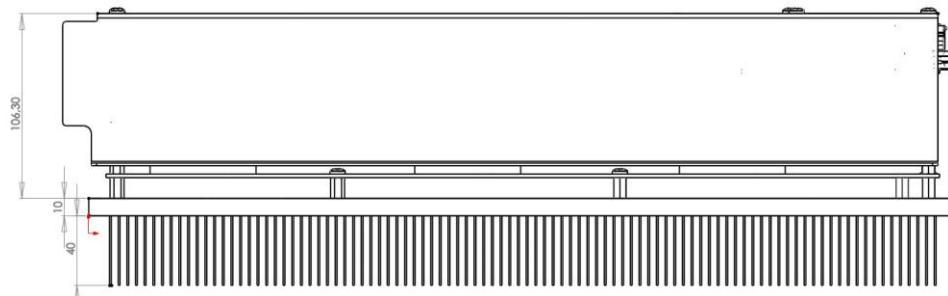
4. The Charger Module is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.

5. Derating may be needed under low input voltage and higher ambient temperature. Please check the derating curve for more details.

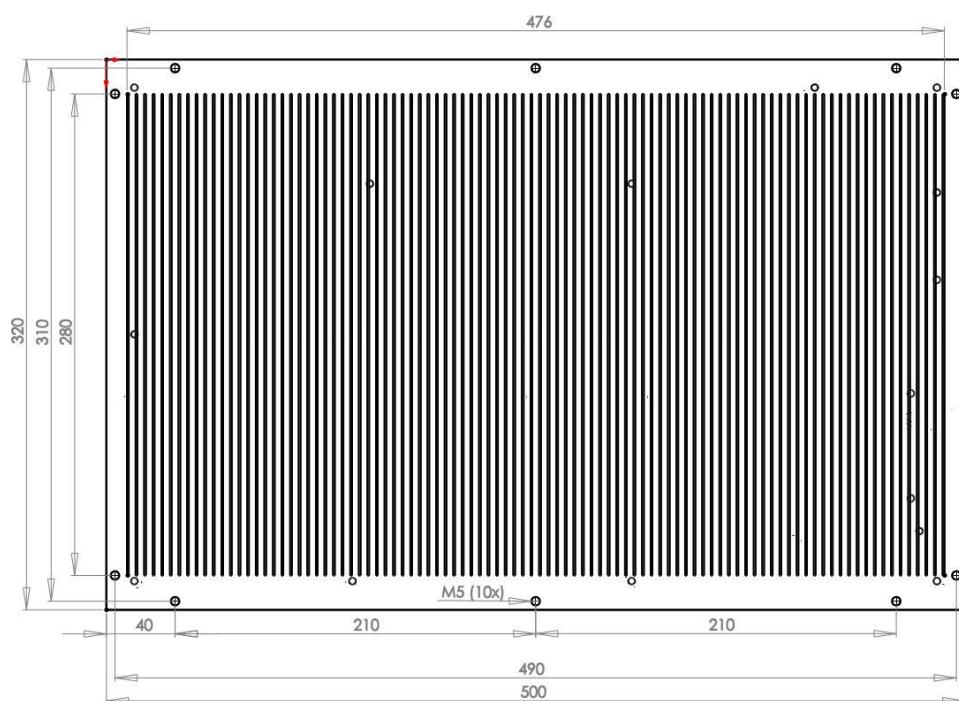
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Mechanical Dimensions

Side View

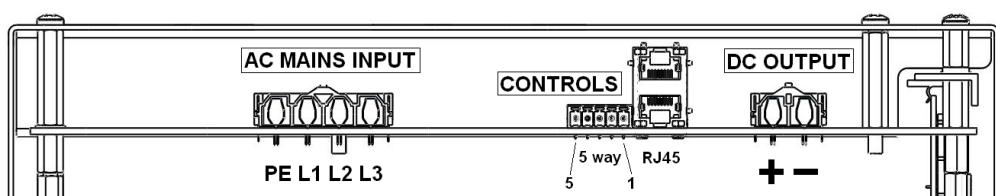


Bottom View



Electrical Connections

Front View



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)

Control Connections

PIN	FUNCTION
1	CAN H
2	CAN L
3	GND
4	ENABLE
5	+12V

MKDS1-5/3.81

PIN	FUNCTION
1	CAN H
2	CAN L
3	GND
4	N/A
5	ENABLE
6	N/A (ALARM)
7	GND
8	+12V

RJ45 CONNECTOR