

# 400 Watt Series Electric Vehicle Charger



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## Description

The EVC 400 Watt is a 2 stage constant current / constant voltage charger for use in charging Lithium Ion battery systems used in Electric Vehicles.

- Universal AC Input / Full Range
- 90-264 VAC Input
- High Reliability
- Communication via CAN bus
- Efficiency up to 92%
- Over Voltage Protection
- Short Circuit Protection
- Over Temperature Protection
- Waterproof IP64 Enclosure
- RoHS Compliant
- 2 Year Warranty



## Model Selection

Model Number	Output Current	Current Range	Voltage Range
EVC-58-400	6.8A	3.4 - 6.8 A	39.2 V -58.15 V

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## Specifications

Input Parameters			
Input Voltage Range* *Designed to optimum performance at 110 and 220 nominal lines	MIN TYP MAX	90 110 264	VAC
Input Frequency	TYP	47 - 63	Hz
Power Factor 110 VAC Input, Full Load 220 VAC Input, Full Load	MIN	0.98 0.96	
Input Current 110 VAC, Continuous 240 VAC, Continuous	MAX	4.5 2.0	A RMS
Efficiency 115VAC Full Load 220VAC Full Load	TYP TYP	92 93	%

MTBF: (MIL-HDBK-217F 25°C)	≥ 200,000	Hours
Temperature - Operating	MIN MAX	-23 +85 °C
Temperature - Storage	MIN MAX	-40 +85 °C
Relative Humidity	10% - 100%	
Weatherproof	IP64 for Enclosure IP25 for Charger Connector	
Case Size	8.27" x 6.10" x 1.65" 210mm x 155mm x 42mm	
Unit Weight	TBD kg	
Agency Approval	Designed to meet UL/CSA and TUV	

Output Parameters			
Output Power	MIN TYP MAX	133.3 380.3 395.4	W
Noise & Ripple - Iout 25°C - 20 MHz bandwidth	MAX	20	% Iout
Turn-on Delay Time Full Load	MAX	3	s
Overshoot and Undershoot Response (Power On/Off)	MAX	30	%

General Specifications	
Short Circuit Protection	Hiccup Mode Self Recovery when fault is removed
Over Voltage Protection	Enters latch mode OVP when output voltage is between 65 and 75V. The unit will return to normal operation when powered back on.
Over Temperature Protection	The unit will go into thermal protection as the maximum temperature outside the case exceeds 100±5 °C. The unit will enter hiccup mode and will self-recover when the temperature becomes normal.

Electromagnetic Compatibility EMI/EMC	
EMI, RFI	Comply with EN55002 Class A, shall have a minimum of 6dB margin.
<b>Immunity:</b>	
EN61000-3-2	Harmonic Current Emission
EN61000-3-3	Voltage Fluctuations and Flicker
EN61000-4-2	ESD 8kV Air Discharge, 4kV Contact Discharge
EN61000-4-3	Radio-frequency Electromagnetic Field Susceptibility Test-Rs
EN61000-4-4	Electrical Fast Transient/Burst -EFD
EN61000-4-5	Surge Immunity Test, AC power line: line to line 2kV, line to each 4kV
EN61000-4-6	Conducted Radio Frequency Disturbance Test-Cs
EN61000-4-8	Power Frequency Magnetic Field Test
EN61000-4-1-1	Voltage Dips

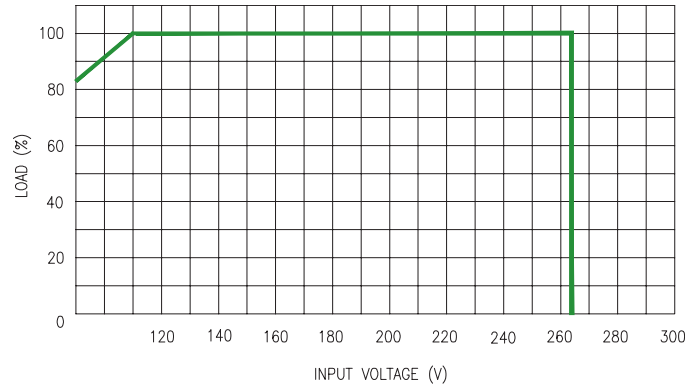
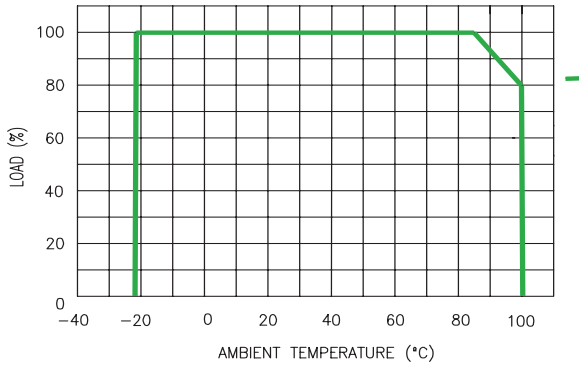
### Notes:

- (1) Specifications are subject to change without notice.
- (2) See Green Watt Power website for RoHS statement.  
[www.greenwattpower.com/pdf/rohs.pdf](http://www.greenwattpower.com/pdf/rohs.pdf)

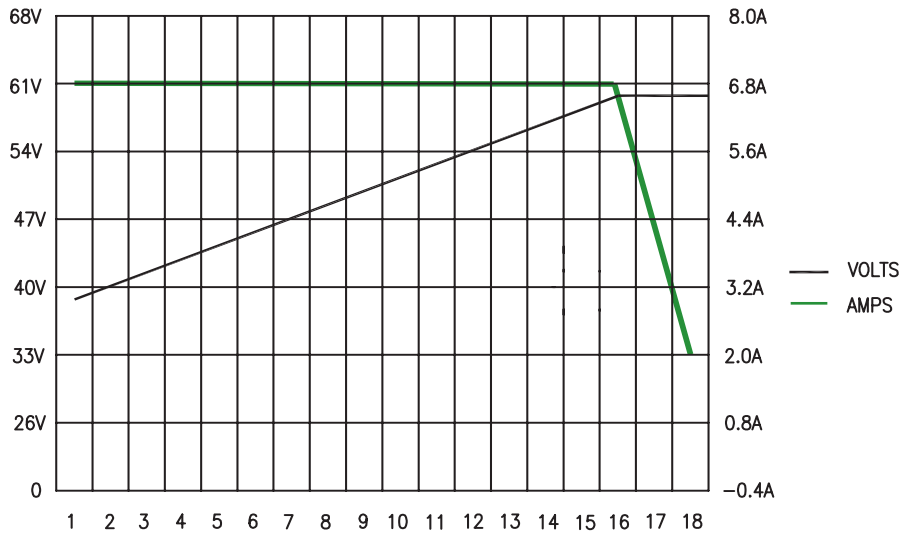
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## Derating Curves



## Charging Curve

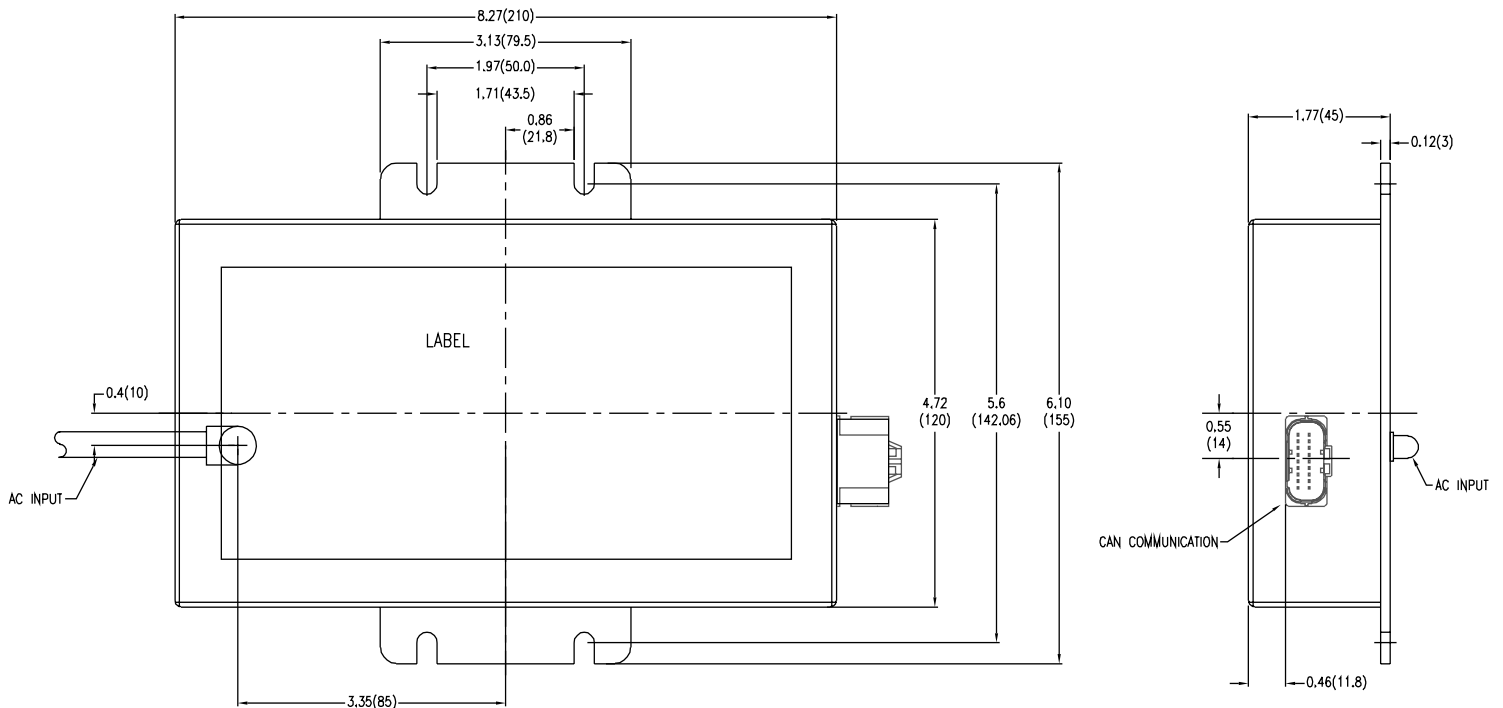


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## Case Specifications

All dimensions are inches (mm)



### CAN Signal Connector:

Will be JAE MX23A18NF1 present on a PCB connector and shall be mounted to the charger body Pinout, by pin number. Undefined pins are no connection or factory use.

Pin	Function
1	LED Power
2	LED ref
3	Charger Output -
4	Not Connected
5	Not Connected
6	CANL
7	CANH
8	Not Connected
9	Charger Output +

Pin	Function
10	Charger Output +
11	Ob_charger_attached [charger_attached]
12	Charger_en_0 [charger_en_n]
13	Ob_charger_ref_0 [charger_gnd_ref]
14	Charger Output -
15	Programming gnd
16	Programming bgnd
17	Programming reset
18	Programming vdd