

## 240 Watt Electric Vehicle Charger Data Sheet



### Description:

The EVC-57-240-B charger has been designed for charging lithium iron magnesium phosphate batteries with a variety of applications including charging of Electric Vehicles and battery systems contained within them.

- Universal AC Input / Full Range
- 85 - 265 VAC Input
- 12VDC @ 50mA, AC present, signal feature
- Meets EL/EN61000-6-2 immunity for industrial Environment Emission Requirements
- High Reliability
- Efficiency greater than 90%
- Over Voltage Protection
- Under Voltage Protection
- Short Circuit Protection
- Over Temperature Protection
- Waterproof IP67 Enclosure
- RoHS Compliant
- 2 Year Warranty



Model Number	Output Current	Current Range	Voltage Range
EVC-57-240-B	4A	3.8 - 4.2 A	40 V - 57 V

This charger has selected parameters for use on two Valence U1-24RT batteries connected in series, in the application for a 3 wheel EV.

## Specifications:

Input Parameters				
	Min	Typ	Max	Units
Input Voltage Range* *Designed to optimum performance at 110 and 220 nominal lines	85	110	265	VAC
Input Frequency		47 – 63		Hz
Power Factor 110 VAC Input, Full Load 220 VAC Input, Full Load	0.99 0.96			
Input Current 110 VAC, Continuous			2.7	A
Input Leakage Current			0.5	mA
Efficiency		90		%

Output Parameters				
	Min	Typ	Max	Units
Output Voltage and Current*, ** * Selected voltage points for two Valence U1-24RT batteries connected in series. ** Maximum output voltage accuracy tolerance isn+0% to -2% under all defined operating tempertures.	40.0 3.8	51.2 4.0	57.0 4.2	VDC A
AC Present Signal @ 50 mA			12	VDC
Output Ground Leakage Current / Isolation: (both charger main & 12V signal outputs)	<0.1 mA Maximum / > 1M $\Omega$			
Noise & Ripple – Iout 25°C – 20MHz bandwidth			$\pm 15$	% Iout
Turn-on Delay Time – Full Load			3	Sec
Overshoot and Undershoot Response (Power On/Off)			+20 -15	%

## Specifications:

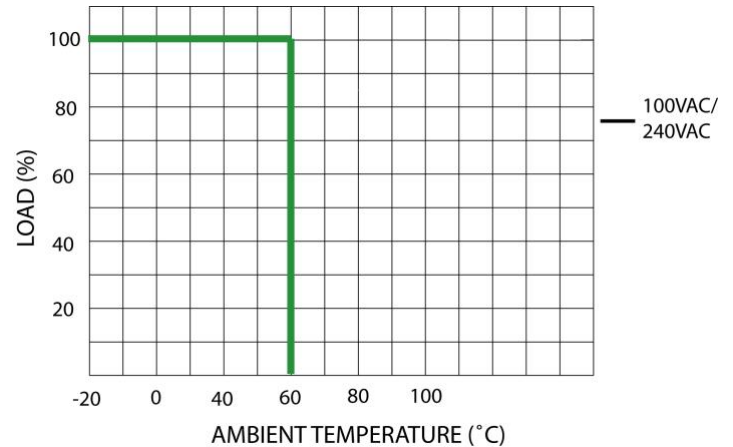
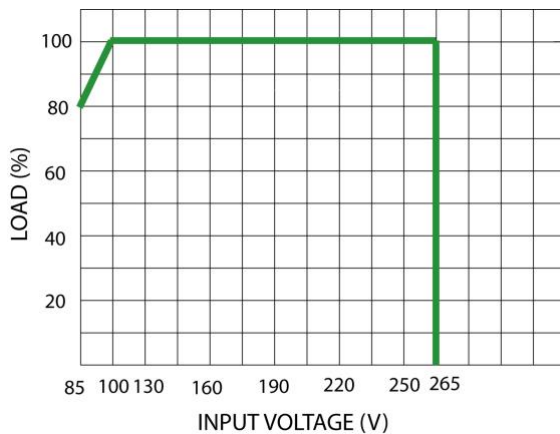
<b>General Specifications</b>			
Short Circuit Protection	Hiccup Mode Self Recovery when fault is removed		
Over Voltage Protection	If output voltage is 63V or greater on attached battery, unit will enter hiccup mode to protect itself. Unit will return to normal operation when voltage is within normal range		
Under Voltage Protection	If the output voltage is below 30VDC ( $\pm 5$ ) on attached battery, unit will enter hiccup mode to protect itself. Unit will return to normal operation when voltage is within normal range.		
Over Temperature Protection	The unit will go into thermal protection when the maximum temperature outside the case exceeds $85 \pm 5$ °C. The unit will enter hiccup mode and will self-recover when the temperature becomes normal.		
MTBF: (MIL-HDBK-217F 25°C)	$\geq 200,000$ Hours		
Temperature - Operating	MIN	-20	°C
	MAX	+60	
Temperature - Storage	MIN	-40	°C
	MAX	+85	
Relative Humidity	10% - 100%		
Weatherproof	IP67 for Enclosure		
Case Size	10.08" x 2.68" x 1.67" 256mm x 68mm x 43mm		
Unit Weight	1.35 kg		
Agency Approval	UL1012 CAN/CSA-22.2 No.107 CE/IEC60335-2-29		

## Notes:

- (1) Output Inrush Current - The charger shall limit inrush current or use diode protection on the charge output lines to prevent arcing from occurring when the battery is connected to the charger. This shall be true regardless if the charger is powered On or Off.
- (2) Maximum Unpowered Battery Load - When powered Off (mains not connected) the on-board charger shall sink a maximum of 0.5mA from a fully charged battery.
- (3) Specification is subject to change without notice.
- (4) See Green Watt Power website for RoHS statement.  
[www.greenwattpower.com/pdf/rohs.pdf](http://www.greenwattpower.com/pdf/rohs.pdf)

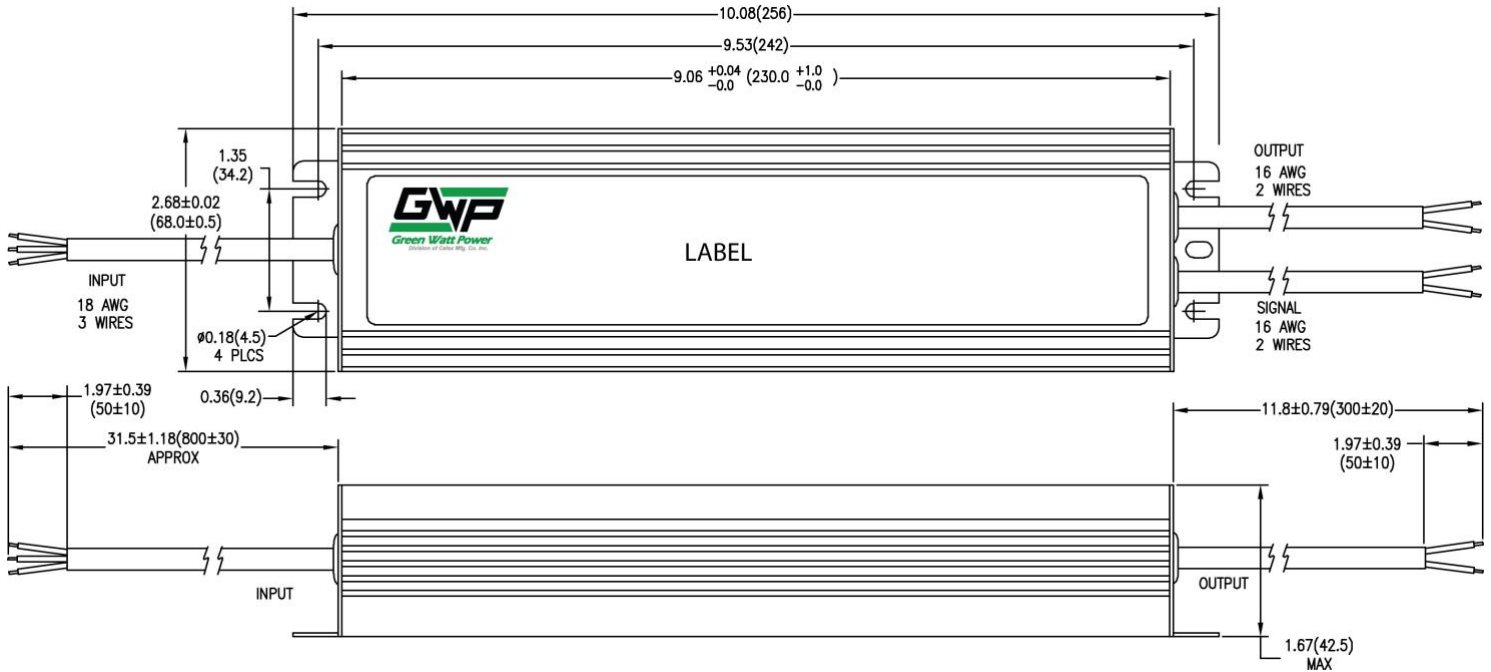
Electromagnetic Compatibility EMI/EMC	
EMI, RFI	Comply with EN55002 Class A, shall have a minimum if 6dB margin.
<b>Immunity for Industrial Environmental EL/EN61000-6-2</b>	
Also Compliant to:	
EN61000-3-2	Harmonic Current Emission
EN61000-3-3	Voltage Fluctuations and Flicker
EN61000-4-2	ESD 8kV Air 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
EN61000-4-8	Power Frequency Magnetic Field Test
EN61000-4-11	Voltage Dips

*Derating Curves:*



### Case Specifications:

All dimensions are inches



INPUT WIRES	OUTPUT WIRES
AC LINE - BROWN	+V - RED
AC NEUTRAL - BLUE	- V - BLACK
GND - GREEN/YELLOW	+SIGNAL - WHITE
	-SIGNAL - BLACK