

EVC-57-240-B

Electric Vehicle Charger



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 Selection

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 this application for a 3 wheel EV.

EVC-57-240-B

Electric Vehicle Charger



Specifications

Input Parameters			
Input Voltage Range*	MIN	85	VAC
*Designed to optimum performance at 110 and 220 nominal lines	TYP	110	
	MAX	265	
Input Frequency	TYP	47 - 63	Hz
Power Factor	MIN	0.99	
110 VAC Input, Full Load 220 VAC Input, Full Load		0.96	
Input Current	MAX	2.7	A
110 VAC, Full Load			
Input Leakage Current	MAX	0.5	mA
Efficiency	TYP	90	%

Output Parameters			
Output Voltage and Current*, **	MIN TYP MAX	Voltage	Current
*Selected voltage points for two Valence U1-24RT batteries connected in series.		40.0 VDC	3.8A
** Maximum output voltage accuracy tolerance is +0% to -2% under all defined operating temperatures.		51.2 VDC	4.0A
		57.0 VDC	4.2A
AC Present Signal	MAX	12VDC @ 50mA	
Output to Ground Leakage Current/Isolation: (Both charger main & 12V signal outputs)	<0.1mA Maximum / >1MΩ		
Noise & Ripple - I _{out}	MAX	±15	% I _{out}
25°C - 20 MHz bandwidth			
Turn-on Delay Time Full Load	MAX	3	s
Overshoot Response	MAX	+20	%
Undershoot Response (Power On/Off)		-15	

General Specifications	
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 (±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 operating temperature exceeds 85±5 °C. The unit will enter hiccup mode and will self-recover when the temperature becomes normal.		
MTBF: (MIL-HDBK-217F 25°C)	≥ 200,000	Hours	
Temperature - Operating	MIN MAX	-20 +60	°C
Temperature - Storage	MIN MAX	-40 +85	°C
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-C22.2 No. 107 CE/IEC60335-2-29		

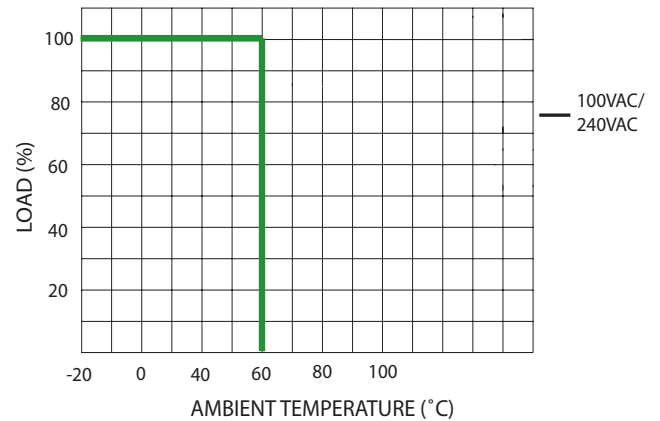
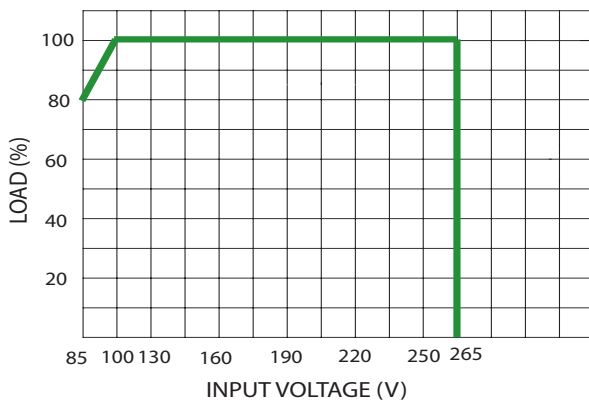
Notes:

- (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) Specifications are subject to change without notice.
- (4) See Green Watt Power website for RoHS statement. www.greenwattpower.com/pdf/rohs.pdf

EVC-57-240-B Electric Vehicle Charger



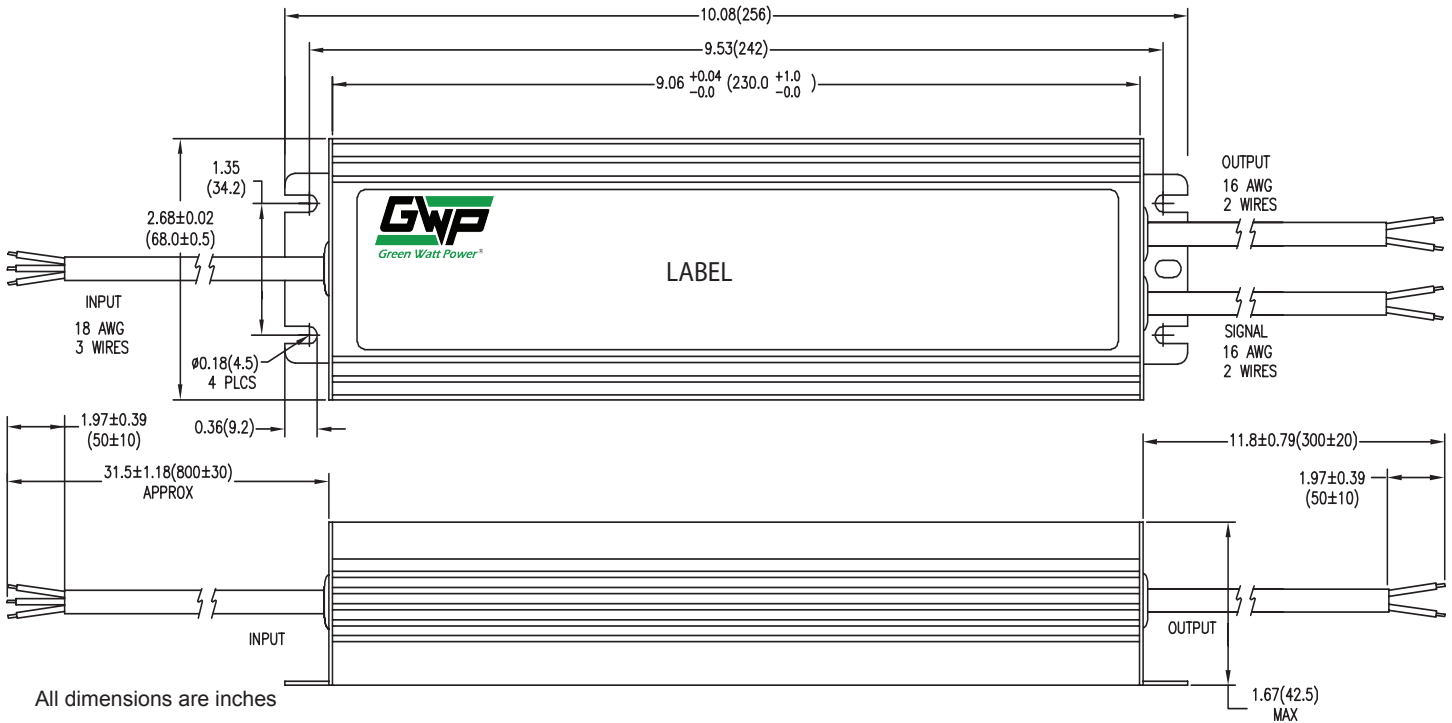
Electromagnetic Compatibility EMI/EMC	
EMI, RFI	Comply with EN55022 Class B, shall have a minimum of 6dB margin.
Immunity for Industrial Environmental EL/EN61000-6-2	
Also Compliant to:	
EN61000-3-2	Harmonic Current Emission
EN61000-3-3	Voltage Fluctuations and Flicker
EN61000-4-2	ESD 8kV Air Discharge, 4kV Contact Discharge
EN61000-4-3	Radio-frequency Electromagnetic Field Susceptibility Test-Rs
EN61000-4-4	Electrical Fast Transient/Burst
EN61000-4-5	Surge Immunity Test, AC power line: line to line 2kV, line to earth 1kV.
EN61000-4-6	Conducted Radio Frequency Distrubance Test-Cs
EN61000-4-8	Power Frequency Magnetic Field Test
EN61000-4-11	Voltage Dips



EVC-57-240-B Electric Vehicle Charger



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