84 Watt 42V
Electric Bike Charger

Description:

The 84 Watt EVC-42-84 charger is a constant current charger designed for charging Lithium Ion and other chemistry battery systems with a variety of applications including charging of Electric Bikes and Electric Vehicles

- Universal AC Input / Full Range
- 90 – 264 VAC Input
- High Reliability
- Efficiency up to 90% @ 230 VAC
- Over Voltage Protection
- Short Circuit Protection
- Over Temperature Protection
- Reverse Polarity Protection
- < 20µA Output Sinking Current
- RoHS Compliant
- 2 Year Warranty

Input Parameters				
	Min	Typ	Max	Units
Input Voltage Range* *Designed to optimum performance at 110 and 230 nominal lines	90	110/230	264/305	VAC
Input Frequency		47 – 63		Hz
Input Current 110 VAC, Input Continuous 230 VAC, Input Continuous			2.2 1.1	A RMS
Efficiency 115 VAC Full Load 230 VAC Full Load		88.5 90		%

Output Parameters				
	Min	Typ	Max	Units
Output Current Setting Range		2000 ±5%		mA
Charging Voltage Range (1)	17		42.2	V

Note (1)

a) When the output voltage is less than 17Vdc, the charger will stop charging.

b) When the output voltage is between 17 Vdc and 23 Vdc, the charger operates on constant current mode with 1.0 A output charging current.

c) When the output voltage is between 23 Vdc and 41 Vdc, the charger operates on constant current mode with 3.5 A output when the output voltage is higher than 41.8 Vdc, the charger will operate on constant voltage mode.

d) Output voltage is zero when the output is disconnected.

Output Characteristics				
	Min	Typ	Max	Units
Current Accuracy			±5	%
Voltage Accuracy			±0.6	%
Output Power			86.1	W
Ripple and Noise – Iout With typical CV load at 25 ºC 100/240 VAC input measured at 20 MHz			10	% Iout
Turn-on Delay Time Full Load @ 110 VAC Full Load @ 230 VAC			 3 2	S
Rise Time @ 25 ºC, Full Load			500	ms
Current Temperature Coefficient 0 ºC , Tcase < Tcmax			0.05	% / ºC
Voltage Temperature Coefficient 0 ºC , Tcase < Tcmax			0.05	% / ºC

General Specifications			
Short Circuit Protection	Auto-recovery return to normal when fault is removed		
Over Voltage Protection	Auto-recovery during over voltage protection and will return to normal operation when fault condition is removed.		
Over Temperature Protection	The unit will go into thermal protection when it is overheating. The unit will enter auto-recovery mode and will self-recover when the temperature becomes normal.		
Reverse Polarity Protection	When the battery is reverse polarity connected, the output is cut off, and the charger will return to normal operation after fault condition is removed.		
MTBF: @ 25 ºC, 230 VAC Input and Full Load	≥ 100,000 Hours		
Life Time: @50 ºC, 230 VAC Input and full load	≥ 15,000 Hours		
Temperature - Operating	MIN MAX	-10 +45	ºC
Temperature - Storage	MIN MAX	-40 +85	ºC
Relative Humidity	10% - 100%		
Weatherproof	IP20 for Enclosure		
Case Size	4.33” x 2.32” x 1.26” 110mm x 59mm x 32mm		
Unit Weight	0.5 kg		
Agency Approval	Designed to meet CE and UL1012		

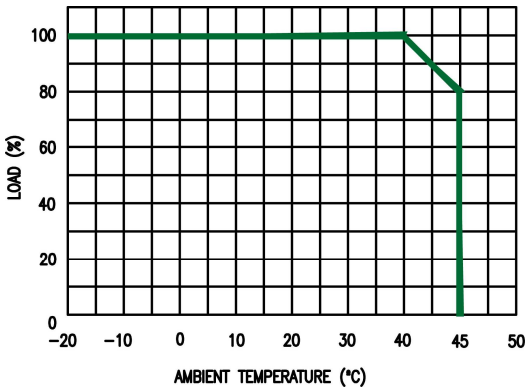
Safety	
Isolation Test: Primary to Secondary	3000 VAC 10 mA Max / 60 seconds (3 seconds for production)
Isolation Test: Secondary to Ground	500 VAC 10 mA Max / 60 seconds (3 seconds for production)
Leakage Current @ 240 VAC / 50 Hz	0.75 ma Max @ 240 VAC/ 50 Hz
Isolation Resistance Primary to Secondary with 500 VDC test voltage	Min: 50 MΩ

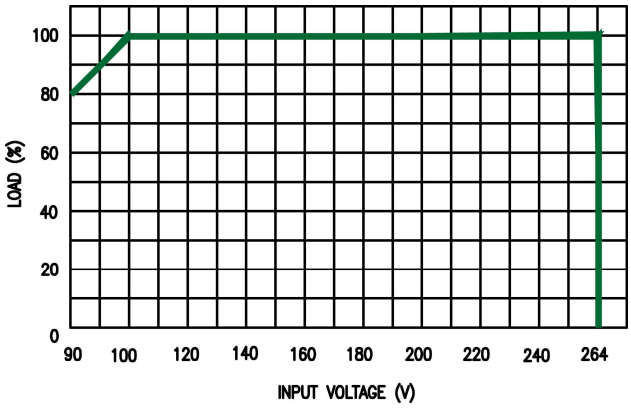
Notes:

(1) Specification is subject to change without notice.
(2) See Green Watt Power website for RoHS statement.
www.greenwattpower.com/pdf/rohs.pdf

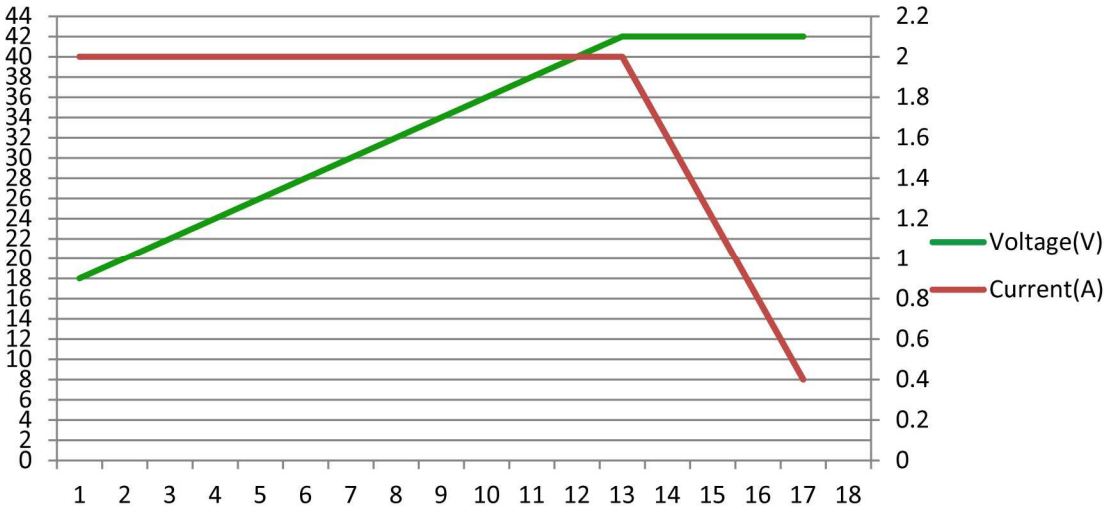
Electromagnetic Compatibility EMI/EMC	
EMI, RFI	Comply with EN55014 Class B
Immunity:	
EN61000-4-2	ESD 8kV Air Discharge, 4kV Contact Discharge
EN61000-4-4	Electrical Fast Transient/Burst – EFD
EN61000-4-5	Surge Immunity Test, AC power line: line to line 2kV, line to each 4kV
EN61000-4-6	Conducted Radio Frequency Disturbance
EN61000-4-8	Power Frequency Magnetic Field Test
EN61000-4-11	Voltage Dips

Derating Curves:





Charging Curve:



There is an ENABLE pin in the output socket. To make sure the charger operates properly, a 5 V 10 kHz PWM signal with 50% must be applied to the Enable pin.

There is less than 20 μA sinking current when the battery is connected to the output and AC input is disconnected.

Case Specifications:

All dimensions are inches