

## 3.4 kWatt Electric Vehicle Li-Ion Charger Data Sheet



### Description:

The EVC-116-3400-FC Watt supports a constant current, constant voltage and constant power charging. The charging current and voltage are controlled through CAN communication. The charger has been designed for a variety of applications including the on-board charging of Electric Vehicles and battery systems contained within them.

### Features:

- Universal AC Input / Full Range
- 90 – 264 VAC Input
- High Reliability
- Communications via CAN bus
- Fan Cooled
- Efficiency up to 94%
- Over Voltage Protection
- Short Circuit Protection
- Over Temperature Protection
- Reverse Polarity Protection
- Waterproof IP65 Enclosure
- RoHS Compliant
- 2 Year Warranty
- Fully potted to ensure high reliability in rugged environments



Model Number	Maximum Output Current	Current Range	Voltage Range
EVC-116-3400-FC	34 ADC	5 A – 29.31 ADC	70V – 116V

## Specifications:

Input Parameters				
	Min	Typ	Max	Units
Input Voltage Range* *Designed to optimum performance at 110 and 220 nominal lines	90	115/230	264	VAC
Input Frequency		45 – 65		Hz
Power Factor 115 VAC Input, Half Load 230 VAC Input, Full Load	0.97 0.96	0.99 0.98		
Input Current 115 VAC, Half Load 230 VAC, Full Load			13 16	A
Efficiency 115VAC Half Load 230VAC Full Load		92.5 94		%

Output Parameters				
	Min	Typ	Max	Units
Output Voltage	70	102	116	VDC
Noise & Ripple – I <sub>out</sub> 25°C – 20MHz bandwidth			5	% I <sub>out</sub>
Maximum Ripple Current @ 100 – 120 Hz			±45	%
Measurement Precision DC Output Voltage		±1		%
Measurement Precision DC Output Current		±5		%
Turn-on Delay Time – Full Load			5	Sec
Rise Time – Full Load			500	ms

## Specifications:

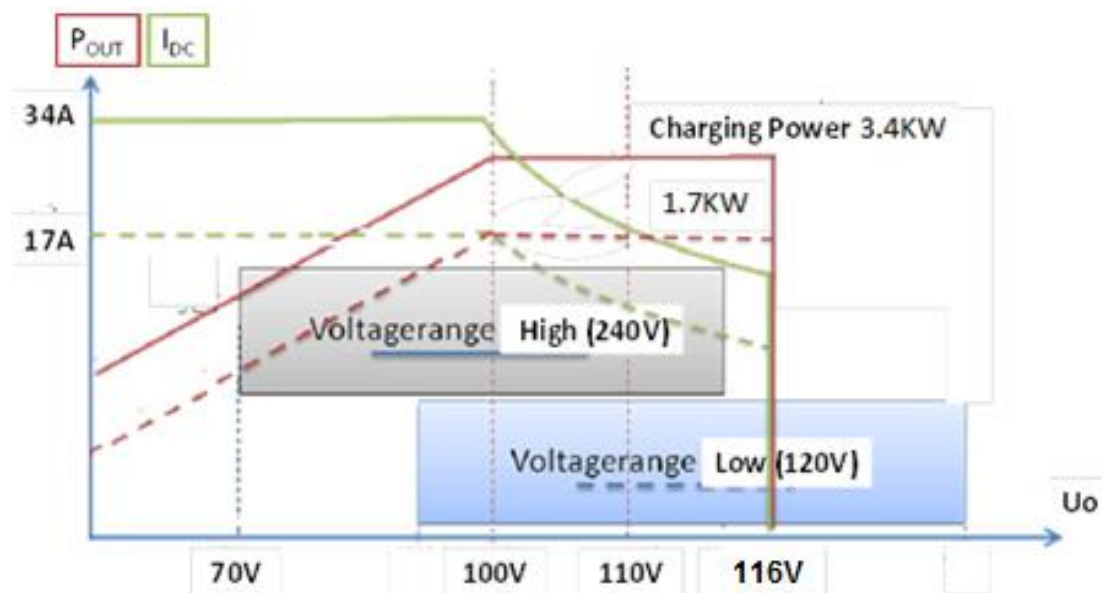
General Specifications			
Short Circuit Protection	Hiccup Mode Self Recovery when fault is removed		
Over Voltage Protection	Enters Auto recovery mode when output voltage is between 125 and 130V. The unit will return to normal operation when powered back on.		
Over Temperature Protection	The unit will go into thermal protection when the case temperature exceeds 85 $\pm$ 10 $^{\circ}$ C. The unit will enter hiccup mode and will self-recover when the temperature becomes normal at or below 85 $^{\circ}$ C.		
Reverse Polarity Protection	When the battery polarity is reverse connected the charger will have no output.		
MTBF: @ 25 $^{\circ}$ C, Full Load, Nominal Input	$\geq$ 200,000 Hours		
Product Life @ 50 $^{\circ}$ C	$\geq$ 30,000 Hours		
Temperature - Operating	MIN	-40	$^{\circ}$ C
	MAX	+60	
Temperature - Storage	MIN	-40	$^{\circ}$ C
	MAX	+85	
Relative Humidity	10% - 100%		
Weatherproof	IP65 for Enclosure IP55 for Fan		
Case Size	9.45" x 7.36" x 2.76" 240mm x 187mm x 70mm		
Unit Weight	TBD kg		
Agency Approval	Designed to meet UL2202		

Electromagnetic Compatibility EMI/EMC	
EMI, RFI	Comply with EN55002 Class A, shall have a minimum if 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
EN61000-4-8	Power Frequency Magnetic Field Test
EN61000-4-11	Voltage Dips
EN61547	Electromagnetic Immunity Requirements applies to Lighting Equipment

## Notes:

(1) Specification is subject to change without notice.

## Charging Curve:

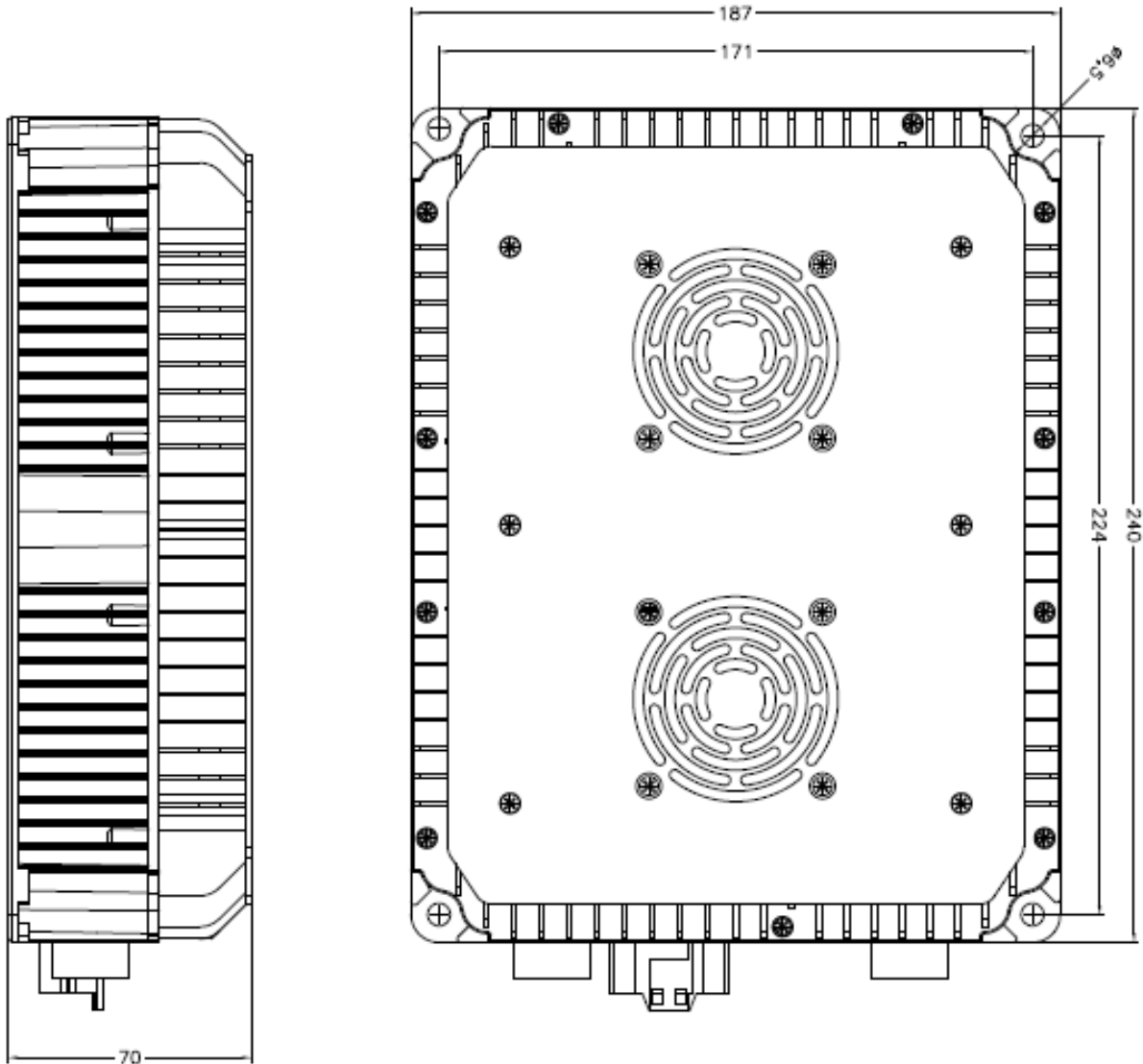


### Case Specifications:

All dimensions are mm

240mm x 187mm x 70mm not including connectors

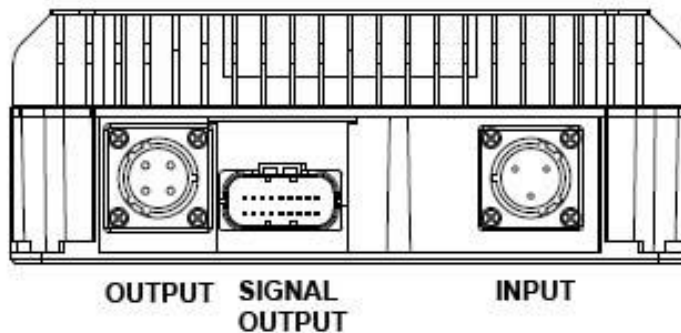
9.45" x 7.36" x 2.76" not including connectors



Output Connector: CNLINKO  
YW-20-C04PE-02-001

Signal Connector: JAE  
MX23A18NF1

Input Connector: CNLINKO  
YW-20-C03PE-02-001



## Case Connections:

### Input Connection:

Connector: CNLINKO YW-20-C03PE-02-001	
Pin	Function
1	L
2	N
GND	PE

### Signal Output Connection

Connector: JAE MX23A18NF1			
Pin	Function	Pin	Function
1	Not Connected	10	AC_OK
2	Not Connected	11	AC_OK
3	Not Connected	12	Charger_ENA
4	Can_Gnd	13	12V_ISO_GND
5	Can_5V	14	12V_ISO
6	Can_L	15	DGND
7	Can_H	16	BKGO/MS
8	Test for Factory	17	Reset
9	Not Connected	18	Reset

### Output Connection:

Connector: CNLINKO YW-20-C04PE-02-001	
Pin	Function
1	VO-
2	VO-
3	VO+
GND	VO+