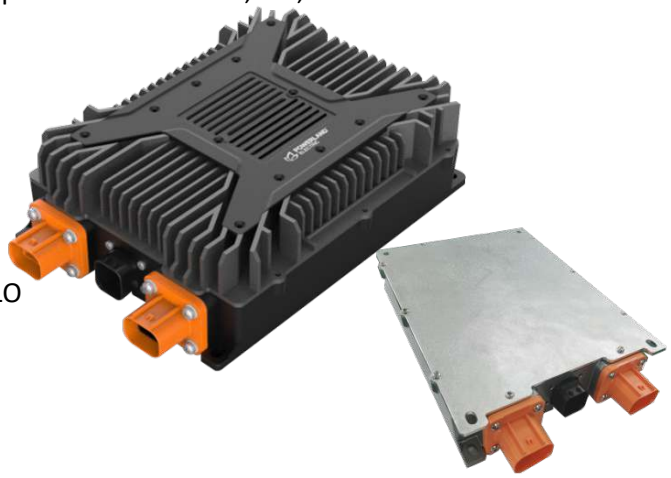
3300 Watt Electric Vehicle Li-Ion Charger Data Sheet

Description:

Green Watt/Powerland's 3.3kW Li-ion battery chargers are designed with ultra-high power density and a metal case enclosure. The excellent power efficiency and thermal management provide the on-board standard chargers high reliability and long lifetime. This series of chargers offer solid and safe power conversion for applications such as e-vehicles, e-bus, e-boat, etc. Options include J1772, fan, and no-fan versions.

Features:

- Universal AC Input: 85~264Vac
- Output Power: 3.3kW
- High Reliability On-Board Design
- Compatible with Liquid Cooling and Air Cooling
- High Efficiency: Up to 95%
- All-Around Protections: OVP, OCP, SCP, OTP, UVLO
- Low Temperature Start Up @ -40°C
- High Temperature Full Load Operation @ 60°C
- IP67 Ingress Grade
- Communication via CAN Bus
- J1772 option



Model Number	J1772	Cooling	Output Power	Output Voltage	Output Current	Output Current Range
EVC-420-3300-FC (PLD3300-EVCS02-420)*	No	Fan included	3300W	200-420V	10A	0-10A
EVC-420-3300-L (PLD3300-EVCS02-420L)*	No	No Fan	3300W	200-420V	10A	0-10A
EVC-420-3300-J1772-FC (PLD3300-EVCS02-420-J)*	Yes	Fan included	3300W	200-420V	10A	0-10A
EVC-420-3300-J1772-L (PLD3300-EVCS02-420L-J)*	Yes	No Fan	3300W	200-420V	10A	0-10A

NOTE: Model #'s in parenthesis are factory part numbers

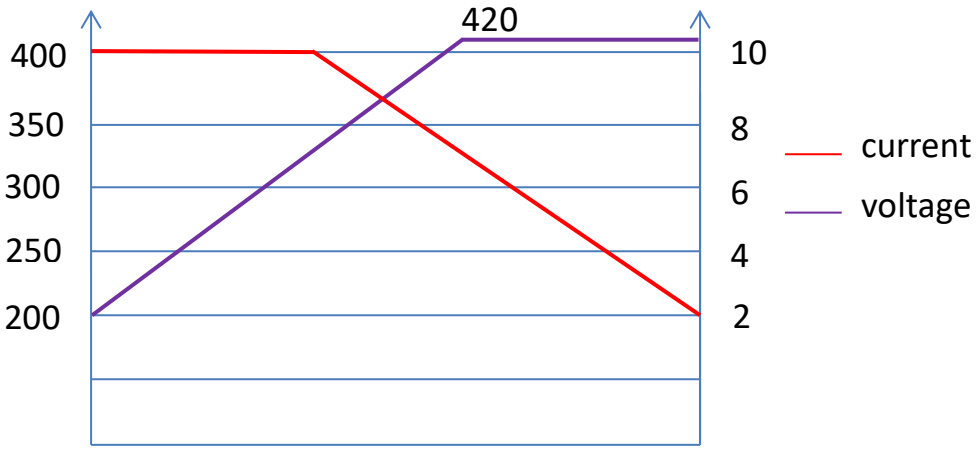
Input/Output Specifications	
Input Voltage	85-264v
Input Frequency	45-65Hz
Max. Input Current	16A
Max. Input Power	3680W
Output Voltage	200-420V
Output Current	10A
Current Accuracy	±0.3A
Voltage Accuracy	±0.5%
Output Power	3300W
Efficiency (Up to)	95%
Power Factor (Typical)	0.99 (low line); 0.98 (high line)
Ingress Protection	IP67 for enclosure (without fan)

General Specifications			
Short Circuit Protection	When output is shorted, power supply will enter hiccup mode, and shall be self-recovery when the fault condition is removed.		
Over Voltage Protection	Over voltage protection shall be triggered if the output voltage goes beyond 440±4V. The PSU shall return to normal operation after the fault condition is removed.		
Over Temperature Protection	The power supply shall go into thermal protection as the case temperature over 85±5°C. When the charger enters overheating protection condition, no components should be damaged. The charger shall enter into auto-recovery mode during over temperature protection, and return to normal operation after the fault condition is removed.		
Anti-Reverse Polarity Protection	When the battery polarity is reversely connected to the charger, the charger will not output.		
Under Voltage Protection	Under voltage protection will activate when output voltage goes to 190±4V.		
Communication Fault Protection	When there is communication fault between charger and BMS, the charger will not output.		
MTBF: 25°C, 230Vac input, and full load output.	≥ 100,000 Hours		
Product Life: 25°C, 230Vac input, and full load output.	≥ 50,000 Hours		
Temperature – Operating (with power derating)	MIN MAX	-40 +60	°C
Temperature - Storage	MIN MAX	-40 +85	°C
Relative Humidity	10% to 90%RH (no condensing)		
Case Size	250 x 186 x 72 (fan) 250 x 186 x 44 (no-fan)		
Unit Weight	5.6kg		

Electromagnetic Compatibility EMI/EMC	
EMI, RFI	Comply with EN55002 Class B, shall have a minimum of 3dB margin.
Immunity (Designed to meet):	
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
EN61000-4-11	Voltage Dips
61000-3-2 Class A	Harmonic current emission

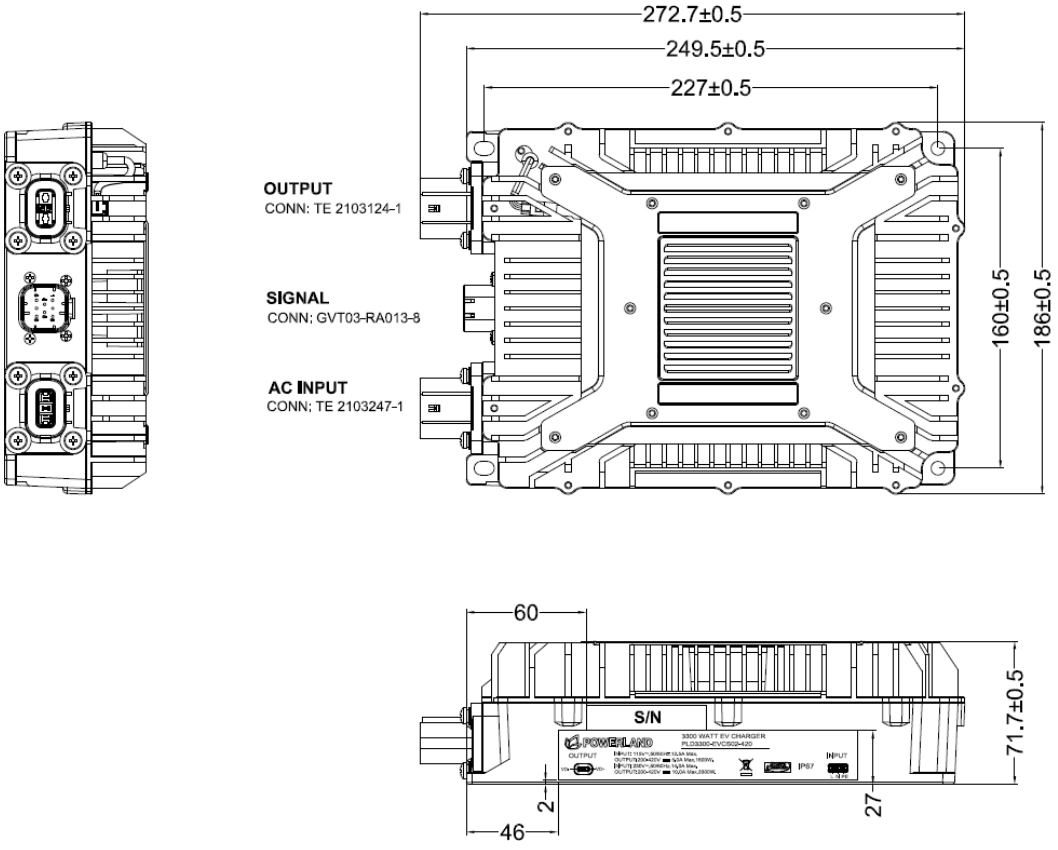
Notes: Specification is subject to change without notice.

CHARGE CURVE:

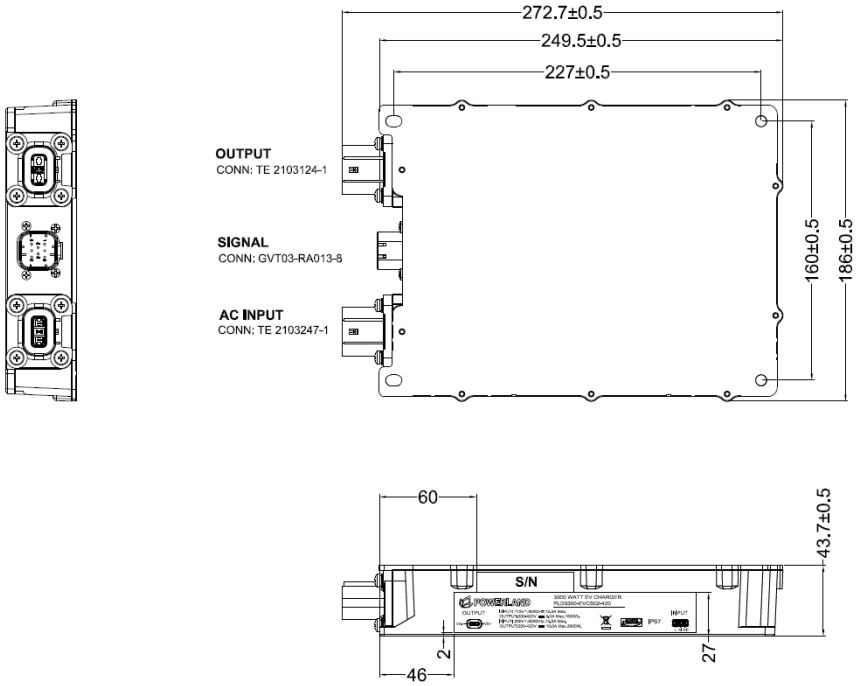


[1] The charging current will be limited to ensure charger power will not exceed 3.3KW. The charge curve is an example under 230Vac input and 25°C ambient temperature. The charge curve will be different if different AC input current. The ambient temperature will also influence the charging process to limit the case temperature not to exceed 85°C.
[2] Testing Condition: In parallel with specified X capacitors under 20MHz Bandwidth
[3] Test Condition: When output current is above 2A.

Mechanical Information: Fan Versions



Mechanical Information: No-Fan Versions



Connector Info: All Connectors:

Type	Output Connector	Input Connector	Signal Connector
Charger Female Connector	TE 2103124-1	TE 2103247-1	GVT03-RA013-8
Cable Male Connector	TE 2103191-1 (See below *)	TE 2103321-1	GVT03-RA013-8 (See below **)
Cable Male Connector Supplied?	No	No	Yes

TE 2103191-1 (See *)

TE 2103321-1

GVT03-RA013-8 (See **)

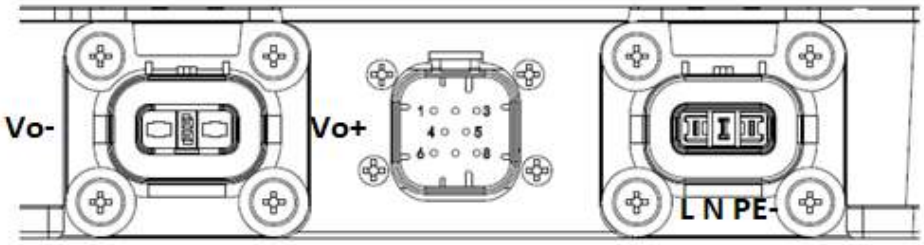
*https://www.te.com/commerce/DocumentDelivery/DDEController?Action=showdoc&DocId=Specification+Or+Standard%7F114-13259%7FD%7Fpdf%7FEnglish%7FENG_SS_114-13259_D.pdf%7FN-A

**GV Tong website info: http://www.gvtong.com/. Mating connector housing (Plug) is: GE01-P008-8NNB-Y01, Terminal pins: S06-0017P-NA-N, Waterproof terminal plug for unused pins: H13-0002-NA-N

Other connector info:
- CNLinko / Linko - http://www.cnlinkousa.com/where-to-buy.html
- GV Tong - http://www.gvtong.com/
- Jnicon - . http://www.jnicon.com/

Pin Info: J1772

- ***EVC-420-3300-J1772-FC (PLD3300-EVCS02-420-J)****
- ***EVC-420-3300-J1772-L (PLD3300-EVCS02-420L-J)****



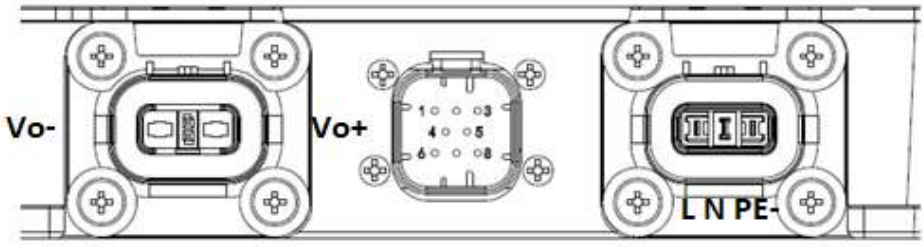
J1772 PIN INFO FOR SIGNAL CONNECTOR

Pin No.	Des	Description
1	CANH	
2	CANL	
3	CAN_ID or NULL	This is used for two chargers in parallel; one charger works in master mode and one charger works in slave mode. If one CAN_ID of two chargers is connected to the PE (ground for 12Vin/Vo), the charger will work in slave mode with slave ID. If only one charger is connected, PIN3 can be defined as NULL.
4	CP	Pilot
5	PP	Proximity
6	PE	Ground for 12Vout and 12Vin
7	12Vo	
8	12Vin	

Note: A 2mm creepage distance between CAN signals and other nets referenced to chassis ground is required by safety agencies. Please be aware of this on system PCB's

Pin Info: Non-J1772

- ***EVC-420-3300-FC (PLD3300-EVCS02-420)****
- ***EVC-420-3300-L (PLD3300-EVCS02-420L)****



Pin 1: CANH
Pin 2: CANL

* Factory Model Numbers are in parenthesis