

3000 Watt DC/DC Converter EVD Data Sheet



Description:

Green Watt/Powerland's 3kW DC/DC power supply for 28V and 48V output EV systems is designed with extended protection functions, the next-generation semiconductor power devices, and thermal management. It is the industry's first design to cover full input voltage range of e-vehicle on-board air conditioning system DC/DC power supply, and feasible for a wide variety of electric vehicles.

Features:

- Full Input Voltage Coverage: 280~880Vdc
- High Power Density and High Maintainability
- Ultra-high Efficiency: Up to 96%
- Advanced EMI Design
- Suitable for High Inrush Current Application
- Designed with Next-Generation Semiconductor Devices
- Natural Cooling
- Max. Case Temperature @ 100°C
- CAN Communication
- All-Around Protections: OVP, OCP, SCP, OTP
- Optimized for variable motor loads of EV air conditioning system: reliable DC output direct driving



Figure 2 – Waterproof Version



Figure 1 - Standard Version

Model Number	EVD-590-3000A-28 [PLD3000- EVDYL02(A)-27]	EVD-590-3000A-48 [PLD3000- EVDYL02(A)-48]	EVD-590-3000-28 [PLD3000-EVDYL02- 27]	EVD-590-3000-48 [PLD3000-EVDYL02- 48]
Output Voltage	27.5V	48V	27.5V	48V
Output Current	110A	62.5A	110A	62.5A
Max. Output Voltage	27.5V	48V	27.5V	48V
Output Voltage @ Open Circuit	27.5V	48V	27.5V	48V
Voltage Accuracy	±2%	±2%	±2%	±2%
Output Power	3000W	3000W	3000W	3000W
Line Regulation	±1%	±1%	±1%	±1%
Load Regulation	±1%	±1%	±1%	±1%
Output Noise and Ripple	500mV	1000mV	500mV	1000mV
Input Voltage	280~880V	280~880V	280~880V	280~880V
Max. Input Current	12A	12A	12A	12A
Max. Input Power	3600W	3600W	3600W	3600W
Efficiency	96%	96%	96%	96%
Communication	CAN	CAN	CAN	CAN
On/Off Control	Yes	Yes	Yes	Yes
Protections	OVP, OCP, SCP, OTP			
Ingress Protection	IP67	IP67	IP54	IP54
Working Temperature	-40~85°C	-40~85°C	-40~85°C	-40~85°C
Cooling	Natural Cooling (With System using cooling plate)			
EMI	CSPR 55025/GB18655 (With System)	CSPR 55025/GB18655 (With System)	CSPR 55025/GB18655 (With System)	CSPR 55025/GB18655 (With System)
Isolation (In/Out)	3500Vdc	3500Vdc	3500Vdc	3500Vdc
Dimensions (LxWxH)	260x180x62mm	260x180x62mm	260x180x62mm	260x180x62mm
Weight	4kg	4kg	3.5kg	3.5kg
Life Time at 40°C, 380Vdc Input, and Continuous Full Load Output	50,000 Hours	50,000 Hours	50,000 Hours	50,000 Hours

Part numbers in brackets are factory numbers

MECHANICAL INFO (IP67 VERSIONS): EVD-590-3000A-28 & EVD-590-3000A-48

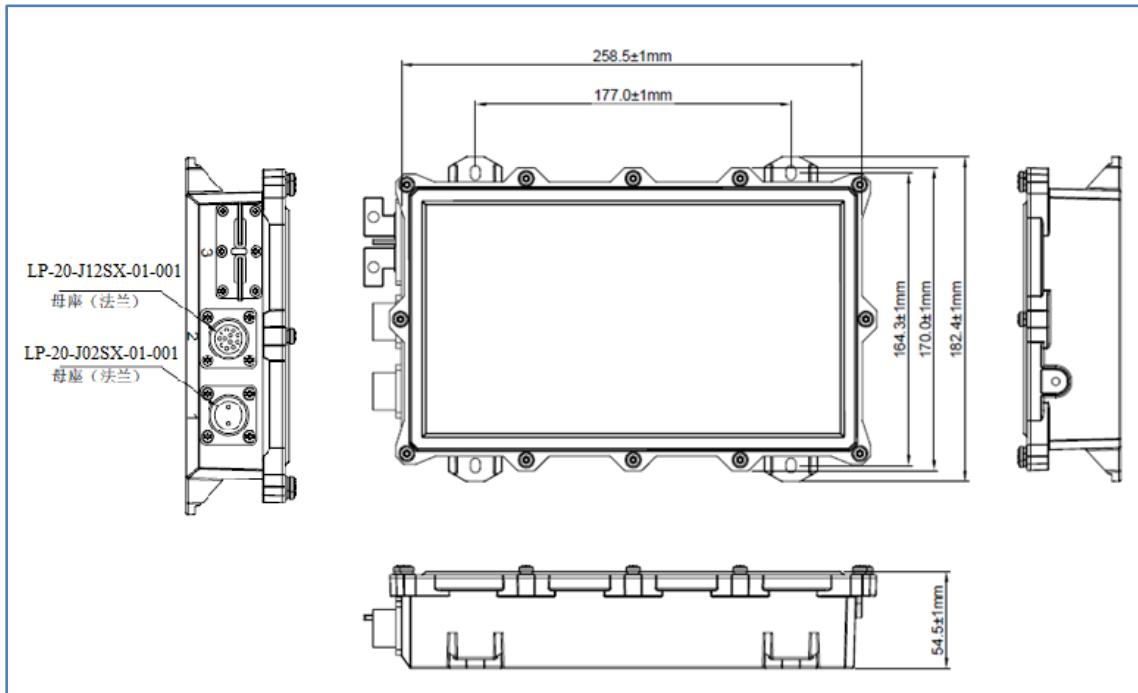
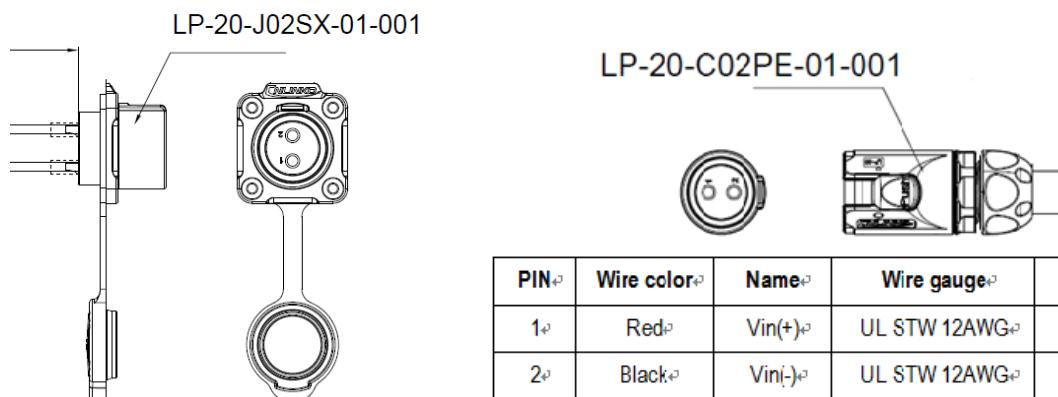


Figure 3 Waterproof Model (IP67) -W "A" in part number

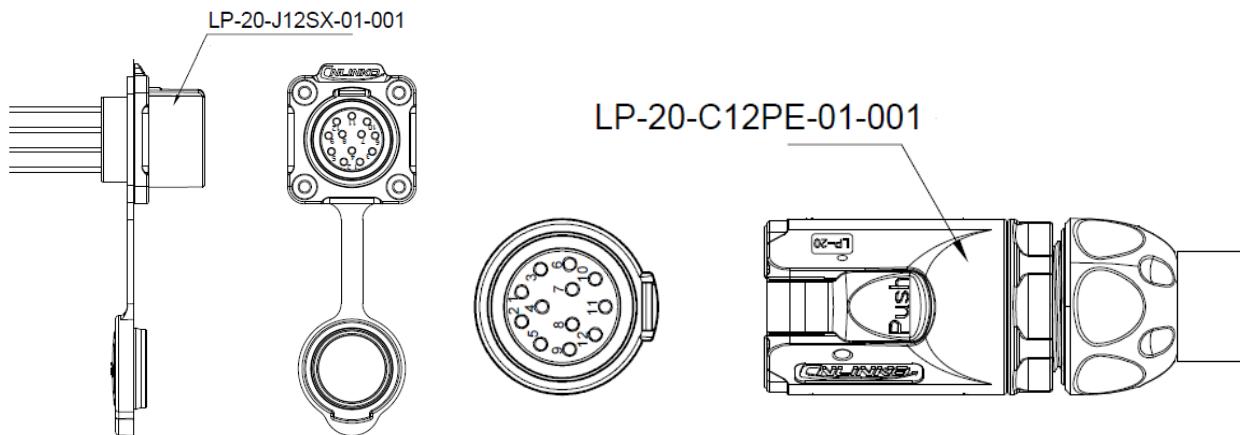
Connectors' Information

Connector	Female Connector Model (installed in Converter)	Male Connector Model (Customer must purchase)	Manufacturer
Input Connector	LP-20-J02SX-01-001	LP-20-C02PE-01-001	Cnlinko
Signal Connector	LP-20-J12SX-01-001	LP-20-C12PE-01-001	Cnlinko



Aux Power and Signal Port Pinouts

Function	Pin No.	Wire Color	Signal	Wire Gauge	Notes
Aux In*	8	Red	24V	UL 1007, 22AWG	Aux Power Input
	6	Black	24VGND	UL 1007, 22AWG	Aux Power Input
CAN	3	Yellow	CAN-H	UL 1007, 22AWG	CAN H Signal
	5	White	CAN-L	UL 1007, 22AWG	CAN L Signal
Control (On/off):	10	Green	#PSON	UL 1007, 22AWG	Power on: Low Resistance (ref 1K ohm) to AUXin GND
	4	Green	GND	UL 1007, 22AWG	Power off: open or >1Meg ohm to AUXin GND



MECHANICAL INFO (IP54 VERSIONS): EVD-590-3000-28 & EVD-590-3000-48

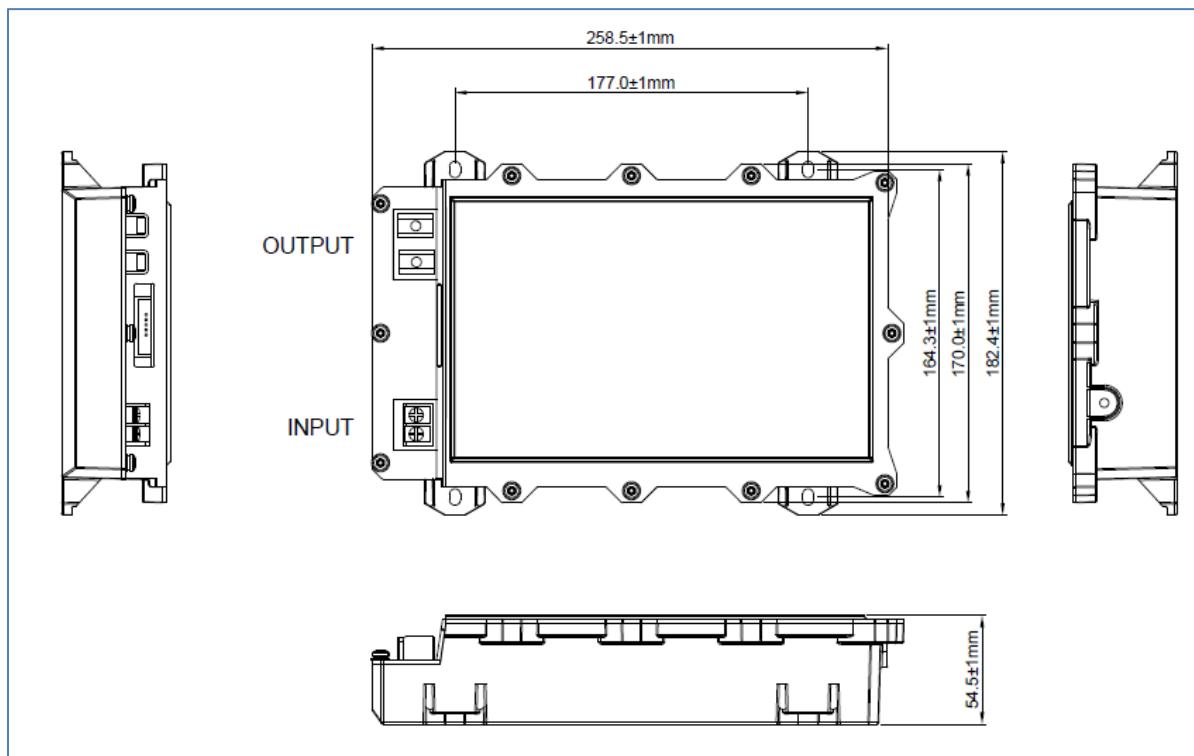


Figure 4 Standard Model -W/O "A" in part number

Aux Power and Signal Port

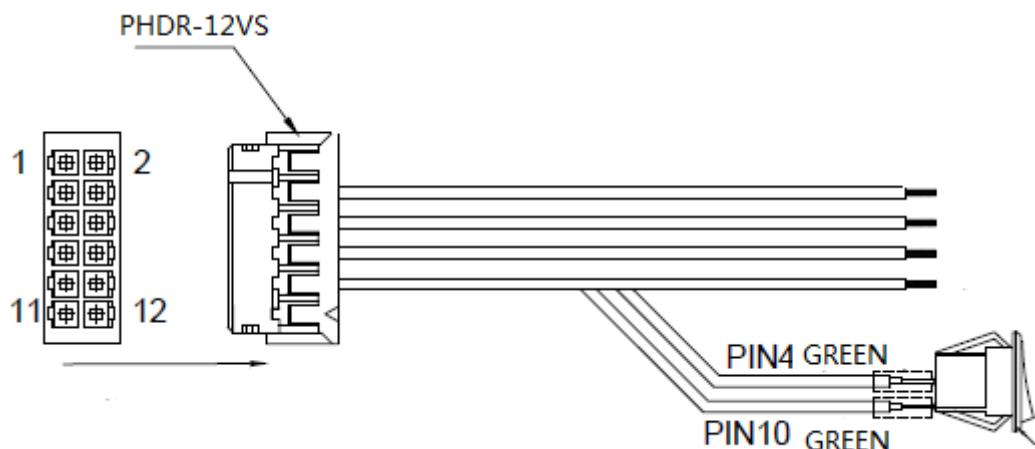
Function	Pin No.	Wire Color	Signal	Wire Gauge	Notes
Aux In*	8	Red	24V	UL 1007, 22AWG	Aux Power Input
	6	Black	24VGND	UL 1007, 22AWG	Aux Power Input
CAN	3	Yellow	CAN-H	UL 1007, 22AWG	CAN H Signal
	5	White	CAN-L	UL 1007, 22AWG	CAN L Signal
Control (On/off):	10	Green	#PSON	UL 1007, 22AWG	Power on: Low Resistance (ref 1K ohm) to AUXin GND
	4	Green	GND	UL 1007, 22AWG	Power off: open or >1Meg ohm to AUXin GND

Connectors' Information

Connector	Female Connector Model (installed in Converter)	Male Connector Model (Provided separately with unit*)
Signal Connector		Part NO.---PHDR-12VS Available on https://www.jst-mfg.com/product/detail_e.php?series=201

Signal Port Pinout

2.0mm pitch pins



Orientation of pinout looking at the front of the converter:

