

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	OVP, OCP, SCP, OTP	OVP, OCP, SCP, OTP	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)	Natural Cooling (With System using cooling plate)	Natural Cooling (With System using cooling plate)	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

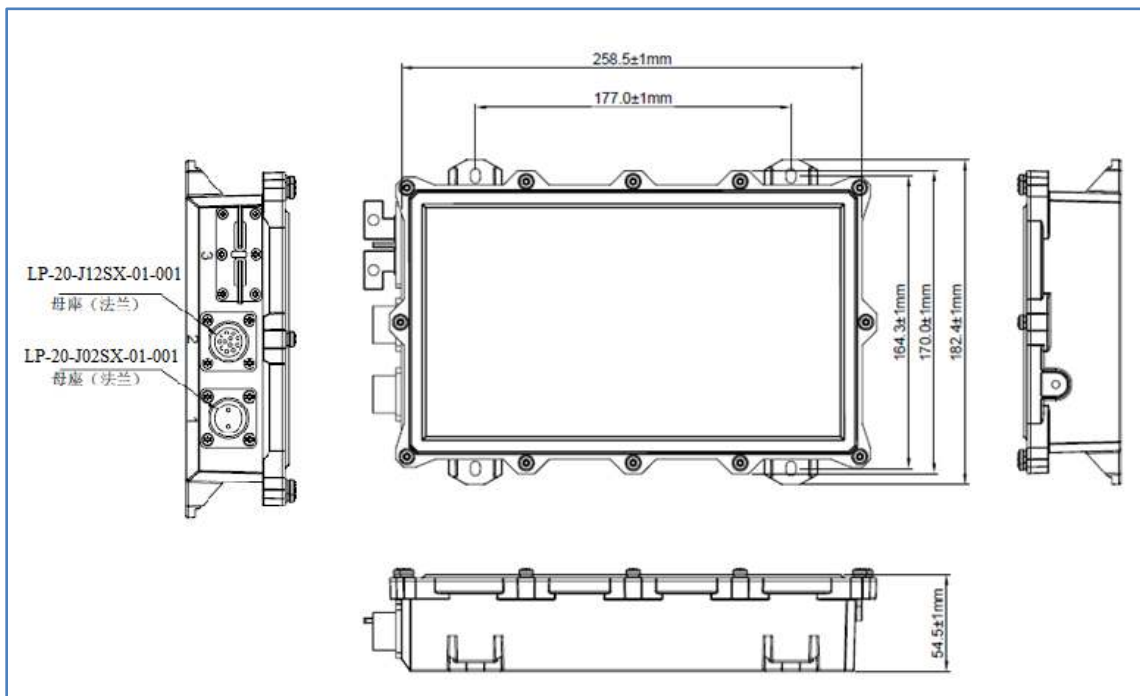
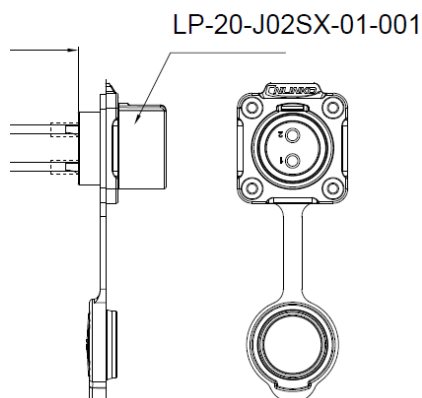


Figure 3 Waterproof Model (IP67) -W "A" in part number

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



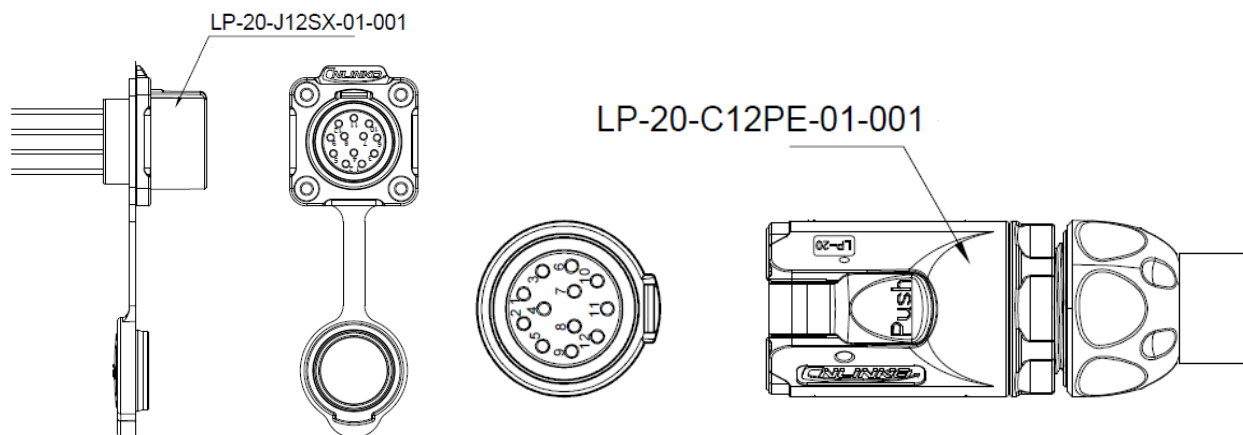
LP-20-C02PE-01-001



PIN	Wire color	Name	Wire gauge	Function
1	Red	Vin(+)	UL STW 12AWG	Positive input voltage
2	Black	Vin(-)	UL STW 12AWG	Negative input voltage

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

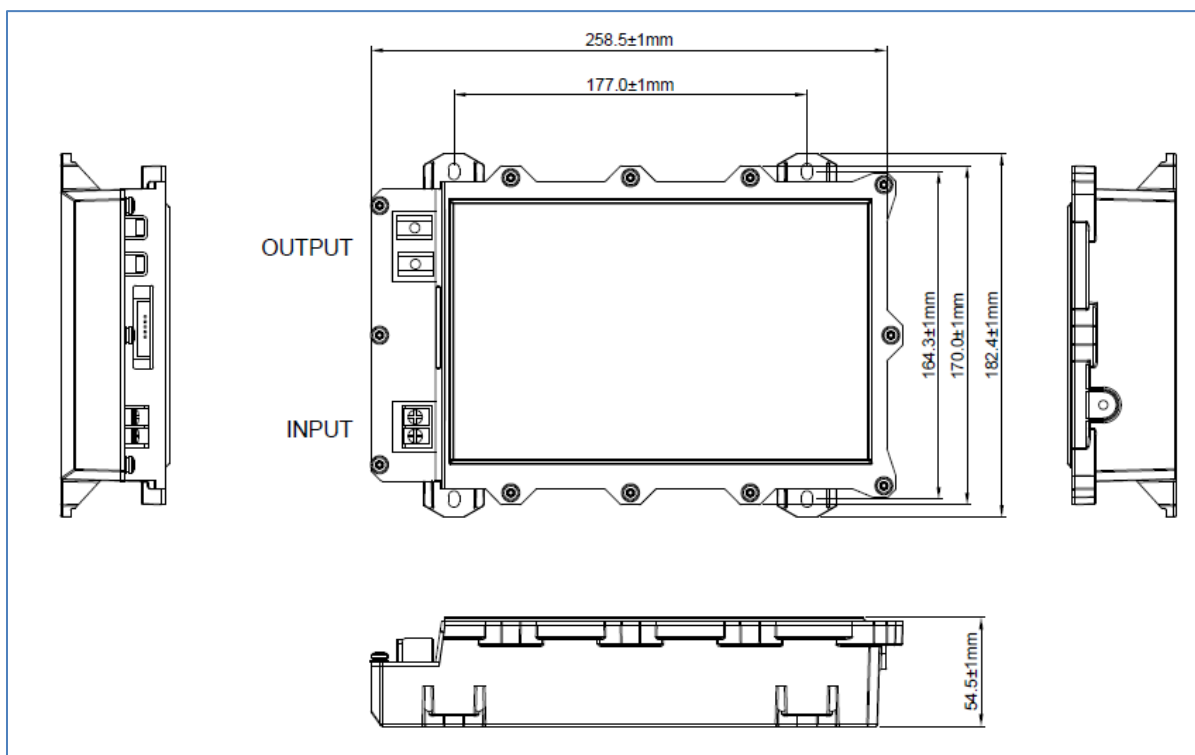


Figure 4 Standard Model -W/O "A" in part number

Aux Power and Signal Port

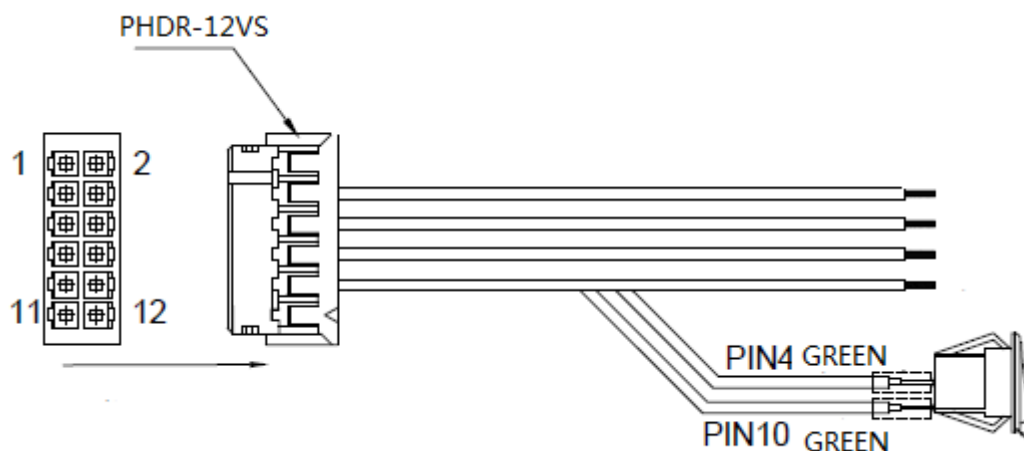
Function	Pin No.	Wire Color	Signal	Wire Gauge	Notes
Aux In*	8	Red	24V	UL 1007, 22AWG	Aux Power Input
	6	Black	24VGND	UL 1007, 22AWG	Aux Power Input
CAN	3	Yellow	CAN-H	UL 1007, 22AWG	CAN H Signal
	5	White	CAN-L	UL 1007, 22AWG	CAN L Signal
Control (On/off):	10	Green	#PSON	UL 1007, 22AWG	Power on: Low Resistance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

