

PDU-70 POWER DISTRIBUTION UNIT





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The PDU-70 is a power distribution unit developed by NERO Industries engineers in the scope of electrical vehicle application. The PDU-70 is a safe, intelligent and versatile power distribution unit in a compact form with configurable multiple power inputs and outputs. The smart control unit provides easy integration for high voltage/high current system applications. As typical application fields, the PDU-70 is suitable for medium and heavy duty electric/hybrid vehicle power distribution and energy control. Some important features are as

- High voltage power inputs for standard charging

- Isolated voltage reading at the high voltage inputs and outputs (up to 1000 VDC)

- High voltage safety interlock line (HVIL)

- Interlock line controlled high voltage battery relay control outputs

- Earth insulation level measurement

Secondary passive high voltage DC bus energy sinking
Active high voltage DC bus energy sinking (Through PTC Thermistors)

- Pre-charge circuit at all high-voltage power outputs

- Fuse protection at high voltage outputs

- Overvoltage, undervoltage, overcurrent and over-temperature protection

- Low power mode



PDU-70 uses SAE J-1939 standart CAN protocol in order to communicate with the electrical control unit (ECU). 250kbit/s bit rate is chosen in order to provide reliable operation.

The cyclic status messages are transmitted by the PDU-70 in every 100 ms and the cyclic command message is expected from the ECU in every 100 ms. If the command message is not received by the PDU-70 for 400 ms, the emergency output is asserted (logic high) in order to indicate fault but the operational state of the PDU-70 stays the same in order to give the ECU to control the whole system. For the sake of the operation, the PDU-70 should be taken into low power mode as soon as possible. The details of the CAN messages can be found in log file.

RS422 COMMUNICATION

PDU-70 uses RS422 communication in order to send status messages to the diagnostic/record device in the system. The PDU-70 does not receive any message through RS422, hence no operational change can be performed. By using RS422 communication, a secondary check to CAN communication can be provided.

TRACTION VOLTAGE POWER DISTRIBUTION UNIT FOR ELECTRIC VEHICLES TRACTION AND AUXLIARY HIGH VOLTAGE SYSTEMS INCLUDING:

- Active unit include traction voltage contactors and contactor controls with Voltage and current measurement units.
- Pre-charging circuit to balance voltage levels before and after contactors

- Service charging circuit with contactor switching

- High voltage circuit insulation resistance measurement & monitoring

- Fuse protection for high and low current component output

Hazardous voltage interlock loop (HVIL)

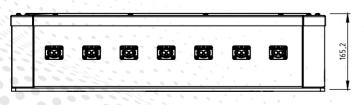
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Operating Temperature Range	-40°C / +70°C
Storage Temperature Range	-40°C / +85°C
Protection Class	IP65
Dimensions	714 x 505 x 165,2
Weight	43 ± kg
Cooling	Natural Airflow



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Operating Voltage Range	10 - 800 VDC		
	Battery Input 1 / 300 A		
Parameter 1	Battery Input 2 / 300 A		
Power Input	Battery Input 3 / 300 A		
	Battery Input 4 / 300 A		
	DC Charge Input / 400 A		
	Traction Inverter / 600 A		
	PTO Inverter / 125 A		
	On Board Changer / 50 A		
	Air Compressor / 30 A		
	Heater / 25 A		
Power Output	DC-DC Converter / 25 A		
	A/C Compressor / 30 A		
Current Peak	600 A		
Interlock Line ("HVIL") Current	Adjustable (Default: 35 mA)		
Interlock Line ("HVIL") Voltage	36 VDC		
Max Voltage Drop over HVIL Loop	Adjustable (Default: 12 VDC)		
Interfaces	CAN Bus SAE J-1939		
	RS422/485		



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