Epec Power Distribution Unit (PDU)

ONE PAGER PDU

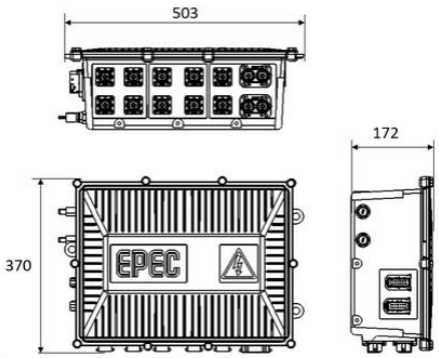
Product specification for active PDU FPEN1PXXX .

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)

MAIN DIMENSIONS:

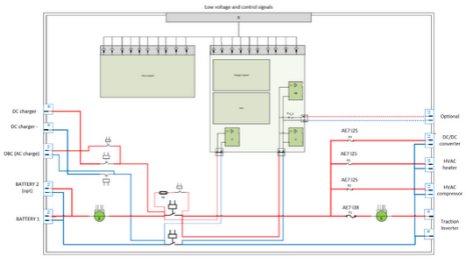
- Overall dimensions: 503 x 370 x 172 mm
- Weight: 21 kg
- Mounting to vehicle: all other orientation allowed than Cables upside
- Mounting by customer designed brackets by M8 screw from each side



FUNCTIONAL BLOCK DIAGRAM, DC-Link

Simple High voltage circuit control block diagram for active PDU

- Control unit: Epec PDU controller
- Insulation monitoring unit
- Voltage measurement
- Current measurement
- Main contactors
- DC-charging contactors
- Pre-charge and charging relays
- Temperature measurement inside PDU
- HVIL loop for all connectors and covers



TECHNICAL DATA

FEATURE	VALUE	NOTE
Thermal management	Water cooling option,	16 mm Hose barb or VDA NW12 standard quick connection
Connection	CANopen interface (SAEJ1939 support also)	12 or 24 V operating voltage for PDU controller
Operating Voltage	500-800 V	1000 V optional
Operating current	350 A (RMS)	Continuous current
Current peak	500 A	Peak 10 s
Connections	4x High current component 3x Low current component 1x DC charging	Connections can be varied based on customer need
Safety	All connections IPXXB, service switch included	
Battery connection	Main contactors for battery disconnection	600 A max switching current
Insulation monitoring	Full HV-system monitoring,	Alarming limit: min 500 kΩ, possible to isolate from DC-link
Sensors	Voltage (Battery and HV grid) Current (Battery and HV grid)	
HVIL circuit	Covers and connectors included	Safety lid included
Fuses	High current up to 500 A /800 VDC Low current up to 50 A /800 VDC	Fuse sizing shall be done at integration project with customer
Control system	Epec controller	Optionally functional safety level PLd / Sil 2 compliant controller
Operating condition	In operation -40 °C to +60 °C IP67 and IP69K Max 2000 m	
Size	503 x 370 x 172 mm Aluminum housing	
Output power (continuous)	100- 225 kW	

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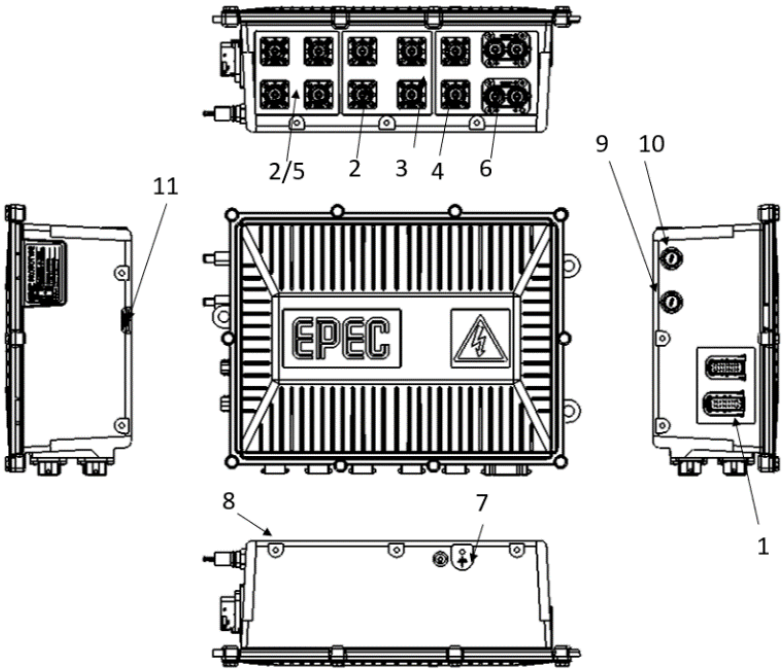
www.epec.fi

https://epec.fi/systems/epec-flow/i

OUTSIDE INTERFACES:

- Signal connector
- Low current component
- On board service charger (max 50A)
- DC charging (max 200A)
- High current component
- Battery connection
- Grounding point, M8 thread
- Mounting screw hole, 8x M8
- Cooling inlet, VDA NW12
- Cooling outlet, VDA NW12
- Gore Vent



CONFIGURABLE OPTIONS

High current connections
Preferred connectors

- Amphenol Powerlok 300 Gen II single & dual
- TE HVP-HD1000
- Cable glands as customized versions

Low current connections
Preferred connectors

- Amphenol ePower Lite (up to 100A)
- Amphenol HSVLS 600
- Amphenol Powerlok 60
- TE HVA 280 / HVA 400

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