

Epec Flow PDU Features



Standard functionalities

Active PDU

- Controllable contactors + integration to control system (CAN: CANopen and/or SAE J1939)
- Overcurrent and short-circuit protection for DC-link and high-voltage cables
- Main contactors on both polarities (positive and negative)
- Pre-charging circuit with high energy impact capability to have controlled balancing of the battery side and DC-link side
- Current measurement before and after main contactors
- Voltage measurements for pre-charging
- Contactors for DC-charging connection or other connection which requires contactor disconnection from the DC-link, optional can be equipped also with pre-charging circuit
- Contactors diagnostics
- Insulation monitoring of the DC-link, can be disconnected while battery insulation monitoring enabled
- Communication via CAN bus to the vehicle or machine control unit
- HVIL signal generation and monitoring (internal and external)
- Temperature monitoring for the busbars

Passive PDU

- Overcurrent and short-circuit protection for DC-link and high-voltage cables
- Insulation monitoring of the DC-link as optionally which can be disconnected while battery insulation monitoring enabled
- HVIL loop



Optional features

PDU Feature	Active PDU	Passive PDU
Amount of High current (60-500 A) connections	Max 4 pcs	Max 9 pcs
Charging	<ul style="list-style-type: none">• DC-charging connection with contactors (Max 500 A)• OnBc charging connection with contactor (Max 50 A)	<ul style="list-style-type: none">• N/A
Amount of low current connections (5-50 A)	Max 5 pcs	Max 5 pcs
Max fuse configurations	800 V: <ul style="list-style-type: none">• 1 x 600 A• 3 x 400 A• 5 x 50 A• Total 9 fuses 1000V: <ul style="list-style-type: none">• 1 x 400 A• 3 x 300 A• 2 x 30 A• Total 6 fuses	800 V: <ul style="list-style-type: none">• 1 x 600 A• 4 x 400 A• 1 x 100 A• 5 x 50 A• Total 11 fuses 1000 V: <ul style="list-style-type: none">• 2 x 400 A• 3 x 300 A• 1 x 100 A• 2 x 30 A• Total 8 fuses
Connector types	See preferred below	See preferred below
Insulation resistance monitoring	CAN	
1 x low current contactor (max 50 A)	N/A	Optional

Epec Flow PDU Features



Configurable parameters (Active PDU)

- CAN bus comply to CANopen or SAE J1939 (protocol set as product variant)
- Epec MultiTool Diagnoser software can be used for the configuration parameter setup
- Customer configurable parameters:
- CAN bus node-ID
- System voltage limits (min / max)
- System current high limit
- Overcurrent handling (open contactors or alarm)
- Insulation resistance fault limit value
- Insulation resistance fault situation handling (open contactors or just alarm)
- DC-link pre-charge time
- DC-link pre-charge voltage difference
- OnBc pre-charge time, if enabled on variant
- NMT startup (PDU wakeup management)

Connectors

Connectors preferred by Epec:

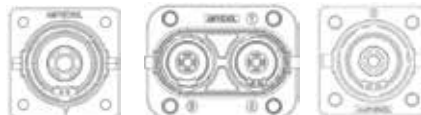
- Powerlok 300 Gen 2 for all over 60 A connections (single and dual type according the layout proposal)
- Only straight plug models supported
- Powerlok 500 for over 300 A continuous current
- Only straight plug models supported
- Powerlok 60 gen 2
- Hirschman HPS40-2-2 for multicore cables
- Signal connector passive: TE HDSCS 8 pin (code A)
- Connecting plug type example: TE 1-1418479-1
- Signal connector active: TE HDSCS 12 pin (code A)
- Connecting plug type example: TE 1-1703639-1
- Cooling connection
- VDA NW12 quick connectors in use at both PDUs



For more information about Epec PDUs, visit epec.fi

High current connectors

Powerlok 500 single Powerlok 300 dual (Only for active PDU) Powerlok 300 single



Medium current connectors

HVSL 600



Low current connectors

Powerlok PL60 HPS40-2-2 GT C91



Low voltage connectors

HDSCS 12 pin

Active PDU



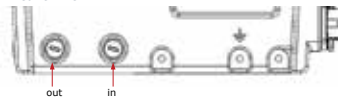
HDSCS 7 pin

Passive PDU

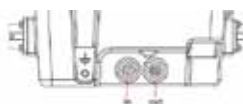


Cooling connector

Active PDU:



Passive PDU:



Spigot male: VDA NW12



Hose barb connector example: NORMAQUICK 07026009012

