

## FLEX power distribution unit for electric commercial vehicles

### Advanced and modular PDU solution

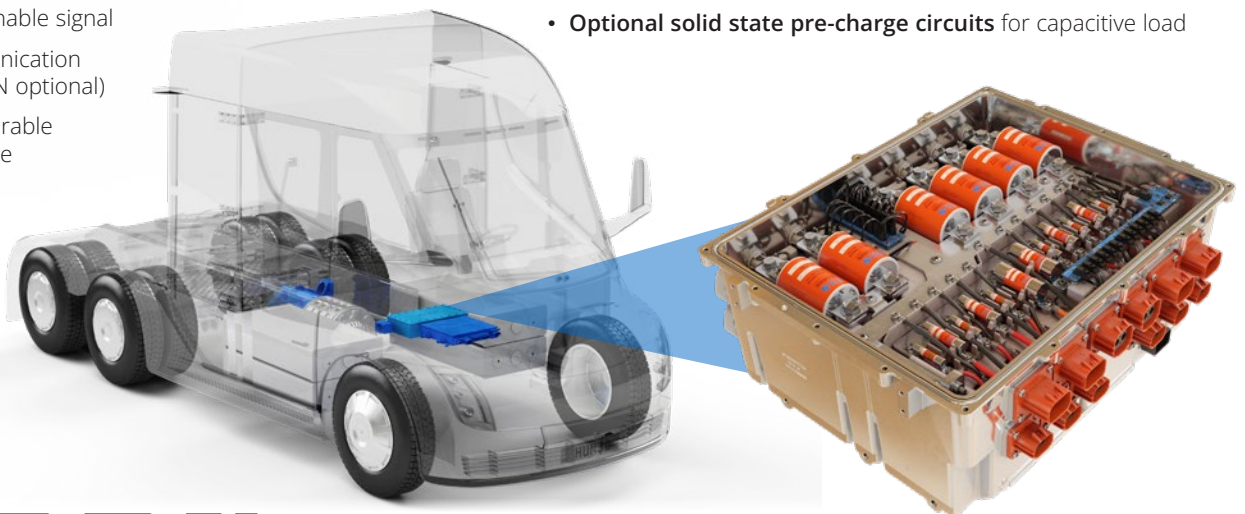
The next generation high-voltage intelligent FLEX power distribution unit (PDU) monitors and manages all power distributed to power electronics and provides central protection for the electrical system for electric commercial vehicles.

### Features:

Sealed from the elements

- Converter enable signal
- CAN communication (isolated CAN optional)
- Field configurable parallel mode

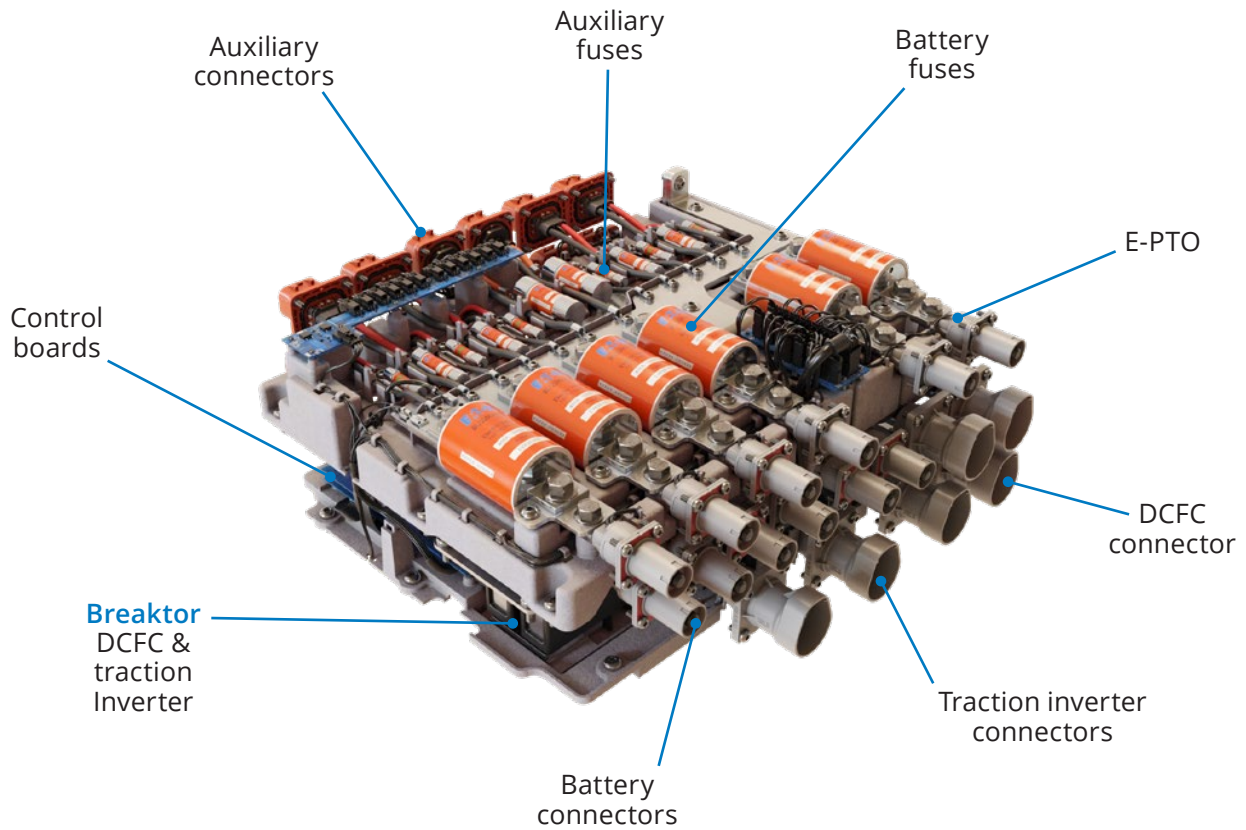
- **Flexible and modular architecture** allows for a customized solution for a range of vehicle variants, shortening development time
- **Software integration** into FLEX PDU for complete programmable control of system components via Controller Area Network (CAN)
- **Integrated over-current protection** between Eaton Bussmann® series fuses for auxiliary loads and Breaktor® for high power loads including traction inverters and DC fast charge
- Architecture accommodates up to **6 battery pack inputs, over 12 output loads and 2 high current loads protected by Breaktor**
- Dedicated Breaktor controlled input for up to **350kW DC fast charging**
- **Featuring integrated Eaton components** including connection systems, terminals and busbars for improved power density
- **Optional ground fault detection** for load circuits
- **Optional solid state pre-charge circuits** for capacitive load



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# FLEX PDU key features



## Intelligent integration



### Breaktor circuit protection

Advanced switching and protection function in one unit, with consistent reaction time and no fatigue



### Busmann series fuses

Tailored protection solutions that feature market-leading compact and high-speed designs, with lifetime durability simulation capabilities



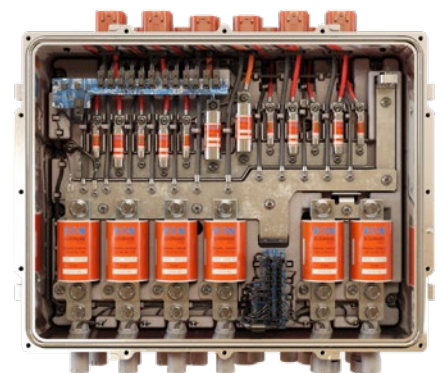
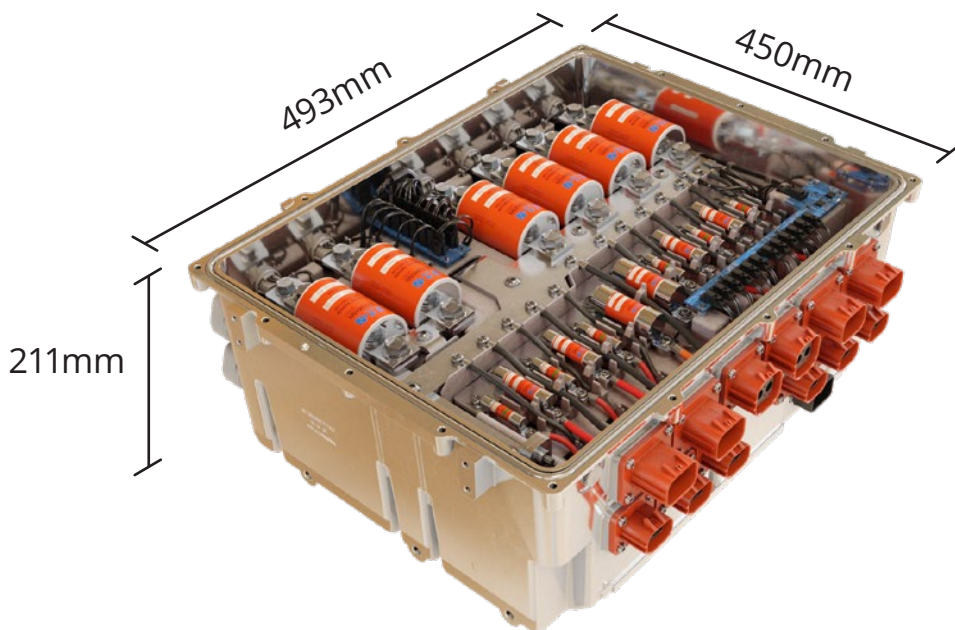
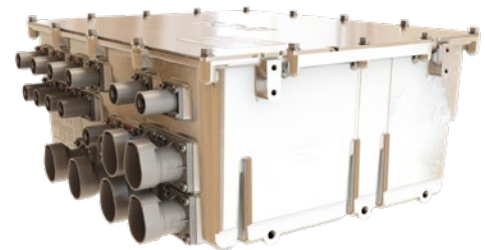
### Connectors

High-precision connector technologies increase efficiency and safety in power distribution, improving total systems cost and reliability through better assembly and ergonomics



## FLEX PDU features & dimensions

- Control system with CAN communication (SAE J1939)
- Voltage, Current and Temperature sensing
- Multiplex pre-charge circuits
- Active discharge
- HV Isolation monitoring
- HVIL



# FLEX PDU specifications

Parameter	Min.	Max.	Unit	Notes & Conditions
Operating input voltage HV	0	900	VDC	850V up to 5531m altitude , 900V up to 2000m altitude
Operating input voltage LV	10	32	VDC	
Input reverse polarity protection				Yes
Active & passive discharge				Yes
Active precharge				Yes
Operating output current on Breaktors channels	350 (cont.)	500	A	Max current for 10 min at 60C
HVIL				Yes
Battery fuse configurability				Compatible with EVK30, EVK40 and EVK50 Eaton Bussmann family
Aux Fuse				Per different interface EVK10 or EVK14 or EVK22
Short circuit current protection		25	kA	With EVK fuse family and Breaktor
Reverse polarity				Yes
<b>Other Characteristics</b>				
External ambient temperature	-40	85	C	
Current sensing range (traction inverter, DCFC)	-1500	+1500	A	Accuracy +/- 3%
Current sensing range (aux)	-500	+500	A	Accuracy +/- 3%
Voltage	200	900	V	Accuracy +/- 1%
Temperature	-30	150	C	Accuracy +/- 5K
Crash signal				Yes
CAN communication				J1939, providing status, reporting, control and diagnostic
Isolation detection				Yes, upstream and downstream
Breaktor Control				via CAN
Vibration Compliant with ISO 16750-3				Yes

Learn more at [Eaton.com/eMobility](https://www.eaton.com/eMobility)

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 Printed in USA  
 Publication No. EMOB0038  
 June 2023

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