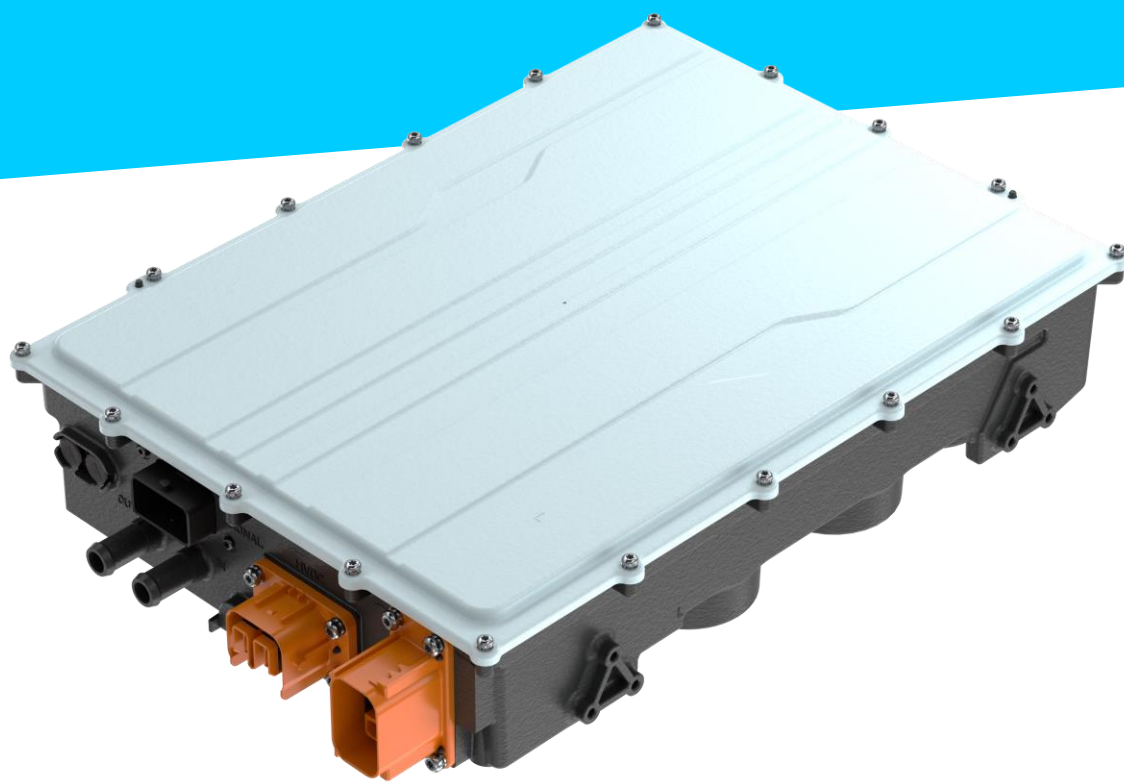


eLION Onboard Charger EOBC1

Heavy duty design for off-highway applications



Specifically designed for the off-highway market, Bosch Rexroth has developed its eLION solution portfolio to be robust and scalable with an integrated functional safety. It fulfills demanding customer requirements for enhanced productivity and performance, as well as improved efficiency and reduced exhaust emissions. With an already strong position as an engineering partner in the hydraulic world, Bosch Rexroth has a strong position with off-highway vehicle manufacturers. The eLION portfolio provides easily integrated electric solutions for various functions in off-highway vehicles, whether they be diesel-electric, hybrid, or fully-electric.

CUSTOMER BENEFITS

- Integrated AC and DC charging communication
- Robust design to endure off-highway conditions
- Safety functions according to ISO 13849 and 25119
- Easy integration with single-sided connection
- CAN J1939 communication
- 1-phase or 3-phase grid operation

FUNCTION AND BENEFITS

Integrated AC and DC charging communication

To allow operation with various charging infrastructures, the eLION onboard charger provides interfaces for AC and DC charging. The AC communication is according to standards: IEC-61851, SAE-J1772, GB/T 18487.1 and the DC communication is according to ISO 15118 and DIN Spec 70121. In addition, the onboard charger is capable of inlet management (e.g., temperature monitoring, locking actuator, and LED control).

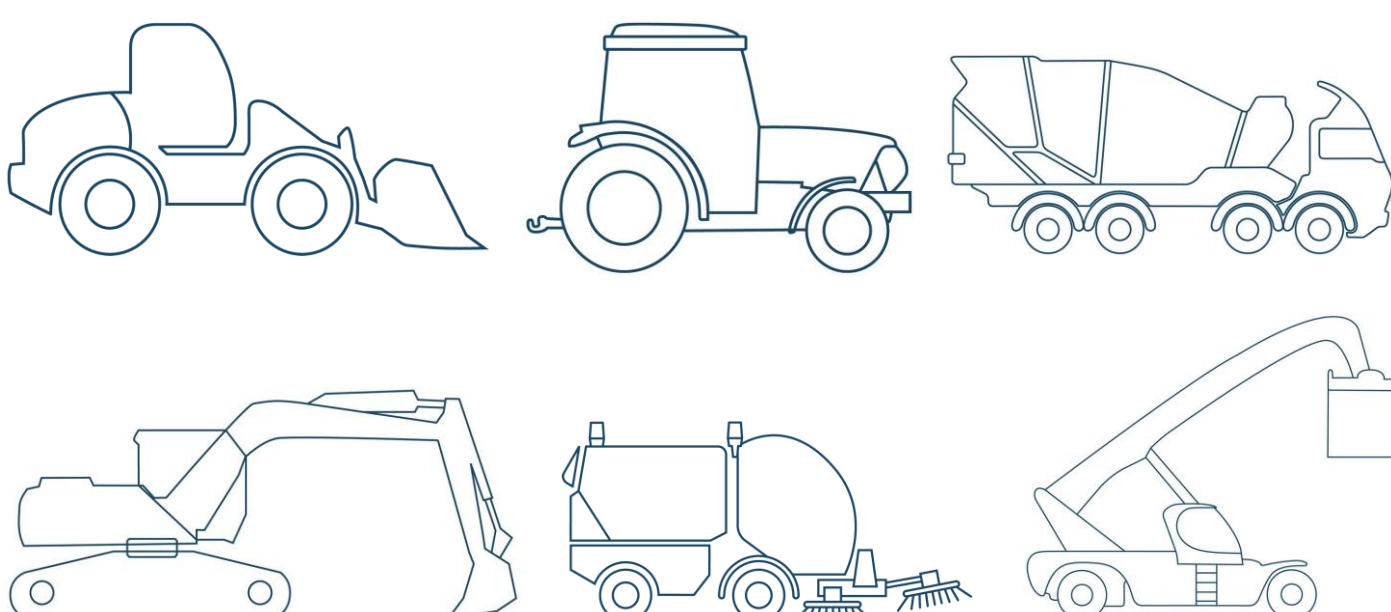
Robust design to endure off-highway conditions

With a protection rating of up to IP6K7 and IP6K9K according to ISO 20653, the eLION onboard charger can withstand harsh environments, which off-highway vehicles are exposed to. In addition, the onboard charger operates reliably between ambient temperature ranges of -40 °C to +85 °C.

Safety functions according to ISO 13849 and 25119

To ensure safety on the entire vehicle, all eLION components are equipped with functional safety in accordance with ISO 13849 and ISO 25119 and are rated up to PL c on the system level. The functions provided include charging plug monitoring, emergency shutdown, input and output overcurrent, output overvoltage, and overtemperature protection.

APPLICATIONS



TECHNICAL DATA

eLION Onboard Charger EOBC1	
Maximum input power:	19.2 & 22.1 kW
Input voltage range:	80 ... 285 V _{RMS}
Maximum input current:	80 & 32(per phase) A _{RMS}
LV Supply voltage:	9 ... 32 V _{DC}
Output current:	36 A _{DC}
Output voltage range:	450 ... 860 V _{DC}
Efficiency:	up to 95%
Coolant flow rate (@65 °C):	10 L/min
Pressure drop (@ 10 L/min & 65 °C):	< 100 mbar
Data sheet:	RE96780

Easy integration with single-sided connection

To ensure easy integration, the eLION onboard charger is designed with a high-power density and all connectors on one side of the housing. In addition, the connectors are designed using the poka-yoke principle and with an integrated high voltage interlock (HVIL) system with passive detection.

CAN J1939 communication

As a communication bus system designed for off-highway applications, the CAN J1939 (CAN 2.0) complements the eLION onboard charger with its integrated UDS services. The system creates efficient communication and diagnostic channels between components.

1-phase or 3-phase grid operation

The onboard chargers have been designed to operate on grids with 1-phase (e.g., USA) and 3-phases (e.g., EU). Available in stand-alone (communication to EVSE) or slave configuration (no EVSE communication). Both variants can operate in parallel with up to four devices in battery charging or voltage control mode. DC contactor actuation control is integrated as a standard feature.

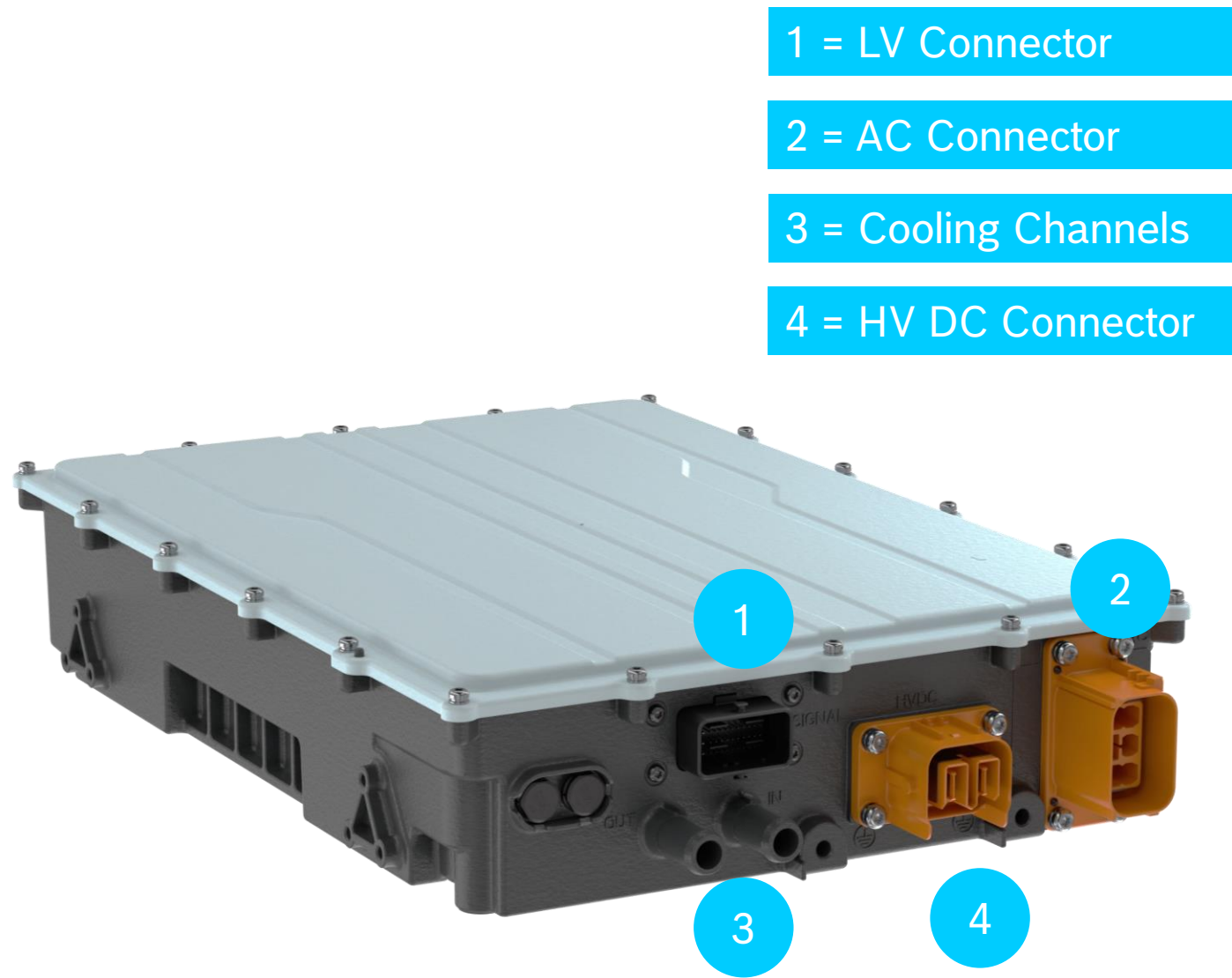


Image: EOBC1 Onboard Charger Connection Interfaces