

# eLION Inverter EDS1

Heavy duty design for off-highway applications

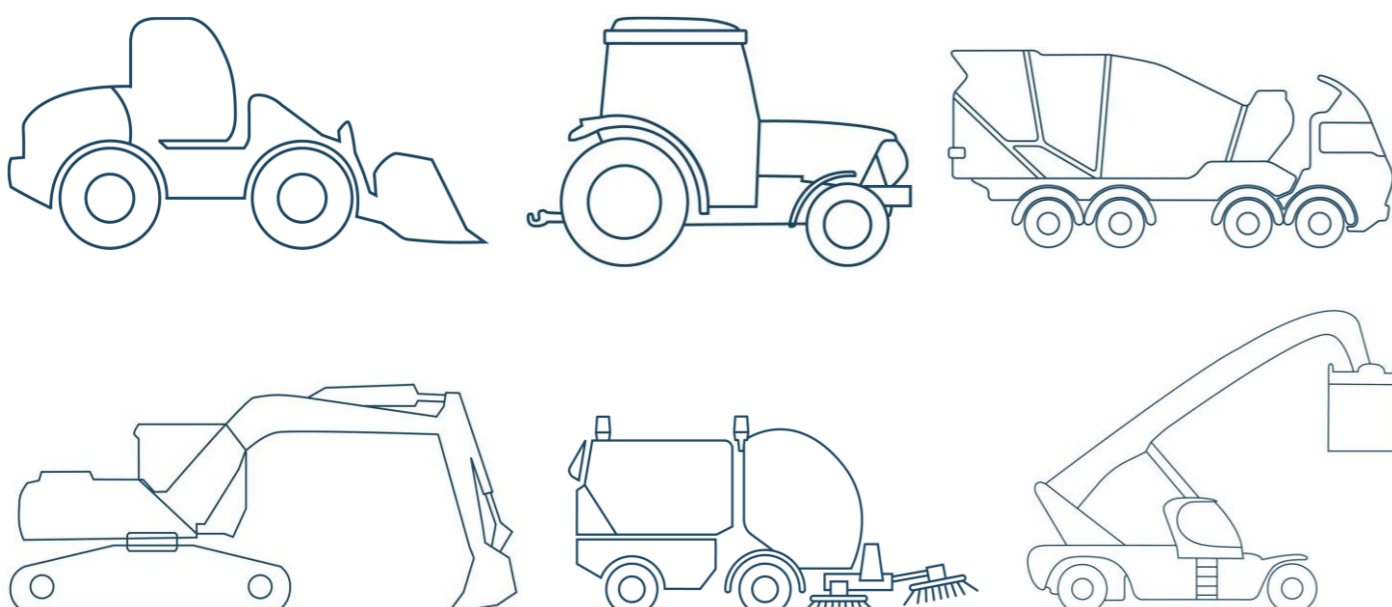


Specifically designed for the off-highway market, Bosch Rexroth has developed its eLION solution portfolio to be robust and scalable with an integrated functional safety. It fulfills demanding customer requirements for enhanced productivity and performance, as well as improved efficiency and reduced 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

- Robust design to endure off-highway conditions
- CAN J1939 communication
- Quick connectors for simplified assembly
- High overload capability
- Safety functions according to ISO 13849, 25119 and 19014
- Sustainable mobile machine solutions and designs

## APPLICATIONS



## FUNCTION AND BENEFITS

### Robust design to endure off-highway conditions

To withstand the harsh off-highway environments, the eLION inverter has a rating of up to IP6K9K, protecting it against 50 g shock and 6.0 g vibration. In addition, the inverter has been designed with functional safety according to ISO 13849, ISO 25119 and ISO 19014 up to PL d to ensure safety on the entire machine.

### CAN J1939 communication

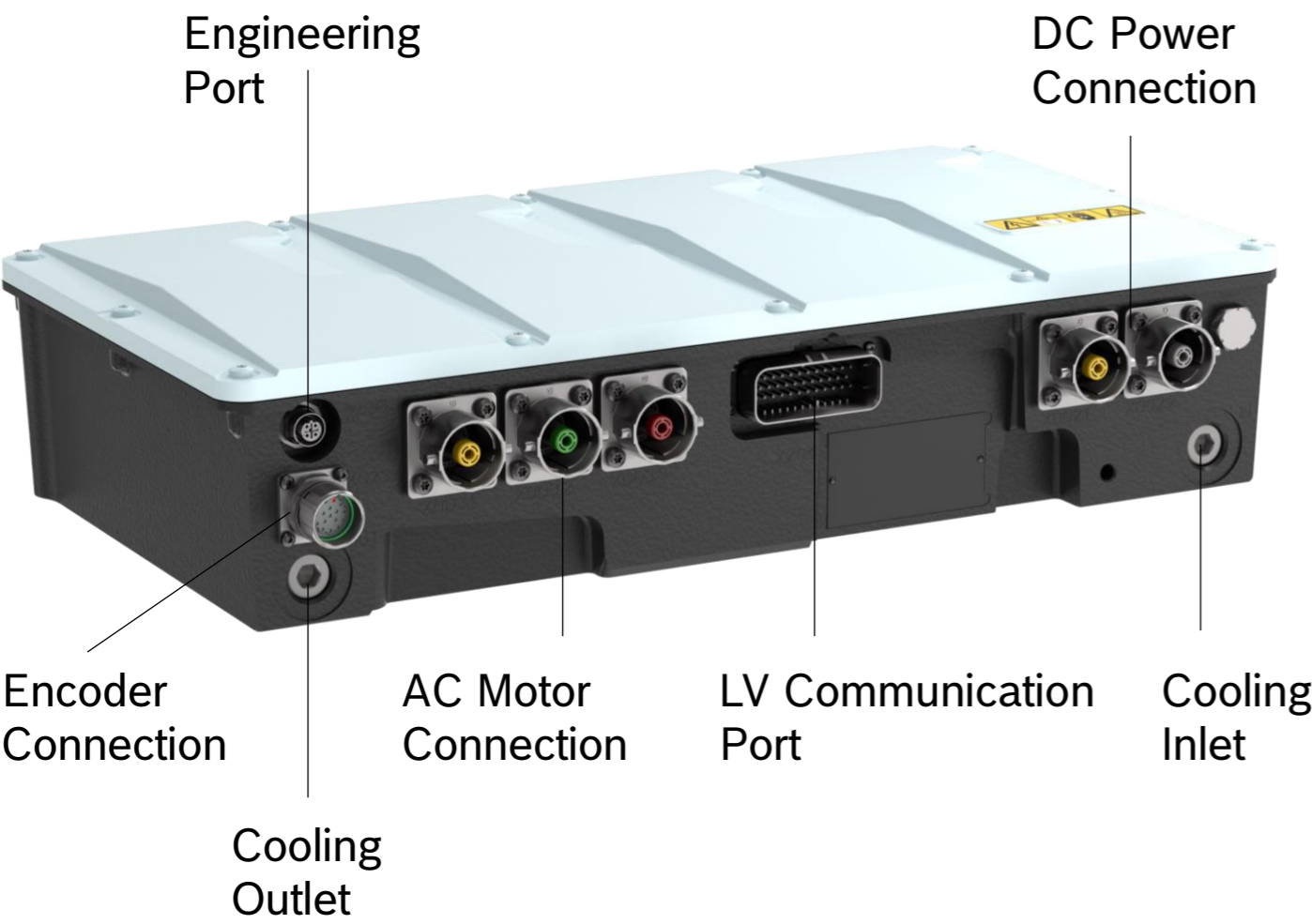
The eLION solution portfolio uses the CAN J1939 (CAN 2.0) communication bus, designed for off-highway applications with integrated UDS services. The system creates efficient communication and diagnostic channels between components.

### Quick connectors for simplified assembly

To guarantee correct and efficient cable connection to the power and control interfaces, the Rexroth eLION inverter is complemented with quick connectors. All interfaces are therefore supported by a quick-locking connector, possible as a straight or right angle. In addition, the 1-pole connectors consist of a color-coded poka-yoke principle.

TECHNICAL DATA

| eLION Inverter EDS1          |                             |
|------------------------------|-----------------------------|
| Operating voltage range:     | 270 ... 800 V <sub>DC</sub> |
| Nominal current:             | 80, 160, 300 A              |
| Peak current @ 10 s:         | 200, 400, 600 A             |
| Peak current @ 60 s:         | 160, 320, 450 A             |
| Motor power:                 | up to 200 kW                |
| Cooling:                     | 50:50 Water-Gylcol Mixture  |
| Coolant flow rate (@ 65 °C): | 20 L/min                    |
| Data sheet:                  | RE96750                     |



EDS1 Inverter Connection Interfaces

High overload capability

The eLION inverter has an overload capability of up to 2.5 times the nominal operating current, which is in line with the capabilities of the eLION motor. This is accomplished by the selection of high-performance components together with an advanced cooling concept.

Safety functions according to ISO 13849, 25119 and 19014

Functional safety technology, specifically designed for off-highway vehicles, is integrated into the eLION inverter. The safety functions are in accordance with ISO 13849, 25119 and 19014 and allow machine safety functions of up to PL d. Provided functions are Safe Torque Off, Safe Communication, Safe (actual) Speed, Safe (actual) Torque, as well as numerous safety monitoring functions. In addition, an active motor phase short circuit is applied to the design to protect against overvoltage, as well as high-voltage interlocks to protect against disconnected power cables.

Sustainable mobile machine solutions and designs

Bosch Rexroth contributes mobile machine solutions, which offer a substantial reduction of emissions, or even zero local emissions with an overall reduced machine noise. In addition, these sustainable solutions enhance the efficiency and performance of the machine through precise control and electrification of machine systems, such as traction or implements.