



Telehandler electrified by Bosch Rexroth.

## The powerful way to electrify

**Construction and agricultural machines should be more environmentally friendly and, ideally, more productive. Bosch Rexroth supports electrification with eLION, its modular and scalable high-voltage platform.**

The objective is clear: every machine that is electrified should help to protect the environment. While 'why' is easy to answer, 'how' poses more challenges. Vehicle manufacturers who would like to electrify their off-highway machines economically need modular and scalable solutions. Bosch Rexroth caters for their needs with a complete portfolio of high-voltage solutions.

### WELL-SCALED HIGH-VOLTAGE PLATFORM

The individual components for the eLION electrification platform include not only cutting edge high-voltage motors and inverters but also other high-performance components along with gear technology, hydraulics and software. In order to offer maximum design freedom

when electrifying existing and new vehicle architectures, the drives cover a wide rated power range from 20 to 230kW with maximum torques of over 2500Nm. Four sizes in different lengths, various motor windings, and high-speed and low-speed variants give manufacturers a choice of over 80 configurations.

The eLION electrification platform combines uncompromising robustness with a high degree of functionality. In addition to Bosch Rexroth's in-house experience with electrical industrial solutions, it also benefits from its sector knowledge of mobile machines and Bosch's many years of expertise in the field of electromobility.

## IMPERMEABLE

All eLION motor inverters meet IP6K9K impermeability requirements. The temperature range is from -40°C to 85°C with an upper temperature limit of 100°C for the motors, which can also act as permanent generators. The shock and vibration resistance of the eLION components is up to 50g shock and 10g vibration. Manufacturers and users also benefit from a range of inverter safety functions in accordance with ISO 13849.



*Bosch Rexroth's eLION electrification platform includes high-voltage motors and inverters.*

To complement the wide range of motors, the inverters are available in graduated power classes of up to 300 A continuous current. The overload for a 10-second peak current and 450A for 60 seconds. In addition, the eLION inverters support DC link voltages from 270 to 850V. Gearboxes for wheel and central drives which are also included in the portfolio allow compact drive units with a high-power density. Bosch Rexroth also provides BODAS (Bosch Rexroth Digital Application Solutions) software and suitable hydraulic components for the entire eLION platform.

## PARTNERSHIP WITH BRUSA

The more components sourced from a single supplier, the more integrated the solutions and efficient processes in development, production, and service. The eLION platform therefore takes into account additional electrification components too: DC/DC converters, on-board charging devices and high-voltage cables are used to create standardized solutions for independent drive types.

The DC/DC converters and on-board charging devices developed in partnership with Brusa HyPower are a new addition to the eLION portfolio. The eLION DC/DC converter with a high-power density of 12kW/l achieves an efficiency level of almost 99%. The compact 22kW on-board charging device can be integrated flexibly into various vehicles and achieves a maximum charging current of 35 A with an efficiency level of 94% (three-phase). It allows DC as well as AC charging.

## FEWER EMISSIONS, MORE POWER

The eLION high-voltage portfolio enables off-highway manufacturers to meet pressing market demands for increased power and reduced exhaust emissions. Bosch Rexroth makes this possible with the finely graduated, finely tuned electrified eLION solution platform. Manufacturers can thus electrify all driving, working and auxiliary functions regardless of the drive type – whether diesel-electric, hybrid or all-electric – while reducing noise emissions and downtimes. This ultimately results in greater productivity and availability as well as a strengthened competitive position.

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