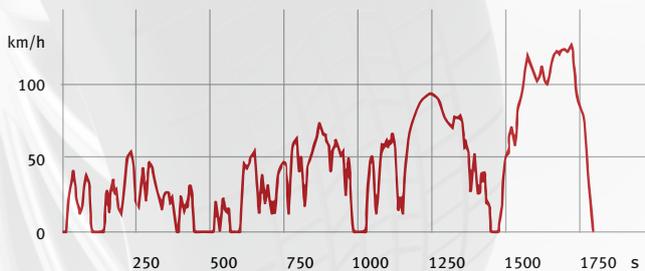


ROTOR POSITION ENCODER

for modern electric motors
in cars, lorries and buses

Since 01.09.2018 all vehicles in Europe have been tested according to the new rules of the WLTP driving cycle; the intention is to make the energy consumption more transparent. The WLTP driving cycle is orientated on real operation with frequent starts and stops.

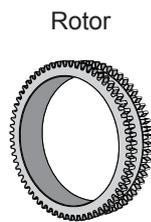


Driving cycle for the "Worldwide Harmonised Light Vehicles Test Procedure" (WLTP)

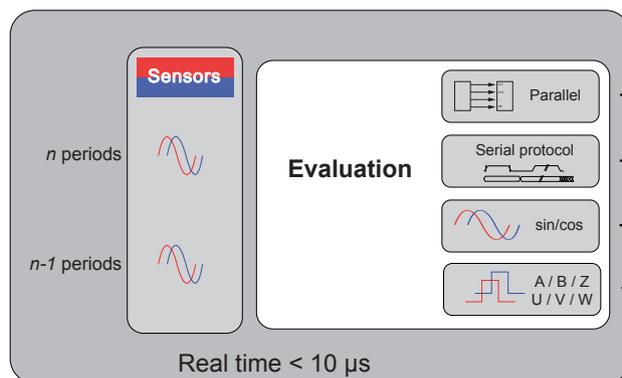
Electric motors are intended to provide full torque from standstill in this application. However, if control is inefficient, wear is increased and the energy consumption is higher. Modern motor control systems are therefore necessary to optimise the power consumption for different load requirements. These control systems require the rotor position and the speed of the rotor with high accuracy and a short reaction time.

This is the job of rotor position encoders from Lenord + Bauer. These encoders acquire both the rotor position and the speed. The contactlessly operating encoders impress due to their compact, bearingless design and provide the necessary data to control the motor as a robust feedback system. You can increase the **efficiency** of the drive and increase the **range** of the vehicle with our system.

Measuring scale



Encoder kit



Optional output

- D0 ... Dxx
- Absolute (position)
SPI, SSI, BiSS, CAN-FD, etc.
- Analogue (rotational speed)
- Incremental (rotational speed)

ROTOR POSITION ENCODER

Innovative rotor position and rotational speed acquisition

Our robust, high-resolution encoders have been setting the standards worldwide in traction control systems in rail vehicles for 30 years. For more than 15 years our encoder kits have proven themselves in more than one million high-frequency spindles with motors that operate with rotational speeds of up to 100,000 revs/min.

Our solutions for determining the rotor position and speed of drive motors in electric vehicles with high resolution are based on these technologies. These solutions are physically compatible with common systems such as resolvers and magnet wheel encoders.

Our systems offer the highest accuracy and impress with their ability to react in real time. Together with a modern motor control system, higher efficiency and greater vehicle range can be achieved with the same battery capacity.

With the aid of rapid prototyping we can quickly supply you with demonstrators or samples for your application. In this way you can test our solution on your motor test stand in advance.



Rotor and encoder design as internal rotor with radial scanning, axial scanning and external rotor are possible.

Typical encoder data ⁽¹⁾

- › Pole position < 0.5° electrical
- › Maximum speed up to 50,000 revs/min
- › Resolution up to 65536 pulses/turn
or 32 - 512 sin/cos periods/turn
- › Temperature range -40 °C to +150 °C
- › Air gap ~ 0.5 mm ± 0.2 mm
- › Robust to mechanical tolerances
- › No effect on the measuring system due to magnetic brakes or motor winding
- › Scalable for multi-pole motors

(1) The encoder data is dependent on the customer application
The values stated indicate possible limits and are not assured product characteristics!

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