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## **Absolute encoder kit for acquiring the rotor position in motors**

### **Single turn encoder for modern drives**

If the torque of synchronous and servomotors is to be controlled, the exact rotor position must be acquired. For this application Lenord + Bauer has developed a single turn encoder kit with an additional signal for speed acquisition. After installation, the system is configured using a testing and programming unit and adjusted to the installation situation.

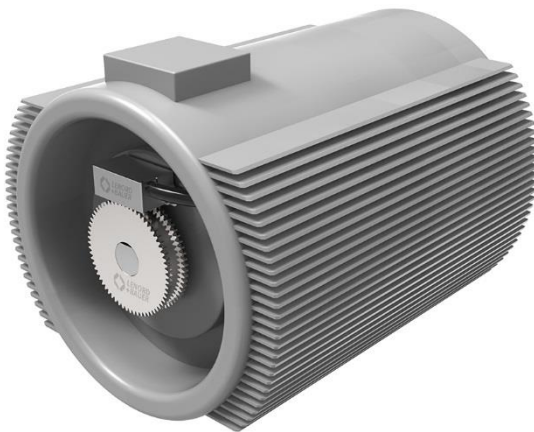
Controlling the torque of synchronous and servomotors entails acquiring the exact rotor position. On the rotor of these drives there are permanent magnets whose absolute position must be acquired at least over one pole pair range. Lenord, Bauer & Co. GmbH has developed the GEL 2800 single turn encoder kit with additional incremental output for this application. The vernier measuring system of the specialist in motion sensors and integrated drive technology consists of a scanning unit and a two-track target wheel that is mounted directly on the drive shaft. The sensor system scans the two wheel tracks of 64 and 63 teeth contactlessly and delivers two corresponding sinusoidal signals. Through interpolation, the system achieves an overall resolution of 18 bits.

The position data is transmitted by means of a serial interface. In addition, the encoder kit outputs two 90° phase-offset square-wave signals for speed acquisition. The system is adjusted to the control system and the application via parameters such as interpolation and division factor by means of a testing and programming unit. This device automatically recognises the encoder kit and supports the personnel in the configuration and commissioning of the measuring system. For commissioning, the system is connected to the testing and programming unit. It exchanges the data with a tablet or PC via WLAN or

2,611 characters incl. blanks

Ethernet. The data is presented in a web browser regardless of the operating system.

After installation, the scanning unit and target wheel are calibrated in the current installation situation. During this process the system compensates mechanical tolerances. The encoder corrects slight deviations in the air gap by adjusting the signal. In the consistency test, the device checks whether the output signal of the encoder kit provides only increasing or decreasing position values with the same direction of rotation. All tests are performed and the results displayed in the graphic user interface of the web browser. The service technician can document the work by saving the data in a report. This allows the measuring system to be checked fully and documented on site.



*Figure 1: Motor with mounted rotor position sensor*

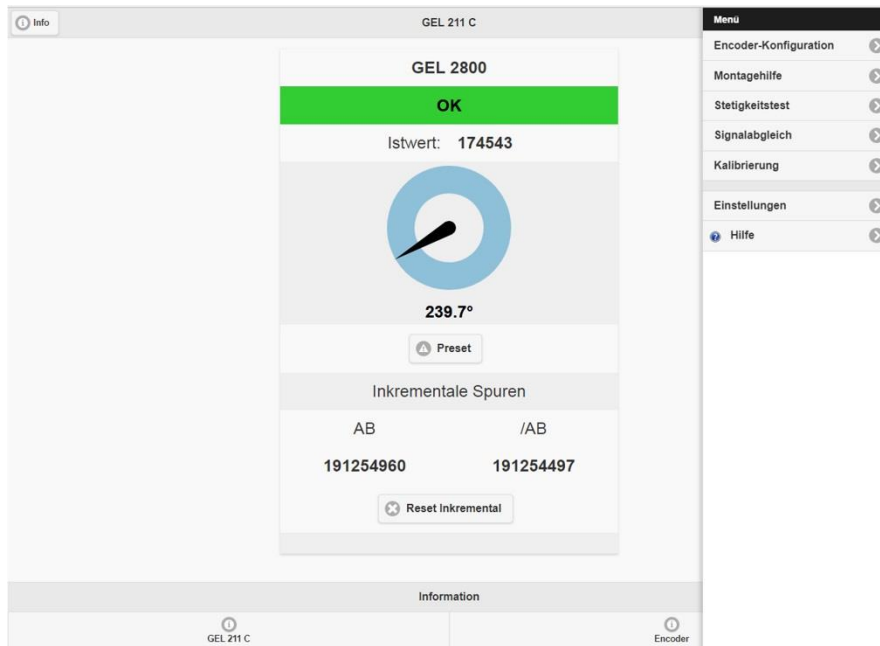


Figure 2: Display of the actual position of the single turn encoder kit in the web browser



Figure 3: Mounting aid in the web browser: If all displays are in the green range, the sensor is fitted correctly

**About Lenord + Bauer:**

We are an international specialist in the field of motion sensors and integrated drive technology. We develop, produce and distribute technology-leading solutions for the mobility and machinery sectors. Our activities are focused on railway rolling stock, machine tools and packaging machines.

Our customers have been benefiting from our considerable technical consultancy skills and expertise in customer applications for more than 50 years.

Lenord + Bauer is certified according to DIN EN ISO 9001 and 14001, as well as IRIS.