CAN *Newsletter Online*

NON-CONTACT TORQUE SENSOR

Measurements down to 0,5 Nm

NCTE, German sensor manufacturer, has expanded its 2300 torque sensor series. It is based on magnetostriction for applications with low torques. The added variant is suitable for torque-range measurement tasks down to 0,5 Nm. CAN is available as an output.

0,5 Nm sensor of the 2300 series (Source: NCTE)

The series measures dynamic and static torques from 100 Nm to 0,5 Nm for bandwidths up to 1000 Hz. Accuracy is 0,5 % for speeds up to 10 000 minutes^{-1} (rotations per minute). The sensors are used, for example, to control machine tools, to measure the efficiency in electric motors over a long period of time, or to detect load peaks and vibrations in a test setup, explained the company.

For its torque sensors, NCTE uses the principle of magnetostriction. In a patented process, the shaft is magnetically-encoded so that the sensors measure mechanical forces without contact. This magnetic coding is long-term stable (remanent), added the company. A separate discrete primary sensor is not necessary. To ensure that the technology works even when there are influences from external magnetic fields such as EMC (electromagnetic compatibility) interference, two magnetic fields are always generated in opposite magnetic orientation. The solution works with very low field strengths, the component itself does not become a magnet, further explained the company.

Non-contact measurement is provided. Data is acquired in real time. The sensors function even in the presence of strong vibrations, under water, or in an oil bath. The operating temperature ranges from -30 °C to +85 °C. The analog outputs 0 V to 10 V as well as 4 mA to 20 mA, CAN, or USB are available as signal outputs for the 2300 series. No external measuring amplifier is necessary (plug-and-play). Each sensor has a protection class of at least IP50. The series includes a 5-m cable and calibration certificate available from stock.

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