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NEW WIRELESS TORQUE TECHNOLOGY



Sensor Technology has launched a new range of non-contact torque sensors based on a full four element strain gauge bridge design, complementing its existing non-contact sensors that use surface acoustic wave (SAW) detection.

Designated the TorqSense SGR510/520 series, the new units have a 250% overrange reading capacity, allowing sudden spikes in torque to be

measured and recorded accurately. The design also compensates for any extraneous forces, such as bending moments, inadvertently applied to the sensor, improves sensitivity and has a wide temperature tolerance.

The bridge is essentially four strain gauges glued onto the shaft that is to be monitored in a square formation set at 45deg to the axis of rotation. Thus, when torque is applied to the shaft, two gauges are stretched into tension and two go into compression. A rotor mounted ultra-miniature microcontroller, powered by an inductive coil, measures the differential values in each strain gauge and transmits them back to the stator digitally, via the same coil. The robust SGR510/520 series transducers then use state of the art strain gauge signal conditioning techniques to provide a high bandwidth, low cost torque measuring solution with high overrange and overload capabilities. This design gives it several significant advantages over conventional torque sensors.

The measuring range of the SGR series is 1Nm to 500Nm (with models up to 13000Nm available shortly), accurate to $\pm 0.1\%$ and with a resolution to $\pm 0.01\%$ of the transducer's full scale. The digital transmission between rotor and stator cuts out all cyclic fluctuation of the signal due to shaft rotation and generates a digital sample rate of 4000 samples per second.

Sensor Technology

www.sensors.co.uk/DS0521

TORQ SENSE

Rotary Torque Transducers

- 10mNm up to 13,000Nm
- Analog & Digital Outputs
- $\pm 0.1\%$ Accuracy
- Non-contact digital strain gauge torque measurement



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Tel: +44 (0)1860 238400

Web: www.sensors.co.uk/dso0521