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 per cent 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 45° 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 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.

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