Wireless Torque Sensor Cuts out Slip Rings

Machine designers are expected to make a beeline to Sensor Technology's stand at the Sensors & Instrumentation Exhibition, NEC, Birmingham to see a wireless technology for measuring power in drive shafts and other rotating machine elements.

The company's TorqSense Rotary Torque Sensors are unlike traditional slip ring transducers, using a simple non-contact radio link for collecting real-time torque signals. This means that machine builders and control engineers can do away with expensive and temperamental slip rings – instead, simply mounting the sensors and checking the radio connection.

In a SAW sensor, the surface waves are produced by passing an alternating voltage across the terminals of two interleaved comb-shaped arrays, laid onto one end of a piezoelectric substrate. A receiving array at the other end of the transducer converts the wave into an electric signal.

The frequency of the oscillation used is typically 200MHz. The frequency-basis of the TorqSense concept gives a wide bandwidth and the susceptibility to electronic interference, common with other analogue-based techniques such as inductive devices, is eliminated.

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