

Torque Sensors



SENSING AND CONTROL

Surface Acoustic Wave (SAW) Sensing Technology

Honeywell

Torque Sensor Technology

Surface Acoustic Wave (SAW) Torque Sensing is an emerging technology for automotive, transportation, rail and other similar segments for use in powertrain and chassis applications. Significant research and development efforts have provided Honeywell with the technology and design approach to mass-produce SAW torque sensors at a cost-effective price. Engine, transmission, driveline and chassis designers can now choose Honeywell's sensors to gain that competitive edge with improved vehicle safety, performance and economy.

Honeywell SAW devices are resonators whose resonant frequency changes when they are strained. Working at radio frequencies, devices can be wirelessly excited with an interrogation pulse and a resonant frequency response measured allowing strain to be calculated. Torque can be sensed by using appropriate packaging and algorithms to deduce value of sensed property from returned signal.

Why SAW Torque Sensors?

High Performance. System Cost Reduction. And More.

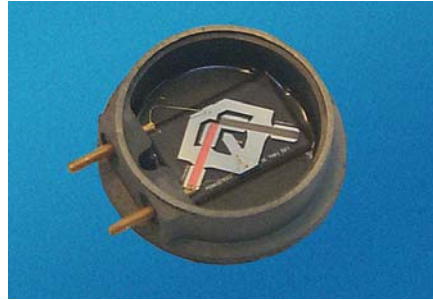
Features

- Battery-less, wireless operation
- Nominal resonant frequency 433MHz
- High measurement bandwidth up to 1 kHz
- Small, light weight design
- High accuracy and resolution
- Immunity to electromagnetic interference
- High temperature operation up to 150°C
- Robust packaging, durable design
- Operates in harsh environments
- Long term stability
- Established manufacturing processes

Automation and Control Solutions

Sensing and Control
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Double SAW Torque Device



Honeywell SAW Torque Sensors provide an unprecedented level of powertrain and chassis performance, reducing the total qualification and system costs required to achieve optimal vehicle performance.

Why Choose Honeywell Sensors?

You Get Unique Features and Benefits with Honeywell (SAW) Torque Sensors:

Benefits

- Flexible package design allows for easy integration with current system designs
- Varied sensor mounting locations and applications:
 - Input and output shaft (transmission)
 - Transmission components
 - Clutch pack monitoring
 - Crankshaft and engine components
 - Driveline (4WD and AWD)
 - Steering and chassis systems
- Improved vehicle performance and economy
- Improved vehicle safety (driveline management)
- Optimization of powertrain management
- Capability to incorporate speed sensing (Torque x Speed = "Power Modules")
- Compatible with Honeywell tire pressure sensors for integrated chassis systems
- Honeywell system uses patent protected methodology for sensing and reading/interrogation.

Vehicle manufacturers can rely on Honeywell technology to take that next step in powertrain and chassis performance. Engine, transmission, driveline and chassis processes can be controlled more precisely using Honeywell torque sensors. Complex control algorithm and system development, test, evaluation and qualification time can be significantly reduced with real-time torque sensor measurement. Why not optimize your control systems with torque sensors that can provide feedback for closed-loop control. All of these improvements are possible by using torque sensing technology from Honeywell, your leader in Automotive system-critical sensing applications.

Honeywell Sensing and Control has been leading the way in sensor technology for over 40 years. Our engineers and scientists tap into the vast R&D resources of the Honeywell labs to create products and processes specifically designed to enhance high-volume production environments, like those found in the automotive industry. Technological excellence is a driving force behind Honeywell's stature as a leading controls company, ensuring you leading-edge innovation.

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