

### Pressure transducers

High-accuracy M5100 and U5100 pressure transducers from **Measurement Specialties** are designed for harsh applications requiring long-term stability. Applications include process control, hydraulic and pneumatic systems, pumps, compressors, and agriculture equipment. The M5100, offered for gauge or sealed gauge sensing, features a rugged, vibration-resistant package suited for high-pressure, high-cycle-count applications that can produce fatigue-related failure. The U5100 features an oil-filled stainless steel isolated capsule diaphragm to provide accuracy in applications of less than 150 psi (10 bar). Both transmitters have a CE rating, an application-specific integrated circuit for extended-range temperature compensation, signal conditioning, and output amplification. Various options for ports, connectors, and electrical outputs are available, and the temperature ranges from -20 to +85°C (-4 to +185°F), with extended performance to 125°C (257°F).



### Differential pressure

**Setra Systems** offers the Model 231 Multi-Sense wet-to-wet, differential pressure transducer, suitable for monitoring control pump differential pressures; chiller or boiler differential pressure drops; and flow measurement of gasses or liquids. The single unit design reduces costs by providing users with field-selectable features such as switch-selectable pressure ranges, selectable analog outputs, and unidirectional and bidirectional ranging. An optional LCD display is available for reporting range and output status, and jumpers provide additional features including port swapping. Model 231 is offered in three versions, each with four unidirectional pressure ranges and four bidirectional pressure ranges. The MS1 has ranges from 5 to 50 psi (0.3 to 3.4 bar), the MS2 from 10 to 100 psi (0.7 to 6.9 bar), and the MS3 from 25 to 250 psi (1.7 to 17.2 bar).



### Speed sensors

**Honeywell's** SNDH Series quadrature general industrial speed and direction sensors improve vehicle service by separating the sensor and bearing in electric motor applications, allowing users to service the sensor without removing the bearing from the motor drive. Dual differential Hall-effect integrated circuit (IC) BiCmos technology improves the circuit's accuracy, allowing the sensor to detect speed and direction of small, rotating target features with large air gaps up to 2 mm (0.08 in). The IC packaging technique allows the sensor-to-sensor 90° phase shift accuracy to be repeatable; tolerances are tight, reducing variation in the manufacturing process. Potential applications include industrial and heavy-duty vehicle applications requiring high resolution at wide frequency ranges with large air gaps such as transmissions, hydraulic motors, pumps and gear boxes; steering assembly direction of rotation; replacement for bearings with integrated sensors; and tachometers/counters and encoders.



### High-pressure sensor

**Kavlico's** P5000 hermetically sealed high-pressure sensor uses a thin-film sputtered sensing element to improve accuracy in high-temperature environments.



Available in pressure ranges from 500 to 45,000 psi (34 to 3100 bar), the rugged device offers a 5-V power supply and a stainless steel sensing diaphragm and housing. The sensor can be specified with various electrical and process connections to fit installation requirements. Features include a second-order temperature compensation system, electromagnetic induction/radio-frequency interference, short circuit, reverse polarity, and over-voltage protection. The P5000 is suited for hydraulic systems found on agricultural vehicles such as backhoes and front-end loaders as well as on heavy-duty construction equipment.

### Underwater force/torque sensor

The IP68 Underwater DAQ Sensor from **ATI Industrial Automation** is a force/torque sensor for use in



underwater (freshwater) environments to a maximum depth of 10 m (328 ft). The sensors are used in naval research and other marine applications. They incorporate nitrile and silicone O-rings to assure that no water enters the units. They come in five models.

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**Bearing ring**

A split-ring version of the Aegis SGR Bearing Protection Ring from **Electro Static Technology** is offered in halves for field installation with minimal disassembly of equipment. For variable frequency drive-controlled ac and dc motors, the split ring protects bearings from electrical damage caused by circulating or shaft currents, extending motor life and preventing bearing noise, downtime, and motor repairs. The ring's conductive microfibers perform with little friction or wear and are unaffected by dirt, grease, or other contaminants. Mounting hardware accommodates motor shafts up to 6 in (150 mm) in diameter, with larger rings available.

shaft wear, and improved lip lubrication. The Waveseal series fit shaft diameters from 0.25 to 12.25 in (6 to 310 mm). Suitable applications include gearboxes, speed reducers, transmissions, motors, drive systems, and pumps; customized sealing solutions are available.



**Control monitor**

The Westlock XR linear/rotary control monitor from **Tyco** includes technology to create a baseline signature while in service and provides other features for valve actuation applications. The XR is designed to convey information to process managers in a range of formats and process industries. Alarm logic provides alarms during changes in process conditions, and benefits include diagnostic insight, reduced downtime, and improved operations. Together with the XRa software package, the XR provides valve control, monitoring, and diagnostic information, including performance comparison graphs in real time via a network, local RS232 port, or wireless communication. Other features include a noncontact sensor for positioning control and feedback; encapsulated electronics modules for automated valve package performance information; time- and date-stamped emergency shutdown monitoring and partial stroke testing capabilities; performance analysis; integrated pressure sensors; and a fully encapsulated electronics module.



**Shaft sealing**

**SKF** low-friction Waveseal shaft-sealing solutions feature a molded lip to form a sinusoidal or wave pattern around the shaft surface, improving lubricant retention while pushing dirt away from the surface to protect against contamination. According to the company, the lip generates 25-35% less heat at the contact point, minimizing premature seal failure from heat checking, blistering, hardening, or lubricant breakdown. Other benefits include reduced friction torque or drag, curbed