



Product Digest

this month's topic **Measurement Equipment**

Ultrasonic Sensors Function in Dusty Environments



The BUS line of ultrasonic sensors (Models M30, 18M, and R06K) is designed to measure levels and heights of granules, fluids, and powders in vessels, as well as count and monitor the presence of objects, without making contact. Confounding factors such as particle color, surface finish, transparency, and the presence of dust, dirt, or steam do not affect these versatile instruments, making them appropriate for critical applications. The sensors have detection distances of 20 mm to 8 m, a small blind zone, and a highly precise resolution of up to 0.025 mm. They are available in switching or analog versions.

Balluff, Inc.

www.balluff.com

Analyzer Reduces the Risk of Uncontrolled Combustion



The Thermox WDG-V combustion analyzer reliably and cost-effectively measures oxygen, combustibles, and methane levels in hot, wet fluegas. The addition of this analyzer to a process control system can increase control and safety, as well as reduce the risk of an uncontrolled combustion

event. Cell and detector integrity are verified automatically by the analyzer, which then alerts operators of the services needed to maintain accuracy. The analyzer also provides a low-sample-flow alarm. The Thermox WDG-V is mounted directly to the process flange and is heated to maintain all sample wetted components above the acid dewpoint. Even in heavy-particulate and high-temperature (up to 3,200°F) fluegas streams, this device is a suitable alternative to *in situ* probes.

AMETEK Process Instruments

www.ametekpi.com

Submersible Pressure Sensor Is Corrosion Resistant in Harsh Liquids



Unlike metal sensors that can be highly susceptible to corrosion in harsh environments, the Model AST 4530 liquid level transmitter is constructed of polyvinylidene fluoride (PVDF) with a polytetrafluoroethylene (PTFE) diaphragm, which makes it appropriate for the level measurement of harsh liquids such as slurries, salt water, and oil in vented tanks and containers. Features include a submersible PVDF cable, cord grip, and housing, as well as a conduit connection for turbulent installations such as process plants, saltwater holding tanks, turbulent tanks, and shipping containers. Whereas ultrasonic and radar sensor technologies require an offset in output to account for foaming, reflectivity, lid angle, and wall proximity, these factors have no affect on the pressure sensor. Also, because the transmitter is

vented through the cable to the outside of the tank, vapor and condensation do not disrupt the reading accuracy or survivability.

American Sensor Technologies, Inc.

www.astensors.com

High-Pressure Viscometer Extends Operable Pressure Range

Previously, offshore wells were drilled between 10,000 and 15,000 ft, where pressures top out at 20,000 psi; however, with increased demand, rigs now need to dig to depths of up to 35,000 ft, where pressures can range from 25,000 to 30,000 psi. To adapt to this new standard, VISCOLab PVT — a high-pressure viscometer for oil, gas, and supercritical fluids — has been redesigned with higher-rated valves, tubing, and materials to extend its maximum operating pressure to 30,000 psi. Although the pressure rating has changed, the small sample requirement of 6 mL has been retained. This is crucial because viscosity testing is destructive — once a viscosity test is run, the sample is no longer useful for the numerous other tests that must be conducted.

PAC

www.pacpl.com

Glass Bob Sensor Eliminates the Risk of Bulk Material Contamination

The Smartbob glass bob sensor measures the level of silica sand (*i.e.*, frac sand) stored in bins, tanks, and silos for use in hydraulic fracturing. It is designed to replace traditional steel spike bobs, which, if damaged, can introduce metal contaminants into the sand. The glass bob eliminates this concern, as the glass is made of the same material as the sand. The sensor functions like an automated tape measure: To measure sand level, the bob is dropped toward the materials surface;

when it makes contact, it retracts, and the number of pulses needed for it to return from the sand to the top of the container provides an accurate level measurement. This technology eliminates the need for workers to climb silos and take manual measurements, which increases the safety of the work environment.

BinMaster

www.binmaster.com

App Transfers Data from Measurement Tools to Smartphones



The FlukeConnect app allows maintenance technicians to wirelessly transfer measurement data from their tools to their smartphones, enabling data to be stored on the secure Fluke Cloud and accessed by team members in the field. More than 20 of the manufacturer's tools are compatible with the app, including digital multimeters, infrared cameras, insulation testers, process meters, and specific voltage, current, and temperature meters. With the app's ShareLive video call functionality, technicians can share measurements in real time to get approval for repairs or questions answered without leaving the field. This enhancement in communication and documentation significantly improves workplace safety and efficiency. To simplify troubleshooting and maintenance, the EquipmentLog allows technicians to create a cloud-based history of test measurement data for any piece of equipment. The TrendIt func-

tion also helps aid troubleshooting and maintenance by enabling a technician to instantly graph data to help identify trends and make quick and informed decisions. The app, which incorporates state-of-the-art security measures, is available for free from the Apple App and the Google Play stores.

Fluke Corp.

www.fluke.com

Suspended-Solids Density Meter Uses Ultrasound Technology

This suspended-solids density meter uses ultrasound to measure the concentrations of silt, sludge, and slurry in pipes, clarifiers, and tanks. The sonic pulse passes through the medium and the return echo is measured by the meter. As the pulse travels through the suspended solids, sonic energy is absorbed by the particles; a strong signal indicates low concentrations, while a weak signal indicates high concentrations. The meter can measure concentrations that are too thick for optical sensors, color does not affect measurements, and there is no risk of sensor fouling. The system can also control sludge thickening by automatically shutting off the desludge pump before the sludge becomes too thin. The solids density meter can be installed as an inline or probe-style assembly.

Markland Specialty Engineering

www.sludgecontrols.com

Chlorine Dioxide Analyzer System Includes a Built-In Flow Regulator

The reagent-free Signet 4632 chlorine dioxide analyzer system is a turnkey solution for the measurement of residual chlorine dioxide (up to 2 ppm/mg per L). Attributes of the compact unit include amperometric sensing technology, a clear flow cell, flow regulator, sensors, filter, and a variable-flow indicator. A built-in flow regulator automatically controls the stream vertically across the sensor's membrane, which improves

system accuracy and expands the range of acceptable inlet pressures (15–120 psi). Typical applications include water distribution, process cooling, wastewater odor control, food and beverage processing, and ultrapure water (UPW) treatment.

GF Piping Systems

www.gfpiping.com

Conductivity Sensor Has a Modular Design



The CS8000TC conductivity sensor and flow cell provides accurate total dissolved solids (TDS) monitoring for cooling towers and other processing environments. Its modular design saves users time and money if their process needs change — the platform can be updated with different electrodes for pH, oxidation reduction potential (ORP), and conductivity, as well as different mounting hardware, rather than replacing the entire system. Installation and maintenance are simplified with a detachable cable assembly that eliminates the need to pull cable through a conduit, and sensors that can be cleaned and calibrated without tools. For integration with existing conductivity transmitters or controllers, four sensor options are available: 10K, 30K NTC, Pt100, and Pt1000 RTD.

Sensorex

www.sensorex.com