

Application Note

Wireless Pressure Sensing for Pressure Sensing in Process Control and Manufacturing, Particularly Paper Pulp Facilities

Used in temporary and permanent facility applications to measure fluid pressure

Background

It is easy to imagine a paper pulp manufacturing and process facility as a collection of countless pipes, tubes, and tanks. However, each of the pipes, tubes, and tanks has a specific duty. One pipe may be the line for the lubricant that helps the processing machines process the fibrous materials correctly. The collection of tubes may be transferring critical ingredients needed to make the correct mixture of detergents and solvents present when the package is sealed off and made ready for delivery. All these fluid delivery and storage devices have one thing in common: the fluid housed or moving inside them has pressure. The measured pressure can be used to determine many important things to the customer. When making paper pulps, the pressure of the bleaching chemical injected into the mixing basin can inform the customer that the chemical is dispersing with the correct volume and at the correct temperature. In the final stages of paper pulp production, the pressure and temperature of material, in conjunction with the time elapsed, can ensure containers of paper pulp are filled to the correct level.

Pressure sensors are important when a customer seeks to know the pressure of a fluid. Many pieces of equipment are designed with this in mind. Pressure sensors are installed in all logical positions. However, sometimes customers need to know the pressure of the fluid in-between pieces of equipment.

Perhaps they need to know the pressure of the fluid in a tank, or a process line where no pressure sensor has been installed. It may even be possible that the process control customer does not want a permanent pressure sensor installation.



Wireless Pressure Sensor, WPS Series

Solution

The Honeywell WPS Series Wireless Pressure Sensor can be used effectively as a temporary installation. It doesn't need to be hard wired into the main system as it utilizes a wireless signal to relay the pressure information. It may be installed one day as a testing function for a process line and then removed the next day as testing is completed. However, it can function in permanent installations because it is rugged and can withstand harsh environments. The Honeywell WPS Series Wireless Pressure Sensor easily installs with minimal modification. The small housing and easy-to-read LCD fit into areas where other wireless pressure sensors won't. With the WPS Series, the customer no longer worries about running complex conduit lines to fluid storage tanks in any location in the facility. Process control customers can use the WPS Series for temporary or test locations where a permanent pressure sensor is not desired or hard to integrate. The long battery life helps the device provide long and accurate pressure readings.



Paper production workshops throughout a large pulp and paper mill.

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Wireless Pressure Sensor, WPS Series

Features

- Accurately measures absolute or gage pressures from 0 psi to 50 psi through 0 psi to 10,000 psi
- Wireless design: Radio (license-free and global) P2P (Point-to-Point) or ISA100 Wireless™ compliant provide increased reliability, flexibility, and security in wireless transmission
 - P2P: WPAN 802.15.4, 2.4 GHz; up to 305 m [1000 ft] line-of-sight communication range when used with Honeywell's Wireless Multi-Protocol Receiver Module (WMPR Series), sold separately.
 - ISA100: 2.4 GHz; up to 305 m [1000 ft] line-of-sight communication range when used with a compliant ISA100 Wireless system
- Variety of inputs with simple and universal PLC connections
- Designed to enable the ability to reconfigure and network multiple interfaces with personalized addresses that allows for adding, subtracting, and/or relocating wireless devices
- Agency approvals and standards: 20 dBm: FCC 15.247, Industry Canada RSS 210 Issue 8, ACMA (C-Tick mark); 8 dBm: ETSI EN 300 328 V1.8.1 (CE mark)
- Powered by two 3.6 Vdc "D" size Lithium Thionyl batteries
- Total Error Band ± 2 %FSS max.
- Rugged housing with IP67 sealing
- Barrier diaphragm constructed with 316L, Hastelloy® C-276
- Process head manufactured from 316SSL
- All components packaged in a single, small plastic enclosure
- Large LCD screen simplifies viewing
- Off-the-shelf batteries simplify replacement
- Temperature range -40 °C to 70 °C [-40 °F to 158 °F]

Find Out More

To learn more about Honeywell wireless solutions, contact a Honeywell representative today at **1-800-537-6945**, e-mail info.sc@honeywell.com, or visit sensing.honeywell.com

Sensing and Productivity Solutions

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