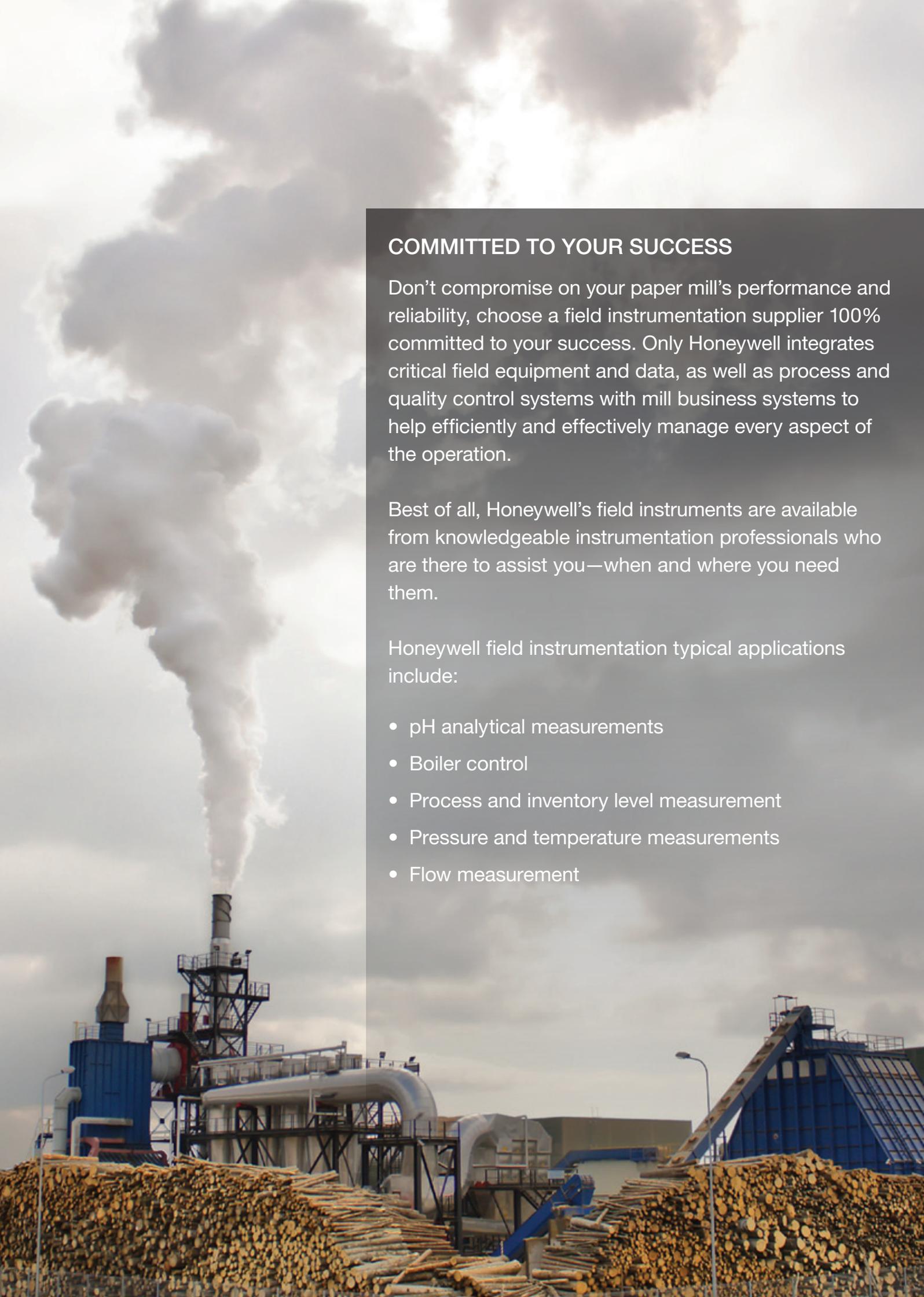




Increasing Paper Mill
Productivity and Improving
Asset Performance



COMMITTED TO YOUR SUCCESS

Don't compromise on your paper mill's performance and reliability, choose a field instrumentation supplier 100% committed to your success. Only Honeywell integrates critical field equipment and data, as well as process and quality control systems with mill business systems to help efficiently and effectively manage every aspect of the operation.

Best of all, Honeywell's field instruments are available from knowledgeable instrumentation professionals who are there to assist you—when and where you need them.

Honeywell field instrumentation typical applications include:

- pH analytical measurements
- Boiler control
- Process and inventory level measurement
- Pressure and temperature measurements
- Flow measurement

Accurate Measurements. Better Product Quality.

Today, the pulp and paper industry is under increasing pressure to harness the power of technology and leverage advanced measurement and control capabilities in order to optimize raw material and energy consumption, machine performance, product quality, and profitability. Mills also face greater demands in the areas of safety, sustainability, and environmental compliance.

With so much at stake in your operation, you need a partner who understands the pulping and papermaking process, and supports your strategic business objectives.



The Right Partner to Help You Prosper

Producing high quality pulp and paper products in an efficient, reliable and cost-effective manner requires a partner who can deliver the right instrumentation and analytical products, systems and services. That's Honeywell.

With decades of pulp and paper know-how, Honeywell has the qualifications to help enable your mill's prosperity. Our team of field sales engineers, sales partners, and technical support specialists are available to serve you in key locations around the world. We back all of our products with a comprehensive warranty and a support center staffed with engineers and technicians with solid product knowledge.

Measurement Solutions Accross Your

Continuous technology improvement must be ongoing in pulp and paper production to obtain the best possible performance and quality, and simultaneously ensure environmentally friendly operation. That's why leading paper companies worldwide choose Honeywell's best-in-class field instruments for use in all areas of the mill, including demanding flow, level, pressure, temperature, and liquid analysis applications.

Pulping

Reliable instrumentation is required for the mechanical and chemical processing of wood chips. Sensor and analyzer information helps ensure the right amount of chemicals, energy and fiber are used throughout the batch and continuous cooking, thermo mechanical pulping, and bleaching processes.

The pulping process requires robust field instruments able to cope with the harsh environment. Chemical pulping is the most demanding process incorporating high temperatures, corrosive and abrasive substances, and vibrations.

Honeywell's products not only offer precise measurement for tight control of all flow rates, temperatures, pressures and pH, but are well known for being the most reliable in the plant.

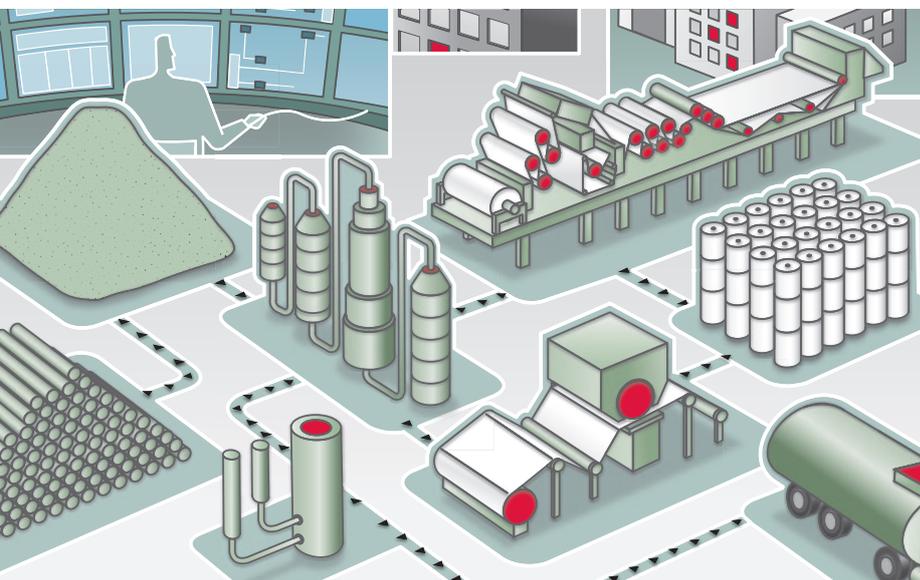
Bleaching

Depending on its density, chemical pulp is transported via pumps, flow distributors, or conveying spirals to the bleaching tower. Bleaching then runs continuously at high temperatures, with chemicals being added.

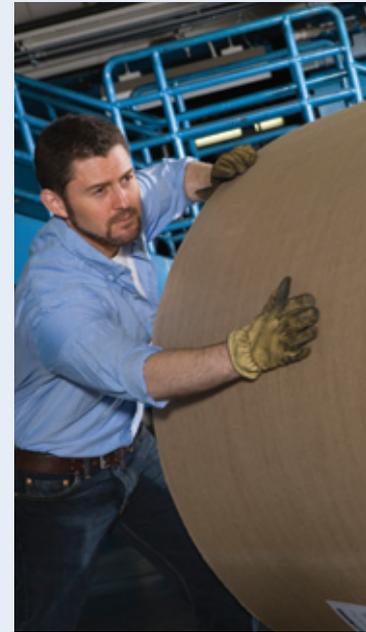
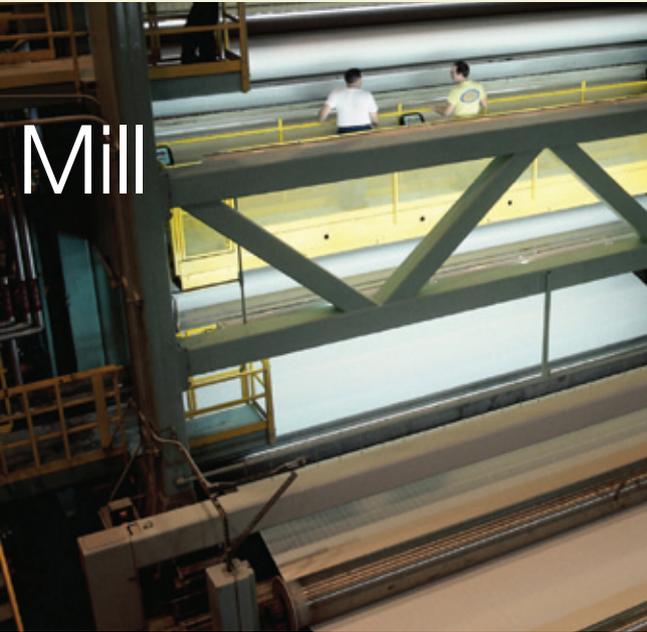
Honeywell can help maintain a constant level in the bleaching tower, which is important for the quality of the bleaching process. Our analytical products are ideal where pH and conductivity levels fluctuate. And, it's essential to measure pressure and flow rates with the sensors in contact with aggressive chemicals. Honeywell's reliable products are designed with these requirements in mind.

Inventory Preparation

For continuous operation in a pulp and paper mill, large quantities of prepared stock are necessary and can be held in storage towers and chests. In this application, Honeywell level measurement delivers reliable information on the contents of the towers, while offering the process compatibility required for minimal maintenance.



Mill



Paper Machine

When coating paper, a slurry of coating additives travel from the tanks to the coating kitchen for additional processing. Honeywell's flow measurement offerings provide accurate monitoring to ensure a safe level and prevent pump damage. Conductivity and pressure are also key measurements offered by Honeywell for these applications.

In the headbox, pressure and speed must be constant to ensure a uniform paper sheet is formed. Honeywell's accurate pressure measurement helps maintain fan pump speed control.

During the drying process, a condensate film forms on the inside wall of the drying cylinder, affecting the heat efficiency of the transfer to the paper. By using Honeywell products to measure the pressure difference between the inlet and outlet, the effect of the drying cylinder is continuously monitored, so the production rate can be altered accordingly to get a perfectly dried sheet

Wet End

After bleaching, pulp from different sources are mixed as needed for various products and mechanically refined prior to delivery to the headbox. Sizing agents, dyes, and additives must be added under strict measurement conditions to promote the desired paper characteristics. These chemicals are more effective under controlled pH conditions.

Honeywell instruments measuring variables such as pH, conductivity and flow increase the effectiveness of the reactions and therefore the quality of the end product. Honeywell's analytical instruments require less calibration and fewer replacements than other offerings.

Waste Treatment

Accurate analytical measurements are also key to waste treatment in a combined pulp and paper mill. Wastes coming together from different processes create a constantly changing waste stream that must be carefully monitored so treatment and disposal can be made according to environmental regulations.

Honeywell's pH and conductivity sensors and magnetic flowmeters are ideal for these regulated requirements.

Utilities

There are various steam, boiler and recovery utilities in a pulp and paper mill that need to be controlled. One of the most important is the recovery of spent cooking chemicals. Accurate level measurement is critical in this lengthy process. Honeywell's multivariable pressure and vortex flow with integral pressure and temperature compensation offer effective and efficient measurements.

In addition, Honeywell's control system offerings provide accurate and tight control of boiler applications with minimal engineering required.



Honeywell Solutions

Honeywell offers industry-proven field instruments and control systems that set the standard for performance and reliability, providing the safety, security and efficiency required by the most demanding applications and environment. We have a proven track record of reducing risk, avoiding downtime, and providing customers with long-term support and migration paths.

Honeywell is known for its robust distributed control systems (DCS), such as Experion PKS. But for those applications where a DCS is not required, Honeywell offers an alternative solution.

MasterLogic PLC

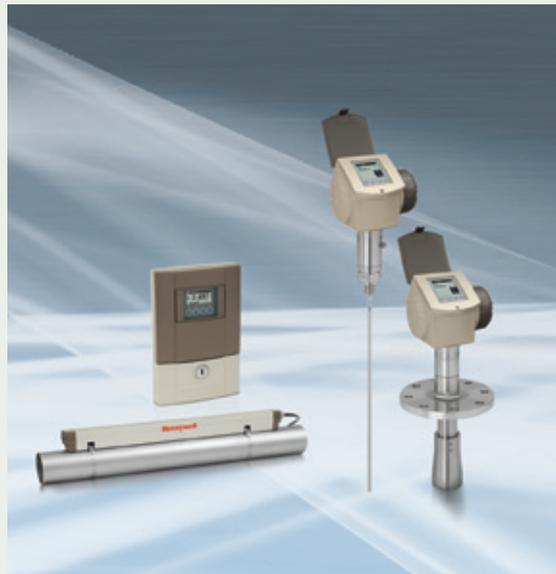
Honeywell's MasterLogic PLC brings power and robustness to logic, interlock and sequencing applications for those applications not needing all the features of a DCS. This compact, modular PLC offers a redundant architecture at a lower cost than other major brands. Its advanced technology enables higher speed processing and better control. MasterLogic PLC I/O is the standard I/O platform for Honeywell's PMD controller installation.

- Powerful and versatile processors
- IEC 61131-3 standard programming
- Vast library of standard function blocks
- Over 50 types of I/O modules
- Smart I/O modules (DIN rail) on open protocols

HC900 Hybrid Control System

The Honeywell HC900 is an advanced hybrid control system with a modular, scalable design. It can serve as a versatile control solution for applications such as sheet and cast film extrusion. The combination of precise control functionality, direct sensor inputs, and integrated logic processing make the HC900 ideal for temperature control. The system is available with options such as MD thickness control (via line or screw speed) and CD bay control (for up to 96 bolts).

- Tightly integrated analog and logic control
- Open Ethernet network connectivity
- Automated loop tuning
- PC supervision and/or local flat panel HMI
- Setpoint schedulers with multiple ramp/soak outputs



VersaFlow Flowmeters

VersaFlow Flowmeters solve many mill problems. The Coriolis mass flowmeter measures mass flow, density, volume, temperature, mass or volume concentration, and solids content with a single device. It is the only Coriolis sensor with a straight measuring tube available in stainless steel, titanium, Hastelloy C® or tantalum.

In addition, Honeywell's vortex flowmeters are ideal for measuring steam, gasses, volumetric flow rate and low viscosity liquids. With built-in temperature and optional built-in pressure compensation, the flow meters are the most versatile products in their category.

The VersaFlow Clamp-on Sonic 1000 Flowmeter measures clean liquids, regardless of their conductive properties. This makes the meter suitable for the control of water volumes in the main water-cooling system. Because it is not an inline device, there is no need to worry about compatibility of process or pressure, and the clamp-on design provides a cost-effective solution for larger diameter pipes.

VersaFlow Magnetic Flowmeters

The available materials of construction and advanced functionality of the Honeywell's VersaFlow Magnetic Flowmeter family are unparalleled. Advanced electronics offer high impedance, making these meters an excellent solution to inherently noisy applications such as heavy paper stock and pulp slurries.

In addition, the VersaFlow TWM9000 Transmitter deals with the noise generated by pulp stock slurries without the need for a special transmitter design.

Robust diagnostics check the performance of the transmitter, the condition of the liner, electrodes and magnetic coils, the operating conditions being experienced by the sensor, and even the conductivity level of the process being measured.

SmartLine Radar Level Transmitters

SmartLine™ Non-Contact and Guided Wave Radar Level Transmitters measure the distance, level, mass, volume and reflectivity of liquids, pastes and slurries. They are suitable for measuring level in process and storage tanks, digesters and cisterns. A common electronics platform makes installation, setup and user interface easy.

- Intrinsically accurate
- Maintenance free—no moving parts
- Measures a wide range of products
- Simultaneously measures overall level and interface (guided wave)

HB Series pH Electrodes

With its replaceable cartridge component, Honeywell's HB Series pH Electrode is ideally designed for the pulp and paper industry. The sensor assembly is inserted into the process through a ball valve and held in place by a compression fitting, allowing a direct measurement of pulp stock with up to 14% consistency. Its unique reference electrode resists poisoning and reference junction plugging, coating or fouling.

- Retractable under pressure (100 psi)
- Variety of mounting options
- Chemically resistant body options
- Temperature sensor options compatible with most analytical instruments

Analytical Products

Honeywell Instruments and Sensors reliably measure pH and Conductivity in a wide variety of applications. The UDA2182 Analyzer is a flexible and versatile dual input instrument that accepts any combination of measurement inputs in a single unit. The HB Series of pH electrodes has a unique reference electrode technology that resists poisoning and fouling thus extending lifetime between replacements, reducing operating costs. The HB Series Ball Valve mounting is ideally designed for the Pulp & Paper industry, allowing for direct pH measurement of pulp stock up to 14% consistency.

- Dual input UDA2182 Analyzer
- UDA2182 Analyzer “mix-n-match” input board design
- Variety of HB Series mounting options, including ball valve, in-line, submersion and Nut-Loc quick connect
- Chemically resistant body options for HB Series pH electrodes

ST 3000 Pressure Transmitters

Honeywell's ST 3000 Pressure Transmitters feature advanced diagnostics and engineered remote seal solutions. Available models include single process variable; differential, absolute and gauge pressure; remote seal; and flange units. The transmitters are intended for use with steam, water, black liquor, pulp stock with seal or water purge, paper machine headbox pressure, screen in/out, boiler feedwater, boiler air, calender stacks and the bleach plant.

- Highest demonstrated reliability in the industry
- Preconfigured – requires no bench testing
- In-line and flush-mount versions are ideal for attaching directly to the pipe or for areas with slurry-like materials

SMV 3000 Smart Multivariable Transmitters

Honeywell offers cost-effective SMV 3000 Smart Multivariable Transmitters that measure differential pressure, static pressure, temperature, and flow rate. Applications include boiler steam, water, dryer drainage, natural gas, and more.

For More Information

For more information on Honeywell Process Solutions, visit www.honeywellprocess.com or contact your Honeywell account manager.

Automation & Control Solutions

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Honeywell

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Honeywell House, Arlington Business Park
Bracknell, Berkshire, England RG12 1EB

Shanghai City Centre, 100 Junyi Road
Shanghai, China 20051

www.honeywellprocess.com



Honeywell offers industry-proven and integrated solutions delivering ideal performance and reliability for any industrial application. With decades of pulp and paper know-how, Honeywell has the qualifications to help enable your mill's prosperity.

STT 3000 Smart Temperature Transmitters

Honeywell's STT 3000 Smart Temperature Transmitter portfolio consists of three different models. For example, the STT 250 Series combines performance, options, and price to meet a variety of mill applications. The transmitter design allows for either head or remote mounting—with or without local indication. Not all manufacturers offer this versatility.

- Universal sensor inputs—RTDs and thermocouples
- Available with integral engineering units meter

OneWireless Network and Transmitters

Honeywell's OneWireless™ network gives you the ability to reduce cost without sacrificing speed or breadth of information transfer between the control room and the field measurement.

- Reduces installation costs by 50% or more
- Easily scalable system—start small and expand over time
- Honeywell site assessment identifies the needs of your facility before a decision is made

Versatile and Modular Field Products

Scan this QR-code to see how Honeywell's portfolio of field measurement and control products enable you to manage your plant assets and optimize your entire enterprise with solutions that are easy to configure, operate and maintain.



Honeywell