

Instrumentation for the pulp and paper industry

Enhanced performance, efficiency, reliability



ABB Instrumentation





Talk to ABB first

ABB has more expertise in pulp and paper applications globally than any other supplier. Based on this experience, we have refined and developed the performance of our portfolio of intelligent instrumentation products to ensure you get a solution that meets your precise requirements every time.

Getting the best levels of efficiency and performance from your production process calls for reliable, accurate instrumentation. Equally important is being able to count on access to an intelligent, informed support network that can assist you throughout all stages of your process, regardless of your location.

A heritage to be proud of

Wherever you are, ABB can provide you with both the solutions and the support that meet your needs exactly. Our product portfolio and expertise are built upon some of the leading names in automation: Bailey, Hartmann & Braun, Fischer & Porter, Kent, Taylor, Schoppe & Faeser, Bush Beach Engineering, Sensycon and TBI-Bailey.

FISCHER
& PORTER 

Hartmann & Braun

Kent

Schoppe & Faeser

 SENSYCON

Taylor

TBI-Bailey

Bush Beach Engineering
Limited



Total support and service

All of ABB's high quality instrumentation products are backed up by teams of ABB factory-trained engineers, capable of providing support and assistance for a wide range of applications across a wide range of industries.

ABB's customer care services include:

- Installation, commissioning and start-up
- Instrumentation and system upgrades
- Emergency service support
- Instrument repair
- On-demand and planned maintenance
- Training
- Specific services to meet local market needs

A range of fieldbus opportunities

ABB is actively involved in the development of fieldbus policy direction and technical standards and supports the major process automation protocols in widespread use throughout industry. With our wide experience and expertise, we can cater to a broad spectrum of fieldbus options, enabling us to meet your exact requirements.

The current generation of ABB fieldbus devices and systems lets you choose both the most suitable devices available and the most appropriate system for your application, including PROFIBUS, FOUNDATION Fieldbus and HART.



A complete range for all pulp and paper applications

ABB offers a comprehensive portfolio of instrumentation and measured value acquisition products for the pulp and paper industry. Our products and services are tailored to ensure they deliver the best performance for sophisticated measurement tasks and harsh environmental conditions.



Plant-wide instrumentation



ABB supplies an unparalleled selection of instrumentation equipment and systems for use throughout all stages of the pulp and paper process. Utilizing ABB's innovative products, you can create advanced systems that will help you ensure economical, reliable and safe performance of your plant facilities.

Recycled Paper

- Electromagnetic flow
- Temperature
- Pressure
- Differential pressure
- pH
- Valve with positioner

Power Plant

- Flow
- Temperature
- Pressure
- Differential pressure
- pH/Conductivity
- Silica
- Dissolved oxygen
- Sodium
- Zirconia oxygen
- Electrical actuator

Mechanical Pulp

- Electromagnetic flow
- Temperature
- Pressure
- Differential pressure
- pH
- Valve with positioner

Chemical Pulp

- Electromagnetic flow
- Temperature
- Pressure
- Differential pressure
- Conductivity
- Valve with positioner

Stock Preparation

- Electromagnetic flow
- Temperature
- Pressure
- Differential pressure
- pH/Conductivity
- Valve with positioner

Approach Flow System

- Electromagnetic flow
- Temperature
- Pressure
- Differential pressure
- pH/Conductivity
- Valve with positioner

Headbox, Wire, Press Section

- Electromagnetic flow
- pH/Conductivity
- ORP/Redox
- I/P Converter



Key Product Areas

- Flow Measurement
- Temperature Measurement
- Pressure Measurement
- Analytical Instruments
- Actuators and Positioners

Chemical Recovery and Evaporators

- Electromagnetic flow
- Temperature
- Pressure
- Differential pressure
- Conductivity
- Valve with positioner

Waste Water Treatment

- Electromagnetic flow
- Thermal mass flow
- Dissolved oxygen
- Conductivity
- pH

Bleach Plant and Storage

- Electromagnetic flow
- Temperature
- Pressure
- Conductivity
- pH
- ORP
- Valve with positioner



Brown Stock Washers

- Conductivity
- pH



Online Coater and Kitchen

- Electromagnetic flow
- Coriolis mass flow
- Temperature
- Pressure
- Conductivity
- pH
- Valve with positioner

Dryer Section

- Vortex flow
- Temperature
- Conductivity
- I/P Converter (Steambox)

Size Press

- Electromagnetic flow
- Temperature

Electromagnetic Flowmeter FSM4000

The FSM4000 has set a new standard for flow measurement in the pulp and paper industry in applications with high solid content, low conductivity, pulsating flows or any noisy process. This electromagnetic flowmeter provides the versatility to measure the simplest to the most extreme flow applications. While employing the most advanced digital signal processors, this new measurement system provides improved performance with quick response and a noise free output, enabling better accuracy than typically pulsed DC electromagnetic flowmeters.



- Planning and replacements stocks are minimized as all measurement tasks can be fulfilled by a single metering system
- Integrated diagnostic coil monitors eliminates zero shift
- Advanced Digital Signal Processing (DSP) enables "real-time" measurements for maximum reliability
- Short and quick data entry for all user-specific parameters required for instrument operation
- Flowmeter primary with nominal size DN 1 to DN 1000 (1/25" to 40")

Vortex and Swirl Flowmeters FV4000/FS4000

Vortex and swirl flowmeters (TRIO-WIRL) are ideally suited for measuring gases, liquids and steam. Integrated RTD option transforms the meter to a mass flow device for saturated steam applications. Swirlmeter is the best solution for steam flow measurement in power and recovery for boiler retrofits where adequate upstream and downstream piping does not exist.

- 2-wire measuring units with DSP technology
- Measuring system available with separate electronics
- Pressure and temperature compensation possible via separate FCU200/400 flow computer
- 2-line LC display with clear text input capability
- Swirl Flowmeter also suitable for short upstream sections



Coriolis Mass Flowmeter FCM2000

The FCM2000 is a Coriolis mass flowmeter for mass flow or density measurement of liquids.

- Measuring principle using the parallel meter tube design
- High precision through Digital Signal Processing (DSP) technology
- Flow rate information is displayed locally
- HART protocol
- Compact design reduces installation and wiring costs
- Wide flowmeter size range from DN 15 to DN 150 (1/2" to 6")



Variable Area Flowmeters FAG1190/FAM5400/FAM3200

ABB offers a selection of variable area flowmeters for measuring low flow liquids and gases. Options include:

- Snap-in purgemeters
- Glass tube flowmeters
- Metal tube flowmeters
- Armored purgemeters, available with scale, min and/or max alarm signal transmitter or differential pressure regulator



Thermal Mass Flowmeter FMT500-IG

A digital mass flowmeter for measurement of air, gases and gas mixtures in process applications. The system is supplied with LC display, integrated gas temperature measurement and totalizer functions. Communication and configuration is possible via the PROFIBUS DPV1 protocol or analog output/HART.

- High accuracy, even in the lower part of the measuring range
- Compact and remote versions allow flexible mounting solutions
- Direct mass flow measurement without compensation
- Low pressure loss, immune to vibrations



pH, Redox (ORP), Conductivity Analyzers TB82

Transmitters feature robust housings designed for extreme conditions while providing an intuitive user-interface along with an industry leading set of digital communications options.

- Rugged, industrial housing
- Reduced maintenance with diagnostics
- Digital communications: HART, PROFIBUS PA, FOUNDATION Fieldbus
- Simple, intuitive operator interface
- Conformal coated circuit boards for protection from humidity



pH, Redox (ORP), Conductivity Sensors

ABB manufactures the widest range of sensors of any industrial analytical supplier. Engineered solutions from the simplest to the most challenging process conditions.

- Direct in-line measurement up to 14% consistency
- Solid matrix (non-liquid filled) Next Step™ pH and Redox reference
- Toroidal, 2- and 4-electrode conductivity techniques matches best technology to specific application
- Over 25 years of innovation in sensor design

Liquid and Combustion Analyzers

ABB offers a wide range of analytical instrumentation solutions covering a broad range of measurement parameters for liquid and combustion analysis for process control and optimization, and to meet regulatory requirements.

- Dissolved oxygen analyzers feature simple replacement cartridge sensors
- ppb sensitivity and low reagent consumption
- In-situ and closed coupled extractive O₂ and O₂/CO_e flue gas analyzers



UP Actuator with AV Positioner

The UP range of pneumatic rotary actuators are used to control dampers, lever operated valves and other final control elements. A wide range of torque ratings are available from 122–6237 Nm (90–4600 ft. lb) in six actuator sizes.

- Easy installation with linkage connection
- Suitable for high temperature environments
- Fail-in-place or fail safe option available
- Easy manual control override function
- Fast travel time due to pneumatic operator



Intelligent Positioners

The TZIDC intelligent positioner series provides flexible and cost effective valve management and control. Features include:

- Modular design
- Built-in self-diagnostics and continuous self-monitoring
- Local or remote control via HART
- Automatic self-commissioning and valve tuning program
- Able to withstand severe shock/vibration
- EMC-compliant. Protected to IP 65/ NEMA 4X with certified explosion protection for intrinsically safe operation



Electrical Actuators Contrac

The range of Contrac electrical actuators offer excellent accuracy and reliability for high-level control applications.

- Continuous modulating actuation principle guarantees hysteresis-free process control
- Robust and compact design provides proven reliability even in the harshest environments
- Modular concept includes integrated and remote electronic installation options
- Choice of HART, RS 232 and PROFIBUS PA communications



I/P Converters

I/P converters are designed to be flexible, tough and immune to shock and vibration. They can be mounted in a variety of configurations.

- More than one million units in use
- Compact design, low weight
- Shock and vibration immune to 10g
- Various signal ranges available
- Wide operating temperature range
- Explosion protection certificates
- Field, direct and DIN rail mounting



Actuators & Positioners

Electro-pneumatic Positioner TZIDC and Ball Segment Valve

Together with actuators and positioners from ABB, Somas valves form the perfect valve control solution for the pulp and paper industry. The variety of models available means these devices can be used for virtually any common task.



- One-piece ball segment and shaft design gives backlash-free operation and accurate control
- Double trunnion mounted segment gives high durability and low torque requirement
- Body design gives exceptionally high capacity – enables smaller and more economical valve sizes to be used
- Easy maintenance – valve seat can be exchanged without removing the actuator or dismantling the valve
- Positioner with automatic self-commissioning, able to withstand heavy vibration

Pressure Measurement

Pressure Transmitters 2600T

ABB's 2600T series offers one of the most complete ranges of pressure measurement equipment currently available.

An extensive family of remote seals plus a choice of materials and fill-fluids with dedicated process connections for:

- Mechanical pulp preparation (fibre chest)
- Chemical pulp preparation (black and white liquor/digester)
- Recycled paper preparation (dissolving and cleaning pulping)
- Transmitter mounted on ball/knife valve to avoid process interruption during maintenance.



- Available in multivariable, high static working pressure and safety versions
- High accuracy – 0.04 % to 0.075%
- Reduced downtime – high long term stability
- Field upgradeable communication: 4-20mA, HART, PROFIBUS PA and FOUNDATION Fieldbus
- On-site configuration without opening the cover (integral display)

Temperature Transmitters

ABB's temperature transmitters provide the interface from the temperature sensor to the PLC and offer excellent long-term stability with enhanced self-diagnostic capability.

- Range of transmitter models – TH02, TH102, TH202
- 4-20mA, HART, PROFIBUS PA and FOUNDATION Fieldbus versions
- Range of mounting options – head-mounted, DIN-Rail or on rack with field housing (IP 66/67)
- Optional display available



Temperature Sensors

Resistance thermometers (RTDs) with welded or drilled thermowell, for temperature measurement in vessels and pipes.

- Standard and special design versions available
- Measuring insets exchangeable during operation
- Optional point for short response time
- Various process connections available



Recorders and Controllers

Advanced Videographic Recorders SM Series

ABB's range of videographic recorders delivers the latest in electronic data recording technology for industry applications.

- Comprehensive range offering from 6 to 36 channels
- Remote supervision and data access solutions provided via Ethernet communications
- High capacity Compact Flash and Smart-Media memory card options greatly reduce need for operator intervention



Process Controllers

ABB's range of process controllers set the highest standards in industrial instrumentation. From simple single loop to advanced control options (including feed forward, cascade and ratio control), a controller is available to match any application. Features available in most units include:

- In-built 2 wire transmitter power supply
- Links to central PLC or SCADA systems via Modbus
- Front plate rated to NEMA 4X/IP 66 protection
- Windows™ based PC Configuration Software





The Company's policy is one of continuous product improvement and the right is reserved to modify the information contained herein without notice.

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ABB is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 105,000 people.



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