

# The complete portfolio of innovative instrumentation

Choose from the breadth of products, choice of communications, asset optimization capabilities and value added services



ABB Instrumentation



## World class instrumentation solutions built on over 100 years of experience



Unrivalled in its scope and applications expertise, ABB Instrumentation is a global leader with solutions certified to international standards, a worldwide network of manufacturing plants and strategically situated calibration laboratories.

ABB Instrumentation's ability to satisfy customers' needs has never been greater, being built upon the leading names and brands in the automation world:

Bailey, Bush Beach Engineering, Fischer & Porter, Hartmann & Braun, Kent, Schoppe & Faeser, Sensycon, Taylor, TBI-Bailey.

FISCHER  
& PORTER 

Hartmann & Braun

Kent

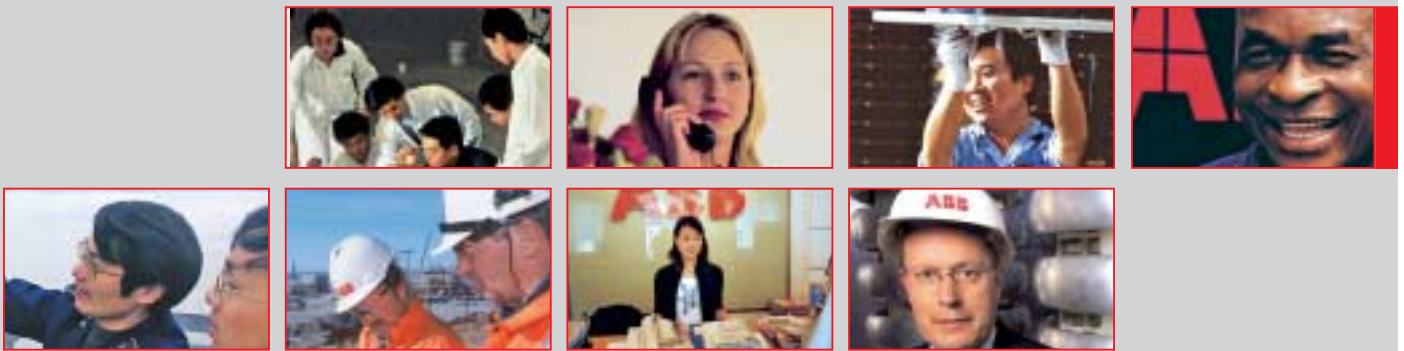
Schoppe & Faeser

 SENSYCON

*Taylor*

TBI-Bailey

Bush Beach Engineering  
— Limited —



## Worldwide presence

Across a wide range of applications – in a wide range of industries, ABB is working in partnership with our customers:

ABB Instrumentation delivers not only high quality device solutions but also levels of customer care that continually enhance their business.

ABB Instrumentation delivers intelligent, informed support throughout all the stages of industrial processes – worldwide.

Our customers have the extra assurance that comes from knowing that ABB's high quality products are supported by worldwide teams of ABB factory trained engineers – from installation and commissioning to maintenance and training.

"So if you need to measure, control, record, actuate or analyze, ABB Instrumentation has products and services backed by a network of hundreds of sales offices, service centers, manufacturing sites and calibration rigs to provide your industry, utility or municipality with world-class instrumentation solutions."



## **Complete instrumentation portfolio serving key industries**



 Instrumentation Services

 Analytical Instruments

 Flow Measurement

 Recorders and Controllers

 Pressure Measurement

 Actuators and Positioners

 Temperature Measurement

**ABB Instrumentation produces world class products at highest quality level. Our producing units are accredited to internationally recognized quality standards. Innovation comes as standard with 100's of registered patents.**

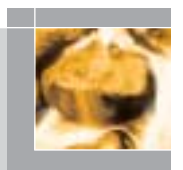
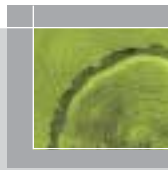
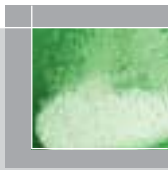
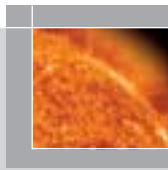
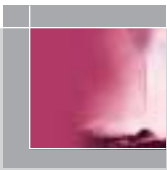


ABB instruments deliver more than reliable and accurate measuring values. Integrated into a systems environment, the devices play a key role in maximizing asset optimization.

Remote diagnosis and device status data provide Maintenance Management Systems that bring many advantages: Plant Efficiency, Plant Security, Plant Availability, Plant Reliability, Process Optimization.

A complete range of measurement technologies designed the specific needs of the markets we serve:



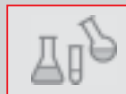
**Food & Beverage**



**Water & Waste Water**



**Pulp & Paper**



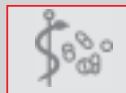
**Chemical & Petrochemical**



**Oil & Gas**



**Power/Steam Generation**



**Pharmaceuticals**

## Industrial<sup>IT</sup> enabled instruments from ABB – Your route to enterprise-wide control



To help you improve the efficiency of your entire business and production process, ABB is committed globally to Industrial IT. It involves the development of systems and products guaranteed to inter-operate and communicate using the same information standard within a single digital architecture – one that recognizes every detail of every aspect of your enterprise and gives you complete control of your process from your desktop. The purpose of Industrial IT is:

- To give you instant access to all the information you need on every facet of your enterprise from your desktop
- To optimize your process by enabling real-time communication between assets and collating the information you need to improve efficiency
- To give you complete control over your process and your business from your desktop
- To increase your future options by making your business processes flexible and adaptable

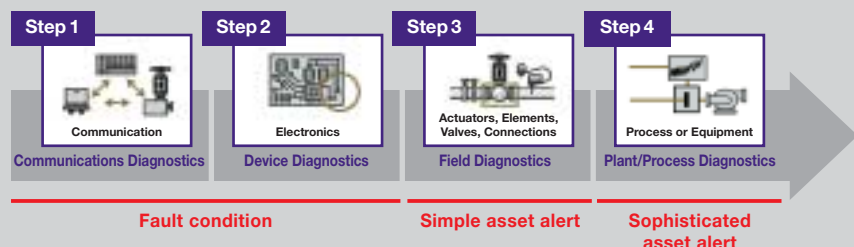
### Industrial<sup>IT</sup> – Optimizing your instrumentation assets

Industrial IT and Asset Optimization with ABB instruments provide features and benefits across the full scope of our offering. Intelligent field instruments not only provide highly accurate process measurement data, but process information is available at the click of a mouse for predictive maintenance, advanced trouble shooting, optimized spares handling, hence increased product availability and process security.

Devices include diagnostic data

- In a common asset format
- For indentifying conditions in real time
- With embedded help including:  
Description of condition, possible cause, suggested actions.
- With priority/severity of condition

Through communication protocols such as HART, PROFIBUS or FOUNDATION Fieldbus, this information is made available to any control system where the assets are optimized to reduce cost of ownership.



### A practical solution – Easily achieved

Industrial IT enabled products are produced to a common 'information standard' that guarantees interoperability with other Industrial IT enabled products and systems and all the common SCADA/DCS/SPC systems you may already use.

This standard also means 'plug and produce' compatibility with your process. This is made possible by ABB's Windows™ based information architecture, Plant Explorer. In the same way your PC's operating system recognizes and configures a new printer when you connect it, ABB Plant Explorer recognizes any Industrial IT enabled product introduced anywhere within your enterprise, makes it accessible from your desktop and puts it to work immediately. Combine these benefits with ABB's unrivalled expertise in process industries and it's easy to understand why people the world over are turning to Industrial IT to increase their profitability.



### Building towards a more efficient enterprise at a pace which suits you

Embracing Industrial IT is something you do at your own pace. Whether you simply introduce a single Industrial IT enabled instrument to your process, or work with ABB to optimize your whole enterprise (a simple process which can make use of your existing SCADA networks and remote I/O stations), the benefits are yours immediately.

# Industrial<sup>IT</sup> enabled instrumentation – Making life easier at every level



## All information at your fingertips

To make day-to-day life easier, every Industrial IT enabled product is supplied with all the associated information you will ever need to access. From an operation manual, user specific documentation, Device Type Management with FDT/DTM (Field Device Tool/ Device Type Manager) to an Asset Monitor for enhanced Asset Optimization functions – it's all there, available at the click of a mouse.

## Guaranteed to add value straight from the box

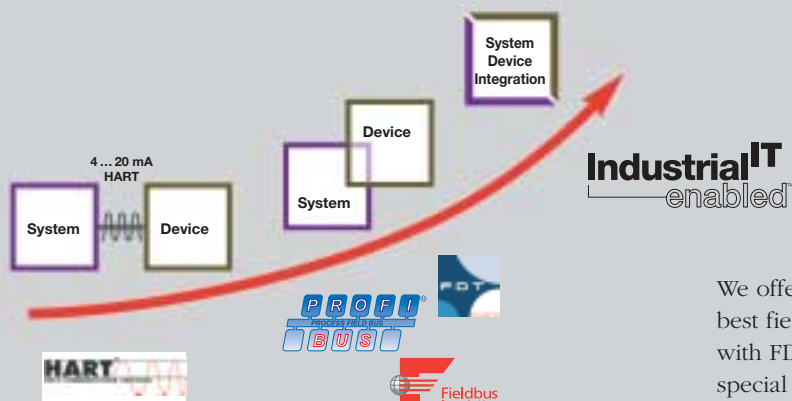
Every ABB Industrial IT enabled product is competitively priced and of the high standard you expect from ABB. The integration with Plant Explorer

in the Industrial IT Extended Automation System 800xA from ABB provides the availability of measured values and all automation functions in a single operation and engineering environment.

## Making your business future-proof

As technology and your processes change, you can always alter your direction, safe in the knowledge that your plant's Industrial IT enabled elements are designed to increase your options.

In short, whatever your plans, an investment in Industrial IT enabled instruments is an investment in your present and your future – at no extra cost!



We offer our customers the option to choose the best fieldbus solution as well as open engineering with FDT/DTM (stand alone or system integrated), special solutions for intrinsic safety and increased availability – **simply freedom of choice.**



## ABB Instrumentation – for an open and standardized system integration

ABB has a network of fieldbus support teams; dedicated engineers that can provide assistance with the design, implementation and support of your system throughout its life.



ABB uses FDT/DTM technology, that enables independent engineering and maintenance of field devices, regardless of manufacturer or protocol, thus removing the need for multiple tools. DTMs provide needed flexibility for handling both complex and simple device configurations using a DDL presentation format that may be extended to show enhanced user friendly graphics.

A complete solution:

- Fieldbus Layout Tool
- Device Management Tool
- All necessary accessories
- Application specific packages
- Global support and service



Fieldbus  
Foundation



For more information visit:

[www.abb.com/fieldbus](http://www.abb.com/fieldbus)

## Instrumentation Services

**Our broad scope of services lay the foundation for end-to-end support for your enterprise. ABB Instrumentation Services delivers the knowledge and global experience required to keep your assets operating at peak reliability and accuracy. ABB provides a full scope of services from start-up and commissioning through lifecycle support.**



### Unparalleled expertise

ABB's field service organization is comprised of thousands of service engineers in more than 50 countries. They provide field instrumentation and control system application expertise to implement, maintain and optimize your process.



"Did you know that ABB has four certified flow calibration rigs located in Europe, North America and Asia?"

For additional instrumentation service information, to schedule on-site service, order parts, receive technical support or register for training, visit:

[www.abb.com/service](http://www.abb.com/service)

### Installation and Commissioning

ABB service engineers provide expert on-site installation and commissioning services. Our field engineers are trained and certified to provide the expertise to start up equipment efficiently, following OEM specifications. ABB delivers a full spectrum of start-up and commissioning services from full project management to installation support.

- Field start-up
- Project management

### Preventive Services

ABB offers customizable service contracts tailored to meet the unique requirements of each facility. Our service management team create a customized service contract solution to increase plant uptime and efficiency.

- Preventative maintenance
- Total maintenance
- Full service

### Calibration Services

Our calibration laboratories are equipped with the latest technology and processes to calibrate ABB and other instrumentation products. They provide certified results that are traceable to NIST, UKAS and PTB standards.



## Maintenance

ABB's preventative and corrective maintenance services help maximize the performance of instrumentation and control equipment. ABB's preventative maintenance program provides planned, proactive care of system components to insure uninterrupted plant performance. Corrective maintenance services are provided by local engineers utilizing advanced diagnostic and repair practices.

- Instrumentation calibration
- Performance check
- Maintenance assessment
- Loop tuning
- Instrument tune-up

## Migration/Upgrades

ABB has developed cost-effective upgrade programs which enable low-risk, phased migration to the latest hardware and software technology. After a thorough site evaluation, ABB will develop a customized implementation plan for migration of installed equipment. This approach assures maximum return on investment while enhancing availability and performance.

- Dissolved oxygen upgrades
- Magmeter converter updates
- Positioner firmware upgrades

## Services for industry, utilities and municipalities

## Consulting

Achieve optimum performance from existing equipment with ABB's extensive application knowledge. Our experts will evaluate plant conditions, identify opportunities for improvement and implement a cost-effective performance enhancement program.

- Plant optimization
- Asset management

## Training

The skills of operations and maintenance personnel play a key role in equipment performance as well as maximizing return on investment. ABB provides a portfolio of standard courseware to help personnel keep skills up-to-date. Standard or custom training courses can be delivered on-site or at an ABB training facility.

- Operator training
- Maintenance training

## Parts and Repair

ABB's global logistics network provides quick and easy parts ordering, shipping and tracking, making critical parts readily available. Services include a complete spectrum of ISO-certified repair services as well as a parts exchange program.

- Standard stock
- Flow/Calibration
- Warranty exchange
- Refurbishment
- Repair/Exchange program



## Flow Measurement

**ABB has one of the broadest offerings of flowmeters in the world, with an unrivalled number of well-proven measuring principles, type variants and applications. From water and waste water through chemical, pharmaceutical and paper to many applications in the food and beverage industry.**



### History of our success

The story of over 100 years of success started in the 1890's in the UK when George Kent company began supplying Venturi tubes.

In 1937 Fischer & Porter was founded in Germantown, Pennsylvania (USA).

ABB successfully brought together the know-how and experience of Fischer & Porter and other well-known companies rich in tradition like Sensycon, Hartmann & Braun and Kent Taylor.

Due to the great variety of measuring methods, including electromagnetic, variable area, vortex, swirl, Coriolis and thermal mass flow measurement, ABB is able to provide the appropriate flowmeter –

seen from the technical and financial point of view – for virtually all applications.

Approved flowmeter calibration laboratories with water, gas and air test benches are available at various ABB sites throughout the world. The test equipment is controlled on a regular basis and in accordance with the relevant international standard.

All flowmeters have the certificates and approvals required for the respective applications.



### Electromagnetic Flowmeters

The world's largest and finest selection of electromagnetic flowmeters for conductive liquids and slurries or pastes. Various product families and designs provide solutions meeting a wide range of requirements.

- Compact design or remote version with separate converter
- Standardized installation lengths for DIN/ANSI
- Connections for a variety of process and flange standards
- Variety of output signals
- Choice of approved liner materials





## Water and waste water applications

These flowmeters are designed for use in drinking water systems, waste water applications, sewage plants and effluent reprocessing plants.

- Battery-powered or mains-powered
- Suitable for buried installation
- Cost-effective retrofits
- Measurement even in partially filled pipes
- Liners approved for potable water
- Comprehensive on-site testing of flowmeters by the CalMaster



## Latest technology: Electromagnetic Flowmeters

### Industrial and food and beverages applications

These flowmeters are suitable for virtually all industrial or chemical processes and applications where chemical and/or high sanitary requirements have to be met. The remarkable features of these devices are their amazing versatility and the large variety of process-oriented models.

- Explosion-proof versions complying with international standards
- Country-specific approvals and certificates
- Versions with fixed flanges or versatile process connections
- 2-wire design
- Acid/alkali-proof liners
- Liners for abrasive media
- Vacuum-proof liners
- Measurement of multi-phase media
- For media with low conductivity
- Stainless steel housing available
- Easy to clean and sterilize
- Digital signal processing (DSP)
- Absolute zero stability
- Batch and filling processes
- Variety of fieldbus communications: HART, PROFIBUS PA, PROFIBUS DP, FOUNDATION Fieldbus



## Coriolis Mass Flowmeters

Coriolis mass flowmeters are best suited for measuring liquids, slurries or pastes independently of their conductivity, density or temperature. Due to their robust design they are insensitive to vibrations and pipe stresses.

- Wide range of nominal sizes
- Self-draining whether mounted vertically or horizontally
- High precision due to digital signal processing (DSP)
- Comprehensive, flexible explosion protection concept
- Approvals for food and beverage applications (EHEDG)



## Thermal Mass Flowmeters

These flowmeters use the hot-film anemometer measuring principle for precise direct mass flow measurement of gases. This wide product range covers a variety of applications in the fields of process engineering, food and beverages, machine construction, pneumatic engineering and engine construction.

- Wide measuring range
- High accuracy
- Very short response times
- Explosion-proof versions



## Vortex and Swirl Flowmeters

Due to their innovative DSP technology (digital signal processing) these flowmeters are particularly reliable for liquids, gases and steam applications. Pollution or deposits will not affect the signal generation when using the Vortex measuring method. Extremely short straight sections (upstream and downstream) are the special feature of swirlmeters.

- Integrated temperature measurement (optional)
- Media temperatures of up to 400 °C/+752 °F
- Saturated steam measurement directly in mass units
- Comprehensive explosion protection concept (incl. Dust-Ex)



## Variable Area Flowmeters

Variable area flow measurement is a classical and well-proven method for measuring gases, liquids and steam with low flow rates. A variety of models are available with meter tubes made of glass or metal.

- Cost effective measuring method
- Local indication without requiring external power
- Measurement of even small gas and liquid quantities
- Independent of electrical conductivity
- Explosion-proof versions



**The widest choice of flowmeters –  
Extensive and universal**

## Flow Measurement using the Differential Pressure Method

This method is a classical alternative to the measuring principles described above. There is a wide range of differential pressure transmitters and primary elements available including measuring sections, orifices, plates/assemblies, Venturi meters and integral weld-in flowmeters.

- Ideal for high temperatures and pressures
- Extensive range of primary elements



## Flow Computer Unit

Universal devices for special usage as 2-channel counter, caloric energy computer or gas flow computer. Additionally, these computer units are used for IR temperature monitoring, signal combination and (saturated) steam calculation.

- Easy to use
- Low system costs due to less peripherals
- Easily read, comprehensive process overview
- Easy to customize on-site using configuration tools

## Pressure Measurement

Pressure sensors and transmitters are available in a variety of designs and materials to suit even the harshest operating environments. Multi-sensor technology and upgradeable electronics with automatic re-configuration functionality add to the many features of the ABB pressure transmitter.

### Wide product range based on practical experience

#### The performance you need

Choose the performance mix that fits your needs: accuracy of 0.04 % or 0.075 %, wetted materials, high working pressure, fill fluids, remote seals and accessories.

#### The communication you need

Choose the communication standard that fits your needs from HART/4...20 mA, PROFIBUS PA, FOUNDATION Fieldbus and Modbus.

Replacing the electronic module for a different communication strategy is very easy – and takes only a few minutes.

#### The transmitters you need

Choose an ABB multivariable transmitter for your air, gas or steam mass flow applications or your multiple input needs. Built-in preconfigured flow primary elements are selectable.

Choose an ABB SIL2 certified HFT1 safety transmitter – designed with the necessary redundancy and self diagnostics for critical safety applications.

Choose the safety approval you need: intrinsically safe, explosion proof, FM factory sealed.



### Series 2600T – Modular design at its best

The 2600T series brings together proven ABB transmitter features and the very latest smart technologies, a combination which provides an uncompromising choice of models, options and variants of associated measurement devices.





## Sensor technology

The 2600T series offers field proven sensors, ensuring optimum reliability for all process applications and types of measurements:

- Differential, gauge and absolute pressures
- Level, flow, volume, density and level interface
- Mass flow and standard volume flow



## Electronics

If the electronics need replacing, the self-configuration feature ensures that full functionality is restored in less than one minute.

- No further tools needed
- Field upgradeable communication protocol

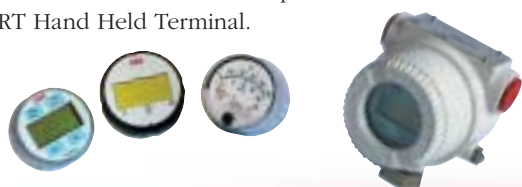
The following communications are available:

- HART/4...20 mA
- PROFIBUS PA
- FOUNDATION Fieldbus
- Modbus



## Meters

Integral display and true output meters are available. ABB local indicators allow on-site configuration of the device (integral display) without even opening the cover. Configuration/troubleshooting are possible via the on board CoMeter or remotely mounted (695 field indicator) CoMeter – the cheapest alternative to HART Hand Held Terminal.



The multivariable platform uses a multi-sensor that measures both differential and absolute pressure; an additional temperature sensor can be connected to allow compensated flow calculation.

This cost-effective solution also increases measurement accuracy and applicability.

High overload gauge/absolute sensors and extraprotection to over-pressures.

## Modular design: the most suitable pressure transmitter for each application

### High flexibility

2600T transmitters are designed for their intended end usage and can be customized to precisely match each application.

- The aluminum alloy electronic housing is available in DIN and Barrel styles to meet the installation requirements; while a full stainless steel version can withstand harsh offshore environments.
- A wide selection of wetted material from stainless steel, hastelloy, monel, tantalum and gold plating are provided for application-specific process media.
- A comprehensive range of filling fluids are available to cover the widest temperature range and match the needs of the process industries.





## Process connection

The complete range of 2600T series models can interface the process via standard DIN or metric threaded single port connections, differential style horizontal or vertical flanges or the most appropriate seal type.

## Direct mount and remote seals

Remote seals are used to isolate the 2600T transmitter from process conditions that will either shorten the transmitter life or dramatically affect its performance. These include: high or low temperatures, viscous, crystallizing or hazardous fluids.

The seals connect to the transmitter directly and/or remotely via capillary.

Seal types include wafer, flange mounting, flush or extended diaphragms, threaded union, welded bushing, clean-in-place, sanitary and aseptic, in-line and miniature.

In addition to the complete range of seal types, application matching fill fluids and materials – including corrosion and anti-stick coating – are selectable to cover the widest temperature range.

Wide choice of construction designs for heavy duty applications in the chemical, pulp and paper as well as food and beverage industry.

All welded Taylor design diaphragm seal systems guarantee optimum performance and maintenance free operation even in heavy duty applications (high vacuum, high temperature).



## Safety Transmitters for critical applications

The 2600T safety platform is based on the intrinsic redundancy of inductive sensors, offering TÜV certified SIL2 transmitters in compliance with IEC 61508/IEC 61511/ISA S84.01.

The Safety 2600T matches all necessary requirements in terms of diagnostics coverage, reliability and availability according to IEC 61508/IEC 61511 for SIL2 devices, with the additional protection which only an HFT1 device can provide.

In a SIL2 environment, a single Safety 2600T transmitter provides the same level of protection as two conventional devices, while retaining the same performance and accuracy characteristics.

The reduced number of transmitters results in lower lifecycle costs of up to 50%.



## Competence resulting in diversity

### Multivariable Transmitters

The unique combination of several sensor systems in a single device permits the simultaneous measurement of differential and absolute pressure. Additionally, the sensor temperature is measured and recorded for service and diagnosis purposes.

Connecting an external temperature sensor allows the measurement of process temperature in addition to the pressure variables. As a result, the transmitter is capable of measuring flow gases, vapors and liquids using the differential pressure method.

With dynamic flow calculations, considering the type of primary element and the operating density of the fluid as a function of pressure and temperature, the real mass flow is directly available as an output in accordance with AGA 3 or DIN EN ISO 5167.

- Multi-functional: a single transmitter can be used for up to three measured values
- Modular: exchangeable electronics with self-reconfiguration
- Global: national and international approval certificates
- World's most accurate multivariable transmitter - 0.04%
- A unique multivariable transmitter with communication via FOUNDATION Fieldbus or PROFIBUS PA



## Temperature Measurement

Temperature is the most important measuring variable for many processes. With its wide range of environmentally ruggedized thermocouples, RTDs and heating elements designed for the widest spread of industries and applications, and with its temperature transmitters and supply units, ABB is able to meet the requirements of the entire measuring chain.



### Advanced technologies – Global application experience

ABB's success in the field of temperature measurement, which is closely linked with the trademark Sensycon, is based on 120 years of experience.

Advanced solutions for standard, industry-specific and project-specific applications are available to meet the ever increasing customer requirements.

Our experience in designing, engineering and manufacturing temperature measuring devices is second to none.

The key features of our products are their reliable, user-friendly measuring technology, their innovative design and their economic use even under challenging operating conditions such as harsh industrial environments or in hazardous areas.

International certificates and approvals and certified calibration laboratories ensure a high quality standard. Due to the multi-lateral ECA (European Cooperation for Accreditation) agreement, the national calibration certificates are accepted in many industrial nations throughout the world.



### Temperature Sensors

The appropriate temperature sensor can be selected from three product lines: one offering the best solution considering investment cost and delivery time, one for universal applications and one for customized solutions.





## Temperature Sensors with measuring inset

Flexible temperature sensors for use in vessels and pipes with aggressive or explosive liquids or gases.

- Individually selectable insertion length
- Welded/drilled/turned thermowell
- A variety of explosion protection designs



Heavy-duty version for use in the harsh environments of the chemical, petrochemical or offshore industries:

- Certified explosion protection in accordance with ATEX, FM and CSA
- A variety of process connections
- Housing made of die-cast aluminum or stainless steel
- Threaded cover with retention device
- Ambient temperature range: -50 ... +150 °C/-58 ... +320 °F

## Sanitary Temperature Sensors for hygienic applications

- All process-wetted parts made of food-safe materials
- CIP/SIP capabilities
- Confirm to: 3A Sanitary, EHEDG and FDA



## Temperature Transmitters

A variety of designs are available for a wide range of applications:

- 4...20mA, HART, PROFIBUS, FOUNDATION Fieldbus
- Excellent long-term stability
- Extensive programming capabilities
- Wide operating temperature range: -50 ... +110 °C/+23 ... +230 °F
- Comprehensive explosion protection concept
- SIL2 for safety-related plants

## Sheathed and cable-type Temperature Sensors

- Flexible and vibration-proof sensor
- Available in extraordinary lengths
- Universal plugs, connectors and cables



## Straight Thermocouples for high-temperature applications

- For furnaces, hot gas conduits and incinerating plants
- Measuring range up to 1800 °C/+3272 °F
- A variety of process connections



### Head-mounted transmitters

- Robust and easy to install



### Field-mounted transmitters

- Protection to IP 66/67, NEMA 4X
- Aluminum or stainless steel housing
- Extremely rugged design
- Analog or numerical/alphanumeric digital display



### Rail-mounted transmitters

- DIN rail mounting (in-line)



Innovative Instrumentation	
Industrial IT	
Instrumentation Services	
Flow Measurement	
Pressure Measurement	
<b>Temperature Measurement</b>	
Analytical Instruments	
Recorders and Controllers	
Actuators and Positioners	

## Analytical Instruments

An innovative leader in analytical instruments for nearly 70 years, ABB offers one of the broadest ranges on the market today. ABB's extensive experience and unsurpassed range of parameters allows us to satisfy your need for a single source supplier of analytical instrumentation.



### Because accuracy matters

Bringing together skills from companies such as Cambridge Instruments, EIL, Kent, Taylor and TBI, ABB Instrumentation is able to provide measurements and expertise in a wide variety of applications. Modern processes need accurate, reliable analytical measurements in order to meet local environmental regulations and run profitably. For over 70 years, ABB has developed and manufactured analyzers for the power and steam, pulp and paper, environmental, and food and beverage industries. Today, we are a global industry leader providing a selection of measurement, monitoring and analytical solutions to meet the exacting quality requirements of our valued customers.

ABB Instrumentation offers one of the largest analytical instrument and sensor portfolios available today – 18 parameters and growing. Our commitment to innovation is exemplified by the annual dedication of a multimillion US dollar investment in research and development. ABB's capability is backed by efficient and effective local support in over 100 countries. This means, no matter where your project is located or destined, ABB can offer you the support needed to be successful.



ABB's line of analytical instruments has been developed to meet the world's growing demand for accurate, reliable information about process quality. Offering one of the broadest selections of instruments available today, ABB is unique in its capabilities and applications knowledge.

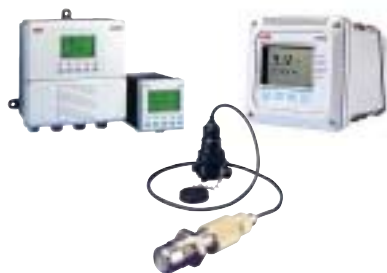




## Optical Dissolved Organics and Nitrate

Designed specifically for the potable water market, providing information in a simple cost effective way to assist with optimising the water treatment process, and ensuring compliance with operating limits these systems use the latest UV light absorption techniques.

- Automatic cleaning
- Reagentless operation
- Long-life and ultra-stable light source



## Conductivity/Resistivity

The widest range of conductivity sensor technology available. Our sensor family includes 2- and 4-electrode, and electrode-less technologies. Whether for high purity water or aggressive chemical applications, ABB has the sensor to meet your requirements.

- Precision cells eliminate calibration factors
- Auto-compensation in high-coating media
- Insertion, flow-through, dip and retractable cells
- HART, PROFIBUS DP and PA, and FOUNDATION Fieldbus

## pH/Redox (ORP)

Unrivalled range of instruments, sensors and sensor systems with patented sensor technologies for even the most challenging power, process and water process conditions – including high temperatures and pressures, pure water and the most contaminated liquids.

- In-line sensor diagnostics and integral PID control
- Non-incendive or intrinsically safe instruments
- Self-cleaning and process-resistant electrodes
- In-line, dip, submersible and retractable sensors



## Dissolved Oxygen

Our comprehensive range aids maximum efficiency and minimum down time on high pressure steam-raising plant and provides effective control of sewage treatment. The encapsulated cartridge design eliminates maintenance time previously required to re-build dissolved oxygen sensors.

- Replaceable, low cost sensor
- Self-cleaning, floating-ball sensor systems
- In-line sensor diagnostics and integral PID control
- Sensor jet-wash facility





## Combustion Gas Analysis

These analysers are designed to monitor Oxygen and Combustibles in virtually all combustion processes. The range includes close coupled extractive or true in-situ measurement, oxygen only or oxygen plus combustibles.

- Hazardous area approvals ATEX, CENELEC and FM
- MCERTS certification
- TÜV approval 13 and 17 BlmSchV
- Automatic calibration



## Colorimetric Silica and Phosphate

The 8240 Series of monitors utilizes colorimetric measurement techniques and a carefully designed liquid handling section, providing accurate and reliable measurements with minimal maintenance.

- Continuous measurement
- Capable of analyzing upto 6 streams
- Unique heated block assembly
- Extensive diagnostics

## Hydrogen Purity Monitoring

Gas analyzers to monitor hydrogen purity in hydrogen cooled generators. It provides a complete system for monitoring hydrogen purity during normal operation and purge gas monitoring during commissioning and decommissioning of the generator.

- Certified intrinsically safe
- Fail safe design
- Full redundant measurement of hydrogen purity



## Monitors for Ammonia, Carbon Dioxide, Chloride, Fluoride, Nitrate

The 8230 series of monitors incorporates selective ion measurement technology. Accurate and reliable, continuous measurement is ensured by utilizing sample temperature control and automatic two point calibrations.

- Continuous control of sample temperature
- Online diagnostics
- Simple design for ease of maintenance







## Turbidity

Our rugged turbidity systems operate in the most demanding installations. Whether measuring industrial effluent or processes of near perfect clarity, ABB's line of turbidity systems gets the job done. Simple maintenance and operator safety is ensured using a dry standard calibration method.

- Ranges from 0 to 1 NTU and up to 250 NTU and 2,000 FTU
- Assured accurate and reliable results below 0.1 NTU
- Dry standards eliminate use of toxic formazine
- Auto-cleaning performance for reduced maintenance

## Sodium

ABB provides monitoring systems for the effective and reliable measurement and control of sodium. Users can achieve peak efficiency, and minimize downtime from excessive boiler corrosion or scaling in the water/steam cycle and the water treatment plant of modern power stations.

- Automatic sample temperature compensation
- 'Pumpless' liquid handling section
- Comprehensive diagnostics facility



**Analytical measurements offering one of the largest analytical instrument and sensor portfolios available today**

## Hydrazine

This exceptional analyzer enables measurement of hydrazine in boiler feedwater with auto range change. With full calibration available, the instrument enables monitoring of expensive hydrazine dosing so there is minimal waste of this costly reagent.

- Auto range switching
- Low volume reagent usage
- Compensation for pH and temperature
- Refurbishable sensor



## Integrated monitoring solutions

ABB can optimize our products to your application reducing the time for installing, testing and commissioning. ABB offers engineered, preassembled water monitoring systems that are efficient, simple to install and easy to operate.

- Ideal working environment for operators
- Simple maintenance, enhanced operator efficiency
- Delivered to site ready for operation
- More than 25 years experience

## Recorders and Controllers

**ABB manufactures a wide range of process and industrial process controllers and recorders. From the latest high visibility, secure videographic recorder to single loop controllers and indicators, the ABB range can be used across a wide spectrum of applications, even in the harshest of environments.**

### A clearer view of your process

Based on over 150 years of experience – since Taylor started to provide customers with instruments to help them better control their business – ABB has developed a comprehensive family of process control instrumentation that meets the demanding requirements of a broad range of industries – water/waste, paper, metals, food, chemicals, pharmaceuticals, oil & gas. The range includes process controllers, digital indicators, videographic and chart recorders, all of which share the same high standards of reliability and flexibility and each capable of withstanding the harshest of process environments. Many of the products in the range can be configured in operation using ABB's unique PC configuration software. This is a Windows™-based package providing an immediate answer to customizing an instrument for a specific application or to simplify the setting-up of multiple units.

All ABB recorders and controllers have a high degree of dust and water protection, many to NEMA 4X and IP 66 as standard. Clear displays mean process status can be seen at a glance. They offer universal inputs, transmitter power supplies and extensive process output within the standard instrument. Totalizers, math functions and logic equations are available on many models for advanced application functionality. They have a high level of electrical noise immunity and all carry the CE mark.

Modbus and Ethernet communications facilities are available allowing maximum conductivity into systems and networks.



### Multi-Point Videographic Recorder

Multipoint process monitoring is made simple by the SM3000. The large, bright and clear display maximizes visibility of process data. A wide variety of display formats are available, including a circular chart display and overview of all process groups.

- 4 process alarms and 2 flow totalizers per channel
- 6 process groups
- Grouping of channels
- Individual displays for different processes
- Remote access and e-mail facilities





## Advanced Videographic Recorder

The SM2000 provides advanced functionality recording and high specification hardware features, making it suitable for almost any recording application. Easy operation, high clarity screen for ease of operation.

- Windows™ style display
- Touch sensitive screen
- 8 MB internal memory
- Optional math and logic capabilities



## Videographic Recorder

The SM1000 incorporates state of the art technology featured across the entire SM range, whilst ensuring maximum simplicity of use at a competitive price level.

- Compact Flash and SmartMedia memory card options
- Large capacity information storage
- Monitors up to 12 process signals
- Alarms and totalization

## Chart and Process Recorders

A comprehensive range of paper, process and chart recorders suitable for a wide range of applications. Based on many years practical experience, each model has features and benefits for accurate, reliable recording.

- 1 or 24 trace strip chart recorders
- 4 trace circular chart recorders
- Integrated process control



## Single Loop and Process Controllers

A range of general-purpose, single loop controllers suitable for applications in the paper, metals, consumer, chemicals, pharmaceuticals and oil & gas industries.

- 1/8 and 1/4 DIN process and motorized valve versions
- Wall/Pipe mounted universal process controllers
- Advanced 1/4 DIN short case controllers



## Process Indicators

A range of highly versatile indicators that can measure a wide range of variables including temperature, pressure, flow and level.

- Wall, pipe and panel mount
- Clear process displays



## Actuators and Positioners

ABB valve automation products are tailored to the individual customer's needs in all industrial applications. I/P signal converters and positioners are unequalled for their resistance to shock and vibration up to 10 g. Electrical actuators reliably meet the highest requirements for continuous positioning operation.



For nearly 50 years, ABB's electrical actuators have proved to be a good investment – throughout the world; in virtually all fields of applications and for the widest range of final control elements. They are an important component in the process automation chain, meeting the strongest requirements, today and into the future. High accuracy and availability – even in the harshest environments – are essential features of these actuators.

Electro-pneumatic positioners are additional devices for final control elements, converting a given setpoint signal to a precise valve position. They are designed to be used with pneumatic, linear or rotary actuators.

ABB offers the entire range of smart and compact positioners. Fully automatic self-commissioning and valve tuning plus comprehensive explosion protection concept are the essential prerequisites for application-oriented use.





## Continuous Electrical Actuators for modulating control

ABB actuators combine highest control quality and unmatched reliability, for all high-level control applications:

- The unique continuous modulating actuation principle guarantees the best, hysteresis free process control
- The robust and compact design provides proven reliability even in harshest environments
- The modular concept includes integrated and remote electronic installation
- Freedom of choice between HART, RS232 communication and PROFIBUS DP



## Positioners

ABB positioners provide flexible and cost effective valve management and control. Features include:

- Smart and analog versions available
- Modular design
- In-built self-diagnostics and continuous self-monitoring
- Communication via HART, PROFIBUS PA, FOUNDATION Fieldbus
- 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 (ATEX, FM, CSA) for intrinsically safe operation

Innovative Instrumentation

Industrial IT  
Instrumentation Services  
Flow Measurement  
Pressure Measurement  
Temperature Measurement  
Analytical Instruments  
Recorders and Controllers  
**Actuators and Positioners**



## Valve Control Equipment for Harsh Environments

## Pneumatic Actuators

The UP range of pneumatic rotary actuators are used to control dampers, lever operated valves and other final control elements.

- 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



## I/P and P/I Signal Converters

I/P and P/I signal converters are the central elements for electro-pneumatic positioners. With more than a million installed devices throughout the world, these products have a considerable market share. A patented force balancing system provides for analog signal conversion.

- A variety of designs
- Compact, any mounting orientation
- High resistance to shock and vibration
- Different signal ranges
- Individual units for OEM applications





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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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