
ABB MEASUREMENT & ANALYTICS

Measurement made easy

Packaged analyzer solutions



Expertise in technology

More than a century of experience

To operate any process efficiently, it is essential to measure, transmit, record and control. With ABB's measurement and analytical solutions, the customer is receiving the best technology, reliability and service in the business. ABB's products are easy to configure, easy to integrate and easy to maintain. With a global network of specialists delivering local service and support, ABB offers a broad range of life cycle services for optimum product performance and customer support.

The provision of complete customer solutions has long been core to our business and many of our customers expect us to go beyond simply providing instruments and analyzers. ABB's innovative systems integration centers can provide standard systems for key measurement parameters, as well as complex bespoke solutions for the most arduous of applications.

Our heritage

Aztec

Bailey

BOMEM

Bush Beach Engineering
Limited

**FISCHER
& PORTER**

Hartmann & Braun

K-TEK

Kent

[L G R]
Los Gatos Research
A MEMBER OF THE ABB GROUP

Pressductor®

SENSYCON

Schoppe & Faeser

Spirit
A MEMBER OF THE ABB GROUP

Taylor

TBI-Bailey

TORBAR
FLOWMETERS LTD

TOTALFLOW
MEASUREMENT & CONTROL SYSTEMS



Comprehensive packaged solutions

Serving diverse industries

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01 SWAS cabinet

For more than 40 years, ABB's packaged water analyzer team has designed and built systems for our customers. Originally focused on the power generation industry producing Steam and Water Analytical System (SWAS) shelters, the business grew rapidly to serve industries as diverse as Water and Wastewater, Petrochemical and Chemical.

ABB's packaged analyzer solutions team includes specialists in sample preparation (filtration & cooling), chemical engineering (fluid handling & pressure control), mechanical design (rack & shelter fabrication) and electronics (integration of instrumentation and distributed control systems (DCS).

ABB aims to be a flexible supplier for process monitoring and control. As such, we offer:

- Bespoke engineering and design solutions for third-party integration
- Complete fabrication of any system, from a simple panel to very large shelters
- Rack and cabinet-mounted systems to reduce and simplify installation requirements
- Sample-conditioning systems for high pressure and high temperature applications
- Filtration systems where fouling can adversely affect analyzer and instrument performance
- Automatic sampling, calibration and validation systems to increase system availability
- Standard panels for common applications such as pH and conductivity monitoring

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Continuous accurate measurement in the harshest of applications

- 01 Sample cooling and pressure regulation
- 02 Water quality analysis panel

ABB's experience across a range of industries provides peace of mind, whatever the application. We design systems on the basis of converting the fluid or vapor at the point of application to a usable and representative water sample for the measuring device.

Sample preparation comes in three main forms; temperature conditioning, pressure reduction and solids removal.

Temperature conditioning

The impact of corrosion and scale formation on many processes can be severe. Operators often need to know the quality and condition of water and steam at multiple points in their processes in real time to prolong asset life and maximize availability. Our systems are designed to reduce the temperature in sample streams to suitable and safe levels for both operatives and monitoring equipment. Working with leading providers of chillers and coolers, we ensure our systems represent the highest standards in safety while providing ideal conditions for water quality analyzer operation.

Pressure reduction

To combat the disparity between high pressures in the process and the limited pressures at which most sensors and analyzers operate, we design our systems based on the safest and most appropriate technologies including incorporating enclosures to protect operators where needed. ABB partners with global suppliers and client-approved vendors to ensure that the best solutions are applied for safe working and the extended life of the customer's assets.

Solids removal

Samples are not always available in a suitable condition for measurement. Many analyzers operate using optical sensors or other methods which can be prone to fail when fouled. ABB has expertise in selecting the best method of filtration to maximize the efficacy of the analytical measurement and the uptime of the analyzer.

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A service designed for the customer from the smallest panel to the largest systems

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03 Standard panel
mounted analyzers
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04 Self-contained
analyzer shelter

Panel-mounted analyzer solutions

While some of our customers prefer to integrate their ABB products themselves, for many there is a major benefit to procuring a ready to use system. For retrofit, replacement and upgrade applications, ABB has developed a range of standard systems for the most commonly used measurement systems. Using industry standard components and best practice in fitting design, customers can easily install a ready to use solution. Our panel-mounted analyzers include:

- Standard-sized backboard for wall or rail mounting
- Sensors, flow-chambers and pipework
- Transmitters/Analyzers with all electrical connections
- Isolation and flow control valves with indicators

Typical measurement parameters included in the range:

- pH
- Conductivity
- pH & conductivity
- Cation conductivity
- Degassed conductivity

Large-scale sampling packages

Many of our customers require a complete and integrated solution to monitor all of the critical elements of a specific process or plant. In such cases, we design a system from basic principles; the sample type to be monitored, its characteristics and the parameters to be measured in the sample. Taking into account the customer's preferences and specifications, we work with both ABB and third-party suppliers to produce a system design that meets performance needs, is cost-competitive and meets all necessary safety, environmental and electro-mechanical standards.

Such systems are often supplied in their own pre-fabricated buildings and are shipped complete, tested and pre-commissioned directly to the customer's site, requiring only plumbing and electrical connections to be made. Once this relatively simple installation is finished, the final commissioning is rapid and the system is ready to go into operation.

With hundreds of such installations around the world, from river banks to power stations, ABB has an unrivaled track record in providing large-scale systems to its customers.

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Boiler and steam-cycle monitoring

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01 Condenser
analyzer system
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02 Water quality
analysis shelter

ABB's heritage in the provision of sampling systems for power generation and other steam-raising plants is unrivaled. We have an established track record in innovation, including inventing the world's first dissolved oxygen and silica analyzers in the 1960s.

Demineralization

Treating boiler feed water is crucial to maximizing uptime and extending asset life in boiler plants. ABB's analyzers are trusted around the world to monitor and control the operation of ion-exchange filters and associated plant. Analyzers can be provided on pre-assembled panels, racks or skids, complete and ready to go.

Steam-cycle

As trace minerals precipitate with rising temperatures and pressures, ABB's silica analyzers can rapidly indicate rising levels and trigger blowdown or alarms.

Where the spent steam is condensed for return to the boiler and to reduce corrosion in the system, plant operators employ various systems including pH control, de-aeration and other chemical dosing. To ensure close monitoring and control of these systems, ABB's conductivity, pH, dissolved oxygen, sodium and silica analyzers are trusted to give rapid and accurate measurement.

Multiple samples for these parameters can be relayed to purpose-built shelters, where they can be reduced in temperature and pressure to safe and suitable levels to be analyzed. Our systems include all necessary pipework, valves, pressure regulation and cooling systems.

Cooling

Maintaining water quality and balance is essential in the measurement of any cooling water system. Reducing fouling corrosion and scale-formation are key concerns for any cooling system. As well as offering all of the essential parameters for monitoring cooling water quality, ABB has developed a wide array of custom measurement solutions from small cabinet systems to major systems in large laboratory-type shelters.

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Regulatory water monitoring

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03 River intake
monitor

Discharge of liquid effluent to the environment is subject to strict legislation in many countries, from municipal waste water plants through to industrial facilities. Such legislation requires operators to record data on water quality to ensure that certain parameters are within safe limits.

In addition, operators that abstract water for any purpose from a surface water or well/borehole source are subject to licensing and other regulatory requirements, calling for accurate and continuous monitoring of specific key parameters.

In many cases, there may be no building or suitable facility to house the analytical equipment, and appropriate equipment for extracting a sample and conditioning it.

ABB works with its customers to design and build systems which meet the needs of relevant legislation while taking into account the realities of the site. We fabricate solutions according to location, accessibility of samples, climate and data transmission needs.

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Proven measurement products

Our comprehensive industry portfolio 1/2

Product name	Electromagnetic flow	VortexMaster / SwirlMaster	Variable area flowmeters	Level	Pressure sensors & transmitters	Temperature sensors & transmitters	Valve actuators
Product type	FEP FEW	FSV FSS	Various	MT5000 KMICRO KM26 LLT AT	26X 266	TSx TTx	Contract UP LP
Product image							
Water treatment	●	●		●	●	●	●
Demineralization	●			●	●		●
Boiler chemistry		●		●	●		●
Steam cycle		●	●		●	●	●
Cooling water		●	●	●	●	●	●
Wastewater treatment	●	●		●	●		●

Valve positioners	Combustion control	Emissions monitoring & control	Extractive gas analyzers	In-situ gas analyzers	Averaging pitot tubes	Paperless recorders	Paper recorders	Controllers
TZID EDP300 AV	AZ20 AZ25 AZ30 AZ35 AZ40	ACX ACF	AO2000 EL3000	LS25	FPD	SM500F RVG200	C1900	CM10 CM30 CM50 CMF310
								
●						●	●	●
●						●		●
●	●	●	●	●	●	●		●
●					●	●		●
●					●	●		●
●						●	●	●

Proven measurement products

Our comprehensive industry portfolio 2/2

Product name	pH	Conductivity	Turbidity	Suspended solids	Dissolved oxygen	Sodium	Dissolved organics
Product type	AP100 AP200 AP300 7600 TB(X)5	AC200 TB200 TB400	4690 ATS430	ATS430	9408 ADS430 ADS550 ADS551	ASO550	AV400
Product image							
Water treatment	●	●	●		●		
Demineralisation	●	●					●
Boiler chemistry	●	●			●		
Steam cycle	●	●			●		
Cooling water	●		●		●		
Wastewater treatment	●		●	●	●		

Silica	Ammonia	Nitrate	Phosphate	Iron	Manganese	Aluminium	Chlorine	Hydrazine
AW641	AAM631 AW630	AV400	AW642 AW630	AW630	AW630	AW630	AW400	AHM550
								
	●	●	●	●	●	●	●	
●								
●			●					●
●			●				●	
	●						●	
	●	●	●			●	●	



ABB Measurement & Analytics

For your local ABB contact, visit:
www.abb.com/contacts

For more product information, visit:
www.abb.com/measurement

