



ANALYTICAL TECHNOLOGIES PORTFOLIO OVERVIEW

The most complete industrial measurement solutions, from sea to space



ENGINEERED
TO OUTFIT

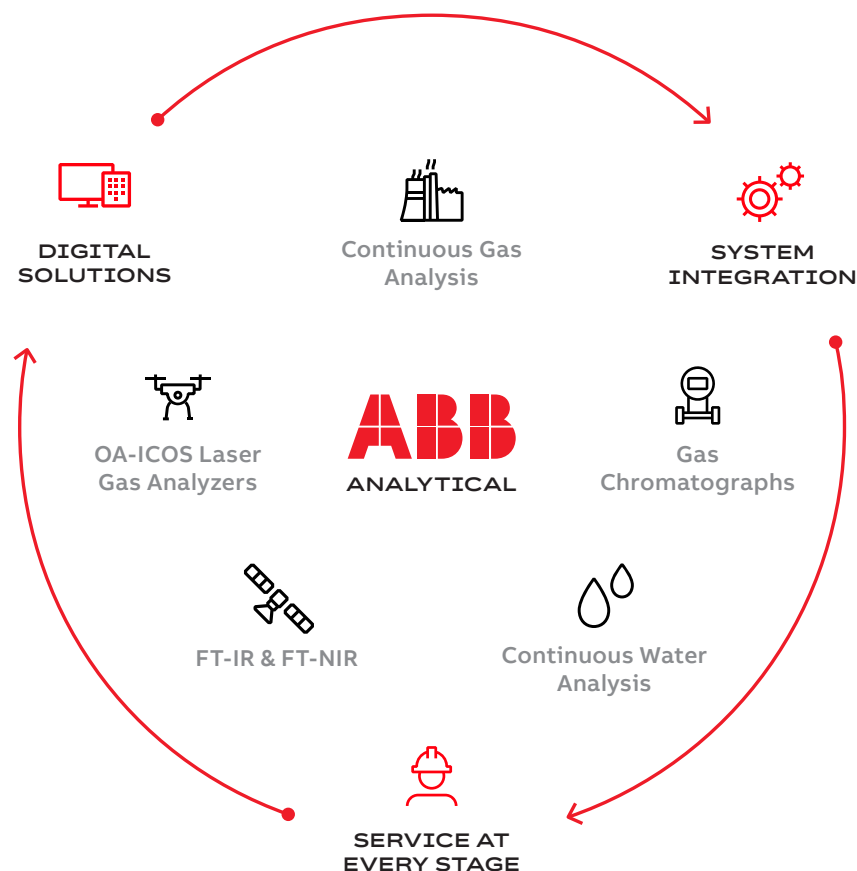
TABLE OF CONTENTS

03	The ABB Analytical advantage
05	Continuous Gas Analyzers
07	Continuous Water Analysis
09	Gas Chromatograph Analyzers
11	FT-IR/FT-NIR Analyzers
13	Multiwave Analyzers
15	Off-Axis-ICOS Laser Gas Analyzers
17	System Integration
18	Digital + Service solutions

THE ABB ANALYTICAL ADVANTAGE

We offer a more comprehensive product portfolio across five product lines – plus digital solutions, global service and system integration – helping you tackle your toughest measurement challenges.

Our mission is to help industries run leaner and cleaner, contributing to a safer, more sustainable world. Backed by global expertise and end-to-end support, we empower you to stay ahead in a rapidly evolving landscape across every step of operations and product lifecycles.



Productivity

Our analytical solutions deliver real-time, high-throughput analytics that reduce lab dependency and accelerate decision making. Our systems are engineered to maximize uptime, minimize manual intervention and streamline operations across industries such as oil and gas, water and wastewater, power, chemicals and semiconductor manufacturing.

Quality

From trace-level gas detection to high-resolution spectral analysis, our analyzers deliver accuracy even in the harshest environments. Trusted by global leaders across industries, our technologies ensure safety, reliability and performance in labs, processes, systems – and even space.

Flexibility

Our modular portfolio spans mobile, stationary and airborne platforms and is designed to adapt to your process, industry and scale. Whether you're monitoring emissions in an industrial plant or refinery, optimizing water treatment, surveying methane leaks in remote terrains, or protecting power transformer assets, we have solutions that fit.

Simplicity

Our analyzers are engineered for intuitive operation, fast setup and minimal maintenance. With digital tools like My Measurement Assistant+ and ABB Ability™ cloud platforms, users gain instant access to system diagnostics, technical support and analytical insights – anytime, anywhere.

Sustainability

Our analyzers enable real-time emissions monitoring, methane leak detection and greenhouse gas sensing – from the ground to outer space. They empower customers to reduce unwanted emissions, optimize resource use and meet environmental goals. From natural gas and biomethane custody transfer applications to water pollution analyses, our solutions help industries operate more responsibly and efficiently.



CONTINUOUS GAS ANALYZERS

Our Continuous Gas Analyzers (CGAs) are designed to support industries in their journey toward environmental responsibility and sustainable growth.

With over 100,000 systems installed worldwide, we deliver accurate gas concentration measurement for safe, efficient operations and ensure compliance with environmental regulations.

CGA portfolio overview



1. MODULAR GAS ANALYZERS

Scalable gas modules for infrared, ultraviolet, thermal conductivity, flame ionization, zirconia, paramagnetic and laser-based measurement



2. HOUSINGS AND INTEGRATIONS

Robust sampling, housing and enclosure systems for any environment



3. PRECONFIGURED SYSTEMS

Readymade systems for emissions, process and marine applications



4. CEM COMPLIANCE SOLUTIONS

Certified gas, dust and flow analyzers and Data Acquisition Handling System



Industries and applications

- Oil & gas
- Chemical
- Waste-to-energy
- Power
- Marine
- Cement
- Emissions monitoring
- Combustion compliance and optimization
- Energy transition

Key benefits



Measure accurately in tough environments



Maximize uptime with predictive diagnostics



Ensure certified multi-gas compliance



Over 100,000 systems installed worldwide, demonstrating reliability and global trust



Predictive maintenance reduces service footprint and unplanned downtime by 80 percent



We established that the oxygen measurement from the **Magnos28 is more accurate, more precise** and within tighter tolerances compared to the instrument that was previously in use. We are convinced of the improved repeatability and stability of the measurement and confident that this will lead to reduced power consumption and reduced calibration related operating costs on our site.

– Jürgen Wimmer, responsible for plant inspection at AlzChem (Germany)

CONTINUOUS WATER ANALYSIS

Water quality affects everything from industrial equipment to natural resources. ABB's water analysis and control solutions help utilities and plants improve efficiency, reduce costs and meet regulations.

With over 100 years of experience and a legacy of innovation, we bring trusted technologies and deep expertise to help you manage water more sustainably, with precision and reliability built for real-world operations.

CWA portfolio overview



1. COLORIMETRIC AND ISE ANALYZERS

Our Aztec™ and Navigator™ series of analyzers measure multiple parameters including aluminum, ammonia, fluoride, iron, phosphate, silica and sodium



2. ULTRAVIOLET AND VISIBLE LIGHT ANALYZERS

The UviTec™ family delivers fast, accurate measurement of BOD, COD, color, nitrate, nitrite, permanganate, TOC, DOC, UVT and UV254 in seconds



3. SMART TRANSMITTERS

With innovative features like EZLink™ and My Measurement Assistant, our universal transmitter platforms simplify water quality measurement, access and servicing



4. SENSORS AND PROBES

A comprehensive portfolio of sensors for measuring chlorine, conductivity, dissolved oxygen, dissolved organics, pH/ORP and turbidity



5. CONTROLLERS

ControlMaster™ offers scalable PID control with intuitive operation and free ConfigPilot software for efficient integration across a wide range of applications



6. RECORDERS & INDICATORS

Local traceable data collection with paperless and hard copy chart recorders for monitoring and compliance. Digital indicators feature easy-to-read displays



Industries and applications

- Urban water cycle
- Potable water treatment
- Desalination & distribution monitoring
- Wastewater treatment
- Cooling water
- Ultrapure water
- Regulatory compliance
- Identify & reduce product loss

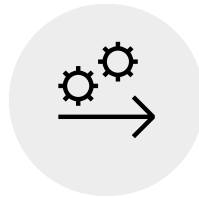
Key benefits



One of the largest water analyzer portfolios available



Easier commissioning, operation and maintenance with digital tools like the EZLink app



Maximum uptime with innovative sensor technologies for longer life and up to 75% less maintenance



Pre-built panelized solutions available for turnkey integration into your plant



We needed a trusted partner that had the technical expertise and could deliver and commission safe, reliable, quality fluoride analyzers that would allow us to meet our legal requirements.

– Sheila Brown, Senior Commissioning Specialist,
Instrumentation and Control, Watercare

GAS CHROMATOGRAPH ANALYZERS

Our Gas Chromatography solutions provide accurate, real-time analysis of gas and liquid stream compositions. This enables improved product quality, optimized process control, enhanced operational efficiency and regulatory compliance. Plus our GC line also supports combustion optimization, ensures purity in production and distribution, and helps detect and monitor emissions and volatile compounds. By delivering precise chemical composition data, it plays a critical role in safety and sustainability, with cost-effective operations across complex industrial environments.

GCA portfolio overview



1. PGC5000 SERIES

Multi-oven analyzers designed for advanced separation challenges across all segments of the Hydrocarbon Processing Industry (HPI)



2. NGC8200 SERIES

Rugged, compact analyzers for upstream and midstream gas analysis with best-in-class custody transfer accuracy and precision



3. GCPro SERIES

The world's first gas chromatograph with integrated, certified cybersecurity. A breakthrough in analytical technology with smart features that boost reliability, security and simplify maintenance





Industries and applications

- Natural gas
- Biogas & biofuels
- Carbon Capture, Utilization, and Storage (CCUS)
- Environmental & emissions monitoring
- Refining
- Petrochemical and Chemical
- Power generation
- Industrial gases

Key benefits



Versatile and adaptable across a wide range of industries, process conditions and sample types



High accuracy enables tight control over product specifications and process conditions



Ensure trace-level regulatory compliance



Real-time monitoring of key performance indicators (KPIs) and optimized maintenance scheduling



Process optimization and cost savings by reducing waste, energy consumption and downtime, with early fault detection

FT-IR/FT-NIR ANALYZERS

Our Fourier-Transform Infrared and Near-Infrared (FT-IR and FT-NIR, respectively) analyzers deliver fast and reliable insights into complex processes and applications.

FTIR technology is a trusted, industry-proven solution delivering fast, repeatable, and multi-component analysis with a single analyzer. Designed for a wide range of applications across diverse industries, it enables rapid measurements – often in minutes – replacing or complementing lengthy laboratory procedures. By accelerating QA/QC workflows and supporting process optimization, our FTIR/FT-NIR spectrometers help operators ensure quality, compliance, and sustainability while reducing lab time and improving efficiency.

FT-IR/FT-NIR portfolio overview



1. PROCESS ANALYZERS

Fiber optic-based solutions for remote real-time monitoring of various industrial processes



2. LABORATORY ANALYZERS

Dedicated FT-IR and FT-NIR laboratory analyzers for QA/QC, R&D, routine chemical analysis and process support



3. ORIGINAL EQUIPMENT MANUFACTURER (OEM) SPECTROMETERS

OEM-ready FT-IR and FT-NIR components for integration and advanced data analysis



Industries and applications

- Semiconductors
- Oil & gas
- Chemicals
- Life sciences
- Emission monitoring
- Petrochemical
- Refining

Key benefits



Simplify workflows with user-friendly interfaces and automated calibration



Provides laboratory-grade accuracy for process measurements



Minimizes wastes, product reblends and giveaways



Achieve ultra-low detection limits in the most complex streams



Highly flexible to analyze powders, pellets, gels liquid or gas

“

TALYS ASP310 Wet Bath Monitoring Analyzer fulfils the needs of equipment suppliers to semiconductor, solar and LED Fabs. It is a low-cost, high-performance wet bath monitor that allows for real-time, in-bath monitoring of a wet etching, cleaning, and PR removal bath. Great Results.

– Sushan Gautam, Senior Software Engineer, Vassar Labs

MULTIWAVE ANALYZERS

Multiwave process photometers deliver reliable and fast continuous analytical measurements for process control, quality assurance, safety monitoring and environmental compliance in chemical and petrochemical plants.

Built on decades of industrial experience, our devices operate in harsh conditions such as wet, hot, pressurized, acidic, explosive, or corrosive environments. Highly configurable, they handle liquid or gas streams across UV, visible and IR spectral ranges for multi-component analysis.

Multiwave portfolio overview



1. PIR3502

Configuration for infrared and near-infrared absorbing compounds



2. PUV3402

Configuration for ultraviolet-absorbing compound and color measurements



3. PUV3402-LED

Configuration with higher precision and less maintenance for the ultraviolet absorbing compound





Industries and applications

- Petrochemical and Chemicals
- Refining

Key benefits



Versatile and adaptable across a wide range of chemical processes



Measure accurately in tough environments



Over 45 years of field-proven applications worldwide, demonstrating reliability and global trust



Low cost of ownership, simple to use with limited maintenance needs

OFF-AXIS-ICOS LASER GAS ANALYZERS

Off-Axis Integrated Cavity Output Spectroscopy (OA-ICOS) analyzers deliver ultra-sensitive, accurate, stable gas and isotope measurements across land, sea and air – all with expansive uses and applications. Built on patented technology, they detect and quantify gases like methane with high sensitivity, speed and reliability.

MobileGuard™, MicroGuard™ and HoverGuard™ enable real-time gas leak detection, localization and quantification while Sensi+ NG™ measures four natural gas contaminants in one analyzer. These solutions help operators meet performance standards, reduce impact and improve safety with fast, accurate and reliable data.

OA-ICOS portfolio overview



1. PORTABLE & BENCHTOP ANALYZERS

Compact analyzers for fieldwork, research and high-precision lab applications requiring highest performance



2. PROCESS AND LAB ANALYZERS

High-performance laser analyzers for continuous gas measurement in fixed installations



3. HAZARDOUS AREA ANALYZERS

Rugged laser analyzers for fast, accurate trace gas measurements in industrial gas streams



4. ADVANCED MOBILE LEAK DETECTION

ABB Ability™ platforms for vehicle, UAV and handheld methane leak detection and quantification



5. SUBSEA MONITORING

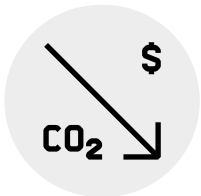
Deepwater gas and isotope analyzers for environmental, offshore and research deployments



Industries and applications

- Oil & gas
- Chemicals
- Energy transition
- Semiconductors
- Government & utilities
- Environment & research
- Gas leak detection

Key benefits



Help reduce emissions and meet stringent compliance goals



Measure with high sensitivity, accuracy and precision



Operate reliably in harsh environments



Detect and find leaks faster with high performance mobile analyzers



OA-ICOS achieves parts-per-billion (ppb) level sensitivity with no cross interference, ideal for monitoring complex gas matrices

“

For leak detection and ABB, I find it's the best tech out there, honestly. What I like about it, is its extremely stable baseline, very sensitive detection limits and rapid response. All those things are needed.

– Dr. Daniel Krause, Senior Research Engineer, SINTEF Ocean

SYSTEM INTEGRATION



Our System Integration Unit delivers complete analytical systems from concept to commissioning as well as after-sales services through the entire lifecycle.

We manage every phase to ensure the right technologies and efficient delivery across global industries. Each system is fully assembled and tested before shipment to reduce commissioning time and minimize onsite issues. Our modular designs fit oil and gas, chemicals, power, marine and green energy sectors. We provide further support with digital tools and remote diagnostics, and our systems enable emissions monitoring, leak detection and water quality analysis to help meet environmental and regulatory goals.

We provide single-source accountability for all project requirements to reduce vendor coordination and risk. With global hubs and proven technologies – five integration centers and eight factories globally – we also simplify complexity, delivering tested systems that improve uptime and compliance.

DIGITAL + SERVICE SOLUTIONS

Devices and digital solutions no longer exist in parallel. Our approach to digital and service maximizes performance and uptime to transform how industries outperform, evolving the relationship between devices, data, people and processes. Our platforms provide real-time clarity into asset health and performance for all expertise levels. Our suite of digital tools and experienced experts enables superior service execution worldwide for all our customers' needs.



Our digital solutions deliver instant analytics to optimize operations and predictive maintenance that can cut unplanned downtime by up to 80 percent. Enterprise-grade platforms provide reliable monitoring and scale from single assets to global fleets, accessible anytime. Unified dashboards and AI copilots turn complex workflows into guided actions.

With 40+ local service centers worldwide, our expert teams provide 24/7 support for rapid response and lifecycle continuity. With certified precision and modular service offerings, we help reduce downtime and improve operations.

Lifecycle tools and innovations aligned to market needs support every phase, delivering long-term value across all product lines.

Service and digital solutions combine to extend asset life and support cleaner, more efficient operations.

From maximized uptime to actionable insights, from compliance to clarity, we help teams work smarter, respond faster and reduce impact.

Digital & service overview

1. MY MEASUREMENT ASSISTANT+

Generative AI-powered self-service app that supports customers in commissioning, maintaining and troubleshooting measurement devices 24/7

2. ABB ABILITY™ CONDITION MONITORING

An on-premise solution with full visibility into analyzer health, helping detect issues early, troubleshoot remotely and maintain performance efficiently

3. ABB ABILITY GENIX™ DATALYZER

A scalable, cloud-based solution that connects analyzer fleets to deliver real-time emissions monitoring insights, simplifying data access and improving decision-making from anywhere

4. VISUAL REMOTE SUPPORT AND SELF SERVICE

Support when and where you need it utilizing the latest remote support technologies. Empowering industry operators with over the shoulder visual guidance, troubleshooting or remote device assessment for faster resolution

5. MEASUREMENT CARE

Scalable service agreements, personalized to your needs. Comprehensive support from self-service to full lifecycle management packages to keep your processes moving, all bundled in a single service agreement

6. SPARE PARTS

Protect your process reliability, ensure optimal performance and extended equipment lifespan, minimizing unplanned downtime and maintaining measurement accuracy throughout your operations with strategic spare parts stocking of ABB parts



Industry applications

Our digital and service solutions work seamlessly together and are engineered to serve every industry across the globe



Key benefits



My Measurement Assistant+ connects digital and service to devices and people:

- Resolving up to 80% of technical issues in minutes and boosting first-time fix rates up to 50%
- Visual Remote Support can save up to three days of waiting time and thousands in repair costs
- Dynamic QR codes help reduce troubleshooting time by up to 20-30 minutes per case



24/7 service support and more than 40 local service centers ensure rapid response, minimal disruption and downtime



CEMS supported by Genix Datalyzer, enabling remote troubleshooting, predictive maintenance and increased system availability backed by cross-device and cross-plant data services



Combine all your essential services into on scalable, personalized agreement providing you with measurement you can trust across the full potential lifetime of your devices



—
ABB Ltd.
Affolternstrasse 44
8050 Zurich
Switzerland

solutions.abb/analytical

© Copyright 2025 ABB. All rights reserved.
Specifications subject to change without notice.

