Emission Monitoring

Advanced solutions for every measuring task

Your task – our solution

The measurement of hazardous emissions is becoming increasingly important to your company. On the one hand, government regulations keep getting stricter and on the other, you want your company to take an active role in protecting the environment. That's why you need solutions that deliver both optimal results and cost effectiveness.

Your are looking for ...

- A reliable partner providing comprehensive support
- Analyzer systems perfectly tailored to your individual requirements
- Turn-key systems for problem-free operations from the very start
- Systems that are easy to operate
- Reliable, low-maintenance systems which are performance-tested
- A worldwide operating partner

Our solution

- Pre-engineered systems with a compact, modular design
- Cost effective operations over the entire life cycle
- High-performance NDIR/FTIR technology
- Low-maintenance, self-monitoring systems
- Calibration without test gas cylinders
- Network communications via field bus, Ethernet or modem

If that is what you are looking for – then ABB is the partner you want. Using performance-tested, standardized modules, we can develop cost effective solutions tailored to meet all your special requirements: From sample conditioning to analytical equipment, from system controls to turn-key solutions. Thanks to our ABB worldwide network, you can be sure that our solutions will also fulfill any regional requirements. And our analyzer systems can either be integrated with your existing equipment or supplied as a unified solution, for example with integrated data management.

Our analyzer systems are engineered to provide the measurement accuracy you expect and the high reliability you need for low-maintenance, low-cost operations. Several gas components can be measured simultaneously and state-of-the-art calibration methods permit reliable monitoring operations – without test gas cylinders.

The system's modular design integrates all gas feed and conditioning components. Through its compact design, extremely short gas pathways are now possible with a minimum number of internal connections. As a result, the analyzers need less maintenance and their spare parts inventory has been streamlined which further reduces your operating costs and improves the system's availability.
Equally convincing is the system's economical calibration method, which is now possible without the use of expensive supplementary test gas cylinders.

ABB analyzer systems – an overview:

AO2000

- High-performance measuring technology
- Standardized analyzer components
- Compact system design
- Easy integration of components
- Standard interfaces for IT and process automation networks
- Typical sample components: CO, NO, SO_2, O_2
- NO_X in single digit ppm ranges

With ABB analyzer systems, you always have everything in control.
Internal sensors in the analyzer and the sample conditioning system ensure that status information is always available centrally.
This reduces unnecessary down-time as well as the need for frequent inspections. And by connecting our systems to a PC via the integrated Ethernet interface, you'll also be able to control the system remotely.

ABB analyzer systems offer you convincing advantages

- Easy to operate, compact analyzers
- Extended maintenance intervals
- Calibration without expensive test gas cylinders
- Complete remote control and monitoring

Why settle for less?

ACN

- For emission monitoring according to local regulations
- Economically priced analyzer system for standard applications
- Simultaneous determination of up to five sample components e.g. CO, NO, SO_2, C_{total} and O_2
- Calibration without test gas cylinders
- Maintenance interval 1 year
- Complete remote control and remote maintenance via the AO2000 network
- Maintenance as needed via self-monitoring

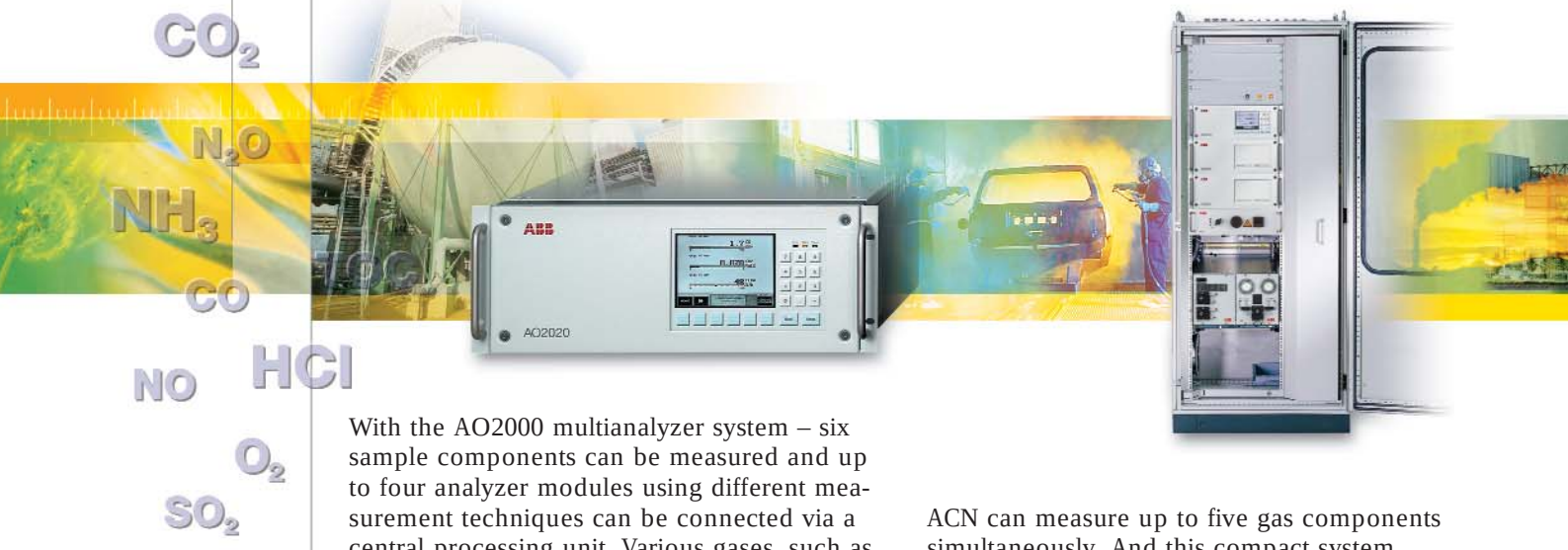
ACF-NT

- For emission monitoring according to local regulations
- Analyzer system for complex applications
- Simultaneous measurements of up to 12 sample components or its range can be extended to 30 components, such as HCl, CO, NO, SO_2, NO_2, N_2O, NH3, H_2O, CO_2, HF, O_2 and C_{total}
- Maintenance interval 6 month
- Remote diagnosis via modem
- Maintenance as needed via self-monitoring

For every application the right analyzer system

Performance-tested analyzers – AO2000

The modular components of the AO2000 series form the basis for a wide range of ABB analyzer systems. What makes the AO2000 so unique is its high-performance measuring technology and its use of standardized modules. These analyzer components are the keys to the system's success and are available for use with different measurement principles.



With the AO2000 multianalyzer system – six sample components can be measured and up to four analyzer modules using different measurement techniques can be connected via a central processing unit. Various gases, such as CO, CO_2, NO, SO_2 or hydrocarbons can be measured, depending upon the module in use. With the special photometer Limas11 even very low concentrations of hazardous substances such as NO_X, NO and NO_2 can be measured directly. This thereby eliminates the need for complex, error-prone converter solutions. And everything can be operated from the central processing unit – regardless of whether the analyzer is nearby or up to 350 meters away.

The AO2000 series is modularly built and all of its sample gas conditioning components can be smoothly integrated with your other existing instruments. Here, a central processing unit takes over all the system control functions. And with the AO2000, all data is now centrally available on your PC's thanks to a standard Ethernet interface.
Consequently, maintenance can be planned in advance and carried out as required. This reduces down-times, increases the system's availability and permits more efficient maintenance schedules. Added to that, the AO2000 can be also be operated remotely through this interface.

The compact system for standard applications – ACN

ACN, the economically priced system for standard applications – is used for the measurement of CO, SO_2, NO, C_{total} and O_2.
This analyzer system is based on the AO2000 series and uses the photometers Uras14 or Limas11, the FID analyzer module Multi-FID14 as well as the oxygen analyzer module Magnos106 or an electrochemical oxygen sensor.

ACN can measure up to five gas components simultaneously. And this compact system also includes all the modules needed for gas sampling and conditioning, such as the SCC-C sample gas cooler and the SCC-F gas feed unit.

With the ACN analyzer system, no test gases are needed for its calibration. The zero or span point for the oxygen measurement as well as the zero point for the infrared measurement are adjusted with ambient air.

The span adjustment for measurements with the infrared analyzer Uras14 is done using innovative gas-filled calibration cells, patented by ABB. The stability of these calibration cells has been confirmed in a ten year test conducted by Germany's technical inspections association, TÜV. And naturally, the calibration process is done automatically.

Controlling complex applications – ACF-NT

The ACF-NT is ideal for monitoring complex applications, such as: Domestic and hazardous chemical waste incinerators, sewage sludge incinerators, cement plants and power plants. The system is based on ABB's FTIR spectrometer and it offers the high selectivity of FTIR technology as well as the ability to accommodate additional infrared components.

Sample gas conditioning

In most cases, a gas sample requires conditioning before it can be processed by a gas analyzer. Pressure, temperature, solids and condensation, such as water, acids or lubricating oil, can all influence the final measurement or impair the analyzer's operation. That's why sample conditioning needs to be precisely adapted to each application.

This monitoring system is perfectly suited for the measurement of emissions according to the 17th BImSchV (German Federal Immission Control Ordinance) such as: HCl, CO, NO and SO_2 as well as NH_3, H_2O, CO_2, HF, N_2O and NO_2. In addition, the measurement of O_2 and Ctotal can also be integrated and even low levels of water-soluble components can be recorded without loss. This is made possible through innovative high temperature measurement, where the sampling and conditioning systems as well as the measurement cell are all uniformly heated to 180 °C.

The reliability of the system is increased by its self-diagnostics functions. Here, all optics are checked during the daily reference spectrum registration. Should an error occur, it is automatically identified, documented and a maintenance request is then generated. Thanks to the ACF-NT systems' stability, its calibration procedures have also been simplified. Now, zero and reference points for emissions measurements only need to be checked once every six months, as confirmed by the technical inspectors at Germany's Rheinland TÜV. Finally, you no longer need to maintain an inventory of test gases, because a test gas check is only needed twice a year and can be done by your ABB service team.

ABB offers you a wide range of system components to solve even the most difficult problems. The SCC-C sample gas cooler includes all the modules needed for sample gas conditioning. Whether with precondensation, reagent dosing or automatic condensation discharge – the SCC-C can be easily adapted to any application. A system connection to the AO2000 is provided via the SCC-F gas feed unit, which then permits monitoring and control of all sample gas conditioning. Plus, all information concerning the cooling temperature, cooler function and sample gas flow can then be centrally accessed. Additional control functions include the control of external solenoids and automatic shut-off valves for the gas feed pump, which are triggered by the condensation monitor or high temperatures. Thanks to this innovative concept, both the engineering and installation costs for these analyzer systems have been dramatically reduced.

ABB provides you with a modular system for the sample gas feeding and cleaning. This allows the sample conditioning system to be easily adapted to the process gas state. And depending on the type of application – low or high temperature, high dust content or corrosive gas – a specially designed probe tube can also be used.

ABB continuously optimizes its products, therefore the technical data in this document is subject to change.

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