



ACF-NT  
Multi-component analyzer system  
Emission monitoring in combustion  
processes

# Analyzer system ACF-NT – powerful and cost-effective

Are you looking for ...

- A reliable analyzer system to accurately measure the composition of your plant's exhaust gases?
- A turnkey system with trouble free operation right from the start?
- A system whose simplicity makes it easy to operate and maintain?
- A reliable partner that provides you with worldwide support?

Then ABB is the right partner for you.

We offer cost-effective solutions that comply with all regulatory requirements. We provide turnkey systems that enhance and upgrade your existing systems.

#### The multi-component analyzer system ACF-NT offers:

- Measurement of 15 gas components
- Proven hot/wet extractive measurement
- Powerful FTIR technology
- Completely pre-engineered systems with a compact and modular design
- A single sample inlet for all sample gases with a unique air-driven aspirator pump
- Low cost of ownership, maintenance and installation
- Communication, control and maintenance via fieldbus and Ethernet TCP/IP or modem

#### Typical applications

- Hazardous waste incinerators
  - Cement plants
  - Lime kiln
  - Thermal treatment of contaminated soils
  - Solvent recovery and destruction at pharmaceutical plants
- Municipal waste incinerators
  - Biomedical waste incinerators
  - Waste pyrolysis
  - Gasification
- Power Plants
  - Combustion of coal, oil, waste or sludge
  - DeNOx and DeSOx plants
- Steel and aluminum smelters
- Brick, tiles and glass manufacturing
- Catalyst protection monitoring
- Combustion research

#### International certifications

- Fully certified CEM system according to international standards
- TÜV certification according to the German and European requirements, EU Directives 2000/76/EC, 2001/80/EC, and EN 14181
- MCERTS certified in Great Britain
- Certified in USA according to US EPA and ASTM
- Certified in Canada according to CAN/CSA and UL Std.
- GOST certification





# High stability, accuracy and reliability

## Everything under control

ABB is the only supplier offering all standard analyzer modules, such as FTIR, FID and ZrO<sub>2</sub>, thus ensuring that the ACF-NT works as a truly integrated CEM system, with a simple, easy-to-understand user interface.

Furthermore, ACF-NT offers extensive communication capabilities. All system parameters allow remote monitoring.



# Emission monitoring in combustion processes

## Powerful and accurate

ABB's multi-component analyzer system, ACF-NT, combines the advantages of an infrared spectrometer using Fourier transformations with the proven technology of FID and ZrO<sub>2</sub> analyzer modules. There is no need for frequent calibration. The high resolution FTIR spectrometer provides selective infrared measurement of the active gas molecules with great sensitivity and stability.

The proven FID and ZrO<sub>2</sub> sensors measure the unburned hydrocarbons and the oxygen content. Even for exhaust samples with high moisture levels, the accuracy of this new system has been certified by the German Technical Inspections Association (TÜV) following a six month test period.

## Cost effective solution

The innovative design of the FTIR spectrometer with complete separation of the interferometer from the gas path and the trouble-free aspirator pump module requires less routine maintenance of the analyzer system: Thus minimizing downtime and increasing the product's operational availability. TÜV certification confirms that the system's availability is over 97% and meets the availability criteria of the EC directive 2000/76/EC on waste incineration. The equipment is also designed to integrate signals from other sensors, such as dust, flow, or mercury sensors. Digital communication uses industrial standards like Ethernet, Modbus and PROFIBUS.

## ABB – a dependable partner

- More than 20 years experience with FTIR spectrometers in process gas analysis
- More than 1200 installations worldwide

## Proven and reliable analyzer technology

- High resolution infrared spectrometer using Fourier transformations for IR absorbent gases
- Zirconium oxide analyzer for oxygen
- Flame ionization analyzer for unburned hydrocarbons
- Standard measuring capability for up to 15 gas components, which can be expanded upon request

### FTIR – sample components and smallest measuring ranges

	mg/m <sup>3</sup>	ppm		mg/m <sup>3</sup>	ppm
SO <sub>2</sub>	0...75	0...25	HF	0...5	0...5
NO	0...200	0...150	CO	0...75	0...60
NO <sub>2</sub>	0...40	0...20	H <sub>2</sub> CO	0...20	0...15
CH <sub>4</sub>	0...100	0...150	CH <sub>3</sub> OH	0...40	0...30
N <sub>2</sub> O	0...50	0...25			
NH <sub>3</sub>	0...15	0...20	H <sub>2</sub> O	0...40 Vol.-%	
HCl	0...15	0...10	CO <sub>2</sub>	0...30 Vol.-%	

### FID – sample component and smallest measuring range

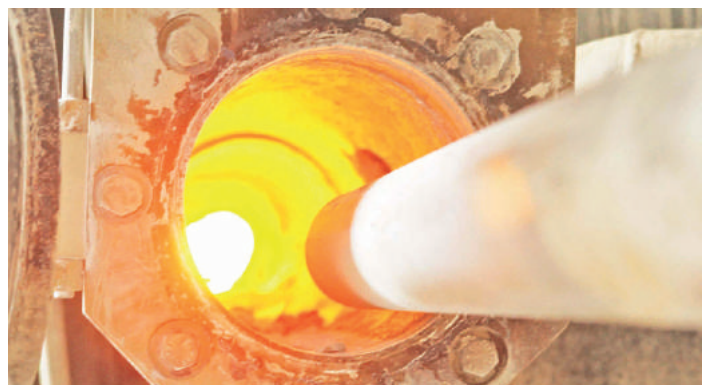
VOC 0...15 mg/m<sup>3</sup>

### ZrO<sub>2</sub> – sample component and measuring range

O<sub>2</sub> 0...25 Vol.-%

### Technical data – ACF-NT

- Limit of detection: < 2% of the measuring span
- Zero-point drift: Corrected automatically
- Sensitivity drift: None
- Detection limit: Typically < 2% of the measuring range
- Cross sensitivity: < 4% of the measuring range
- Availability: > 97% as confirmed by TÜV





# The Added Value

## What you can expect from a market leader

As one of the world's leading suppliers of analyzer technology, we offer our customers additional benefits and services other manufacturers can not provide. With the added values ABB Analytical helps to improve performance and reliability at work.

### Best choice of analyzers tailored to your needs

We offer the broadest selection of measuring principles under one roof. All types of analyzers share a common operation to reduce the need for training and spare parts.

### Certified sales and service partners wherever you are

Our "Manufacturer Certified Service" program involves more than 300 service specialists with many years of experience and comprehensive know-how working for our clients on-site worldwide. Our engineers are your professional partners dedicated to finding the best solutions for your measuring tasks. They regularly undergo manufacturer training and certification.

### Long-term security in your investment

Our comprehensive and transparent life cycle plan for each of our products covers the service of spare parts and service support for their entire lifetime. Our products are extendable with upgrade programs keeping them technologically up-to-date at all times.

### Most powerful software solutions

Full remote control and maintenance access to the system inside a protected network and quality monitoring (QAL3) are available for ABB analyzers. Integrated controllers with PLC functionality provide monitoring while controlling the measurement from sample taking right up to analysis.

### Unique time and cost saving calibration concepts

ABB has 30 years of unrivalled experience in producing gas-filled calibration cells, allowing internal calibration without test gas cylinders for photometers. Single-point calibration with ambient air as the standard gas is also possible.

### Unrivalled options for connectivity

ABB gas analyzers and systems excel in Ethernet network abilities and Modbus or PROFIBUS interfaces. This enables the analyzer data to be easily read, archived and visualized on a PC, PLC or process control system.

### Assured quality through independent certification

ABB provides all major international certificates for CEMS, hazardous area installations, metrological approvals, electrical safety and quality and environmental management.







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