

# BEX-1000FT Multi-Component Emissions Analyzer System



## Laboratory vehicle exhaust testing based on FTIR technology

A&D Technology's multi-component emissions analyzer system, BEX-1000FT, is based on FTIR (Fourier Transform Infra-Red) technology and is designed for the continuous measurement of diluted or undiluted vehicle exhaust in a laboratory environment. The system provides optimized gas analysis methods for different fuel types, including Gasoline, Diesel, CNG and other alternative fuels.

To fulfill today's and future emissions regulations, a simultaneous reduction of particulate and  $\text{NO}_x$  emissions is necessary. Particulate emissions are reduced by the usage of Diesel Oxidation Catalyst (DOC) and Diesel Particulate Filters (DPF). Both systems convert NO to  $\text{NO}_2$ , which may have a detrimental influence on the SCR ( $\text{DeNO}_x$ ) catalyst. Additionally, these after-treatment devices have the ability to create supplementary contaminants (such as  $\text{N}_2\text{O}$  and  $\text{NH}_3$ ), which are very accurately measured using FTIR technology, but not using conventional emissions analyzers.

Because the BEX-1000FT system allows for the simultaneous measurement of more than 30 gases at one detector, with a sample rate of up to 5 Hz, it is the ideal

measuring device for testing these catalytic systems and other emissions after-treatment devices, in various combinations.

The list of measurable gases includes  $\text{NO}$ ,  $\text{NO}_2$ ,  $\text{N}_2\text{O}$ ,  $\text{NH}_3$ ,  $\text{CO}$ ,  $\text{CO}_2$  and  $\text{CH}_4$ , as well as alcohols and carbonyls.



*The A&D BEX-1000FT multi-component analyzer system has been designed for the continuous measurement of diluted or undiluted vehicle exhaust in a laboratory environment*

## Benefits

- Low cost of ownership due to drift-free calibration and minimal maintenance requirements
- Highly portable and vibration dampened, allowing for effortless test cell sharing
- Accurately measures the most important exhaust gas components with a sample rate of up to 5 Hz
- Excellent correlation with conventional analyzer systems

## Features

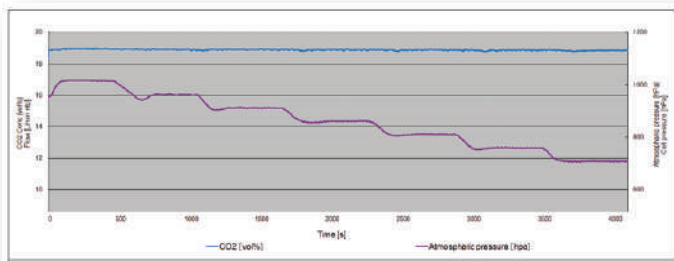
- Allows for measurement of up to 40 regulated and unregulated gases at one detector
- Differentiated measurement of  $\text{NH}_3$ ,  $\text{NO}$ ,  $\text{NO}_2$ ,  $\text{N}_2\text{O}$ , and  $\text{CH}_4$
- Differentiated measurement of hydrocarbons
- Fast response,  $T_{10-90}$  time < 1.5 seconds
- Complies with legislative requirements, for FTIR measurement, by US EPA 40 CFR part 1065

# BEX-1000FT

## Multi-Component Emissions Analyzer System

### High and Low Pressure Control System

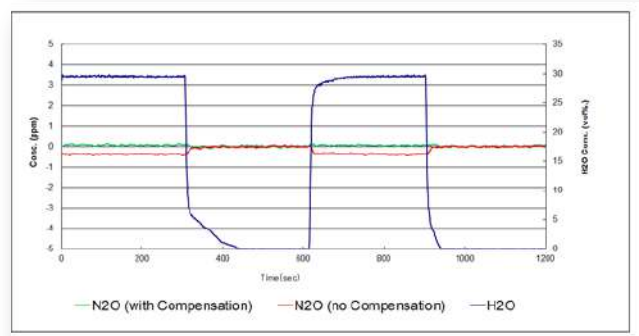
With the optional high and low pressure control system, BEX-1000FT can be used at low atmospheric pressure test chambers (simulated altitudes of  $\leq$  app. 4000 m/13,120 ft.). Inversely the system can also accept high exhaust pressure, produced by sampling in between emissions after-treatment devices, or with a turbocharger.



The optional sample system accepts sample pressures of 0 – 400 kPa, and an atmospheric pressures of 700-1000 mBar

### Cross Interference Compensation

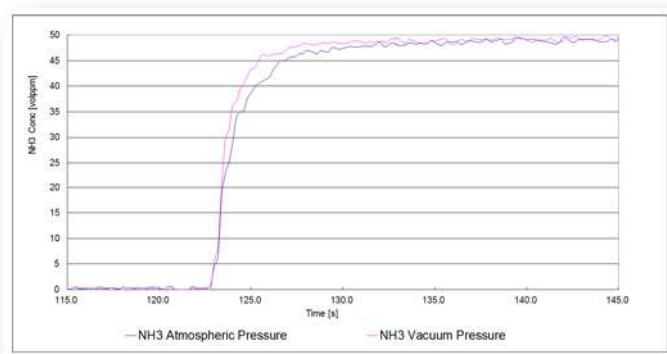
Measurements can be forged by the cross interference between different gases. Water content in the exhaust can have an especially significant influence on the measurements of certain gases (e.g.  $N_2O$ ). The BEX-1000FT cross interference compensation minimizes these effects of water, and other interfering gases.



Changes in the  $H_2O$  concentration do not affect the  $N_2O$  measurement

### Fast Response Time

The BEX-1000FT measures the exhaust under vacuum pressure, significantly reducing the adsorption, exhaust gas consumption, and the response time.



### Configurable High and Low Ranges

The BEX-1000FT allows for configurable ranges, and will display multiple ranges of each gas component. The analyzer will simultaneously broadcast high and low ranges of gas components, ensuring you have an accurate measurement over the entire emissions spectrum, from very finite measurements all the way up to enormous gas concentrations.

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