



# ECO PHYSICS CON 765

## APPLICATION EXAMPLES

- Ambient air quality control
- Atmospheric research
- Tropospheric research
- Continuous trace gas analysis



**The CON 765 NO<sub>y</sub> converter was developed for combination with a highly sensitive ECO PHYSICS chemiluminescence analyzer and allows the measurement of the total reactive nitrogen oxides (NO<sub>y</sub>) in the range of parts per trillion.**

### Measurement of:

#### • NO<sub>y</sub>

### The Role of Oxides of Nitrogen

The oxides of nitrogen play an important role in atmospheric chemistry. In the troposphere, nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) first function as catalysts in photochemical reaction cycles, that either produce or destroy ozone (O<sub>3</sub>), second, they are precursors of nitric acid (HNO<sub>3</sub>), which is an important constituent of acid precipitation. Compounds such as peroxyacetyl nitrate (PAN) are an important source of NO<sub>x</sub> (NO + NO<sub>2</sub>) in areas far off from anthropogenic sources. In the lower stratosphere, NO<sub>y</sub> and ClONO<sub>2</sub> are the principal reactive nitrogen species involved in ozone depletion. Accurate measurement techniques for the above mentioned compounds are important to be able to understand their chemistry and verify model calculations.

What is NO<sub>y</sub>?

**NO<sub>y</sub> = NO<sub>z</sub> + NO<sub>x</sub>**  
**NO<sub>x</sub> = NO + NO<sub>2</sub>**  
**NO<sub>z</sub> = HNO<sub>3</sub> + HONO + N<sub>2</sub>O<sub>5</sub> + H<sub>2</sub>NO<sub>2</sub> + PAN + NO<sub>3</sub> + org. nitrates – but not NH<sub>3</sub>**

### The Measurement Technique

The CON 765 utilizes the reduction of the higher oxides of NO in reaction with CO on a metal catalyst NO<sub>y</sub> + CO > NO + CO<sub>2</sub> + X and the subsequent detection of NO by a ECO PHYSICS chemiluminescence NO analyzer.

### Continuous Monitoring

The CON 765 NO<sub>y</sub> gold converter enables the continuous and automatic monitoring of nitrogen oxides at remote clean air areas. Many features have been integrated to assure robust, accurate and safe operation. The conversion efficiency exceeds 90% and is linear over the complete range. The presence of water vapor in the sample reduces the interference of NH<sub>3</sub> and HCN to a negligible level.

### The Ideal Combination

The CON 765 is designed to be operated together with an ECO PHYSICS NO analyzer. The CON 765 is in use at several remote research and monitoring locations in Europe.

- Compact design
- High conversion efficiency
- Low interferences against HCN, NH<sub>3</sub> and amines
- Remotely controllable in combination with a ECO PHYSICS nCLD

**Measurably better**

Sample flow rate	depending on CLD: nCLD 899 and Cranox II: 0.7 l/min nCLD 88 p: 0.3 l/min CLD 780 TR: 3 l/min	Supply Gas	CO 99.999; 30 ml/min outlet press. CO bottle: 1.5bar
Converter volume	24 ccm	Power required	320 VA
Converter temperature	300°C (regulated)	Supply voltage	240 V/50 Hz, 115 V/60 Hz
Converter efficiency	> 90%	Interface	digital, fits with ECO PHYSICS nCLD's
Converter material	gold	Dimensions	height: 120 mm width: 290 mm length: 650 mm
Temperature range	5 - 40 °C	Weight	12 kg
Humidity tolerance	5 - 95% rel. h (non-condensing, ambient air and sample gas)	Delivery includes	converter incl. gold tube power cable interface cable
Input pressure	ambient (600-1'100 mbar abs.)		
Flow settings	selectable sample intake: - direct into converter tube or - through valve, allowing fully automatic calibration. - switching mode: NO&NO <sub>y</sub>		

## FLOW DIAGRAM

\*Depending on filter setting  
Connectivity properties are country-specific  
ECO PHYSICS reserves the right to change these specifications without notice.

