



# NO<sub>x</sub> BOX

NO/NO<sub>2</sub>/NO<sub>x</sub> System



The NEMA 4/4X climate-controlled, chemiluminescent NO<sub>x</sub> BOX System offers an ideal solution for NO<sub>x</sub> analysis in harsh environments.

## Features

- Heated version for direct “hot/wet” sampling or unheated version with sample conditioning
- Measures from 0-3 ppm up to 0-3,000 ppm Full Scale (NO/NO<sub>2</sub>/NO<sub>x</sub>)
- Air-conditioned and heated enclosure
- Heated sample pump
- Solenoid valves for automatic calibration
- Fast response time
- Electronic sample and ozone flow control
- Fittings for zero/span valves, and penetration and temperature control circuit for heated line

## Applications

- Continuous emissions monitoring (CEMS)
- SCR monitoring
- Scrubber efficiency
- Combustion efficiency
- Turbine/generator feedback control
- Process gas analysis
- Power plant denitrification

## Options

- Paramagnetic oxygen channel
- Internal zero air generator
- Provision for monitoring up to four sample points
- Remote heated filter
- Output options: Voltage, current, RS-232 using AK Protocol and TCP/IP, Modbus

# NO<sub>x</sub>BOX

## Chemiluminescent NO<sub>x</sub> System

### Description

The CAI NO<sub>x</sub>BOX system has been specifically designed for harsh environmental conditions frequently found in outdoor applications. The analyzer system is housed in an air-conditioned and heated NEMA 4 or 4X enclosure.

The NO<sub>x</sub>BOX incorporates a CAI heated or unheated chemiluminescent NO/NO<sub>2</sub>/NO<sub>x</sub> analyzer and can include an optional paramagnetic oxygen analyzer and water-removal sample conditioning system. An optional

zero-air generator is available to supply pure air for the NO<sub>x</sub> analyzer's ozone generator and for zero calibration.

Automatic calibration, complete diagnostics and alarms are standard with digital outputs to control systems. With the heated analyzer, the system operates as a "close-coupled system" allowing direct hot/wet measurements, greatly simplifying sampling requirements and decreasing response time.

### Analyzer Specifications

|                         | NO <sub>x</sub> Analyzer    | Oxygen Analyzer           |
|-------------------------|-----------------------------|---------------------------|
| <b>Detector:</b>        | Chemiluminescence           | Paramagnetic              |
| <b>Ranges:</b>          | 3 to 3,000 ppm              | 0-25%                     |
| <b>Response Time:</b>   | < 3.0 Seconds               | < 10.0 Seconds            |
| <b>Resolution:</b>      | 0.01 ppm NO/NO <sub>x</sub> | 0.1%                      |
| <b>Repeatability:</b>   | > 0.5% of Full Scale        | > 0.5% of Full Scale      |
| <b>Linearity:</b>       | Better than 1%              | Better than 1%            |
| <b>Noise:</b>           | < 1% Full Scale             | < 1% Full Scale           |
| <b>Zero/Span Drift:</b> | Better than 1% Full Scale   | Better than 1% Full Scale |
| <b>Flow Control:</b>    | EPC valve                   | Orifice                   |
| <b>Converter:</b>       | Vitreous carbon             |                           |
| <b>Ozonator:</b>        | Ultraviolet lamp            |                           |

### System Specifications

**Ambient Temperature** – -40°F to +140°F  
**Power Requirements** – 115 VAC, 15 amp  
**Air Requirements** – 60-125 PSIG @ 7 LPM  
**Dry Oil-Free Air** – @ -35°C to 0°C dew point  
**Zero Air Generator** – Less than 1 ppm NO/NO<sub>x</sub>  
**System Response Time** – Varies, dependent upon heated sample line length  
**Output** – Voltage, current, RS-232, TCP/IP, Modbus  
**Input Fittings** – ¼-inch single heated sample line termination

**Compressed Air Input** – ¼-inch  
**Vent/Drain** – ¼-inch  
**Calibration Gas** – ¼-inch  
**Dimensions** – 48" H x 36" W x 16" D  
**Weight** – 165 Pounds  
**Certifications** – The NO<sub>x</sub> analyzer is CE Mark and ETL listed. Conforms to UL STD 61010-1 and is certified to CAN/CSA C22.2 STD No. 610610.1

*Specifications subject to change without notice.*



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