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Analytical Products and Solutions

NOXMAT 700

Accurate, Precise, Dependable

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Features

- Measures from ppb to 3,000 ppm Full Scale (NO/NOx)
- Four User Programmable Ranges from 0-1 ppm to 0-3,000 ppm
- Fast Response Time
- Auto Ranging
- Auto Calibration
- Output Options: Analog (User Scalable), Digital (RS232) including AK Protocol & TCP/IP
- Displays & Outputs: NO/NOx/NO₂ with Adjustable Time & Hold, Diagnostics, Alarms & Preventative Maintenance
- Remote Monitoring and Control
- Electronic Sample & Ozone Flow Control

Description

The NOXMAT Model 700 CLD NO/NOx digital analyzer is designed around a state-of-the-art 16-bit microprocessor, with 16 digital inputs, 16 digital outputs, 16 analog inputs and 4 analog outputs. The analyzer can be manually operated from the keypad or remotely via TCP/IP, RS-232C communications and discrete inputs.

The analyzer display includes screen presentation of all analyzer alarms. Four levels of password protection are provided. For precision measurements, the analyzer's accuracy is increased by entering calibration curve fit polynomials.

Automatic calibration may be activated locally or remotely and includes auto cal via preset times. The analyzer may also display NO, NOx and NO₂ via selectable time and hold commands.

Method of Operation

The NOXMAT 700 CLD Analyzer utilizes the principle of chemiluminescence for analyzing the NO or NO_x concentration within a gaseous sample. In the NO mode, the method is based upon the chemiluminescent reaction between ozone and nitric oxide (NO) yielding nitrogen dioxide (NO₂) and oxygen. This reaction produces light which has an intensity proportional to the mass flow rate of NO into the reaction chamber. The light is measured by means of a photodiode and associated amplification electronics. In the NO_x mode, NO plus NO₂ is determined as above, however, the sample is first routed through the internal NO₂ in the sample to NO. The resultant reaction is then directly proportional to the total concentration of NO_x. Local operation is simplified using the 20 button alphanumeric keypad with data presented on a back lit LCD display. All local operations may be performed remote via RS-232 and/or TCP/IP.

Applications

- Stack Gases (CEM)
- Scrubber Efficiency
- Turbine/Generator Feedback Control
- Process Chemical Gas Analysis
- Personnel Safety
- Power Plant Stack De-Nitrification
- Vehicle Emissions

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Specifications

Detector: Chemiluminescence (CLD) Photodiode (thermally stabilized with Peltier Cooler) NO/NO_x RANGES: 0-1 * to 3,000 ppm NO or NO_x (Four user programmable ranges) (Higher ranges available upon request)

Response Time: T90 < 2 Seconds to 60 Seconds Adjustable

Resolution: 10 ppb NO/NO_x (Displays 5 significant digits)

Repeatability: Better than 0.5% of Full Scale

Linearity: Better than 0.5% of Full Scale

Noise*: Less than 1 % of Full Scale (*1.5% @ 0-1 ppm Full Scale)

Zero & Span Drift: Less than 1 % of Full Scale per 24 Hours

Zero & Span Adjustment: Via front panel, TCP/IP or RS-232

NH₃, HCN & SO₂ Effect: Not detectable with 100 ppm

CO₂ Effect: Less than 1 % with 10% CO₂

H₂O Effect: Less than 1 % with 1 % H₂O

Sample Gas Pressure: 8-25 psig (Standard model)

Sample Flow Rate: 1.5 to 2.0 LPM (Consult factory for other flow rates)

Converter: Vitreous Carbon Material @ 205.C > 98% efficiency

Ozonator: Ultraviolet Lamp

Air Or O₂ Requirements: Less than 0.01 ppm NO_x at 350 cc/Min.
@ 25 psig (Dew Point < -35°C)

NO/NO_x Control: Manual/Remote/Auto Cycle (Remote NO_x mode by dry contact closure)

Outputs Available: TCP/IP, RS232, Four Scalable Analog 0- 10 V/4-20 mA

Discrete Alarms: (Local & Remote Adjustable) General Fault! TTL Logic (Ground True) Calibration Failure/ TTL Logic (Ground True) High Concentration (2 each)/ TTL Logic (Ground True)

Digital Diagnostics: Control Voltages, Temperatures, Pressures, Flow Parameters

Keypad Displays: Factory Settings, TCP/IP Address, Passwords (4), Scalable Analog Output Voltages, Full Scale Range Select, Auto Cal Times

Special Features: Calculated NO₂ derived from NO_x converter efficiency, Auto Ranging, Auto Calibration (adjustable through internal clock) Less than 3 cc Gold Plated Reaction Chamber

Display: 3" x 5" Back lit LCD

Sample Temperature: Up to 50.C Noncondensing

Ambient Temperature: 5 to 40.C

Ambient Humidity: Less than 90% RH Noncondensing

Warm-Up Time: 1 Hour (Typical)

Fittings: 1/4 Inch Tube

Power Requirements: 115/230 (:t100;0) VAC; 50/60 Hz; 200 Watts (350 watts with pump)

Dimensions: 5 1/4 H x 19 W x 17 D (Inches) - short case

Weight: 45 Pounds