600 SERIES

NDIR/O_2

Infrared/Oxygen Multi-Component Analyzer

APPLICATIONS

- Stack Gases (CEM)
- Combustion Efficiency
- Turbine/Generator Feedback Control
- Process Chemical Gas Analysis
- Personnel Safety
- Fuel Cell Analysis
- Vehicle Emissions

OPTIONS

- Model 600 P/F—Paramagnetic or Fuel Cell Oxygen Analyzer With no NDIR Gases
- Internal Sample Pump
- Sample Flow Control
- Multiple Inputs
- 19 Inch Rack Mount Slides

FEATURES

- Measures From Low ppm up to 100% Full Scale
- Measures Oxygen from 0-1% up to 0-100%
- Multi-Component—Up to Three IR Channels or Two IR Channels Plus Oxygen
- Up to Four User-Definable Ranges Per Channel
- CE Mark and ETL Listed—Conforms to UL STD 61010-1, Certified to CAN/CSA C22.2 STD No. 610610.1
- Auto Calibration and Ranging
- Fast Response Time
- Temperature and Pressure Compensation
- Comprehensive Diagnostics
- Output Options: Voltage, Current, RS-232, TCP/IP
- Remote Monitoring and Control

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600 Series
NDIR/O_2 Analyzer

NDIR/02

DESCRIPTION

The California Analytical Models 601-2-3 NDIR/O2 digital analyzer product line 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 calibration via preset times.

METHOD OF OPERATION—NDIR

The California Analytical Instruments' NDIR analyzer is based on the infrared absorption characteristics of gases. Using a single infrared beam to measure gas concentrations, this analyzer produces highly stable and reliable results. A single infrared light beam is modulated by a chopper system and passed through a sample cell of predetermined length containing the gas sample to be analyzed. As the beam passes through the cell, the sample gas absorbs some of its energy. The attenuated beam (transmittance) emerges from the cell and is introduced to the front chamber of a two-chamber infrared microflow detector. The detector is filled with the gas component of interest and consequently the beam experiences further energy absorption. This absorption process increases the pressure in both of the chambers. The differential pressure between the front and rear chambers of the detector causes a slight gas flow between the two chambers. This flow is detected by a mass-flow sensor and is converted into an output signal.

METHOD OF OPERATION - Oxygen

The California Analytical Instruments oxygen analyzer section utilizes either the paramagnetic or fuel cell method to determine the percent level of oxygen contained in the sample gas. The oxygen level is displayed on the LCD panel in percent concentration.

SPECIFICATIONS

IR Analysis Method: Non-Dispersive Infrared (NDIR)
NDIR Components: CO / CO_2 / CH_4 / C_3H_8 / SO_2
Detector Type: Microflow
NDIR Ranges: From 0-50* ppm up to 0-100%
*SO_2, CH_4, C_3H_8 0-250 ppm minimum
Range Ratio: 10:1
Response Time (IR): 90% of Full Scale in < 1 Second**
**Depending on Cell Length, Flow Rate, and Time Constant
IR Sample Cell: Stainless Steel w/ Replaceable gold cell liner
Resolution: Typically 0.1% of Full Scale
Repeatability: Better than 1.0% of Full Scale
Linearity: Better than 1.0% of Full Scale of Factory Calibrated Ranges
Noise: Less than 1% of Full scale of Factory Calibrated Ranges
Zero & Span Drift: Less than 1% of Full Scale per 24 Hours
Zero & Span Adjustment: Via front panel, TCP/IP or RS-232
Sample Flow Rate: 0.5 to 2.0 LPM
Oxygen Analysis Method: Paramagnetic or Fuel Cell
O_2 Ranges: 0-1% (Paramagnetic Only) up to 0-100% O2 Full Scale, Four Definable Ranges
O_2 Response Time: T90—2 Seconds Paramagnetic, 16 Seconds Fuel Cell

600 Series Features:

Outputs available: TCP/IP, RS232, Four Scalable Analog 0-10V / 4-20mA (Allows Offset & Expandable Range DC Analog Outputs)
Discrete Control: Remote/Local Control, Range Change, Range Sense Mode (All TTL Logic)
Discrete Alarms: (Local & Remote Adjustable)
General Fault/TTL Logic (Ground True)
Calibration Failure/TTL Logic (Ground True)
Concentration (2 Each) TTL Logic (Ground True)
Digital Diagnostics: Pressure – Pressure Control Voltages Temperatures – Flow Parameters
Keypad Displays: Factory Settings, TCP/IP address, Passwords(4), Scalable Analog Output Voltages, Full Scale Range Select, Auto Cal Times
Special Features: Auto Ranging, Data Streaming, Auto Calibration (adjustable through internal clock)
Display: 3” x 5” Back lit LCD
Sample Temperature: Up to 50° C, Non-condensing
Ambient Temperature: 5° to 40° C
Ambient Humidity: Less than 90% RH (Non-condensing)
Fittings: ¼ inch Tube
Power Requirements: 115/230 (+/- 10%) VAC; 50/60Hz, 300 watts maximum
Dimensions: 5¼”Hx19”Wx23”D
Weight: 30-45 lbs. (Depending on configuration)

Specifications subject to change without notice.

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