600 SERIES

UV SO_2

APPLICATIONS

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

OPTIONS

- Internal Sample Pump
- NDIR CO_2 Channel
- Paramagnetic O_2 Channel

FEATURES

- Measures 5 to 1,000 ppm Full Scale
- Compact-size PMT With Integral Peltier Cooling
- Auto Calibration and Ranging
- Fast Response Time
- Temperature/ Pressure Compensation
- Comprehensive Diagnostics
- CE Mark and ETL Listed—Conforms to UL STD 61010-1, Certified to CAN/CSA C22.2 STD 61010.1
- Output Options: Voltage, Current, RS-232, TCP/IP , MODBUS
- Data Archiving

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600 Series SO_2 Analyzer

UV Fluorescence

DESCRIPTION

The California Analytical Series 600 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-232 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 analyzers' 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—UV

The California Analytical Instruments UV Fluorescence gas analyzer measures gas concentration based on the principle that SO_2 will fluoresce when exposed to ultra-violet light. The instrument consists of a UV light source and an optical filter, a measuring cell, a second optical filter, and a detector. In addition, there are lenses and baffles to focus the light. The light source emits UV light in the direction of the measurement cell. The light is focused and the wavelength filtered as it enters the measurement cell. The optical filter blocks UV at wavelengths longer than 230nm. The UV is absorbed by the SO_2 in the measurement cell. The SO_2 absorbs UV at wavelengths between190nm and 230nm, and then emits the energy as UV at wavelengths between 230 and 420nm. At a right angle to the incoming beam of UV light is the port for the detector. The detector is a photomultiplier tube that is very sensitive. The detector port has a filter that blocks UV shorter than 230nm, as well as a focusing lens. The filters keep the detector from sensing the UV light from the lamp, so only UV light emitted by SO_2 is measured. The amount of energy picked up by the sensor is directly proportional to the concentration of the SO_2 in the measurement cell.

METHOD OF OPERATION - Oxygen

The optional oxygen channel utilizes the paramagnetic 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.

METHOD OF OPERATION - CO_2

The optional CO_2 channel utilizes the NDIR method to determine the ppm level of CO_2 contained in the sample gas. The CO_2 level is displayed on the LCD panel in ppm concentration.

SPECIFICATIONS

Analysis Method: Ultra-Violet (UV) Fluorescence
Components: SO_2
Detector Type: Photomultiplier Tube (PMT)
SO_2 Ranges: From 0-5 to 0-1,000 ppm
(4 user-programmable ranges)
Response Time*: Approximately 17 seconds to 90% Full Scale
*Depending on Flow Rate, Range, and Time Constant
Resolution:** Typically Better than 0.2 ppm
**Depending on Range
Repeatability: Better than 0.5% of Full Scale
Linearity: Better than 1% of Full Scale
Noise*:** Typically Less than 0.1 ppm
***Depending on Range and Time Constant
Zero & Span Drift: Less than 0.5% 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
O_2 Ranges: 0-1% to 0-100% O_2 Full Scale, Four Definable Ranges
O_2 Response Time: T90 < 15 Seconds
CO_2 Analysis Method: NDIR
CO_2 Ranges: 1,000, 2,000, or 3,000 ppm (Single Range Only)
CO_2 Response Time: T90 <15 Seconds

600 Series Features:

Outputs available: TCP/IP, RS-232, 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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