ZRE

NDIR/O_2

APPLICATIONS

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

OPTIONS

- Fuel Cell Oxygen Channel
- Digital Inputs/Outputs
- External NOx Converter

FEATURES

- Measures From Low ppm to percent Concentrations
- Multi-Component—Up to Four IR Channels Plus Oxygen
- One or Two Ranges Per Component
- Fast Response Time
- Comprehensive Diagnostics
- Virtually Unaffected by Moisture Interference
- Output Options: Voltage, Current, RS-485 (MODBUS Protocol), USB
- Compact Size
- CE Mark

CAI

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ZRE
NDIR/O_2 Analyzer

NDIR/O2

DESCRIPTION

METHOD OF OPERATION—NDIR

The ZRE 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 ZRE analyzer section utilizes a 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 / SO_2/NO
Detector Type: Microflow
NDIR Ranges:

Gas	Minimum	Maximum
CO	0-200 ppm	0-100%
CO_2	0-200 ppm	0-100%
CH_4	0-500 ppm	0-100%
SO_2	0-200 ppm	0-10%
NO	0-200 ppm	0-5,000 ppm

Range Ratio: 10:1
Oxygen Analysis Method: Fuel Cell
O_2 Ranges: 0-10% or 0-25% Full Scale
Response Time (IR): 90% of Full Scale within 60 seconds
**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 0.5% of Full Scale
Linearity: Better than 1.0% of Full Scale of Factory
Noise: Less than 1% of Full scale Range
Zero & Span Drift: Less than 2% of Full Scale per week
Zero & Span Adjustment: Via front panel or remote
Sample Flow Rate: 0.5 to 2.0 LPM
Purge Gas Flow Rate: 1 LPM
Outputs available: USB, RS485 (MODBUS protocol), 0-1V / 4-20mA
Digital Inputs: 9 maximum optically isolated signals for range switching, begin auto calibration, output signal hold, reset average value
Digital Outputs: 15 relays maximum, each is 1 form C for range identification, instrument failure,cal failure, cal in progress, high/low alarm limits, solenoid valve activation, external pump on/off
Display: Back lit LCD
Sample Temperature: Up to 50 C, Non-condensing
Ambient Temperature: -5 to 50 C
Ambient Humidity: Less than 90% RH (Non-condensing)
Fittings: ¼ inch NPT
Power Requirements: 100 to 240 VAC, 50/60 Hz,, 100 VA
Dimensions: 5¼"Hx19"Wx16.5"D
Weight: Approximately 18 lbs. (Depending on configuration)

Specifications subject to change without notice.

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