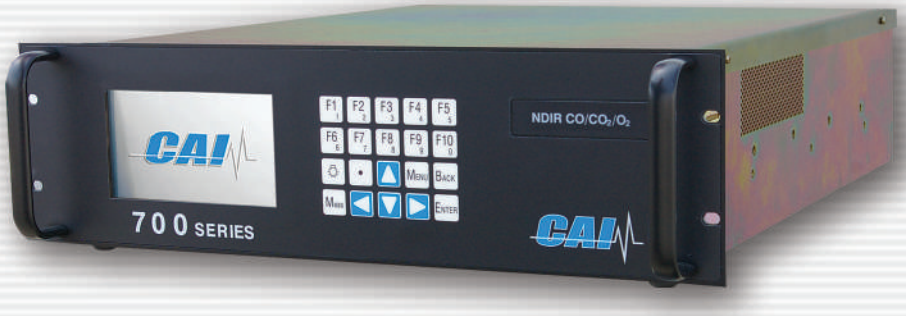
# 700 Series

## NDIR/02 Analyzer




- **New Electronics**
- **User-Friendly Operation**
- **Proven Analytical Components**

### Features

- Measures IR From Low ppm up to 100% Full Scale And Oxygen from 0-1% up to 0-100%
- Multi-Component—Up to Three IR Channels or Two IR Channels Plus Oxygen
- Auto Calibration and Ranging
- Fast Response Time
- Temperature and Pressure Compensation
- Comprehensive Diagnostics
- Output Options: Voltage, Current, RS-232, TCP/IP, MODBUS
- CE Mark and ETL Listed—Conforms to UL STD 61010-1, Certified to CAN/CSA C22.2 STD No. 610610.1
- Meets 1065 Requirements

### 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
- Sample Flow Control
- Multiple Inputs
- 19 Inch Rack Mount Slides

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## Description

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 – $O_2$

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 / $CO_2$ / $CH_4$ / $SO_2$ / NO*
*NO is available with an external NOx converter

**Detector Type –** Microflow

**NDIR Ranges –** From 0-50 ppm up to 0-100%

**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% $O_2$ Full Scale, Four Definable Ranges

**$O_2$ Response Time –** T90—2 Seconds Paramagnetic, 16 Seconds Fuel Cell

**Outputs available –** TCP/IP, RS232, MODBUS 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 –** 1/4 Inch Tube

**Power Requirements –** 115/230 (+/- 10%) VAC; 50/60Hz, 300 watts maximum

**Dimensions –** 51/4"Hx19"Wx23"D

**Weight –** 30-45 lbs. (Depending on configuration)

*Specifications subject to change without notice.*

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