

# Thermo Scientific Model 410i Carbon Dioxide Analyzer

Utilizing non-dispersive infrared technology

The Thermo Scientific™ Model 410i Carbon Dioxide (CO<sub>2</sub>) Analyzer utilizes advanced Non-Dispersive Infrared (NDIR) optical filter technology to measure the concentration of CO<sub>2</sub> in stack gas levels. Reporting capabilities are user-selectable for either of the accepted industry standards, straight extractive or dilution sampling methods.

- Advanced Non-Dispersive Infrared (NDIR) technology
- User-selectable reporting capabilities
- Expanded ambient temperature operating range
- High performance over a wider range of concentrations
- Linearity through all ranges



This analyzer utilizes advanced Non-Dispersive Infrared technology (NDIR) with optically fixed bandpass interference filters and quantum detection to analyze the concentration of CO<sub>2</sub> in the gas stream.

In addition, the expanded ambient temperature operating range provides excellent performance over a wider range of concentrations.

The Thermo Scientific Model 410i analyzer is available in Standard or High Level ranges and uses an internally stored calibration curve to accurately linearize the instrument output over any range up to a concentration of either 10,000 ppm (Standard) or 25% (High level).

The Model 410i analyzer combines proven detection, easy to use menu-driven software, and advanced diagnostics to offer unsurpassed flexibility and reliability.

iSeries features also include:

- Rack mountability
- Ethernet port & connectivity options
- Flash memory for increased data storage
- Easily programmable short-cut keys
- Large interface screen



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Preset Ranges	High Level: 0-0.5, 1, 2, 5, 10, 20, 25% Standard: 0-200, 500, 1000, 2000, 5000, and 10000 ppm
Zero Noise	High Level: 10 ppm RMS (60 second averaging time) Standard: 0.1 ppm RMS (300 second averaging time)
Minimum Detectable Limit	High Level: 20 ppm (300 second averaging time) Standard: 0.2 ppm (300 second averaging time)
Zero Drift (24 hour)	High Level: +/- 40 ppm Standard: +/- 1.0 ppm
Span Drift (24 hour)	High Level: < 2.0% Reading - 7 Days Standard: < 0.5% Reading - 24 Hours - <1% Reading - 7 Days
Response Time	(90% full scale) 90 seconds (30 second averaging time)
Precision	+/- 1.0% of reading
Linearity	+/- 1.5% of span (at concentrations of 10% - 100% of span)
Sample Flow Rate	1.0 liter per minute
Operational Temperature	41°F to 113°F (+5°C to +45°C)
Power Requirements	110 VAC, 115 VAC, 220-240 VAC +/- 10% @ 275W
Size and Weight	16.75" (W) x 8.62" (H) x 23"(D), 39 lbs. (17.7 kg)
Outputs	Selectable voltage, RS232/RS485, TCP/IP, 10 status relays, and power fail indication (standard) 0-20 or 4-20 mA isolated current output (optional)
Inputs	16 digital inputs (standard), 8 0-10 Vdc analog inputs (optional)

### Ordering Information

#### Model 410i Carbon Dioxide Analyzer

Choose from the following configurations/options to customize your own Model 410i analyzer

#### 1. Voltage options:

A = 120 VAC 50/60 Hz  
B = 220 VAC 50/60 Hz  
J = 100 VAC 50/60 Hz

#### 2. Internal zero / span:

N = No zero / span valve  
Z = Internal zero / span valves  
S = No zero / span valve with O<sub>2</sub> sensor  
R = Internal zero / span valves with O<sub>2</sub> sensor

#### 3. Filter Wheel Purge:

P = Filter wheel purge setup (Standard)

#### 4. Sample Gas Concentration Range:

D = 0 -10,000 ppm Concentration Range (Dilutive)  
E = 0 - 25% Concentration Range (Extractive)

#### 5. Optional I/O:

A = No optional I/O (standard)  
C = 0 - 20, 4-20mA Current output, 6 Channels  
0 - 10v Analog Input, 8 Channel

#### 6. Mounting Hardware:

A = Bench mounting and Ears/Handles, EIA

**Your Order Code: Model 410i - \_ \_ \_ \_ \_**

To maintain optimal product performance, you need immediate access to experts worldwide, as well as priority status when your air quality equipment needs repair or replacement. We offer comprehensive, flexible support solutions for all phases of the product life cycle. Through predictable, fixed-cost pricing, our services help protect the return on investment and total cost of ownership of your Thermo Scientific products.

For more information, visit our website at [thermoscientific.com](http://thermoscientific.com)

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This product is manufactured in a plant whose quality management system is ISO 9001 certified.

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