thermo scientific

PRODUCT SPECIFICATIONS

Model 450*i* hydrogen sulfide and sulfur dioxide analyzer

Pulsed fluorescence gas analyzer

The Thermo Scientific™ Model 450*i* Hydrogen Sulfide and Sulfur Dioxide Analyzer utilizes pulsed fluorescence technology.

Features

- Pulsed excitation and intensity stabilization
- Reflective bandpass filters
- Temperature stabilization reaction chamber
- Stable, long-life UV source
- Superior zero stability

Introduction

The Thermo Scientific™ Model 450*i* analyzer operates on the principle that H_2S can be converted to SO_2. As the SO_2 molecules absorb ultraviolet (UV) light and become excited at one wavelength, the molecules then decay to a lower energy state emitting UV light at a different wavelength.

Specifically:

$$H_2S \rightarrow SO_2$$

$$SO_2 + h\nu\ 1 \rightarrow SO_2^* \rightarrow SO_2 + h\nu_2$$

The pulsing of the UV source lamp serves to increase the optical intensity whereby a greater UV energy throughput and lower detectable SO_2 concentration are realized. Reflective bandpass filters, as compared to commonly used transmission filters, are less subject to photochemical degradation and are more selective in wavelength isolation. This results in both increased detection specificity and long term stability.

This state-of-the-art gas analyzer also offers features such as an ethernet port as well as flash memory for increased data storage.

Ethernet connectivity provides efficient remote access, allowing the user to download measurement information directlyfrom the instrument without having to be onsite.

You can easily program shortcut keys to allow you to jump directly to frequently accessed functions, menus or screens. The larger interface screen can display up to five lines of measurement information while primary screen remains visible.

Thermo Scientific™ Model 450*i*
Hydrogen Sulfide and Sulfur Dioxide Analyzer

ThermoFisher SCIENTIFIC

thermo scientific

Thermo Scientific Model 450*i* Hydrogen Sulfide and Sulfur Dioxide

Specifications	
Preset ranges	0-0.05, 0.1, 0.2, 0.5, 1, 2, 5, and 10 ppm, 0-0.2, 0.5, 1, 2, 5, 10, 20, and 25 mg/m^3
Extended ranges	0-0.5, 1, 2, 5, 10, 20, 50 and 100 ppm, 0-2, 5, 10, 20, 50, 100, 200, and 250 mg/m^3
Custom ranges	0-0.05 to 100 ppm, 0-0.2 to 250 mg/m^3
Zero noise	1.0 ppb (Manual SO_2 or Combine Sulfur) 3.0 ppb (Automatic mode SO_2 or H2S) (10 second averaging time) 0.5 ppb 1.5 ppb (60 second averaging time) 0.25 ppb 0.75 ppb (300 second averaging time)
Lower detectable limit	2.0 ppb (Manual SO_2 or Combine Sulfur) 6.0 ppb (Automatic mode SO_2 or H2S) (10 second averaging time) 1.0 ppb 2.0 ppb (60 second averaging time) 0.5 ppb 1.5 ppb (300 second averaging time)
Zero drift (24 hour)	Less than 1 ppb
Span drift (24 hour)	+/-1% Full Scale
Response time	80 seconds (10 second average time) 110 seconds (60 second average time) 320 seconds (300 second average time)
Precision	1% of reading or 1 ppb (whichever is greater)
Linearity	+/-1% full scale < 100 ppm
Sample flow rate	1.0 liter/min.
Converter efficiency	> 80% H2S to SO_2. (Note: Various other sulfur compounds can be converted at varying %)
Operating temperature	20°C to 30°C
Power requirements	100 VAC, 115 VAC, 220-240 VAC +/-10% @ 300W
Size and weight	16.75" (W) × 8.62" (H) × 23" (D), 48 lbs 425 mm (W) × 219 mm (H) × 584 mm (D), 21.8 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)
Available options	Teflon particulate filter, rack mounts, rear extenders

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.

Ordering information

Model 450*i* H_2S/SO_2 Analyzer
Choose from the following configurations/ options to customize your own Model 450*i* analyzer
1. Voltage options
A = 115 Vac 50/60 Hz
B = 220 Vac 50/60 Hz
J = 100 Vac 50/60 Hz
2. Internal zero/span
N = No zero/span assembly (standard)
Z = Internal zero span assembly
P = Internal permeation span source with zero/span assembly
3. Sample Handling:
S = Standard
E = External Converter Setup (no converter supplied)
H = Selective SO_2 scrubber (Continuous H2S analysis only)
4. Optional I/O
A = None (standard)
C = I/O expansion board (4-20mA outputs – 6 channels, 0-10v inputs – 8 channels)
5. Mounting hardware
A = Bench mounting and ears/handles, EIA

Your Order Code: Model 450*i* -

☐ ☐ ☐ ☐ ☐

USA
27 Forge Parkway
Franklin, MA 02038
Ph: (508) 520-0430
Fax: (508) 520-2800
orders.aqi@thermofisher.com

India
C/327, TTC Industrial Area
MIDC Pawane
New Mumbai 400 705, India
Ph: +91 22 4157 8800
india@thermofisher.com

China
+Units 702-715, 7th Floor
Tower West, Yonghe
Beijing, China 100007
Ph: +86 10 84193588
info.eid.china@thermofisher.com

Europe
Ion Path, Road Three,
Winsford, Cheshire CW73GA
UK Ph: +44 1606 548700
Fax: +44 1606 548711
sales.epm.uk@thermofisher.com

Find out more at **thermofisher.com/cleanair**

ThermoFisher SCIENTIFIC

© 2017 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific and its subsidiaries unless otherwise specified. **EPM_450i_0518**