

Model 5100HD Gas Analyzers for Measuring H₂S in Process Gas

Based on Tunable Diode Laser Absorption Spectroscopy (TDLAS)
An additional gas such as CO₂ or H₂O may also be measured.

Model 5100HD



Model 5100HD Atex Zone 1



Model 5100HD uses sealed reference cells for continuous on-line analyzer verification and offers high specificity, sensitivity and extremely fast response speeds.

Features and Benefits

- ▶ **Noncontact Measurement**
The sample has no contact with the optical measuring device which minimizes maintenance
- ▶ **All Digital Signal Processing**
32-bit microcontroller capable of sophisticated signal processing
- ▶ **Web-Based Interface**
To interrogate the analyzer remotely, all you need is the IP address of the analyzer
- ▶ **Connectivity**
Modbus, Ethernet, dry contacts and analog
- ▶ **Real-Time Performance Monitoring**
Laser line-lock and span verification using internal reference cell
- ▶ **NEMA 4 or NEMA 4X Enclosure to house the electronic components**
Designed for outdoor installation
- ▶ **Fully-Integrated Sample Handling**
Standard feature
- ▶ **Resistant to Contamination**
No interference from gas phase amines, glycol, methanol, and mercaptans
- ▶ **Hazardous Area Options**
NEC/CEC: Class I, Div 2, Groups A,B,C,D; Class II, Div 2, Groups F & G; Consult factory for details of: CSA, IECEx, Atex 3G, Ex n II C T3 (Zone 2) Atex, Atex 2G Exd IIC T3 (Zone 1)

Model 5100HD Gas Analyzers

Specifications

Laser Specification: Class 1m or IIIb depending on application

Typical Operating Range: 0-1000 ppm
Min / 0 to 30% Max; Other ranges available subject to application, consult AMETEK
CO₂: 0-100ppmv up to % ranges
H₂O: 0-100ppmv up to % ranges
CO, CH₄ and O₂ also available

Accuracy: Application dependant.
Typical H₂S accuracy in hydrocarbon streams in ±50ppm

Repeatability: 1% of reading

Linearity: Better than 1%

Environment:

Ambient Temperature: -20°C to +50°C (-4°F to 122°F).

Electrical Classification:

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Relative Humidity: 0% to 90%, non-condensing

Sample Flow Rate: 1 to 10 SLPM recommended (2 - 20 SCFH)

Sample Cell Pressure:
70 to 170 kPa absolute (10-25 psia)

Sample Cell Temperature:
The horizontal cell is located in an oven with sample tubing and filter which has variable temperature options depending on application requirement. Note that sample must be presented to the analyzer in the gas phase. The analyzer may maintain gas phase at the appropriate temperature but should not be used to vaporize liquid sample.

Speed of Response:
< 1 second photometric response. Total system response is dependent on sample flowrate.

Outputs:
4-line x 20-character alphanumeric VF display.

Fast Ethernet (IEEE802.3)
RS-485 serial port, isolated (supports Modicon Modbus RTU)

(1) isolated 4-20 mA loop-powered analog output

(4) dry relay contacts. Contact rating 30 VAC, 60 VDC, 100 VA resistive

Electrical Requirements:
120 VAC (108-132V); 47-63 Hz, or 240 VAC (216-264V), 47-63 Hz
24 VDC also available, consult factory

Power Requirements:
Model 5100HD: 450W with optional heater

Physical Dimensions (HxWxD):

Model 5100HD:
67.4 cm x 83.0 cm x 30.5 cm
(26.5 in. x 32.7 in. x 12.0 in.)

Model 5100HD Atex Zone 1:
64.8 cm x 114.3 cm x 43.6 cm
(25.5 in. x 45.0 in. x 17.1 in.)

Weight:

Model 5100HD:
59 Kg (130 lb)

Model 5100HD Atex Zone 1:
114 Kg (250 lb)

Enclosure: IP-65, NEMA 4 (NEMA 4X available)



150 Freeport Road, Pittsburgh, PA 15238
Ph. +1-412-828-9040, Fax +1-422-826-0399
www.ametekpi.com



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One of a family of innovative process analyzer solutions from AMETEK Process Instruments.
Specifications subject to change without notice.

SALES AND MANUFACTURING:

USA - Delaware
455 Corporate Blvd., Newark DE 19702 • Tel: +1-302-456-4400, Fax: +1-302-456-4444

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TDLAS