



Model 5100/5100 HD Gas Analyzers for Measuring H₂S in Process Gas

Based on Tunable Diode Laser Absorption Spectroscopy (TDLAS)



Model 5100



Model 5100 HD, GP, Class I, Div 2
ATEX/IEC Ex Zone 2

Features and Benefits

- || **Noncontact Measurement**
Noncontact measurement offers low maintenance
- || **All Digital Signal Processing**
32-bit microcontroller capable of sophisticated signal processing
- || **Web-Based Interface**
Connect through a remote PC using standard web browser
- || **Connectivity**
Modbus, Ethernet, dry contacts and analog
- || **Real-Time Performance Monitoring**
Laser line-lock verification using internal reference cell
- || **TYPE 4X Enclosure houses 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

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

The Model 5100 HD has a horizontally orientated cell and may be configured to include multiple lasers and cells in an oven which can be run at temperatures up to 150°C (302°F).

Model 5100/5100 HD Gas Analyzers

Specifications

Laser Specification: Class 1m or 3b depending on application

Typical Operating Range:

5100: Percent levels
5100 HD: 0-300 ppm minimum range, percent levels available

Accuracy: Application dependant.
5100 HD 0-300 ppm range: ± 5 ppmv, Higher ranges application dependent.

Repeatability: Application dependent.

Speed of Response:

< 1 second photometric response.
Total system response is dependent on sample flowrate.

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

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

Environment:

Ambient Temperature: -20°C to +50°C (-4°F to 122°F). Max. temp for 5100 HD is 100°C

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

Electrical Classification:

Model 5100: Class I, II, III, Div 2 Group A-D, F,G ; Div 1 and ATEX Zone 1 are also available;

Model 5100 HD: Class I Div 1, BCD T3; Ex de IIB+H2 T3 Gb; Pressurized Class 1 Zone 1 ATEX de IIB+H2 T3 (or T5); Div 2 and Zone 2 are also available. INMETRO Certification for Zone 2 - Ex nA nC ic op is IIC T3 Gc, IP65

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 (no oven or cell heater option)

Power Requirements:

Model 5100: 105W; < 25W without cell heater
Model 5100 HD: 450W; 105W without heater

Physical:

Model 5100 (HxWxD):
86.88 cm x 43.42 cm x 21.17 cm (34.2" x 17.1" x 8.34")

Model 5100 HD (HxWxD):
64.23 cm x 83.03 cm x 29.53 cm (25.29" x 32.69" x 11.63")

Weight:

Model 5100: 25 Kg (55 lb)
Model 5100 HD: 60 Kg (132 lb)

Enclosure: IP-65, TYPE 4, 4X

Safety Classification: AMETEK

Process Instruments TDLAS products utilize laser devices with safety classifications of Class 1 and Class 3b.



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