

Model 5100HD Gas Analyzers for Measuring O₂ 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

Typical Operating Range: 0-1% and 0-25%

Note that one additional component (CO, CO₂, CH₄, H₂S or H₂O) may also be measured.

Accuracy: Typically 1% of Full Scale Range

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)
For higher pressures, consult AMETEK.

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)



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

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TDLAS