

Model 5100 Gas Analyzer for the Measurement of Moisture and Methane in Natural Gas

Based on Tunable Diode Laser Absorption Spectroscopy (TDLAS)



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

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**
To interrogate the analyzer remotely, all you need is the IP address of the analyzer
- ▶ **Connectivity**
Modbus, Ethernet and analog
- ▶ **Real-Time Performance Monitoring**
Laser line-lock verification using internal reference cell
- ▶ **NEMA 4X Enclosure Houses the Electronic Components**
Designed for outdoor installation
- ▶ **Fully-Integrated Sample Handling**
Standard feature
- ▶ **Methane Measurement Option**
The 5100 can also be used to measure methane content in the range of 25%-100% with an accuracy typically of $\pm 3\%$ by volume.
- ▶ **Hazardous Area Certifications**
NEC/CEC: Class I, Div 2; Class II, Div 2, Groups F & G; Class III, Div 2
Div 1 and ATEX Zone 1 are also available

Model 5100 Gas Analyzer

Specifications

Laser Specification: Class 1m

Operating Range:

0.25 - 60 lb/MMscf / 4 - 1900 mg/m³ (5 to 2500 ppmv moisture)

25%-100% methane (when option selected)

ppm and % measurements are also available

Accuracy:

Moisture: Typically 2% of reading or ±4 ppmv whichever is greater

Methane: ±3% by volume (when option selected)

Repeatability:

Moisture: Typically 2% of reading or ±4 ppmv whichever is greater

Methane: ±3% by volume (when option selected)

Environment:

Ambient Temperature:

-20°C to +50°C (-4°F to 122°F)

Electrical Classification:

NEC/CEC: Class I, Div 2; Class II, Div 2, Groups F & G; Class III, Div 2 (standard model)

Div 1 and ATEX to Zone 1 are also available

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)

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) assignable 0-20 mA 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 - consult factory

Power Requirements:

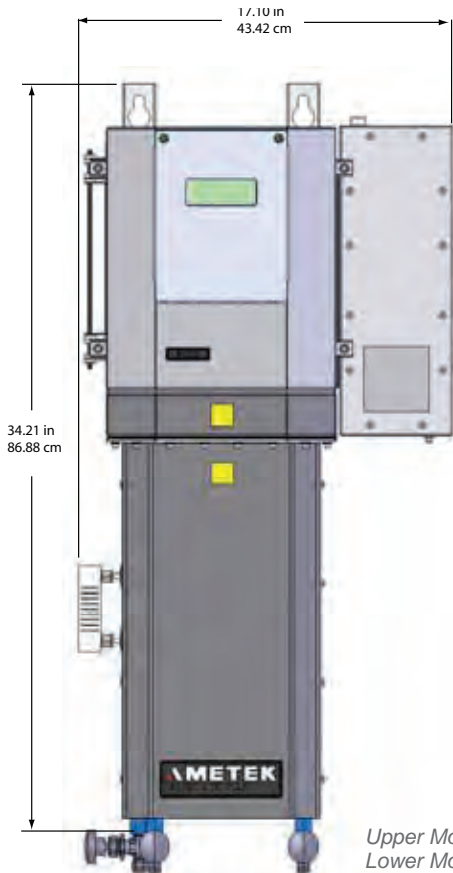
< 25 W; with optional heater 105 W

Physical Dimensions (HxWxD):

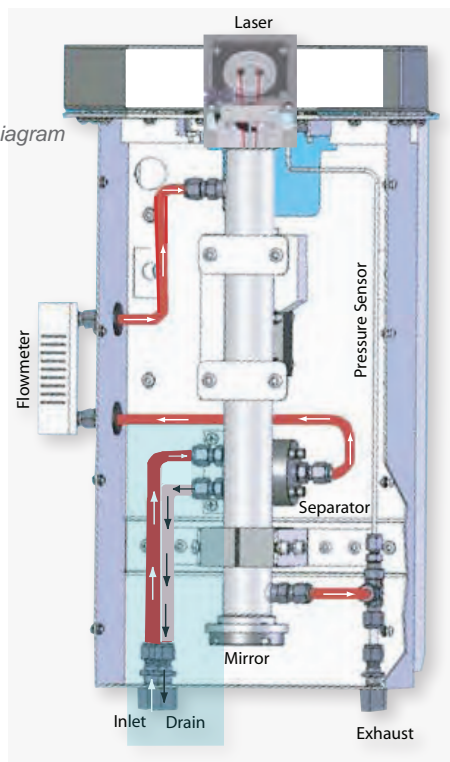
86.88 cm x 43.42 cm x 21.17 cm (34.2 in. x 17.1 in. x 8.34 in.)

Weight: 25 Kg (55 lb)

Enclosure: IP-65, NEMA 4X



5100 Flow Diagram



Upper Mounting Hardware: (2) 1/2" x 1.00 L (M6 x 25 mm L) hex bolts
 Lower Mounting Hardware: (2) 1/2" x 2.50 L (M6 x 60 mm L) hex bolts (Optional)



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TDLAS