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

Based on Tunable Diode Laser Absorption Spectroscopy (TDLAS)

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 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

► **Methane Measurement Option**
  The 5100 can also be used to measure methane content in the range of 25%-100% with an accuracy typically of ±3% by volume.

► **Hazardous Area Certifications**
  NEC/CEC : Class I, II, III, Div 2 Group A-D, F,G ; Div 1 and ATEX Zone 1 are also available

Model 5100 uses a sealed moisture reference cell for continuous on-line analyzer verification and offers high specificity, sensitivity and extremely fast response speeds.
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)
0-100 ppm and % measurements are also available

**Accuracy:**
- Moisture: Typically ±4 ppmv or 2% of reading, whichever is greater
- Methane: ±3% (when option selected)

**Enclosure:** IP-65, TYPE 4X

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

**Electrical Classification:**
NEC/CEC : Class I, II, III, Div 2 Group A-D, F,G ; Div 1 and ATEX 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 AMETEK)

**Power Requirements:**
105W; < 25W without cell heater

**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)

**Safety Classification:** AMETEK Process Instruments TDLAS products utilize laser devices with safety classifications of Class 1 and Class 3b.