

PRODUCT DATA SHEET

5100 and 5100HD Gas Analyzers

Measuring moisture in natural gas and non-absorbing backgrounds

Moisture is one of the impurities of most concern found in natural gas. It must be removed to:

- 1) Prevent the formation of hydrates and liquid slugs that can damage expensive equipment
- 2) Prevent lowering the British Thermal Unit (BTU) value of the gas stream
- 3) Protect pipelines from corrosion which occurs when carbon dioxide and hydrogen sulfide combine with water to form carbonic or sulfuric acid
- 4) Reduce bacterial spore activation

In several petrochemical production processes, moisture can also negatively impact final product quality or reduce the operational life of expensive catalysts.

The 5100 is a laser-based analyzer designed to measure moisture both in local plants and in remote locations. The analyzer can output results nearly instantaneously following sudden increases or decreases in moisture concentrations during upsets.

To further increase the optical performance of the 5100, a sealed reference cell is used for continuous on-line optical system verification and offers high specificity and sensitivity.

Non-contact measurement

The sample never contacts the key optical components, reducing maintenance.

Line lock

The wavelength of interest is constantly verified using an integrated reference.

Designed for use in difficult environments

Can be installed in many environments, including those defined as hazardous.



KEY BENEFITS

- Real-time performance monitoring
- Low maintenance cost and requirements
- Remote monitoring and maintenance access
- IP 65/Type 4X enclosure
- Fully-integrated sample handling

APPLICATIONS

- Tariff or custody transfer
- Natural gas sweetening
- Storage inlet/outlet
- Petrochemical production

KEY MARKETS

- Natural gas
- Chemicals
- Petrochemicals
- Refining

PERFORMANCE SPECIFICATIONS

Analyzer range (moisture in natural gas or hydrocarbon gas stream)	Minimum range: 0 to 20 parts per million by volume (ppmv) (other parts per million (ppm) and % ranges are also available)
Accuracy	±2% of reading or ±4ppm, whichever is greater (typical)
Ambient temperature	-20 to 50°C (-4 to 122°F)
Relative humidity	0% to 90%, non-condensing
Sample flow rate	1 to 10 slpm recommended (2 to 20 SCFH)
Sample cell pressure	70 to 170 kPa absolute (10 to 25 psia)
Speed of response	<1 second photometric response. Total system response is dependent on sample flow rate
Outputs	Keypad and display Fast Ethernet (IEEE802.3) RS485 serial port, isolated (supports Modicon Modbus RTU) Up to two isolated 4-20 mA analog outputs Four dry relay contacts. Contact rating 30 VAC, 60 VDC, 100 VA resistive
Electrical requirements	120/240 VAC (108-132/216-264V); 47-63 Hz, or 24 VDC (Consult AMETEK)
Power requirements	5100: 105W; < 25W without cell heater 5100HD: 450W; 105W without heater
Physical (W x H x D)	5100: 434.2 x 868.8 x 211.7 mm (17.1 x 34.2 x 8.34 in.) 5100HD: 830 x 674 x 305 mm (32.7 x 26.5 x 12.0 in.) (can vary based on configuration)
Weight	5100: 25 kg (55 lb) 5100HD: 60 kg (132 lb) (can vary based on configuration)
Enclosure	IP-65, Type 4X
Approvals and certifications	Approvals and certifications: Certified to meet multiple ATEX, IECEx, CSA, NEC and Inmetro standards for hazardous areas Consult AMETEK for more details

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