

## 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.

### Non-contact measurement

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

### Line lock

The reference cell is used to line-lock the laser on a desired wavelength. Any minor shift in the observed spectrum is used as feedback to adjust the laser, ensuring the proper operating wavelength. Thus, there is a real-time confirmation that the laser is locked on the desired absorption line.

### 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

<b>Analyzer range (moisture in natural gas or hydrocarbon gas stream)</b>	Minimum range: 0 to 20 parts per million by volume (ppmv) (other parts per million (ppm) and % ranges are also available)
<b>Accuracy</b>	±2% of reading or ±4ppm, whichever is greater (typical)
<b>Ambient temperature</b>	-20 to 50°C (-4 to 122°F)
<b>Relative humidity</b>	0% to 90%, non-condensing
<b>Sample flow rate</b>	1-2 LPM (2.1-4.2 SCFH) – application dependent
<b>Sample cell pressure</b>	70 to 170 kPa absolute (10 to 25 psia)
<b>Speed of response</b>	<1 second photometric response. Total system response is dependent on sample flow rate
<b>Outputs</b>	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
<b>Electrical requirements</b>	120/240 VAC (108-132V/216-264V), 47-63Hz or 24VDC (22-26VDC)
<b>Power requirements</b>	5100: 25W without heater, 105W with heater – typical 5100HD: 25-45W without heater, 425-445W with heater – typical
<b>Physical dimensions (W x H x D)</b>	5100: 434 x 917 x 211 (17.1 x 36.1 x 8.3in) – typical for NEC/CEC Class I Division 2 configurations 5100HD: 880 x 674 x 302mm (34.6 x 26.5 x 11.9in) – typical for NEC/CEC Class I Division 2 and ATEX/IECEx Zone 2 configurations
<b>Weight</b>	5100: 25 kgs (55lbs) – typical for NEC/CEC Class I Division 2 configurations 5100HD: 60 kgs (132lbs) – typical for NEC/CEC Class I Division 2 and ATEX/IECEx Zone 2 configurations
<b>Enclosure</b>	IP-65, Type 4X
<b>Approvals and certifications</b>	Certified to meet multiple ATEX, IECEx, CSA, NEC and Inmetro standards for hazardous areas Consult AMETEK for more details

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