

PRODUCT DATA SHEET

5100HD Gas Analyzer

Measurement of carbon dioxide (CO₂) in natural gas

Carbon dioxide (CO₂) is one of the highest level impurities found in well head natural gas. It must be removed to meet pipeline quality British thermal unit (BTU) standard specifications for consumer gas and to protect pipelines from corrosion, which occurs when CO₂ and water combine to form carbonic acid.

The AMETEK 5100HD is an extractive-type CO₂ analyzer designed for hot/wet sample analysis. There is no sample conditioning for the analyzer system, just sample handling to transport the sample.

The 5100HD measures at a wavelength free of interferences from the hydrocarbons typically found in natural gas streams to provide continuous and accurate results. The 5100HD uses a sealed reference cell for continuous online optical system verification and offers high specificity, and sensitivity.

For customers looking to measure multiple components with one analyzer, the 5100HD can simultaneously measure water vapor and CO₂ measurements in natural gas streams.

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
- Reduced downtime
- IP 65/Type 4X enclosure
- Fully-integrated sample handling

APPLICATIONS

- Tariff or custody transfer
- Natural gas sweetening

KEY MARKETS

- Natural gas
- Petrochemicals
- Refining

PERFORMANCE SPECIFICATIONS

Typical ranges & performance	Ranges: 0-50 ppm (min), 0-100% (max) Accuracy $\pm 2\%$ of reading NOTE: Accuracy is range dependent. Contact AMETEK for more details.
Ambient temperature	-20 to +50°C (-4 to 122°F)
Relative humidity	0 to 90%, non-condensing
Sample flow rate	1-2 LPM (2.1-4.2 SCFH) – application dependent
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
Electrical requirements	120/240 VAC (108-132V/216-264V), 47-63Hz or 24VDC (22-26VDC)
Power requirements	25-45W without heater, 425-445W with heater – typical
Outputs	Keypad and display Fast ethernet (IEEE802.3) RS485 serial port, isolated (supports Modicon Modbus RTU) (1) single isolated 4-20 mA loop-powered analog output (4) dry relay contacts. Contact rating 30 VAC, 60 VDC, 100 VA resistive
Physical dimensions (W x H x D)	880mm x 674mm x 302mm (34.6 x 26.5 x 11.9in) – typical for NEC/CEC Class I Division 2 and ATEX/IECEX Zone 2 configurations
Weight	60 kgs (132lbs) – typical for NEC/CEC Class I Division 2 and ATEX/IECEX Zone 2 configurations
Enclosure	IP65 and Type 4X
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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