

PRODUCT DATA SHEET

5100HD Gas Analyzers

Measurement of hydrogen sulfide (H₂S) in process gas

Tunable diode laser technology has been applied to a number of applications and is widely used for the measurement of hydrogen sulfide (H₂S), moisture (H₂O), carbon dioxide (CO₂), and other components from percent concentrations down to single-digit parts per million (ppm) levels

AMETEK 5100HD analyzers have been tuned to measure H₂S concentrations in flare and fuel gas streams, without the use of scrubbers. The 5100HD responds quickly to changes in sample stream concentrations and has demonstrated high reliability due to the long life of the laser diode lasers as well as a high specificity for H₂S as an analyte.

For flare and fuel gas applications, the operational and capital savings of a 5100HD analyzer over process gas chromatographs are significant – no columns, no oven valves and minimal sheltering requirements. Compared to lead acetate paper tape analyzers, the 5100HD responds faster to upsets, is more precise and has no consumables.

No scrubber

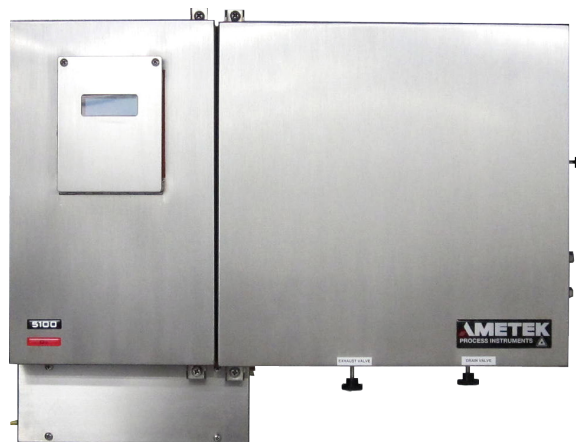
Analytical information is derived from a combination of signal processing and chemometric regression techniques.

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
- Continuous and instant measurements
- IP65/Type 4X enclosure

APPLICATIONS

- H₂S in flares
- H₂S in fuel gas

KEY MARKETS

- Oil and gas
- Petrochemicals
- Refining

PERFORMANCE SPECIFICATIONS

Typical operating range	0-300 ppm min /0 to 100% max; other ranges available
Accuracy	Application-dependent. Typical ±5ppmv or 2% of reading, whichever is greater
Ambient temperature	-20 to +50°C (-4 to 122°F)
Electrical classification	120/240 VAC (108-132V/216-264V), 47-63Hz or 24VDC (22-26VDC)
Relative humidity	0% to 90%, non-condensing
Sample flow rate	1-2 LPM (2.1-4.2 SCFH) – application dependent
Sample cell pressure	7 to 170 kPa absolute (1 to 25 psia)
Speed of response	<1 second photometric response. Total system response is dependent on sample flowrate
Outputs	Display and keypad Fast ethernet (IEEE802.3) supports Modbus over TCP/IP RS485 serial port, isolated (supports Modicon Modbus RTU) (1) isolated 4-20 mA analyzer or loop-powered analog 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	25-45W without heater, 425-445W with heater – typical
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 and NEC standards for hazardous areas. Consult AMETEK for more details

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