AMETEK®
PROCESS INSTRUMENTS

MEASURES: CO_2

PRODUCT DATA SHEET

5100P TDLAS

Carbon Dioxide in Natural Gas Analyzer

Lightweight and rugged transportable carbon dioxide (CO_2) analyzer, using tunable diode laser technology to deliver accurate and fast measurements in natural gas

The 5100P analyzer provides simple, easy-to-use CO_2 analysis using tunable diode laser absorption spectroscopy (TDLAS) in a durable, lightweight, and transportable package for measurements in natural gas. Designed to be intuitive to start-up and log data, the 5100P is the tool-of-choice for users needing to perform measurements in remote locations or verify fixed analyzer installations.

Minimal maintenance required

The non-contact TDLAS sensing technology means that both the laser source and the detector are kept separate from the process. This eliminates the need for routine calibration, cleaning of the sensor or interferences from process contaminants, increasing measurement uptime and reducing total cost of ownership. To reduce the possibility of over pressuring the cell, or introducing contaminants, an integrated sample conditioning panel is included with the 5100P analyzer.

Measurement confidence

To ensure accurate measurement, every 5100P is factory calibrated and tested prior to shipment. The 5100P also features line locking where the analyzer continually verifies its optical performance by checking against an internal sealed reference ampoule. Line-locking monitors and controls the laser-source output continuously to deliver an accurate measurement every time.

Increased efficiency

With an integrated sample system, using the 5100P is simple and easy. A measurement can be made in minutes, just connect the sample tubing, power up the analyzer, and start flow through the system. The TDLAS technology in the 5100P delivers immediate response to changes in the CO_2 content of the natural gas. Users no longer have to wait hours for the sensor to equilibrate and can make more measurements in less time. The 5100P is certified for use in hazardous areas so there are no costly enclosures or hot work permits needed to operate the analyzer.

KEY BENEFITS

- Fast response, highly accurate measurements using TDLAS technology
- Certified for use in hazardous areas
- Integrated sample system removes contaminants
- Rechargeable battery for at least eight hours of operation
- Lightweight package simplifies transporting the device between locations

APPLICATIONS

- Monitoring CO_2 in natural gas pipelines, distribution networks and amine treatment (sweetening) processes

KEY MARKETS

NATURAL GAS

- Transmission pipelines
- Custody transfer
- Processing (amine sweetening)
- Underground storage

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PERFORMANCE SPECIFICATIONS

Technology	Tunable diode laser absorption spectroscopy
Speed of response	<1 second photometer response; <15 seconds to T90 at 2 SLPM of sample gas
Range	0 – 2%
Accuracy	±2% of reading or 200 ppmv (whichever is greater)
User interface	On board display and USB
Battery type	Rechargeable sealed lead acid battery
Sample cell pressure	Atmospheric
Ambient temperature	-20 to +50ºC (-4 to +122ºF)
Sample temperature	-20 to +50ºC (-4 to +122ºF)
Inlet pressure range for sample panel	1.03 to 17.2 barg (15 to 250 psig)
Recommended sample flow rate	1 to 2 SLPM (2 to 4 SCFH)
Physical dimensions	25.1 cm x 20.9 cm x 40.1 cm (9.9 in x 8.2 in x 15.8 in); approximately 13.2 kg (29.1 lbs)
Sample wetted parts	304 Stainless steel, 316 stainless steel, SiO_2 glass, EPDM
Power requirements	110-240 VAC 50-60 Hz for battery charging and instrument use when battery is depleted
Environmental rating	Pollution degree: 2 Overvoltage category: I Maximum altitude: 2000 meters Ingress rating: IP 65
Certifications	ATEX/IEC Ex II 3G na IC Op is IIC T3 Gc -20ºC < Tamb <+50ºC (pending) UL/CSA Class 1, Div 2, GRP A, B, C, D, T3 -20ºC to +50ºC

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Specifications subject to change without notice.