

## PRODUCT DATA SHEET

# 5100P TDLAS Moisture Analyzer

Lightweight and rugged transportable water vapor analyzer delivering reliable, accurate measurements in hydrocarbon streams

The 5100P analyzer is designed to measure moisture at very low parts per million (ppm) levels in hydrocarbon streams. It provides simple, easy-to-use analysis using tunable diode laser absorption spectroscopy (TDLAS) in a durable, lightweight, and transportable package. Specific configuration and testing ensure accurate measurement, whether the background gas is 95%+ methane, ethane, propane, or butane.

### 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

The 5100P can be used as a sole source to confirm product purity, or to validate accurate measurements are being made by fixed installation analyzers located in one, or several plants. Every analyzer is factory calibrated and tested prior to shipment. The 5100P also uses an internal reference 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.

### 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 moisture content of the hydrocarbon stream.



## KEY BENEFITS

- Accurate measurements of moisture within a few minutes of powering up the analyzer
- Lightweight package simplifies transporting the device between locations
- Certified for use in ATEX, IECEx, and NRTL defined hazardous areas
- Integrated sample system removes contaminants
- Rechargeable battery for at least eight hours of operation



## APPLICATIONS

- Monitoring water concentrations in hydrocarbon streams



## KEY MARKETS

### NATURAL GAS

- Natural gas processing

## PERFORMANCE SPECIFICATIONS

<b>Technology</b>	Tunable diode laser absorption spectroscopy
<b>Speed of response</b>	<1 second photometer response; <15 seconds to T90 at 2 SLPM of sample gas
<b>Range</b>	0 – 1000 ppmv
<b>Accuracy</b>	2% of reading or +/- 4 ppmv (whichever is greater)
<b>Repeatability</b>	2% of reading or +/- 4 ppmv (whichever is greater)
<b>Limit of detection</b>	5 ppmv in hydrogen
<b>User interface</b>	On board display and USB
<b>Battery type</b>	Rechargeable sealed lead acid battery
<b>Sample cell pressure</b>	Atmospheric
<b>Ambient temperature</b>	-20 to +50°C (-4 to +122°F)
<b>Sample temperature</b>	-20 to +50°C (-4 to +122°F)
<b>Inlet pressure range for sample panel</b>	1.03 to 17.2 barg (15 to 250 psig)
<b>Recommended sample flow rate</b>	1 to 2 SLPM (2 to 4 SCFH)
<b>Physical dimensions</b>	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)
<b>Sample wetted parts</b>	304 Stainless steel, 316 stainless steel, SiO2 glass, EPDM
<b>Power requirements</b>	110-240 VAC 50-60 Hz for battery charging and instrument use when battery is depleted
<b>Environmental rating</b>	Pollution degree: 2 Overvoltage category: I Maximum altitude: 2000 meters Ingress rating: IP 65
<b>Certifications</b>	ATEX/IEC Ex II 3 G Ex nA ic op pr IIC T3 Gc -20°C ≤ Ta ≤ +50°C CSA/UL Class I Division 2, Groups A-D, T3 -20°C ≤ Tamb ≤ +50°C

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