

SpectraSensors SS2000 Moisture/Carbon Dioxide Analyzer

Key Features

- *Virtually Maintenance Free*
- *No Interference from glycol, methanol or amine contaminants (vapor phase)*
- *Fast and Accurate Real-time Measurements*
- *No wet-up or dry-down delays*
- *Reliable in Harsh Environments*
- *Short Term Payback; No Consumables*
- *NIST-Traceable Calibration*
- *CSA Class I, Division 2 Certification Standard*
- *NEMA 4X (IP56) or NEMA 7 Enclosures*
- *Analog and Digital*
- *Outputs for Remote Monitoring*



**Ask about other
available products:**

**SS1000 Portable Gas
Analyzer**

SpectraSensors SS2000 Moisture or Carbon Dioxide Analyzer is an extremely reliable extractive sensor utilizing SpectraSensors' line-spectroscopy technology. The sensor measures concentration using an IR laser and special software and electronics to determine the concentration of the gas without coming into physical contact with it. The state-of-the-art technology was originally developed for atmospheric moisture measurement on Earth and Mars.

FAST

The SS-Series analyzers take measurements 4 times per second with a laser and detector and average the results. These real-time measurements are not hampered by wet-ups or dry-downs as with surfaced-based sensors because the laser does not contact the gas. Real time measurements are a reality with the SS2000.

RELIABLE

Trustworthy measurements are vital to petrochemical delivery and processing companies. The SS2000 is a product that offers certainty in the readouts! Independent studies have proven that the SS2000 results are highly correlated with those of chilled mirrors. However, the chilled mirrors required skilled experts to operate and the results were highly scattered (large standard deviation).

In applications such as natural gas pipelines or petro-chemical process monitoring, uncertain measurements can be extremely costly. For example, additional processing or dehydration costs, upset conditions,

Trustworthy measurements are critical in process analyses. The SS2000 provides reliable, accurate, real-time measurements.

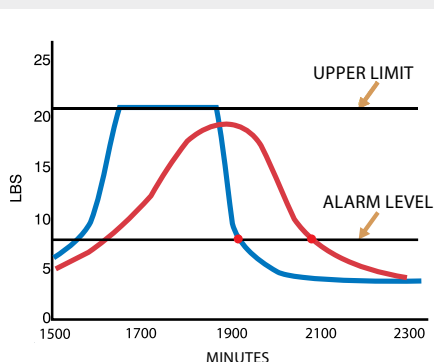


Figure 1: A read out comparison of the SS2000 (left curve) and a slower sensor demonstrates how eliminating long dry-downs can drastically reduce costly shutdown times. In this example, the alarm state is erroneously extended for hours.



shut-ins, and inconsistent process results may be caused by sensors that do not perform properly. The SpectraSensors technology is the first to offer truly reliable data and simple operation.

NO INTERFERENCE

The SS2000 Tunable Laser Diode (TDL) sensor does not come into contact with the sample gas stream. The sensor sends a beam of light through a window in the sample cell and analyzes the resulting changes (absorption) in the beam energy. The result is a sensor which does not suffer from contamination or drift due to vapor impurities such as glycol, methanol, amines, hydrogen sulfide, or mercaptans.

PAYBACK

The SS2000 sensor heads are not subjected to corrosives or contaminants in the gas stream as mentioned above. A quick pay-back period can be realized by eliminating the cost of consumables, extra sensor heads, and the labor and overhead associated with excessive maintenance. Additionally, intangible (but real) costs associated with unreliable gas measurements can be reduced dramatically. For example, added processing steps, poor gas quality and the possibility of costly damage to equipment can result from sensors that produce incorrect data. The potential savings easily justify the need for a reliable, fast and maintenance free solution such as the SpectraSensors SS2000 moisture and carbon dioxide analyzer.

SpectraSensors™

SS2000

Moisture/Carbon Dioxide Analyzer

Specifications

Performance

Moisture Concentration (H ₂ O)*	10-422 ppmv, NIST Traceable 0.5 to 20 lbs/MMSCF Nat.Gas
Accuracy (H ₂ O)	±2% of reading or ±4 ppmv
Carbon Dioxide Concentration (CO ₂)*	0-10%
Accuracy (CO ₂)	±2% of reading, or ±0.04% of reading (400 ppmv), whichever is greater
Response time**	Display updates 0.25-2 seconds (software adjustable)

* Consult factory for alternative ranges

** Flow Rate Dependant - Sample cell volume is 0.14 L (0.005 ft³). Time to displace cell volume
at a flow of 1 L/min (2 scfh) is ~10 sec.

Application Data

Environmental Temperature Range	-20° to 50° C (-4° to 122° F)
Sample Inlet Pressure	10 to 25 PSIA, 10 PSIG Maximum (70-170 kPa Abs, 70 kPaG Maximum)
Sample Flow Rate	0.1-10 L/min (0.2 to 20 scfh)
Contaminant Sensitivity	None for gas phase glycol, methanol, amines, hydrogen sulfides or mercaptans

Electrical & Communications

Input Voltage	100-240 VAC, 50-60 HZ Standard 9-16 VDC or 18-32 VDC Optional
Current	1 amp maximum @ 120VAC 1.6A @ 24VDC, 3.2A @ 12 VDC
Outputs	Generic or Modbus RS232 (all parameters) 4-20mA loop (concentration only)
LCD Display	Concentration, Cell Pressure and Cell Temperature

Physical Specifications

Size	444 mm H × 376 mm W × 135 mm D (17.5" H × 14.8" W × 5.8" D)
Weight	Approx. 11.5 Kg (25 lbs)
Sample Cell Construction	316L Series Polished Stainless Steel

Area Classification

Certification	CSA Class I, Division 2, Groups C and D, Temp Code T3C, ATEX Ex nA nL II T3 (Pending)
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