

# 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*

**SpectraSensors SS2000** Moisture or Carbon Dioxide Analyzer is an extremely reliable extractive sensor utilizing SpectraSensors' line-spectroscopy technology. The sensor measures concentrations 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 petrochemical process monitoring, uncertain measurements can be extremely costly. For example, additional processing or dehydration costs, upset conditions,



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.

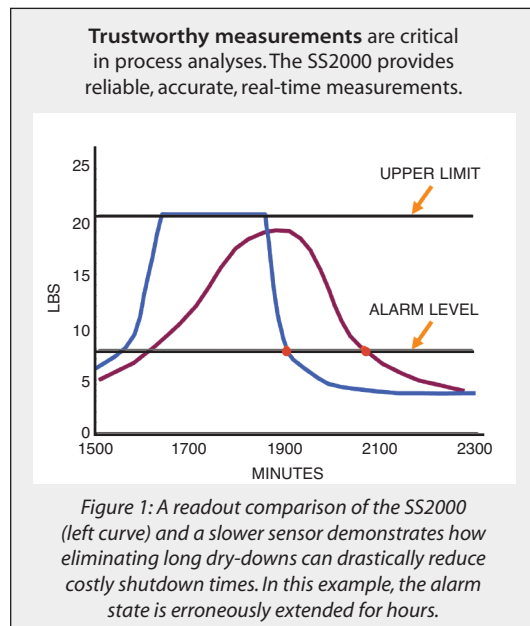
**NO INTERFERENCE** The SS2000 Tunable Laser Diode (TDL) sensor does not come into contact with the sample gas stream. The sensor sends a beam of light through a window in the sample cell and analyzes the resulting changes (absorption) in the beam energy. The result is a sensor which does not suffer 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 payback 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.



Ask about other available products:

**SS1000 Portable Gas Analyzer**



**SpectraSensors™**

# SS2000 Moisture/Carbon Dioxide Analyzer



## Specifications

### Performance

Moisture Concentration (H <sub>2</sub> O)*	0.5 to 20 lbs/MMSCF Nat. Gas 10-422 ppmv, NIST Traceable
Accuracy (H <sub>2</sub> O)	±2% of reading or ±4 ppmv
Dew/Frost Point	-76° to -20°F (-60° to -29°C)
Carbon Dioxide Concentration (CO <sub>2</sub> )*	0-10%
Accuracy (CO <sub>2</sub> )	± 2% of reading, or ±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 0.005 ft<sup>3</sup>. Time to displace cell volume at a flow of 2 scfh is ~10 sec.

### Environmental Range

Temperature	-4° to 122°F (-20° to 50°C)
Inlet Pressure	10 to 25 PSIA, <b>10 PSIG Maximum</b> (70-170 kPa Abs, <b>70 kPaG Maximum</b> )
Sample Cell Construction	316L Series Polished Stainless Steel
Sample Flow Rate	0.2 to 20 SCFH (100-10,000 cc/min)
Contaminant Sensitivity	None for gas phase glycol, methanol, amines, hydrogen sulfides or mercaptans

### Power Requirements

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

### Physical Specifications

Outputs	Generic or Modbus RS232 (all parameters) 4-20mA loop (concentration only)
LCD Display	Concentration, Cell Pressure and Cell Temperature
Size	17.5"H x 14.8"W x 5.8"D (444mm H x 376mm W x 135mm D)
Weight	Approx. 25lbs (11.5Kg)

### Area Classification

Certification	CSA Class I, Division 2, Groups C and D, Temp Code T3C
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