

SpectraSensors SS2100/SS2200 Process Gas Analyzer

Key Features

- *High Resolution Spectrometer*
- *Simple design, trouble-free operation*
- *Robust laser light source*
- *Fast Response, no wet-up or dry-down*
- *No interference or drift from contaminants*
- *Reliable in harsh environments*
- *Available in single or dual channel for various applications & sensitivities*
- *Spectrum software tool*
- *Serial and analog outputs*

The SS2100 is an exceptionally reliable gas analyzer used to measure trace levels of gas components using Tunable Laser Diode Absorption Spectroscopy (TDLAS). This technology is a form of infrared spectroscopy in which the light source is a diode laser, giving the SS2100 the benefit of long life, simplicity and reliability. Additionally, the SS2100 utilizes an high-resolution technique that allows it to measure specific gases with very high accuracy.

FAST The SS2100 analyzers take measurements 4 times per second with a laser and detector and averages the results. These real-time measurements are not hampered by wet-ups (absorption) or dry-downs (desorption) as with surfaced-based sensors because the laser does not contact the gas.

RELIABLE Trustworthy measurements are vital in process analytical applications. The SS2100 does not require regular maintenance and calibration or periodic replacement parts due to the inherent characteristics of TDLAS technology. Because the measurement is the percent of absorbed light that travels through a gas sample, the sensor is unaffected by contaminants and corrosives.

The analyzer measures a spectral feature that can be displayed as a peak. The software uses "peak tracking" to maintain the center of the peak which eliminates the possibility of drift.

The diode laser is a solid-state semiconductor device. The useful life of the laser is many times longer than incandescent sources. The instrument has no choppers or other moving parts to replace.



SIMPLE OPERATION The SS2100 comes with analog, serial, and Modbus outputs as well as a functionally intuitive touchpad and LCD screen interface. Installation is as easy as plugging it in and turning it on because there are no start up calibrations or procedures. SpectrumPlot software provides easy-to-analyze text and graphics on laptop or desktop PC computers.

CONFIGURABLE The analyzer is available in a single-channel (SS2100) or dual-channel (SS2200) package and each channel can be configured for a variety of measurements. An assortment of sample cell lengths and tunable laser wavelengths provide sensitivity in the parts-per-billion for many applications in the refining, natural gas, bulk gas, semiconductor, and environmental monitoring industries. Components that can be measured include moisture (H₂O), carbon monoxide/dioxide (CO & CO₂), ammonia (NH₃), nitric oxide (NO), hydrochloric acid (HCl), hydrogen sulfide (H₂S), ethylene oxide (ETO), hydrofluoric acid (HF), methane (CH₄), Oxygen (O₂) and more.

Liquid Natural Gas



Environmental Monitoring



Refining



Petrochemical



Bulk Gas



SpectraSensors[™]

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Specifications

Environmental Range

Temperature	-20° to 50° C (-4° to 122°F)
Inlet Pressure	70 kPaG (10 PSIG) max
Sample Flow Rate	100-10,000 cc/min (0.2 to 20 SCFH)

Power Requirements

Input Voltage	100-240 VAC, 50-60Hz Standard 9-16 VDC or 18-32 VDC Optional
Current	1 amp maximum @ 120VAC 1.6A @ 24 VDC, 3.2A @ 12 VDC

Physical

Enclosure Type	NEMA 4X – Stainless Steel (typ*)
Instrument Size	300mm(H) X 250mm(W) X 140mm(W) (12in X 10in X 5.5in)
Sample Cell Size	300 to 560mm Tall X 150mm square (12 to 22in Tall X 6in square)
Sample Cell Construction	316L Series Polished Stainless Steel (typ*)
Number of Sample Cells	1 (single channel SS2100) or 2 (dual channel SS2200)
Heated Enclosure Size	Varies**
Sample Handling Systems	Custom configurations available including stream handling, heated enclosures, pressure control, etc.**
Weight	Approximately 10-20Kg (25-50 lbs)**

Data Display

Measurement Response Time	.025 to ~60 sec**
Communication Outputs	Generic or Modbus RS232 (all parameters) 4-20mA loop (concentration)
LCD Display	Concentration, Cell Pressure and Temperature Diagnostic Data

Typical Applications

Target Components	H ₂ O CO CO ₂ NH ₃ NO HCl H ₂ S ETO HF CH ₄ O ₂
Measurement Ranges	0-1ppm to 0-100% **

* Typical shown – custom configurations available.

** Application specific; consult factory.