

# SS2100 Datasheet

## TDLAS gas analyzer

### Key Features

- Laser based – rapid response
- Negligible interference from contaminants
- Non-contact sensing
- Reliable in harsh environments
- Low maintenance
- Intrinsically stable; field calibration not needed
- Remote diagnostics
- Available for the following measurements:  
H<sub>2</sub>O (moisture)  
CO<sub>2</sub> (carbon dioxide)  
H<sub>2</sub>S (hydrogen sulfide)  
NH<sub>3</sub> (ammonia)  
C<sub>2</sub>H<sub>2</sub> (acetylene)
- CSA Class I, Div 2;  
Class I, Zone 2;  
FCC Certifications



SpectraSensors SS2100 Process Gas Analyzers are exceptionally reliable for measuring trace gas components using Tunable Laser Diode Absorption Spectroscopy (TDLAS) technology. TDLAS is a high-resolution infrared technique that enables the measurement of specific gases with precision while avoiding interferences that are common with traditional infrared analyzers. The SS2100 is certified for CSA Class I, Div 2, and Class I, Zone 2.

**Simple operation** The operation of the analyzer is very straightforward. Most technical personnel can learn to operate the system in a very brief time. Coupled with the fact the analyzer has very little maintenance requirements, the end result is an extremely low cost of ownership.

At the same time, technical support capability is a crucial element of the product

design. There are several health monitoring parameters and remote access is available using Service software or directly through the touch sensitive keypad.

**Reliable** Trustworthy measurements are vital in process analytical applications. The TDL sensor is unaffected by contaminants and corrosives since the gas stream never touches the laser or detector. The SS2100 requires little maintenance and does not need recalibration or periodic replacement parts due to the inherent stability of TDL technology.

**Simple installation** The SS2100 is easy to install; connect the power, data link and measured gas line and the analyzer begins working without the need for extensive calibrations or setup.



SS2100 Examples:  
Trace H<sub>2</sub>S (left)  
Trace H<sub>2</sub>O (right)

## Specifications

|   |   |
|---|---|
| <b>Application Data</b>                   |   |
| Target Components                         | H <sub>2</sub> O, H <sub>2</sub> S, CO <sub>2</sub> , NH <sub>3</sub> , C <sub>2</sub> H <sub>2</sub> (Ranges from low ppmv to %)*                        |
| Principle of Measurement                  | Tunable Diode Laser Absorption Spectroscopy   |
| Measurement Time                          | Typically less than 20 seconds*   |
| Environmental Temperature Range           | -20°C to 50°C (-4°F to 122°F), -10°C to 60°C (14°F to 140°F) - optional   |
| Sample Cell Operating Pressure Range      | Typically 800-1200 mbara or 950-1700 mbara* - optional  |
| Pressure to Sample Cabinet                | Typically between 140-350 kPaG (20-50 PSIG)*  |
| Sample Flow Rate                          | 0.5-4 SLPM (0.02-0.1 SCFM)*   |
| <b>Electrical &amp; Communications</b>    |   |
| Input Power, Maximum                      | 120 or 240 VAC +/-10%, 50-60 Hz, 300W - standard<br>18 - 24VDC, 1.6A max - optional   |
| Analog Communication                      | Two Isolated 4-20mA Analog Output, 1200 ohms @ 24 VDC max   |
| Serial Communications                     | RS232C and Ethernet   |
| Digital Outputs                           | Qty 5: Concentration Alarm, General Fault, Validation Fail*, Validation 1 Active*, Validation 2 Active*   |
| DO Contact Rating (inductive)             | 250VAC, 3A NO Contact, 1.5A NC Contact<br>24VDC, 1A NO and NC Contact   |
| Digital Inputs                            | Qty 2: Flow Alarm*, Validation Request*   |
| Protocol                                  | Modbus Gould RTU or Daniel RTU or ASCII   |
| Diagnostic Value Examples                 | Detector Power (Optics Health), Spectrum Reference Comparison and Peak Tracking (Spectrum Quality), Cell Pressure and Temperature (Overall System Health) |
| LCD Display                               | Concentration, Cell Pressure and Temperature & Diagnostics  |
| <b>Physical</b>                           |   |
| Electronics Enclosure                     | NEMA 4X 304 or 316L Stainless Steel   |
| Sample System Enclosure(s)                | NEMA 4X 304 or 316L Stainless Steel   |
| Analyzer Dimensions                       | 1300-1500 H x 600-920 W x 300-450 D mm<br>(50-60 H x 24-36 W x 12-17 D inches) with Sample System*  |
| Analyzer Weight                           | 90-130 kg (200-300 lbs) with Sample System*   |
| Analyzer Shipment and Storage Temperature | Analyzers with Permeation Validation: >0°C (32°F)<br>All other Analyzers: ≥ -20°C (-4°F)  |
| Sample Cell Construction                  | 316L Series Polished Stainless Steel  |
| Number of Sample Cells                    | 1 per Analyzer  |
| <b>Certifications</b>                     |   |
| Analyzer with Sample Conditioning System  | CSA Class I, Div 2, Groups A, B, C & D;<br>Class I, Zone 2 IIC T3 (T3C without Heater), IP66  |
| FCC                                       | Meets FCC Part 15, Subpart B, Sections 15.107 and 15.109  |
| Other                                     | CRN and NACE available for specific product configurations  |

\* Application dependant.

### Contact

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