

# SS2100 Datasheet

## TDL 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, FCC Certifications



SpectraSensors SS2100 Process Gas Analyzers are exceptionally reliable for measuring trace gas components using Tunable Laser Diode (TDL) technology. TDL absorption spectroscopy 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.

**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 %)*
Measurement Performance	Refer to application notes for application specific performance information
Principle of Measurement	Tunable Diode Laser Absorption Spectroscopy
Environmental Temperature Range	-20°C to +50°C (-4° to 122°F), -10°C to +60°C (14° to 140°F)-optional
Sample Cell Operating Pressure Range	Typically 800-1200 mbara or 950-1700 mbara* - optional
Pressure to Sample Cabinet	Typically between 1.5-4 barG (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, 260W (2 power connections)-standard 18 - 24VDC, 1.6A max + 200W AC heater power - 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 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 & Sample System Enclosure	Built with NEMA 4X 304 or 316L Stainless Steel enclosure
Analyzer Dimensions	1300-1500 H x 600-920 W x 300-450 D mm (51 H x 24-36 W x 17 D inches) with Sample System*
Shipping Weight (with crate)	204-227 kg (450-500 lbs)*
Sample Cell Construction	316L 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, T3 with heater (T3C without heater), IP66
FCC	Meets FCC Part 15, Subpart B, Sections 15.107 and 15.109
EMC	EN/IEC 61326-1

\*Application dependant.

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