

# SS2100a ATEX Zone 2 Datasheet

## TDLAS gas analyzer

### Key Features

- Touch keypad interface, no tools required
- Simple design, trouble-free operation
- No routine maintenance required
- Field calibration not needed
- No drift or interference from contaminants
- Reliable in harsh environments
- 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)
- ATEX Certification



SpectraSensors SS2100a Process Gas Analyzers are exceptionally reliable for measuring trace gas components using tunable diode laser 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 SS2100a is certified for ATEX.

**Simple operation** The operation of the analyzer is very straightforward. Most technical personnel can learn to operate the system in a very brief time. When 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.


**Simple installation** The SS2100a 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.

**Reliable** Trustworthy measurements are vital in process analytical applications. The TDLAS sensor is unaffected by contaminants and corrosives since the gas stream never touches the laser or detector. The SS2100a requires little regular maintenance and does not need recalibration or periodic replacement parts due to the inherent stability of TDLAS technology.



SS2100a with  
Sample Conditioning System

## 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	800-1200 mbara - standard, or 950-1700 mbara - optional*
Pressure to Cell	70 kPaG (10 PSIG) max to spectrometer cell
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, Electronics Enclosure	120 or 240 VAC ±10%, 50-60 Hz; 60W max (with 2 solenoids)
Input Power, Sample Cabinet	120 or 240 VAC, 50-60 Hz - standard; 100W or 200W max for heated systems*
Analog Communication	Isolated Analog channels, 1200 ohms @ 24 VDC max Outputs: Qty 2 4-20 mA (measurement value) Inputs: Qty 1 4-20 mA (pipeline pressure)*
Serial Communication	Ethernet & RS485 half-duplex - standard
Digital Signals	Outputs: Qty 5 Hi/Lo Alarm, General Fault, Validation Fail*, Validation 1 Active*, Validation 2 Active* Inputs: Qty 2 Flow Alarm*, Validation Request*
Protocol	Modbus Gould RTU or Daniel RTU or ASCII
Diagnostic Value Examples	Detector Power (Mirror 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	IP66 Copper-Free Aluminum with Weather Resistant Polyester Powder Coating, 80-120 micron thickness
Sample System Enclosure(s)	IP55 (min) 304 or 316L Stainless Steel
Analyzer Electronics Dimensions	610 H x 341 W x 254 D mm (24 H x 13.4 W x 10 D inches)
Analyzer Electronics Weight	Approximately 50 kg (100 lbs)*
Analyzer Shipment and Storage Temperature	Analyzers with Permeation Validation: >0°C (32°F) All other Analyzers: ≥ -20°C (-4°F)
Enclosure Dimension & Weight	Varies - Refer to Application Drawings
Sample Cell Construction	316L Series Polished Stainless Steel - standard
Number of Sample Cells	1 per Analyzer
<b>Certification</b>	
Analyzer (Electronics & Laser)	CE  II 3G Ex dc ec nA opis IIB+H2 T3,Gc, IP66, EMC Directive 2014/30/EU, ATEX Directive 2014/34/EU

\*Application dependant.



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