

## SS2100 gas analyzer

### Exceptionally reliable for measuring trace gas components



More information and current pricing:

[www.apsc.endress.com/SS2100](http://www.apsc.endress.com/SS2100)

#### Benefits:

- Accurate, real-time measurements
- Low cost of ownership, no consumables and virtually maintenance-free and reliable in harsh environments
- Available to measure up to 3 analytes in one unit (2-packs or 3-packs)
- Provides measurements not hampered by wet-up (absorption) or dry-down (desorption)
- Dependable with greater repeatability than surface-based sensors
- Analog and serial outputs for remote monitoring
- Available for following measurements: H<sub>2</sub>O, CO<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, C<sub>2</sub>H<sub>2</sub>

#### Specs at a glance

- **Measured Variables** Concentration Cell Pressure Cell  
Temperature
- **Hazardous area approvals** CSA Class I, Division 2 CSA Class I, Zone 2

**Field of application:** Using patented tunable diode laser absorption spectroscopy (TDLAS) technology, the SS2100 gas analyzer measures specific gases (H<sub>2</sub>O, CO<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, and C<sub>2</sub>H<sub>2</sub>) with precision while avoiding interferences that are common with traditional infrared analyzers. The SS2100 analyzer requires little maintenance and does not need recalibration or periodic replacement parts.

#### Features and specifications

H2S

**Measuring principle**

TDLAS

## H2S

**Product Headline**

An advanced gas analyzer for hydrogen sulfide (H2S) measurement. The SS2100 uses Tunable Laser Diode Absorption Spectroscopy (TDLAS) to determine the concentration of the analyte without coming into physical contact with the stream.

**Channels**

1

**Analyte and Measurement ranges**

H2S (Hydrogen Sulfide): 0-10 to 0-1000 ppmv; 0-5000 ppmv to 0-5%

**Measured Variables**

Concentration  
Cell Pressure  
Cell Temperature

**Ambient Temperature range**

-20 to 50°C (-4 to 122°F)  
Optional: -10 to 60°C (14 to 140°F)

**Operating Pressure range**

Inlet Pressure: 140-350 kPa (20-50 psig)  
Sample Cell: 800-1200 mbara or 950-1700 mbara (optional)

**Analyzer Wetted materials**

316L Stainless Steel  
FKM O-Rings  
Glass

**Power supply**

120 or 240 VAC ±10%, 50-60 Hz, 300W  
(18-24 VDC - optional for electronics only)  
3 Amps max @ 120 VAC , 1.5 Amps max @ 240 VAC Hz

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**H2S****Communication**

Analog Output: Two 4-20mA Isolated, 1200 ohms @ 24 VDC max load

Serial: RS232C and Ethernet

Protocol: Modbus Gould RTU or Daniel RTU or ASCII

Digital Outputs: 5, Concentration Alarm, General Fault, Validation Fail, Validation 1 Active, Validation 2 Active

Digital Inputs: 2, Flow Alarm, Validation Request

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**Housing materials**

Electronics: 304 or 316L Stainless Steel

Sample System Enclosure: 304 or 316L Stainless Steel

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**Hazardous area approvals**

CSA Class I, Division 2

CSA Class I, Zone 2

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**Degree of protection**

IP66, Type 4X

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**H2O****Measuring principle**

TDLAS

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**Product Headline**

An advanced gas analyzer for moisture (H2O) measurement. The SS2100 uses Tunable Laser Diode Absorption Spectroscopy (TDLAS) to determine the concentration of the analyte without coming into physical contact with the stream.

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**Channels**

1

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**Analyte and Measurement ranges**

H2O (Moisture): 0-10 to 0-100 ppmv; 0-50 to 0-5000 ppmv

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## H2O

**Measured Variables**

Concentration  
Moisture Dew Point  
Cell Pressure  
Cell Temperature

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**Ambient Temperature range**

-20 to 50°C (-4 to 122°F)  
Optional: -10 to 60°C (14 to 140°F)

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**Operating Pressure range**

Inlet Pressure: 140-350 kPa (20-50 psig)  
Sample Cell: 800-1200 mbara or 950-1700 mbara (optional)

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**Analyzer Wetted materials**

316L Stainless Steel  
FKM O-Rings  
Glass

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**Power supply**

120 or 240 VAC  $\pm$ 10%, 50-60 Hz, 300W  
(18-24 VDC - optional for electronics only)  
3 Amps max @ 120 VAC , 1.5 Amps max @ 240 VAC Hz

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**Communication**

Analog Output: Two 4-20mA Isolated, 1200 ohms @ 24 VDC max load  
Serial: RS232C and Ethernet  
Protocol: Modbus Gould RTU or Daniel RTU or ASCII  
Digital Outputs: 5, Concentration Alarm, General Fault, Validation Fail,  
Validation 1 Active, Validation 2 Active  
Digital Inputs: 2, Flow Alarm, Validation Request

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**Housing materials**

Electronics: 304 or 316L Stainless Steel  
Sample System Enclosure: 304 or 316L Stainless Steel

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H2O	<p><b>Hazardous area approvals</b> CSA Class I, Division 2 CSA Class I, Zone 2</p> <hr/> <p><b>Degree of protection</b> IP66, Type 4X</p> <hr/>
CO2	<p><b>Measuring principle</b> TDLAS</p> <hr/> <p><b>Product Headline</b> An advanced gas analyzer for carbon dioxide (CO2) measurement. The SS2100 uses Tunable Laser Diode Absorption Spectroscopy (TDLAS) to determine the concentration of the analyte without coming into physical contact with the stream.</p> <hr/> <p><b>Channels</b> 1</p> <hr/> <p><b>Analyte and Measurement ranges</b> CO2 (Carbon Dioxide): 0-10 to 0-1000 ppmv; 0-5000 ppmv to 0-5%</p> <hr/> <p><b>Measured Variables</b> Concentration Cell Pressure Cell Temperature</p> <hr/> <p><b>Ambient Temperature range</b> -20 to 50°C (-4 to 122°F) Optional: -10 to 60°C (14 to 140°F)</p> <hr/> <p><b>Operating Pressure range</b> Inlet Pressure: 140-350 kPa (20-50 psig) Sample Cell: 800-1200 mbara or 950-1700 mbara (optional)</p> <hr/>

CO2

**Analyzer Wetted materials**

316L Stainless Steel  
FKM O-Rings  
Glass

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**Power supply**

120 or 240 VAC  $\pm 10\%$ , 50-60 Hz, 300W  
(18-24 VDC - optional for electronics only)  
3 Amps max @ 120 VAC , 1.5 Amps max @ 240 VAC Hz

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**Communication**

Analog Output: Two 4-20mA Isolated, 1200 ohms @ 24 VDC max load  
Serial: RS232C and Ethernet  
Protocol: Modbus Gould RTU or Daniel RTU or ASCII  
Digital Outputs: 5, Concentration Alarm, General Fault, Validation Fail,  
Validation 1 Active, Validation 2 Active  
Digital Inputs: 2, Flow Alarm, Validation Request

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**Housing materials**

Electronics: 304 or 316L Stainless Steel  
Sample System Enclosure: 304 or 316L Stainless Steel

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**Hazardous area approvals**

CSA Class I, Division 2  
CSA Class I, Zone 2

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**Degree of protection**

IP66, Type 4X

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NH3

**Measuring principle**

TDLAS

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**Product Headline**

An advanced gas analyzer for ammonia (NH3) measurement. The SS2100 uses Tunable Laser Diode Absorption Spectroscopy (TDLAS) to determine the concentration of the analyte without coming into physical contact with the stream.

NH3

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**Channels**

1

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**Analyte and Measurement ranges**

NH3 (Ammonia): 0-5 ppmv

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**Measured Variables**

Concentration

Cell Pressure

Cell Temperature

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**Ambient Temperature range**

-20 to 50°C (-4 to 122°F)

Optional: -10 to 60°C (14 to 140°F)

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**Operating Pressure range**

Inlet Pressure: 140-350 kPa (20-50 psig)

Sample Cell: 800-1200 mbara or 950-1700 mbara (optional)

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**Analyzer Wetted materials**

316L Stainless Steel

FKM O-Rings

Glass

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**Power supply**

120 or 240 VAC ±10%, 50-60 Hz, 300W

(18-24 VDC - optional for electronics only)

3 Amps max @ 120 VAC , 1.5 Amps max @ 240 VAC Hz

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**Communication**

Analog Output: Two 4-20mA Isolated, 1200 ohms @ 24 VDC max load

Serial: RS232C and Ethernet

Protocol: Modbus Gould RTU or Daniel RTU or ASCII

Digital Outputs: 5, Concentration Alarm, General Fault, Validation Fail,  
Validation 1 Active, Validation 2 Active

Digital Inputs: 2, Flow Alarm, Validation Request

NH3

**Housing materials**

Electronics: 304 or 316L Stainless Steel

Sample System Enclosure: 304 or 316L Stainless Steel

**Hazardous area approvals**

CSA Class I, Division 2

CSA Class I, Zone 2

**Degree of protection**

IP66, Type 4X

C2H2

**Measuring principle**

TDLAS

**Product Headline**

An advanced gas analyzer for acetylene (C2H2) measurement. The SS2100 uses Tunable Laser Diode Absorption Spectroscopy (TDLAS) to determine the concentration of the analyte without coming into physical contact with the stream.

**Channels**

1

**Analyte and Measurement ranges**

C2H2 (Acetylene): 0-5; 0-3000 ppmv

**Measured Variables**

Concentration

Cell Pressure

Cell Temperature

**Ambient Temperature range**

-20 to 50°C (-4 to 122°F)

Optional: -10 to 60°C (14 to 140°F)



**C2H2****Operating Pressure range**

Inlet Pressure: 140-350 kPa (20-50 psig)

Sample Cell: 800-1200 mbara or 950-1700 mbara (optional)

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**Analyzer Wetted materials**

316L Stainless Steel

FKM O-Rings

Glass

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**Power supply**

120 or 240 VAC  $\pm 10\%$ , 50-60 Hz, 300W

(18-24 VDC - optional for electronics only)

3 Amps max @ 120 VAC , 1.5 Amps max @ 240 VAC Hz

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**Communication**

Analog Output: Two 4-20mA Isolated, 1200 ohms @ 24 VDC max load

Serial: RS232C and Ethernet

Protocol: Modbus Gould RTU or Daniel RTU or ASCII

Digital Outputs: 5, Concentration Alarm, General Fault, Validation Fail,  
Validation 1 Active, Validation 2 Active

Digital Inputs: 2, Flow Alarm, Validation Request

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**Housing materials**

Electronics: 304 or 316L Stainless Steel

Sample System Enclosure: 304 or 316L Stainless Steel

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**Hazardous area approvals**

CSA Class I, Division 2

CSA Class I, Zone 2

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**Degree of protection**

IP66, Type 4X

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**H2S+H2O****Measuring principle**

TDLAS

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## H2S+H2O

### Product Headline

Advanced multi-channel gas analyzer for hydrogen sulfide (H2S) and moisture (H2O), also known as a 2-Pack. The SS2100 uses Tunable Laser Diode Absorption Spectroscopy (TDLAS) to determine the concentration of the analyte without coming into physical contact with the stream.

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### Channels

2

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### Analyte and Measurement ranges

H2S (Hydrogen Sulfide): 0-10 to 0-1000 ppmv

H2O (Moisture): 0-100 to 0-5000 ppmv

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### Measured Variables

Concentration

Moisture Dew Point

Cell Pressure

Cell Temperature

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### Ambient Temperature range

-20 to 50°C (-4 to 122°F)

Optional: -10 to 60°C (14 to 140°F)

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### Operating Pressure range

Inlet Pressure: 140-350 kPa (20-50 psig)

Sample Cell: 800-1200 mbara or 950-1700 mbara (optional)

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### Analyzer Wetted materials

316L Stainless Steel

FKM O-Rings

Glass

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### Power supply

120 or 240 VAC ±10%, 50-60 Hz, 300W

(18-24 VDC - optional for electronics only)

3 Amps max @ 120 VAC , 1.5 Amps max @ 240 VAC Hz

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## H2S+H2O

**Communication**

Analog Output: Four 4-20mA Isolated, 1200 ohms @ 24 VDC max load  
 Serial: RS232C and Ethernet (H2S) and RS232C or Ethernet (H2O)  
 Protocol: Modbus Gould RTU or Daniel RTU or ASCII  
 Digital Outputs (H2S): 5, Concentration Alarm, General Fault, Validation Fail, Validation 1 Active, Validation 2 Active  
 Digital Inputs (H2S): 2, Flow Alarm, Validation Request  
 Digital Outputs (H2O): 2, Concentration Alarm, General Fault

**Housing materials**

Electronics: 304 or 316L Stainless Steel  
 Sample System Enclosure: 304 or 316L Stainless Steel

**Hazardous area approvals**

CSA Class I, Division 2  
 CSA Class I, Zone 2

**Degree of protection**

IP66, Type 4X

## H2S+CO2

**Measuring principle**

TDLAS

**Product Headline**

Advanced multi-channel gas analyzer for hydrogen sulfide (H2S) and carbon dioxide (CO2), also known as a 2-Pack. The SS2100 uses Tunable Laser Diode Absorption Spectroscopy (TDLAS) to determine the concentration of the analyte without coming into physical contact with the stream.

**Channels**

2

**Analyte and Measurement ranges**

H2S (Hydrogen Sulfide): 0-10 to 0-1000 ppmv  
 CO2 (Carbon Dioxide): 0-5000 ppmv to 0-5%

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**H2S+CO2****Measured Variables**

Concentration  
Cell Pressure  
Cell Temperature

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**Ambient Temperature range**

-20 to 50°C (-4 to 122°F)  
Optional: -10 to 60°C (14 to 140°F)

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**Operating Pressure range**

Inlet Pressure: 140-350 kPa (20-50 psig)  
Sample Cell: 800-1200 mbara or 950-1700 mbara (optional)

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**Analyzer Wetted materials**

316L Stainless Steel  
FKM O-Rings  
Glass

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**Power supply**

120 or 240 VAC ±10%, 50-60 Hz, 300W  
(18-24 VDC - optional for electronics only)  
3 Amps max @ 120 VAC , 1.5 Amps max @ 240 VAC Hz

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**Communication**

Analog Output: Four 4-20mA Isolated, 1200 ohms @ 24 VDC max load  
Serial: RS232C and Ethernet (H2S) and RS232C or Ethernet (CO2)  
Protocol: Modbus Gould RTU or Daniel RTU or ASCII  
Digital Outputs (H2S): 5, Concentration Alarm, General Fault, Validation Fail, Validation 1 Active, Validation 2 Active  
Digital Inputs (H2S): 2, Flow Alarm, Validation Request  
Digital Outputs (CO2): 2, Concentration Alarm, General Fault

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**Housing materials**

Electronics: 304 or 316L Stainless Steel  
Sample System Enclosure: 304 or 316L Stainless Steel

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H2S+CO2

**Hazardous area approvals**

CSA Class I, Division 2

CSA Class I, Zone 2

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**Degree of protection**

IP66, Type 4X

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H2S+H2O+CO2

**Measuring principle**

TDLAS

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**Product Headline**

Advanced multi-channel gas analyzer for hydrogen sulfide (H2S), moisture (H2O), and carbon dioxide (CO2), also known as a 3-Pack. The SS2100 uses Tunable Laser Diode Absorption Spectroscopy (TDLAS) to determine the concentration of the analyte without coming into physical contact with the stream.

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**Channels**

3

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**Analyte and Measurement ranges**

H2S (Hydrogen Sulfide): 0-10 to 0-1000 ppmv

H2O (Moisture): 0-100 to 0-5000 ppmv

CO2 (Carbon Dioxide): 0-5000 ppmv to 0-5%

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**Measured Variables**

Concentration

Moisture Dew Point

Cell Pressure

Cell Temperature

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**Ambient Temperature range**

-20 to 50°C (-4 to 122°F)

Optional: -10 to 60°C (14 to 140°F)

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**H2S+H2O+CO2****Operating Pressure range**

Inlet Pressure: 140-350 kPa (20-50 psig)

Sample Cell: 800-1200 mbara or 950-1700 mbara (optional)

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**Analyzer Wetted materials**

316L Stainless Steel

FKM O-Rings

Glass

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**Power supply**

120 or 240 VAC  $\pm 10\%$ , 50-60 Hz, 300W

(18-24 VDC - optional for electronics only)

3 Amps max @ 120 VAC , 1.5 Amps max @ 240 VAC Hz

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**Communication**

Analog Output: Four 4-20mA Isolated, 1200 ohms @ 24 VDC max load

Serial: RS232C and Ethernet (H2S) and RS232C or Ethernet (H2O/CO2)

Protocol: Modbus Gould RTU or Daniel RTU or ASCII

Digital Outputs (H2S): 5, Concentration Alarm, General Fault, Validation Fail, Validation 1 Active, Validation 2 Active

Digital Inputs (H2S): 2, Flow Alarm, Validation Request

Digital Outputs (H2O/CO2): 2, Concentration Alarm, General Fault

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**Housing materials**

Electronics: 304 or 316L Stainless Steel

Sample System Enclosure: 304 or 316L Stainless Steel

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**Hazardous area approvals**

CSA Class I, Division 2

CSA Class I, Zone 2

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**Degree of protection**

IP66, Type 4X

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More information [www.apsc.endress.com/SS2100](http://www.apsc.endress.com/SS2100)