# **SOUTHLAND** SENSING MEASURE. ANALYZE. CONTROL.

**Overview & Product Introduction** 



### **Company Overview**

At Southland Sensing Ltd, we believe that even the most complex gas analysis measurement should be fast, accurate and simple to perform. Southland Sensing specializes in the design and manufacturing of:

- Electrochemical (Galvanic) Micro-Fuel Cell Oxygen Sensors
  - Both Percent (%) and PPM (Parts-Per-Million) Ranges
- Oxygen Analyzers & Transmitters
- Hydrogen Sulfide Analyzers & Transmitters
- A Complete Product Offering for End Users and Distributors
- OEM Focused Custom Solutions

We've introduced some ground-breaking technologies since our initial launch in 2013, and today, we remain focused on the continual advancement of gas analysis, measurement, and control products.

Trusted by over 375 market leaders in gas analysis applications in over 52 countries; Southland Sensing offers industry leading individualized technical and product support along with a network of domestic and international distribution partners. This results in a seamless buying experience with fast delivery.

All products are designed, tested and assembled at our facility in California, USA.



# **Oxygen Analysis Overview**

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# **Product Introduction**



# Why Measure Oxygen?

Oxygen gas concentration measurements are essential for the effective management of many industrial processes providing an important indicator with the focus on the following 6 areas:

#### Product Quality

Protect Capital Assets Protect Personnel Product Yield Life Support Environmental Concerns

Fundamentally, the benefits of oxygen monitoring has to significantly outweigh the costs of measuring, analyzing, and controlling the application. Instrumentation must, therefore, provide data that exceeds the requirements for accuracy, ease-of-use and reliability. The benefits of a good piece of equipment will be mostly process related; However, the benefits of a really exceptional piece of equipment will be both capital and operational – we strive for exceptional.

For this reason, Southland Sensing has designed its instrumentation to offer excellent performance, while minimizing service, calibration and maintenance requirements.



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### **Industrial Oxygen Analysis Applications**

3D Metal Printing *Air Separation* Area Monitoring Beverage Quality – CO2 Brewing Applications Confined Space Monitoring *Electronics* Fermentation Processes Fiber Optics Food Packaging Generators (N2, H2, O2, Air) Glass Fabrication *Glove Box Atmospheres Headspace Analysis* Marine Vapor Recovery Metals Processing *Nitrogen Blanketing* Natural Gas Transmission Ozone Generation Personnel Safety **Petrochemical Processing** Pharmaceutical Power Generation Semiconductor Steel Processing R&D Laboratories Transportation of Gases Waste Water Treatment

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#### Why Use Precision Galvanic "Micro Fuel Cell" Oxygen Sensors?

#### Accuracy:

Specific to oxygen

Excellent long term stability Linear output – one point calibration (in most cases) Limited interferences – gases and sample conditions

#### Versatility:

Adaptable to a wide range of measurements and temperatures Compact dimensions Product design is inherently intrinsically safe

#### Cost of Ownership: Relatively inexpensive

Field calibration to NIST traceable standard (if required) Maintenance free – no periodic additions of water or electrolyte







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#### How Does a "Micro Fuel Cell" Oxygen Sensor Work?

- In short, chemical energy, in the form of oxygen is transformed into an electrical energy.
- Oxygen in the sample gas dissolves into the electrolyte through the Teflon membrane and migrates to the anode and cathode simultaneously. At the cathode, oxygen is reduced by the electrons generated by the oxidation of the anode. The flow of electrons from the anode to the cathode constitutes an electrical current proportional to the partial pressure of oxygen in the sample gas.
- The rate of reaction, or in better terms the amount of oxygen in the gas stream, determines the signal output from the sensor.
- The relationship between the oxygen concentration and signal output is linear.
- Without oxygen, there is no reaction and, therefore, no output → this is also called an absolute zero and the reason our sensors usually do not need a zero calibration.

#### O2 + 2H2O + 4e- → 4OH-Oxidation at Anode (Pb): $2Pb + 4 OH \rightarrow 2 PbO + 2H2O + 4e$ Electrolyte Membrane Layer $O_2 O_2$ OH-OH-OH-OH-OH-OH-OH OH-Cathode OH-OH OH OH-OH-OH-OH OH-OH-OH-Electrolyte OH OH-OH-OH-OH-OH-OH-OH-OH OH-PhO OH-PbO PbO Anode OH-OH-

**Principle of Operation** 

**Reduction at Cathode:** 

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#### Acid Gas Streams and the Affects on our Oxygen Sensors



• When we talk about acid gas streams, we are typically referring to carbon dioxide (CO2) or natural gas as a background gas to your application.

- TO2-1 and PO2-1 series oxygen sensors contain a base electrolyte and are designed for continuous use in inert gases, gaseous hydrocarbons, helium, hydrogen, mixed gases, air and intermittent use in CO2 and other acid gas.
- For Intermittent use, think of a portable analyzer that might check the gas stream for 15 20 minutes at a time.
- Continuous use of our TO2-1 and PO2-1 oxygen sensors will lead to gradual deterioration in signal output; Requiring frequent calibrations until failure.
- The chart to the left gives an expected sensor life vs. CO2 concentration for a TO2-1 or PO2-1 series oxygen sensor.
- For continuous use in acid gas streams, consider using our TO2-2 or PO2-2 series oxygen sensors. These sensors are designed with an acid based electrolyte that can handle up to 100% CO2 without experiencing sensor life deterioration.
  - The TO2-2 and PO2-2 series oxygen sensors do have their own set of limitations and should not be used in most inert gas applications.

\*\* Consult the factory for your unique application.

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# **Competitive Replacement Oxygen Sensors**

- Southland Sensing Ltd.'s direct fit replacement electrochemical oxygen sensors are known for their quality, performance and exceptional value.
- Southland Sensing Ltd. designs and manufactures galvanic electrochemical oxygen sensors that have the same principle of operation as disclosed in US Patent Nos. 3,429,796 and 3,767,552.
- The oxygen sensors operate under the same principles as those currently being marketed by other manufacturers.
- Varying performance advantages to the SSO2 sensors can be attributed to minor modifications in dimensions, connections and packaging. However, the principle of operation and the basic components remain the same.
- We offer direct fit replacements for the following competitors:
  - Advanced Instruments<sup>®</sup> / Analytical Industries<sup>®</sup>
  - Advanced Micro Instruments AMI®
  - GE Sensing<sup>®</sup> / Panametrics<sup>®</sup>
  - Teledyne Analytical Industries<sup>®</sup>

Replacement Sensors: Complete manufacturers cross reference guide:

http://www.sso2.com/support/replacement-guide



AMI 1000RS with a TO2-1x PPM Replacement Oxygen Sensor Installed. (Tokyo, Japan)

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### **Competitive Technology Discussion**

Micro Fuel Cell Oxygen Sensors: While it is true, the technology behind most micro fuel cell oxygen sensors is similar, not every micro-fuel cell oxygen sensor is the same. During the manufacturing of Southland Sensing's oxygen sensors, we perform a lot of unique steps to ensure our sensors are of extremely high quality and they perform better in the market. As a result, we have some key competitive advantages over our competitors of similar technology. These advantages typically include: more sensitivity when measuring near zero, faster recovery from high oxygen levels and initial installation, more consistent performance, as well as longer sensor life and a longer warranty.

**Zirconium Oxide Sensors:** Typically zirconia oxygen sensors offer a very fast response and recovery along with a longer sensor life. However, their application is limited. This is partially due to the interference from reducing gases (H2, CO, HC) along with the high measuring temperature (1,110°F required to conduct ions). Zirconia sensors are typically affected by drift due to stability of the electronics, sensitivity to pressure change and intolerance to sulfur compounds. The other competitive advantage we have is cost. Zirconia sensors are often higher in initial cost due to the purchase of the sensor, furnace and electronics and the ongoing expenses of reference gases, power usage, sample conditioning and periodic sensor replacements.

**Paramagnetic Oxygen Sensors**: In most cases paramagnetic sensors offer superior stability for measuring in the 99 - 100% range and are also insensitive to sulfur compounds. With that noted, there are usually many disadvantages, those include the lack of sensitivity below 1%, the sensitivity to change in gas conditions (flow, position, vibration, particulates and moisture), abnormally large drift (up to 4% a week on some cases) and are typically very expensive to buy and maintain.

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# **Oxygen Analyzers & Transmitters**

**Southland Sensing** designs and manufacturers a wide range of online analyzers, transmitters and portable meters that take advantage of our electrochemical oxygen sensor technology. SSO2 analyzers are outfitted with a comprehensive electronics package with some rather unique and industry leading features:

- Continuous online analyzer, transmitter and portable configurations
- Trace (parts-per-million) or percent (%) oxygen analysis ranges
- Removable USB flash drive for data logging, stores files in .csv format (Excel)
- Data logger can store 50+ years worth of data at 1 min intervals with 8 GB flash drive
- A variety of power options  $\rightarrow$  2-wire loop, 100 240 VAC, 12 24 VDC, battery, solar
- Flexible analog outputs: 4 20mA, 0 10V DC, 0 1V DC
- User friendly menu driven interface
- Fully configurable form C non-latching alarm relay contacts
- High quality Swagelok tube fittings on all instruments & sensor housings
- Hazardous area enclosures for Class 1 Division 1, Groups B, C, D
- Intrinsically safe options for Class 1, Division 2, Groups B, C, D (I.S. barriers)
- Custom sample systems on request

#### Most analyzers are in stock for fast shipment.

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**Oxygen Analyzer** 

# **OMD-640 Portable PPM Oxygen Analyzer**

#### Key Features:

- Analysis of PPM Oxygen 0 1ppm / 10 / 100 / 1000 ppm / 25%
- Portable configuration with bypass sample system
  - Flow indicator, flow valve, sample / bypass valve
- Installation: Battery powered with 100 240 VAC universal charger
- Data logging via removable flash drive (.csv format Excel compatible)
- Analog output: 0 1 V DC
- Optional integral sampling pump
- Optional sensor for use in acid background gases (natural gas, CO2)
- Easily access the sensor without opening up the analyzer
- Display is easy to read in direct sunlight

#### Recommended Applications:

- Portable analysis when quick response and accuracy are needed.
- Spot checking air separation and liquification
- Natural gas leak detection

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# **OMD-580 Portable PPM Oxygen Analyzer**



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#### Key Features:

- Installation: Portable battery powered with rugged polypro enclosure
- Power: Battery powered with 100 240V AC universal charging adapter
- Data logging: Removable USB flash drive (.csv data [Excel format])
- Analog output: 0 1V DC
- Gas connections: Swagelok isolating quick disconnect; 1/8" tube
- Can measure oxygen while charging
- Light weight; 4.8lbs
- 0 10ppm / 100ppm / 1000 ppm / 1% and 25% ranges

#### **Recommended Applications:**

- Spot checking natural gas applications
  - Great to use in place of a broken online o2 analyzer as it can run continuously with AC charger.
- Spot checking gas cylinders & headspace
- Inert gas welding of exotic materials

# **OMD-480 Portable Percent Oxygen Analyzer**

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Oxygen Analyzer

#### Key Features:

- Installation: Portable battery powered with rugged polypro enclosure
- Power: Battery powered with 100 240V AC universal charging adapter
- Data logging: Removable USB flash drive (.csv data [Excel format])
- Analog output: 0 1V DC
- Gas connections: Swagelok 1/8" tube fitting
- Light weight; 4.8lbs
- Optional integral sampling pump
- 0 1% / 5% / 10% / 25% / 100%

#### **Recommended Applications:**

- Spot checking cylinders & O2 generators
- O2 monitoring during welding application
- Headspace analysis on cargo ships
- Spot checking waste water treatment plants

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# OMD-501D / OMD-401D Panel Mount Oxygen Analyzer





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#### Key Features:

- Panel mount configuration (1/4 DIN) with remote sensor housing
- Installation: General purpose
- Input power: 100 240V AC or 12 24V DC (specify with order)
- Analog output: 4 20mA
- Range ID output: 1 5 VDC (optional 4 20mA)
- Alarms: 2 fully configurable form C non-Latching relay contacts
- Sensor housing: Flow through with 1/8" Swagelok tube fittings
  - 1/4" and 6mm fittings optional
- Optional KF-40 (NW 40F) sensor housing, replaces flow through.
- OMD-501D: 0 10/100/1000 PPM/ 1%/25%
- OMD-401D: 0 1/5/10/25/100%

#### **Recommended Applications:**

- Inert glovebox systems
- N2 and O2 gas generators
- Panel mount configurations for O2 monitoring

# OMD-525 / OMD-425 Wall Mount Oxygen Analyzer

#### Key Features:

- Wall mount installation, IP66 / NEMA4X
- Installation: General purpose; outdoors
- Input power: 100 240V AC or 12 24V DC (specify with order)
- Data logging via removable USB flash drive
- Analog output: 4 20mA
- Range ID output: 1 5 VDC (optional 4 20mA)
- Alarms: 2 fully configurable form C non-latching relay contacts
- Sensor housing: Flow through with 1/8" Swagelok tube fittings
- OMD-525: 0 10/100/1000 PPM/ 1%/25%
- OMD-425: 0 1/5/10/25/100%

#### Recommended Applications:

- Outdoor PSA N2 or O2 generators, portable generators
- Inert blanketing of raw materials and finished products

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# **OMD-625 Ex. Proof Oxygen Analyzer**



**Oxygen Analyzer** 

20.9%

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SAMPLE

- Wall mount / pole mount configuration
- Installation: Class 1 Div 1 Groups B, C, D,
- Input power: 12 24V DC
- Analog output: 4 20mA or 1 5VDC menu selectable
- Alarms: 2 fully configurable form C non-latching relay contacts
- Integral sample / span valve and flow meter
- PPM analysis: 0 1/10/100/1000 PPM/25%
- Percent analysis: 0 1/5/10/25/100%

#### **Recommended Applications:**

- Natural gas extraction, pipelines & processing
- Natural gas compressors and booster stations
- Acid (CO2) gas streams
- Inert, hydrocarbon, hydrogen processing
- Off-shore platforms PSA skid generators
- Petrochemical / chemical applications

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# **OMD-150 IP66 Online Oxygen Transmitter**

#### Key Features:

- Wall mount configuration
- Installation: NEMA 4X / IP66
- Input power: 12 24V DC (2-wire or 4 wire)
- Analog output: 4 20mA (4 wire also has 0 10VDC)
- Sensor housing: Inline with 1/8" Swagelok tube fittings
- PPM analysis: 0 10/100/1000 PPM/ 1%/25%
- Percent analysis: 0 1/5/10/25/100%
- Optional intrinsically safe for Class 1 Div 2 Groubs B, C, D, (via I.S. barriers)

#### Recommended Applications:

- Outdoor PPM and percent oxygen analysis applications
- Nitrogen, oxygen and hydrogen Generators
- Steel & other metals processing
- Inert blanketing of raw materials and finished goods

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Oxygen Analyzer

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# **OMD-507 Online Oxygen Transmitter**



#### Key Features:

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- Inline mount with mounting screw holes at bottom of sensor housing
- Installation: General purpose
- Input power: 12 24V DC (2-wire or 4 wire)
- Analog output: 4 20mA (4 wire also has 0 10VDC)
- Sensor housing: Inline with 1/8" Swagelok tube fittings
  - (1/4" and 6mm optional)
- PPM analysis: 0 10/100/1000 PPM/ 1%/25%
- Percent analysis: 0 1/5/10/25/100%
- Optional intrinsically safe for Class 1 Div 2 Groubs B, C, D, (via barriers)
- Optional KF-40 (NW 40F) fitting on the bottom (replaces flow through housing)

#### **Recommended Applications:**

- Inert glovebox systems & 3D metal printers
- PSA N2, O2, H2 generators
- Reflow soldering

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# **OEM & Custom Designed Products**

- **Southland Sensing** Produces and packages a wide range of sensors, electronics, and finished products for OEM's around the world on a proprietary basis.
- Faced with limited resources and high overhead costs, these companies are meeting their oxygen analysis objectives by partnering with Southland Sensing.
- Our engineers work in partnership with OEM's (and customers) from the initial design stage through post-production to ensure customer satisfaction through all phases of product development.
- Unique sensor characteristics, exotic digital interfaces, and other product enhancements are often incorporated into the finished product.
- Typical OEM customers might include inert glovebox manufacturer's, PSA N2 / O2 manufacturer's, 3D metal printing, amongst many others.



# EMD-485 / 482 OEM Oxygen Transmitter





Key Features:

- Designed primarily for OEM applications
- Installation: Loose components, electronics board, sensor housing, sensor
- Ships with or without the display
- Input power: 12 24V DC (2-wire loop or 6-wire)
- Analog output: 4 20mA (optional 0 1VDC and 0 10 VDC)
- Sensor housing: Flow through with 1/8" Swagelok tube fittings
  - 1/4" and 6mm fittings optional
- Optional KF-40 (NW 40F) sensor housing, replaces flow through.
- PPM analysis: 0 10/100/1000 PPM/ 1%/25%
- Percent analysis: 0 1/5/10/25/100%

#### Recommended Applications:

- Inert glovebox systems
- Nitrogen and oxygen PSA generators
- Laboratories & universities

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# **Oxygen Analyzer / Transmitter Installation Considerations**

Typical questions we will ask when specifying a fuel cell oxygen analyzer as well as some good recommendations:

#### Gas Sample Stream Composition

- This helps give us a little insight into what the customer is doing; Chances are we have done it before.
- Anticipated Level of Oxygen Analysis
  - Typically we want to see if we need a PPM oxygen sensor, a hybrid sensor, or a percent oxygen sensor.
- Temperature
  - Our sensors are designed to work in 0 50 °C; If needed we can condition the sample.
- Pressure
  - Ideally we keep the inlet pressure to 0 80 PSIG, and vent to atmosphere; if needed we can condition the sample.

#### Moisture and Particulates

- Condensed moisture can block the oxygen readings; a simple coalescing filter might be necessary or something a bit more elaborate.
- Power Available for Analyzer
  - Helps us narrow the offering of our instruments, battery, AC power, DC power, loop power, etc.
- Features Desired with Analyzer
  - This, again, helps us select the right analyzer for the right application. Our USB data logging feature is extremely popular due to its uniqueness.
- Analyzer Gas Connections
  - All of our instruments use high quality Swagelok tube fittings, but we can configure them with 1/8", 1/4", 6mm or something else.

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# **Oxygen Analyzer / Transmitter Calibration Considerations**

Easily the most popular question we get is how to calibrate the analyzer, and when does the analyzer need to be calibrated.

Ideally an oxygen analyzer is calibrated every 2 – 3 months or as the application and process dictates. We purposely leave this statement open ended as many customers set their own internal guidelines on when to calibrate, which is fine. Some customers might calibrate once per week, others might do it once per 3 months. The following are the two approaches we typically see:

#### Standard Approach

- The simplest approach is to use ambient air as your one point calibration. You can open the sensor housing up, hold the
  sensor against the electrical contact pins with the screen side facing down, calibrate to 20.9% and re-install the sensor into
  the process. For percent applications, feel free to take your time, for PPM applications, you want to keep the sensor in air for
  less than 1 minute and quickly purge with zero gas or process gas. This will help with response time.
  - In some higher elevation areas such as Denver, CO the oxygen value will not be 20.9%, check locally for verification.

#### Optimum Accuracy

- Calibration: 80% of full scale on the range you are going to use, or 1 range higher.
  - For example, if you expect to measure 50 ppm O2, consider calibrating at 80 PPM oxygen or up to 1000 ppm oxygen.
- Elevated oxygen (percent when measuring above 25%)  $\rightarrow$  Use calibration gas above reading
  - For example, if you are expected to measure 55% oxygen, use a calibration gas value around 60 70%
- High purity (percent when measuring above 90%) → A 95-100% calibration gas recommended

#### Zero Calibration

• In almost all applications that we deal with, zero calibration is not needed. A simple 1 point calibration is sufficient.

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# Hydrogen Sulfide Analysis Overview

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# **Product Introduction**



# Why Measure Hydrogen Sulfide?

Hydrogen Sulfide is the chemical compound with the formula H2S. It is a colorless gas with the characteristic foul odor of rotten eggs. It is a very toxic and highly corrosive colorless gas that has flammable and explosive properties.

When H2S is present in natural gas, in conjunction with oxygen, moisture and carbon dioxide a very corrosive mixture is formed. If left untreated, it can cause costly damage to any pipeline or natural gas infrastructure.

The benefits of a good piece of equipment will be mostly process related however the benefits of a really exceptional piece of equipment will be both capital and operational – we strive for exceptional.

For this reason, Southland Sensing has designed its instrumentation to offer excellent performance, while minimizing service, calibration and maintenance requirements.



Our H2S analyzer is designed around the natural gas industry. If your application is outside of this area, consult with the factory to make sure the sensor / analyzer will work well for your installation.



# Hydrogen Sulfide (H2S) Analyzers & Transmitters

**Southland Sensing** designs and manufacturers a wide range of online analyzers, transmitters and portable meters that take advantage of a unique electrochemical Hydrogen Sulfide (H2S) sensor. SSO2 analyzers are outfitted with a comprehensive electronics package with some rather unique and industry leading features:



Hydrogen Sulfide Chemical Compound

- Continuous online analyzer, transmitter and portable configurations
- Trace (parts-per-million) 0 200 ppm or 0 2000 ppm
- Flexible analog outputs: 4 20mA or 1 5 VDC
- User friendly menu driven interface
- Fully configurable form C non-latching alarm relay contacts
- High quality Swagelok tube fittings on all instruments & sensor housings
- Hazardous area enclosures for Class 1 Division 1, Groups B, C, D
- Custom sample systems on request

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# H2S-725 Hydrogen Sulfide Ex. Proof Analyzer



#### Key Features:

Wall mount / pole mount configuration

• Installation: Class 1 Div 1 Groups B, C, D,

Input power: 12 – 24V DC

• Analog output: 4 – 20mA or 1 – 5VDC menu selectable

• Alarms: 2 fully configurable form C non-latching relay contacts

• Integral sample / span valve and flow meter

• PPM analysis: 0 – 200 PPM or 0 – 2000 PPM

#### Recommended Applications:

Natural gas extraction, pipelines & processing

Natural gas compressors and booster stations

Biogas applications before and after the H2S scrubber

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# H2S Analyzer Installation Considerations

Typical questions we will ask when specifying an H2S analyzer as well as some good recommendations:

#### Gas Sample Stream Composition

- This helps give us a little insight into what the customer is doing; chances are we have done it before.
- Anticipated Level of Hydrogen Sulfide Analysis
  - Typically we want to see if we need a 0 200 ppm or 0 2000 ppm H2S sensor.
- Temperature
  - Our sensors are designed to work in 0 50 °C; if needed we can condition the sample.
- Pressure
  - Ideally we keep the inlet pressure to 0 80 PSIG, and vent to atmosphere; if needed we can condition the sample.
- Moisture and Particulates
  - Condensed moisture can block the H2S readings; a simple coalescing filter might be necessary or something a bit more elaborate.
- Power Available for Analyzer
  - Helps us narrow the offering of our instruments, battery, AC power, DC power, 2-wire loop power, etc.
- Features Desired with Analyzer
  - This again helps us select the right analyzer for the right application.
- Analyzer Gas Connections
  - All of our instruments use high quality Swagelok tube fittings, but we can configure them with 1/8", 1/4", 6mm or something else.

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### H2S Analyzer / Transmitter Calibration Considerations

Easily the most popular question we get is how to calibrate the analyzer, and when does the analyzer need to be calibrated.

Ideally an H2S analyzer is calibrated about once per month or as the application and process dictates. We purposely leave this statement open ended as many customers set their own internal guidelines on when to calibrate, which is fine. Some customers might calibrate once per week, others might do it once per month.

#### Using a Bottle of SPAN Calibration Gas

- Since H2S is not available in ambient air, we are required to source a span calibration bottle. Span calibration bottles are typically available from 10 ppm up to 2000 ppm from many reliable sources.
- It is generally a safe practice to make sure you are in a well ventilated area prior to performing a SPAN calibration with H2S gas. <u>Exposure above 100 ppm H2S can be fatal.</u>
- Simply connect your H2S SPAN calibration bottle to the SPAN inlet of the analyzer and flow the gas at 0.5 1.0 SCFH through the instrument. Adjust the SPAN calibration in the on-board menu to match the SPAN gas
  - Example, if the span gas is 25 ppm H2S / balance N2, adjust SPAN cal in the menu to read 25.0 PPM.
  - H2S is a toxic gas, make sure to vent appropriately and handle with care.

#### **Zero Calibration**

• In almost all applications that we deal with, zero calibration is not needed. A simple 1 point calibration is sufficient.





# Quality

**Southland Sensing Ltd.** is committed to providing products and services that meet or exceed all customer requirements and applicable standards and specifications. Each employee is committed to this goal.

**The Southland Sensing Ltd.** company quality policy is to continually improve product design and manufacturing performance by supplying – on time – goods, services and information of a quality standard that shall consistently meet or exceed the requirements of our customers. We will ensure a high level of customer satisfaction to maintain long term commitments, productive customer relationships, and to provide a positive work environment.

**Trace Oxygen Sensors:** All trace (parts-per-million) oxygen sensors undergo additional testing to ensure performance is met prior to shipment. Along with additional testing parameters, every sensor undergoes a gas test to ensure the sensors meet the product specifications and are fully functional prior to shipment.

**Analyzers & Transmitters:** As SSO2 continues to open new markets for its sensors and analyzers, we recognize the need to meet international standards. SSO2 has begun to certify, through third party testing, that its products conform to EN 61326-1:2013 and EN 61010-1:2010 and meet the requirements for CE conformity.

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With the growing demand for higher quality, better performing, and economically priced solutions, Southland Sensing Ltd. has emerged as a global partner in Oxygen and H2S gas analysis for many End Users, System Integrators and OEM users alike.

