PST GPR-1800 Line Powered Oxygen Analyzer User Guide

Contents

PST GPR-1800 Line Powered Oxygen Analyzer

Product Information

The Line-Powered Oxygen Analyzer is a device designed for measuring oxygen concentration in process gas. It is compliant with various safety approvals and directives to ensure safe and accurate measurements. The analyzer features a user-friendly interface with buttons for easy navigation and calibration.

Safety Information

- Do not apply excessive pressure or blow on the sensing surface of the sensor, as it may cause damage.
- To clean the sensing surface, gently wipe it with a damp cloth. Ensure that ppm sensors have minimal exposure to air.
- Follow local safety directives and ensure that the power supply voltage does not exceed 24 V DC.

Product Usage Instructions

First Air Calibration

1. Apply power to the analyzer.
2. Use the navigation buttons to select “Select Range” and choose the “0-25% (Air Cal)” option.
3. Open the front window of the analyzer using the latches.
4. Open the sensor housing and place the sensor in the top sensor housing, away from any gas stream.
5. Allow the sensor to stabilize for 2-3 minutes.
6. Press the menu button on the analyzer.
7. Use the navigation buttons to select “Calibration” > “Span Calibrate”.
8. Enter the value “20.90%” using the navigation buttons. Wait for the reading to stabilize.
9. Press the accept button to confirm the calibration or press abort to cancel.
10. Place the sensor into the bottom sensor housing with the gold contact plate facing upwards.

Process Gas Connection

1. Connect your process gas line to the inlet on the flow meter.
2. If you have an analyzer with a sample system, connect the span gas and sample gas lines to the appropriate ports. Set the 3-way valve to the desired position for process gas.

3. Ensure the flow rate is set to 1-2 SCFH and allow the span gas to flow for 2-3 minutes to purge the system.

Making Your First Measurement

1. Observe the reading on the analyzer to ensure that the oxygen concentration is trending downward.

Welcome to the Quick Start Guide for first air calibration and first measurement using your line-powered analyzer.

Here, you will find information covering first air calibration in section A, and connecting to your process gas in section B to make your first measurement in section C. Please read the safety information below.

Start here
The GPR-series of line-powered oxygen analyzers is compliant with the following safety approvals and directives:

Safety information

- Avoid covering the vent for the test flow indicator when gas is flowing to the sensor. This can pressurize the sensor causing damage.
- To remove moisture and particulates, open the sensor housing and either blow on the sensing surface or gently wipe the surface with a damp cloth. Ensure ppm sensors have minimal exposure to air.
- You must connect the analog signal output to a recording device in accordance with local safety directives.
- If your analyzer is an AIS or IS model, power to the alarm contacts must not exceed 24 V DC.
    - The first calibration is of utmost importance as all subsequent calibrations are based on the initial one.

NOTE:
We recommend you use certified span gas for calibration; if this is not available to you, follow these instructions to carry out an air calibration.

User Interface (UI)

Button	Function
	Menu
	Enter
	Previous (decrement)
	Next (increment)

First air calibration

The GPR-1800 and GPR-2800 are delivered without the sensor installed to preserve its operational life. To install the sensor:

1. Apply power to your analyzer (refer to Figure 3).

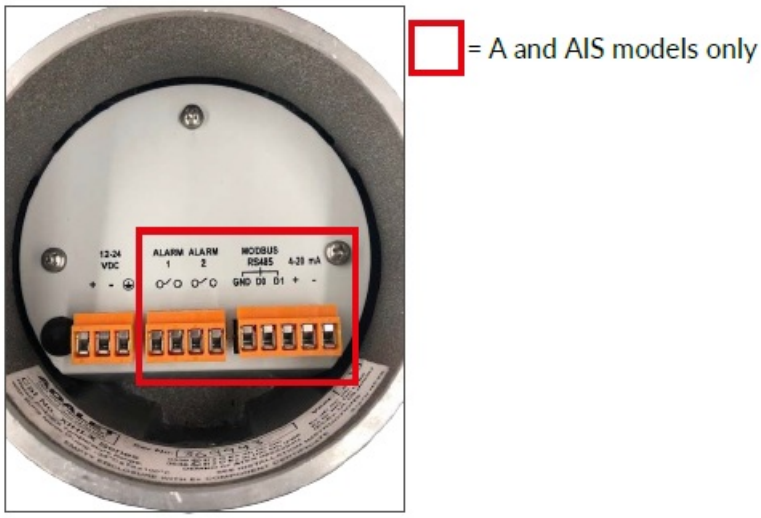

Figure 3 - Wiring your analyzer

2. Use ↓ and ↑ to navigate to Select Range.
3. Press ↵ to select 0-25% (Air Cal).
4. Using the two latches, open the front window.
5. Open the sensor housing (refer to Figure 2 for guidance).
6. Loosen the star wheel then disengage the top sensor housing by turning it 90° counter-clockwise. Refer to ‘b’ in Figure 2.

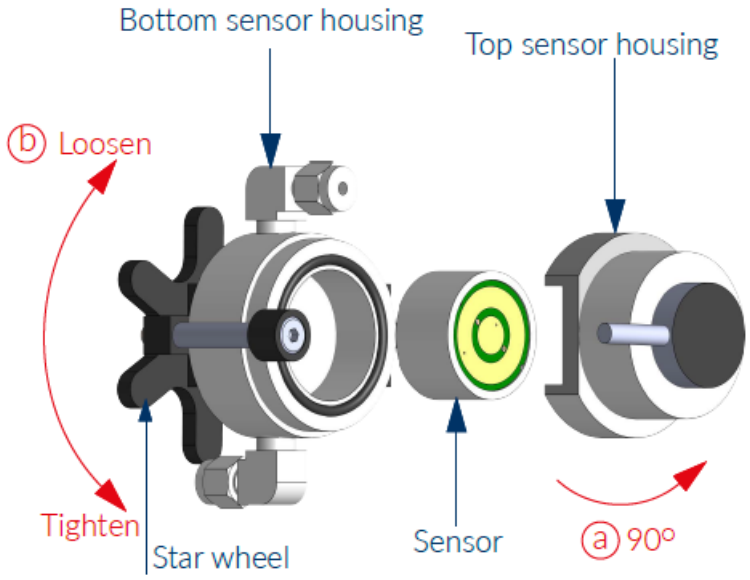

Figure 2 - Installing and uninstalling your sensor

7. Remove the sensor from its packaging, remove the shorting flags and immediately place in the top sensor housing (refer to Figure 1).

Figure 1 - Aligning your sensor

8. Hold the sensor in the top sensor housing away from any gas stream. After 2…3 minutes the sensor is stable.
9. On your analyzer, press ☰.
10. Use ↓ and ↑, navigate to Calibration > Span Calibrate.
11. Now ↓ use and ↑ enter the value 20.90 %. Ensure the reading has stabilized before continuing.

    NOTE: When a Span or Zero Cal starts, only “Abort” with ↓ is shown until the reading is stable, then “Accept” ↑ appears.
12. Use ↑ to Accept, and ↓ to Abort.
13. Now place the sensor into the bottom sensor housing with the gold contact plate facing upwards, (see Figure 1 for guidance,) and replace the top sensor housing by placing it on top of the sensor and turning 90° clockwise.
14. Secure it with the star wheel at the bottom of the housing assembly (refer to ‘b’ in Figure 2).
15. Quickly close your analyzer and continue immediately to section B.

Process gas connection

1. Connect your process gas line to the inlet on the flow meter (refer to Figure 4).

   NOTE: If you have an analyzer with a sample system connect your span gas and sample gas lines to the appropriate ports. Once connected, move the 3-way valve to the desired position for Process gas.

Figure 4 - Gas inlet (analyzer's right side elevation)

2. Ensure the flow rate is at 1…2 SCFH and allow the span gas to flow for 2…3 minutes. This will purge the

system.

3. Continue to section B.

Making your first measurement

1. Observe the reading on your analyzer to ensure the O2 concentration is trending downward.

2. When the O2 reading is in the desired sampling range, press ☰ on your analyzer.

3. Use ↓ and ↑ navigate to Select Range then press ↵.

4. Use ↓ and ↑ select your required operating range.

E.g. Response time: Sensor exposed to air for 2…3 minutes and installed in <1 ppmV O2 sample gas:

Reading	**Recovery time** **(Air to 0 ppm with N_2 purge)**
0.1 %	5 minutes
100 ppm	30 minutes
10 ppm	60 minutes
> 1 ppm	6-12 hours

NOTE:
Response times are dependent on your analyzer model as well as your sensor.

Useful links

Scan below for more information:

ProcessSensing.com

Documents / Resources

	**PST GPR-1800 Line Powered Oxygen Analyzer** [pdf] User Guide GPR-1800 Line Powered Oxygen Analyzer, GPR-1800, Line Powered Oxygen Analyzer, Powered Oxygen Analyzer, Oxygen Analyzer, Analyzer
	**PST GPR-1800 Line Powered Oxygen Analyzer** [pdf] User Guide GPR-1800 Line Powered Oxygen Analyzer, GPR-1800, Line Powered Oxygen Analyzer, Powered Oxygen Analyzer, Oxygen Analyzer

References

- Process Sensing Technologies | Monitoring Instruments
- Process Sensing Technologies | Monitoring Instruments