

Model 905V Oxygen Analyzer

Details & Specifications

✓ Features

- Analyzes oxygen in all types of vials / bottles
- Battery operated (optional)
- Range: 0.01 to 100% oxygen
- Removable, low volume sample probe
- Economically priced
- 0-5 Vdc analog outputs (optional)



The Model 905V measures oxygen levels in small or large pharmaceutical vials.

Pharmaceutical preparations packaged in vials are often gas-flushed to provide a specific atmosphere in the vial, with defined levels of oxygen, nitrogen or other gases. Depending on the product, these vials can range in size from 1 ml to 250 ml or larger. Small vials present some difficulty for oxygen analysis because the sample volume available is often quite small. A one ml vial, for example, may have only 0.5 ml of headspace gas. For direct analysis with an oxygen analyzer, the instrument must be capable of analyzing very small volumes.

Low Volume Sensor Design

The Model 905V sensor is designed specifically for this purpose. The oxygen sensor internal chamber through which sample gas flows, including all connecting tubing, has a very small volume of about 0.1 cc. The sensor is located inside the instrument case close to the front panel to minimize tubing length, and connects to the front panel fitting via 1/32 ID (.03 in.) inert tubing. The vent port of the sensor connects to a short piece of narrow-bore tubing for sample exhaust and introduction of zero or calibration gases.

Calibration Simplicity

The oxygen sensor output is very linear through the entire range of measurement. This allows for a single point calibration to be performed anywhere in the measurement range. Span calibration is accurately done by testing room air, which should give a reading of 20.9% oxygen. Calibration standards can also be used if required by in-house test procedures.

Design Reliability

Microprocessor based electronics are used for sensor signal processing, battery charging and on/off control to provide high accuracy and reliability. The heavy duty, proprietary oxygen

sensor is designed to provide many years of service, is totally sealed and requires no maintenance. The sensor output is compensated for ambient temperature variations. The sensor can easily be changed if needed.

Laboratory or Production Line

The Model 905V is a rugged benchtop unit housed in a heavy-duty metal enclosure, well suited for continuous use in routine QC testing in the laboratory. With built-in battery operation (optional) in addition to the AC mode, this unit can be easily transported and used at remote locations such as the packaging line.

Unit Operation

To test samples of vials or bottles, the sample must have a septum cap, aluminum seal or thin plastic which can be punctured by a needle. Samples may be tested by three different methods with the 905V.

- 1) water injection to force sample out of the vial. This method is used for all types of vials, but is required for those with very small volumes, eg 1-2 ml.
- 2) syringe suction at the sample vent to draw sample out of the vial.
- 3) sample withdrawal using an internal pump contained within the analyzer. This method is only useful for larger samples of 50 ml or more.

The sample probe with needle is used to puncture through the vial septum into the headspace of the vial. One of the three methods is use to withdraw sample gas into the analyzer for measurement. A stable reading is obtained in about 15 seconds.

Calibration Adjustments

The SPAN adjustment is made using the potentiometer located on the right side of the unit. Additionally, a coarse span and zero adjustment are located on the rear panel. Accurate calibration of the oxygen reading can be checked at any time by sampling room air, which should give a reading of 20.9%. If the reading is off, it can quickly be set by adjusting the SPAN potentiometer. If internal laboratory procedures or regulations require checks with a known calibration standard, this can be used instead of room air.

Technical Specifications - Sensors

	Oxygen Sensor
Type:	Heavy Duty Proprietary Electrochemical
Range:	0 to 100%
Sensitivity:	0.01% O ₂
Resolution:	0.01% O ₂
Minimum Detection Limit:	0.01% O ₂
Accuracy:	± 0.2% O ₂ below 25% ± 1% of reading above 25%

Technical Specifications - All

Calibration Controls	Potentiometer SPAN adjustment and potentiometer ZERO adjustment for O ₂ ; side panel adjuster for fine SPAN adjust.
O ₂ Calibration	Weekly; set with room air set to 20.9% O ₂ . Calibration can also be set with standard calibration gas.
O ₂ Resolution	0.01% O ₂
Analog Output (Optional)	0-5Vdc proportional to concentration
Sampling Port	Front panel fitting with screw connection for sample probe
Accessories	Low volume sample probe, three zero volume puncture needles, tubing & tee fitting, two plastic 1cc and 5cc syringes, 115/240Vac to 12Vdc power adapter
Battery (optional)	Sealed, rechargeable gel battery with eight hour battery life; includes charger
Size	9.8W x 4H x 10L in. (249 x 102 x 254 mm)
Weight	9 lb. (4 Kg)
Warranty	Two years, parts and labor
Standards	 
Origin of Goods	Our products are manufactured in the U.S.A.
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