

Test for O₂ and/or CO₂ levels in packages, bottles, and containers

- ❖ *Intelligent*
- ❖ *Durable*
- ❖ *Lightweight*
- ❖ *32-bit microprocessor*
- ❖ *On-board storage*
- ❖ *Available for O₂, CO₂, or both*
- ❖ *Test packages, enclosures, and containers*

Analyzed Gases	
Q30	Oxygen only
Q31	CO₂ only
Q32	Oxygen and CO₂



Overview

The Q30 series of analyzers feature a color display, menu driven setup, calibration functions, a built-in sample pump, and data collection (up to 100,000 values).

This unit combines a fast response sensor for oxygen in a desktop/benchttop package for ease of use in all types of gas measurement applications. The unit is powered by an AC to 12 Volt DC wall adapter. The unit has a rugged miniature diaphragm pump with adjustable timing functions to operate only when sampling.

The Q30 Series is available with several sampling inlet configurations to suit many different monitoring applications, including a sample probe/needle assembly for package testing, or a straight tube probe with flexible tubing attachment. The latter attachment is ideal for insertion into various processes, containers, and bio enclosures.

Package Sampling

The Q30 Series is equipped with fast response sensors, and is ideal for rapid, routine package testing. With our standard sample probe/needle assembly, this unit is used for the measurement of O₂ in many types of modified atmosphere packages (MAP), or “gas-flushed” packaged foods such as:

- ❖ meats,
- ❖ snack foods,
- ❖ coffee,
- ❖ nuts,
- ❖ fruits & vegetables
- ❖ dairy products,
- ❖ and ready-to-eat packaged foods including salads.



MAP packaging can be done with a single gas such as nitrogen or a mixture of gases such as nitrogen, oxygen, and carbon dioxide. Analytical testing of the package is valuable to determine if the concentrations are correct and whether the package has leaked.

If your gas mix is incorrect, your product quality may be seriously degraded before it even reaches the consumer. Gas flushing isn't enough – you have to test the finished product to ensure the correct mix of gases is in your package.

Hold Function

The microprocessor based “hold” function takes the guesswork out of testing. The reading automatically freezes on the display for 5 seconds (adjustable) when the test is complete, providing clarity of results to the operator.

Data Collection

With built-in data collection, values can be stored either automatically (with the hold function enabled), or with the touch of a button for each individual sample. For continuous testing, data collection can be set to store values at predetermined intervals from 1 second to 99 seconds*. Storage capacity is available to record 100,000 values, complete with date/time stamp. These values can be exported to a USB thumb drive as a “CSV” file.

* For example, if the interval is set to 10 seconds, the unit will store readings for 11.5 days continuously.

Electrochemical O₂ Sensor

The Q30 features our 5 year oxygen sensor, reducing downtime and replacement costs.

Our long-life, proprietary design yields accurate low-level measurements down to 0.1% oxygen and measures full range up to 100% level. The sensor response is 5 seconds to 95%. The output is compensated for ambient temperature variations. The sensor is not heated, has no moving parts, and requires no routine maintenance. CO₂ does not interfere with the oxygen reading – even 99% CO₂ will have no effect on the oxygen reading.

Sampling Probe Assembly

The sample probe is one piece construction to minimize internal volume and to eliminate fittings which can leak. Inert tubing extends from the front panel fitting through the probe to the needle hub. The probe tip is fitted with a disposable filter for dirt and moisture removal. The removable needle has a tip with a side-port hole to prevent plugging.

The syringe needle attached to the end of the probe is inserted into the package through an adhesive-backed foam septum. With the pump on, sample is drawn through the probe and tubing into the oxygen sensor, through the pump and out to vent. The sensor signals are converted to concentration values and displayed on the front panel. The probe, tubing and sensors have been designed with minimal internal volume to reduce the sample volume needed, important for small package measurements. Neither sensor is heated, so the pump can be located downstream of the sensors and does not contribute to the volume requirement of sample. A disposable syringe filter can be inserted on the end of the probe to remove any moisture and dirt from the sample gas.

Sampling Pump

The internal miniature diaphragm pump has menu driven adjustable timing functions to operate in a number of timing configurations, including preset cycles. The pump is rated for 5000 hours, or about 5 years in a typical package testing environment.

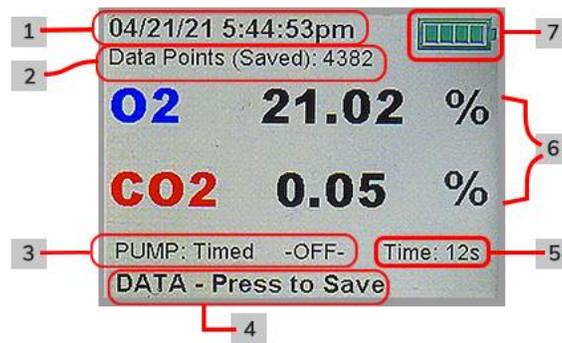
Microprocessor/Electronics

Micro-processor based electronics are controlled by a 32-bit microprocessor, for sensor signal processing, pump timing, data collection and on/off control provide high accuracy and reliability with minimal component use to reduce size and cost.

Comparison Chart

	Q30	Q31	Q32
Oxygen sensor	YES		YES
CO ₂ sensor		YES	YES
Range	0-25% OR 0-100% Oxygen	0-20% or 0-100% CO ₂	0-25% OR 0-100% Oxygen 0-20% or 0-100% CO ₂

Menu Screen



1. **Date and Time** can be set by the user under “Advanced Options”
2. **Total data points** that are stored in the onboard memory.
3. **Pump Mode** (Timed/Cycling/Continuous)
4. **Data Mode** (Single/Auto/Interval)
5. **Pump timer** that counts run time (and rest time when cycling on and off)
6. **Percent O₂ and CO₂**

Technical Specifications – Sensors, Accuracy

SENSORS	Oxygen Sensor	Carbon Dioxide Sensor
Type:	Proprietary Electrochemical	NDIR
Range:	0-25% or 0-100%	0-20% or 0-100%
Sensitivity:	0.1% O ₂	0.1%; .01% for 0-20% range
Minimum Detection Limit:	0.1% O ₂	0.1% or .01% CO ₂
Response time:	5 seconds to 95% of the final reading, 17 seconds to final reading	15 seconds to 95% of the final reading, 20 seconds to final reading
Accuracy:	± 0.1 % O ₂ or ± 1% of reading, whichever is greater	± 0.2% CO ₂ or ±1% of reading, whichever is greater (for 0-100% range)
Calibration Controls	Menu driven adjustments for all calibration functions, including SPAN and ZERO adjustment for O ₂ and CO ₂	
O ₂ Calibration	Weekly; set with room air set to 20.9% O ₂ .	
CO ₂ Calibration	Every 12 months; calibration gas recommended.	

Technical Specifications – Components, Battery, Dimensions

Sample Pump	Miniature diaphragm type with menu driven timing. Flow rate ~ 5 cc/sec.
Sampling Assembly	Sample Probe/Needle holder with luer needle, disposable filter, 1/16 O.D. PTFE tubing. Optional flexible tube/ plastic tubing connection to front panel.
Readout Display	Color display, TFT 320x240 pixels, 2.6 in diagonal
Power	Wall adapter, 110/240 Vac to 12 Vdc.
Size	8W x 2H x 7D in. (203 x 51 x 178 mm)
Weight	5 lb. (0.9 Kg)
Warranty	2 years, parts and labor
Standards	
Included Consumables	For package testing applications: Sample probe assembly, 2 luer fit needles, 200 foam septas, (2) particulate filters, (2) Moisture Guard filters.
Origin of Goods	Our products are manufactured in the U.S.A.