

Model 315 Trace Oxygen Analyzer

Teledyne's Model 315 Trace Oxygen (O₂) Analyzer provides accurate and reliable monitoring of gas phase parts-per-million (ppm) O₂ concentration in a wide variety of process monitoring and quality assurance applications. The Model 315 is simple to calibrate, requires no support gases, and is virtually maintenance-free. Measuring just 11 x 4½ x 7½ inches (27.9 x 11.4 x 19 cm / height x width x depth), the Model 315's unique compact size is ideal for general purpose applications that have very little panel space available.

Along with its compact dimensions, the Model 315 offers a wealth of standard features, including: Switch selectable measuring ranges of 0-10 and 0-100 ppm O₂ (other ranges available); a special span range for convenient air calibration; 0-1 VDC output signal; integral meter; integral sample handling system; and easy-access fuse holder and cell compartment.

Maintenance-Free Sensor

The Model 315 uses the specially-qualified Class B-2 Micro-Fuel Cell to measure trace O₂ in a sample gas. The B-2 sensor sets industry standards for accuracy, sensitivity and ease-of-use. And because every B-2 sensor undergoes stringent glovebox testing and special quality procedures, you're assured of outstanding reliability and optimum performance.

Like all Micro-Fuel Cells, the B-2 is a sealed electrochemical device with no electrolyte to change or electrodes to clean, so it is virtually maintenance-free. This sensor is specific to oxygen and is capable of accurately monitoring gas streams containing up to 100% hydrocarbons. Also, because it has an absolute zero, no zero gases are needed for calibration.



Easy Calibration

The Micro-Fuel Cell produces an output that is linear from 0 to 100%. That means you can use ambient air (209,500 ppm O₂) for calibration. This eliminates the need for special ppm O₂ span gases. Or, if a faster calibration is required, a certified ppm O₂ span gas can be used to calibrate the Model 315.

Sample Handling System

The Model 315 has a simple, integral gas handling system for control of sample gas. A manually operated isolation valve provides shut-off of sample flow to the cell compartment—for use during process shutdowns. The Model 315 also includes a needle valve and flowmeter. Note that the measurement provided by the Model 315 is not flow sensitive; however, the flowmeter is included to verify that there is sample flow through the analyzer and to provide nominal flow control.

Special Systems

You can order the Model 315 as a standard unit, or as part of a larger analytical system. Signal conditioning, custom sampling systems, and free-standing enclosures are all available.

Teledyne also provides special sensors, custom-engineered analyzers and complete monitoring systems to satisfy unique application requirements.

 **TELEDYNE ANALYTICAL INSTRUMENTS**

SENSORS • ANALYZERS • SYSTEMS

SCIENTIFIC SOLUTIONS

Typical Applications

Air separation and liquefaction
Pure, gaseous hydrocarbon stream monitoring
Semiconductor manufacturing
Protective atmosphere blanketing of primary liquid feedstocks and flammable liquids
Process monitoring of gaseous monomers — vinyl chloride, propylene, butadiene, isoprene or ethylene
Gas purity certification
Glove box leak detection
Natural gas treatment and transmission
Catalyst protection
Inert gas welding of exotic metals
Heat treating and bright annealing
Nuclear fuel processing and isotope separation
Monitoring chemical reactions
And many other applications

Options

- Millivolt output signal
- Stainless steel sample passages and fittings
- Stainless steel cell block
- Custom-engineered analyzers and complete monitoring systems for special applications

Features

- Two linear measuring ranges: 0-10 and 0-100 ppm O₂ (others available) plus a special air calibration range
- Air calibration... no zero or span gases required
- Unique compact housing measures only 11 x 4½ x 7½ inches, requires very little panel space
- High accuracy and sensitivity, fast response
- 0-1 VDC output signal
- Analog meter readout
- Simple integral gas handling system
- Unaffected by hydrocarbons and other oxidizable gases
- Long-life, maintenance-free Micro-Fuel Cell oxygen sensor
- Less than 2% drift over 3-4 week periods without calibration
- Unaffected by position, motion or vibration

Specifications *

Ranges:

0-10, 0-100ppm, 25% oxygen

Sensitivity:

0.5% of full scale

Accuracy:

+/-2% of full scale at constant temperature and pressure (temperature and pressure of calibration) (except +/-1ppm on 0-10ppm range)

+/-5% of full scale over operating temperature providing temperature is held constant for 3 hours (except +/-1ppm on 0-10ppm range)

Response Time:

At 77F (25C) 60 sec.

System Operating Temperature:

32 to 122F (0 to 50 Deg C)

Stability:

+/-1% in 24 hours (at constant temperature)

Reproducibility:

+/-1% of full scale at constant temperature

Sensor Type:

Micro-Fuel Cell Class B-2

Signal Output:

0-1VDC

System Power Requirements:

110 VAC, 50/60Hz, 30W

Dimensions:

11" x 4.5" x 7.5" (HxWxD)

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