

# Teledyne Analytical Instruments

## Models 3190 and 3290



### Trace & Percent Oxygen Analyzers Fuel Cell or Zirconium Oxide Sensors

Good things come in small packages, and Teledyne's **3190 Trace** or **3290 Percent** Oxygen Analyzer proves it. These microprocessor based units offer high accuracy, easy use, and all the standard features demanded by the end-user in a compact, budget priced design.

Membrane command switches and a large, four digit LED display make setup and operation clear and quick. For the latest technology, Teledyne quality, and an unbeatable value, the 3190 or 3290 provides a pocket-sized solution.

#### Field-Configurable Range Options

Depending on the application, these units can be configured to utilize one of Teledyne's patented, Micro-fuel Cell sensors or zirconium oxide sensors, assuring the highest accuracy. With a long expected sensor life, the 3190 or 3290 is **as inexpensive to maintain as it is to purchase**. Teledyne has even provided a sensor failure alarm, taking the worry and work out of the end-user's hands.

Two ranges are field configurable on Model **3190** at 0-10 ppm and 0-1000 ppm with a 0-25% calibration range. Optional ranges can be set between 10 ppm and 10,000 ppm.

The **3290** ranges are field configurable between 1% and 25% oxygen with 0-25% oxygen calibration. An optional full scale range is available up to 100%. Autoranging is standard on both models.

Two programmable failsafe concentration **alarms** (one high and one low setpoint) provide the versatility to satisfy nearly any requirement. And because it's a Teledyne product, you can rely on many years of quality service.

#### Outputs For Data

A standard 0-10 VDC output provides range identification, while the oxygen concentration is output through 4-20 mADC negative ground and 0-10 VDC negative ground signals. An optional unidirectional RS-232 serial interface is incorporated to relay information to a host computer for remote monitoring of all functions. Configuration information and analysis results are as close as your personal computer.

#### Advantages

- AutoRanging capabilities
- One high and one low alarm setpoint with corresponding relay contacts
- Sensor failure alarm

#### Standard Features

- Two field configurable ranges plus cal range (0-25%)
- Signal output: 0-10 VDC for range identification
- Analytical output: 4-20 mADC negative ground and 0-10 VDC signals
- Universal AC power supply (Optional configuration available)

#### Optional Configurations

- Power requirement: 10-36 VDC
- Zirconium oxide sensor

#### Applications

- Wave solder reflow ovens
- Glove box manufacturers
- Nitrogen membrane skids
- PSA skids
- Helium recovery systems
- Diving applications
- Clean air systems for medical applications

Built for reliability and performance

# 3190 / 3290 TRACE / PERCENT OXYGEN ANALYZERS

	3190 Trace	3290 Percent
<b>Ranges:</b>	0-10 ppm and 0-1000 ppm and 0-25% calibration range (nominal) (user selectable percent ranges) (user selectable ranges can be set between 10 ppm and 10,000 ppm)	0-3% and 0-10% oxygen (standard ranges) and 0-25% calibration range (nominal) (user selectable percent ranges) (user selectable ranges can be set between 1% and 25% O <sub>2</sub> ) An optional 0-100% range is available.
<b>Display:</b>	LED	LED
<b>Accuracy:</b>	±1% of full scale at constant temperature	±2% of full scale at constant temperature; ±5% of full scale over operating temperature (once temperature equilibrium is reached; at 3% and higher user-defined ranges)
<b>Response time:</b>	90% in less than 45 seconds at 25°C for fuel cell, faster with a zirconium oxide sensor	90% in less than 10 seconds at 25°C
<b>System operating temp:</b>	0-50°C	0-50°C
<b>Signal output:</b>	4-20 mA and 0-10 VDC negative ground, non-isolated	
<b>Range identification:</b>	0-10 VDC	0-10 VDC
<b>Alarm output:</b>	One high alarm relay, adjustable; One low alarm relay, adjustable; One sensor calibration fail relay (all alarms are failsafe)	
<b>System power requirements:</b>	10-36 VDC or 100V-240 VAC; 47-440 Hz, user specified	
<b>Dimensions</b>		
<b>Panel mount:</b>	2.81" H x 6" W x 2.87" D (71.4 x 152.4 x 72.9 mm)	
<b>Oxygen sensor:</b>	Class B-2 (for ranges lower than 0-200 ppm) Optional: - Class A-2C for CO <sub>2</sub> backgrounds - Zirconium oxide	Class E-2 Optional: - Class A-5 for CO <sub>2</sub> backgrounds - Zirconium oxide



## SP76 Compliant Oxygen Sensor

Teledyne offers an SP76 compliant oxygen sensor for trace and percent ranges. SP76 is the Instrument Society of America's standard for sampling system components, which brings the following advantages:

- Substantially reduced size -- as compared to the alternative which requires discrete tubing cut and connected through fittings of various components, i.e. sensors, pressure regulators, valves, etc.
- A building block, plug-and-play approach that makes even the most inexperienced assembler or designer an immediate expert

## TELEDYNE ANALYTICAL INSTRUMENTS

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### Warranty

Instrument is warranted for 1 year against defects in material or workmanship

NOTE: Specifications and features will vary with application. The above are established and validated during design, but are not to be construed as test criteria for every product. All specifications and features are subject to change without notice.

