

Trace Oxygen Analyzer

Model 3020T

Teledyne's Model 3020T Trace Oxygen Analyzer is a versatile microprocessor-based instrument for detecting oxygen at the parts-per-million (ppm) level in a variety of gases. This instrument serves as the explosion-proof, bulkhead-mount version of the 3000T, and is designed to make the task of trace oxygen analysis easier, faster and more precise than ever before. Simple menu choices, externally accessible command switches and dual LCD and LED displays make set-up and operation clear and quick.

Three User-Configurable Analysis Ranges

Three user-configurable ranges are standard, with an excellent linearity precluding the need to recalibrate when changing ranges. Two fully programmable concentration alarms provide the versatility to satisfy nearly any requirement. All features offer a sophistication that assures the 3020T will provide years of service.

Convenient Outputs For Data

Two standard 0-1 VDC outputs and two 4-20mADC isolated outputs provide both concentration and range identification. A bi-directional RS-232 serial interface is incorporated to relay information to a host computer for remote monitoring of critical functions.

Operator Interface

All controls and displays on the standard 3020T are available from outside the housing. The instrument has two simple operator controls. A digital meter, an alphanumeric display, and a sample flowmeter give the operator constant feedback from the instrument.

3020T ADVANTAGES

- Linearity of analysis across three user-programmable ranges
- AutoRanging capabilities
- Digital interface allows monitoring from a remote station
- Extended-life, maintenance-free sensor
- Comprehensive self testing function

STANDARD FEATURES

- An explosion proof NEMA 4/7 rated enclosure
- A 2-line alphanumeric display screen, driven by microprocessor electronics continuously prompting and informing the operator
- High resolution, accurate readings of oxygen content from low ppm levels through 25%. Stainless steel cell block
- Advanced Micro-Fuel Cell designed for trace analysis, with a one year warranty and an expected life of two years
- Versatile analysis over a wide range of applications



- Microprocessor based electronics: 8-bit CMOS microprocessor with 32kB RAM and 128kB ROM
- Three user-definable output ranges (from 0-10ppm through 0-250,000 ppm) assuring a perfect match for the user's process.
- Air-calibration range for convenient spanning at 20.9%
- Auto-Ranging automatically selects the proper preset range for a given measurement. Manual override allows the user to lock onto a specific range of interest.
- Two adjustable concentration alarms and a system failure alarm
- Extensive self-diagnostic testing at start-up and on demand with continuous power-supply monitoring
- Two way RS-232 serial digital port for use with a computer or other digital communication device
- Four analog outputs; two for measurement (0-1VDC and Isolated 4-20mADC) and two for range identification

APPLICATIONS

- Monitoring inert gas blanketing
- Air separation and liquefaction
- Chemical reaction monitoring
- Semiconductor manufacturing
- Petrochemical process control
- Quality assurance
- Gas analysis certification



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Specifications

Ranges: 3 customer programmable ranges
(minimum 0-10ppm) with AutoRanging

Calibration Range: 0-25%

Accuracy: +/- 2% of FS at a constant temperature
+/- 5% of FS over operating temperature range (once temperature equilibrium has been reached; except 0-10 ppm scale which is +/- 1 ppm)

Sensitivity: 0.5% of FS

Response: 90% of FS at 77°F (25°C) in less than 65 seconds

Operating Temperature: 32°F to 122°F (0°C to 50°C)

Signal Output: Analytical measurement - 0-1VDC and 4-20mADC (isolated)

Range ID Output: 0-1VDC and 4-20mADC (isolated)

Analysis Display: 5 digit red LED, 3/5" high numerals

Menu Display: 20 character, 2 line LCD

Data Lines: Bi-directional RS-232C serial interface, baud rate 2400 - remote monitoring of all critical functions

Alarm: One system failure alarm contact to detect power, calibration, zero and sensor failure. Two fully programmable concentration alarm set points and corresponding form C 3 amp contacts.

Power Requirements: 115 / 230VAC, 50-60Hz

Oxygen Sensor: Teledyne Micro-Fuel cell, Class L-2 (2 year life expectancy with most applications)

Wetted Parts: 316 stainless steel

Sample Connections: 1/4" fittings

Area Classifications: Explosion proof enclosure is U/L and CSA listed for Class I, Division 1, Group B, C, D service NEMA 4/7 rated

Mounting: Bulkhead mounting

Dimensions: 25.63" H x 15.25" W x 11" D

OPTIONS

- **C** Integrally mounted cal/zero valves
- **V** Plumbed for vacuum service
- **F** Flame arrestors for Class I, Div 1, Group C/D service
- **G** Flame arrestors for Class I, Div 1, Group C/D service with cal valves
- **H** Flame arrestors for Group B (hydrogen) service
- **I** Flame arrestors for hydrogen service with cal valves

If you would like to meet with a member of the Teledyne team to discuss the Model 3020T or arrange a demonstration, please don't hesitate to contact your local representative.



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.

