

TELEDYNE ANALYTICAL INSTRUMENTS



MODEL 3020T *Process Trace Oxygen Analyzer*

Teledyne's Model 3020T Trace Oxygen Analyzer is a 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 3000 Series. Simple menu choices, externally accessible command switches, and dual LCD and LED displays make set-up and operation clear and quick.

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 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 4-20 mA 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.

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%.
- 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 4-20mA) and two for range identification

Applications

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

Built for Reliability and Performance

Use and Disclosure of Data

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MODEL 3020T TRACE OXYGEN ANALYZER

Specifications

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

Calibration range: 0-25%

Accuracy: $\pm 2\%$ of FS at a constant temperature
 $\pm 5\%$ 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 - 0-1 VDC
and 4-20 mA DC (isolated)

Range ID output: 0-1 VDC and 4-20 mA DC (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 failure. Two fully programmable
concentration alarm set points and
corresponding form C 3 amp contacts.

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

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

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
- S Stainless steel cell block

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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.

