

TELEDYNE ANALYTICAL INSTRUMENTS



MODEL 3010PA *Process Percent Oxygen Analyzer*

Teledyne's Model 3010PA Percent Oxygen Analyzer is a versatile microprocessor-based instrument for detecting oxygen at the percent (%) level in a variety of gases.

The 3010PA is designed as a "split architecture" instrument, meaning that a general purpose Control Unit for non-hazardous areas controls a specially designed Analysis Unit or "remote probe" that can operate in hazardous areas. Simple menu choices, membrane 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 3010PA will provide years of service.

Convenient Outputs For Data

Two standard 0-1 VDC 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.

3010PA 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 analysis unit enclosure
- Stainless steel sample passages and fittings
- 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 percent levels through 100%.
- Advanced Micro-Fuel Cell designed for percent analysis
- 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 0-1% through 0-100%) assuring a perfect match for the user's process and equipment
- 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
- Two analog outputs for measurement and range identification (0-1 VDC isolated)

APPLICATIONS

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

MODEL 3010PA PERCENT OXYGEN ANALYZER

Specifications

Ranges: 3 customer programmable ranges (minimum 0-1%) 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)

Sensitivity: 0.5% of FS

Response: (B-1) 90% of FS at 77°F (25°C) in less than 10 seconds

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

Signal output: Analytical measurement - 0-1 VDC

Range ID output: 0-1 VDC

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: Universal AC input ranges -
Control unit: 85 / 230 VAC, 50-60 Hz
Analysis unit: 115 / 230 VAC, 50-60 Hz

Oxygen sensor: Teledyne Micro-fuel Cell, Class B-1
Optional: A3, A5, B3, C3

Wetted parts: 316 stainless steel sample passages, nylon cell holder

Sample connections: 1/4" with conversion to 6 mm available

Area classifications:

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

Control Unit: General purpose flush mounted

Dimensions: 6.96" H x 8.7" W x 12.2" L

Options

- C Integrally mounted cal/zero valves
- M Isolated 4-20 mADC signal and range ID output
- 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
- K 19" Rack Mount available with either one or two analyzer Control Units installed and ready to mount in a standard rack.
- S Stainless steel cell holder

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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.

