

3010C  
Series

Oxygen Analyzers

CENELEC  
approved





# 3010C Series

- Four configurations to choose from
- Trace and percent applications
- Intrinsically-safe design
- From the world leader in oxygen analysis

Teledyne's 3010TC and 3010PC series BASEEFA / CENELEC approved, intrinsically safe trace and percent oxygen analyzers are versatile, micro-processor based instruments used for detecting oxygen from 0-10 parts-per-million to 100% in a variety of gases. The units are designed as "split architecture" instruments, meaning that a general purpose control unit for non-hazardous areas controls a specially designed analysis unit or "remote probe" that is CENELEC approved intrinsically safe for use in area classification EEXiaIICT6, Zone 0. Simple menu choices, membrane command switches, and dual displays make set-up and operation clear and quick. Like all Teledyne products, the 3010C series is constructed of high quality materials to insure long term, trouble free service.

## Flexibility

These units offer three dynamic, user-configurable ranges and can be calibrated in any range. Two fully programmable concentration alarms and relays provide the versatility to satisfy nearly any requirement.

## Convenience

Two standard 0-1 VDC outputs and two 4-20 mA DC 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 zero and span calibration.

## Long-life maintenance free sensor

The 3010C series features Teledyne's Micro-Fuel Cell to measure oxygen in the 0-10 ppm to 100% range. Our sensors set industry standards for accuracy, sensitivity, and ease of

use, and come with a one year limited warranty against defects in material and workmanship. And because every sensor is manufactured using stringent quality control procedures, the user is assured of outstanding reliability and optimum performance. The sensor is a sealed electrochemical device with no electrolyte to change or electrodes to clean, making it maintenance free. The sensor is specific to oxygen and can be used in a wide variety of background gases including hydrocarbons.



3010TBC & 3010PBC



3010TAC & 3010PAC

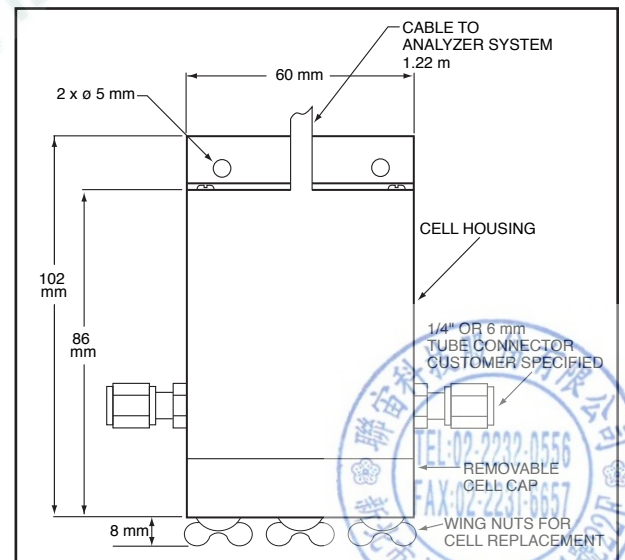
## CENELEC INSTRUMENT CONFIGURATIONS

3010TAC - Trace oxygen analyzer, flush mount

3010TBC - Trace oxygen analyzer, wall mount

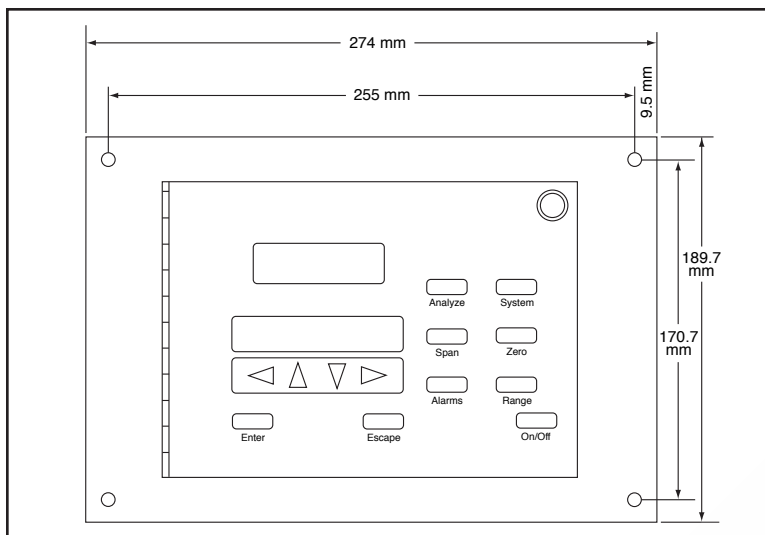
3010PAC - Percent oxygen analyzer, flush mount

3010PBC - Percent oxygen analyzer, wall mount



Remote Probe

Housing 60 mm x 102 mm H x 62mm D



3010TAC & 3010PAC

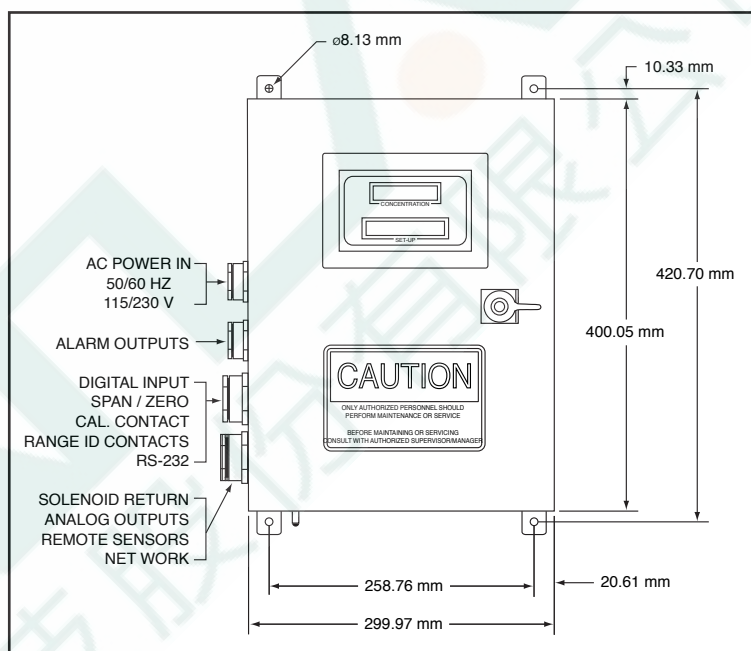
## ADVANTAGES

- Multiple configurations to choose from
- Intrinsically safe for area classification EEXiaIICT6, Zone 0
- Linearity of analysis across three user-programmable ranges
- Auto ranging capability
- Programmable alarm and relay functions
- Extended-life, maintenance-free sensor
- Comprehensive self-testing functions

## 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

3010TBC & 3010PBC



## STANDARD FEATURES

- Maintenance-free micro fuel cell
- Three user-selectable ranges plus cal range
- Signal output: 0-1 VDC & 4-20 mADC
- Programmable auto ranging
- Range ID contacts (quantity 4), Form A normally open contacts, 3A resistive
- Two fully-adjustable concentration alarm points with programmable relay function, Form C contacts, 3A resistive
- Programmable auto cal/zero with Form A normally open contact relay signals
- Remotely initiated cal/zero via customer supplied 24 VDC signal and 12 VDC control valves
- Self diagnostics with Form C failure alarm contacts
- Full duplex RS232 communication link
- Five digit oxygen concentration LED display
- Backlit 2 x 20 line alphanumeric vacuum fluorescent display for set up and diagnostics
- Universal power supply: 85-230 VAC, 50-60 Hz
- Remote probe, nylon with stainless steel fittings
- Oxygen sensor:
  - 3010TC series: Micro-fuel Cell, Class L2C, up to 2 years life
  - 3010PC series: Micro-fuel Cell, Class C-3, up to 1.5 years life

## 3010C Series

### Options

- K 19" rack mount with either one or two units installed, mounted side by side (flush mount versions only)
- S Stainless steel cell holder

### Alternate Sensors

- 3010TC Series: Class L2C-L: Backgrounds with CO<sub>2</sub> 90% of FS in < 60 seconds; up to 1 year life
- 3010PC Series: Class A-5: Backgrounds with CO<sub>2</sub> 90% of FS in < 45 seconds; up to 8 months life
- Class B-1: 90% of FS in < 10 seconds; up to 6 months life
- Class B-3: 90% of FS in < 15 seconds; up to 1 year life

In addition to the options listed above, the 3010C series can be ordered as a standard unit or as part of a larger analytical system. Teledyne can also supply special sensors, custom engineered analyzers, and complete monitoring systems to satisfy unique applications.

### Specifications

- Ranges: 3 customer selectable ranges
- 3010TC Series - Minimum: 0-10 ppm  
Maximum: 0-25%
- 3010PC Series - Minimum: 0-1%  
Maximum: 0-100%
- Calibration range: 0 - 25% (unit can be calibrated on any range or gas)
- 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  $\pm 1$  ppm)
- Sensitivity: 0.5% of FS

- Response: 3010TC series - < 60 seconds  
3010PC series - < 30 seconds
- Operating temperature: 32°F to 122°F (0°C to 50°C)
- Signal output: Analytical measurement - 0-1 VDC, and 4-20 mADC isolated, 1000 ohm impedance
- Range ID output: 0-1 VDC and 4-20 mADC isolated
- Analysis display: 5 digit red LED, 3/5" high numerals
- Menu display: 20 character, 2 line vacuum fluorescent
- Data lines: Bi-directional RS-232C serial interface
- Power requirements: Universal AC input ranges, 85 to 230 VAC, 50-60Hz

### Remote Probe:

- Wetted parts: Stainless steel fittings. Nylon sensor holder
- Sample connections: User specified 1/4" or 6mm fittings
- Area classification: EExIaIICT6

### Enclosures:

- 3010TAC and PAC: General purpose, flush panel mount  
Case: 201mm W x 176.8mm H x 309.9mm D  
(8.70" W x 6.96" H x 12.2" D)
- Bezel: 274mm W x 189.5mm H  
(10.79" W x 7.46" H)
- 3010TBC and PBC: I.P. 65/66 rated wall mount  
651mm H x 387.4mm W x 279.4mm D  
(25.63" H x 15.25" W x 11" D)

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