

# TELEDYNE ANALYTICAL INSTRUMENTS



Model 320BRC



Model 320P

## **SERIES 320** *Portable Oxygen Analyzers*

Teledyne's rugged 320 Series of Portable Oxygen Analyzers are designed for use in a wide variety of applications from diving to fine tuning boilers.

Lightweight (less than 6 lbs. / 2.7 kg) and easy to use, these units utilize Teledyne's own Micro-fuel Cell sensor for quick and accurate analysis of oxygen. This maintenance-free, sealed, electrochemical cell is specific to oxygen, insensitive to flow rate, and has a 90% response in less than 7 seconds. At the end of its life, the cell is discarded and replaced like a flashlight battery. A unique Cell-Saver cap preserves the sensor from exposure to air, thereby prolonging its operational life.

The rugged 320 Series is powered with rechargeable NiCad batteries. The integral NiCad batteries have an expected life of 5 years (minimum). Fully charged, the batteries provide over one month of continuous operation (320BRC series), and recharging is accomplished overnight (14 hours). The built-in charger requires a 115 VAC, 50 / 60 Hz electrical source (100 VAC or 220 VAC, 50 / 60 Hz optional).

Teledyne's portable flue gas oxygen analyzers are specifically designed to improve efficiency, lower fuel costs, and reduce explosive hazards in such applications as power plants, refineries, chemical / petrochemical plants, and steel making.

When used to monitor boilers, fireboxes, and process streams, these analyzers can safeguard combustion processes from insufficient or excessive oxygen conditions.

The 320P/D also offers a digital, liquid crystal display (LCD) with a readability / resolution of  $\pm 0.1\%$  oxygen. Linear range is 0-100% oxygen.

The Series 320 requires no warm up, making it ideal for quick, spot checking analysis. Its accuracy is assured by a cost-effective calibration method using atmospheric air rather than zero or span gases.

### **FEATURES**

- Fast, accurate response
- Maintenance free sensor
- Rugged and completely portable
- Rechargeable NiCad batteries
- Integral recharge circuit
- Pushbutton activated built-in pump (320P Series)
- Sample filter (320P Series)
- Digital meter (320BRCD & 320P/D)
- Air calibration; no zero or span gases

*The Model 320BRC meets the United States Pharmacopoeia criteria as a reference method for detecting the amount of oxygen in medical air supplies.*

### **OPTIONS**

- 100 VAC or 220 VAC, 50 / 60 Hz recharge circuit
- Special ranges
- Carrying case: aluminum / steel clad, foam interior (P/N C-416)
- Flow-thru adapter (P/N 9913)
- mVDC output signal

**Built for Reliability and Performance**

# SERIES 320 PORTABLE OXYGEN ANALYZERS

## SPECIFICATIONS

|                      | 320BRC   | 320P  | 320BRCD & 320P/D  |
|----------------------|--|---|---|
| Ranges               | 0-5, 0-25, and 0-100% oxygen<br>(switch selectable)<br>- optional ranges available   | 0-5, 0-10, and 0-25% oxygen<br>(switch selectable)<br>- optional ranges available | 0 to 100% oxygen  |
| Sensitivity          | 0.5% of full scale   |   |   |
| Accuracy             | ±2% of full scale at constant temperature; ±5% of reading<br>throughout the operating temperature range (once temperature<br>equilibrium is achieved)          |   | ±1% of oxygen reading at<br>constant temperature; ±3% of<br>oxygen over temperature range |
| Operating temp range | 32 to 122°F (0 to 50°C)  |   |   |
| Response time        | 90% < 7 seconds with B-1 cell (6 month warranty)<br>90% < 15 seconds with B-3 cell (12 month warranty)<br>90% < 30 seconds with C-3 cell (18 month warranty)   |   |   |
| Output               | 0-100 mVDC range   |   | 0-100 mVDC for 0-100% oxygen  |
| Oxygen sensor        | Micro-fuel Cell, class B-1 (standard)<br>Class C-3, B-3, A-5 cells (optional).<br>Sensor selection is determined by customer needs and sample gas composition. |   |   |
| Power requirements   | Integral rechargeable NiCad batteries  |   |   |
| Sample pump          | Not included   | Included  | Included only in 320PD  |
| Display              | Analog meter   | Analog meter  | Integral liquid crystal display<br>(LCD), 3-1/2 digits                                    |

## PUMP SPECIFICATIONS

Type: Diaphragm  
 Intended duty: Intermittent  
 Power: 2.5 VDC supplied by NiCad batteries  
 Maximum vacuum: 48 inch water column

## 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.

