



**Advanced Micro Instruments, Inc.**

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## MODEL 221R

The **Model 221R** offers a complete state-of-the-art solution for Oxygen Deficiency Monitoring.

Our standard Model 221R is outfitted with a complete package of electronic features and utilizes a very accurate and reliable 10-year life zirconium oxide sensor. This combination provides unmatched stability and is virtually maintenance free over its entire life.

Competitive models generally suffer from undesirable stability issues causing frequent and expensive false/nuisance alarms. The undesirable drift usually results from just slight ambient temperature change or the unavoidable decline in electrochemical sensor outputs.

Our innovative engineering and sensor technology guarantee unmatched stability and performance over a wide temperature range of 0° to 130° F, thereby eliminating costly nuisance alarm issues.

Our sensor requires no support gases and can be easily and accurately calibrated using compressed air. A standard calibration takes approximately 1 minute and only needs to be performed every 6 months.

Given the remarkable stability over an extreme temperature range, complete electronics package, and a compact water tight NEMA 4X enclosure, the Model 221R is a perfect fit for a wide range of applications, including: clean room, control rooms, confined spaces, refrigerator/freezer, and applications that are susceptible to routine hose down requirements.

Listed below is a summary of all the standard features included with the base Model 221R.

### **Standard features include:**

- Red backlit 3 ½ digit LCD. High-resolution and easy to read from across the room
- 2-Factory preset oxygen depletion alarms set for OSHA standards of 20.0% for CAUTION and 19.5% for DANGER. Relays are Form C contacts and rated for 5A @115VAC
- 95db audible alarm that sounds when the oxygen level drops below 19.5% danger set point



- Battery back up in the event of AC power loss
- User configurable alarm logic: Fail-safe/non-failsafe, energize above/below set point, and latching/non latching
- Measurement range is 0-25%. Optional ranges available upon request
- Data logger. Logs data for 15 days continuously @ 1min intervals.
- Isolated 4-20mA. analog output
- RS-485 bi-directional communications
- Simple, intuitive user interface
- Customer selectable security lockout feature
- Weather tight NEMA 4X enclosure
- RFI protected
- Unmatched 2-year warranty on all components including sensor
- Bright status LED for any alarm conditions
- 1 minute front panel alarm silence button

The Model 221R is a rugged piece of safety equipment designed for industrial applications. AMI leads the industry with the most complete set of standard features while maintaining the industry's most competitive pricing. UL 61010-1 standard approval is currently pending.

## MODEL 221R

### FEATURES

- 0-25% Measurement range
- Large 3 ½ digit Red Backlit digital display
- 2 fully adjustable oxygen concentration alarms. Preset for OSHA standards  
20.0% Caution and 19.5% Danger
- Customer configurable alarm logic
- Status LED
- 95dB danger alarm preset for 19.5%
- Customer selectable security lockout feature
- Battery back-up
- Isolated 4-20mA analog output signal
- Data logger
- RS-485 bi-directional communications
- Unmatched stability and repeatability
- RFI protected
- Wide operating temperature range
- 10 year life expectancy zirconium oxide sensor
- Weather tight NEMA 4X package
- Optional remote oxygen sensing probe. Can be located up to 300' away from control unit
- Gas connection: Diffusion screen. No pump, sample tubing or fittings required
- Compact size

### SPECIFICATIONS

- **Measurement range:** 0- 25%
- **Red Backlit Digital display:** High resolution 3 ½ digit LCD. Reads full scale from 00.0% to 25.0%
- **Alarms:** 2 fully adjustable oxygen concentration alarms. Preset for OSHA standards  
20.0% Caution and 19.5% Danger  
Dry contacts 3A. @24VDC/115VAC
- **Status LED:** indicates Power, Safe Operation, Alarm Conditions and Loss of AC power
- **Danger alarm:** 95dB danger alarm preset for 19.5%
- **Battery back-up:** 1 hour
- **Analog output signal:** Isolated 4-20mA
- **Data logger:** Logs data for 15 days @ 1 minute intervals, 30 days @ 2 minute intervals, etc.
- **Communications:** RS-485 bi-directional
- **Power requirements:** 115VAC < 10watts
- **Minimum detection:** 0.05% of oxygen
- **Repeatability:** +/- 0.1% of range or +/- 0.1% of oxygen, whichever is greater
- **Operating temperature range:** 0 to 130° F
- **Diurnal temperature specification:**  
< +/- 1 % of scale over temperature range
- **90% full scale response times for specified range:**  
0-25% <12 seconds
- **Long life zirconium oxide sensor:** 10 year life expectancy
- **Weather tight NEMA 4X package**
- **Area Classification:** Designed to meet General Purpose UL 61010-1 standard and IP 65 requirements. Approval pending.
- **Gas connection:** Diffusion screen. No pump or fittings required
- **Mounting:** Wall mount or 2.0" pipe mount
- **Dimensions:** 7.0"W x 5.7"H x 4.5"D
- **Weight:** 4 lbs.

