

ADVANCED MICRO INSTRUMENTS
An ENPRO Company

MODEL 221R
OXYGEN DEFICIENCY MONITOR

DESIGNED FOR CONTINUOUS SAFETY MONITORING

The AMI **MODEL 221R** has become the gold standard for oxygen deficiency & confined space monitoring. It is used by the thousands of government laboratories, space agencies, universities, and other industries to ensure the safety of their personnel. The virtually maintenance free design with a 10-year sensor is for use in NON-FLAMMABLE applications. It provides an incredibly accurate and stable reading over a wide temperature range.

DESIGN FOR SAFETY COMPLIANCE

The standard 221R has three OSHA-Compliant preset alarms with relay contacts and a 95 decibel audible alarm. The preset 20.0% **Caution** and 19.5% **Danger** low oxygen alarms as well as the 23.5% **Enriched Oxygen** alarm will de-energize alarm relays to operate fans or warning devices. The Enriched O_2 or Danger low O_2 alarms will also trigger the 95dB audible alarm to alert personnel. The 221R is NTRL-certified to UL61010-1 for safety electrical equipment for measurement, control and laboratory use.

COMMON APPLICATIONS

- LABORATORY RESEARCH
- AIR SEPARATION
- AEROSPACE

10+ YEAR ZIRCONIUM OXIDE SENSOR

The AMI zirconium oxide sensor is virtually maintenance-free lasting up to 10 years with only routine calibration. It is extremely accurate and stable over a wide temperature range without being affected by changes in barometric pressure.

OPTIONAL REMOTE PROBE

An optional remote probe is available for continuous monitoring of locations up to 300 ft (91 m) from the control unit. It is an ideal solution for making sure difficult to access location are safe.



FULL SUITE OF STANDARD FEATURES

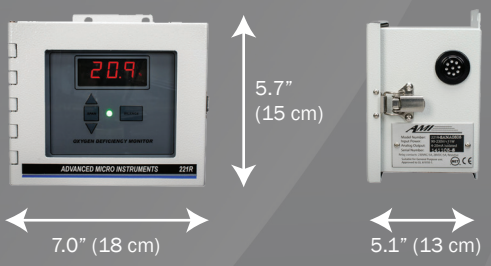
The **MODEL 221R** is full of standard safety features, including rechargeable battery backup and tamper resistant alarms to prevent user override of safety setpoints. It also offers advanced features that can be accessed through AMI's COMMAND CENTER Software including automatic data logging of time stamped O_2 measurements, power supply voltage and calibration history.

MODEL 221R

PHYSICAL & ELECTRICAL SPECIFICATIONS

WEIGHT	MOUNTING	GAS CONNECTIONS	DIGITAL DISPLAY
4.0 lbs (1.8 kg)	Wall mount	Diffusion screen. No pump, sample tubing or fittings required	3-digit LCD (reads full scale from 0.0% to 25.0%)

POWER	OUTPUTS
90 – 230 VAC (11 Watts) Battery back-up provides 1 hour of power	4 – 20 mA isolated output signal



Note: 2-year Warranty for Parts & Labor for any defects in materials or workmanship. 2-year Warranty for zirconium oxide sensors

OPERATIONAL SPECIFICATIONS

MEASUREMENT RANGE	AMBIENT OPERATIONAL TEMPERATURE	METHOD OF MEASUREMENT	ENVIRONMENT
0 – 25.0%	14°F to 122°F (-10°C to 50°C)	Zirconium Oxide Sensor (10-year life expectancy)	Not for use in areas where flammable gases may be present

MONITOR PERFORMANCE SPECIFICATIONS

MINIMUM DETECTION LIMIT	90% UPSCALE RESPONSE TIMES FOR SPECIFIC RANGES	REPEATABILITY	DIURNAL TEMPERATURE SPECIFICATION	APPROVALS
0.05% of Oxygen	<12 sec for 0.0% – 25.0%	±1% of range or ±0.1% of oxygen, whichever is greater	<±1% of scale over temperature range	UL 61010-1 for Safety Electrical Equipment, CE Mark, Designed to Meet IP 65

ANALYZER KEY FEATURES

TAMPER RESISTANT PRESET ALARMS	OSHA Standard Preset Alarms ▸ Below 19.5% Oxygen Danger Level — Red warning light, 95 dB audible alarm, Relay 1& 2 de-energized ▸ Above 23.5% Oxygen Enriched Level — Red warning light, 95 dB audible alarm, Relay 1 & 2 de-energized Additional Preset Alarm ▸ Below 20.0% Oxygen Caution Level — Yellow caution light, Relay 1 de-energized	
WASH DOWN READY	Designed to withstand direct water spray	
SAFETY FEATURES	▸ 1-hour rechargeable battery back-up ▸ Tamper-resistant alarm setpoints	▸ Front Panel lock-out ▸ Calibration error detection and alarm
ACCESSORIES	▸ Remote Sensing Probe for monitoring up to 300 ft from control unit ▸ Gas Calibration Block	▸ Pre-wired Type B Wall Plug ▸ Pre-wired Type C Wall Plug
COMMAND CENTER	▸ Calibration details ▸ Alarm configurations	▸ Security Settings ▸ Data logger (time-stamped record of O_2 measurements & Power History)

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