



The Ultima[®] XIR Gas Monitor

[Infrared technology for combustible gas detection]

The Ultima XIR Gas Monitor is a microprocessor-based, infrared point gas detector for continuous monitoring of combustible gases and vapors. Designed around a rugged, 316 stainless steel enclosure, the Ultima XIR Monitor is the latest sensor to be launched in the Ultima X Series of Gas Monitors.

The Ultima XIR Monitor operation is based on dual-wavelength, heated-optics technology, providing definitive compensation for temperature, humidity and aging effects. The IR technology offers excellent long-term stability, eliminates the need for frequent calibrations and reduces overall cost of ownership.

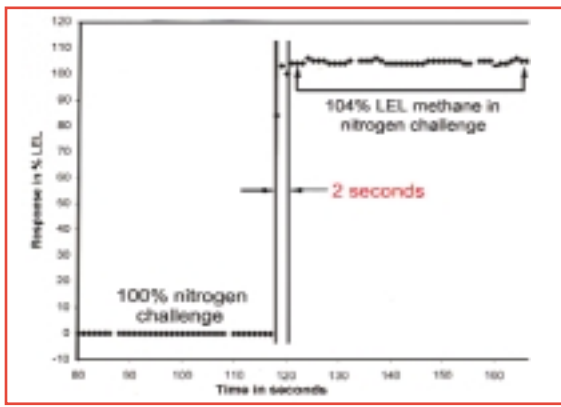
Features

- * 316 stainless steel explosion-proof, multiple-entry-mounting enclosure.
- * Field-selectable algorithms for a variety of hydrocarbon-based gases.
- * LCD display with scrolling messaging.
- * Single-board design for ultimate reliability and easy, no-tool servicing.
- * 4-20mA output.
- * Optional "quick-check" LEDs for increased product visibility.
- * Optional field-programmable relays feature three alarm levels and one fault.
- * "Fail to Safety" operation.

Benefits

- * No-gas calibration. A zero adjustment is all that is required for full calibration.
- * Extremely fast speed of response.
- * Designed without a sintered disk for optimum performance in the harsh, offshore environment.
- * Operates over extended temperature ranges.
- * Immune to poisoning.
- * Sensor life not reduced by exposure to gas.
- * Automatic compensation for humidity and temperature changes.
- * No moving parts, jumpers, switches or pots.
- * Operates in high-gas and low-oxygen environments.





Extremely Fast Speed of Response ($T_{90} < 2$ sec.)



Ultima XIR Accessories

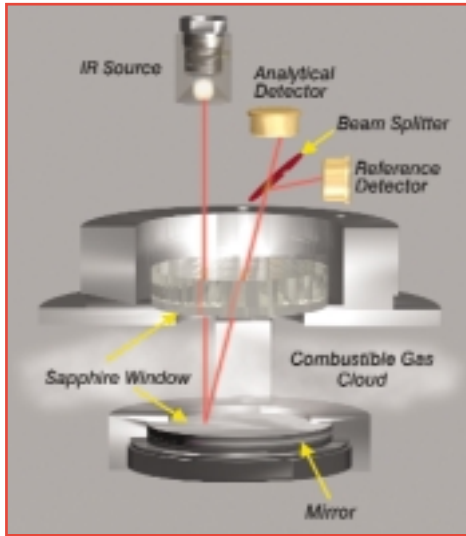
Specifications:

Gas Types and Ranges	Combustible gases & vapors; 0-100% LEL
Temperature Range	-40°C to +60°C (-40°F to +140°F)
Stability	±2% Full Scale/year
Accuracy	
Repeatability	±1% Full Scale
Linearity	±2% Full Scale (≤50% LEL) ±5% Full Scale (>50% LEL)
Response Time (without the sensor guard)	
T_{90}	<2 sec.
Humidity	0%-95% RH, non-condensing
Sensor Warranty	2 years
Power Input	7-30VDC @ 750mA maximum
Wiring Requirements	3-wire
Signal Output	4-20mA 3-wire current source
Relay Contact Rating	5amp @ 230VAC; 5amp @ 30VDC
Conduit Entries	Four entries, 3/4" NPT
Physical	316 stainless steel;
Approval Ratings	UL 1203 Class I, Div. 1, Groups B, C, & D; Class II, Div. 1, Groups E, F, & G; Class III CSA C22.2-30 Class I, Div. 1, Groups B, C, & D (pending) Class II, Div. 1, Groups E, F, & G (pending) Class III (pending) CSA C22.2 No. 152 Combustible Gas Performance (pending) CE Low Voltage Directive: 73/23/EEC (pending) CE EMC Directive: 89/336/EEC (pending) CE ATEX Directive: 94/9/EC II 2G EEx d IIc T5 (T_{amb} -40°C to +60°C) (DMT pending)

Ordering Information

All Ultima X Series Gas Monitors are manufactured using MSA's Assemble-To-Order (ATO) process. For further information on the Ultima X Series Gas Monitors, see Datasheet 07-2051.

Offices and representatives worldwide



Principles of IR Technology

The Ultima XIR Gas Monitor uses an electronically modulated source of infrared energy and two detectors that convert the infrared energy into electrical signals. Each detector is sensitive to a different range of wavelengths in the infrared portion of the spectrum.

The source emission is directed through a window in the main enclosure into an open volume. A mirror at the end of this volume, protected by a second window, directs the energy back through the window in the main enclosure and onto the detectors.

The presence of a combustible gas in the open volume will reduce the intensity of the source emission reaching the analytical detector but not the intensity of the source emission reaching the reference detector. The microprocessor monitors the ratio of these two signals and correlates this to a %LEL combustible reading.

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