



The Ultima[®] XI Gas Monitor

[Infrared technology for combustible gas detection]

The ULTIMA XI Gas Monitor

is a digital signal processor-based, infrared point gas detector for continuous monitoring of combustible gases and vapors. Designed around a rugged 316 stainless steel enclosure, the ULTIMA XI Monitor is a completely self-contained, explosion-proof unit that is dependable in harsh environments.

The ULTIMA XI 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 and Benefits

- No-gas calibration. A zero adjustment provides reliable accuracy.
- 316 SS enclosure.
- Selectable algorithms for a variety of hydrocarbon-based gases.
- 4-20mA output.
- "Fail to Safety" operation.
- Designed without a sintered disk for optimum performance in the harsh offshore environment.
- Operates over extended temperature ranges.
- Extreme speed of response.
- Immune to poisoning.
- Operates in high-gas and low-oxygen environments.

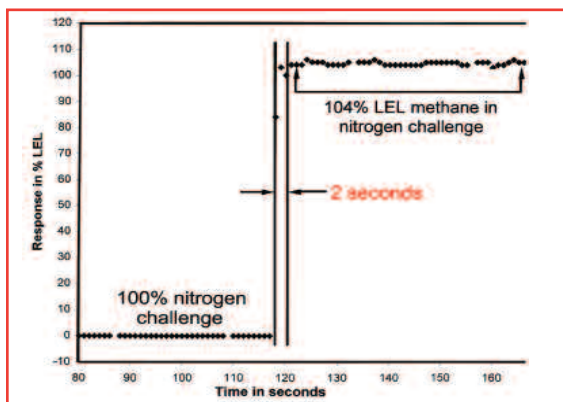
Calibration

The patent-pending calibration method of the ULTIMA XI Monitor provides the simplest, one-man calibration requirements on the market.



Simply place the calibration cap onto the ULTIMA XI Monitor and calibration is initiated. The intrinsically-safe calibration cap provides status on zero and span calibration, along with final calibration results.





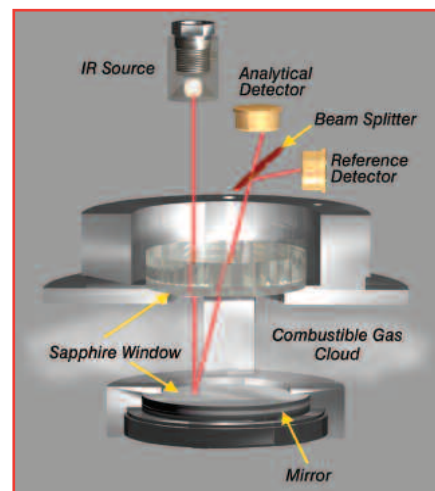
Extremely Fast Speed of Response ($T_{90} < 2$ sec.)



Ultima XI Accessories

Specifications:

Gas Types and Ranges	C1-C7 hydrocarbons; 0-100% LEL
Temperature Range	-40°C to +60°C (-40°F to +140°F)
Stability	±2% Full Scale/year
Repeatability	±1% Full Scale
Accuracy	±3% Full Scale (≤50% LEL) ±5% Full Scale (>50% LEL)
Response Times (without the sensor guard)	
T_{90}	<2 sec.
Humidity	0%-95% RH, non-condensing
Sensor Warranty	2 years
Power Input	7-30VDC, 5 watts
Current Draw	200mA maximum @ 24VDC
Wiring Requirements	3-wire
Signal Output	4-20mA 3-wire current source
Conduit Entries	One entry, 3/4" NPT (19.05mm) with optional condulet
Physical	316 stainless steel
Weight	6 lbs. (2.7kg)
Dimensions	2.5" dia. x 8" long (64 x 203mm)
Approval Ratings	CUL 1203/C22.2-30 Class I, Div. 1, Groups B, C, & D; Class II, Div. 1, Groups E, F, & G; Class III CSA C22.2 No. 152 Combustible Gas Performance CE EMC Directive: DMT 89/336/EEC CE ATEX Directive: DMT 94/9/EC II 2G EEx d IIc T5 (Tamb -40°C to +60°C)



Principles of IR Technology

The Ultima XI 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.

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 datasheets 07-2051 and 07-2054.

Offices and representatives worldwide