The **Ultima®** XIR Gas Monitor

Infrared technology for combustible gas detection

SIL 2 CERTIFIED

Features

- DuraSource Technology offers improved IR sensor life
- Field-selectable algorithms for a variety of hydrocarbon-based gases
- LCD display with scrolling messages and LEDs
- Single-board design for ultimate reliability and easy, no-tool servicing
- 4-20mA, HART and ModBus (X^3) output
- Optional "quick-check" LEDs for increased product visibility
- "Fail to Safety" operation

Benefits

- No-gas calibration. A zero adjustment is all that is required for full calibration
- Extremely fast speed of response (t90 < 2 sec)
- 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
- Operates in high-gas and low-oxygen environments

DURA™ SOURCE TECHNOLOGY

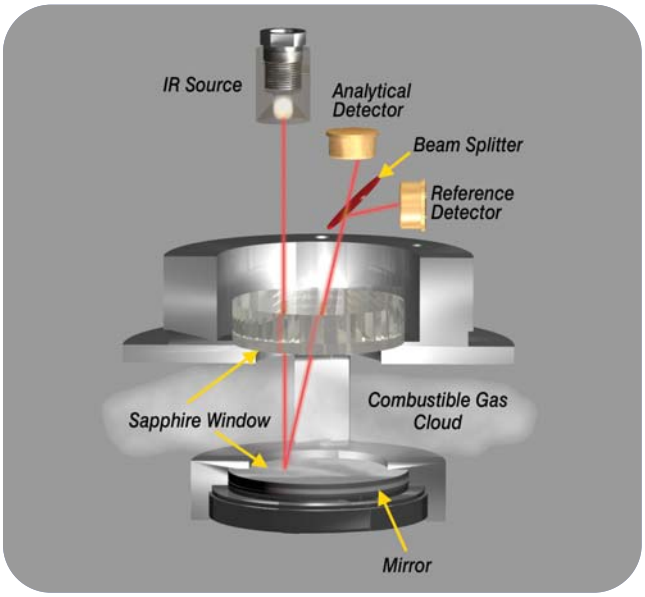
10 YEAR WARRANTY

MSA
The Safety Company

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 has multiple entries for maximum flexibility.

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.

Ultima XIR Accessories



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.

Specifications

Gas Types and Ranges	Combustible gases & vapors; 0-100% LEL CO_2 0–5%, 0–2%, 0–5000 ppm
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)	
t90	<2 sec.
Humidity	0%-95% RH, non-condensing
Sensor Warranty	10 years for IR source
Power Input	8-30 VDC, 5 watts
Current Draw	290mA 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 Weight Dimensions	316 stainless steel 6 lbs. (2.7kg) 2.5" dia. x 8" long (64 x 203mm)
Approval Ratings	$_cFM_{us}$, $_cUL_{us}$, CSA Class I, Div. 1 and 2, Groups B, C, & D Class II, Div. 1, Groups E, F, & G Class III ANSI/ISA 12.13.01 CSA C22.2 No. 152 Combustible Gas Performance CE EMC Directive: 89/336/EEC CE ATEX Directive: 94/9/EC II 2G EEx d IIc T5 (Tamb -40˚C to +60˚C) TYPE 4X, IP 66 SIL 2 assessed to IEC 61508

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.

Note: This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products.

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