

# The Ultima<sup>®</sup> 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<sup>3</sup>) 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 ( $t_{90} < 2$  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

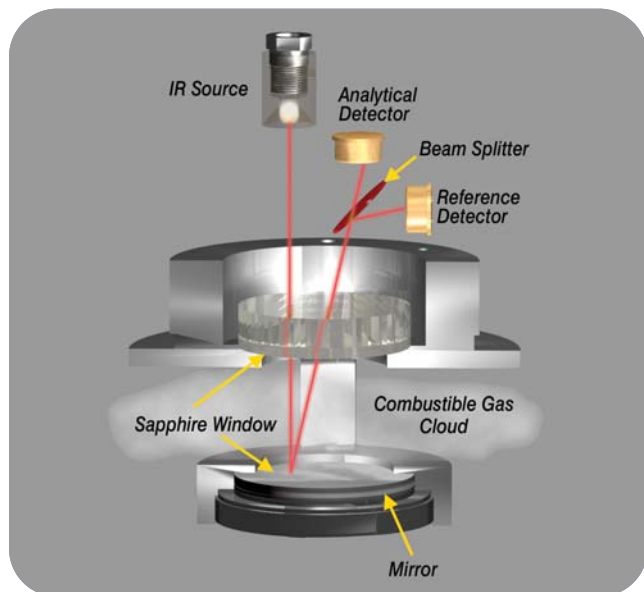
**DURA<sup>™</sup>  
SOURCE  
TECHNOLOGY**

**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.



## 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.

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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**Ultima XIR Accessories**

## Specifications

<b>Gas Types and Ranges</b>	Combustible gases & vapors; 0-100% LEL CO <sub>2</sub> 0-5%, 0-2%, 0-5000 ppm
<b>Temperature Range</b>	-40°C to +60°C (-40°F to +140°F)
<b>Stability</b>	±2% Full Scale/year
<b>Repeatability</b>	±1% Full Scale
<b>Accuracy</b>	±3% Full Scale (≤50% LEL) ±5% Full Scale (>50% LEL)
<b>Response Times (without the sensor guard)</b>	
<b>t90</b>	<2 sec.
<b>Humidity</b>	0%-95% RH, non-condensing
<b>Sensor Warranty</b>	10 years for IR source
<b>Power Input</b>	8-30 VDC, 5 watts
<b>Current Draw</b>	290mA maximum @ 24VDC
<b>Wiring Requirements</b>	3-wire
<b>Signal Output</b>	4-20mA 3-wire current source
<b>Conduit Entries</b>	One entry, 3/4" NPT (19.05mm) with optional conduit
<b>Physical</b>	316 stainless steel
<b>Weight</b>	6 lbs. (2.7kg)
<b>Dimensions</b>	2.5" dia. x 8" long (64 x 203mm)
<b>Approval Ratings</b>	cFM <sub>US</sub> , cUL <sub>US</sub> , 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.

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