

MSA Fixed Gas & Flame Detection for the Oil, Gas & Petrochemical Industries



A Passion for Safety

Oil, gas and petrochemical industries and corresponding potentially hazardous and combustible materials necessitate gas and flame detection and monitoring solutions. Chemical handling, storage and possible spills and leak require early detection and fast response using durable, reliable detection instruments. MSA designs and manufactures a complete line of world-class detection products for oil, gas and petrochemical facilities monitoring.

Providing the best products, service and support in the industry. *That's the MSA passion.*

*Because every life has a **purpose...***

Fixed Gas & Flame Detection **for the Oil, Gas & Petrochemical Industries**

Ultima® X Series Gas Monitors

Designed to provide thorough, continuous monitoring of many hazardous gases, indoor/outdoor Ultima X Series Gas Monitors offer excellent performance and MSA quality craftsmanship. DuraSource™ Technology offers extended sensor life; HART Protocol provides convenient setup, calibration and diagnostics. Single circuit board increases reliability; MSA patented sensor disconnect-under-power feature allows all sensors to be replaced within hazardous areas without area declassification. Units are built from stainless steel or polycarbonate. Interchangeable smart sensors eliminate the need for re-configuration. Scrolling LCD screen displays sensor reading and gas type; calibration process includes date stamping and ability to calibrate locally or remotely.

The Ultima X Series Sensor X-Change™ Program is a sensor-replacement service that supplies users with calibrated sensor modules when needed, on demand. The program provides easy installation and minimal downtime. Sensors arrive prior to the Ultima X Monitor's scheduled calibration date. Then, simply change out the old sensor with the new, perform a gas check and the system is operational.

Ultima X Series Gas Monitors are well-suited to indoor and outdoor applications in virtually any industry including offshore, refineries, chemical and petrochemical facilities, steel mills, water and wastewater plants, mining, and general industry.

Ultima X Series Gas Monitors with X3® Technology provide continuous monitoring of combustible and toxic gases and oxygen deficiency. X3 Technology is X to the Power of 3, bringing multi-sensing, signal boost and Modbus output to Ultima X Series Gas Monitors. This technology allows 3 sensors to be connected to a single 1 Ultima X Gas Monitor and provides Modbus RTU output. Each sensor can be remoted up to 3,000 feet from the monitor. Any combination of electrochemical, catalytic and infrared-type sensor is available, a perfect match for all applications and industries.

- Multi-sensing; up to 31 monitors with up to 3 sensors inputted per monitor for total of 93 sensors.
- Signal boost: universal 10-256VAC or 7-30 VDC power supply available at remote conduit.
- RTU output: industry standard RTU format, RS-485 half-duplex communication interface and integration into PLC/DCS systems.



Ultima XE Gas Monitors offer continuous gas monitoring of combustible and toxic gases, as well as for oxygen deficiency. HART Protocol provides increased sensor data, part of cost-effective asset management. Calibrate, set up or perform diagnostics with HART from any point along the 4-20 mA line. Advanced features include:

- DuraSource™ Technology for improved sensor life.
- FM, UL, CSA, ATEX, and IEC approvals. SIL 2-certified products.
- Disconnect-under-power, allowing for hazardous area sensor replacement.
- Interchangeable **smart** sensors enable easy installation and replacement.
- Onboard LEDs and relays provide increased alarm and fault condition indication.



Ultima XIR Gas Monitors provide microprocessor-based, infrared-point gas detection for continuous monitoring of combustible and carbon dioxide gases and vapors. Ultima XIR Monitors employ dual-wavelength heated-optics technology, providing definitive compensation for temperature, humidity and aging effects. IR technology offers excellent long-term stability, eliminating the need for frequent calibrations and reducing overall cost of ownership. Ultima XIR Monitors operate over extended temperature ranges, have rapid response time and are immune to sensor poisoning. Ultima XIR Monitors function in both high gas and low oxygen environments and contain no moving parts, jumpers, switches, or pots.



Ultima XIR Monitors offer the same features as Ultima XE Gas Monitors plus advanced features including:

- FM, UL, CSA, ATEX, and IEC approvals.
- DuraSource Technology for improved sensor life.
- 10-year warranty on IR source.
- Field-selectable algorithms for many hydrocarbon-based gases.
- Fail-to-safety operation designed without sintered disk.
- SIL2-certified products.

Ultima XL/XT Series Gas Monitors are economical continuous gas monitors. Single-sensor units use catalytic, electrochemical and infrared gas detection technologies for combustible and toxic gases and for oxygen deficiency. HART Field Communications Protocol running over 4-20 mA output provides convenient setup, calibration and diagnostics. Hand-held HART communicator, controller or laptop provides display, while local calibration employs LEDs and pushbuttons. Ultima XL Gas and Ultima XL Infrared Combustible Gas Monitors are explosion-proof with stainless steel enclosures, while the Ultima XT Gas Monitor is housed in general purpose plastic.



- Sensor disconnect-under-power without declassifying hazardous area.
- Interchangeable **smart** sensors; no reconfiguration required.
- 1 circuit board for increased reliability and easier serviceability.
- Calibrate, set up or perform diagnostics with HART from any point along 4-20 mA line.
- Easy installation with 2-piece field wiring connectors.
- Asset management using HART interface.

MSA's **Wireless Communication System** is an ideal solution for gas detection needs at locations where no infrastructure exists. Combustible and toxic gases can leak virtually anywhere, and leaks may not occur near a facility's gas detection instrument installation area.

- 900 MHz radio that communicates to a gateway provides reliable real-time detection data at distances of up to 1 mile with clear line of sight.
- Accepts either Analog or Modbus inputs.
- Power options include solar panel, battery and charger to help ensure up to 2 weeks of autonomous operation.
- Wireless HART adapter can be added to any MSA HART-enabled field device to communicate with any existing wireless HART network.





PrimaX® Gas Monitor

PrimaX Gas Monitors offer proven quality and reliability for toxic gas, oxygen or combustible gas detection, as well as SIL 2-certification and HART digital communication option. Innovative enclosure design, ease of use, fast installation, and options to suit both indoor and outdoor installations make the PrimaX Gas Monitor your choice for versatile gas detection. Monitors are available in explosion-proof and intrinsically-safe versions.

PrimaX I Gas Monitor

Intrinsically-safe detection of toxic gases or oxygen

- Robust, anti-static, reinforced nylon IP66-rated housing
- Integral mounting plate for quick, easy installation
- Large, easy-to-read LCD display

PrimaX P Gas Monitor

Explosion-proof detection of combustibles, toxic gases or oxygen

- Powder-coated aluminum enclosure (IP66-rated)
- Integral mounting plate for fast, easy installation
- Easy menu navigation using integrated four-way keypad
- Large, easy-to-read LCD display, three LED status indicators





Ultima OPIR-5 Open Path Gas Detector

The **Ultima OPIR-5 Detector** is an open path IR gas detector that provides continuous monitoring of combustible gas concentrations at a path length of up to 150 meters.

- Dual detection range enables sensitivity to both small (ppm · meter) and large (LEL · meter) gas leaks. Parts-per-million meter range allows for fast detection of low level leaks.
- Performance approved for use in harsh environments (-67°F/-55°C).
- Multiple communication outputs (Analog, HART, Modbus, AMS Support) provide complete status and control capability.
- Automatic gain control compensates for dirty optics, rain and fog.



Ultima MOS-5 Intelligent Hydrogen Sulfide Sensor

The **Ultima MOS-5 Sensor** is a microprocessor-based transmitter designed for use with Metal Oxide Semiconductor (MOS) sensor. Durable and robust construction is proven for use within the most extreme environments.

- Precise and reliable MOS sensor is highly selective and is unaffected by many gases commonly present in plant environments.
- User self-calibration: simply activate magnetic switch and apply gas—no special tools or area declassification is required.
- Reduced use of H₂S calibration gas and personnel time required to perform routine maintenance saves time and money.
- Suitable for use in SIL3 systems and approved by FM and CSA.
- Functions within wide range of ambient temperatures and high humidity.
- 2-year product warranty including long-life MOS sensor.



UltraSonic® EX-5 Gas Leak Detector

The **UltraSonic EX-5 Gas Leak Detector** detects airborne leaks from high-pressure gas systems. Because the UltraSonic Detector responds to a gas release source rather than dispersed gas, the unit is unaffected by changing wind directions, gas dilution and gas leak direction. With wide coverage radius, a single unit can monitor a relatively large area.

- Advanced high precision stainless steel microphone enables instant detection of pressurized gas leaks.
- Senssonic™ integrated acoustic self-test provides full fail-safe operation.
- HART and Modbus communication options provide complete status and control capability.
- Stainless steel 316L explosion-proof housing for corrosion resistance in harsh environments.
- 1-person check and calibration with traceable portable test unit delivers high reliability and trouble-free maintenance.
- 3-digit LED display shows actual sound pressure level and alarm indication.
- Event logging stores fault, sound check, calibration, and alarm event history (requires HART communication).



FlameGard® 5 Series of Flame Detectors includes 3 models:

• FlameGard 5 MSIR Flame Detector

Advanced multi-spectrum flame detector provides superior false alarm immunity with widest field of view. Detector employs state-of-the-art multi-spectrum infrared (MSIR) sensor array with sophisticated Neural Network Technology (NNT) system.

• FlameGard 5 UV/IR Flame Detector

Uses ultraviolet and infrared technologies for flame detection.

• FlameGard 5 UV/IR-H2 Flame Detector

Uses ultraviolet and infrared technologies to detect hydrogen fires.

Features that set the FlameGard 5 Series apart:

- Superior false alarm immunity.
- Wide field of view.
- Continuous Optical Path Monitoring (COPM) checks optical path integrity and electronic circuitry once every minute.
- SIL3-suitable products.

The **FlameGard 5 Test Lamp** provides an easy way to verify functionality of any FlameGard 5 Detector.



SUPREMAtouch® Controller

The **SUPREMAtouch Controller** offers modular design to meet many application requirements and complies with all relevant global safety standards, including redundant systems with up to SIL 3 rating (IEC 61508). This custom product features large color touchscreen display, enhanced processing capabilities and optional integration of addressable fire and smoke detectors. Unit is compatible with many detectors, including combustible and toxic gas, oxygen, smoke, fire, and heat. Output options include relay, and analog and digital communication between racks, allowing interfacing to external systems using Modbus or Profibus.

- Compact modular design requires fewer cabinets, saving space.
- Decentralized configuration through use of satellites minimizes wiring.
- Digital bus technology provides reliable communication to external bus systems.
- Connections for 3 system power supplies enable automatic switchover to backup supply.



MODEL 10K™ Integrated Fire and Gas System

The **MODEL 10K Integrated Fire and Gas System** is an NFPA 72-approved fire and gas controller. This system represents the next generation in highly intelligent monitoring solutions designed to reduce hazard vulnerability and meet the world's most demanding safety standards.

The MODEL 10K System is an innovative, modular system that is highly scalable and delivers these features and benefits:

- FM-approved:
 - To NFPA 72 compliance as a system.
 - For proprietary central station monitoring.
 - As both fire alarm panel and gas controller.
 - For fault-tolerant digital communications.
 - To release control panel.
- Remote I/O capability.
- Optional fiber optic communications.
- Color touch screen operator interface.
- Data and event logging.
- Supports 3rd-party device integration.
- Gas calibration histories (combustible and H₂S gas).
- Simple, reliable and cost-effective field wiring topology.
- Addressable detection loop for buildings.

The MSA MODEL 10K Fire and Gas System is ideal for use in compressor stations, drilling and production platforms, refineries, pipelines, LNG/LPG facilities, storage facilities, chemical plants, electric power plants, and wastewater treatment plants.





MSA Gas and Flame Detection for Oil, Gas and Petrochemical Applications

As the world leader in fixed gas and flame detection, MSA provides safety solutions that protect workers' lives. Our instruments reflect the latest developments in sensor and instrumentation design using electrochemical, catalytic bead, metal oxide, photoacoustic infrared, advanced acoustic detection and both point and open path infrared sensing technologies.

Our products have been successfully installed in a variety of applications including oil rigs, production platforms, wellheads, storage vessels, pipelines and compressor stations, to name a few. Whether your field is upstream, midstream or downstream, MSA can help you safely navigate with our extensive line of detectors, built to meet your flame, oxygen, combustible and toxic gas detection needs.

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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MSA Corporate Center
1000 Cranberry Woods Drive
Cranberry Township, PA 16066 USA
Phone 724-776-8600
www.MSAafety.com

U.S. Customer Service Center
Phone 1-800-MSA-INST
Fax 1-800-967-0398

MSA Canada
Phone 1-800-672-2222
Fax 1-800-967-0398

MSA Mexico
Phone 01 800 672 7222
Fax 52 - 44 2227 3943

MSA International
Phone 724-776-8626
Toll Free 1-800-672-7777
Fax 724-741-1559
Email msa.international@msafety.com

Offices and representatives worldwide

For further information: