

# MSA Gas Detection

for the Water and Wastewater Industries



**Does your facility  
meet NFPA 820?**

[www.msagasdetection.com](http://www.msagasdetection.com)

**MSA**  
The Safety Company

## A Passion for Safety

MSA's passion for safety comes from almost a full century of manufacturing high quality gas monitoring instruments.

MSA designs and manufactures a complete line of world-class gas detection products for the water and wastewater industries.

Our passion shows through in our rugged, globally-approved permanent instruments and our reliable, easy-to-use and durable single- and multi-gas portable instruments; providing you with a complete solution for your needs.

We are dedicated to designing and manufacturing the highest-quality gas monitoring instruments for our customers to ensure that men and women may work in safety and that they, their families and their communities may live in health throughout the world.

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



MSA offers a full line of gas detection instruments to meet your needs and those of everyone in your organization.

### Ultima® X Gas Monitors

Ultima X Series Gas Monitors are engineered using microprocessor-based technology for the detection of combustible and toxic gases and oxygen deficiency. HART protocol provides increased sensor data and convenient setup, calibration and diagnostics. It also enables existing wiring to be used, reducing installation costs. Advanced features of the Ultima X Monitor include:

**Sensor Disconnect Under Power** - MSA's proprietary feature allows for sensor change-out without declassifying a hazardous area.

**Interchangeable Smart Sensors** - Pre-calibrated sensor modules are ready for installation out of the box. Sensors can be replaced in the field without the use of tools.

**State-of-the-Art Display** - Liquid crystal display conveniently alternates between sensor reading and gas type and features scrolling messaging, indicating ongoing diagnostic checks such as sensor "end-of-life" condition.

**World-Class Design** - Engineering efforts feature a single-board design for ultimate reliability and serviceability. Ultima XE and XIR Gas Monitors feature a 316 stainless-steel multiple-entry mounting enclosure. The Ultima XA Monitor features a water- and corrosion-resistant, all-purpose, NEMA4X poly-carbonate enclosure. Both enclosures are designed to be separate from the electronics and sensor, allowing for problem-free installation and servicing.

**Infrared Technology** - The Ultima XIR Gas Monitor provides microprocessor-based, infrared point gas detection for continuous monitoring of combustible gases and vapors.

Operation using dual wavelength-heated optics technology, provides definitive compensation for temperature, humidity and aging effects. Ultima XIR Gas Monitors are IP67 rated (dust proof, protected from temporary immersion in water) to withstand the rugged demands of the water and waste water industry.

**Onboard LEDs and Relays** - Optional "quick-check" LEDs and four relay outputs allow for increased indication of alarm and fault conditions. "Quick-check" LEDs, viewable from afar, indicate NORMAL (green) and ALERT (red) status conditions.

### Ultima X<sup>3</sup>™ Technology

X<sup>3</sup> Technology brings multi-sensing and ModBUS RTU output to the Ultima X Series Gas Monitors.

- Sensors can be observed remotely up-to 3000 ft. from the monitor.
- A system can handle up to 31 monitors with up to 3 sensors per monitor for a total of 93 sensors.
- Any combination of electrochemical, catalytic, and infrared type sensors are available, making it a match for all applications.



## GasGard® XL Controller

The GasGard XL Controller is a versatile, easy to use wall-mounted controller for monitoring toxic and combustible gases, and oxygen deficiency. It is compact with a durable housing constructed of fire-retardant ABS plastic. The large and clear multi-language LCD display provides real-time target gas readings and events, offers full system diagnosis, and is supported by individual LEDs per channel with common relays and internal buzzer. The GasGard XL Controller can be easily configured to accept up to 8 remote gas sensors.



- Fully configurable via USB or RS485 Modbus connection
- Event log upload through isolated Ethernet RS 485 or USB
- Multi-language display selectable via controller menu
- Expandable up to 8 independent channels using plug-in boards
- Dedicated keys make all functions accessible from the front panel
- Common relay board for Alarm Level 1 and 2, Horn 1 and 2 or Failure
- Optional 2 additional relays per channel
- Large graphic display with intuitive icons; all channels shown at a glance
- Internal buzzer 85 dB

## Ultima® X Monitor Sensor X-change™ Program

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



Program benefits:

- Eliminates the need to perform initial field calibrations
- Reduces overall maintenance time
- Greatly reduces calibration cylinder requirements
- Eliminates the need to dispose of sensor modules

## ModCon™ 75 Controller

MSA's ModCon75 Controller is designed for use with the Ultima X Gas Monitor with X3 Technology, enabling self-configuration and saving time and money. This pre-programmed, self-configuring controller monitors up to 25 Ultima® X Gas Monitors with X3 Technology transmitters (75 sensors total). Compact unit allows for remote control of many features. ModBUS RTU input/output and ModBUS-over-Ethernet interface capability.



- All pertinent data displays on main data screen.
- Seven-year battery backup provides memory and real-time clock.
- Up to 9 zone relays are standard.
- Remote relay option allows for local alarming

## 9010/9020 Controller Units

9010/9020 Controllers offer maximum flexibility to work in conjunction with a wide variety of remote 4/20 mA sensors to provide reliable gas detection in a wide range of industries and applications. Modular design combined with dual-channel capability allows for a variety of configurations to meet most applications. Each Control Module comes with an independent AC/DC power supply transformer for increased system reliability.



## The Flamegard® Series of Flame Detectors

Flamegard Flame Detectors provide continuous optical flame detection for hydrocarbon-based fires. They can operate as a stand alone unit without a control panel, or can be connected to a fire or security panel via an internal alarm or accessory relay. FlameGard Detectors reduce the possibility of false alarms because the units must receive the proper wavelength, duration and intensity of the fire's radiation before an alarm is activated. The self-test model further enhances the fire detection system because it performs a complete functional test periodically. Enclosed in heavy-duty, copper-free, explosion-proof aluminum or stainless steel housings, FlameGard Detectors are easily mounted via a simple bracket or the optional Swivel Mount Kit.



### 3 Versions

#### **FlameGard UV Flame Detector**

- Monitors ultraviolet radiation

#### **FlameGard UV/IR Flame Detector**

- Dual-optical sensing monitors ultraviolet radiation and infrared radiation

#### **FlameGard IR3 Flame Detector**

- Patented triple-infrared detection technique monitors infrared radiation while providing enhanced immunity to false alarms

Features of all three models:

- 4 to 20mA and RS-485 outputs
- Alarm, accessory and fault relays
- 100,000 hours minimum calculated Mean Time Between Failure (MTBF)
- Easy to install, operate and maintain
- User programmable to various configurations
- High-speed response with false alarm suppression
- Optional MSA Fire Simulator provides flame-free testing

# Custom Systems

MSA has the ability to create a custom system for your specific application.

## TriGard™ Monitoring System for Chlorine and Sulfur Dioxide

The MSA TRIGARD Monitoring System is designed for monitoring chlorine, sulfur dioxide and other toxic gases, as well as for oxygen deficiency or enrichment. These new monitors were designed specifically for water and wastewater facilities which are typically large producers of these gases. The MSA TRIGARD Monitor offers an affordable monitoring solution for a variety of needs.

- Adjustable range
- Multiple sensor mounting options
- AC- or DC-powered
- On-board relays
- NEMA 4X design
- LCD display with highly visible LED indicators
- Piezo horn with horn silence button
- Long-life, MSA-designed sensors
- Simple push-button calibration
- Available as single-point or 3-point unit



Advanced features include sensor disconnect under power, interchangeable smart sensors, state-of-the-art display, world-class design and onboard LEDs and relays.

## Tri-Gas Sample Draw System

Areas of wastewater treatment plants that are subject to flooding, such as wet wells, are ideal for MSA's three-gas sample draw custom system. The system is ideal for monitoring oxygen, hydrogen sulfide, and combustible gases (methane or petroleum vapors). In addition, the system is specifically designed for optimum performance in high-moisture environments.

MSA's three-gas sample draw system consists of up to three sensors with Ultima® X3™ digital communications (ModBus RTU output) with onboard LEDs and relays to provide local alarms.

Options:

- One or two top-mounted beacons.
- Combustible IR sensor.
- Federal, side-mounted horn.
- Heated enclosure.
- Nema 4X stainless steel enclosure.
- Additional common dry contacts.



## Scrubber Monitoring System

With the increased concern for clean air, many wastewater treatment plants are adding air scrubber systems to help control odor (hydrogen sulfide) emissions. MSA offers both in-situ-type sensors for large diameter pipes and/or pre-engineered sample draw systems for those applications that require higher detection ranges up to 500 ppm. Both of these products can also be used in chlorine scrubber applications with a range of 0-25 PPM.

MSA Ultima® X or X3 sensor/transmitters with a duct mount kit feature remote calibration for use within the larger pipes. All of the advanced features of the Ultima X or X3 are available, including smart sensors, onboard relays and LEDs, internal power supply option, and true one-person calibration.

The MSA Scrubber Monitoring System is a pre-engineered system that is compatible with most wet or dry scrubbers. The system operates within a closed loop so that no gas is vented into the atmosphere. Built to withstand harsh outdoor environments, it is housed in a heated NEMA 4X enclosure.

Maintenance and calibration are simple procedures. If an obstruction occurs in the sample line, the unit provides a flow failure indication. Calibration can be performed with an IR calibrator, eliminating the need to open the front door of the system.

Benefits

- Ensures that your scrubber is working and meeting EPA requirements.
- Indicates break-through for carbon bed scrubbers.
- Controls chemical feeds for wet scrubbers.
- Conserves expensive chemicals.
- Eliminates complaints from the community.



# Portable Gas Detectors

MSA offers a full-line of portable single-gas and multi-gas detection instruments for confined space monitoring.

**New!**

## ALTAIR® 5 Multigas Detector

The ALTAIR 5 Multigas Detector is MSA's latest portable instrument for detection of many toxic gases. This innovative unit offers these exclusive portable instrument features:



- Standard MotionAlert™ feature to indicate "man-down"
- InstantAlert™ feature to alert those around you
- Optional high-resolution color display
- Logo Express® Service option for customized instruments
- Great impact durability
- Excellent dust and water ingress protection
- Multilingual at no extra cost
- Standard graphical display
- Diffusion mode or internal pump
- Rechargeable or alkaline battery options

## ALTAIR® 4 Multigas Detector

The ALTAIR 4 Multigas Detector for LEL, CO, H<sub>2</sub>S, and O<sub>2</sub> is a super-durable, competitively-priced, personal multigas detector. The ALTAIR 4 Multigas Detector is the only portable gas detector with an optional MotionAlert™ feature if a user should become disabled due to unforeseen hazards. When enabled, the MotionAlert feature will activate if the instrument does not detect motion for 30 seconds, and is ideal for confined space entry applications. This unique gas detector function can be easily turned off by the user.



## Orion® Multigas Detector

The Orion Multigas Detector is a low-cost, four-gas portable detector featuring one-button calibration, rugged construction with excellent resistance to dust and water penetration, and a 16- to 20-hour run time. The Orion Detector includes an internal pump and charger and detects CO, H<sub>2</sub>S, and O<sub>2</sub>, combustible gas.



## Sirius® PID Multigas Detector

The Sirius® Multigas Detector provides users outstanding multifunctional capabilities by allowing users to simultaneously monitor for volatile organic compounds (VOCs) with low vapor pressures while measuring for combustible, toxic and oxygen-deficient atmospheres within one reliable, easy-to-use, durable unit.



## Galaxy® Automated Test System

The Galaxy Automated Test System is an easy-to-use, versatile and durable calibration and test system that uses the latest technology to provide simple, reliable performance in a design that withstands the harshest of environments. Versions are available for the Solaris Multigas Detector, Orion Multigas Detector, Sirius Multigas Detector and the ALTAIR and ALTAIR Pro Single-gas Detectors.



## ALTAIR® and ALTAIR Pro Single-Gas Detectors

### ALTAIR Single-Gas Detector

- Maintenance-free monitoring with 2-year lifespan
- Sensors: carbon monoxide, hydrogen sulfide & oxygen



### ALTAIR Pro Single-Gas Detector

- Replaceable sensor and battery
- Sensors include: ammonia, carbon monoxide, chlorine, hydrogen sulfide, oxygen & sulfur dioxide. Other sensor options available.



### Both units feature:

- Reliable performance with easy one-button operation
- Superior dust and water protection and high RFI-resistance
- Large, clear, backlit LCD
- Distinctive triple-alarm system

# Gas Detection Selection Chart

| Hazard Location   | Flame Detection | Methane | Oxygen | Hydrocarbon | Chlorine | Hydrogen Sulfide | Carbon Monoxide | Carbon Dioxide | Sulfur Dioxide | Ammonia |
|---|-----------------|---------|--------|-------------|----------|------------------|-----------------|----------------|----------------|---------|
| Anaerobic Digesters Both Fixed & Floating Cover*                                |                 | •       | •      |             |          | •                |                 | •              |                |         |
| Digester Control Building   |                 | •       | •      |             |          | •                |                 |                |                |         |
| Digester Gas Processing Rooms   |                 | •       | •      |             |          | •                |                 |                |                |         |
| Underground (piping) Tunnels Containing Natural or Sludge Gas Piping            | •               | •       | •      |             |          | •                |                 |                |                |         |
| In-vessel Compositing*  | •               | •       |        |             |          |                  |                 |                |                |         |
| Alcohol Storage   |                 | •       | •      |             |          |                  |                 |                |                |         |
| Incinerators  |                 | •       | •      | •           |          |                  | •               |                |                |         |
| Chlorination Room   |                 |         |        |             | •        |                  |                 |                |                |         |
| Chlorine Storage Tanks & Room   |                 |         |        |             | •        |                  |                 |                |                |         |
| Ammonia Storage Tanks & Pipes   |                 |         |        |             |          |                  |                 |                |                | •       |
| De-chlorination Processes   |                 |         | •      |             |          |                  |                 |                | •              |         |
| Sulfur Dioxide Storage Tanks  |                 |         |        |             |          |                  |                 |                | •              |         |
| Wet Wells (Storm Water, Residential Wastewater)                                 |                 | •       | •      |             |          | •                |                 |                |                |         |
| Pumping Stations  |                 | •       | •      |             |          | •                |                 |                |                |         |
| Course & Fine* Screen Facilities  |                 | •       | •      |             |          | •                |                 |                |                |         |
| Flow Equalization Tanks*  |                 | •       |        |             |          | •                |                 |                |                |         |
| Grit Removal Tanks*   |                 | •       | •      |             |          | •                |                 |                |                |         |
| Pre-Aeration Tanks*   |                 | •       |        |             |          | •                |                 |                |                |         |
| Primary Sedimentation Tanks*  |                 | •       | •      |             |          | •                |                 |                |                |         |
| Oxygen Aeration Tanks   |                 | •       |        |             |          |                  |                 |                |                |         |
| Scum Handling Building*   |                 | •       | •      |             |          | •                |                 |                |                |         |
| Scum Pits*  |                 | •       | •      |             |          | •                |                 |                |                |         |
| Scum Pumping Areas* Wet & Dry Side  |                 | •       | •      |             |          | •                |                 |                |                |         |
| Sludge Thickener*   |                 | •       | •      |             |          | •                |                 |                |                |         |
| Sludge Storage Areas*   |                 | •       | •      |             |          | •                |                 |                |                |         |
| Sludge Blending Tanks* and Holding Wells  |                 | •       | •      |             |          | •                |                 |                |                |         |
| Odor Control System Access  | •               | •       |        |             |          | •                |                 |                |                |         |
| Composting Piles  | •               |         |        |             |          |                  |                 |                |                |         |
| Dewatering Buildings  | •               |         |        |             |          |                  |                 |                |                |         |
| Anaerobic Digestion Gas Storage   |                 | •       |        |             |          |                  |                 |                |                |         |
| Underground (Piping) Tunnels <b>NOT</b> Containing Natural or Sludge Gas Piping | •               |         |        |             |          |                  |                 |                |                |         |

\*If building is enclosed.

**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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