Fixed Gas & Flame **Detection**

International Product Range Overview

Over 100 years of experience and capability in comprehensive safety solutions have made MSA a modern and forward-looking company for the protection of people, facilities, and the environment. MSA is one of the few suppliers of fixed gas and flame detection (FGFD) measurement technology that develops and manufactures a complete range of products and integrates them into safety solutions.

With the acquisition of General Monitors in September 2010 and Senscient in 2016, the MSA FGFD product portfolio expanded even further. As these unmatched experts in gas and flame detection joined forces, we are proving that the right mix of durable products and innovative technology increases safety while driving operational efficiency.

Together we have the widest range of sensing technologies for gas and flame detection. We create solutions that not only provide worker safety and protect facilities, but also decrease overall cost of ownership.

WE KNOW WHAT'S AT STAKE.

Selection **Guide**

The Right Gas Detector

	Product Type									
	ULTIMA X5000	S5000	ULTIMA XE & ULTIMA XIR	PrimaX I	PrimaX P	PrimaX IR	S47K	Senscient ELDS	IR5500	OBSERVER-i
Detection Principle										
Catalytic combustion sensor	■	■	■		■		■			
Electrochemical sensor	■	■	■	■	■					
Semiconductor sensor		■								
Infrared Point detection	■	■	■			■				
Infrared Open Path detection								■	■	
Ultrasonic										■
Units of Measure										
0–100% LEL	■	■	■		■	■	■			
0–100% Volume		■	■							
0–5% LEL·m								■	■	
ppm	■	■	■	■	■					
ppm.m								■	■	
40–120 dB (u)										■
Detectable Gases										
Ammonia (NH_3)			■	■	■			■		
Arsine (AsH_3)			■							
Bromine (Br_2)			■							
Carbon Monoxide (CO)	■	■	■	■	■					
Carbon Dioxide (CO_2)	■		■					■		
Chlorine (Cl_2)			■	■	■					
Chlorine Dioxide (ClO_2)			■							
Diborane (B_2H_6)			■							
Ethylene (C_2H_4)	■	■	■		■	■	■	■	■	■
Ethylene Oxide (ETOX)			■							
Fluorine (F_2)			■							
Germane (GeH_4)			■							
Hydrocarbon Combustible Gases	■	■	■		■	■	■		■	■
Hydrogen (H_2)	■	■	■	■	■		■			■
Hydrogen Cyanide (HCN)			■	■	■					
Hydrogen Sulphide (H_2S)	■	■	■	■	■			■		
Hydrogen Chloride (HCl)			■	■	■			■		
Hydrogen Fluoride (HF)			■					■		
Methane (CH_4)	■	■	■		■	■	■	■	■	■
Nitrogen Oxide (NO)			■	■	■					
Nitrogen Dioxide (NO_2)			■	■	■					
Oxygen (O_2)	■	■	■	■	■					
Phosphine (PH_3)			■							
Silane (SiH_3)			■							
Sulphur Dioxide (SO_2)			■	■	■					

Please also find MSA's Flame Detectors, Controllers and Refrigerant Monitors in this Product Range Overview.

ULTIMA® X5000

The ULTIMA X5000 gas monitor offers new advanced technologies detecting oxygen, toxic and combustible gases.

Key features:
- High visibility and intuitive display with full-word text available in 9 languages
- Tool-free operation with touch-enabled display
- TruCal® simulated calibration technology extends manual calibration interval
- Dual sensing and universal board design lowers project installation costs
- Bluetooth® application provides easy configuration for faster start-ups

ULTIMA X5000

S5000

The S5000 gas monitor is the ulitmate gas detector for extreme environments needing to detect oxygen, toxic and combustible gases.

Key features:
- Performs over a wide temperature range (–55°C to +75°C)
- Tool-free design with touch-enabled display
- TruCal simulated calibration technology extends manual calibration intervals
- Dual sensing lowers project installation costs
- Backwards compatible with selected S4000TH and S4000CH sensors
- Bluetooth® application provides easy configuration for faster start-ups

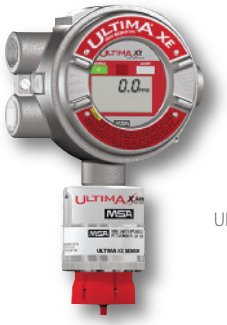
S5000

General Monitors
by MSA

ULTIMA® X Series

The ULTIMA XE and ULTIMA XIR provide continuous monitoring of combustible and toxic gases and oxygen deficiency using catalytic, electrochemical and infrared sensor technologies.

Key features:
- Operate with a large range of gases and toxics
- Easy to read LCD
- Optional on board status LED's and/ or output relays
- Optional HART



ULTIMA XE

ULTIMA XIR

Detectors

PrimaX

The PrimaX transmitter range detects a wide range of toxic, oxygen and combustible gases.

PrimaX I:
- Electrochemical sensor technology
- Large display in robust reinforced nylon housing
- Optional HART

PrimaX P:
- Detects combustible, toxic gases or oxygen
- Flameproof coated aluminum enclosure
- Optional HART

PrimaX IR:
- Hydrocarbon detection in LEL
- Infrared dual source technology
- Redundant IR source provides reliability

Series 47K

Series 47K are cost effective passive catalytic sensors detecting potentially hazardous concentrations of flammable gas and vapour in air.

Key features:
- Available in poison resistant (PRP) or high temperature (HT) versions
- Large range of approved gases according to ATEX Directive 2014/34/EU
- Complete range of accessories and junction boxes
- 3, 4 or 5 wire connection

Flame Detector Series

FL4000H:
- Advanced multi-spectral infrared detector
- Detects hydrocarbon fires
- Neural Network Technology (NNT) for reliable discrimination between actual flames and false alarm sources
- HART and Modbus communication options

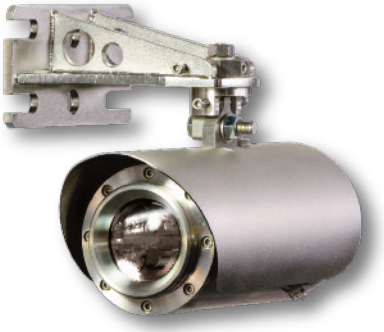
FL3100H:
- Ultraviolet/ infrared flame detector
- Detects hydrocarbon and hydrogen fires
- Wide field of view for greater fire detection coverage
- HART and Modbus communication options

FL3110, FL3111, FL3112:
- UV/IR, UV and IR flame detectors for European market (ATEX approved)
- Available in stainless steel housing and Ex e wiring compartments
- Modbus communications

Senscient ELDS™

A laser based open path gas detector for the detection of toxic or flammable gases. Using a separate transmitter, receiver arrangement it is certified for use in hazardous areas. Available for open area detection (5–200 m gas dependent) and ventilation air intakes (0.5–5.0 m Methane only).

Key features:
- Target gas specific – No false alarms
- Fast speed of response (<5 seconds) – Fast initiation of safety actions
- Daily automatic self test – No routine manual testing
- Factory lifetime calibration – No routine recalibration required
- No consumable sensing elements – Reduced operational cost



Senscient ELDS

IR5500

The IR5500 is an open path infrared gas detector that provides continuous monitoring of flammable gases.

Key features:
- Sensitive to small (ppm.m) and large (LEL.m) gas leaks
- Ideal for harsh environments (–55 °C)
- Continuous self-check for fail-to-safe operation
- Multiple communication outputs (HART, Modbus, AMS support)

IR5500

General Monitors by MSA

OBSERVER-i

The OBSERVER-i responds to the airborne ultrasound generated from pressurized gas releases in open ventilated areas.

Key features:
- Artificial Neural Network (ANN) distinguishes real gas leak noise and suppresses false alarm sources
- Patented Senssonic™ self-test ensures full failsafe operation
- Trouble-free maintenance and one-person check and calibration
- AISI 316L stainless steel housing enclosure
- Explosion proof design, Ex-d

OBSERVER-i

General Monitors by MSA

Surveyor

The Surveyor is a non-concentration based gas detector used to detect leaks from high pressure systems.

Key features:
- Instant detection of high-pressure gas leaks with coverage up to 20 m in radius
- Interface outputs include 4-20 mA analogue and alarm/fault relays
- AISI 316L stainless steel housing enclosure
- Intrinsically safe Ex-i design that requires proper safety barriers in the installation design
- Minimal maintenance and calibration requirements with portable test unit
- Local LED indicator displays detector status
- Wide dynamic range (44 –104 dB)

Surveyor

General Monitors by MSA

Controllers

SUPREMATouch

SUPREMATouch is a gas and fire warning system for large area measuring.

Key features:
- Processes up to 256 inputs and 512 outputs
- Multi-lingual touchscreen enabling intuitive operation
- New software enabling remote, one-man and group calibration
- SIL3 compatible due to the option of redudant input cards
- SUPREMAManager software saves set-up time due to parametrization can be initiated offline

SUPREMATouch

9010/9020 SIL

The 9010/9020 SIL gas controller provides maximum flexibility, simple operation, and high reliability.

Key features:
- Monitors up to 20 channels independently
- Options in 19" rack or wall-mount box (one or two channels)
- Works in combination with a wide range of MSA gas sensors
- Large LCD and LED inform about gas concentration, alarm status and more
- RS 485 Modbus RTU, Ethernet for Modbus TCP

9010/9020 SIL 19" rack

9020 SIL wall mount

GasGard XL

The GasGard XL is a multi-channel wall mount controller for monitoring toxic, oxygen and flammable gases in industrial plants.

Key features:
- Easily configured, up to eight remote gas sensors
- Large, easy-to-read, multi-language LCD graphic display
- Event log transfer via Ethernet or USB

GasGard XL

Importance of monitoring refrigerant and combustible gases

A building's mechanical room is the hub of its heating, ventilation and air conditioning system. This can include central utility plants, boiler and chiller rooms, mechanical and electrical rooms and fuel rooms. The equipment within these rooms has the potential to leak harmful combustible or toxic gases, including costly and environmentally harmful refrigerant gases.
Refrigerant gas is considered as a toxic gas and although refrigerants have low toxicity, at high concentrations they can displace oxygen. Oxygen deficiency can cause serious injury or death to workers. Many of these refrigerants are categorized as ozone depleting substances and are highly monitored. Gas monitors satisfy the requirements for equipment room emissions. For economic reasons refrigerant leak detection is encouraged due to costs associated with refrigerant leaks.

Chillgard® 5000

The Chillgard 5000 refrigerant leak monitor provides the earliest level of detection of costly refrigerant gas leaks in mechanical equipment rooms.

Key features:
- Patented photoacoustic infrared (PAIR) technology detects leaks as low as 1 ppm
- Intuitive, multi-lingual touchscreen user interface makes it easy to operate
- Predictive maintenance and diagnostics keep you operational
- Modular design makes it easy to maintain and expand sample points
- Digital communications – BACnet® and Modbus

Chillgard 5000

Chillgard VRF

The Chillgard VRF monitors R410a in buildings such as museums, hotels and other air conditioned areas using variable refrigerant flow systems. It monitors at a low detection level of 25 ppm with MSA's PAIR (photoacoustic infrared) technology.

Key features:
- Low-level detection at 25 ppm minimum detection
- Versatility – capable of operating within wide temperature and humidity ranges
- Low maintenance – no moving parts and stable PAIR sensor technology
- Easy installation – simply secure back plate to wall
- Digital communications – BACnet® and Modbus

Chillgard VRF

Chillgard M-100

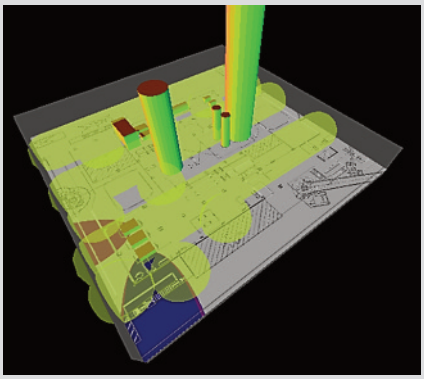
The Chillgard M-100 refrigerant sensor is designed to detect the presence of the most common halogenated refrigerants in cold storage facilities, mechanical equipment rooms and other refrigerant applications.
This compact sensor can be mounted almost anywhere to detect potential leaks of halogenated refrigerants and can be easily installed.

Chillgard M-100

Improving Gas Detection Coverage with Gas and Flame Mapping

Why Perform Flame & Gas Mapping? MSA flame and gas mapping is a solution that assists in the evaluation of flame and gas risks within a process facility and in the reduction of these risks towards an acceptable risk profile.
Flame and gas mapping includes placing of detectors in appropriate locations to achieve the best possible detection coverage, with a systematic and numeric method, which also considers external factors, such as wind direction and obstructions. The output of a mapping study includes graphical maps of residual risks, recommended detector placements and numerical estimates of detection coverage.

For further information please contact us:
EUROPE.mapping@MSAsafety.com



MSA Service – Professional, Reliable & Responsive

Alongside the extensive range of top quality products, MSA also provides a high level of customised service.

MSA's comprehensive and versatile range of services ensures that your equipment and systems will always be reliable, economical and ready for use. MSA is always at your service to provide you with the support you need, when you need it.

- Custom System Solutions
- Project Management
- Installation & Commissioning
- System Modification
- Maintenance
- Repair & Service
- Training

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