MSA
The Safety Company

Gas Detectors for the Fire Service



WHEN YOU GO IN, WE GO IN WITH YOU.

MSA Gas Detectors for YOUR Fire Service Applications

Emergency response crews face two basic challenges when entering dangerous environments:

- Is the air acceptable for normal, unprotected breathing?
- Is the air safe from potential explosions?

Portable gas detection equipment can help emergency response crews to meet these challenges. Gas detection needs are expanding. Increasingly, fire departments respond to situations where hazardous substances may be present and proper detection equipment is necessary. MSA provides equipment to meet almost any gas detection need.

Confined Space Entry

Emergency response teams may be called upon to perform services or rescues in confined spaces. While often industrial in nature, a confined space is typically defined as any enclosed area not meant for human habitation, such as a sewer or storm drain. MSA's multigas detectors can help to ensure that confined space atmospheres are safe for worker entry.

Overhaul

During overhaul operations, you can never be certain of conditions within damaged structures. MSA Single and Multigas Detectors can indicate the need to use respiratory protection.

Hydrogen Cyanide (HCN) Risks

Hydrogen Cyanide (HCN) detection has increasingly become a key part of firefighting respiratory programs and SOPs as the awareness of HCN exposures becomes known and studied. Materials such as insulation, furniture carpets, appliances and plastics can generate HCN when burning as can many items made of natural materials.

In addition to the smoke generated during active fires, the continued presence of heat and smoldering materials during overhaul can generate dangerous levels of HCN. This has prompted many departments to adjust their respiratory SOPs to minimize firefighter exposure to HCN. The use of HCN monitors during overhaul can provide the critical information needed to support those decisions and further protect firefighters.

HCN is a colorless gas with a bitter, almond like odor. HCN is considered to be IDLH at 50 ppm per NIOSH. HCN can enter the body through the absorption, inhalation and ingestion. Symptoms of HCN exposure can include nausea, dizziness, vomiting and breathing difficulty. These symptoms can appear immediately. The long term effects of repeat exposure continue to be studied. MSA ALTAIR Pro and ALTAIR 5X instruments can help firefighters detect threats from HCN.

Carbon Monoxide (CO) Risks

CO is a colorless, odorless gas that is considered toxic at 35 ppm with a NIOSH IDLH at 1200 ppm. Symptoms of exposure can include headache, nausea, dizziness, confusion and shortness of breath. Since CO is often the byproduct of incomplete combustion, it can be a threat during overhaul or in many home calls.

Home Calls

Fire departments often respond to calls concerning CO (carbon monoxide) home alarms. MSA ALTAIR® 2X, ALTAIR 4X, and ALTAIR 5X Gas Detectors can detect the presence of CO upon arrival at call sites and determine if the premises are safe for habitation. These units can even be used to locate the gas source (often garages or leaky furnace vents). Fire departments may also respond to natural gas leaks or suspicious odors and must be able to measure concentrations of several gases simultaneously.

HazMat

Fire departments and HazMat teams at times must detect and identify hazardous compounds and other VOCs at spills and other emergency situations. With the ability to detect hundreds of volatile organic compounds, the ALTAIR 5X PID Multigas Detector is the ideal instrument for HazMat applications.





MSA The Safety Company

ALTAIR 5X/5X PID Multigas Detector

Powered by Performance

ALTAIR 5X Multigas Detectors provide industry-leading sensor technology with MSA XCell® Sensors, offering typical life of more than double the industry average. MSA's proprietary Application-Specific Integrated Circuit (ASIC) design miniaturizes sensor controlling electronics, offering superior stability, accuracy, and repeatability.

VOC detection is critical in HAZMAT, Arson Investigations, and several applications emerging in the Fire Service. Advanced Photoionization (PID) Detectors are becoming required tools for the fire service for VOC applications. Count on MSA to bring this advanced technology in an extremely durable and easy-to-use package.

Tremendous Flexibility

Users can simultaneously monitor for VOC with low vapor pressures while measuring for combustible, toxic, and oxygen deficient atmospheres within one reliable, easy-to-use, durable unit.

Durable & Reliable PID Performance

Integrating MSA's patented PID sensor design in our proven reliable multigas detector make this combination a dependable winner. Get the job done reliably and quickly.

Loud, Attention-Grabbing Alarm System

ALTAIR 5X PID Multigas Detectors provide outstanding alarms to clearly warn users of potentially hazardous situations. Rechargeable lithium-ion battery packs keep instruments running for up to 20 hours.

Ordering Information

Description	UL P/N	CSA P/N
Instrument Only Kits		
MONOCHROME DISPLAY, LEL, O_2, CO, H_2S	10116924	10115118
COLOR DISPLAY, LEL, O_2, CO, H_2S, PID	10165445	
Standard Kits *Monochrome Display, 10 ft. (3 m) Sampling Line, 1 ft. (0.3 m) Probe*		
MONOCHROME DISPLAY, LEL, O_2, CO, H_2S	10116926	10115120
Standard Kits *Color Display, 10 ft. (3 m) Sampling Line, 1 ft. (0.3 m) Probe*		
COLOR DISPLAY, LEL, O_2, CO, H_2S	10116928	10115142
COLOR DISPLAY, LEL, O_2, CO, H_2S, PID	10165446	

Accessories

P/N	Description
10042621	Sample probe
10040665	10 ft. (3 m) sample line
801582	Water stop filter, 10 pack
10045035	58 L, quad gas (LEL, O_2, CO, H_2S)
10095774	Vehicle charger
10034391	Demand regulator kit

Sensor Options & Specifications

Gas Type	Range	Resolution
COMBUSTIBLE	0-100%	LEL 1% LEL
OXYGEN	0-30% Vol.	0.1% Vol.
CARBON MONOXIDE	0-1999 ppm	1 ppm
HYDROGEN SULFIDE	0-200 ppm	1 ppm
SULFUR DIOXIDE	0-20 ppm	0.1 ppm
CHLORINE	0-10 ppm	0.1 ppm
AMMONIA	0-100 ppm	1 ppm
NITROGEN DIOXIDE	0-20 ppm	0.5 ppm
CHLORINE DIOXIDE	0-1 ppm	0.01 ppm
PHOSPHINE	0-5 ppm	0.1 ppm
HYDROGEN CYANIDE	0-30 ppm	0.1 ppm
CARBON DIOXIDE	0-10% Vol.	0.01% Vol.
BUTANE	0-25% Vol.	0.1% Vol.
METHANE	0-100% Vol.	1% Vol.
PROPANE	0-100% Vol.	1% Vol.
PID	0-2000 ppm / 1.0 ppm	0-999 ppm / 0.1 ppm



MSA XCell® Technology

MSA revolutionizes sensor technology with design reakthroughs for superior performance that saves you money.

- Sensor response and clear times in less than 15 seconds
- Bump test in less than 15 seconds
- Span calibration time of 60 seconds
- Greater signal stability and repeatability within changing or extreme environmental conditions
- Two-tox CO/H_2S sensor with virtually no cross-channel interference
- Sensor digital output reduces susceptibility to RF interference
- Reliable, extended-life XCell Sensors offer typical life greater than four years
- Laser-welded sensor housings eliminate opportunities for leaks
- Combustible sensor proprietary operating mode improves poison resistance
- End-of-sensor-life warning gives advance notice to user, reducing service outages

ALTAIR 4XR Multigas Detector

The MSA ALTAIR 4XR Multigas Detector is the world's toughest and most reliable four-gas monitor. Proven MSA XCell Sensors are among the fastest available, and when paired with the MSA ALTAIR Connect app, this detector can text alarm notifications to supervisors, team members, or other interested parties.

- < 15-second sensor response time
- 4-year standard warranty
- 5-year expected life
- 24-hour battery run-time
- Agency-certified IP68 rating *(2 m for 1 hour)*
- Can survive incidental 25-ft. (7.6 m) drops
- Meets MIL-STD-810 drop test requirements
- Optional real-time event notification
- Instrument compliance with exclusive red-green LED bump status indicators



Charcoal (left)
Glow-in-the-Dark (right)

Ordering Information

P/N	Description
10178557	LEL, O_2, CO, H_2S (North American charger) charcoal
10178558	LEL, O_2, CO, H_2S (North American charger) glow-in-the-dark

Accessories

P/N	Description
10152669	ALTAIR Pump Probe with charger
10153104	25 ft. (7.6 m) Sample Line for Pump Probe
10082834	JetEye IR Adapter with USB connector
10045035	58 L, quad gas (LEL, O_2, CO, H_2S)
467895	Flow control regulator
10095774	Vehicle charger

Sensor Options & Specifications

Gas Type	Range	Resolution
LEL	0-100%	1%
O_2	0-30% Vol.	0.1% Vol.
CO	0-1999 ppm	1 ppm
H_2S	0-200 ppm	1 ppm
H_2S-LC	0-100 ppm	0.1 ppm
NO_2	0-50 ppm	0.1 ppm
SO_2	0-20 ppm	0.1 ppm

ALTAIR io™ 4 Gas Detection Wearable

With fully integrated cellular connectivity right out-of-the-box, the ALTAIR io 4 Gas Detection Wearable delivers real-time visibility to help drive safety and productivity across workers, worksites, and workflows.

- Available through MSA+, our comprehensive subscription program including hardware and software, gives you access to powerful cloud-based solutions enabling faster implementation, increased warranty coverage and automatic software and firmware upgrades—with minimal capital expense.
- Designed with fully integrated connectivity for real-time visibility across your worksites from day one.
- CAT-M LTE cellular connectivity and integration with the MSA Grid.
- Deploys in seconds, right out of the box. No IT required.
- Rugged, durable design and industry-leading XCell® Sensors.
- Survives a 25-foot drop test.
- Breakthrough sensor design enables faster response and shorter span calibrations.



Ordering Information

P/N	Description
10245598	LEL, O_2, CO, H_2S *(US outright purchase)*
10248523	LEL, O_2, CO, H_2S *(US outright purchase)*
SUBSCRIPTION	*Please contact MSA Customer Service*

Accessories

P/N	Description
10152669	ALTAIR Pump Probe with charger
10153104	25 ft. (7.6 m) Sample Line for Pump Probe
10045035	58 L, quad gas (LEL, O_2, CO, H_2S)
467895	Flow control regulator

Sensor Options & Specifications

Gas Type	Range	Resolution
LEL	0-100%	1%
O_2	0-30% Vol.	0.1% Vol.
CO	0-1999 ppm	1 ppm
H_2S	0-200 ppm	1 ppm
H_2S-LC	0-100 ppm	0.1 ppm

ALTAIR 2X Gas Detector

Introducing the ALTAIR 2X Gas Detector from MSA—the first one or two gas detector that incorporates industryleading XCell® Sensor Technology to deliver unparalleled performance while drastically minimizing total cost of ownership, increasing durability, and delivering enhanced worker safety, compliance, and traceability.



Built Tough

Like all MSA detectors, ALTAIR 2X Gas Detector is built for durability and designed for the work that is being completed.

- Withstands extreme impacts with rugged polycarbonate housing and passes 25 ft. (7.6 m) drop test
- IP 67-rated ALTAIR 2X is both dust-tight and water-tight
- Minimal rF interference
- Full three-year warranty supports the entire instrument, including the sensors

Ordering Information

Detector Type (Low, High Alarm in ppm)	P/N
ALTAIR 2X Single-Gas Detector	
CO (25, 100)	10153986
CO-H_2 (25, 100)	10154074

Detector Type (Low, High Alarm in ppm)	P/N
ALTAIR 2X Two-Tox Gas Detector	
CO/H_2S (CO: 25, 100; H_2S: 10, 15)	10154040
CO-H_2/H_2S (CO: 25, 100; H_2S: 10, 15)	10154071
CO/H_2S-LC (CO: 25, 100; H_2S: 5, 10)	10154072
CO/NO_2 (CO: 25, 100; NO_2: 2.5, 5)	10154073

ALTAIR Pro HCN Single-Gas Detectors

Ease of Use

ALTAIR Pro HCN Gas Detectors combine user flexibility and functional simplicity. Units use an easily replaceable, commercially available battery and one button operation.

Distinctive Alarm System

Triple alarm system's piercing audible alarm averages 95 dB at 1 ft. (0.3 m) and is designed not to be confused with other sounds. Visual alarm features dual bright top LED to be seen from all angles. Internal vibrating alarm is standard with all units.

Built-in iR Communication (Event & Data-Logging)

ALTAIR Pro HCN Gas Detectors provide standard data logging, automatically recording the 50 latest events while simultaneously recording peak readings every three minutes.

Durability

Thick rubberized housing withstands accidental drops and other impacts. 10 ft. (3 m) drop test and IP67-rated for water-and-dust resistance.



Ordering Information

P/N	Instrument Type	Low Alarm	High Alarm	STEL	TWA
10076729	Hydrogen Cyanide (HCN)	4.7 ppm	10 ppm	10 ppm	4.7 ppm

Accessories

P/N	Description
711072	Cal Gas, 10 ppm HCN, 34 L
655051	Replacement HCN sensor
467895	Flow Control Regulator
602294	Tubing
10150609	Cal Gas, 60 ppm CO, 116 L

The Importance of Calibration & Bump Testing

It is vital to firefighter safety that portable gas detectors are maintained and calibrated properly. All sensors can eventually expire due to loss of sensitivity, slowed response time or both. Because of this, performance of a daily bump test is best practice because it is the only method by which the entire system: instrument, sensors, flow path, power source, alarms, and all electronics can be checked to ensure that it is functioning properly. That's why most manufacturer instructions recommend a daily bump test each day, prior to operation of gas detectors.

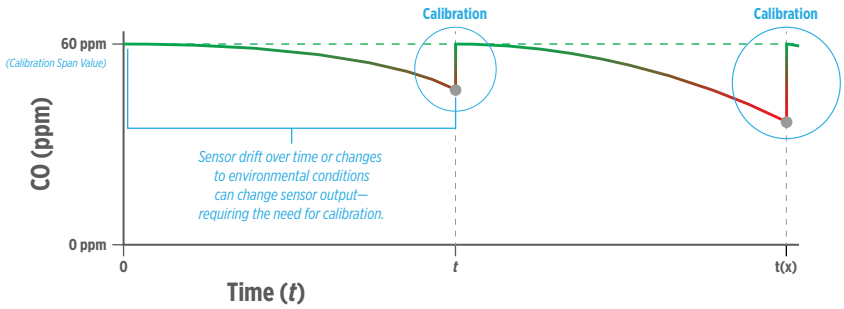
Sensor drift

All electrochemical sensors will eventually lose sensitivity over time with exposure to work conditions. Calibration is used to compensate for the loss of sensitivity and adjust the readings to the new sensitivity output level.

Drift is the amount that sensor output changes over time. All sensors experience drift. Once the sensitivity becomes too low, it becomes more difficult to assess exact differences in gas concentrations. Sensors typically have a fixed sensitivity limit assigned by the detector; once that limit is reached, they will not pass calibration.

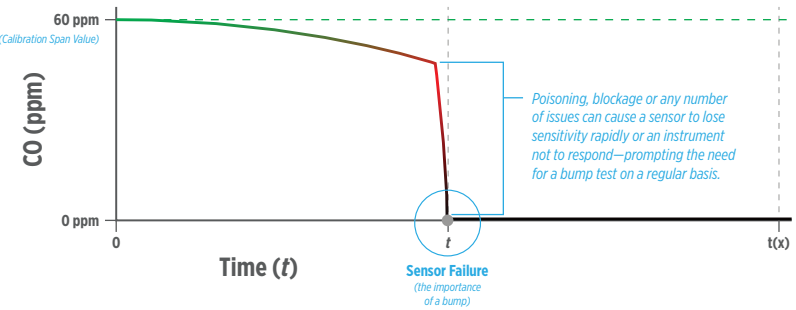
What is Calibration?

Calibration is an adjustment of the sensor(s) output to match the known traceable calibration gas concentration. Full calibration ensures maximum accuracy of the instrument. Environmental conditions such as over-exposures, introduction of poisons, heavy impacts, or other extreme environmental changes can cause sensors to become less accurate. Calibration allows the instrument to manage these changes in sensitivity.



What is a Bump Test?

Bump tests are meant to verify that the sensors and the alarms function properly and that the sensors respond within acceptable margins. Gases or vapors must be able to reach the sensor. Bump tests confirm that gas flow paths to the sensor on the detector are clear and the sensor(s) are functioning from a qualitative stand-point. Bump testing will alert users if a gas inlet has become blocked, even if the blockage is not visible. The bump test, however, is not meant to adjust the device's accuracy.



GALAXY® GX2 Automated Test System

Simplicity counts with the MSA GALAXY GX2 Automated Test System for advanced safety management and effortless operation. GALAXY GX2 Automated Test System provides simple, intelligent testing and calibration of MSA ALTAIR and ALTAIR PRO Single-Gas Detectors and ALTAIR 4XR and ALTAIR 5X Multigas Detectors. Easy-to-use automated test stand offers high performance as either stand-alone unit or integrated portable detector management system, enabling total data access and control of the MSA ALTAIR family Gas Detector fleet. MSA Grid Live Monitor features: secure web-based setup and access, IT-free maintenance, real-time worker health and safety notifications, incident and compliance awareness, management and reports, and is exclusively for ALTAIR 4XR and 5X Detectors.

- Color touch screen for ease of setup and viewing
- Extremely simple to use; testing starts automatically without touching a single button
- Simultaneous testing of up to ten instruments
- GALAXY GX2 Automated Test System is optimized for use with MSA XCell Sensors, providing up to 50% cost of ownership reduction
- At-a-glance indicators include low calibration gas volume, expiration warnings, and test stand status
- MSA Grid Fleet Manager has replaced MSA Link Pro Software
- 18 languages available for test stand



Ordering Information

	1 Valve (for use with 1 calibration gas cylinder)		4 Valve (for use with 1-4 calibration gas cylinder[s])	
	Charging	*No-Charging*	*Charging*	*No-Charging*
ALTAIR / ALTAIR PRO SINGLE-GAS DETECTOR	—	10128644	—	10128643
ALTAIR 4XR MULTIGAS DETECTOR	10128630	10128642	10128629	10128641
ALTAIR 5X MULTIGAS DETECTOR	10128626	10128628	10128625	10128627

Accessories

P/N	Description
10127422	ALTAIR 4XR Detector Multi-unit Charger
10127427	ALTAIR 5X Detector Multi-unit Charger
10161803	ALTAIR 4XR/4X & 5X (2:2) Detector Multi-unit Charger
10105756	Electronic Cylinder Holder
10125135	Standard Cylinder Holder
10034391	Demand regulator kit
10127111	Memory Card

Calibration Cylinders & Accessories

P/N	Description
10034391	Demand flow regulator (universal)
10050985	Kit, case with Gas Miser® Regulator, demand flow RP (includes tubing and fitting, less gas)
10041225	Calibration tubing with Quick-Disconnect fitting
10045035	58 L quad gas (60 ppm CO, 20 ppm H_2S, 15% O_2, 1.45% CH_4)
10048280	34 L quad gas (60 ppm CO, 20 ppm H_2S, 15% O_2, 1.45% CH_4)
10048789	34 L cylinder (60 ppm CO, 15% O_2, 1.45% CH_4)
711072	34 L Econo-Cal® cylinder (10 ppm HCN)

ALTAIR io™ Dock

The ALTAIR io 4 Dock enables effortless calibration and bump testing which helps to improve compliance and safety. When in the ALTAIR io Dock, the ALTAIR io 4 Gas Detection Wearable knows when it needs a bump test and immediately runs the appropriate test. When the ALTAIR io 4 device is in the Dock, all compliance reporting is sent immediately to your MSA Grid account, helping to minimize the risks associated with manual record keeping or data file management.

- Simultaneous testing of multiple detectors and sensor configurations
- Test bank can include up to three-cylinder holders and 10 test stands with no messy calibration gas tubing
- Gas cylinders can be RFID-enabled or manually configured
- Cylinder Holder LEDs provide Light band indication of low, empty, or expired calibration gas
- No networking required for compliance reporting to the cloud-based MSA Grid account
- The display indicates current Bank status including current cylinder expiration and pressure in PSI or Bar, while Test Stand LEDs and display indicates current test and test stand status
- The ALTAIR io 4 Dock Leverages the ALTAIR io 4 device connectivity for fast, correct test system setup with no complex user-interface
- Test Modes include:
  - Bump test only
  - Calibration only
  - Bump test with calibration on failure of bump
  - Smart Mode—Dock will perform a bump test or calibration as required by the Grid-configured gas detector settings without user intervention



ALTAIR io Dock Test Stand & Cylinder Holder (top)

ALTAIR io Charge smart charger (bottom)



Ordering Information

P/N	Description
10242914	ALTAIR io Dock Test Stand, global, purchase

Accessories

P/N	Description
10242913	ALTAIR io Dock Cylinder Holder, global, purchase
10242927	ALTAIR io CHARGE 5-Device Smart Charger, purchase

Note: This Bulletin contains only a general description of the products shown. While product uses and performance capabilities are generally described, the products shall not, under any circumstances, be used by untrained or unqualified individuals. The products shall not be used until the product instructions/user manual, which contains detailed information concerning the proper use and care of the products, including any warnings or cautions, have been thoroughly read and understood. Specifications are subject to change without prior notice. MSA is a registered trademark of MSA Technology, LLC in the US, Europe, and other Countries. For all other trademarks visit https://us.msasafety.com/Trademarks.

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