

# ALTAIR® 5X Multigas Detector

With MSA XCell® Sensor Technology

## Frequently Asked Questions

### 1 MSA's ALTAIR 5X Multigas Detector uses NEW MSA XCell® Sensors. Aren't all electrochemical and catalytic bead sensors basically the same?

All sensors are **not** the same. Sensors are the heart of an instrument; sensor performance can vary greatly depending upon manufacturer. Most multigas detectors use the same sensors from the same few global suppliers. MSA has designed a superior gas detection sensor platform with built-in microelectronic control circuitry that is specifically optimized for MSA gas detectors. MSA XCell Sensors are designed for longer life, faster response, and higher performance when used with MSA's ALTAIR 5X Multigas Detector.

The MSA XCell Sensors used in ALTAIR 5X Multigas Detectors for combustible gas, O<sub>2</sub>, CO, and H<sub>2</sub>S are the same sensors used in ALTAIR 4X Multigas Detectors and are interchangeable among these instruments. In addition, three new XCell Sensors are now available for ALTAIR 5X Multigas Detectors for sulfur dioxide (SO<sub>2</sub>), ammonia (NH<sub>3</sub>), and chlorine (Cl<sub>2</sub>).

MSA has designed and manufactured gas detection sensors and instruments for decades. Our experts are there to support you with all product or application concerns, allowing you to focus on your core business.

### 2 What are the benefits of new MSA XCell Sensors for sulfur dioxide (SO<sub>2</sub>), ammonia (NH<sub>3</sub>), and chlorine (Cl<sub>2</sub>)?

The newest additions to MSA's XCell Sensor platform are SO<sub>2</sub>, NH<sub>3</sub>, and Cl<sub>2</sub>. These sensors have the same embedded controlling microelectronics, same digital output, and same form factor as other XCell Sensors. The key difference concerns new patent-pending electrolyte systems that generate longer-lasting, more stable sensors that also offer extremely fast response.

### 3 How does the ALTAIR 5X Multigas Detector's end-of-sensor-life warning and indicator work?

Following each calibration, a software algorithm calculates each sensor's approximate remaining life. When it is determined that the sensor is nearing its end-of-life, the instrument displays that sensor's end-of-life warning. Users are given advanced notice (four to six weeks of typical use) that a sensor is nearing its end of life in order to plan for sensor replacement.

**The instrument and sensor can continue to be used after the end-of-sensor-life warning, as long as regular bump tests are passed.**

If sensor output during calibration is too low, the unit will fail calibration and the end-of-sensor-life indicator will be displayed on the instrument screen. This information tells users that the end of the sensor's useful life has been reached and that the instrument should not be used until the sensor is replaced.

### 4 What primary applications should be considered when purchasing the ALTAIR 5X Multigas Detector's infrared (IR) sensor?

Catalytic combustible sensors are popular as they are extremely versatile in detecting an array of combustible gases and mixtures. They are simple to use, cost effective, and very reliable. They also detect hydrogen (H<sub>2</sub>), which typical IR sensors do not.

IR sensors play an important role in gas detection concerning certain situations and applications:

(a.) Inert gas sampling: catalytic combustible sensors need at least 10% O<sub>2</sub> content for proper functionality. For this application, either a dilution tube or an MSA IR sensor can be used. IR sensors do not need O<sub>2</sub> to function and are therefore ideal for inert sampling.

#### MSA XCell Sensor Quick Facts:

- Long life: four-year life (SO<sub>2</sub>), three-year life (NH<sub>3</sub>, Cl<sub>2</sub>)
- Both SO<sub>2</sub> and NH<sub>3</sub> use a non-consuming chemical reaction, resulting in no permanent loss of life with normal gas exposure
- Fast average t<sub>90</sub> response times: 10-second SO<sub>2</sub>, 40-second NH<sub>3</sub>, 30-second Cl<sub>2</sub>
- Maintain stable functionality in extreme temperatures and in extremely dry or wet environments



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- (b.) Sampling with background poisons: catalytic combustible sensors can be poisoned by particular substances (most commonly by silicones or lead compounds). IR sensors are not impacted by these poisons and are ideal for sampling in areas where it is known that catalytic sensors are non-functional.
- (c.) CO2 detection: CO2 is a toxic gas that is difficult to detect with electrochemical sensors. An ALTAIR 5X Multigas Detector CO2 sensor is ideal for this application.

## 5 Historically, oxygen (O2) sensor technology is seen as problematic and short-lived. How does MSA's XCell O2 Sensor actually achieve a typical lifespan of more than four years?

Most O2 sensors on the market today use a consumable chemical reaction wherein lead is consumed and converted to lead oxide. These sensors have a very finite life; once the lead is consumed, the sensor stops working.

MSA's XCell O2 Sensor uses a non-consumable chemical reaction; O2 is converted to water and then back to O2. The sensor does not "use itself up" each time it sees O2, generating a much longer shelf-life and overall lifespan.

## 6 The ALTAIR 5X Multigas Detector uses MSA XCell Sensors that offer fast response and clear times. How do I translate that into cost savings?

Over a product's life, customers spend more money on calibration time and gas usage than on initial instrument purchase. MSA's XCell Sensor's speed of response allows for faster calibration and bump test times. A perfect example of this is the industry-first 60-second LEL, O2, H2S, CO, and SO2 single-bottle span calibration and 10-second bump test. The ALTAIR 5X Multigas Detector also offers the industry's lowest gas flow rates, further adding to calibration gas savings.

For more detailed information regarding cost of ownership savings, download MSA's **cost of ownership calculator** from <http://msanet.com/ALTAIR5X/> or contact an MSA sales representative.

## 7 The ALTAIR 5X Multigas Detector uses an integral pump. What are the advantages of an integral pump over snap-on sampling solutions?

Although they are more expensive, integral pumps provide advantages that far outweigh the cost benefit of snap-on solutions, demonstrated by the ALTAIR 5X Multigas Detector's industry-leading durability and its ability to survive a 10-foot drop. Integral pumps allow instruments to be tightly packed so that the instrument's rugged over-molded housing can act as a pump-protecting shield.

Another important advantage is that pump integration achieves a better overall ergonomic design that allows for less cumbersome handling. Many competitive snap-on pump solutions are bulky and not easy to handle. Lastly, ease of maintenance and service is improved by having all instrument parts internally integrated.

## 8 Can the ALTAIR 5X Multigas Detector be configured for different languages?

The ALTAIR 5X Multigas Detector user interface is user-selectable for up to 18 languages, including English, Spanish, French, Portuguese, and others. When you first receive the instrument out-of-box, you will be prompted to select your language of choice. During regular operation, customers can also enter the setup menu or use MSA Link™ Software to update the instrument's language setting.

## 9 When and why do I need MotionAlert™ and InstantAlert™ features?

If you must work alone, be sure to have the instrument that alerts others. Only MSA offers these potentially life-saving features: MSA's **MotionAlert feature** to alert others in the area if a worker is down due to hazardous gas exposure or other threats. **InstantAlert feature** is a manual alarm activated by users to alert others of potentially hazardous situations.

MSA's MotionAlert feature operation is very similar to that of a PASS device; first warnings and second warnings can be reset by moving the device and will alarm after 20 and then 24 seconds of no detected movement. Final alarm sounds after 30 seconds of no detected movement and can be reset only by pressing the **DOWN** button.

MSA's InstantAlert feature is activated by pressing and holding the **DOWN** button for five seconds. This alarm can only be cleared by pressing the **UP** button.

## 10 How can I use MSA's Logo Express® Service option on the ALTAIR 5X Multigas Detector?

When you order an MSA ALTAIR 5X Multigas Detector and choose the Logo Express Service option, MSA will email you a Web link for you to use to upload your logo artwork. For security reasons, this site authenticates via your sales order number and customer account number. Once the logo has been successfully uploaded, instrument manufacturing will begin. Please note that the factory will **not** start a Logo Express Service unit build until the logo has been successfully uploaded to the Web site.

**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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