

# MSA XCell<sup>®</sup> Sensors



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

## XCell Sensors

MSA XCell Sensors are a breakthrough in sensor design, enabling faster response and shorter span calibrations, saving you time and money. **ASIC** (application-specific integrated circuit) technology inside of each sensor provides greater control and higher performance than other sensors on the market.

Every XCell Sensor is built by MSA with a proprietary embedded ASIC microchip that drives the sensor and converts its output to a digital signal. This microchip is much more than a digital sensor; XCell Sensors perform real-time environmental corrections, provide plug-and-play capabilities and deliver greater RF immunity with higher overall performance.

MSA XCell Sensors have a typical life of more than four years\*, double the industry average. By miniaturizing sensor controlling electronics and placing them inside of the sensor itself, MSA XCell Sensors offer superior response time, stability, accuracy, and reliability. MSA is proud to offer XCell Sensors with:

- State-of-the-art automated assembly for greater control and reliability.
- Laser-welded sensor housings to eliminate opportunities for leaks.
- End-of-sensor-life warning to minimize downtime and inventory replacement.

*With less time spent on calibration and bump tests, you save on calibration gas, maintenance costs and in turn, save money. But most importantly, MSA's industry-leading response times help to save lives.*



\*Refers to most standard XCell Sensors. Specific exotic gas and special application sensors have shorter expected lives. Please refer to [www.MSASafety.com](http://www.MSASafety.com) for additional information.

# Combustible

## Ex Sensor

P/N 10106722

<b>Gas:</b>	Combustible (LEL)
<b>Package:</b>	Single gas
<b>Range:</b>	0-100% LEL or 0-5% CH <sub>4</sub>
<b>Resolution:</b>	1% LEL or 0.05% Vol CH <sub>4</sub>
<b>Response Time (typ):</b>	t(90) <15 seconds (pentane) t(90) <10 seconds (methane)
<b>Alarm Setpoint:</b>	Min 5% LEL/ Max 60% LEL
<b>Warranty:</b>	3 years



- Advantages:**
- Long life: >4-year life using dual detector beads means fewer sensor replacements over the instrument's life.
  - Durable: patented support system allows sensor to survive a 20-foot drop in an ALTAIR® 4X Multigas Detector.
  - Response: industry-leading response time not only helps to save lives, but your time and money as well.
  - Performance: run up to 3 shifts with XCell Sensor's low power consumption.
  - Resilience: extremely robust filter helps to keep sensors free of poisons and inhibitors.

## Ex-M Sensor

P/N 10121212

<b>Gas:</b>	Combustible (LEL)
<b>Package:</b>	Single gas
<b>Range:</b>	0-100% LEL or 0-5% CH <sub>4</sub>
<b>Resolution:</b>	1% LEL or 0.05% Vol CH <sub>4</sub>
<b>Response Time (typ):</b>	t(90) <15 seconds (pentane) t(90) <10 seconds (methane)
<b>Alarm Setpoint:</b>	Min 2% LEL/ Max 60% LEL
<b>Warranty:</b>	3 years



- Advantages:**
- Specialized: additional stability for extended CH<sub>4</sub> exposures found in mining/liquefied natural gas (LNG) applications.
  - Long life: >4-year life using dual detector beads means fewer sensor replacements over the instrument's life.
  - Resilience: extremely robust filter helps to keep sensors free of poisons and inhibitors.

## Ex-H Sensor

P/N 10121211

<b>Gas:</b>	Combustible (LEL)
<b>Package:</b>	Single gas
<b>Range:</b>	0-100% LEL or 0-5% CH <sub>4</sub>
<b>Resolution:</b>	1% LEL or 0.05% Vol CH <sub>4</sub>
<b>Response Time (typ):</b>	t(90) <15 seconds (pentane) t(90) <10 seconds (methane)
<b>Alarm Setpoint:</b>	Min 5% LEL/ Max 60% LEL
<b>Warranty:</b>	1 year



- Advantages:**
- Specialized: increased response to select solvents and heavy hydrocarbons (acetone, nonane, methyl ether keytone (MEK), xylene).

\*Not available for CSA-approved instruments.

# Oxygen

## O<sub>2</sub> Sensor

P/N 10106729

- Gas:** Oxygen
- Package:** Single gas
- Range:** 0-30% Vol O<sub>2</sub>
- Resolution:** 0.1% O<sub>2</sub>
- Response Time (typ):** t(90) <10 seconds
- Alarm Setpoint:** Min 5% Vol/ Max 24% Vol
- Warranty:** 3 years



- Advantages:**
  - Long life: >4-year life, more than 100% additional life than other lead-based sensors.
  - False-alarm rejection: don't be fooled; XCell Sensors are immune to pressure spikes.
  - Durable: when other sensors freeze, XCell Sensors keep working down to -40°C.

# Carbon Monoxide

## CO/H<sub>2</sub>S Sensor

P/N 10106725

- Gas:** Carbon monoxide
- Package:** Two-tox
- Range:** 0-1999 ppm CO
- Resolution:** 1 ppm CO
- Response Time (typ):** t(90) <15 seconds
- Alarm Setpoint:** Min 10 ppm/ Max 1700 ppm
- Warranty:** 3 years

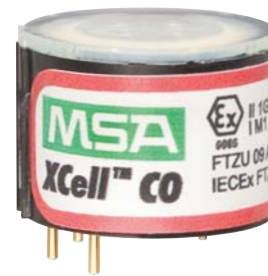


- Advantages:**
  - Long life: >4-year life means fewer sensor replacements over the instrument's life.
  - Reliability: virtually no cross-channel interference brings accuracy to a new level.
  - Stability: when it comes to helping to savings lives, be secure in knowing that XCell Sensors are rock solid performers.
  - Response: industry-leading response time not only helps to save lives, but your time and money as well.
  - Resilience: extremely robust filter means that you see the gas of interest.

## CO-HC Sensor

P/N 10121216

**Gas:** Carbon monoxide (high concentration)  
**Package:** Single Gas  
**Range:** 0-10,000 ppm CO  
**Resolution:** 5 ppm CO  
**Response Time:** t(90) <15 seconds normal temperature  
**Alarm Setpoint:** Min 10ppm/ Max 8500ppm  
**Warranty:** 3 years

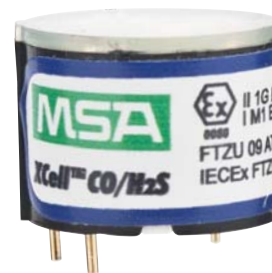


- Advantages:**
- Performance: Extended range for high concentration CO applications
  - Long life: >4-year life means fewer sensor replacements over the instrument's life
  - Reliability: Feel confident that XCell Sensor's linearity provides accuracy across the entire readable range
  - Response: Industry-leading response time not only helps to save lives, but your time and money as well
  - Resilience: Extremely robust filter means that you can even operate within environments where alcohol vapors may be present

## H<sub>2</sub>S/CO H<sub>2</sub> RES Sensor

P/N 10121214

**Gas:** Carbon monoxide (hydrogen-resistant)  
**Package:** Two-tox  
**Range:** 0-1999 ppm CO  
**Resolution:** 1 ppm CO  
**Response Time:** t(90) <15 seconds normal temperature  
**Alarm Setpoint:** Min 10ppm/ Max 1700ppm  
**Warranty:** 3 years



- Advantages:**
- Performance: This XCell Sensor has 10 times less sensitivity to hydrogen (<5% Cross Sensitivity)
  - Long life: >4-year life means fewer sensor replacements over the instrument's life
  - Response: Industry-leading response time not only helps to save lives, but your time and money as well
  - Resilience: Extremely robust filter means that you see the gas of interest

# Hydrogen Sulfide

## CO/H<sub>2</sub>S Sensor

P/N 10106725

- Gas:** Hydrogen sulfide
- Package:** Two-tox
- Range:** 0-200 ppm H<sub>2</sub>S
- Resolution:** 1 ppm H<sub>2</sub>S
- Response Time (typ):** t(90) <15 seconds
- Alarm Setpoint:** Min 5 ppm/ Max 175 ppm
- Warranty:** 3 years



- Advantages:**
  - Long life: >4-year life means fewer sensor replacements over the instrument's life.
  - Response: industry-leading response time not only helps to save lives, but your time and money as well.
  - Stability: when it comes to helping to save lives, be secure in knowing that XCell sensors are rock solid performers.

## CO/H<sub>2</sub>S-LC Sensor

P/N 10121213

- Gas:** Hydrogen sulfide (low concentration)
- Package:** Two-tox
- Range:** 0-100 ppm H<sub>2</sub>S
- Resolution:** 0.1 ppm H<sub>2</sub>S
- Response Time (typ):** t(90) <15 seconds
- Alarm Setpoint:** Min 1 ppm/ Max 70 ppm
- Warranty:** 3 years



- Advantages:**
  - Long life: >4-year life means fewer sensor replacements over the instrument's life.
  - False-alarm rejection: don't be fooled; increased sensitivity means fewer false alarms, allowing you to work uninterrupted.
  - Response: industry-leading response time not only helps to save lives, but your time and money as well.

# Sulfur Dioxide

## SO<sub>2</sub> Sensor

P/N 10106727

**Gas:** Sulfur dioxide

**Package:** Single gas

**Range:** 0-20 ppm SO<sub>2</sub>

**Resolution:** 0.1 ppm SO<sub>2</sub>

**Response Time (typ):** t(90) <10 seconds

**Alarm Setpoint:** Min 0.5 ppm/ Max 17.5 ppm

**Warranty:** 3 years

- Advantages:**
- Long life: >4-year life outlasts competition by more than 33%.
  - Response: industry-leading response time not only helps to save lives, but your time and money as well.
  - Resilience: XCell Sensors continues to perform within low humidity environments when others do not.



## H<sub>2</sub>S/SO<sub>2</sub> Sensor

P/N 10121215

**Gas:** Sulfur dioxide

**Package:** Two-tox

**Range:** 0-20 ppm SO<sub>2</sub>

**Resolution:** 0.1 ppm SO<sub>2</sub>

**Response Time (typ):** t(90) <15 seconds

**Alarm Setpoint:** Min 1 ppm/ Max 17.5 ppm

**Warranty:** 3 years

- Advantages:**
- Long life: >4-year life outlasts competition by more than 33%.
  - Response: industry-leading response time not only helps to save lives, but your time and money as well.
  - Resilience: XCell Sensors continues to perform within low humidity environments when others do not.



# Nitrogen Dioxide

## CO/NO<sub>2</sub> Sensor

P/N 10121217

- Gas:** Nitrogen dioxide
- Package:** Two-tox
- Range:** 0-50 ppm NO<sub>2</sub>
- Resolution:** 0.1 ppm NO<sub>2</sub>
- Response Time (typ):** t(90) <15 seconds
- Alarm Setpoint:** Min 1 ppm/ Max 47.5 ppm
- Warranty:** 3 years



- Advantages:**
  - Long life: >4-year life means fewer sensor replacements over the instrument's life.
  - Response: industry-leading response time not only helps to save lives, but your time and money as well.
  - Stability: when it comes to helping to save lives, be secure in knowing that XCell Sensors are rock solid performers.

# Ammonia

## NH<sub>3</sub> Sensor

P/N 10106726

- Gas:** Ammonia
- Package:** Single gas
- Range:** 0-100 ppm NH<sub>3</sub>
- Resolution:** 1 ppm NH<sub>3</sub>
- Response Time (typ):** t(90) <40 seconds
- Alarm Setpoint:** Min 10 ppm/ Max 75 ppm
- Warranty:** 2 years



- Advantages:**
  - Long life: >3-year life with patent-pending non-consuming reaction outlasts competition by more than 50%.
  - Resilience: XCell NH<sub>3</sub> Sensors recover from repeated exposures, meaning fewer sensor replacements.
  - Response: industry-leading response time not only helps to save lives, but your time and money as well.

*\*Not suitable for use in NH<sub>3</sub>-enriched environment*



# Chlorine

## Cl<sub>2</sub> Sensor

P/N 10106728

**Gas:** Chlorine

**Package:** Single gas

**Range:** 0-10 ppm Cl<sub>2</sub>

**Resolution:** 0.05 ppm Cl<sub>2</sub>

**Response Time (typ):** t(90) <30 seconds

**Alarm Setpoint:** Min 0.3 ppm/ Max 7.5 ppm

**Warranty:** 2 years

- Advantages:**
- Life: >3-year life, patent-pending non-consuming reaction outlasts competition by more than 50%.
  - Response: industry-leading response time not only helps to save lives, but your time and money as well.
  - Stability: when it comes to helping to save lives, be secure in knowing that XCell Sensors are rock solid performers.
  - Resilience: XCell Sensors continue to perform within low humidity environments when others do not.



*Additional toxic sensors available for detection of PH<sub>3</sub>, HCN, ClO<sub>2</sub>, NO, and CO<sub>2</sub> in the ALTAIR 5X Multigas Detector.*

## XCell Sensor Applications

	Combustible			Oxygen	Carbon Monoxide			Hydrogen Sulfide		Sulfur Dioxide		Nitrogen Dioxide	Ammonia	Chlorine
	Ex	Ex-M	Ex-H	O <sub>2</sub>	CO/H <sub>2</sub> S	CO-HC	H <sub>2</sub> S/CO H <sub>2</sub> RES	CO/H <sub>2</sub> S	CO/ H <sub>2</sub> S-LC	SO <sub>2</sub>	H <sub>2</sub> S/SO <sub>2</sub>	CO/NO <sub>2</sub>	NH <sub>3</sub>	Cl <sub>2</sub>
AEROSPACE	■			■										
AGRICULTURE	■			■	■			■	■			■	■	
AUTOMOTIVE	■			■						■	■	■		
AVIATION	■			■								■		
CHEMICAL	■		■		■			■	■	■	■	■	■	■
FIRE	■			■	■			■	■					
FOOD/BEVERAGE	■			■	■			■	■	■	■	■	■	■
FOUNDRIES	■			■	■			■	■	■	■	■		
HAZMAT	■			■	■			■	■	■	■		■	
HEAVY MANUFACTURING	■			■	■			■	■	■	■	■	■	
HVAC	■			■								■	■	
INDOOR AIR QUALITY	■			■										
MARINE	■				■			■	■			■	■	■
MEDICAL	■												■	
MINING		■		■	■	■		■	■			■		
OIL/GAS/PETROLEUM	■	■	■	■	■			■	■	■	■		■	
PAPER/PULP	■									■	■	■	■	■
PHARMACEUTICAL	■									■	■		■	■
POWER	■									■	■	■	■	
SEMICONDUCTOR	■											■	■	■
STEEL	■				■	■	■	■	■	■	■	■	■	
WATER/WASTEWATER	■				■			■	■	■	■		■	■
WELDING	■											■	■	

\*Additional sensors available for detection of PH<sub>3</sub>, HCN, ClO<sub>2</sub>, NO, and CO<sub>2</sub> in the ALTAIR 5X Multigas Detector.

## XCell Sensor Instrument Compatibility

	Ex	Ex-M	Ex-H	O <sub>2</sub>	CO/H <sub>2</sub> S	CO-HC	H <sub>2</sub> S/CO H <sub>2</sub> RES	CO/ H <sub>2</sub> S-LC	SO <sub>2</sub>	H <sub>2</sub> S/SO <sub>2</sub>	CO/NO <sub>2</sub>	NH <sub>3</sub>	Cl <sub>2</sub>
ALTAIR 4X MULTIGAS DETECTOR	YES	YES	YES	YES	YES	NO	YES	YES†	NO	YES†	YES†	NO	NO
ALTAIR 5X MULTIGAS DETECTOR	YES	YES	YES	YES	YES	YES‡	YES	YES‡	YES	NO	YES‡	YES	YES

† Requires ALTAIR 4X Multigas Detector software version 2.03 or greater

‡ Requires ALTAIR 5X Multigas Detector software version 1.27.06 or greater



TK 1  
SODIUM HYDROXIDE  
NO. 1 36-21-6  
NO. 7 32-18-5  
HIBY-AMMON-TK14



# MSA—The Safety Company

---

*Our business is safety. We've been the world's leading manufacturer of high-quality safety products since 1914. MSA products may be simple to use and maintain, but they're also highly-sophisticated devices and protective gear — the result of countless R&D hours, relentless testing, and an unwavering commitment to quality that saves lives and protects thousands of men and women each and every day. Many of our most popular products integrate multiple combinations of electronics, mechanical systems, and advanced materials to ensure that users around the world remain protected in even the most hazardous of situations.*

*Our dedication to safety has been the key to our impressive year-over-year growth. In 8 of the past 10 years we've achieved record growth numbers, with annual revenues of more than \$1 billion.*

## Our Mission

---

MSA's mission is to see to it that men and women may work in safety and that they, their families, and their communities may live in health throughout the world.

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

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.



**ID 0800-71-MC / November 2013**  
© MSA 2013 Printed in U.S.A.

**MSA Corporate Center**  
1000 Cranberry Woods Drive  
Cranberry Township, PA 16066 USA  
Phone 724-776-8600  
[www.MSAafety.com](http://www.MSAafety.com)

**U.S. Customer Service Center**  
Phone 1-800-MSA-2222  
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](mailto:msa.international@msafety.com)

**Offices and representatives worldwide**  
For further information: