



WE KNOW WHAT'S AT STAKE.

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.MSAafety.com for additional information.

Combustible

Ex Sensor **P/N 10106722** **ALTAIR 4X, ALTAIR 4XR, ALTAIR 5X**

Gas: Combustible (LEL)
Package: Single gas
Range: 0-100% LEL or 0-5% CH₄
Resolution: 1% LEL or 0.05% Vol CH₄
Response Time (typ): t(90) <10 seconds (methane)
t(90) <15 seconds (pentane)
Alarm Setpoint: Min 5% LEL/ Max 60% LEL
Warranty: 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 6-meter 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** **ALTAIR 4X, ALTAIR 4XR**

Gas: Combustible (LEL)
Package: Single gas
Range: 0-100% LEL or 0-5% CH₄
Resolution: 1% LEL or 0.05% Vol CH₄
Response Time (typ): t(90) <10 seconds (methane)
Alarm Setpoint: Min 2% LEL/ Max 60% LEL
Min 0.1% VOL/ Max 3% VOL
Warranty: 3 years
Advantages:

- Specialized: additional stability for extended CH₄ 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** **ALTAIR 4X, ALTAIR 4XR, ALTAIR 5X**

Gas: Combustible (LEL)
Package: Single gas
Range: 0-100% LEL or 0-5% CH₄
Resolution: 1% LEL or 0.05% Vol CH₄
Response Time (typ): t(90) <10 seconds (methane)
t(90) <15 seconds (pentane)
Alarm Setpoint: Min 5% LEL/ Max 60% LEL
Warranty: 1 year
Advantages:

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



Oxygen

O₂ Sensor

P/N 10106729

ALTAIR 4X, ALTAIR 4XR, ALTAIR 5X

Gas:	Oxygen
Package:	Single gas
Range:	0-30% Vol O ₂
Resolution:	0.1% O ₂
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/H₂S Sensor

P/N 10106725

ALTAIR 4X, ALTAIR 4XR, ALTAIR 5X

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.



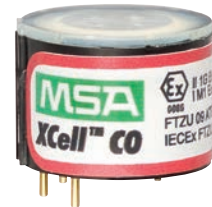
CO-HC Sensor

P/N 10121216

ALTAIR 5X

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 10 ppm/ Max 8500 ppm
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.



H₂S/CO H₂ RES Sensor P/N 10121214

ALTAIR 4X, ALTAIR 4XR, ALTAIR 5X

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 10 ppm/ Max 1700 ppm
Warranty: 3 years
Advantages:

- Performance: this XCell Sensor has a very low cross-sensitivity to Hydrogen <5%.
- 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/H₂S Sensor **P/N 10106725** **ALTAIR 4X, ALTAIR 4XR, ALTAIR 5X**

Gas: Hydrogen sulfide
Package: Two-tox
Range: 0-200 ppm H₂S
Resolution: 1 ppm H₂S
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/H₂S-LC Sensor **P/N 10121213** **ALTAIR 4X, ALTAIR 4XR, ALTAIR 5X**

Gas: Hydrogen sulfide (low concentration)
Package: Two-tox
Range: 0-100 ppm H₂S
Resolution: 0.1 ppm H₂S
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

SO₂ Sensor

P/N 10106727

ALTAIR 5X

Gas: Sulfur dioxide
Package: Single gas
Range: 0-20 ppm SO₂
Resolution: 0.1 ppm SO₂
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.



H₂S-LC/SO₂ Sensor

P/N 10121215

ALTAIR 4X, ALTAIR 4XR

Gas: Sulfur dioxide
Package: Two-tox
Range: 0-20 ppm SO₂
Resolution: 0.1 ppm SO₂
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/NO₂ Sensor

P/N 10121217

ALTAIR 4X, ALTAIR 4XR, ALTAIR 5X

Gas:	Nitrogen dioxide
Package:	Two-tox
Range:	0-50 ppm NO ₂
Resolution:	0.1 ppm NO ₂
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

NH₃ Sensor

P/N 10106726

ALTAIR 5X

Gas:	Ammonia
Package:	Single gas
Range:	0-100 ppm NH ₃
Resolution:	1 ppm NH ₃
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 NH₃ 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 continuous NH₃ exposure.

Chlorine

Cl₂ Sensor

P/N 10106728

ALTAIR 5X

Gas:	Chlorine
Package:	Single gas
Range:	0-10 ppm Cl ₂
Resolution:	0.05 ppm Cl ₂
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.



XCell Sensor Applications

	Combustible			Oxygen	Carbon Monoxide			Hydrogen Sulfide		Sulfur Dioxide		Nitrogen Dioxide	Ammonia	Chlorine
	Ex	Ex-M	Ex-H	O ₂	CO/H ₂ S	CO-HC	H ₂ S/CO H ₂ RES	CO/H ₂ S	CO/ H ₂ S-LC	SO ₂	H ₂ S-LC/ SO ₂	CO/NO ₂	NH ₃	Cl ₂
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 PH₃, HCN, ClO₂, NO, and CO₂ in the ALTAIR 5X Multigas Detector

XCell Sensor Instrument Compatibility

	Ex	Ex-M	Ex-H	O ₂	CO/H ₂ S	CO-HC	H ₂ S/CO H ₂ RES	CO/ H ₂ S-LC	SO ₂	H ₂ S-LC/ SO ₂	CO/NO ₂	NH ₃	Cl ₂
ALTAIR 4XR/ ALTAIR 4X	YES	YES	YES	YES	YES	NO	YES	YES†	NO	YES†	YES†	NO	NO
ALTAIR 5X	YES	NO	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



MSA-The Safety Company

Established in 1914, MSA Safety Incorporated is the global leader in the development, manufacture and supply of safety products that protect people and facility infrastructures. Many MSA products integrate a combination of electronics, mechanical systems and advanced materials to protect users against hazardous or life-threatening situations. The company's comprehensive product line is used by workers around the world in a broad range of markets, including the oil, gas and petrochemical industry, the fire service, the construction industry, mining and the military. MSA's core products include self-contained breathing apparatus, fixed gas and flame detection systems, portable gas detection instruments, industrial head protection products, fire and rescue helmets, and fall protection devices.

Trust & Durability

For nearly 100 years our passionate mission of safety empowers us, "The Safety Company", to protect lives. We are committed to providing the latest in innovative, best-in-class safety solutions that feature integrated systems capability and allow our customers to return safely to their families and friends.

Every day our customers place their lives in our hands. In response, we provide them with protection they can trust, and their stories become our stories. Hand in hand, we partner with our customers to earn that trust.

MSA: We Know what's at stake.