MSA XCell® Sensors

MSA X-Cell 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.

Combustible

Ex Sensor (PN 10106722)

Gas	Combustible (LEL)
Package	Single gas
Range	0-100% LEL or 0-5% CH_4
Resolution	1% LEL or 0.05% Vol CH_4
Response Time (typ)	t(90) <15 seconds (pentane) t(90) <10 seconds (methane)
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 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 (PN 10121212)

Gas	Combustible (LEL)
Package	Single gas
Range	0-100% LEL or 0-5% CH_4
Resolution	1% LEL or 0.05% Vol CH_4
Response Time (typ)	t(90) <15 seconds (pentane) t(90) <10 seconds (methane)
Alarm Setpoint	Min 2% LEL/ Max 60% LEL
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

Refers to most standard XCell Sensors. Specific exotic gas and special application sensors have shorter expected lives. Please refer to www.MSASafety.com for additional information.

Ex-H Sensor (PN 10121211)

Gas	Combustible (LEL)
Package	Single gas
Range	0-100% LEL or 0-5% CH_4
Resolution	1% LEL or 0.05% Vol CH_4
Response Time (typ)	t(90) <15 seconds (pentane) t(90) <10 seconds (methane)
Alarm Setpoint	Min 5% LEL/ Max 60% LEL
Warranty	1 year
Advantages	• Specialized: increased response to select solvents and heavy hydrocarbons (acetone, nonane, ethyl ether keytone (MEK), xylene)

Not available for CSA-approved instruments.

Oxygen

O_2 Sensor (PN 10106729)

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/H_2S Sensor (PN 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 (PN 10121216)

Gas	Carbon monoxide (high concentration)
Package	Single gas
Range	0-10,000 ppm CO
Resolution	5 ppm CO
Response Time (typ)	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_2S/CO H_2 RES Sensor (PN 10121214)

Gas	Carbon monoxide (hydrogen-resistant)
Package	Two-tox
Range	0-1999 ppm CO
Resolution	1 ppm CO
Response Time (typ)	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_2S Sensor (PN 10106725)

Gas	Hydrogen sulfide
Package	Two-tox
Range	0-200 ppm H_2S
Resolution	1 ppm H_2S
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$_2$S-LC Sensor (PN 10121213)

Gas	Hydrogen sulfide (low concentration)
Package	Two-tox
Range	0-100 ppm H$_2$S
Resolution	0.1 ppm H$_2$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

CO/H$_2$S Sensor (PN 10106727)

Gas	Sulfur dioxide
Package	Single gas
Range	0-20 ppm SO$_2$
Resolution	0.1 ppm SO$_2$
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$_2$S/SO$_2$ Sensor (PN 10121213)

Gas	Sulfur dioxide
Package	Two-tox
Range	0-20 ppm SO$_2$
Resolution	0.1 ppm SO$_2$
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 (PN 10121217)

Gas	Nitrogen dioxide
Package	Two-tox
Range	0-50 ppm NO₂
Resolution	0.1 ppm NO₂
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 (PN 10106726)

Gas	Ammonia
Package	Single gas
Range	0-100 ppm NH₃
Resolution	1 ppm NH₃
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

Chlorine

Not suitable for use in NH3-enriched environment

Cl$_2$ Sensor (PN 10106728)

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_2S	CO-HC	H_2S/CO H_2 RES	CO/H_2S	CO/H_2S-LC	SO_2	H_2S/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 PH_3, HCN, ClO_2, NO, and CO_2 VOC in the ALTAIR 5X Platform.

XCell Sensor Instrument Compatibility

	Ex	Ex-M	Ex-H	O_2	CO/H_2S	CO-HC	H_2S/CO H_2 RES	$CO/$ H_2S-LC	SO_2	H_2S/SO_2	CO/NO_2	NH_3	Cl_2
ALTAIR 4XR 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 4XR Multigas Detector software version 2.03 or greater ‡Requires ALTAIR 5X Multigas Detector software version 1.27.06 or greater

MSA operates in over 40 countries worldwide. To find an MSA office near you, please visit *MSAsafety.com/offices*.