



# ALTAIR<sup>®</sup> 2X Gas Detectors

## Bid Specifications

### Physical Characteristics

<b>Size</b>	L x W x D without clip: 3.5 x 2.125 x 1 in. (89 x 54 x 25 mm).
<b>Weight</b>	113 g (4 oz.) with clip.
<b>Handling</b>	1-button, gloved-hand operation.
<b>Case material</b>	Polycarbonate with rubber over-molding.
<b>Display</b>	Large-character monochrome LCD. Characters must be at least 0.86" tall.
<b>Color</b>	Charcoal gray.

### User Interfaces

<b>Pushbutton</b>	Must have only 1 pushbutton.
<b>Bump status indicator</b>	Bump pass: green LED flash every 15s, large onscreen checkmark. Bump fail or expiration: red LED flash every 15s, no checkmark.
<b>Sensor life indicator</b>	Must notify user when sensor is close to and reaches its end of life.
<b>Sleep mode</b>	Must have option to enable sleep mode to extend battery life.
<b>Backlight</b>	Must backlight LCD with button press. Backlight duration must be adjustable.
<b>Inadvertent shutoff</b>	Must require 3s button press-and-hold to protect against inadvertent shutoff.

### Basic Operational Features

<b>Zero adjustments</b>	Must provide Fresh Air Setup (FAS) function at user's discretion.
<b>Zero adjustment safety lockout</b>	Must not allow FAS in a non-fresh air environment. Must ignore FAS lockout and go into alarm if a dangerous level of gas is present.
<b>Time/date</b>	Must be able to set with MSA Link™ Software.
<b>Last calibration date</b>	Must be able to display last successful calibration date.
<b>Bump Test</b>	Devices with XCell® Pulse Technology feature stand-alone bump test that eliminates Bump test need for bottled gas due to pulse and flow check process. Devices with standard XCell Sensor require calibration gas to perform bump test.
<b>Bump test due indicator</b>	Must notify user of expiration of last successful bump via red LED flash every 15s, as Bump test due indicator well as disappearance of onscreen check mark.
<b>Calibration</b>	Shall be performed using specified regulators, tubing and calibration gas.
<b>Calibration due indicator</b>	Must inform user when next calibration is due. Enabled by default for devices with Calibration due indicator XCell Pulse Technology; disabled for devices with standard XCell Sensors.

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## Sensor Type & Performance

**Gases** *Instrument shall be capable of measuring the following gas(es):*

H <sub>2</sub> S	SO <sub>2</sub>	H <sub>2</sub> S/CO	NO <sub>2</sub> /CO*
H <sub>2</sub> S-LC (low concentration)	NO <sub>2</sub> *	H <sub>2</sub> S/CO-H <sub>2</sub> *	
CO	Cl <sub>2</sub> *	H <sub>2</sub> S-LC/CO*	
CO-HC (high concentration)*	NH <sub>3</sub> *	H <sub>2</sub> S-LC/SO <sub>2</sub>	
CO-H <sub>2</sub> (hydrogen-resistant)*			

\*Contact MSA for availability.

**Sensor types** *Instrument shall be available with the following gas sensing options:*

Gas type	Range	Resolution
H <sub>2</sub> S	0-200 ppm	1 ppm
H <sub>2</sub> S-LC	0-100 ppm	0.1 ppm
CO	0-2,000 ppm	1 ppm
CO-HC	0-10,000 ppm	5 ppm
SO <sub>2</sub>	0-20 ppm	0.1 ppm
Cl <sub>2</sub>	0-10 ppm	0.05 ppm
NH <sub>3</sub>	0-100 ppm	1 ppm
NO <sub>2</sub>	0-50 ppm	0.1 ppm

Standard alarm set points	Gas	Low Alarm	High Alarm	STEL	TWA
	H <sub>2</sub> S	10 ppm	15 ppm	15 ppm	10 ppm
	H <sub>2</sub> S-LC	5 ppm	10 ppm	10 ppm	1 ppm
	CO	25 ppm	100 ppm	100 ppm	25 ppm
	CO-HC	25 ppm	100 ppm	100 ppm	25 ppm
	SO <sub>2</sub>	2 ppm	5 ppm	5 ppm	2 ppm
	NO <sub>2</sub>	2.5 ppm	5 ppm	5 ppm	2.5 ppm
	Cl <sub>2</sub>	0.5 ppm	1 ppm	1 ppm	0.5 ppm
	NH <sub>3</sub>	25 ppm	50 ppm	35 ppm	25 ppm

Contact MSA for alterante and custom set points.

Typical t(90) response times	Gas	t(90)
	H <sub>2</sub> S	< 15s
	CO	< 15s
	SO <sub>2</sub>	< 15s
	NO <sub>2</sub>	< 40s
	Cl <sub>2</sub>	< 30s
	NH <sub>3</sub>	< 40s

**Sensor life** 4 years

Sensor warranty	H <sub>2</sub> S, CO, SO <sub>2</sub> , NO <sub>2</sub> sensors	3 years
	Cl <sub>2</sub> , NH <sub>3</sub> sensors	2 years

**Sensor life indicator** Must notify user when sensor is close to and reaches its end of life.

**Sensor missing alarm** Real-time alarm if sensor recognizes internal failure or loses communication. Built-in sensor control circuitry Must have built-in control circuitry (including drive circuits, memory, microprocessor, and analog to digital converter) for sensor level control and compensation.

**Sensor plug-and-play** Must be able to change which gas that instrument detects by simply swapping sensors.  
\*Cl<sub>2</sub> & NH<sub>3</sub> must be used with filter-free front case

## Device Power

<b>Battery</b>	Must be equipped with replaceable lithium battery.
<b>Battery life indication</b>	Must display estimated remaining battery run time via icon when powered on.
<b>Battery run time</b>	18 months (assumes 8-hr work day and depends upon environmental conditions, mode of operation and alarm frequency).

## Settings & Display Options

<b>Device settings</b>	Must be able to adjust device settings with MSA Link Software.
<b>Reset of functions</b>	Must be able to reset PEAK, STEL and TWA manually or with MSA Link Software.

## Device Alarms

<b>Visual alarms</b>	Flashing ultra-bright LEDs visible from the top, bottom, front, back, and sides.
<b>Audible alarm</b>	95 dB @ 1ft (30 cm).
<b>Vibrating alarm</b>	Standard.
<b>Alarm set points</b>	Must be adjustable with MSA Link Software.
<b>STEL &amp; TWA</b>	Standard. Enabled by default; can be disabled using MSA Link Software.

## Bump Test & Calibration

<b>Manual bump test and calibration</b>	Must be able to initiate and perform manual bump test and calibration.
<b>Automatic bump test and calibration</b>	Must be compatible with MSA GALAXY® GX2 Automated Test System bump test and calibration system. External system shall automatically recognize, bump and/or calibrate instrument and provide ability to retain all calibration records.
<b>Bump &amp; calibration tools</b>	Must not require external calibration cap.
<b>Calibration frequency</b>	Extended 2-month interval for devices with the XCell Pulse Technology Sensor; 6 months for devices with standard XCell Sensors. Assumes no bump failures.
<b>Calibration time</b>	Must not require application of gas for more than 60s.

## Data Logging (Instrument Data Storage)

<b>Event log</b>	Must record up to 75 most recent events (depends upon event type/frequency).
<b>Data logging</b>	Must provide standard data logging.
<b>Data log record intervals</b>	Time interval between data records shall be user-selectable from 15s to 15 min.
<b>Data log capacity</b>	@ default settings -single gas: > 150 hours; two-tox: > 100 hours
<b>Activity record content page</b>	Instrument data log shall record and be capable of reporting significant instrument events including: <ul style="list-style-type: none"> <li>• Gas and battery alarms.</li> <li>• End-of-sensor-life warnings.</li> <li>• Fresh air setups, sensor re-zeroing, calibrations, bumps, pulse and flow checks.</li> <li>• Battery voltage and elapsed run time.</li> <li>• Resets of PEAK, STEL and TWA.</li> </ul>
<b>Data retention</b>	Must retain data stored in memory in event of sudden instrument power loss.

## Environmental & Durability

<b>Ingress protection</b>	Agency-certified dust- and water-tight IP67 construction.
<b>Drop test</b>	Must survive multiple 25-ft drops onto concrete.
<b>Temperature</b>	Normal operation: -10. to 40. C Extended range: -20. to 50. C Extreme range: -40. to +60. C
<b>Humidity</b>	10-95% RH (non-condensing)

## Maintenance & Warranties

<b>Sensor &amp; battery replacement</b>	Sensor and battery shall be easily accessed and replaced. Shall not require removal of printed circuit boards.
<b>Warranty</b>	Chassis and electronics 3 years H <sub>2</sub> S, CO, SO <sub>2</sub> , NO <sub>2</sub> sensors 3 years Cl <sub>2</sub> , NH <sub>3</sub> sensors 2 years. Consumable parts (such as filters, fuses and replaceable batteries) are not covered under warranty.

## Certifications

**USA/Canada** cCSAus Class I Div 1 Groups A, B, C, D  
 Class II Div 1 Groups E, F, G Class III  
 Tamb = -40C to +60C T4  
 USA: UL 913 7th Edition  
 Canada: CSA 22.2 No. 157

**ATEX** FTZU II 2G Ex ia IIC T4 Gb -40C to +60C

**IEC/Australia/New Zealand** FTZU Ex ia IIC T4 Gb -40C to +60C

**Humidity** 10-95% RH (non-condensing)

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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