ALTAIR® Pro Single-Gas Detector

[Bid Specification]

Physical Characteristics	
Size	Instrument shall not exceed 3.4” x 2.0” x 1.0” in total size.
Weight	4.0 oz including clip.
Handling	Unit shall be easy to hold and operate.
Case Material	Polycarbonate with rubber overmolding.
Ingress Protection	Instrument shall be rated to IP67 protection levels for dust/water ingress.
Display Location	Display is viewable from the front.
Carrying Attachments	Unit shall have various optional belt attachments: • Suspender style clip • Lanyard • Cell phone belt clip • Hard hat clip
Event log	Unit shall be equipped with standard event data logging of no less than 50 events before overwriting oldest logged events.
Data log	Unit shall be equipped with standard data logging feature.

User Interfaces	
Display Info	Liquid crystal display [LCD] with large, easy to read characters. Must display gas concentration in PPM or display % O2.
Alarms	Must be equipped with visual, vibrating and audible alarms. Audible alarms sound at an average of 95 dB @ 1 foot. Visual alarms shall be bright and must be viewable from top, front and sides.
Buttons	Unit must have no more than one pushbutton to operate. No access to internal switches shall be necessary for any instrument operations.
Data Access	Access to the event and data log shall be non-intrusive using MSA Infrared Link to IBM-compatible computers and MSA Link®.
Bump test	Display shall have a checkmark as an indication of a successful bump test for 24 hours after conducting the bump test.
Operating Lifetime	Typical battery life is > one year installed. Sensors life is two years. Both the sensor and the battery must be replaceable.
Confidence flash	Unit shall periodically (average every 60 seconds) confirm proper operation by: • confidence flash on Alarm LEDs • confidence dot on display (heartbeat indicator)
Backlight	A backlight shall activate at the start of any alarm situation or by a simple press of a button.

Monitoring

Instrument activation	Instrument shall have provisions to prevent inadvertent activation. A three second button hold is needed to turn the unit on.
Inadvertent Shut Off	Once activated, instrument must not turn off inadvertently. A five second button hold is needed to turn the unit off/
Sensor Types	Instrument shall be available with the following gas sensing capabilities:

Gas Type	Sensor Type	Range	Resolution
Oxygen	echem	0-25%	0.1 Vol.%
Hydrogen Cyanide	echem	0-30 ppm	0.5 ppm
Chlorine Dioxide	echem	0-1.00 ppm	0.02 ppm
Phosphine	echem	0-5.00 ppm	0.05 ppm

Standard Alarm Points — Instrument shall be available with the following standard alarm points:

Gas	Low	High	STEL	TWA
Oxygen	19.50%	23.00%	N/A	N/A
Hydrogen Cyanide	4.5 ppm	10 ppm	10 ppm	4.5 ppm
Chlorine Dioxide	0.1 ppm	0.3 ppm	0.3 ppm	0.1 ppm
Phosphine	0.3 ppm	1.0 ppm	1.0 ppm	0.3 ppm

Instrument Power

Battery	Instrument shall be powered by a replaceable CR2 lithium battery. Only Energizer EL1CR2, Varta CR2, or Panasonic CR2 batteries should be used.
Battery Life Indication	The monitor shall provide the user with an icon depicting battery life.
Instrument Shutdown	Instrument must clearly indicate end of life by audible and visual display information.

Instrument Alarms

Visual Alarms	Instrument must consist of bright flashing LEDs visible from front, top and sides.
Audible Alarm	The audible alarm shall be rated at no less than 95 dB @ 1 ft on average.
Vibrating Alarm	Instrument shall be standard-equipped with vibrating alarm.
Changing Set points	Alarm set points shall be manually adjustable prior the first time the units are turned on, or with the use of IR communication at any time. All alarms (LOW, HIGH, TWA, and STEL) must be field adjustable.

Calibration	
Calibration	Unit must be able to be zeroed and calibrated easily using one button
Calibration set point	Calibration gas concentration set points shall be user-adjustable.
Tools	Calibration must be easily accomplished utilizing no tools other than tubing, cylinder and regulator. No calibration cap shall be required.

Data Storage	
Event logging	Instrument must be equipped standard with event logging.
Capacity	The log capacity shall be no less than 50 latest events.
Record Content	Event log entries shall contain as a minimum • Alarm: type, value, time and date • Alarm clear: type, value, time and date • Calibration: pass/fail, time and date • Bump: pass/fail, time and date • Error non-shutdown: error type, time and date • End of life: reason, alarm minutes, months life, time and date
Data Retention	Instrument shall remain accessible at the end of instrument life.
Data logging	The instrument must be equipment standard with a data logging function. The default setting is three minute peak readings. This sample rate shall be configurable via PC from 15 seconds to 15 minute peaks or one minute peak average

Certifications	
Intrinsic Safety Approval	The detector must meet global approvals per: • UL Class 1, Division 1, Groups A, B, C and D Tcode T4 • CSA Class 1, Division 1, Groups A, B, C and D Tcode T4 • ATEX II 2G EEx ia IIC T4 • Australia Ex ia IIC T4
Quality System	The instrument manufacturer must be certified compliant with ISO 9001 provisions.
Manufacturing	Instrument must be manufactured in the USA.

Environmental	
Temperature	Normal Operation: -20 to 50 °C
Humidity	10-95% RH non condensing

Maintenance & Warranty	
Maintenance	Units shall have replicable sensors and battery.
Warranty	The instrument shall have a full two-year warranty. Warranty does not cover the battery. One year warranty on ClO2, HCN, & PH3 sensors.