

600-33

**SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS**

**Specifications for Multi-Gas Detector**

**Revised January 26, 2012**

1. **SCOPE**

This specification covers the Multi-Gas Detector that is used to measure atmospheric hazardous conditions to keep worker's exposures below OSHA permissible exposure levels.

2. **GENERAL REQUIREMENTS**

OSHA: 29 CFR 1910.146

**Description:**

Hand-held, portable instrument used by personnel to measure the atmosphere, prior to a confined space entry and other work activities where air quality is of interest.

**Physical Property Data:**

1. The instrument must be certified intrinsically safe by a recognized testing laboratory.
2. The instrument must continuously monitor and simultaneously display gas readings and battery condition.
3. The instrument must detect and monitor a minimum of five (5) gases: oxygen (O<sub>2</sub>), combustible gases (LEL), hydrogen sulfide (H<sub>2</sub>S), carbon monoxide (CO), and one additional gas in the high and low level ranges as found in the OSHA standard. Additional gases to be monitored are Chlorine (Cl<sub>2</sub>) and Sulfur Dioxide (SO<sub>2</sub>).
4. The instrument must provide audible, visual and latching alarms along with TWA and STEL, and self-test with sensor fault messages.
5. All alarm signals must be functional regardless of display selected.
6. The instrument must be capable of being bump-tested and calibrated with simple tools included with the product (with only calibration gas and a gas regulator purchased separately).
7. The instrument's physical case shall be of rugged construction, impact-resistant, non-corrosive composite material that will prevent spark generation, water resistant, with a stainless steel alligator clip for attaching to the user's clothing and a built-in concussion-proof boot, in safety yellow.
8. Size of the instrument to be less than 16.0 oz. and maximum dimensions of 6.0 inches by 3.0 inches by 2.0 inches.
9. Calibration of the instrument must be fully automatic with Auto Zero and Auto Span functions and must advise as each automatic function takes place and when to apply gas. User settable levels must be "User Settable".
10. One-button activation. "On" function must: Test the battery and advise condition; Display the current alarm set points; Provide a full function self-

test of sensor integrity, circuitry integrity, and alarm activation; Automatically calibrate the oxygen sensor or display "O2 calibration off" warning; Advise when the next calibration is due in days, or advise the number of days overdue.

11. Backlight must automatically illuminate the display in all alarm conditions, in low-light conditions and be reactivated on demand.
12. The instrument shall be equipped with rechargeable battery pack (lithium polymer) with a VAC 110 volt slip-in cradle charger.
13. The instrument must be equipped with a black integrally motorized pump with at least 5 feet of sampling tubing and a hand held attachable sampling probe with water trap filter and particulate filter, and at least one spare filter of each type included.
14. The instrument warranty shall be a minimum of 2 years from date of purchase.
15. The unit shall include a user operating manual and data logging software.
16. All sensors shall be plug-in, electrochemical cell (toxic and oxygen); catalytic (LEL).
17. The instrument shall simultaneously and continuously display gas concentrations for all sensors in (ppm, % LEL, % v/v) for the following:

<u>Gas</u>	<u>Measuring Range</u>	<u>In Increments of:</u>
Oxygen (O2)	0-30 % O2	0.1%
Combustible Gases	0-100% LEL	1.0% LEL
Hydrogen Sulfide	0-500 ppm H2S	1.0 ppm
Carbon Monoxide	0-500 ppm CO	1.0 ppm
Chlorine	0-50 ppm Cl2	1.0 ppm
Sulfur Dioxide	0-150 ppm SO2	1.0 ppm

#### **Accessories Description:**

1. Neck strap with safety release
2. Carrying Holster that can be attached to a belt
3. Calibration Gas cylinders
4. Confined Space Kit
5. Replacement sensors for each gas that can be detected
6. Replacement integral motorized pump (as a kit, and as a pump alone)
7. Manual Aspirator Pump
8. Replacement rechargeable lithium battery pack
9. Replacement cradle charger

#### **Special Notations:**

SAWS, at no cost to the manufacturer, may subject random units to testing by an independent laboratory for compliance with these specifications. Any visible defect or failure to meet the quality standards herein will be grounds for rejecting the entire order.

### **3. APPROVED MANUFACTURERS AND MODELS**

#### **Manufacturer**

BW Technologies

#### **Model**

Gas Alert Micro 5