

# Soaring To New HEIGHTS

*The Legacy Continues*



Refineries



Fire & Hazmat



Landfills



Natural Gas



# EAGLE 2

# EAGLE 2



# Specifications

|                                       |                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Enclosure</b>                      | Weatherproof, chemical resistant, anti RFI / EMI coated high impact polycarbonate - PBT blend. Can operate in rain or be set into 2.0" of water without leakage. Ergonomically balanced with rugged top mounted handle.                                                                                                   |
| <b>Dimensions</b>                     | 9.5" L x 5.25" W x 5.875" H (241mm L x 140mm W x 149mm H)                                                                                                                                                                                                                                                                 |
| <b>Weight</b>                         | 3.8 Lbs (1.72kg) (standard 4 gas with batteries)                                                                                                                                                                                                                                                                          |
| <b>Detection Principle</b>            | Catalytic combustion, electrochemical, galvanic, infrared, photo ionization, and thermal conductivity.                                                                                                                                                                                                                    |
| <b>Sensor Life</b>                    | 2 Years under normal conditions.                                                                                                                                                                                                                                                                                          |
| <b>Sampling Method</b>                | Powerful, long-life pump (over 6,000 hours) can draw samples over 125 feet.<br>Flow rate approximately 2.0 SCFH                                                                                                                                                                                                           |
| <b>Display</b>                        | Backlit 128 x 64 graphics display. Viewed through window in case top. Displays readings & status of all 6 channels simultaneously. Backlight, illuminates for alarms and on demand with adjustable time. Optional mode allows automatic or manual scrolling display of just one gas at a time with very large characters. |
| <b>Language</b>                       | Readout can display in 5 languages (English, French, German, Italian, or Spanish).                                                                                                                                                                                                                                        |
| <b>Alarms</b>                         | 2 Alarms per channel plus TWA and STEL alarms for toxics. The two alarms are fully adjustable for levels, latching or self reset, and silenceable.                                                                                                                                                                        |
| <b>Alarm Method</b>                   | Buzzer 95 dB at 30 cm, four high intensity LED's.                                                                                                                                                                                                                                                                         |
| <b>Controls</b>                       | 4 External glove friendly push buttons for operation, demand zero, and autocalibration. Buttons also access LEL/ppm, % Vol. alarm silence, peak hold, TWA/STEL values, battery status, conversion factors, and many other features.                                                                                       |
| <b>Continuous Operation</b>           | At 70°F, (21°C) 16 hours using alkaline batteries, or 18 hours using Ni-MH.                                                                                                                                                                                                                                               |
| <b>Power Source</b>                   | 4 Alkaline or Ni-MH, size C batteries (Charger has alkaline recognition to prevent battery damage if charging is attempted with alkalines).                                                                                                                                                                               |
| <b>Operating Temp. &amp; Humidity</b> | -4°F to 122°F (-20°C to 50°C) 0 to 95% RH, non-condensing.                                                                                                                                                                                                                                                                |
| <b>Response Time</b>                  | 30 Seconds to 90% of range (for most gases) using standard 5 ft hose.                                                                                                                                                                                                                                                     |
| <b>Safety Rating</b>                  | Intrinsically Safe, Class I, Division 1, Groups A, B, C, D.                                                                                                                                                                                                                                                               |
|                                       | Approvals:                                                                                                                                         |
| <b>Standard Accessories</b>           | Shoulder strap, alkaline batteries, hydrophobic probe, 5 foot hose, and internal hydrophobic filter                                                                                                                                                                                                                       |
| <b>Optional Accessories</b>           | <ul style="list-style-type: none"> <li>• Dilution fitting (50/50)</li> <li>• Ni-MH batteries</li> <li>• Battery charger, 115 VAC, 220 VAC, or 12 VDC (charge time 4 hours)/ continuous operation adapter, 115 VAC or 12 VDC</li> <li>• Extension hoses</li> </ul>                                                         |
| <b>Warranty</b>                       | Two year material and workmanship, one year for PID sensor                                                                                                                                                                                                                                                                |

Specifications subject to change without notice

# Sensor Technologies

## Standard 4 Gas

| Catalytic                                                                                                                                   |                                   |                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------|
|                                                            |                                   |                                           |
| Gas                                                                                                                                         | Range                             | Accuracy                                  |
| Hydrocarbons (CH <sub>4</sub> , standard)                                                                                                   | 0 - 100% LEL                      | ± 5% of reading or ± 2% of full scale (*) |
|                                                                                                                                             | 0 - 5% Vol. (CH <sub>4</sub> )    |                                           |
|                                                                                                                                             | 0 - 50,000 ppm (CH <sub>4</sub> ) | ± 50 ppm or ± 5% of reading (*)           |
| Combustible level detection displayed in % LEL, PPM, or % volume. Methane is the standard configuration. Other combustible gases available. |                                   |                                           |

| Galvanic                                                                           |                               |                       |
|------------------------------------------------------------------------------------|-------------------------------|-----------------------|
|  |                               |                       |
| Gas                                                                                | Range                         | Accuracy              |
| Oxygen (O <sub>2</sub> )                                                           | 0 - 40% Vol.<br>0 - 100% Vol. | ± 0.5% O <sub>2</sub> |
| A specific electrochemical sensor for oxygen monitoring.                           |                               |                       |

| Standard Electrochemical                                                            |             |                                |
|-------------------------------------------------------------------------------------|-------------|--------------------------------|
|  |             |                                |
| Gas                                                                                 | Range       | Accuracy                       |
| Carbon Monoxide (CO)                                                                | 0 - 500 ppm | ± 5% of reading<br>± 2 ppm (*) |
| Hydrogen Sulfide (H <sub>2</sub> S)                                                 | 0 - 100 ppm |                                |
| Extra long-life CO and H <sub>2</sub> S sensors.                                    |             |                                |

## Specialty Sensors

| Photo ionization Detection (PID)                                                  |                             |
|-----------------------------------------------------------------------------------|-----------------------------|
|  |                             |
| Gas                                                                               | Range                       |
| Volatile Organic Compound (VOC)                                                   | 0 - 50 ppm<br>0 - 2,000 ppm |
| Monitor low ppm VOC gases.                                                        |                             |

| Infrared                                                                                 |                                               |                                              |
|------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------|
|         |                                               |                                              |
| Gas                                                                                      | Range                                         | Accuracy                                     |
| Carbon Dioxide (CO <sub>2</sub> )                                                        | 0 - 10,000 ppm<br>0 - 5% Vol.<br>0 - 60% Vol. | ± 5% of reading or<br>± 2% of full scale (*) |
| Methane (CH <sub>4</sub> )                                                               | 0 - 100% LEL<br>0 - 100% Vol.                 |                                              |
| Hydrocarbons                                                                             | 0 - 100% LEL<br>0 - 30% Vol.                  |                                              |
| Monitor combustible gases in inert environments. Monitor wide range of CO <sub>2</sub> . |                                               |                                              |

| Thermal Conductivity                                                                |                               |                                           |
|-------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------|
|  |                               |                                           |
| Gas                                                                                 | Range                         | Accuracy                                  |
| Methane (CH <sub>4</sub> )                                                          | 0 - 100% Vol.                 | ± 5% of reading or ± 2% of full scale (*) |
| Hydrogen (H <sub>2</sub> )                                                          | 0 - 10% Vol.<br>0 - 100% Vol. |                                           |
| Monitor % volume methane or hydrogen.                                               |                               |                                           |

## Smart Toxic Sensors

| Smart Electrochemical                                                                                                  |             |                                               |
|------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------|
|                                     |             |                                               |
| Gas                                                                                                                    | Range       | Accuracy                                      |
| Ammonia (NH <sub>3</sub> )                                                                                             | 0 - 75 ppm  | ± 10% of reading or<br>± 5% of full scale (*) |
| Arsine (AsH <sub>3</sub> )                                                                                             | 0 - 1.5 ppm |                                               |
| Chlorine (Cl <sub>2</sub> )                                                                                            | 0 - 3 ppm   |                                               |
| Hydrogen Cyanide (HCN)                                                                                                 | 0 - 15 ppm  |                                               |
| Phosphine (PH <sub>3</sub> )                                                                                           | 0 - 1 ppm   |                                               |
| Sulfur Dioxide (SO <sub>2</sub> )                                                                                      | 0 - 6 ppm   |                                               |
| Monitor a wide variety of toxic gases. Smart plug and play sensors are auto recognized and can be remotely calibrated. |             |                                               |

Note: (\*) = Whichever is greater



## CONFINED SPACE ENTRY

- Monitor LEL, O<sub>2</sub>, CO, and H<sub>2</sub>S
- Internal sample pump
  - ◊ *Pull samples up to 125'*
  - ◊ *Maintain steady sample flow to sensors*
- Audible and visual alarms
  - ◊ *2 Ways to communicate with workers*
- Ideal for refinery applications

## LEAK INVESTIGATION

- Provides ppm detection of combustible gas
- Barhole mode for tracking leak migration
- Leak check with changing blink / pulsing rate
  - ◊ *LED's and alarm tones increase in frequency as gas concentration increases*
- Audible alarm silence
  - ◊ *Perform leak investigations without alarming residents*



## LINE PURGE TESTING

- Thermal conductivity sensor
  - ◊ *0 to 100% volume Methane / Hydrogen range*
- Autoranging IR
  - ◊ *Automatically changes from % LEL to % Vol.*
  - ◊ *Displays appropriate unit of measure*

## VOC MONITORING

- Robust photo ionization detector (PID)
- Two ranges available,
  - ◊ *0-50 ppm or 0-2,000 ppm*
- Can be combined with other sensors to maximize capability
- Method 21 compliant



## TRANSFORMER TESTING

- Determine transformer health by sampling head space
- Measure Hydrogen (and other flammable gases) and Oxygen in nitrogen blanket
- Increasing flammable gas levels in head space indicates failing transformer

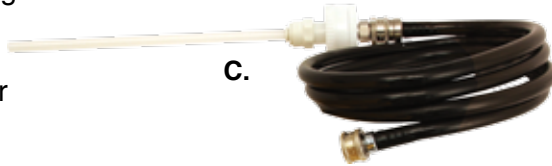
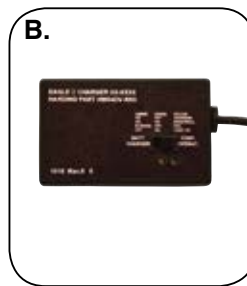
## LANDFILL MONITORING

- LEL / PPM and 0-100% volume Methane
- 0-60% Carbon Dioxide range
- Can be combined with other sensors (O<sub>2</sub>/H<sub>2</sub>S/CO) to maximize capability



# Accessories

- A. Calibration station
- B. Battery charger / continuous operation adapter, AC and DC versions
- C. Variety of sample hose lengths
- D. Float probe, auto shut off when probe contacts water
- E. PID service kits
- F. Calibration kits
- G. Carrying cases
- H. Rechargeable Ni-MH batteries



## User Selectable Options

Date and Time  
 Date Format  
 Battery Type  
 Configuring Channels  
 Combustible Gas Selection  
 Catalytic Detection Units  
 Relative Response On or Off  
 Alarm Points  
 Alarm Latching  
 Alarm Silence  
 User and Station ID  
 Autocal Values  
 Backlight Delay  
 Auto Fresh Air  
 Data Log Interval

Data Log Overwrite  
 Data Log Memory  
 LCD Contrast  
 Calibration Reminder  
 Calibration Past Due Action  
 Calibration Interval  
 Leak Check / Bar Hole Mode  
 Bar Hole Measurement Time  
 Operation Confirmation Alert  
 Password Function On or Off  
 Factory Default  
 Lunch Break  
 Language  
 Span Factor



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