

# Soaring To New HEIGHTS

*The Legacy Continues*



Refineries



Fire & Hazmat



Landfills



Natural Gas



# EAGLE 2

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Low flow shutoff and alarm

Internal / external hydrophobic filters

Self healing polyurethane protective overlay

Powerful internal sample pump with 125' range

4 button operation with glow in the dark text

Glove friendly handle and buttons

PID sensor for low ppm VOC detection

PPM, % LEL, or % Vol. auto-ranging combustible detection

Methane elimination for environmental use

Inlet fitting

Loud buzzer (95dB)

IrDA communication port

Alarm LED's with wide visibility

3 Display modes:

- Display all gases
- Single gas view large type-auto scroll
- Single gas view large type-manual scroll

Programmable gas channel positions

3 Operating modes:

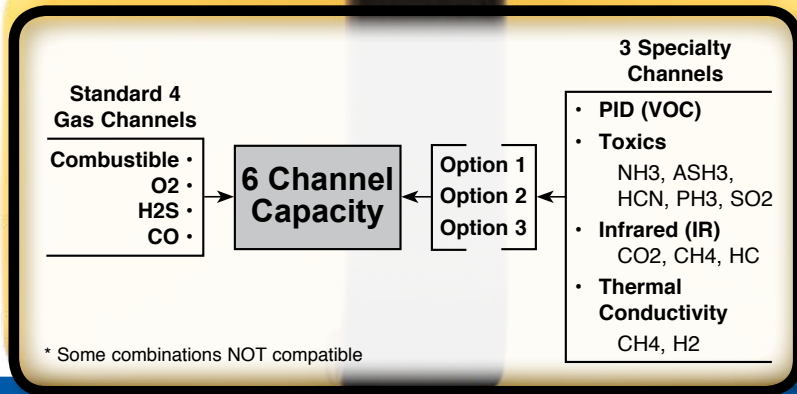
- Normal operating
- Leak check
- Bar hole sampling

Chemical, water, and dust resistant, RFI / EMI protected high impact case

Smart plug & play sensors for toxic gases

Combine catalytic and IR sensors for combustible detection

Multi lingual (5 languages)




Interchangeable Alkaline / NiMH removable battery compartment

Battery compartment thumbscrew



# 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

## Specialty Sensors

## Smart Toxic Sensors


**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.


**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 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

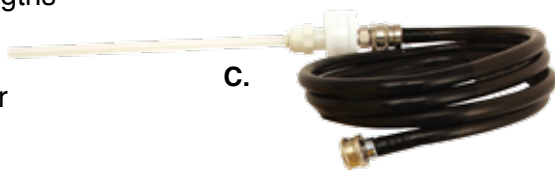
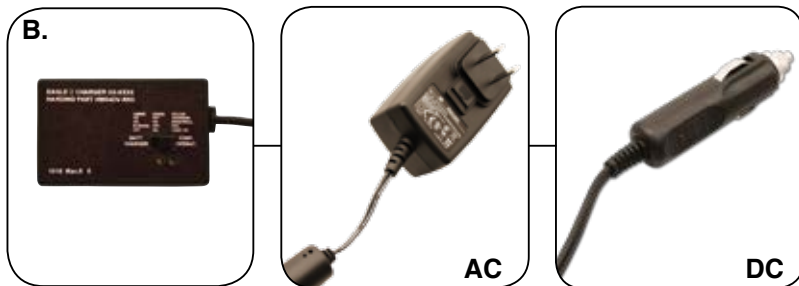
## LANDFILL MONITORING

- 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               | Data Log Overwrite           |
| Date Format                 | Data Log Memory              |
| Battery Type                | LCD Contrast                 |
| Configuring Channels        | Calibration Reminder         |
| Combustible Gas Selection   | Calibration Past Due Action  |
| Catalytic Detection Units   | Calibration Interval         |
| Relative Response On or Off | Leak Check / Bar Hole Mode   |
| Alarm Points                | Bar Hole Measurement Time    |
| Alarm Latching              | Operation Confirmation Alert |
| Alarm Silence               | Password Function On or Off  |
| User and Station ID         | Factory Default              |
| Autocal Values              | Lunch Break                  |
| Backlight Delay             | Language                     |
| Auto Fresh Air              | Span Factor                  |
| Data Log Interval           |                              |



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