

QRAE PLUS

Advanced and Compact 4-Gas Confined Space Gas Detector

The **QRAE PLUS** is full-featured, compact, one-to-four sensor confined space gas detector. New features include easy-to-change, externally accessed battery packs, (available in both alkaline and rechargeable versions), and an even more water-resistant case design. The rechargeable, lithium-ion battery pack provides up to 20-hours of continuous operation. The **QRAE PLUS** includes 16,000 optional datalogging points of storage capacity for download to PC compatible computers with Windows™ 95, 98, 2000 and NT.

Advanced Features

- One-to-four reliable, plug-in smart-sensors
 - Combustible
 - Oxygen
 - Hydrogen sulfide
 - Carbon monoxide
- Wide range of additional substance-specific toxic sensors: SO₂, NO, NO₂, Cl₂, HCN, NH₃, PH₃
- Interchangeable Lithium-ion and alkaline battery packs
- Rechargeable Lithium-ion battery pack provides up to 20-hours continuous operation

- Rugged housing withstands use in harsh environments
 - Water and dust resistant case
 - Strong protective rubber boot standard
 - Highly resistant to radio frequency and other electromagnetic interference
- Strong, built-in sample-draw pump with optional collapsible sample-probe
- Also available in diffusion configuration
- One-button calibration with auto-zero capability
- Large, simple-to-use buttons operable with three layers of gloves
- Loud audible alarm
- Bright visual alarm
- Built-in vibration alarm

Applications

- Confined Space Entry
 - Waste water treatment plants
 - Shipyard and maritime confined spaces
 - Land-fill operations
 - Trenches, silos, railcars
 - Sewers and manholes
- Refineries and petrochemical plants, including offshore drilling and plant shut-downs
- Power plants
- Pulp and paper industry
- Steel mills



Specifications

Sensor Specifications

Sensor	Range	Resolution	Response Time (T ₉₀)
Oxygen	0 ~ 30%	0.1%	15 seconds
Combustible	0 ~ 100% LEL	1% LEL	15 seconds
	0 ~ 100% VOL	1% VOL	15 seconds
CO	0 ~ 500 ppm	1 ppm	20 seconds
H ₂ S	0 ~ 100 ppm	1 ppm	30 seconds

Detector Specifications

Size	4.5" x 3" x 1.8" (11.5 cm x 7.6 cm x 4.6 cm)
Weight	15 oz. (425 g)
Sensors	Combustible: Protected dual-mode catalytic bead for 0 ~ 100% LEL and thermal conductivity for 0 ~ 100% by volume Oxygen: Electrochemical fuel-cell Toxic: Interchangeable electrochemical for CO, H ₂ S, SO ₂ , NO, NO ₂ , Cl ₂ , HCN, NH ₃ and PH ₃
Battery	Interchangeable Li-Ion and alkaline battery packs. Rechargeable units include lithium-ion battery pack with internal smart charging, 120V AC/DC wall adapter, and spare alkaline battery pack
Operating hours	Up to 20-hours of continuous operation with lithium-ion battery pack
Display	2-line, 16-digit LCD with LED back-light, automatic activation in dim-light or alarm condition
Keypad	1 operation key and 2 programming keys
Attachments	Durable, high-visibility rubber boot and wrist strap
Temperature	-4 to 113°F (-20 to 45°C)
Humidity	0% to 95% relative humidity (non-condensing)
Direct readout (Instantaneous up to 4 values)	Instantaneous readings for up to four sensors: <ul style="list-style-type: none"> Oxygen as percentage by volume Combustible: LEL range as percent of LEL Combustible: Thermal conductivity mode as percent volume Toxic gases as parts-per-million by volume High and low values for all gases STEL and TWA values of toxic gases Battery and shut down voltage Date, time, elapsed time, temperature
Alarms	95 dB buzzer, flashing red LED, and built-in vibration alarm to indicate exceeded preset limits: <ul style="list-style-type: none"> High: 3 beeps and flashes per second Low: 2 beeps and flashes per second STEL and TWA: 1 beep and flash per second Alarms latching with manual override or automatic reset Additional diagnostic alarm and display message for low battery and pump stall
Intrinsic Safety	UL Classified as to Intrinsic Safety for use in Class 1, Division I, Groups A, B, C and D hazardous locations. EEx / ATEX Pending.
Calibration	Two-point field calibration for zero and span, optional three-point calibration for oxygen
Datalogging	Optional 16,000 datalogging points downloadable to PC with serial number of unit, user ID, date, time, site number, calibration and readings.
Sampling pump	Optional, internal pump with user selectable flow-rate: Low — 200cc/min, High — 300cc/min

QRAE Plus Accessories

Monitor only includes

- Monitor as specified
- Sensors as specified
- Calibration adapter
- Quick reference guide
- Operators manual
- Training video
- Rubber boot with belt-clip
- Pumped units additionally include:
 - 10 Water trap filters
 - Inlet probe 3"
 - Water trap adapter

Battery options

- Alkaline: includes standard alkaline battery pack
- Rechargeable units include:
 - Lithium-ion battery pack
 - 120 V AC/DC Wall Adapter
 - Spare alkaline battery pack

Monitor with Accessories Kit also includes:

- Hard transport case with pre-cut foam
- 15' (5 m) Tygon® tubing
- Constant flow hand pump (for diffusion models)
- Tool Kit

Optional Calibration Kit also include:

- Four-gas mix in a 34L cylinder; (50% LEL, 20.9% O₂, 10 ppm Hydrogen Sulfide, 50 ppm Carbon Monoxide)
- Calibration regulator and tubing

Datalogging Monitors also include:

- Software, ProRAE Suite Package for Windows™ 95, 98, 2000, NT
- Computer Interface cable

Warranty: Lifetime on non-consuming components (per RAE Standard Warranty), 2 years for O₂, LEL, CO and H₂S sensors, 1 year all other sensors, 1 year pump, 1 year battery



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