

QRAE

Simple and Reliable 4 Gas Monitor for Confined Space Entry

QRAE is a rugged, easy to use, economical, hand-held 4 gas monitor. It has a built-in robust internal pump with optional 20,000 point datalogging capacity.

Features

- Reliable plug-in smart sensors
 - Combustible
 - Oxygen
 - Hydrogen sulfide
 - Carbon monoxide
- Robust external casing for harsh environments:
 - Strong protective rubber boot
 - Water and dust resistant
 - Rugged ABS plastic/metal case
 - Protects from interference by portable radios
- Ease of use with one hand operation
 - One button calibration with auto zero capability
- Strong built-in sample draw pump with optional collapsible remote sampling probe
 - Sample flow rate at 150cc/min
 - Patented security mechanism warns of sample tube crimping or blockage
 - Prevents liquid flow into monitor

- Power source features include:
 - Option of alkaline, Ni-Cd, and automotive 12V adapter charger
 - Field replaceable batteries
 - Smart battery charger with up to 10 hours
 - Unit will run and charge simultaneously
- Large keys operable with three layers of gloves
- Loud audible alarm
- Bright visual alarm
- Optional 20,000 point datalogging storage capacity for download to PC compatible with Windows™ 95, 98, 2000 and NT

Applications

- Confined Space Entry
 - Waste water treatment plants
 - Marine and off shore oil wells
 - Landfill operations
 - Trenches, silos, railcars
 - Coal mines
 - Cruise ships
 - Sewers and manholes
 - Tunnels
- Refineries and petrochemicals plants including offshore drilling and plant shut downs
- Power plants
- Pulp and paper industry
- Steel mills



Specifications

Sensor Specifications

Gas Monitor	Range	Resolution	Response Time (T ₉₀)
Oxygen	0 - 30%	0.1%	15 sec
Combustible Gas	0 - 100% LEL	1%	15 sec
Carbon Monoxide	0 - 500 ppm	1 ppm	20 sec
Hydrogen Sulfide	0 - 100 ppm	1 ppm	30 sec
Size	4.65" L x 3.0" W x 1.9" H (11.8 cm x 7.6 cm x 4.8 cm)		
Weight	16 oz with battery (454 g)		
Detector	Protected catalytic bead for combustible gases Electrochemical sensors for oxygen, H ₂ S, CO		
Battery	Rechargeable, 4.8 V, 1.4 Ah, NiCd battery pack Internal Smart Charging System with discharging capability 4 AA alkaline battery adapter Field replaceable Smart battery charger: Up to 10 hours through built-in or external charger. Includes deep discharge option.		
Operating Hours	12 hours continuous Unit will run and charge simultaneously		
Display	2 line, 16 digit LCD with LED back light automatically in dim-light or alarm condition		
Keypads	1 operation key and 2 programming keys		
Attachments	Wrist-strap and high visible boot		
Direct Readout	Instantaneous (four) values <ul style="list-style-type: none"> • Oxygen as percentage by volume • Combustible gas as percentage of lower explosion limit (LEL) • H₂S & CO 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 • LEL scale (using correction factors) 		
Intrinsic Safety	UL, cUL Class 1, Division I, Group A, B, C, D, EEx ia IIC T4		
Alarm	90 dB buzzer and flashing red LED 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		
Calibration	Two point field calibration for zero and span gas		
Datalogging	Up to 20,000 points (64 hours, 4 channels at one minute intervals) downloadable to PC with serial number of unit, user ID, site number, calibration date		
Datalogging Interval	1 - 3600 seconds, programmable		
Sampling Pump	Internal pump, flow rate 150 cc/min		
Temperature	-4° to 113°F (-20° to 45°C)		
Humidity	0% to 95% relative humidity (non-condensing)		

QRAE Accessories

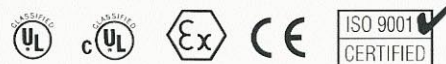
- Calibration kits with gas cylinder, flow regulator and tubing
- External battery charger
- Automotive charging adapter
- 15' (5m) tubing with weight and float attachment
- Collapsible remote sampling probe
- Vibration alarm
- Earphone

Confined Space Kit

- QRAE monitor
- Calibration adapter
- 34 liter multi-gas cylinder and regulator
- Rubber boot
- 15' Tygon® tubing with water trap filter
- 10 water trap filters
- Battery charging adapter
- Alkaline battery adapter
- Manual
- Carry case with precut hard foam

Warranty

- Two years
- Pump — one year
- Batteries



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