VRAE

Hand Held 5-Gas Surveyor

The **VRAE** is a powerful, pumped, one-to-five gas monitor that monitors combustibles in the percent by volume range regardless of oxygen levels. The **VRAE** is capable of monitoring either combustibles, oxygen, and three toxic gases or combustibles and four toxic gases. Its durable Nickel-Metal-Hydride batteries, powerful internal pump and rugged frame make it ideal for leak detection and site surveys.

Key Features

- Toxic sensors include CO, H_2S, SO_2, NO, NO_2, Cl_2, NH_3, HCN, PH_3
- Large alarm-activated back light LCD display
- Visual alarm with flashing LED
- Large keys usable with gloved hand
- Rigid inlet probe
- 10 hours continuous operation
- Sample collection port
- Optional 16,000 data points downloadable to PC
- Strong protective rubber boot
- Protected from interference by portable radios (RFI)
- Internal sample draw pump for quick response and remote sampling
- Smart battery charging with status indication and LED indicator
- Snap-in rechargeable NiMH or alkaline battery pack
- 48 built-in Correction Factors for LEL sensor
- 4 toxic sensor version available

Applications

- Confined Space Entry
- Refineries and petrochemical plants including offshore drilling and plant shut downs
- Waste water treatment plants
- Shipyard and maritime
- Landfill operations
- Trenches, silos, railcars
- Food processing, refrigeration, decomposition, process off gasing, poultry farms
- Cable vaults, transformer stations
- Fire departments

Specifications*

Sensor Specifications

Gas Monitor	Range	Extended Range	Resolution
Combustible	0-100% LEL		1%
	0-100% VOL		1%
Oxygen	0-30.0%		0.1%
Carbon Monoxide	0-500 ppm	1500 ppm	1 ppm
Hydrogen Sulfide	0-100 ppm	500 ppm	1 ppm
Sulfur Dioxide	0-20.0 ppm	150 ppm	0.1ppm
Nitric Oxide	0-250 ppm	1000 ppm	1ppm
Nitrogen Dioxide	0-30.0 ppm	150 ppm	0.1 ppm
Chlorine	0-10.0 ppm	30 ppm	0.1 ppm
Hydrogen Cyanide	0-100 ppm	100 ppm	1 ppm
Ammonia	0-50 ppm	200 ppm	1 ppm
Phosphine	0-5.0 ppm	20 ppm	0.1 ppm

Detector Specifications

Size	8.3"L x 3.0"W x 1.9"H (21 x 7.6 x 4.9 cm)
Weight	20 oz. with battery pack (568g)
Sensors	• Catalytic sensor for combustible gas • Thermal conductivity sensor for percentage volume combustible gas • Electrochemical sensors for oxygen and toxic gases
Battery	Rechargeable, snap-in, field replaceable 4.8V, 1.1 Ah NIMH battery pack, 4 AA battery adapter
Operating Hours	10 hours continuous operation
Display	2 line, 16 digit LCD with LED back light automatically in dim light or alarm condition
Keypads	1 operation and 2 programming keys
Direct Readout	Instantaneous reading (up to 5 values) • Oxygen as percentage by volume • Combustible gas as percentage by volume or percentage of lower explosive limit (LEL)
Alarms	90 dB buzzer and flashing red LED to indicate exceeded preset alarms: • 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
Datalogging	Optional 16,000 points (53 hours, 5 channels at one minute intervals) download to PC with serial number of unit, user ID, site ID and calibration date
Calibration	Two points field calibration of zero and span gas
Sampling Pump	Internal pump, flow rate 400 cc/minute Automatic shut off at low flow condition
Hazardous Area Approval	• US: UL, cUL, Classified as Intrinsically Safe for use in Class I, Division 1 Groups A, B, C, D, Hazardous Locations T6 rating • Europe: EEx ia IIC T4 (pending)
Temperature	-4° to 113°F (-20° to 45°C)
Humidity	0% to 95% relative humidity (non-condensing)
Attachment	Durable rubber boot and wrist strap
Warranty	Lifetime on non-consuming components (per RAE Systems Standard Warranty), 2 years for O_2, LEL, CO and H_2S sensors, 1 year for all other sensors, 1 year pump, 1 year battery

*Ongoing projects to enhance our products means that these specifications are subject to change.

Monitor only includes:
- Monitor as specified
- Sensors as specified
- Filter and O-ring pack
- 5" Inlet probe
- Gas outlet port adapter
- Operation and maintenance manual
- Rubber boot with belt clip
- Alkaline battery adapter
- Rechargeable units additionally include:
  - Nickel-Metal-Hydride (NiMH) battery
  - 120 or 230 V AC/DC wall adapter (if specified)

Monitor with accessories kit also includes:
- Hard transport case with pre-cut foam
- 15' (5m) Tygon® tubing
- Tool kit

Optional calibration kit also includes:
- Four-gas mix in a 34L cylinder (50% LEL, 20.9% O_2, 25 ppm H_2S, 50 ppm CO)
- Calibration regulator (male) and tubing

Datalogging Monitors also include:
- Software ProRAE Suite Package for Windows 98, 2000, NT and XP
- Computer interface cable

DISTRIBUTED BY:

VRAE

RAE SYSTEMS