



AreaRAE Steel

Rapidly Deployable, Wireless Multi-gas Monitor

The AreaRAE Steel is a one- to five-gas wireless monitor that delivers the same features and performance as the industry-leading AreaRAE monitor, in an extremely rugged stainless-steel enclosure designed for applications in harsh environments. The weather-resistant AreaRAE Steel is the benchmark against which portable wireless gas monitors are judged.

AreaRAE Steel combines a photoionization detector (PID) for parts-per-million measurement of volatile organic compounds (VOCs) with lower explosive limit (LEL) and oxygen sensors, plus two electrochemical toxic sensors for measuring specific substances such as hydrogen sulfide or chlorine. An integrated wireless modem allows the AreaRAE Steel to transmit real-time gas measurement data to a ProRAE Remote base station located up to 2 miles (3 kilometers) away.

The base station is a standard Windows-based PC running ProRAE Remote software connected to a RAELink Host Modem. The base station can communicate with up to 64 AreaRAE Steels (or other AreaRAE-compatible monitors), providing a multi-threat detection network that can monitor a wide geographic area.

AreaRAE Steel monitors are powered by rechargeable Lithium-ion batteries that deliver up to 18 hours of continuous operation and can be powered by external 12-volt DC sources or from AC line power. They can also be powered by standard alkaline batteries with an optional alkaline battery adapter.

AreaRAE Steel options include the ability to track and display readings from remotely located detectors on a GPS map.

The AreaRAE Steel is ideal for HazMat and other emergency response monitoring programs. AreaRAE Steel detectors can be used to quickly establish an emergency perimeter by setting out multiple monitors at strategic locations, then backing off to a position of safety to monitor readings over the wireless link.

The AreaRAE Steel is available individually or as part of the Rapid Deployment Kit (RDK) system package.

Key Features

- Up to five sensors (PID, LEL, O₂ and two toxic gas electrochemical)
- Loud buzzer and large, extra-bright warning light
- Large LCD display and keypad
- Rugged, weather-resistant stainless-steel housing
- Built-in sampling pump
- Interchangeable Lithium-ion or alkaline battery pack
- Continuous operation via AC source

Additional Advantages

- Real-time wireless data transmission with built-in RF modem
- View real-time sensor data and alarm status at headquarters or command center
- ProRAE Remote software simultaneously controls and displays readings for up to eight remote detectors
- License-free, ISM wireless transmission with communication range up to 2 mi (3km), extendable with RAELink Repeaters
- Fully hardware and software compatible with standard AreaRAE network components
- Optional GPS provides ability to track and display readings from remote detectors

Applications

- HazMat and Emergency Response
- Refineries and Petrochemical Plants
- Power Plants
- Pulp and Paper Industry
- Plant and Mill Turnarounds
- Marine and Offshore Wells



Wireless

GPS

Specifications*

Detector Specifications

Size	9.25" L x 5.0" W x 9.25" D (235mm L x 127mm W x 235mm D) without handle
Weight	13.85 lbs (6.3 kg) with battery pack
Sensors	Up to five sensors (O ₂ , combustible, two toxic and VOC), electrochemical sensors for toxic gases and oxygen, photoionization sensor for VOC, catalytic combustion sensor for combustible gases
Battery	Rechargeable, 7.4V/4.5Ah, Lithium-ion battery pack with built-in charger (less than 10 hours charge time) or a 6 C-size alkaline battery pack
Operating Hours	Up to 18 hours continuous operation
Display	2-line, 16-digit LCD with manually activated LED back light
Keypads	3 operation and 4 programming keys
Direct Readout	Instantaneous values, sensor name, high and low values for all detectors, TWA and STEL values for toxic gases and VOCs, battery voltage and elapsed time
Alarm	Flashing red LED cluster to indicate exceeded preset limits, low battery or sensor failure
Alarm Setting	Separate alarm limit settings for TWA, STEL, Low and High alarm
Audible Alarm	Buzzer, 110dB buzzer at 10cm (typical)
Visual Alarm	Flashing red LED cluster
Alarm Mode	Latching/automatic reset
Datalogging	4,000 points for each sensor with time stamp, serial number, user ID, site ID
Data Storage	20,000 readings (64 hours, 5 channels at 1 minute intervals) in non-volatile memory
Datalog Interval	Programmable 1 to 3,600 sec
Communication	Upload data to PC and Download monitor setup from PC through RS-232 link to serial port on PC
EM Immunity	No effect when exposed to 0.43 mW/cm ² RF interference (5-watt transmitter at 30cm)
Safety Certification	CSA Classified for use in Class I, Division 2, Groups A, B, C, and D (w/900 MHz modem)
Frequency	902 to 928 MHz (License-free)
RF Range	Up to 2 miles (900 MHz), extendable with RAELink2 Repeaters
Error Detection	32 bit CRC, resend on error
Calibration	Two-point field calibration for fresh air and standard reference gas
Sampling pump	Internal integrated diaphragm pump with programmable High (400cc/min) and Low (300cc/min) flow rate settings
Low Flow Alarm	Auto shutoff pump at low-flow condition
Temperature	-20° to 45° C (-4° to 113° F)
Humidity	0% to 95% relative humidity (non-condensing)
Attachment	Shoulder strap, optional tripod/wall mounting bracket
Optional	Integrated GPS receiver

*Specifications are subject to change

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Sensor Specifications

Gas Monitor	Range	Resolution
Oxygen	0 to 30.0%	0.1%
Combustible	1 to 100% LEL	1% LEL
VOCs	0 to 199 ppm 200 to 2,000 ppm	0.1 ppm 1 ppm
Carbon Monoxide	0 to 500 ppm	1 ppm
Carbon Monoxide	10 to 2000 ppm	10ppm
Hydrogen Sulfide	0 to 100 ppm	1 ppm
Sulfur Dioxide	0 to 20.0 ppm	0.1 ppm
Nitric Oxide	0 to 250 ppm	1 ppm
Nitrogen Dioxide	0 to 20.0 ppm	0.1 ppm
Chlorine	0 to 10.0 ppm	0.1 ppm
Hydrogen Cyanide	0 to 100 ppm	1 ppm
Ammonia	0 to 50 ppm	1 ppm
Phosphine	0 to 5.0 ppm	0.1 ppm
Hydrogen Chloride	2 to 15 ppm	1 ppm
Hydrogen Fluoride	2 to 10 ppm	1 ppm

Monitor only includes:

- Monitor as specified
- Sensors as specified
- Carbon filters (for units with CO)
- Calibration adapter
- Quick reference guide
- Operation and maintenance manual
- Shoulder strap
- Rechargeable Lithium-ion battery pack
- 120/240 VAC AC/DC Adapter
- Spare alkaline battery pack
- 10 spare external filters
- Hard transport case with pre-cut foam padding
- 15' (5m) Teflon® tubing
- Tool kit

Instrument with calibration kit also includes:

- Calibration gas (kit may contain multiple cylinders, depending on the sensors installed)
- Calibration regulator and tubing (kit may contain a second regulator, depending on the types of calibration gases included)

Datalogging Monitors also include:

- Software, ProRAE Suite Package for Windows 98, NT, 2000 and XP
- Computer interface cable

ProRAE Remote Basic Host Software Package includes:

- ProRAE Remote Software for Windows 98, NT, 2000 and XP
- RAELink Modem

