

AreaRAE

Model PGM-5010, 5020, 5030 and 5040

Wireless, Multi-channel, Compact and Easily Transportable Multi Gas Monitor

The **AreaRAE** is a one-to-five sensor gas detector which can be optionally equipped with a wireless, RF (radio frequency) modem which allows the unit to communicate and transmit readings and other information on a real-time basis with a remotely located base controller.

In its simplest form, the **AreaRAE** is a rugged, weatherproof, one-to-five sensor portable monitor that can run over 24-hours on either rechargeable lithium-ion, or alkaline batteries. It is also the first "lunch box" type multi-sensor instrument able to include a photoionization detector (PID) for parts-per-million measurement of volatile organic compounds (VOCs), as well as LEL, O₂ and up to two electrochemical toxic sensors for measurement of specific toxic substances such as CO and H₂S.

The optional RF modem allows real-time data transmission with a base controller located up to two-miles away from the AreaRAE detector. Any personal computer can be used as the base station for an AreaRAE system. The standard ProRAE Remote software used to control AreaRAE systems is capable of monitoring the input of up to 16 remotely-located monitors.

Future AreaRAE options include the ability to track and display readings from remotely located detectors on a GPS map, using the wireless communications link for two-way voice communication, and even video image transmission between AreaRAE detectors and the base controller.

The AreaRAE is ideal for hazmat and other emergency response monitoring programs. AreaRAE 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.

Standard Features

- Up to five sensors (PID, LEL, O₂ and two toxic)
- Loud buzzer and large, extra-bright warning light
- Large LCD display and keypad
- Rugged, weather-proof housing (IP55)
- Built-in pump
- Interchangeable Li-ion or alkaline battery pack
- Continuous operation via AC source

Additional Advantages:

- Optional 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 16 remote detectors
- License free, ISM band RF transmission with communication range up to 2-miles
- Optional wall-mounting bracket or field mounting tri-pod adapter

Applications

- HAZMAT and Emergency Response
- Refineries and petrochemical plants
- Confined Space Entry
- Power plants
- Pulp and paper industry
- Plant and mill turnarounds
- Marine and offshore wells



Specifications

Sensor Specifications

Gas Monitor	Range	Resolution	Response Time (t ₉₀)
Oxygen	0 – 30%	0.1%	15 seconds
Combustible gas	0 – 100% LEL	1%	15 seconds
VOCs	0 – 200 ppm	0.1 ppm	10 seconds
	200 – 2000 ppm	1 ppm	10 seconds
Carbon Monoxide	0 – 500 ppm	1 ppm	20 seconds
Hydrogen Sulfide	0 – 100 ppm	1 ppm	30 seconds
Sulfur Dioxide	0 – 20 ppm	0.1 ppm	15 seconds
Nitric Oxide	0 – 250 ppm	1 ppm	20 seconds
Nitrogen Dioxide	0 – 20 ppm	0.1 ppm	25 seconds
Chlorine	0 – 10 ppm	0.1 ppm	60 seconds
Hydrogen Cyanide	0 – 100 ppm	1 ppm	60 seconds
Ammonia	0 – 50 ppm	1 ppm	150 seconds
Phosphine	0 – 5 ppm	0.1 ppm	60 seconds

Detector Specifications

Size	7.25" L x 6.0" W x 4.5" H (18.4 cm x 15.2 cm x 11.4 cm)
Weight	4.5 lbs. (2Kg) with battery pack
Detector	Up to five sensors (oxygen, combustible, two toxic and VOC), electrochemical sensors for toxic gases and oxygen, photo-ionization sensors for VOC, catalytic sensors for combustible gases.
Battery	Rechargeable, 7.4V/4.5 Ah, Lithium-ion battery pack with built-in charger (less than 10 hours charge time) or a 6 C-cell alkaline battery pack
Operating Hours	Up to 24-hours continuous operation
Display	2 line, 16 digit LCD with automatic LED back light in dim light
Keypads	3 operation and 4 programming keys
Direct Readout	Instantaneous values (up to 4), sensor name, high and low values for toxic all detectors, TWA and STEL values for toxic and VOCs, battery voltage and elapsed time
Alarm	100 dB buzzer and 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	100 dB buzzer at 10 cm (typical)
Visual Alarm	Flashing red LED cluster
External Alarm	Optional plug in pen size vibration alarm or earphone
Alarm Mode	Latching / automatic reset
Datalogging	4000 points for each sensor with time stamp, serial number, user ID, site ID, location information (with GPS option)
Data Storage	20,000 readings (64 hours, 5 channels at 1 minute intervals) in non-volatile memory
Datalog Interval	Programmable 1 - 3600 sec.
Communication	Upload data to PC and Download monitor setup from PC through RS-232 link to serial port on PC
Intrinsic Safety	Non-Wireless: UL Classified for use in Class 1, Division I, Groups A, B, C and D, Class 2 Groups E, F, G Hazardous Locations, Temp Code T3C. Wireless: Class 1, Division II, Groups A, B, C, and D.
EM Immunity	No effect when exposed to 0.43 mW/cm ² RF interference (5 watt transmitter at 12 inch)
Calibration	Two-point field calibration for fresh air and standard reference gas
Sampling pump	Internal integrated diaphragm pump with programmable "High" (400cc) and "Low" (300cc) flow rate settings
Low Flow Alarm	Auto shut off pump at low flow condition
Temperature	-4 to 113°F (-20 to 45°C)
Humidity	0% to 95% relative humidity (non-condensing)
Attachment	Shoulder strap, optional tripod / wall mounting bracket
Optional	Wireless, real-time, RF data transmission, wireless RF data transmission plus two way voice communication, wireless RF data transmission plus two way voice and GPS

AreaRAE Accessories

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
- 120V AC/DC Wall Adapter (if specified)
- Spare alkaline battery pack
- Water-trap adapter
- 10 Spare External Water trap filters
- 5 Internal filters
- Hard transport case with pre-cut foam
- 15' (5M) Teflon tubing
- Tool kit
- Lamp cleaning kit (if instrument equipped with PID)

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)
- Hard transport case with pre-cut foam

Datalogging Monitors also include:

- Software, ProRAE Suite Package for Windows 95, 98 and NT
- Computer interface cable

ProRAE Remote Basic Host Software Package includes:

- ProRAE Remote Software
- RAELink modem
- Hardware key for control of up to 16-detectors

AreaRAE Model Numbers:

- AreaRAE "Stand-alone" (non-wireless version): PGM-5010
- AreaRAE with RF modem: PGM-5020
- AreaRAE with RF modem and GPS: PGM-5030
- AreaRAE with RF modem, GPS and Voice: PGM-5040



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