



RAE Systems

Real-time detection for real-time decisions

PRODUCT CATALOG

About RAE Systems

RAE Systems is the leading global provider of rapidly deployable connected, intelligent gas and radiations detection systems that enable real-time safety and security threat detection. RAE Systems products are used in over 100 countries by many of the world's leading corporations and government agencies.

RAE Systems offers a full line of wireless solutions including personal, hand-held, transportable, and fixed instruments designed to meet the monitoring needs in energy production, refining, industrial and environmental safety, national security, hazardous materials response, and environmental applications.

A proven technology leader that owns and manufactures its chemical sensor technology, RAE Systems holds over 20 chemical sensor patents and has developed proprietary photoionization, wireless, and radiation detection technologies. By leveraging nearly two decades' experience with a global sales channel and partners, RAE Systems provides the highest level of quality, value, and satisfaction to its customers around the world.

Emergency Response Wireless System

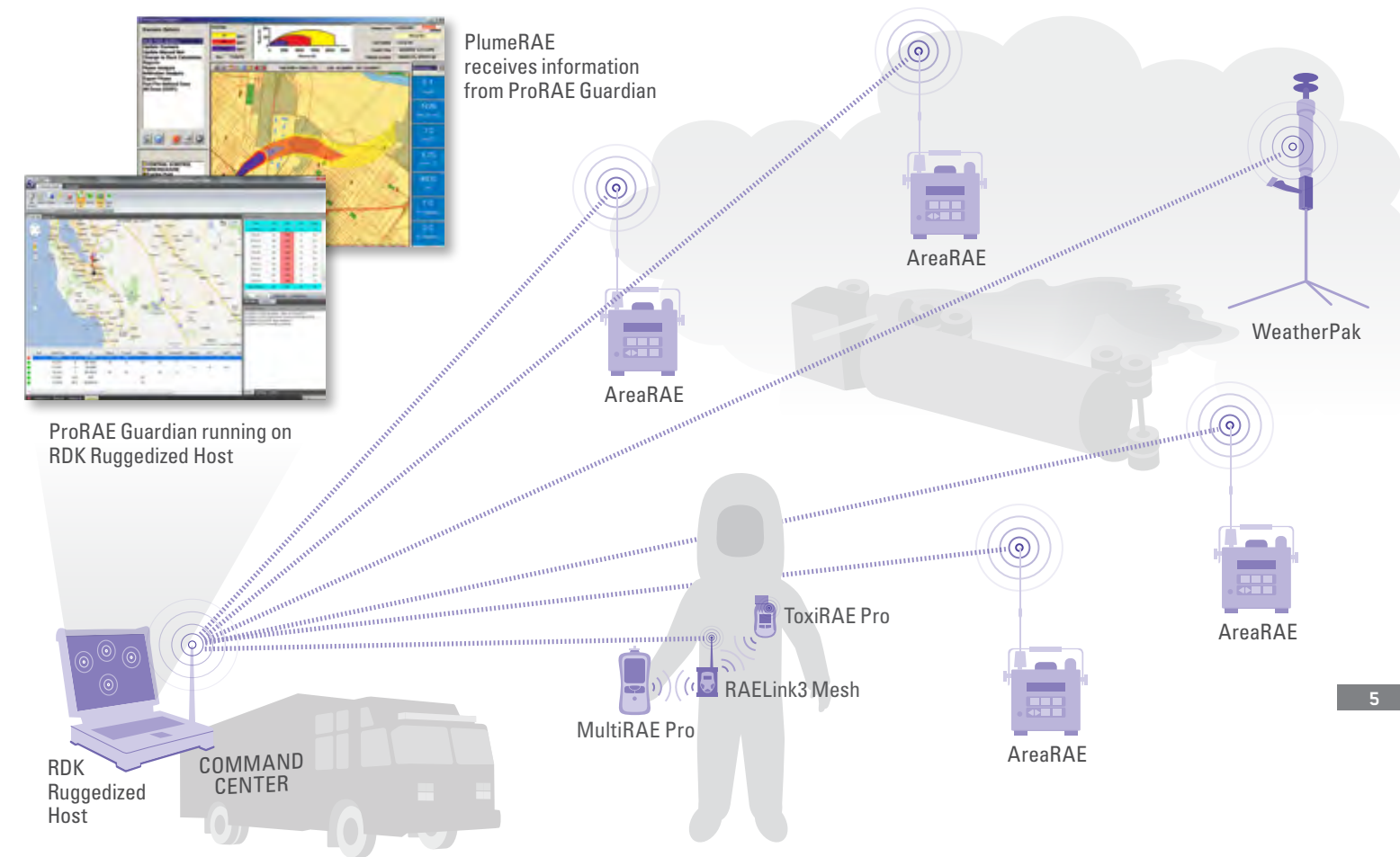
APPLICATIONS

- HazMat and emergency response
- Public venue protection
- Force protection
- Decontamination
- Confined space entry
- Unmanned robotic reconnaissance

RAE Systems' ProRAE Guardian Wireless Safety System provides incident commanders with a real-time view of a variety of radiation and gas monitors deployed within a hazardous zone. The rapidly deployable wireless network of sensors helps incident commanders characterize and track the atmospheric threats within a region, and is a critical tool in ensuring the safety of the public and responders. For larger HazMat incidents, ProRAE Guardian easily integrates the monitoring assets of mutual aid departments using an intuitive, secure web-based interface.

FEATURES

- Provides early warning and tracking of chemical and radiological hazards
- Aids mission control by providing remote wide area monitoring and enabling interoperability
- Speeds up response effort and reduces exposure risk for the public and responders



Industrial Plant Safety Wireless System

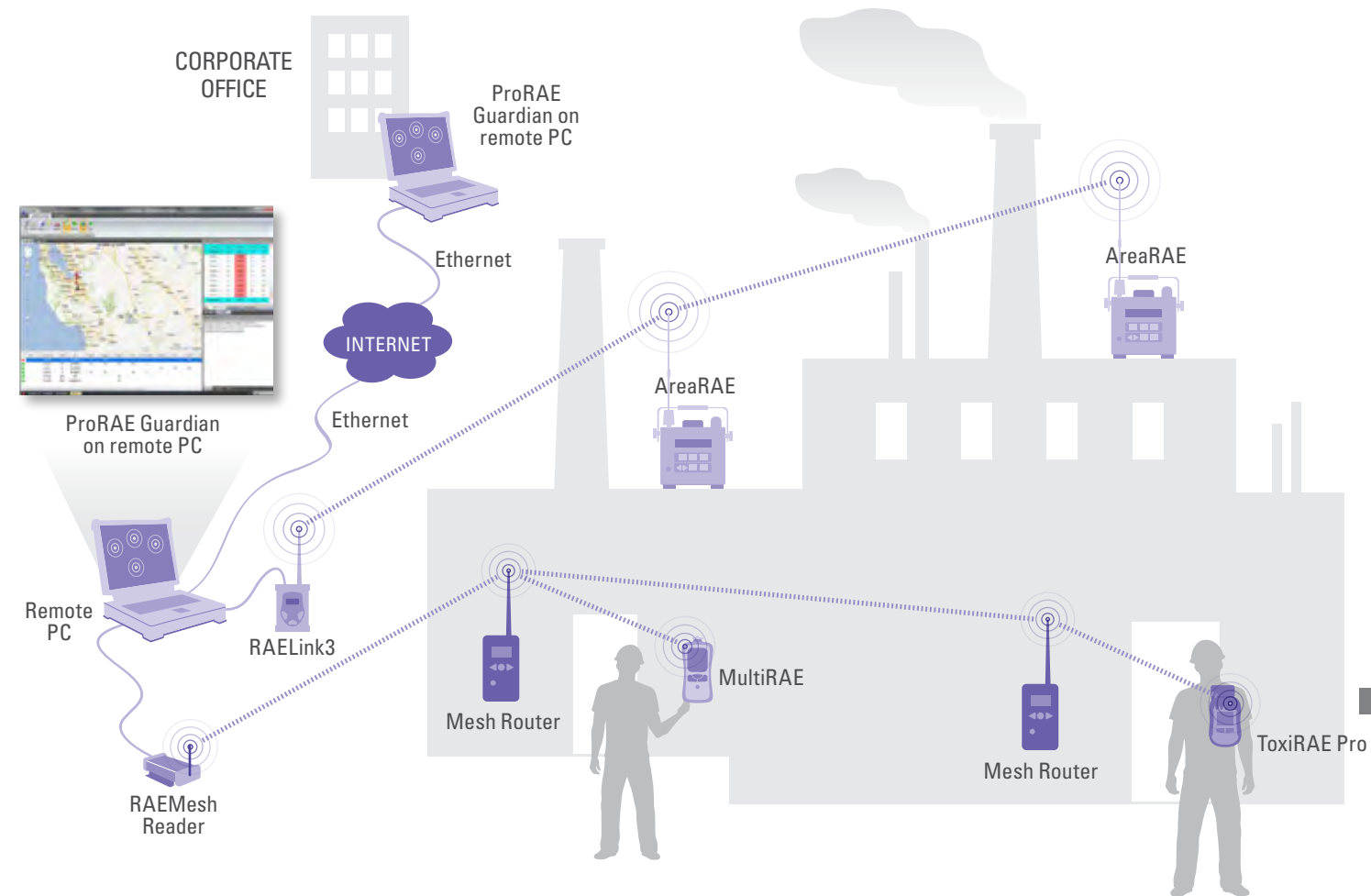
APPLICATIONS

- Plant turnarounds
- Fence-line monitoring
- Personal protection
- Industrial hygiene
- Confined space entry

RAE Systems' ProRAE Guardian Wireless Safety System enables real-time tracking of atmospheric hazards such as flammable gases, hydrocarbons, and specific chemical threats such as hydrogen sulfide and sulfur dioxide. Wireless personal, transportable, fixed, and survey gas monitors provide plant, safety and project managers an invaluable second layer of defense in addition to instrument-based local alarm notification. The self-forming, self-healing network syncs automatically through wireless access points to provide rapid response capabilities to chemical and radiation releases. The ProRAE Guardian Wireless Safety System incorporates field-proven solutions to elevate and deliver proactive safety at the workplace.

FEATURES

- Real-time information helps safety managers make the best on-the-spot decisions
- Up to 512 monitors with real-time data, alarm status, and tracking
- Cascade data from multiple locations to corporate headquarters
- Secure viewing of real-time data by offsite experts over the Internet
- Rich reporting and instrument tracking



Oil and Gas Wireless System

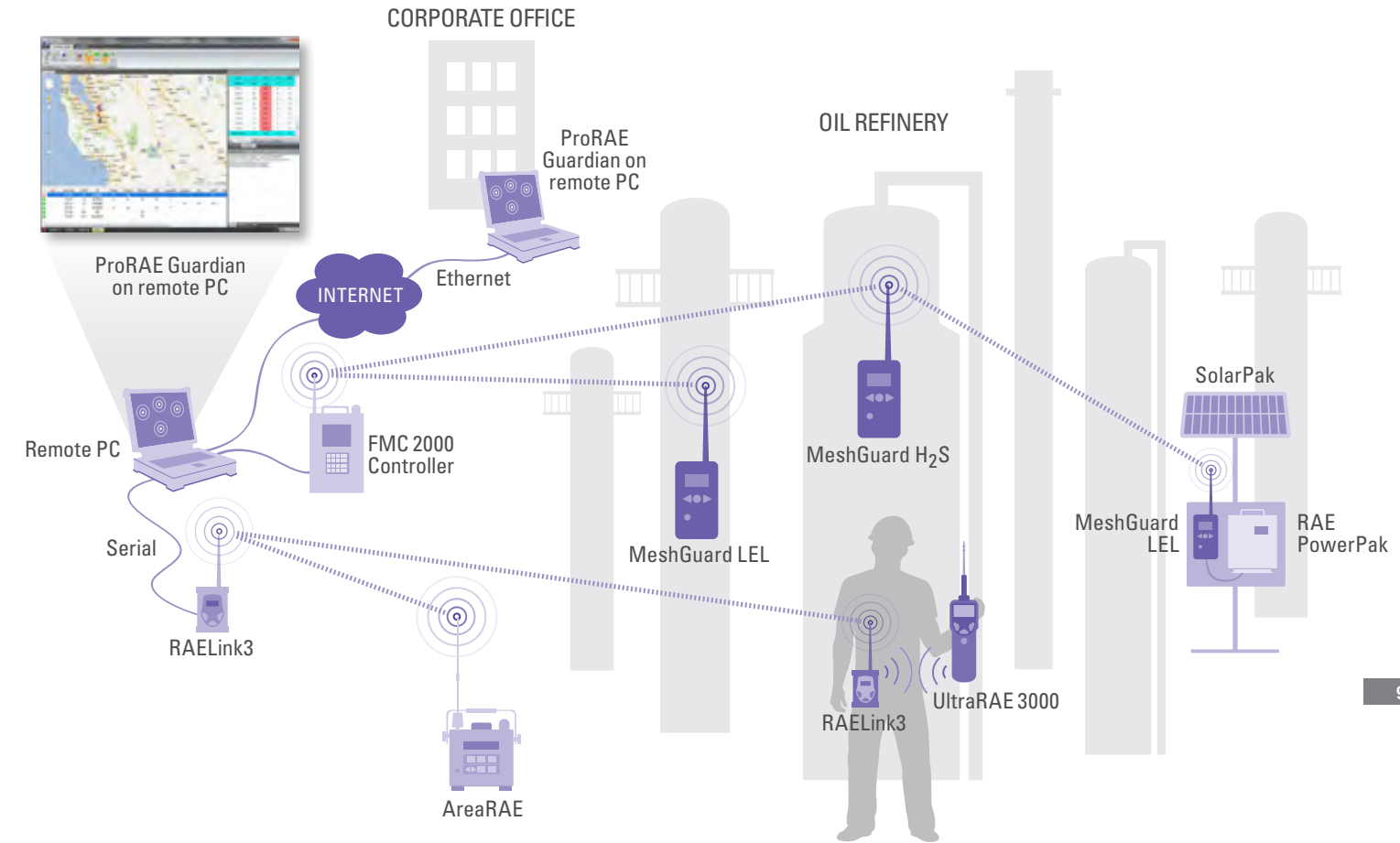
APPLICATIONS

- Oil and gas drilling operations
- Oil and gas production
- Plant maintenance turnarounds
- Industrial safety
- Tank farms
- Shipyards and maritime

Portability and rapid speed of deployment make RAE Systems wireless air monitoring solutions ideal for the oil and gas industry. RAE Systems monitors help create a safe working environment in remote upstream operations as well as downstream applications such as refinery turnarounds where alternative fixed solutions are more expensive and time-consuming. Portable wireless monitors, such as the MeshGuard, enable faster commissioning of a monitoring system, which minimizes downtime. The ProRAE Guardian Wireless Safety System enables corporate visibility into sensor readings and alarm status at multiple remote sites and supports automatic alarm notification through both the ProRAE Guardian interface and via e-mail.

FEATURES

- Self-healing network automatically routes data to the command center through the best wireless path available
- Cascade data from multiple locations to corporate headquarters
- Remote alarm notification via email
- Rugged monitors built for harsh oil and gas environments
- Multiple controller options for real-time wireless data collection and viewing



Closed Loop Wireless System

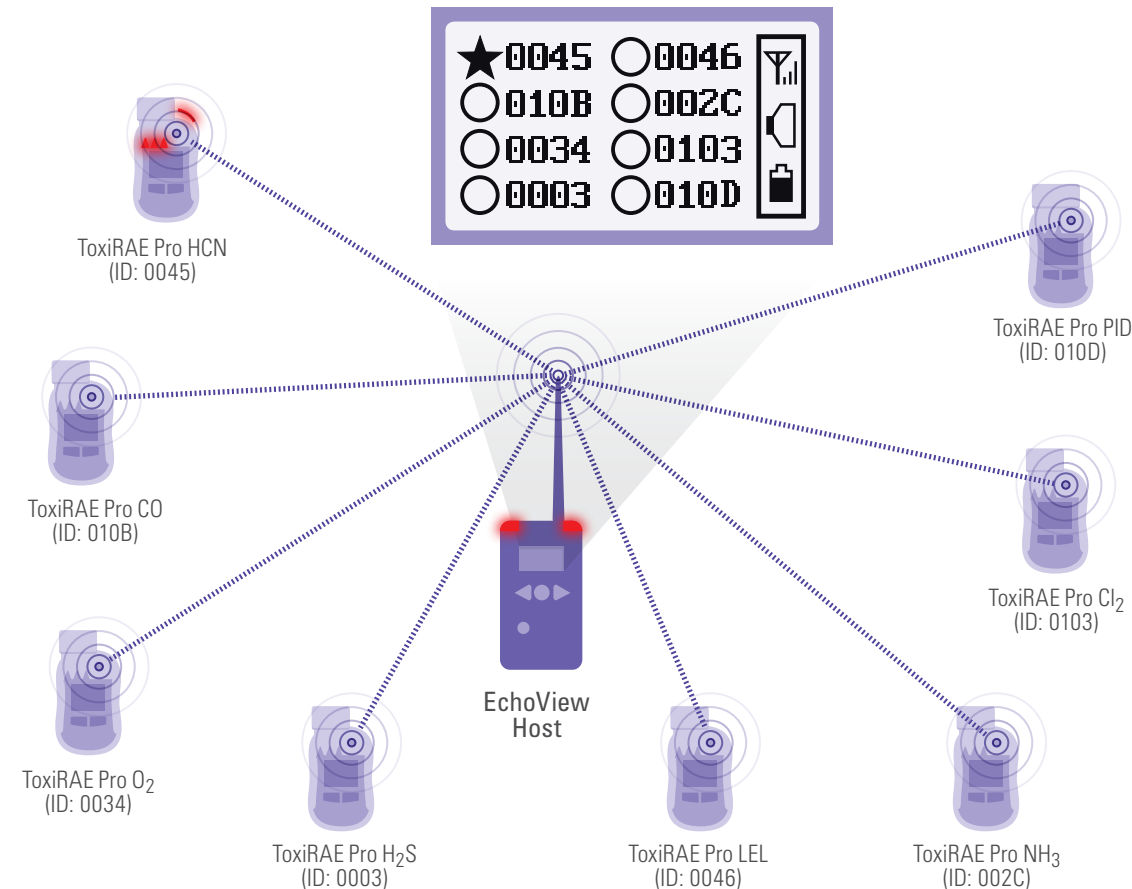
APPLICATIONS

- HazMat response
- Fire service
- Military
- Environmental
- Other "team-in-the-field" applications
- Emergency Medical Services

The EchoView Host Mini-Controller establishes a closed-loop wireless gas detection system with RAE Systems wireless personal and survey monitors elevating safety and enabling faster incident response. The intrinsically safe solution automatically establishes a link between the controller and up to eight monitors. The EchoView Host can then display real-time monitor readings and alarm status to safety officers who may be outside the immediate incident area. This provides incident commanders the same real-time visibility into responders' and workers' gas monitor readings and alarm status as if they were in the "hot zone."

FEATURES

- Intrinsically safe portable EchoView Host Mini-Controller
- Intuitive user interface
- Self-forming network with up to eight monitors
- Typical range: 330 feet (100 meters), extendable to 0.6 mi (1 km) with Mesh Routers



ProRAE Guardian CloudServer

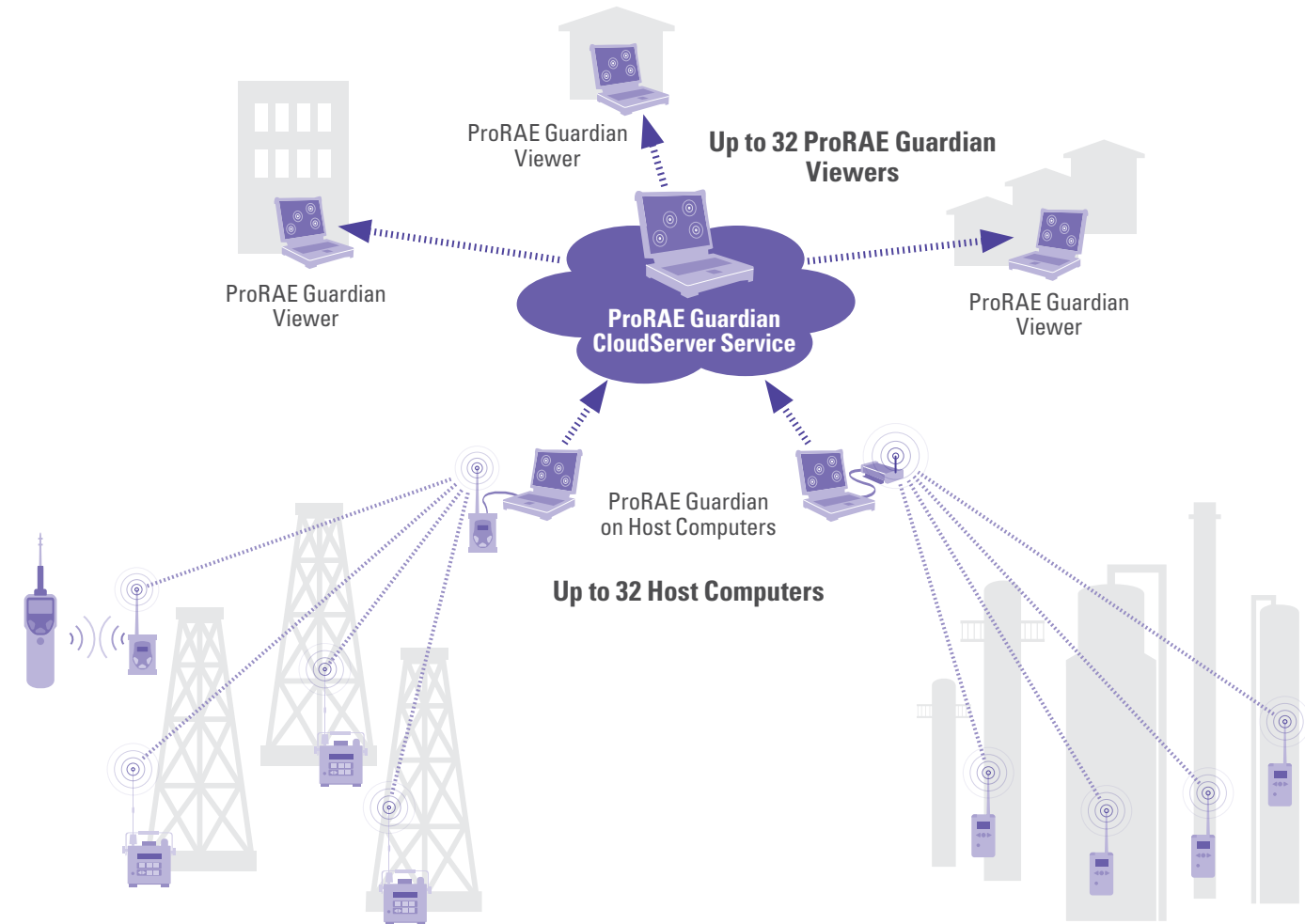
Makes Real-Time Gas and Radiation Sensor Data Available Anytime, Anywhere

ProRAE Guardian CloudServer service simplifies sharing instrument data with multiple remote sites in real time and empowers decision makers with critical information in emergency response situations.

The service aggregates instrument data from multiple installations in real time and makes it available for viewing anywhere in the world with no extra hardware or maintenance costs. The service is professionally hosted and maintained by RAE Systems in a fail-safe environment, which ensures uninterrupted service 24x7. ProRAE Guardian CloudServer eliminates the setup and configuration complexity from users and allows them to focus on their core jobs.

FEATURES

- Hosted in secure and fail-safe environment
- Professionally supported by RAE Systems 24x7
- Turn-key solution up and running in minutes
- Multi-year service terms are available with increasing level of discounts
- Works from inside and outside of corporate firewall



ProRAE Guardian

Your Mobile Command Center For Rapid Threat Response

ProRAE Guardian advanced-generation real-time wireless gas-detection software application serves as a mobile command center for all your threat-detection needs. ProRAE Guardian empowers incident commanders and safety managers with instant updates of data anywhere for real-time decisions. ProRAE Guardian also helps geographically dispersed teams coordinate their threat responses while simultaneously viewing the same situational data in real-time.

ProRAE Guardian software connects, integrates, and relays data from RAE Systems' and select partners' wireless products to remote monitors located anywhere you choose. ProRAE Guardian displays integrated data that includes device status, alarm, and sensor reading on a single, dynamic map for easy visualization.



FEATURES

- Real-time display of device status, sensor readings, and alarms
- Integrated Google Maps show precise instrument locations with alarm status
- Remote alarming via email and text messages
- Supports up to 512 instruments simultaneously
- Security features for data protection and networking



PlumeRAE

Plume Measurement and Decision Support for First Responders

PlumeRAE is a unique, turn-key solution for rapid monitoring and assessment of situations involving the release of hazardous substances. PlumeRAE measurement software integrates information from other RAE Systems products, as well as data transmitted by a PlumeRAE WeatherPak®. The plume measurement software displays a graphic of the toxic plume, the speed at which it is spreading, and the concentration of the toxic compound.



FEATURES

- Tracks and validates plume movement and dispersal
- Employs intelligent placement tactics for safely locating responders
- Guides evaluation of toxicological effect on responders





RAELink3

Wireless Transmission with Integrated Global Positioning System

The RAELink3 wireless modem integrates many RAE Systems gas and radiation monitors, and select third-party devices, into a real-time wireless safety network. Monitors linked with a RAELink3 modem can communicate sensor data and GPS coordinates to a command center's PC running ProRAE Guardian Software up to 2 miles (3 km) away.

FEATURES

- GPS equipped for tracking and viewing sensors on a local map
- Transmits data up to 2 miles (3 km)
- Easily configures in the field to interface with other real-time wireless safety systems
- Bluetooth-equipped for optional wireless connection to monitors
- Programmable as a host modem, repeater, or remote modem
- Configurable for a variety of monitors and detection technologies

SUPPORTED MONITORS

- MiniRAE 2000 & MiniRAE 3000
- ppbRAE Plus & ppbRAE 3000
- UltraRAE 3000
- MultiRAE Plus
- ChemRAE
- GammaRAE II R
- ProEngin AP4C
- TSI DustTrak 2



RAELink3 Mesh

Wireless Transmission with Integrated Global Positioning System

The RAELink3 Mesh wireless modem connects RAE Systems gas and radiation monitors to the ProRAE Guardian Real-Time Wireless Safety System. This provides commanders and safety professionals with remote access to real-time instrument readings, alarm status and location for better visibility and faster incident response. The integrated Mesh Radio automatically links to RAE Systems portable gas and radiation monitors.

FEATURES

- Long-range transmission of up to 2 miles (3 km)
- Can communicate with up to nine gas monitors at the same time
- GPS feature enables asset tracking and real-time viewing of the precise instrument location
- Programmable as a host modem, repeater, or remote modem

SUPPORTED MONITORS

- MultiRAE Lite
- MultiRAE
- MultiRAE Pro
- ToxiRAE Pro EC
- ToxiRAE Pro PID
- ToxiRAE Pro LEL
- ChemRAE
- AP4C
- DustTrak 2





RAEMesh Reader

Host Controller for Wireless Mesh Monitors

The RAEMesh Reader allows the use of a PC (instead of a dedicated controller) to monitor wireless detectors in real time. The RAEMesh Reader receives data wirelessly from remote detectors, and pushes data to ProRAE Guardian software. The RAE Mesh Reader can push data directly to a PC via RS232, or to a remote PC via Ethernet. The RAE MeshReader is designed to be located in non-hazardous, indoor locations.

EchoView Host

Portable Mini-Controller for Portable Wireless Gas Monitors

The EchoView Host can establish a self-contained wireless network with up to eight RAE Systems portable monitors and display their real-time readings and alarm status on an easy-to-read screen. This provides safety officers who may not be at the scene with the same real-time visibility into atmospheric hazards as if they were directly in the "hot zone," for faster incident response.



Mesh Router

Wireless Range Extender

The Mesh Router extends the range of wireless networks featuring RAE Systems ToxiRAE Pro family personal wireless monitors. Up to 3 Mesh Routers can be deployed to extend the communication range between the monitors and the EchoView Host Mini-Controller from 330 feet (100 meters) to up to 0.6 miles (about 1 kilometer).

FEATURES

- The Mesh Router is an intrinsically safe device certified for use in Class I, Division 1 (or Zone 0) hazardous locations
- Each Mesh Router adds up to 330 feet (100 meters) of wireless range to a network
- The Mesh Router can run continuously for over 10 days on its internal replaceable battery



Colorimetric Gas Detection Tubes and Pump

Quick Measurement of Specific Gases and Vapors

RAE Systems' large selection of colorimetric gas detection tubes enables quick, on-the-spot measurement of various gases and vapors. RAE Systems colorimetric tubes provide accurate measurements and never need calibration. The one-time-use tubes are easy to read, with their sharp, clear color change.

COLORIMETRIC GAS DETECTION TUBES

- Precise, quick, low-cost measurements
- Wide assortment of tubes available to detect over 300 gases and vapors
- Easy to use, even in multiple layers of gloves
- Easy-to-read with sharp, clear color change
- No calibration or other maintenance required

HAND PUMP (LP-1200)

- Solid metal construction with lifetime warranty
- Springless piston design accurately draws 50 and 100 cc volumes
- Tube tip breaker and glass tip holder
- Clear end-of-flow indicator
- Tapered inlet design avoids leaks with different diameter tubes
- Simple stroke counter

ToxiRAE II

Personal Single-Gas Monitor

ToxiRAE II is a single-gas personal protection monitor that continuously displays gas concentrations for one of its 11 supported gases. A simple-to-use one-button instrument, the ToxiRAE II is easy to calibrate and offers preset alarms that can be modified to meet specialized requirements.

FEATURES

- Easy-to-read display continuously shows gas concentration
- Displays STEL, TWA, and Peak values
- Sensors available: H₂S, CO, O₂, NH₃, Cl₂, ClO₂, HCN, NO, NO₂, PH₃, SO₂
- Field-replaceable filter and battery
- User-adjustable high, low, STEL, and TWA alarms
- Durable, highly impact-resistant, carbon-loaded ABS housing
- Highly resistant to RFI
- IP-65 rated weather resistant





ToxiRAE 3

Single Gas Monitor for CO or H₂S

The ToxiRAE 3 is a full-featured single-gas monitor that offers an unequaled cost-of-ownership value. The ToxiRAE 3 is compatible with the AutoRAE Lite bump test and calibration station. The ToxiRAE 3 detector features a 2-year warranty and can record STEL, TWA, high, and low alarms.

FEATURES

- High-performance micro sensor with industry's fastest response time
- 0.1 ppm H₂S resolution, and high-range 1999 ppm CO sensors available
- Large, easy-to-read display for gas concentration or days remaining (user configurable)
- Rugged stainless-steel covered enclosure (IP-67 rated)
- Activity records when used with AutoRAE Lite automatic bump test and calibration station
- Can be configured to operate in a 2-year always-on (countdown) mode or in On/Off mode

ToxiRAE Pro

Personal Wireless Monitors for Toxic Gases and Oxygen

The ToxiRAE Pro is the world's first wireless personal monitor for toxic gases and oxygen. The ToxiRAE Pro provides safety professionals wireless access to real-time instrument readings and alarm status from any location for better visibility and faster response. The ToxiRAE Pro can detect a broad range of gases—from carbon monoxide, hydrogen sulfide, and oxygen to ammonia, chlorine, and formaldehyde. The ToxiRAE Pro's intelligent interchangeable sensors store calibration data. Users can monitor one gas one day and another gas the next by swapping the sensors.

FEATURES

- Wireless access to real-time instrument readings and alarm status from any location
- Unmistakable five-way local and remote wireless notification of alarm conditions
- Intelligent sensors store calibration data, so they can be swapped in the field
- Largest display in its class
- Reliable, rugged, and intrinsically safe
- Fully automated bump testing and calibration with AutoRAE 2





ToxiRAE Pro LEL

Personal Wireless Monitor for Combustible Gases

The ToxiRAE Pro LEL is the world's first wireless personal combustible gas monitor. The ToxiRAE Pro LEL provides safety professionals wireless access to real-time instrument readings and alarm status from any location for better visibility and faster response. The ToxiRAE Pro LEL promptly detects and accurately monitors combustible gases and vapors in concentrations from 0 to 100% of the lower explosive limit (LEL). With an onboard library of 55 correction factors, the ToxiRAE Pro LEL can be programmed to automatically read in %LEL of the specified compound.

FEATURES

- Wireless access to real-time instrument readings and alarm status from any location
- Unmistakable five-way local and remote wireless notification of alarm conditions
- 55 built-in LEL correction factors
- Largest display in its class
- Reliable, rugged, and intrinsically safe
- Continuous datalogging
- Fully automated bump testing and calibration with AutoRAE 2



ToxiRAE Pro PID

Personal Wireless Monitor for Volatile Organic Compounds

The ToxiRAE Pro PID is the world's smallest wireless volatile organic compounds (VOC) monitor. The ToxiRAE Pro PID provides safety professionals wireless access to real-time instrument readings and alarm status from any location for better visibility and faster response. Featuring RAE Systems' next-generation PID sensor, the ToxiRAE Pro PID can promptly detect and accurately monitor over 300 VOCs. With an onboard library of 190 correction factors, the ToxiRAE Pro PID can be programmed to automatically read in concentrations of the specified compound.

FEATURES

- Wireless access to real-time instrument readings and alarm status from any location
- Unmistakable five-way local and remote wireless notification of alarm conditions
- Reliable, rugged, and intrinsically safe
- Largest display in its class
- Continuous datalogging
- Fully automated bump testing and calibration with AutoRAE 2
- User-replaceable sensor, filter, fan, and lithium-ion battery





QRAE II

4-Gas Confined Space Monitor, Pumped or Diffusion

QRAE II is a full-featured, compact, compliance monitor for oxygen, combustibles, hydrogen sulfide, and carbon monoxide. Key features include an easy-to-change battery pack, a water-resistant case and a state-of-the-art SPE O₂ sensor.

FEATURES

- Best EMI/RFI immunity for products in its class, virtually eliminating radio interference
- Easy access to pump, sensors, filter and battery compartment without exposing electronic components to potential damage
- IP-65 water- and dust-resistant case
- Strong, protective, concussion-proof design

MultiRAE Lite

Wireless Personal Protection/Confined Space Monitor

The MultiRAE Lite is an optimal one-to-six-gas monitor for personal protection and multi-gas leak detection applications. Available in pumped and diffusion versions and featuring the broadest selection of sensor options in its class, the MultiRAE Lite can be configured to exactly meet the needs and compliance requirements of various countries, industries, and applications.

FEATURES

- Unmistakable five-way local and remote wireless notification of alarm conditions, including Man-Down Alarm
- 25+ interchangeable intelligent sensors, including PID for VOCs, NDIR and catalytic LEL for combustibles, and NDIR for CO₂
- Large graphical display with easy-to-use, icon-driven user interface and automatic “flip” feature
- Continuous datalogging (6 months for 5 sensors, 24x7)
- Easy maintenance with replaceable sensors, pump, and plug-and-play battery



DoseRAE2

Electronic Dosimeter for Personal Radiation Dosage Monitoring

DoseRAE2 is a compact, direct-reading and -alarming electronic personal radiation detector that uses a diode and a scintillation crystal to detect X- and gamma radiation. The DoseRAE2 provides real-time monitoring of personal dose and dose rate. The real-time radiation dose rate monitoring allows immediate reaction in case of radiation occurrences and can help reduce radiation exposure. By measuring dose equivalent and dose equivalent rate, this detector provides the functions of a dosimeter. DoseRAE2 also measures radiation exposure and exposure rate, which can help reduce the exposure of emergency responders to photon radiation.

FEATURES

- Stand-alone electronic dosimeter with LCD display
- Multiple units with reader and software can be used as a dosimetry system
- Continuous digital dose rate readout in rem/h, Sv/h and R/h
- Continuously accumulated total dose readout in rem, Sv and R
- Prominent visible, audible, and vibration alarms
- Long calibration life
- Two operation keys, simple intuitive programming

GammaRAE II R

Gamma Radiation Detector and Dosimeter in One

The GammaRAE II R is a gamma radiation detector and full-range dosimeter in a single instrument. The GammaRAE II R is designed specifically to meet the needs of first responders. GammaRAE II R has the rapid response of a detector and the accurate dose measurement of a dosimeter.

FEATURES

- Two types of sensors for excellent response in high and low dose rate ranges
- Wireless data transmission up to 2 miles (3 km) when used with a RAELink3
- Accurately measures accumulated dose to the wearer
- IP-67, immersible in water for easy decontamination
- Certified for use in Class I, Division 1 hazardous environments
- Top-mounted, invertible display
- Two AA alkaline batteries last up to 600 hours



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NeutronRAE II

Detector for Gamma and Neutron Radiation

NeutronRAE II is a personal radiation detector that provides rapid detection of both gamma (γ) ray and neutron sources, even in potentially flammable environments. The NeutronRAE II is water-immersible for chemical decontamination purposes, and can be safely used in more environments than any other personal gamma and neutron radiation detector.

FEATURES

- Detects neutrons from weapons-grade Plutonium (^{239}Pu)
- Sensitive CsI and LiI scintillators for excellent search capability and fast response
- Top-mounted invertible display
- IP-67, immersible in water for easy decontamination
- Certified for use in Class I, Division 1 hazardous environments
- Two AA alkaline batteries last up to 600 hours



BioHarness

Real-Time Portable Physiological Monitoring

The BioHarness is a lightweight, chest-worn strap that incorporates ECG (electrocardiogram) and breathing rate sensors for real-time portable physiological monitoring. The BioHarness links to a RAELink3 portable modem which enables the long-range wireless radio to transmit sensor readings and GPS coordinates in real time to a PC running ProRAE Guardian safety monitoring software.

FEATURES

- Measurement of heart rate, breathing rate, temperature, posture, and activity
- Quick assessment of an individual's health status
- Remote viewing of real-time sensor readings on a PC within a 2-mile radius
- GPS sensor for tracking on a local map
- Continuous datalogging
- Easily integrate with other sensors to detect hazardous atmospheres
- Quick setup and easy to use



AutoRAE Lite

Automated Bump Test and Calibration Station for ToxiRAE 3 or QRAE II

AutoRAE Lite is a high-speed, low-operation-cost bump test and calibration station with data storage. AutoRAE Lite operates on a low-pressure system with a built-in pump and makes bump testing and calibration as easy as a press of a button.

FEATURES

- Compact, low-cost bump and calibration station
- 12-second bump test
- 2-minute calibration
- Storage of calibration data on a standard SD card
- Portable when used with batteries



AutoRAE 2

Automatic Test and Calibration System

The AutoRAE 2 is an advanced networked automatic test and calibration system for RAE Systems' new MultiRAE family, ToxiRAE Pro family and other instruments.

FEATURES

- Automatic bump testing, calibration, charging, and datalog downloads
- Five dedicated gas inlet ports
- A controller with a large graphical color LCD display
- Form-fitting product-specific cradles:
 - The controller supports up to 10 cradles at the same time
 - Single cradle can be deployed in a standalone mode (without the controller)
- Versatile printing capability
- Multiple powering options (wall adapter or 12V DC vehicle charger)



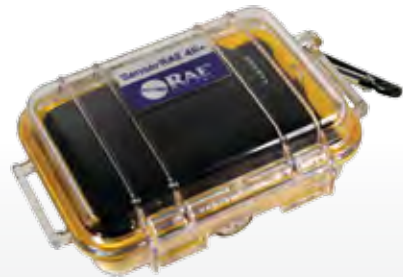
SensorRAE and SensorRAE 4R+

Portable Sensor Conditioning Stations

SensorRAE sensor conditioning stations expand the assortment of sensors available to users for their AreaRAE (SensorRAE), MultiRAE or ToxiRAE Pro (SensorRAE 4R+) monitors. SensorRAE keeps the spare sensors on bias and ready for use without requiring extra warm-up time after installation. Encased in a waterproof housing and small enough to fit in a pocket, the SensorRAE also provides a convenient way to store and carry spare sensors.

FEATURES

- Allows users with just one multi-sensor detector to use a complete suite of RAE Systems sensors
- Keeps sensors warmed up and readily available
- Waterproof, rugged Pelican™ case fits in a pocket
- No maintenance required
- Six months of uninterrupted runtime on four standard AAA batteries



Sampling Kits

RAE Systems offers kits for convenient remote sampling with various RAE Systems pumped and diffusion instruments. A wide assortment of sampling probe, tubing, and aspirator options is offered to help meet remote sampling needs in a variety of applications and confined space types.



Calibration Kits

RAE Systems portable calibration kits include a variety of calibration gases and matching regulators and tubing for convenient field calibration of various RAE Systems gas monitors. Calibration cylinders are available in different sizes ranging from 34 liters to 103 liters.





MultiRAE Holster Cases

MultiRAE holster cases provide additional attachment and carrying options for MultiRAE family instruments, including messenger bag-style shoulder strap and a 4-point chest harness for MultiRAE Lite Diffusion.



MultiRAE Carrying Cases

MultiRAE carrying cases provide a convenient way to protect and carry MultiRAE instruments together with sampling and calibration accessories in one hard case or waterproof Pelican case with custom protective foam padding.

MiniRAE Lite

Handheld VOC Monitor for General Purpose Use in Non-Hazardous Environments

The MiniRAE Lite provides PID performance at a modest price. Accurate VOC monitoring up to 5,000 ppm, 3-second response time, and humidity compensation make it an excellent instrument for applications ranging from environmental monitoring to construction.

FEATURES

- Large graphic display for easy overview of information
- Field-interchangeable battery pack
- Integrated flashlight
- Multi-language support with 12 languages encoded
- IP-65 design
- Easy access to lamp and sensor in seconds without tools





MiniRAE 3000

The Most Advanced Portable VOC Monitor on the Market

The MiniRAE 3000 uses a third-generation patented PID to accurately measure more ionizable chemicals than any other VOC monitor on the market. MiniRAE 3000 provides full-range measurement from 0 to 15,000 ppm and up to six months of datalogging.

FEATURES

- 3-second response time
- Humidity compensation with built-in humidity and temperature sensors
- Wireless data transmission up to 2 miles (3 km) when used with a RAELink3
- Large graphic display with integrated flashlight
- Multi-language support with 10 languages encoded
- IP-67 waterproof design

ppbRAE 3000

Portable Monitor for Parts-per-Billion VOC Measurement

The compact ppbRAE 3000 is a comprehensive VOC gas monitor and datalogger for hazardous environments. RAE Systems' ppbRAE 3000 is the most advanced handheld VOC monitor available for parts-per-billion detection. This third-generation patented PID device monitors VOCs using a photoionization detector with a 9.8 eV or 10.6 eV UV-discharge lamp.

FEATURES

- 3-second response time
- Extended range from 1 ppb to 10,000 ppm with improved linearity
- Humidity compensation with integrated humidity and temperature sensors
- Data transfer to PC via Bluetooth or cable
- Wireless data transmission up to 2 miles (3 km) when used with a RAELink3



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UltraRAE 3000

Portable Handheld Benzene and Compound-Specific VOC Monitor

The UltraRAE 3000 is a compound-specific monitor that can detect benzene from 50 ppb to 200 ppm and other VOCs from 0.05 to 10,000 ppm. In benzene-specific mode, UltraRAE 3000 is ideal for applications including tank entry pre-screening during petrochemical plant maintenance, hazardous material response, and refinery down-stream monitoring.

FEATURES

- Humidity compensation with built-in humidity sensor
- Automatic temperature-controlled sampling time calculation
- Unique 15-minute benzene STEL calculation with 15-minute real-time benzene-specific measurement and recording
- Highly specific readings, combining a 9.8eV UV lamp and RAESep benzene tube
- Wireless data transmission up to 2 miles (3 km) when used with a RAELink3

ChemRAE

Chemical Warfare Agent Detection System

The ChemRAE state-of-the-art handheld chemical warfare agent (CWA) monitor detects CWAs and toxic industrial chemicals, and then classifies them using ion mobility spectroscopy (IMS). ChemRAE can be used as a stand-alone portable monitor or integrated into a real-time wireless safety system by using a RAELink3 wireless modem.

FEATURES

- Display provides agent class, a bar graph of agent concentration and relative time-based dose
- Wireless data transmission up to 2 miles (3 km) when used with a RAELink3
- Clear, simple user interface
- One-handed operation
- Can be powered by a rechargeable lithium-ion battery pack or AA batteries



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MultiRAE

Wireless Portable Six-Gas Monitor with Advanced VOC Detection

The MultiRAE is the most advanced wireless portable chemical detector on the market with the broadest PID sensor range in its class. Certified to meet the military performance standard MIL-STD-810G, the MultiRAE can be configured with more than 30 intelligent sensors to fully meet monitoring needs in a variety of applications.

FEATURES

- Unmistakable five-way local and remote wireless alarm notification, including Man Down Alarm
- Over 25 interchangeable sensor options, including 0.1 to 5,000 ppm PID
- Extensive on-board gas libraries (190 VOCs and 55 combustible gases)
- Large graphical display with easy-to-use, icon-driven user interface and automatic “flip” feature
- Continuous datalogging (6 months for 5 sensors, 24x7)
- Easy maintenance with replaceable sensors, pump, and plug-and-play battery

MultiRAE Pro

Wireless Portable Multi-Threat Monitor

The MultiRAE Pro is the industry’s first wireless multi-threat detection tool that combines continuous monitoring capabilities for gamma radiation, volatile organic compounds, toxic, combustible gases, and oxygen. The MultiRAE Pro combines Man Down Alarm with real-time wireless data communication in a highly portable, MIL-STD-810G-compliant instrument.

FEATURES

- Unmistakable five-way local and remote wireless alarm notification, including Man Down Alarm
- 25 interchangeable sensor options, including parts-per-billion PID and gamma radiation
- Extensive on-board gas libraries (190 VOCs and 55 combustible gases)
- Large graphical display with easy-to-use, icon-driven user interface and automatic “flip” feature
- Continuous datalogging (6 months for 5 sensors, 24x7)
- Easy maintenance with replaceable sensors, pump, and plug-and-play battery





AutoRAE

Automated Calibration, Bump Test and Charging System

AutoRAE is an automated calibration, bump test and charging system for RAE Systems portable gas monitors, including MiniRAE 3000, ppbRAE 3000, UltraRAE 3000, MiniRAE Lite, EntryRAE, MultiRAE Plus, QRAE and QRAE Plus.

FEATURES

- Automatic calibration, bump testing, and charging of up to 10 supported instruments
- Easy pushbutton operation
- Bump and calibration certificates can be printed or saved to a computer for record keeping

Calibration Kits

RAE Systems portable calibration kits include a variety of calibration gases and matching regulators and tubing for convenient field calibration of various gas monitors.



RAESep™ Tubes

Specific Measurement of Benzene and Butadiene with UltraRAE 3000

RAESep Tubes allow the UltraRAE 3000 PID to perform selective and specific measurements of benzene in gasoline vapors and refinery processes, butadiene in polymer and rubber manufacturing, and halocarbons such as methylene chloride in the presence of other organic solvents in the petrochemical industry.



Zero Filtering Tubes

RAE Systems Zero Filtering Tubes enable an accurate zero calibration of gas detection instruments in ambient air even though it may contain impurities. Each single-use tube acts as a charcoal filter that removes volatile organic compounds (VOCs) from ambient air, allowing a true "zero" to be set on highly sensitive RAE Systems instruments such as the ppbRAE 3000 photoionization detector (PID).



APPLICATIONS

- Hazardous Material Response
- Fire Overhaul
- CBRN Detection
- Search and Rescue
- Industrial Accident and Cleanup
- Fireground Monitoring

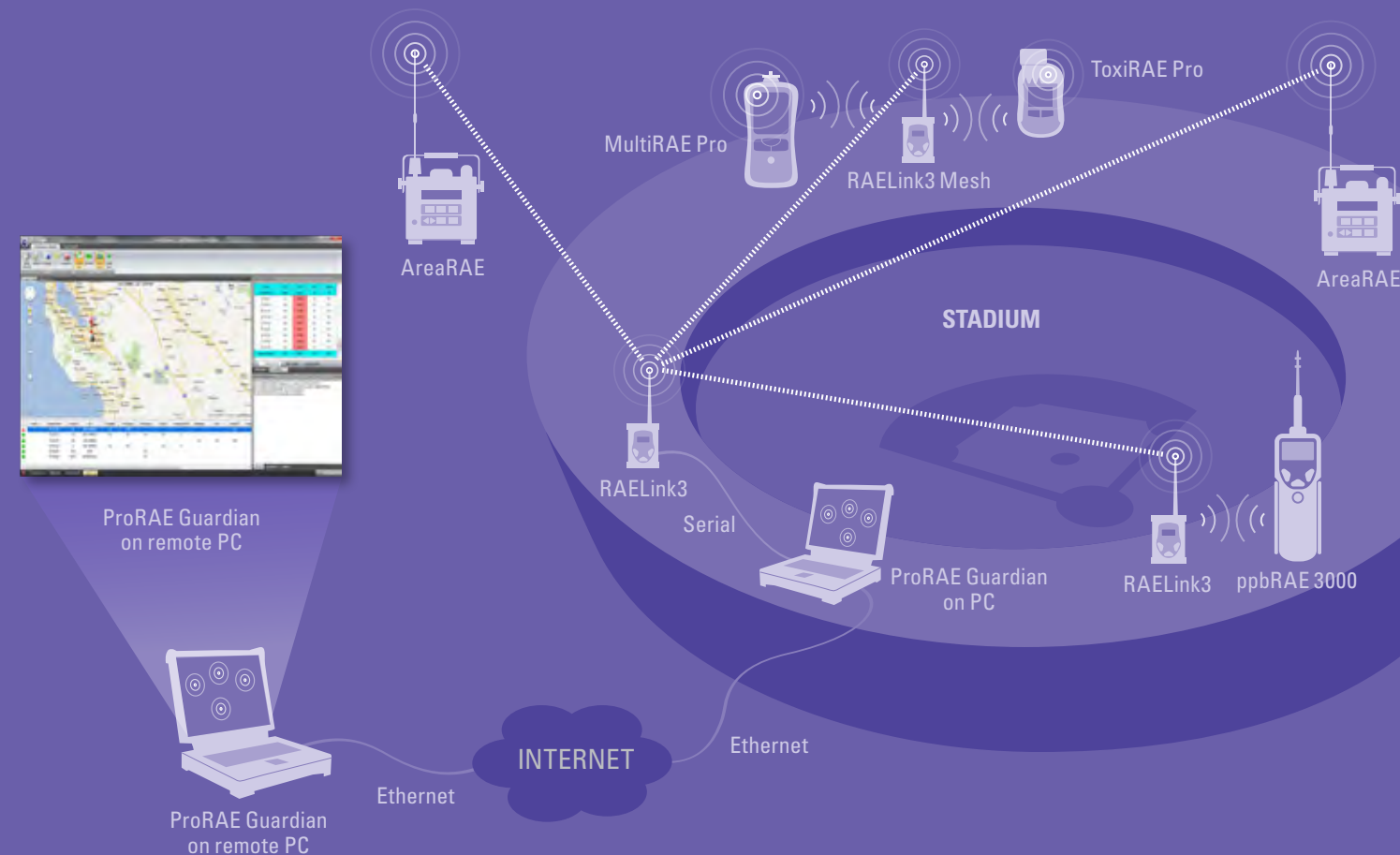
Transportable Wireless System

Wireless Safety System for Remote Monitoring

RAE Systems ProRAE Guardian Wireless Safety System communicates with a variety of third-party monitors and RAE Systems instruments such as AreaRAE multi-threat wireless area monitors to provide a virtual real-time view of the chemical and radiological threats in a "hot zone." The wireless system is rapidly deployable and covers a range of up to 2 miles (3km) and can include up to 64 monitors. Multiple systems can be merged and shared globally by using the Internet and the unique "cascade" feature of ProRAE Guardian.

FEATURES

- Real-time view of sensors with location tracking
- License-free long-range radios for real-time data transmission up to 2 miles (3km)
- Cascade mode for easy merging of systems and remote viewing over the Internet
- Rapid deployment and configuration
- Open software platform with third-party equipment integration capabilities
- Easy to operate with intuitive yet informative user interface
- Integration of multiple detection technologies into one command center





AreaRAE RDK (Rapid Deployment Kit)

Rapid Deployment System for Hazardous Environment Detection

The Rapid Deployment Kit (RDK) is a complete solution designed for quick assessment of chemical and radiological threats. The kit includes four wireless 5-gas AreaRAE detectors with in-case charging, and a Host Controller for monitoring from a command center up to 2 miles (3 km) away. The system can scale up with the addition of Detector Kits, each containing four AreaRAEs.

FEATURES

- In-case charging—one plug to charge four AreaRAEs and repeater
- Military-grade self-contained case
- Easy to transport, deploy and use
- Easily scales to up to a maximum of 64 detectors
- Optional GPS

RDK Ruggedized Host

Military-Spec Laptop Computer with Integrated RAELink Wireless Modem

RDK Ruggedized Host is a turn-key controller for AreaRAE-family monitors. Built to military standards for extensive deployments in extreme environments, the RDK Ruggedized Host provides situational awareness of chemical and radiation threats by managing and displaying real-time sensor data from AreaRAE-family monitors over a wide area. Sensor information may be overlaid on a local mapping area and logged for post-event viewing. System data can integrate with third-party software through a local network, or be pushed over the Internet for viewing beyond the wireless range.

FEATURES

- Magnesium case certified to MIL-STD 810F and IP-54
- Embedded RAELink modem
- Rain, dust, and vibration shielding
- Resistive touchscreen
- Shock-resistant and electromagnetically shielded
- Removable shock-mounted 2.5" SATA HDD





AreaRAE Steel

Wireless Multi-Gas Monitor

AreaRAE Steel is a multi-gas, wireless monitor with embedded RAELink modem for real-time wireless communication with ProRAE Guardian software. Housed in a stainless-steel enclosure, AreaRAE Steel is rugged, portable and weather-resistant, ensuring that it can withstand harsh environments. Strategically placed AreaRAE Steel monitors can be used to quickly establish a perimeter, allowing individuals to back off to a safe position and receive readings from up to 2 miles (3 km) away.

FEATURES

- Up to five sensors:
 - PID, LEL, O₂ and two toxic gas
 - PID, LEL, O₂, Gamma, and one toxic gas
 - PID, LEL, Gamma, and two toxic gas
- Wireless data transmission up to 2 miles (3 km)
- Loud buzzer and large, extra-bright warning light
- Optional GPS
- Rugged, weather-resistant stainless-steel housing
- Built-in sampling pump
- Interchangeable lithium-ion or alkaline battery pack



AreaRAE Gamma Steel

Wireless Multi-Gas and Radiation Monitor

AreaRAE Gamma Steel is a rugged, weather-resistant, portable monitor with embedded RAELink modem for real-time wireless communication with ProRAE Guardian software. AreaRAE Gamma Steel includes a sensor for measuring gamma radiation, plus options for four additional sensors, including a photoionization detector for parts-per-million measurement of volatile organic compounds, an LEL combustible gas sensor, oxygen sensor, and specific electrochemical toxic sensors.

FEATURES

- Up to four gas sensors (PID, LEL, O₂ and selectable toxic gas, or PID, LEL, and two selectable toxic gas)
- One radiation sensor (Gamma)
- Built-in wireless modem for data transmission up to 2 miles (3 km)
- Loud buzzer and large, extra-bright warning light
- Built-in sampling pump
- Interchangeable lithium-ion or alkaline battery pack
- Optional GPS





SolarRAE

Solar Charger for AreaRAE

The SolarRAE provides safe, reliable power generation without the expense of installing utility power. Intended for use with RAE Systems wireless products, including the AreaRAE and MiniRAE 3000. SolarRAE features an externally mounted 30-watt solar panel that provides power to a 55-Amp/hr sealed gel battery and can provide continuous power for up to one week. An internal fan circulates cool air inside the enclosure, prolonging equipment life and ensuring reliability.



BiPod Stand

Easy, Sturdy Access to AreaRAE

The stainless-steel BiPod Stand holds an AreaRAE securely at a height that facilitates operation and monitoring. Simple construction allows for quick deployment and dismantling.



WeatherPak

Real-Time Wind Measurement

WeatherPak for PlumeRAE utilizes the RAE Systems' RAELink2 wireless modem and an ultrasonic wind sensor. Unlike mechanical wind sensors, an ultra-sonic wind sensor has no moving parts, is very rugged and is very accurate even at low wind speeds. Real-time measurement of wind speed, wind direction, temperature, and humidity are transmitted to ProRAE Guardian software using the embedded RAELink modem.



Calibration Kits

RAE Systems portable calibration kits include a variety of calibration gases and matching regulators and tubing for convenient field calibration of various gas monitors.



APPLICATIONS

- Oil and gas drilling operations
- Oil and gas production
- Plant maintenance turnarounds
- Industrial safety
- Tank farms
- Shipyards and maritime

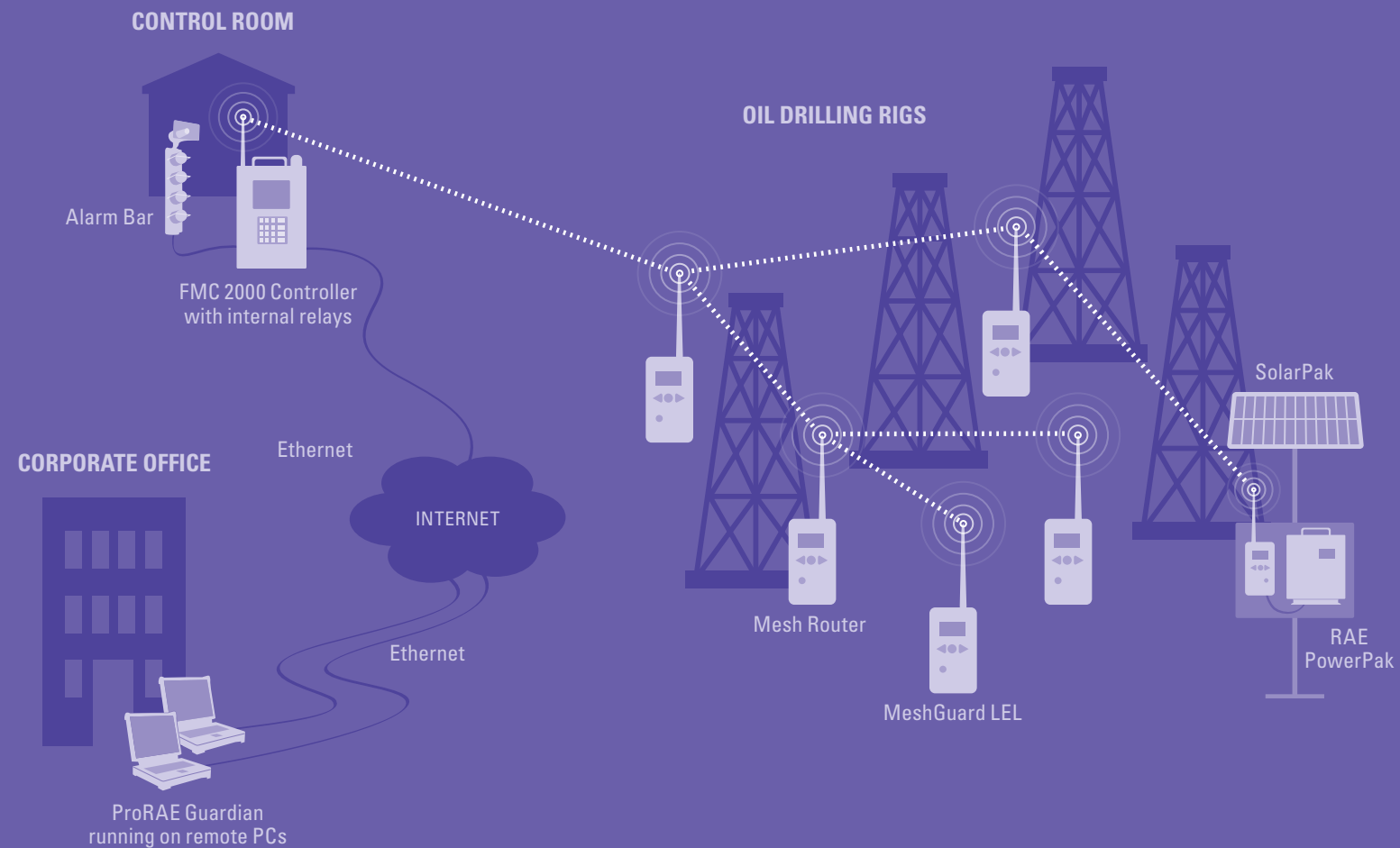
MeshGuard Wireless System

Rapidly Deployable Wireless Gas Detection

RAE Systems' compact and lightweight MeshGuard combines the most advanced gas-detection technology for industrial safety applications with the latest in connected-data systems. MeshGuard detects and records a wide range of toxic gases and quickly relays the data to an easy-to-understand central control system. This gives safety personnel up-to-date information from a network of sensors—all at a finger's touch. The built-in mesh radio automatically finds the best path to the controller by routing the sensor data through nearby monitors. MeshGuard is rapidly deployable in industrial and remote monitoring applications. All detectors are certified for the most hazardous environments—Class I, Division 1 or Zone 0.

FEATURES

- Intrinsically safe
- Battery-powered operation of up to 6 months
- Self-healing network automatically routes data back to controller through best available wireless path
- IP-65 rated weather resistant, and splash guard-equipped for sensor protection
- Multiple controller options for real-time wireless data collection and viewing
- Optional SolarPak and PowerPak can continuously power operation 24/7



MeshGuard RDK (Rapid Deployment Kit)

Complete Hazardous Environment Gas Detection System

The MeshGuard RDK provides a complete solution when a fixed gas monitoring network must be deployed or relocated quickly. Various configurations are available, including MeshGuard EC and LEL Monitors, MeshGuard Routers, and an FMC 2000 Controller, all in a rugged, water-tight case with wheels.

FEATURES

- Complete wireless detection system in one ruggedized kit
- All monitors approved for use in Class I, Division 1 and ATEX Zone 0 hazardous environments
- Rapidly deployable self-forming and self-healing wireless gas detection system



FMC 2000

Wireless Multi-Channel Controller for MeshGuard

The FMC 2000 is a multi-channel wireless controller designed for integration with RAE Systems' MeshGuard intelligent network of connected monitors. The FMC 2000 has a large graphic display and integrated audible and visible alarms.

FEATURES

- Wireless controller for use in MeshGuard networks
- Manages up to 24 MeshGuard monitors
- 5 programmable SPDT relay outputs
- RS-485, Modbus, and Ethernet interfaces
- Backup battery for up to 15 hours of operation
- Datalogging with removable SD card storage



RAEMesh Reader

Host Controller for Wireless Mesh Monitors

The RAEMesh Reader allows using a PC (instead of a dedicated controller) to monitor wireless detectors in real time. The RAEMesh Reader receives data wirelessly from remote detectors, and pushes data to ProRAE Guardian software. The RAE Mesh Reader can push data directly to a PC via RS232, or to a remote PC via ethernet. The RAE MeshReader is designed to be located in non-hazardous, indoor locations.





MeshGuard EC

Wireless Gas Detector with 6-Month Continuous Runtime for Hazardous Environments

The MeshGuard EC operates with an electrochemical sensor for toxic gases, such as CO, H₂S, SO₂, O₂, Cl₂, NH₃ and. MeshGuard EC is designed for two-point field calibration, and the sensor, filter, and battery are easy to replace. All sensor and alarm data are wirelessly transmitted to a remote base station while being simultaneously displayed on the large backlit LCD.

MeshGuard LEL

Wireless Flammable Gas Detector for Use in Hazardous Environments

The MeshGuard LEL precisely monitors the lower explosive limit (%LEL) of flammable gases. Wireless connectivity allows for real-time data transmission to a central controller.



Mesh Router

Wireless Range Extender and Deployment Tool

The Mesh Router is a Class I, Division 1 (Zone 0) portable wireless device that has two primary functions:

1. To extend the wireless transmission range between MeshGuard detectors and/or controllers.
2. As a system deployment tool. Prior to deploying MeshGuard detectors, the Mesh Router can display real-time signal strength at any given location. This ensures that when detectors are placed at router-verified locations that they will have adequate wireless signal strength to transmit their data and alarm conditions.

EchoView

Mini-Controller for Monitoring MeshGuard Network

The EchoView is a portable, intrinsically safe (Class I, Division 1 and Zone 0) alarm notification device that allows you to monitor your MeshGuard sensor network remotely. It displays the sensor readings of up to 16 MeshGuard detectors on a wireless network and retrieves all monitor information that is typically viewed on the system controller. This allows EchoView users to be completely mobile and away from the controller, yet still be notified of any alarm conditions within the system.





SolarPak

Solar Charger for RAE PowerPak

The SolarPak is an intrinsically safe way to extend the operating time of the RAE PowerPak. The SolarPak is certified for Class I, Division 1 (ATEX Zone 0) hazardous locations. An integrated solar panel and charge controller harness the sun's energy to charge the RAE PowerPak. Sensors, such as the industry-standard LEL catalytic bead, can be run continuously with the RAE Systems SolarPak.

PowerPak

External Battery Used to Extend the Run Time of Meshguard Detectors

The PowerPak can be used to power MeshGuard Monitors and Routers. This intrinsically safe (Class I, Division 1 and ATEX Zone 0) rechargeable battery power source is ideal for monitoring applications that require longer runtime than a standard internal battery affords.

FMC-10, FMC-40, and FMC-60

Controllers for Fixed System Monitors

FMC-10

The FMC-10 fixed single-point programmable controller unit delivers economical and reliable monitoring of gas levels in a wide range of environments. It unit features one analog 4-20mA input, an LCD display, and 3 configurable relays.

FMC-40

The FMC-40 is a 1- to 4-channel programmable controller that operates on single-channel plug-and-play cards. In addition to 3 common relays (Low, High, and Fault), each of the 4 available channels has a dedicated programmable relay. A separate line card must be used for each of the 4 available channels.

FMC-60

The FMC-60 multi-channel programmable controller operates on a 4-core (addressable) or 2/3-wire (direct) cable network and has the capacity to monitor up to 64 addressable and 16 direct sensors of various gas types. The alphanumeric screen indicates the reporting sensor, gas type, concentration and alarm status. Alarm levels that are exceeded automatically activate a variety of signal outputs, including analog/digital data and user-selectable relays.





RAEGuard EC, LEL and PID

Fixed Gas Detector for Toxics and Flammable Gases

RAEGuard EC, LEL and PID are fixed gas transmitters housed in ruggedized enclosures. RAEGuards feature local digital displays and magnetic function keys for programming and performing calibration. RAEGuard sensors are compatible with RAE Systems FMC-10, FMC-40, FMC-60, and other third-party controllers.

FEATURES

- Available sensors: CO, H₂S, O₂, SO₂, LEL, PID
- Operate from a 9 to 36 VDC power source
- Analog (4-20mA) and digital (RS-485) signal outputs
- PID ranges of 0.01 to 20 ppm, 0.1 to 100 ppm, and 1 to 1000 ppm
- Certified for use in Class I, Division 1 and ATEX Zone 1 hazardous environments

RAEGuard EC and LEL



RAEGuard PID



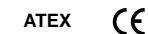
RAEGuard S

Fixed Gas Detectors in Stainless Steel Housing

The RAEGuard S is a fixed gas transmitter housed in a ruggedized stainless steel enclosure. RAEGuard S is equipped with a local digital display and magnetic function keys for performing calibration. RAEGuard S sensors are designed for operation with RAE Systems FMC-10, FMC-40, FMC-60, and other compatible controllers. The RAEGuard S is available in countries that adhere to the ATEX certification standards for equipment use in hazardous-area locations.

FEATURES

- Available sensors: CO, H₂S, O₂, LEL
- Stainless-steel enclosure
- Offline sensor calibration
- Operates from a 9 to 36 VDC power source
- Analog (4-20mA), digital (RS-485, Modbus RTU), signal outputs
- Certified for use in ATEX Zone 1 hazardous environments



Calibration Gases

RAE Systems provides a broad range of calibration gas cylinders varying in size from 11 liters to 103 liters. Money- and space-saving multi-gas mixtures are also offered, including the popular CO, H₂S, LEL, and O₂ mixes for portable and transportable multi-gas monitors. Calibration gas cylinders can be purchased individually or as part of calibration kits together with matching regulators, tubing adapters, and carrying cases. Both demand- and constant-flow regulators are available, as is a wide variety of tubing options.





Real-time detection for real-time decisions

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