MeshGuard and MeshGuard Gamma

Honeywell

RAE Systems by Honeywell
Battery-Powered Wireless
Gas Detector and Radiation Detector

MeshGuard
Battery-Powered Wireless Gas Detector

Key Features

- Self-forming wireless network; units come online automatically
- Compact and lightweight
- IP-65 rated weather resistant, and splash guard equipped for sensor protection
- Multiple controller options for real-time wireless data collection and viewing
- Self-healing network automatically routes data back to controller through best wireless path available
- Battery powered operation for up to 6 months
- SolarPak provides 24/7 uptime
- Intrinsically Safe
- Magnetic mounting option for quick and easy MeshGuard installation

Applications

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

The RAE Systems by Honeywell MeshGuard gas detection monitor is a key building block of the MeshGuard intelligent network of connected sensors for gas detection in industrial safety and oil and gas applications.

The MeshGuard system is designed for quick deployment in areas where low cost/high ROI solutions are required.

MeshGuard is available with field-replaceable precision sensors specifically designed to sense toxic and flammable gases.

- Fastest deployment and decommissioning time
- Simple to install and operate
- Rugged and reliable
- Versatile to accommodate many applications

MeshGuard wireless gas detectors are designed for use in the harshest outdoor environments such as drilling rigs and in other industrial applications

MeshGuard

Battery-Powered Wireless Gas Detector Specifications

Specifications

Sensor Specifications*

Sensor	Range	Resolution	Response Time
H_2S	0 to 100 ppm	0.1 ppm	T90 < 30 sec T10 < 30 sec
LEL	0 to 100%	1%	T90 < 30 sec T10 < 30 sec
CO	0 to 2000 ppm	1 ppm (0 to 500 ppm) 10 ppm (500 to 2000 ppm)	T90 < 30 sec T10 < 30 sec
O_2	0 to 25%	0.1%	T90 < 15 sec T10 < 15 sec
NH_3	0 to 100 ppm	1 ppm	T90 < 90 sec T10 < 200 sec
Cl_2	0 to 10 ppm	0.1 ppm	T90 < 30 sec T10 < 30 sec
SO_2	0 to 20 ppm	0.1 ppm	T90 < 60 sec T10 < 60 sec

*Other sensors: contact RAE Systems

Detector Specifications	
Basic parameters	
Visual Alarm	2 super-bright red LEDs
Audible Alarm	90dB @ 30cm
Calibration	Two-point field calibration
RF Frequency	2.4GHz ISM Band, IEEE 802.15.4 standard compliant
Operating Range	300 meters / 985 feet (line of sight)
Keypad	Three operation and programming keys
Display	Customised LCD (1" x 1.5"/ 72mm x 108mm) with backlight
Power Supply	Disposable Lithium Battery, +3.6V (optional rechargeable external battery for extended run time)
Operating Time	Toxic Gas Sensors: Up to 6 months on internal battery (up to 2 years on external) Flammable Gas Sensor: Up to 21 days on external PowerPak battery
IP Rating	IP-65
Environmental parameters	
Operating Temperature	-40° C to +50° C (-40° F to 122° F) for LEL, CO and H_2S sensors Other sensors: -20° C to +50° C (-4° F to 122° F)
Humidity	5% to 95% relative humidity, non-condensing
Physical parameters	
Size	26.5cm x 9.5cm x 5.5cm (10.5" L x 3.7" W x 2.1" H)
Weight	0.6kg (1.3 lbs)
Certifications	
Certifications	US and Canada: CID1, Groups A, B, C, D, T4 Europe: ATEX IM1/II 1G Ex ia I/IIC T4 IECEx Ex ia I/IIC T4 Inmetro Contact Honeywell for country-specific certification
RF Certifications	FCC Part 15, CE, SRRC

*Specifications are subject to change

MeshGuard Ordering Information

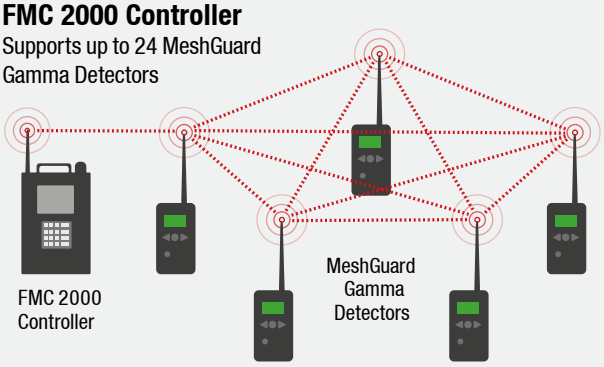
MeshGuard Detector Includes:

- MeshGuard detector with sensor as specified
- Operation and maintenance manual
- Calibration gas test adapter
- High-capacity Lithium battery installed
- Maintenance tool

Mesh Guard System Configuration Options

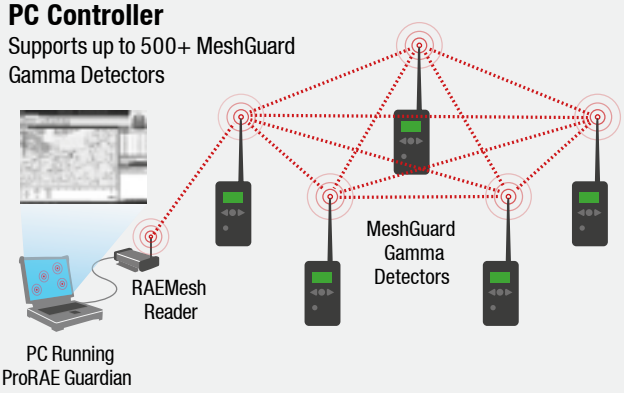
FMC 2000 Controller

Supports up to 24 MeshGuard Gamma Detectors



PC Controller

Supports up to 500+ MeshGuard Gamma Detectors



MeshGuard inside protective stainless-steel housing

RAE PowerPak External Battery

Wireless

ISO 9001 CERTIFIED ATEX IECEx CE FCC

MeshGuard Gamma
Battery-Powered Radiation Detector

Key Features

- Self-forming wireless network; units come online automatically
- Local display with Dose Rate in µR/h, µSv/h or µGy/h
- High sensitivity scintillator detector
- Compact and lightweight
- IP-54 rated weather resistant
- Multiple controller options for real-time wireless data collection and viewing
- Directly compatible with ProRAE Guardian mobile command center software
- Self-healing network automatically routes data back to controller through best wireless path available
- Battery powered operation for up to 2 months
- SolarPak provides 24/7 uptime
- Magnetic mounting option for quick and easy MeshGuard installation

Applications

- Environmental monitoring and protection
- Nuclear industry plant monitoring
- Homeland security and venue protection
- Plant maintenance turnarounds
- Industrial safety
- Nuclear medicine

The RAE Systems by Honeywell MeshGuard Gamma radiation detection monitor is a key building block of the MeshGuard intelligent network of connected sensors for gamma radiation detection in industrial and environmental monitoring applications.

The MeshGuard system is designed for quick deployment in areas where low cost/high ROI solutions are required.

MeshGuard Gamma is available with field-replaceable pre-calibrated sensors specifically designed to sense gamma radiation.

- Fastest deployment and decommissioning time
- Simple to install and operate
- Rugged and reliable
- Versatile to accommodate many applications

Meshguard Gamma provides real-time, 24 x 7 radiation detection for fence-line and area monitoring applications.

MeshGuard Gamma

Battery-Powered Radiation Detector Specifications

MeshGuard Gamma Ordering Information

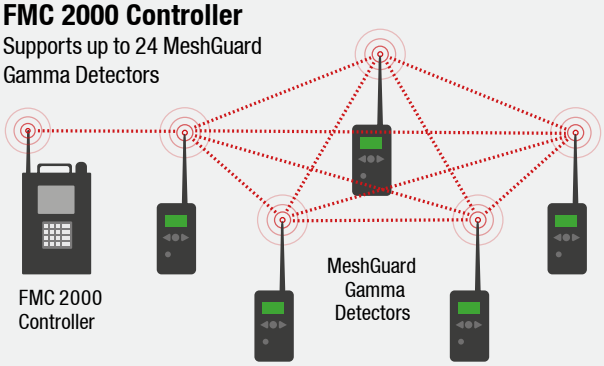
MeshGuard Gamma Detector Includes:

- MeshGuard Gamma detector
- Operation and maintenance manual
- High-capacity Lithium battery installed
- Maintenance tool
- Radiation check source

Mesh Guard System Configuration Options

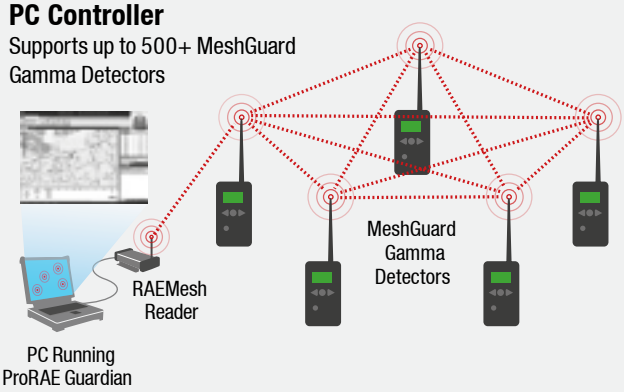
FMC 2000 Controller

Supports up to 24 MeshGuard Gamma Detectors



PC Controller

Supports up to 500+ MeshGuard Gamma Detectors



Specifications

Detector Specifications*	
Basic parameters	
Dose Rate Range	1 µR/h to 20 mR/h (0.01 µSv/h to 200 µSv/h, or 0.01 µGy/h to 200 µGy/h)
Energy Range	0.06 to 3.0 MeV (X-ray and Gamma radiation)
Accuracy	±20% from 100 µR/h to 20 mR/h (1 µSv/h to 200 µSv/h, or 1 µGy/h to 200 µGy/h) ±30% or 5µR/h from 1 µR/h to 100 µR/h (0.01 µSv/h to 1 µSv/h, or 0.01 µGy/h to 1 µGy/h), whichever is greater
Response Time	T90 < 5 sec (Dose Rate > 1 mR/h, 10 µSv/h or 10 µGy/h)
Visual Alarm	2 super-bright red LEDs
Audible Alarm	90dB @ 30cm
RF Frequency	2.4GHz ISM Band, IEEE 802.15.4 standard compliant
Operating Range	300 meters/985 feet (line of sight)
Keypad	Three operation and programming keys
Power Supply	Disposable Lithium Battery, +3.6V (optional rechargeable external battery for extended run time)
Operating Time	Up to 60 days on internal battery
Physical parameters	
Size	26.5cm x 9.5cm x 5.5cm (10.5" L x 3.7" W x 2.1" H)
Weight	0.6kg (1.3 lbs)
Display	
Display	Customised LCD (72mm x 108mm /1" x 1.5") with backlight
Environmental parameters	
Operating Temperature	-20° C to 50° C (-4° F to 122° F)
Humidity	5% to 95% relative humidity, non-condensing
Certification	
IP Rating	IP-54
RF Certifications	FCC Part 15, CE, SRRC

*Specifications are subject to change

Wireless

ISO9001 CERTIFIED

CE

FCC

MeshGuard inside protective stainless-steel housing

RAE PowerPak External Battery

MeshGuard Accessories

Tools that enhance your MeshGuard monitoring network

RAE Systems by Honeywell MeshGuard monitors detect a wide range of gases and quickly relay their data to a central controller in a self-forming, self-healing mesh radio network.

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. A variety of accessories are available for use with the MeshGuard wireless gas detection system.

RAE PowerPak

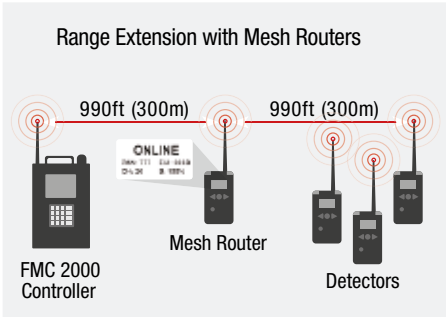
The RAE PowerPak is a rechargeable, external battery used to extend the run time of MeshGuard detectors.

- Powerpak is Class I, Division 1 (Zone 0) certified
- Hot swappable in the field
- PowerPak can operate an LEL detector for 20+ days, or an electrochemical sensor for 18+ months

PowerPak connected to MeshGuard monitor. Monitor is shown in protective stainless-steel housing, secured with included hardware.

Specifications	
Size	14.25" H x 10.2" W x5.75" D (36.2cm x 26cm x 14.6 cm)
Weight	15kg (33 lbs) with four internal batteries
Operating Temperature	-40° C to +55° C (-40° F to 131° F)
Certifications	US and Canada: Class I, Division 1, Groups A, B, C,D, T4 Europe: ATEX IM1/II 1G Ex ia I/IIC T4 IECEx Ex ia I/IIC T4 Contact manufacturer for country-specific certification

*Specifications are subject to change.



Mesh Router

The Mesh Router allows wireless sensor networks to be deployed at greater distances from a central controller. MeshGuard Monitors and Routers work together to find the best possible transmission path for the sensor readings. The MeshRouter displays the realtime wireless signal strength at any given location, which enables rapid determination of suitable locations for MeshGuard Monitors.

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 points.
2. As a system deployment tool. Prior to deploying detectors, the Mesh Router can provide real-time signal strength at any given location.

The Mesh Router can operate continously for 10+ days with an internal battery or 45+ days with an external PowerPak.

MeshGuard Accessories

Tools that enhance your MeshGuard monitoring network

Mesh Reader

RAE Mesh Reader

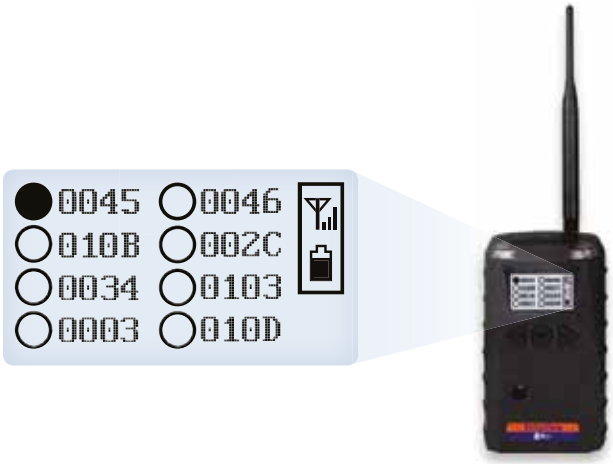
The RAEMesh Reader is a device that allows the use of PC (instead of dedicated controller) to monitor wireless detectors in real time.

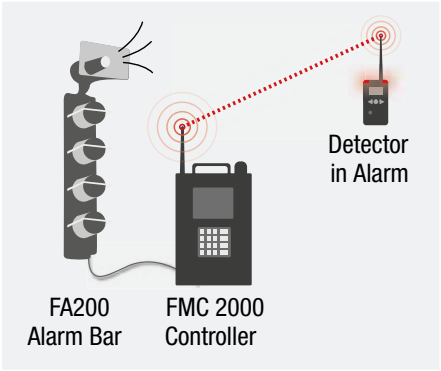
- The RAE Mesh Reader receives data wirelessly from remote detectors, and pushes data to ProRAE Guardian software running on a PC
- The RAE Mesh Reader can push data directly to a PC via RS232, or to a remote PC via ethernet
- The RAE MeshReader is designed to be located in non-hazardous, indoor locations. An optional outdoor antenna with a 10m (30ft) cable can be used to extend the usage to outdoor locations

EchoView

The RAE Systems by Honeywell EchoView is a portable, intrinsically safe (Class I, Division 1 and Zone 0) alarm notification device that allows you to monitor your sensor network remotely. It displays the sensor readings of up to 16 MeshGuard Monitors on a wireless network and retrieves all monitor information that is typically viewed on the system controller.

- Class I, Division 1 (Zone 0) certified
- Allows users to be away from the controller and still be notified of alarm conditions
- The EchoView gets all sensor readings directly from the controller
- 10+ days run time with internal battery, 45+ days run-time with external PowerPak





FA200 Alarm Bar

The FA200 Alarm Bar has one audible (112dB at 3m/10ft) and four visible alarms. The alarm logic is fully configurable from the FMC 2000 multi-channel controller.

The FA200 Alarm Bar uses a simple mil-spec connector to connect to the FMC-2000 controller up to 10m (30ft) away. The five internal relays on the controller come pre-wired for use with an FA200 Alarm Bar, or can be rewired to trigger a variety of external alarms or process controls.

Honeywell Analytics Gas Detection

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