



## MeshGuard

RAE Systems by Honeywell Battery-Powered Wireless Gas Detector

# MeshGuard

## Battery-Powered Wireless Gas Detector

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.

## APPLICATIONS

- Oil and gas drilling operations
- Oil and gas production
- Plant maintenance turnarounds
- Industrial safety
- Tank farms
- Shipyards and maritime
  
- *Fastest deployment and decommissioning time*
- *Simple to install and operate*
- *Rugged and reliable*
- *Versatile to accommodate many applications*



## 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



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SENSOR SPECIFICATIONS			
Sensor	Range	Resolution	Response Time
H <sub>2</sub> S	0 to 100 ppm	0.1 ppm	T90 < 30 sec / T10 < 30 sec
H <sub>2</sub> S	0 to 1000 ppm	1 ppm	T90 < 45 sec / T10 < 45 sec
LEL / LEL IR	0 to 100% LEL	1% LEL	T90 < 30 sec / T10 < 30 sec
CO	0 to 2000 ppm	1 ppm	T90 < 30 sec / T10 < 30 sec
CO <sub>2</sub> IR	0 to 50% Vol 0 to 100% Vol	0.01% Vol 0.1% Vol	T90 < 30 sec / T10 < 30 sec
O <sub>2</sub>	0 to 25% Vol	0.1% Vol	T90 < 15 sec / T10 < 15 sec
NH <sub>3</sub>	0 to 100 ppm	1 ppm	T90 < 30 sec / T10 < 90 sec
Cl <sub>2</sub>	0 to 10 ppm	0.1 ppm	T90 < 30 sec / T10 < 30 sec
SO <sub>2</sub>	0 to 20 ppm 0 to 100 ppm	0.1 ppm 1 ppm	T90 < 60 sec / T10 < 60 sec
HCN	0-50 ppm	0.5 ppm	T90 < 200 sec / T10 < 200 sec
NO	0-250 ppm	0.5 ppm	T90 < 45 sec / T10 < 45 sec
PH <sub>3</sub>	0-20 ppm	0.1 ppm	T90 < 60 sec / T10 < 60 sec
HCl	0-15 ppm	1 ppm	T90 < 200 sec / T10 < 200 sec
ETO-A	0-100 ppm	1 ppm	T90 < 45 sec / T10 < 45 sec
ETO-B	0-10 ppm	0.1 ppm	T90 < 45 sec / T10 < 45 sec
ETO-C	0-500 ppm	10 ppm	T90 < 45 sec / T10 < 45 sec
NO <sub>2</sub>	0-20 ppm	0.1 ppm	T90 < 45 sec / T10 < 45 sec
HF	0-10 ppm	0.1 ppm	T90 < 200 sec / T10 < 200 sec

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	<b>Toxic Gas Sensors:</b> Up to 6 months on internal battery (up to 2 years on external) <b>Flammable Gas Sensor:</b> Up to 21 days on external PowerPak battery <b>LEL IR Gas Sensor:</b> Up to 2 months on internal battery** (up to 1 year on external)
IP Rating	IP-65
Environmental parameters	
Operating Temperature	-40° C to +50° C (-40° F to 122° F) for LEL, LEL IR, CO and H2S 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	
Wireless Frequency	ISM license free band, IEEE 802.15.4 2.4 GHz
Wireless Approvals	PCC Part 15, CE R&TTE, Others***
Radio Module	Supports RM2400A

**Certifications**

**US and Canada:** Class I, Division 1, Groups A, B, C, D, T4  
**Europe:** ATEX IM1/II 1G Ex ia I/IIC T4  
**Customs Union:** PO Ex ia I Ma/OEx ia IIC T4 Ga  
 PB Ex d ia I Mb/1Ex d ia IIC T4 Gb  
 Contact manufacturer for country-specific certification

\*Specifications are subject to change  
 \*\*MeshGuard LEL IR units operating in temperatures below -20°C (-4°F) may require a PowerPak external battery for extended runtimes  
 \*\*\*Contact Honeywell for country specific wireless approvals and certificates

## MeshGuard Ordering Information

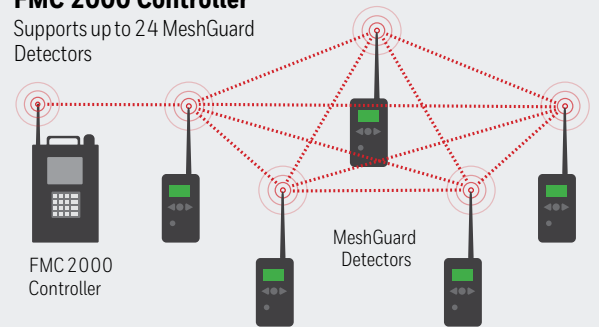
### MeshGuard Detector Includes:

- 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

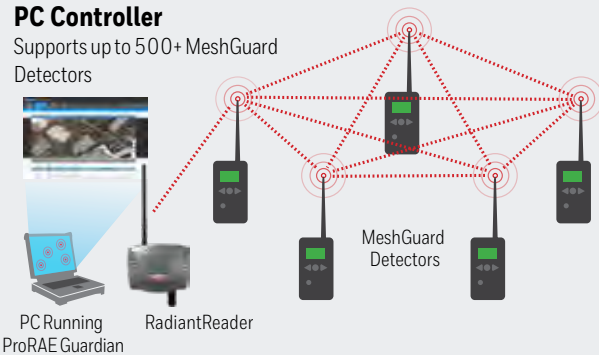
### FMC 2000 Controller

Supports up to 24 MeshGuard Detectors

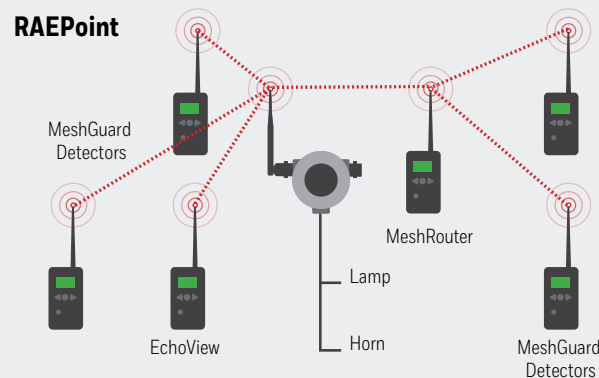


### PC Controller

Supports up to 500+ MeshGuard Detectors



### RAEPoint



MeshGuard inside protective stainless-steel housing

RAE PowerPak External Battery



# RAE Systems

**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 x 5.75" D (36.2cm x 26cm x 14.6 cm)
Weight	15kg (33 lbs) with four internal batterie
Operating Temperature	-40° C to +55° C (-40° F to 131° F)
Certifications	<b>US and Canada:</b> Class I, Division 1, Groups A, B, C, D, T4 <b>Europe:</b> ATEX IM1/II 1G Ex ia I/IIC T4 <b>Customs Union:</b> PO Ex ia I Ma/0Ex ia IIC T4 Ga Contact manufacturer for country-specific certification
<i>*Specifications are subject to change.</i>	

## Mesh Router

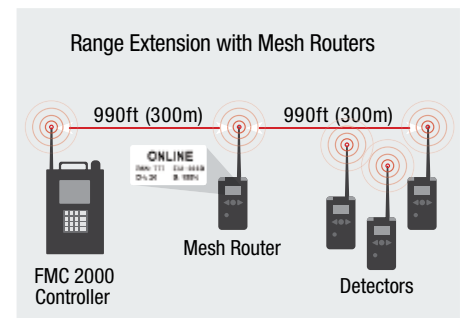
The Mesh Router allows wireless sensor networks to be deployed at greater distances from a central controller. MeshGuard Monitors and Routers work together to find the best possible transmission path for the sensor readings.

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 continuously for 10+ days with an internal battery or 45+ days with an external PowerPak.



# MeshGuard Accessories

## Battery-Powered Wireless Gas Detector



### RadiantReader

Real-time Wireless Communication

The RadiantReader acts as a hub to connect wireless gas monitors to a PC running ProRAE Guardian for real-time data insight and management.

- RadiantReader can communicate with up to 100 remote monitors directly.
- ProRAE Guardian supports up to five RadiantReaders to give a total capacity of 500 monitors.
- The RadiantReader can connect directly with a PC via its COM port, or one or more RadiantReaders can be networked through a TCP/IP connection via Ethernet to push sensor data to ProRAE Guardian or third party control system through MODBUS TCP/IP.
- A networked setup allows visibility of 500 monitors on other PCs running ProRAE Guardian.

### 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
- Customs Union: 0Ex ia IIC T4 Ga/PO Ex ia I Ma
- 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

