

ENHANCED WIRELESS GAS DETECTION SOLUTIONS



Honeywell






Advanced, wirelessly connected sensor systems offering rapid deployments, virtual command centers and 24/7 monitoring of gas or radiation-related incidents, as they happen, are taking safety and crisis management to the next level. Honeywell is leading the way.

Honeywell is at the forefront of hazardous-atmosphere detection-monitoring technology. We develop and manufacture field-proven wireless systems and instruments that enable incident commanders, plant safety managers and industrial hygienists in a wide range of industries to easily and affordably extend their monitoring capabilities, integrate meaningful compliance information and share critical data with stakeholders in real time.

At our core, we strive to

- Elevate safety for workers, responders, and the public at large
- Speed up deployments, reduce project downtime
- Maintain regulation compliance and safety standards

Look for these icons throughout this ebook, as they indicate application options.

	Wireless Connectivity	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Oil & Gas		●	●	●	●	●	●		●		●	●	●	●	●
	Fire & Hazmat	●			●			●	●	●			●	●	●	
	Industrial Safety		●		●		●	●		●		●	●	●	●	●
	Utilities & Power Gen		●		●	●	●	●		●	●	●	●	●	●	●
	Environmental		●		●	●	●	●		●	●			●	●	●



WIRELESS SYSTEMS					SOFTWARE				WIRELESS INFRASTRUCTURE							
Emergency Response	Industrial Plant Safety	Oil & Gas	Closed Loop	Remote Worker	Honeywell Safety Suite Plant Deluxe	Honeywell Safety Suite Plant Premium	Honeywell Safety Suite Responder Deluxe	Honeywell Safety Suite Responder Premium	Honeywell Central Hub	Gas Detector with Cellular Connectivity or Smartphone	TPPLW	EchoView	Echoview Host	Mesh Router	RAELink 3	Smart Device + Safety Communicator

WIRELESS COMPATIBILITY

	GAS DETECTION												ROUTERS AND CONTROLLERS							
	BW Solo	BW Ultra	BW Icon / Icon+	BW Flex	BW RigRat	ToxiRAE Pro	MicroRAE	QRAE3	MultiRAE	3G PID+	AreaRAE	Meshguard	MeshRouter	Echoview	Echoview Host	TPPLW	RAELink3	RAEPoint	Wireless Alarm Bar	Central Hub
LoRa					●				●	●	●	●	●					●	●	●
Mesh (2.4 GHz)					●						●	●	●	●		●		●	●	
Mesh (sub 1 GHz)					●	●	●	●	●	●	●		●		●	●	●	●	●	
Cellular (NB-IoT)					●		●													●
Wi-Fi					●		●		●		●									●
Ethernet																●				●
GPS					●		●				●						●			
BLE	●	●	●	●	●*		●		●	●	●									

*DC APP configuration only



IMPORTANCE OF GATEWAY DEVICES

Wireless gateways are the devices that collect wireless signals and enable the critical safety information from our gas and radiation detection devices to be accessed and used to enhance personnel and plant safety.

Honeywell’s Gateway devices:

- Honeywell Central Hub **NEW**
- RAELink 3
- TPPL Wireless
- Smartphone with Safety Communicator App
- Echoview



TERMINOLOGY

LoRa: Long Range Radio is a low-power LAN wireless standard developed by Semtech. Its biggest feature is that it broadcasts farther than other wireless methods under the same power consumption conditions, enabling low power consumption and long distance. The LoRa wireless technology is perfect for indoor facilities or rural areas where communication coverage is traditionally poor or nonexistent.

NB-IoT: NarrowBand-Internet of Things (NB-IoT) is a standards-based low power wide area (LPWA) technology developed to enable a wide range of new IoT devices and services. NB-IoT significantly improves the power consumption of user devices, system capacity and spectrum efficiency, especially in deep coverage.

LTE: Long Term Evolution is the long-term evolution of the UMTS (Universal Mobile Telecommunications System) technical standard developed by the 3GPP (The 3rd Generation Partnership Project) organization.

Wi-Fi: Wi-Fi is a family of wireless network protocols based on the IEEE 802.11 family of standards, which are commonly used for wireless networking and allow nearby devices to exchange data by radio waves. Wireless local area networks (WLAN) are widely used in the world to link laptop computers, tablet computers, smartphones, smart televisions (smart TVs), printers, and smart speakers together and to a wireless router to connect them to the Internet.

Bluetooth/BLE: Bluetooth is a wireless technology that was designed to create short range personal communication networks. As the current standard of wireless communication, Bluetooth is designed to be simple and easy device-to-device operation.

Mesh Network: The Mesh Radio Network allows devices to detect a wide range of gases and quickly relay data to a central controller. This option is designed to be rapidly deployable in industrial and remote monitoring applications making it ideal in areas where low cost and high ROI solutions are required. As a self-forming wireless network, units come online automatically eliminating the need for timely manual configuration. Its self-healing ability intuitively routes data back to the controller through the best path available.

HOW TO USE THIS EBOOK

This book is designed with the user in mind with interactive features and links to Honeywell product pages.



Hover over this icon to see the product’s name and general information. The arrows demonstrate the flow of information from the device to eventually the Safety Suite Software.



Click on this icon to visit the product page on the Honeywell website to learn more about the device.

EMERGENCY RESPONSE

Honeywell Safety Suite Responder provides incident commanders with a real-time view of a variety of gas and radiation monitors deployed within a hazardous zone.

The rapidly deployable wireless network of sensors helps incident commanders characterize and track atmospheric threats within a region and is a critical tool in ensuring the safety of the public and responders.

For larger HazMat incidents, Safety Suite Responder can easily integrate the monitoring assets of multiple emergency response departments.

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





**SAFETY SUITE
SOFTWARE**

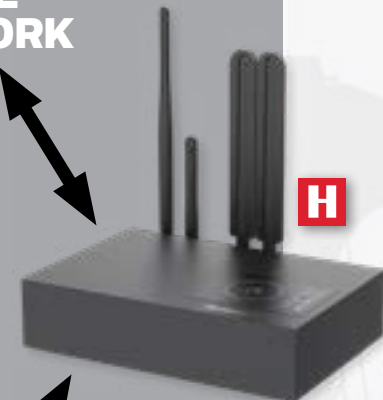
ON-PREMISE



CENTRAL HUB



**CELL
NETWORK**



H



WIRED



H



H



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INDUSTRIAL PLANT SAFETY

Honeywell Safety Suite Plant Premium 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, 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 Honeywell Safety Suite Premium Wireless Safety System incorporates field-proven solutions to elevate and deliver proactive safety at the workplace.

FEATURES

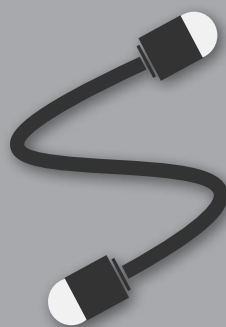
- 24/7 centralized Site and Remote Worker safety monitoring
- Advanced alerting mechanism including geofence alerts for managing critical exposure monitoring
- Private/public wireless infrastructure for maximizing connectivity coverage
- Allows multiple sites to be managed with a single system
- Rich reporting to advanced data management and analytics
- Available as cloud and on-premise offering to provide flexible deployment options



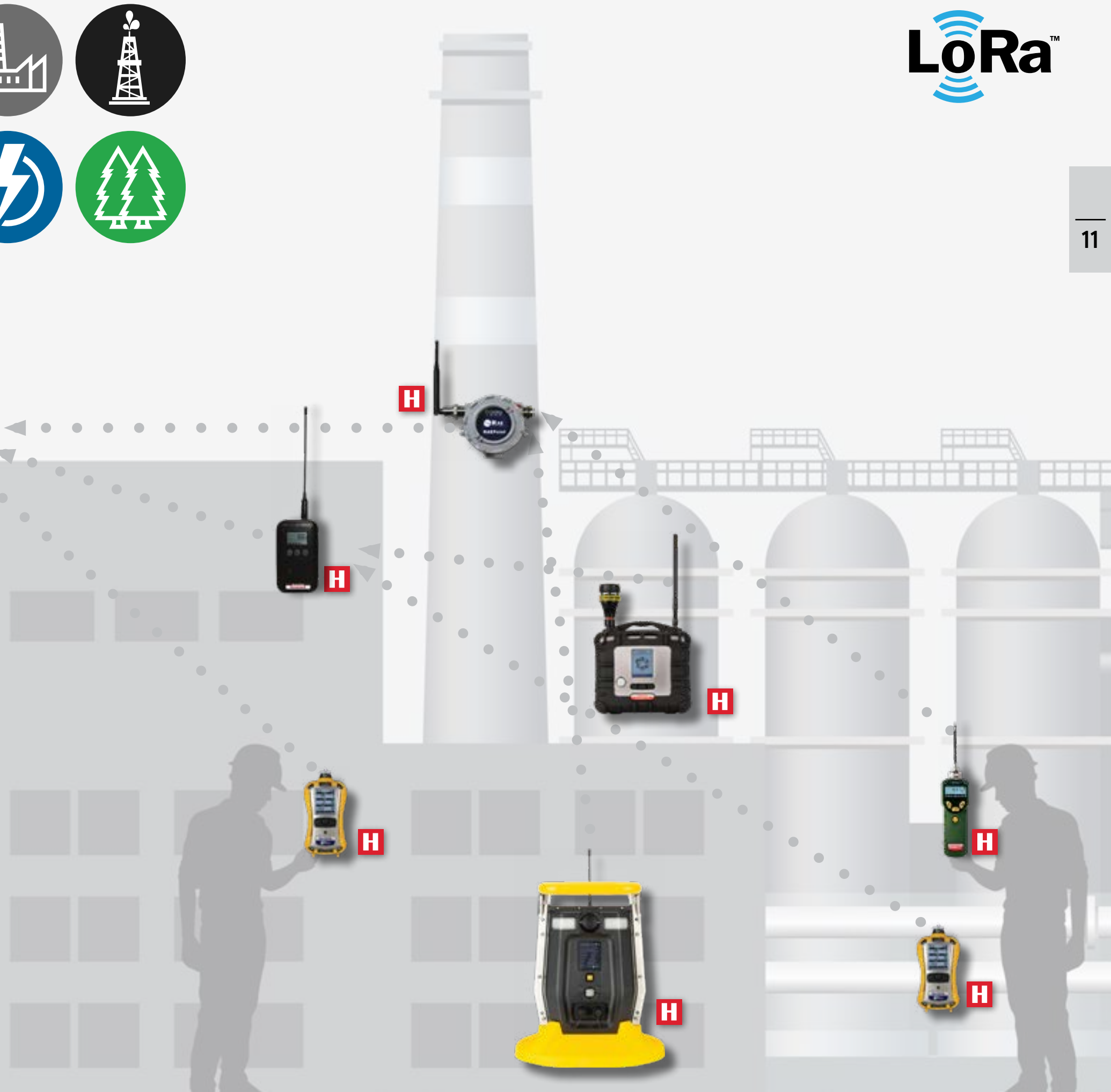
CENTRAL HUB



CELL NETWORK



WIRED

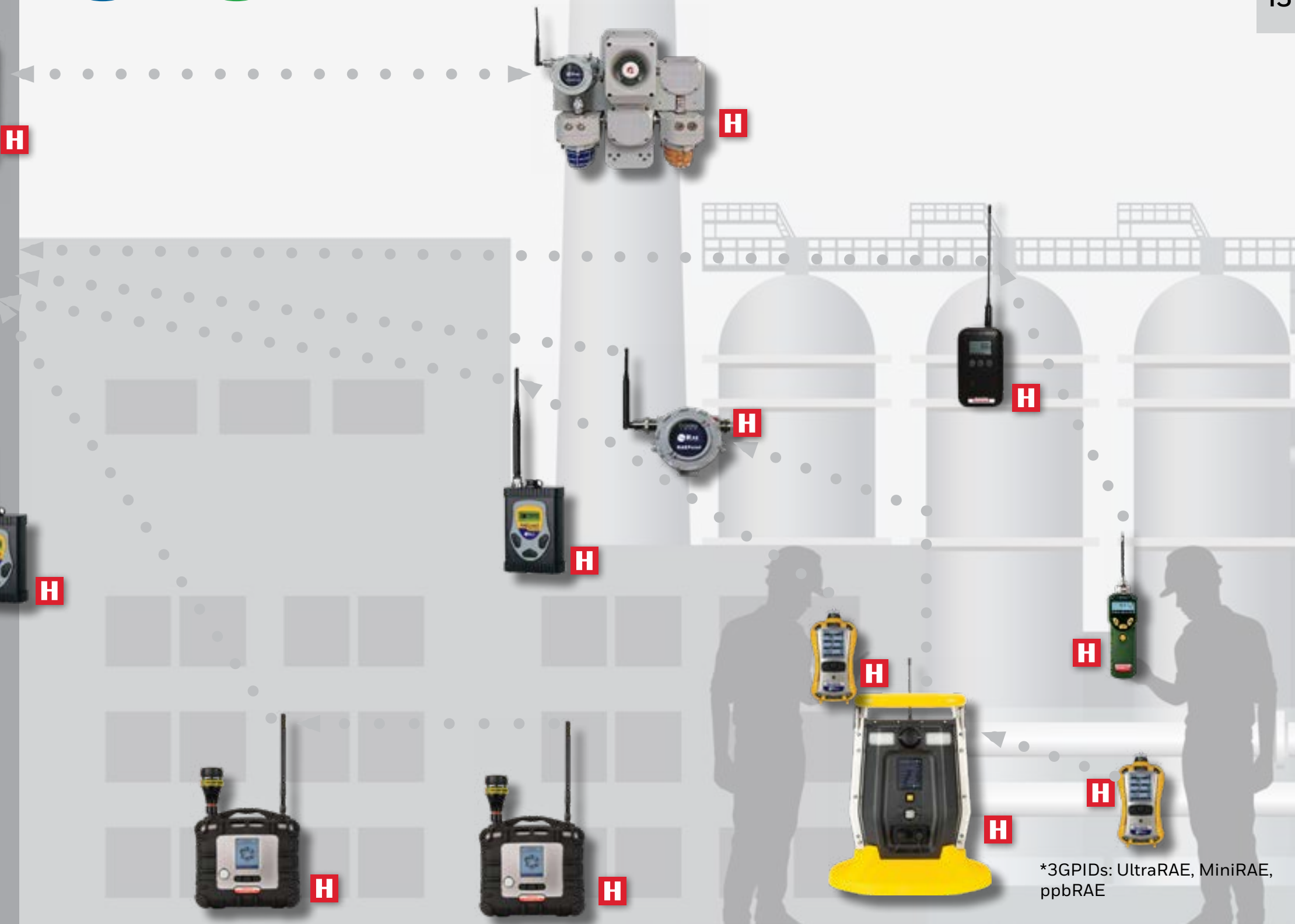




**TPPLW
CONTROLLER
OR RAE LINK**



**MESH
868/900 MHz
ISM**



*3GPIDs: UltraRAE, MiniRAE, ppbRAE

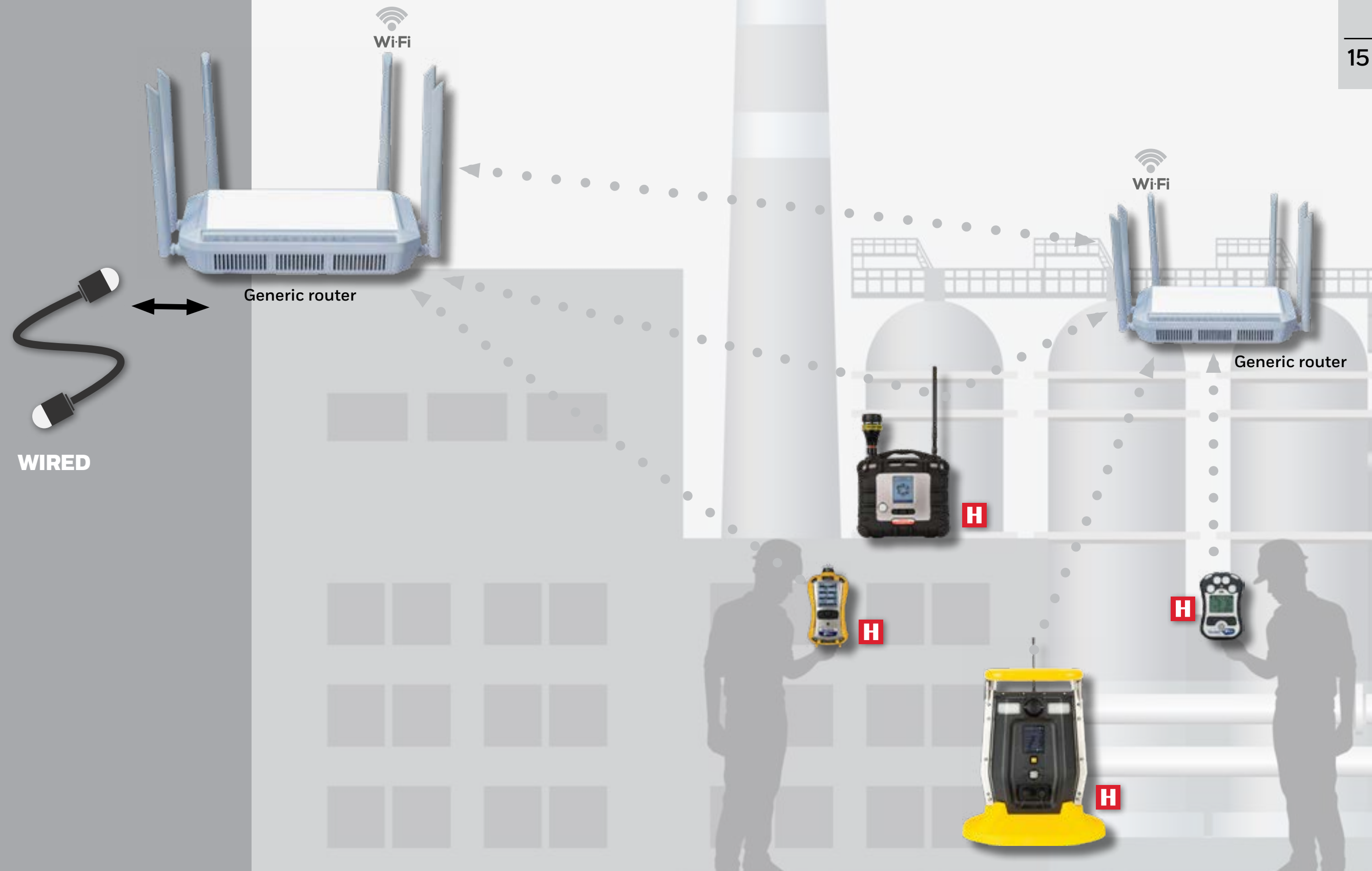


**SAFETY SUITE
SOFTWARE**

ON-PREMISE



WI-FI



Wi-Fi



OIL & GAS WIRELESS SYSTEM

Portability and rapid speed of deployment make Honeywell's wireless air monitoring solutions ideal for the oil and gas industry. Honeywell 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 Honeywell Safety Suite Plant Premium System enables corporate visibility into sensor readings and alarm status at multiple remote sites and supports automatic alarm notification through both a cloud interface and via e-mail text alerts.

FEATURES

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



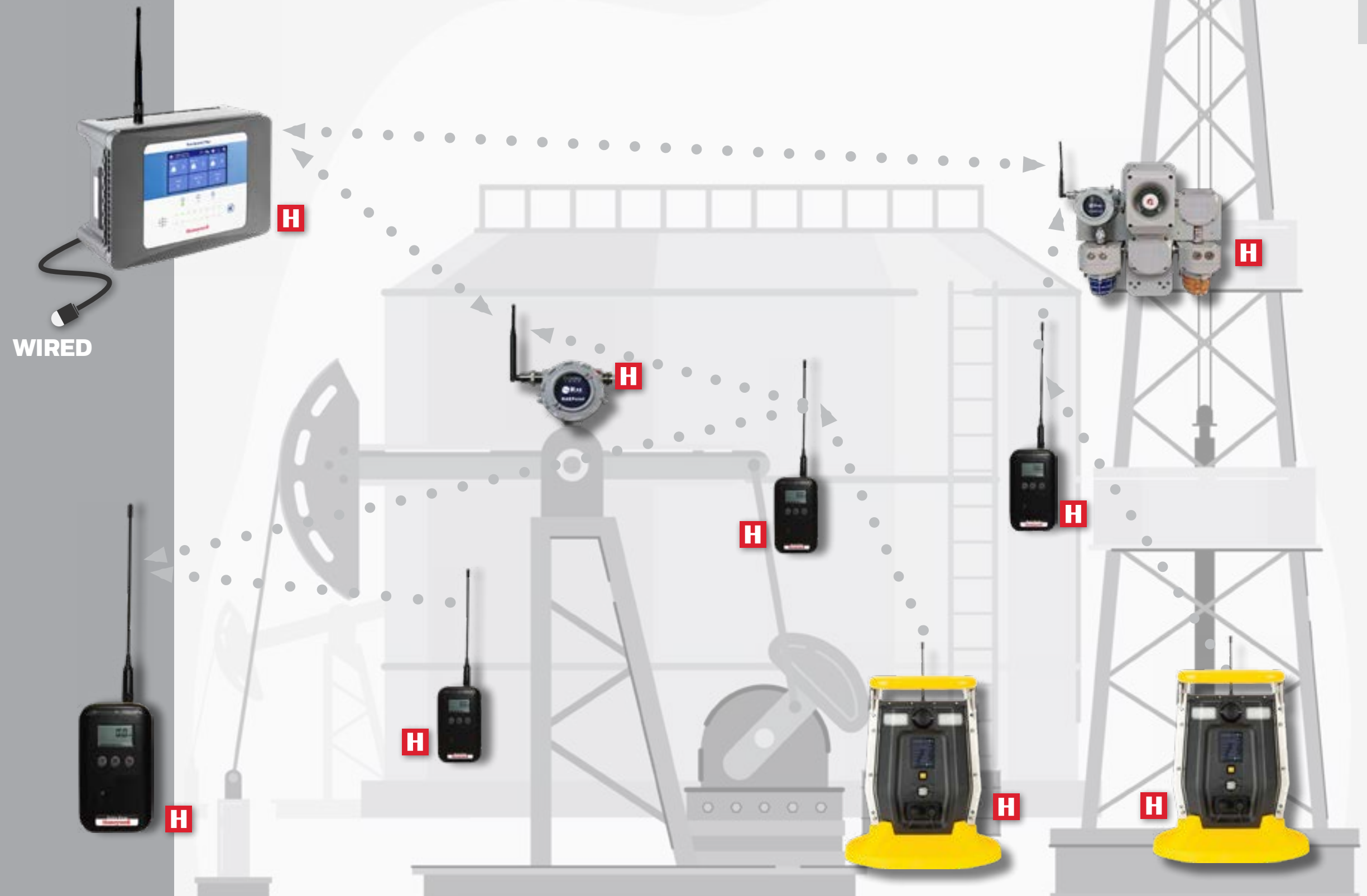
**SAFETY SUITE
SOFTWARE**



**TPPLW &
ECHOVIEW
CONTROLLER**

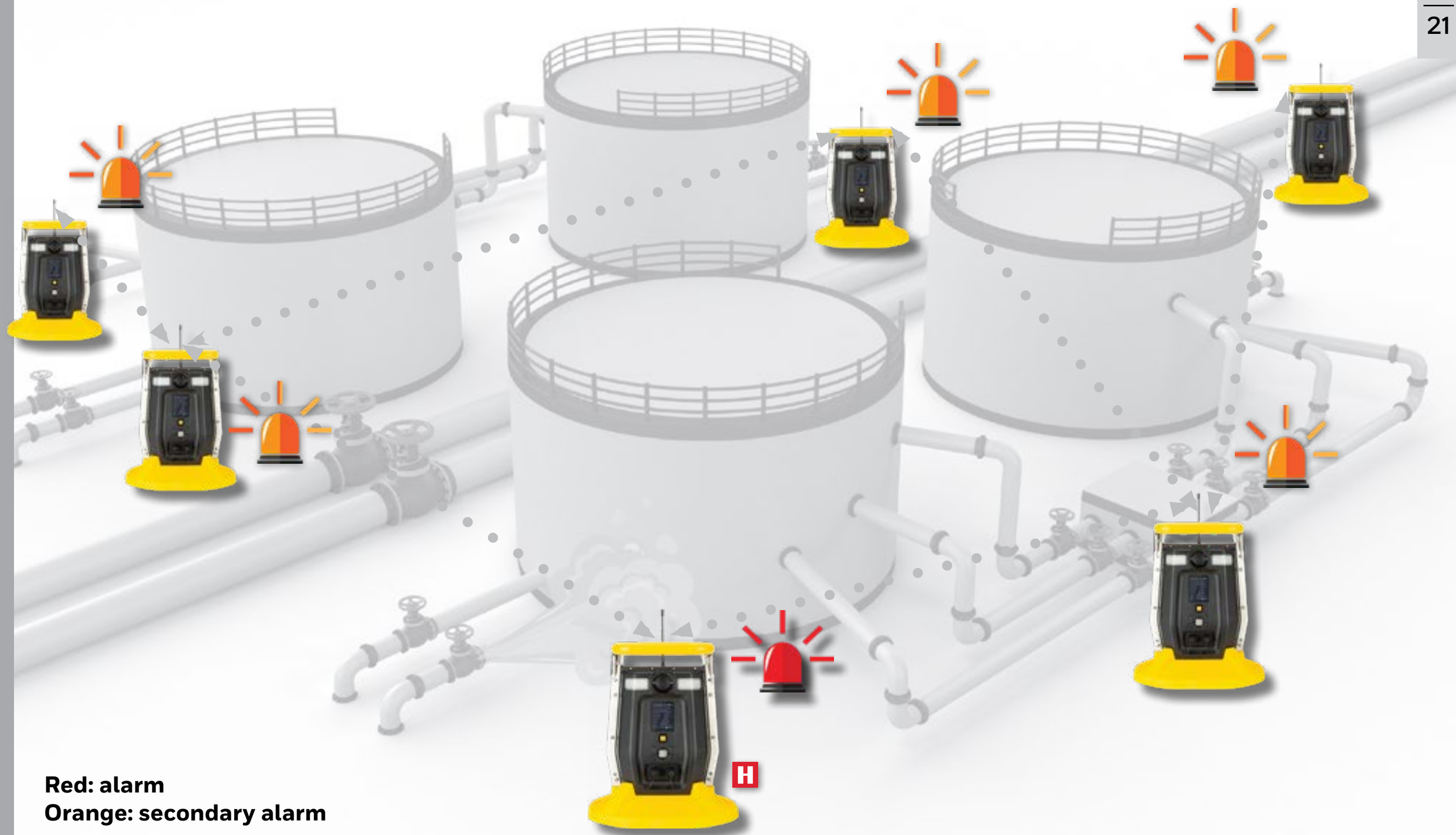


**MESH
2.4 GHz**





Mesh Closed Loop



Red: alarm
Orange: secondary alarm



REMOTE WORKER WIRELESS SYSTEM

The small form factor and portability of the Honeywell Central Hub makes it an ideal wireless solution for application by a travelling remote worker. The low power requirements and superior range of a LoRa network, coupled with the Honeywell Central Hub's ability to link directly to a standard commercial cellular network, ensures remote workers remain visible and protected at their most vulnerable times. The communication of gas readings and accurate GPS location data enables fast and effective emergency response to be instigated, improving the safety and security of employees working in remote locations.

The Honeywell Safety Suite Plant Premium System enables corporate visibility into sensor readings and alarm status at multiple remote sites and supports automatic alarm notification through both a cloud interface and via e-mail text alerts.

The **Device Configurator** app is a powerful tool for managing your BLE enabled gas detectors. The app allows your to configure, update firmware and run calibrations and bump tests for paired devices. In addition, you can view instrument readings, access device data, generate reports and email them to other individuals. You can also upload the device and compliance data to Safety Suite centralized data management and reporting.

Industrial workers often work in environments without a consistent wireless connection, which can make staying connected challenging. By using **Safety Communicator**, an app available for use with both industrial-grade and non-industrial-grade smartphones, central command centers with Honeywell Safety Suite can receive data from the worker's instrument via Bluetooth®. They can view and receive alerts on worker safety and view workers' locations to provide fast help in case of emergency. Safety Communicator enables wireless connectivity without the expense of a private network because it utilizes cellular connectivity for data transmission. If Wi-Fi connectivity is available, Safety Communicator helps ensure continuous wireless monitoring when a worker is out of cellular coverage.

FEATURES

- Honeywell Central Hub's can easily be mounted and powered from any standard utility vehicle
- A SIM card installed into the Central Hub allows the communication of critical gas alarms and position data to be seamlessly pushed to your company Safety Suite Premium instance, allowing the operator to instantly react to an alarm
- Remote alarm notification via email or Text Alerts



SAFETY SUITE
SOFTWARE

ON-PREMISE



CENTRAL HUB & NB-IoT



CELL
NETWORK



H



LoRa™ & Cellular

BLE TO
SMART
DEVICE




CLOUD-BASED

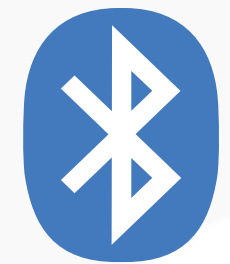
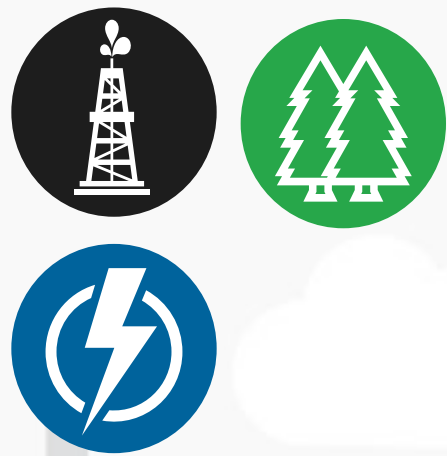


SAFETY SUITE
SOFTWARE

ON-PREMISE



CELL
NETWORK



OTHER SOLUTIONS: BW Solo, BW Icon, BW Flex, BW Ultra, MicroRAE, and MultiRAE

HONEYWELL SAFETY SUITE

A Comprehensive Solution for Gas Detection Fleet Management and Worker Safety Monitoring

Honeywell Safety Suite is an integrated ecosystem of safety systems that enables you to manage your fleet of Honeywell portable gas detectors and docks with ease. This end-to-end solution enhances safety, productivity, and compliance for industrial customers by using connected devices, analytics and workflow automation. As a result, users have unified visibility, data, and device management capabilities to help keep their workers safe in the most challenging conditions.



IMPROVED SAFETY

Safety Suite's real-time monitoring features such as real-time location information, geofence alerts, incident playback and detailed exposure detection allow users to remotely manage the safety of their workers. In addition, alerts ensure the right people get critical alarms with customizable SMS and email notifications.



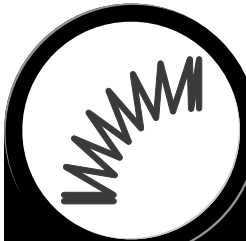
INCREASED PRODUCTIVITY

Minimize the time you spend on fleet management by accessing consolidated data in dashboards or reports. With Safety Suite, you can also automate maintenance tasks such as scheduled email reports, gas-detector firmware updates and data downloads to help your team manage day-to-day tasks with efficiency.



SIMPLIFIED COMPLIANCE MANAGEMENT

Compliance management is simplified through alerts that help you manage detectors that are out of compliance. You can also ensure consistency and compliance by reviewing summaries of upcoming calibrations and bump-tests.



FLEXIBILITY

Honeywell Safety Suite is designed for how you work. It works with your existing technology, in the cloud, or on-premises, across a wide range of wireless technologies and gas-detection instruments, with the scalability and performance required for safety-critical operations.



SAFETY SUITE OVERVIEW

Honeywell Safety Suite is an integrated ecosystem of safety systems that enables you to manage your fleet of Honeywell portable gas detectors and monitor the safety of workers with ease. This end-to-end solution enhances safety, productivity, and compliance for industrial customers by using connected devices, analytics and workflow automation. As a result, you have unified visibility, data, and device management capabilities to help keep your workers safe in the most challenging conditions.

Safety Suite is available as Plant and Responder offerings.

- The Base offering is designed for industrial facilities with most configuration options for flexible deployments
- The Responder offering is designed for emergency responders with standard feature set for fast deployments

In addition, software is available in Deluxe and Premium packages.

- Deluxe package provides device management capabilities
- Premium package provides both Device Management and Real-Time monitoring capabilities



SAFETY SUITE (PLANT)

Honeywell Safety Suite is a gas detection fleet management and real-time monitoring solution providing configurable feature sets specifically designed for flexible deployments to manage the safety of workers at industrial facilities or in remote locations working in potentially hazardous environments.

Users

- Oil & gas
- Wastewater treatment sites
- Electrical, natural gas & telecommunication utilities
- Mining

Use Cases

- 24/7 site monitoring for worker safety
- Fence-line monitoring
- Confined space monitoring
- Centralized remote worker monitoring

Features

- Fully customizable for maximum flexibility to meet each customer's unique measurements
- Geo-fence alerting for managing critical area specific monitoring
- Private/public wireless infrastructure for maximizing connectivity coverage
- Allows multiple sites to be managed with a single system
- Available as cloud and on-premise offering to provide flexible deployment options

SAFETY SUITE (RESPONDER)

Honeywell Safety Suite Responder is a gas detection fleet management and real-time monitoring solution providing standard feature sets specifically designed for fast deployments to manage the safety of emergency response teams working in hazardous environments.

Users

- Local fire & hazmat teams
- National CBRN defense teams
- EPA monitoring

Use Cases

- Temporary Set-up (chemical spills, fire, etc.)
- Event/venue monitoring
- Deployed as needed during emergency situations for hours/days at a time

Features

- Easy to use interface with critical information at your fingertips
- Designed for quick set-up and team-down
- Private wireless infrastructure critical to maintain connectivity
- Mutual-Aid feature allows multiple-response teams to collaborate
- Integrates with ChemResponder, a collaboration tool to aggregate and share data by all government agencies
- Integrates with VIPER, a collaboration tool to aggregate and share data with the EPA

SAFETY SUITE DELUXE

Safety Suite Deluxe gives you the ability to centralize your data management and reporting needs. The app allows you to configure, update firmware, and run calibrations and bump tests for the paired devices. In addition, you can view instrument readings, access device data, generate reports and email them to other individuals.

FEATURES

- Customizable user-defined fields and reports
- Historical data dashboard and event notifications
- Automated and scheduled download and firmware update
- Firmware updates
- Available for both single-drive and multi-device operations
 - Device and sensor configuration
 - Event, calibration and bump test reporting
 - Download, store, view & export data

BENEFITS

- Easier device management allows you to streamline tasks
- Simplified operations through automation, notifications and reporting
- With detailed individual instrument status, one has improved compliance
- Detailed individual instrument status allows for tracking calibration and compliance needs

HONEYWELL SAFETY SUITE SOLUTIONS

1. Emergency response
2. Fence-line monitoring
3. Remote workers
4. Worker/personnel monitoring



SAFETY SUITE PREMIUM

The Safety Suite Premium Package provides both Device Management and Real-Time monitoring capabilities that enable you to manage your gas detection fleet with minimal effort. Features such as incident playback and plume modeling help you analyze root causes and continuously improve safety procedures.

FEATURES

- Real-time instrument reads
- Map view with worker location
- Real-time dashboard
- Incident playback
- Plume modeling with Aloha
- Live event and geo-fence notifications
- Data sharing and mutual aid

BENEFITS

- Reduced total cost of ownership
- Better system monitoring
- Global oversight
- Centralized monitoring enables better situational awareness

CENTRAL HUB

The Central Hub integrates the LoRa driver, which can collect the gas sensor data of the LoRa instrument and reports it to the Safety Suite in real time through the MQTT/HTTP protocol.

FEATURES

- Supports three uplink connection methods - LTE/Wi-Fi/WAN
- Supports GPS positioning
- Supports remote upgrading of Hub firmware
- Micro SD card allows you to save and transmit data logs
- Support wall-mounted, desktop, and car installation and deployment in multiple ways HCH
- MODBUS TCP via Ethernet



WIRELESS DETECTION RANGE

	Internal-to-Internal Antenna	Internal-to-External Antenna	External-to-External Antenna
Mesh	100 m	200 m	300 m
	330 ft	660 ft	990 ft
LoRa*	300 m	600 m	900 m (~1 km)
	990 ft	1980 ft	2970 ft
	0.2 miles	0.37 miles	0.56 miles



WIRELESS GAS DETECTION AT A GLANCE



Click on the product's name to be directed to the device's page on the Honeywell website. You'll find datasheets, manuals, and detailed information on each. Not finding exactly what you need? Contact your Honeywell representative.



CENTRAL HUB

- Integrates the LoRa driver, that can collect the gas sensor data of the LoRa instrument and reports it to the Safety Suite in real time through the MQTT/HTTP protocol
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TPPLW

- Flexible to handle a variety of data processing and communication needs
- Manages up to 64 wireless channels
- Eight analogue 4-20mA inputs
- Up to 14 programmable relay outputs



RAE LINK3

- Can transmit data up to two miles away
- User-friendly display and interface
- Can be configured as a host, repeater, or remote gateway for portable monitors
- Rugged weather- and shock-proof housing
- Runs 18 hours on single battery charge



MESH ROUTER

- Dedicated portable wireless router for Honeywell Mesh wireless detectors
- Quickly and easily extend the range of your network of wireless detectors
- Highly ruggedized and transportable for extended periods in harsh environments
- Quick to access signal strength indicator for optimal placement and quick setup



RAE POINT

- Hazardous-area fixed wireless router for mesh and LoRa systems
- Continuously powered for 24/7 site coverage
- Effortlessly extends the range of mesh or LoRa wireless networks to ensure complete coverage in safety-critical areas



ECHOVIEW/ ECHOVIEW HOST

- Mini-controller for closed-loop wireless solutions
- Displays gas readings and alarm status from up to eight portable monitors
- Easy-to-read screen
- Range up to 1 km (0.6 miles) with mesh routers



WIRELESS ALARM BAR

- RAEPoint fixed wireless relay
- Provides a local audio and visual alarm triggered by the alarm of a compatible gas detector



MICRORAE

- Highly connected multi-gas serviceable detector
- Real-time connectivity via BLE/Mesh/Wi-Fi or NB-IoT
- Wireless device configuration via BLE connection
- Remote notifications and panic functions
- GPS enabled for accurate incident location
- 6-month datalogs



QRAE3

- Versatile, rugged 1-4 sensor serviceable gas detector
- Pumped or diffusion options
- Mesh wireless connectivity
- Choice of six sensor types including HCN and SO₂
- Four instrument alarms + man down alarm



MULTIRAE

- Advanced, multi-threat monitor for the most demanding of hazardous applications
- 25 field-interchangeable sensor options
- Pumped or diffusion options
- Field exchangeable rechargeable battery
- Onboard gas libraries
- Intuitive, icon-driven interface



TOXIRAE PRO

- Serviceable single gas detector
- Wide range of available sensors including toxic, flammable, and VOCs
- Four instrument alarms + Man Down alarm
- Wireless connectivity for real time protection compatible with AutoRAE2 calibration and test station



3G PID+

- minirae, ultrarae, ppbRae
- Advanced Photo-Ionization Detector (PID)
- Measures from 0-15,000 ppm VOC
- Built-in sample pump draws from up to 100 feet
- BLE connectivity allowing the recording and report creation via the powerful, smart device based DC app



MESHGUARD

- Single-gas, transportable gas detector
- Highly ruggedized and transportable
- Self-forming and self-healing wireless network
- Multiple controller options for realtime wireless data collection and viewing
- Magnetic mounting option



AREARAE

- Monitors up to seven threats
- PPB resolution on VOC measurement
- RAEMET metrological data sensor
- Long range wireless connectivity, up to 2 miles
- Secondary modem for complete wireless solution
- Ruggedized, portable, and weather-resistant design



BW RIGRAT

- Wireless, transportable multi-gas area monitor
- Rugged, weatherproof design, with optional protective cage
- Large, easy-to-read display
- Inert mode designed for reliable protection in inert applications
- Simple smartphone setup
- Up to six gas sensors



BW ICON AND ICON+

- Two-year fixed life or serviceable 4-gas detector
- Five different sensor options
- Intuitive icon display
- Simple to learn, simple to use



BW FLEX

- Serviceable 4-gas detector
- Clear LCD display
- Over 12 different sensor options
- Easy to maintain



BW SOLO

- Serviceable single gas detector
- 14 different sensor options
- Multi-language interface
- BLE connectivity standard
- Lightweight



BW ULTRA

- Serviceable 5-gas detector for confined space entry
- Robust; comfortable to handle
- Built-in internal pump
- Enhanced situational awareness with Hole Watch mode
- Wide range of available exotic sensor options including PID, Cl₂, NH₃ and more
- BLE connectivity as standard

**Honeywell Sensing &
Safety Technologies**

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**THE
FUTURE
IS
WHAT
WE
MAKE IT**

Honeywell