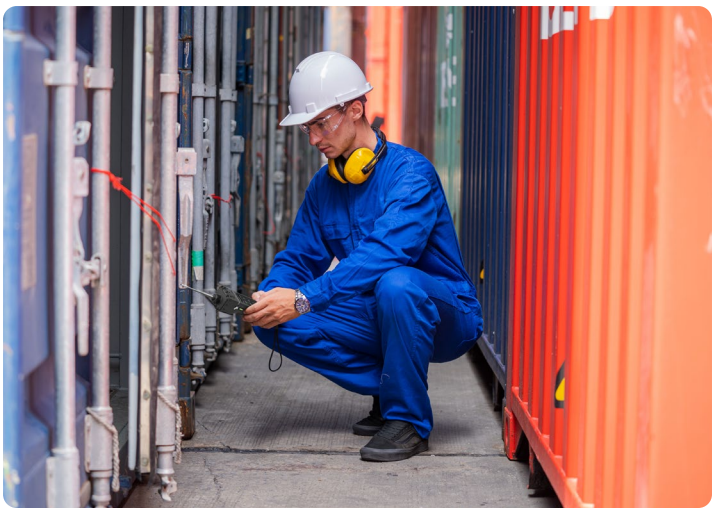

Honeywell ModRAE™: Advanced modular portable gas detection platform

ModRAE is a modular gas detection platform designed to support configurable detection across a range of industrial applications. Its cartridge-based architecture enables teams to align detection capabilities with specific monitoring requirements.

Built to support demanding environments, ModRAE enables faster configuration, more consistent workflows, and greater flexibility as operational requirements evolve.

Configure detection to match your application

Supports diverse applications
Designed to support a wide range of use cases, from soil remediation and fumigation to industrial hygiene and confined space, enabling flexibility across changing monitoring requirements.

Connected and integrated operations
Supports multiple wireless communication approaches to enable remote and real-time monitoring, improve visibility into field conditions and support centralized data management across operations.

Integrated with Safety Suite 2.0
Designed to integrate with Honeywell Safety Suite 2.0, enabling centralized device management, visibility into monitoring data and more informed decision-making across connected operations.

Enhanced serviceability
Cartridge-based architecture supports efficient maintenance and simplified workflows by enabling independent servicing, calibration, and handling of sensing components.

Modular configuration
Interchangeable smart cartridges support fast adjustment of detection capabilities with reduced disruption. The modular design also enables simple wireless upgrades through field installation of a wireless module, helping reduce downtime, service costs, and upgrade effort.

Streamlined user interaction
Designed to support guided workflows and consistent operation, helping reduce variability across users and improve efficiency in the field.

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Honeywell ModRAE features and benefits

Scalable design
ModRAE is designed to support evolving operational and regulatory requirements, enabling organizations to adapt gas detection capabilities as conditions change. Its modular architecture supports quick cartridge replacement, wireless connectivity upgrades, and other enhancements without requiring full device replacement.

Decision-ready interface
ModRAE features a high-visibility color display with intuitive, color-coded alerts to help users quickly interpret gas conditions and respond in real time. Its award-winning interface design, combined with integrated guidance and access to key metrics such as TWA and STEL, supports faster, more consistent decisions.

Advanced gas and chemical detection
Supports a broad range of gas monitoring applications, from VOC screening and total VOC measurement to compound-specific detection such as benzene, enabling teams to address evolving monitoring requirements within a single platform.

Continuous readiness
Each ModRAE cartridge integrates SensorRAE technology to help maintain sensor readiness independently of the device. Cartridges can be stored, transported or serviced while supporting flexible maintenance and faster deployment.

Flexible connectivity
ModRAE supports multiple wireless protocols to enable real-time remote monitoring and centralized visibility across operations. Connectivity options such as cellular, Wi-Fi, LoRa, Mesh, BLE and NFC support flexible deployment and device configuration.

Adaptable workflows
ModRAE features Health Mode for continuous monitoring with exposure metrics such as TWA and STEL, and Safety Mode for targeted investigation. Safety Mode supports survey detection with real-time graphing and object measurement for consistent, repeatable sampling across applications.

Honeywell ModRAE Specifications

Instrument Specifications	
Unit dimensions	375 mm (L) × 83 mm (W) × 48/60 mm (H), including the sensor probe and rubber boot 14.76 in (L) × 3.27 in (W) × 1.89/2.36 in (H), including the sensor probe and rubber boot
Dimensions wireless module (LoRa)	97 mm (L) × 48 mm (W) × 35.8 mm (H) 3.82 in (L) × 1.89 in (W) × 1.41 in (H)
Dimensions wireless module (cellular)	97 mm (L) × 62 mm (W) × 40.4 mm (H) 3.82 in (L) × 2.44 in (W) × 1.59 in (H)
Weight (whole unit)	Appx. 975 g, including the base unit, sensor cartridge, hand strap, clip and rubber boot Appx. 2.15 lb, including the base unit, sensor cartridge, hand strap, clip and rubber boot
Weight (LoRa module)	Appx. 75 g Appx. 0.165 lb (2.65 ounces)
Weight (cellular module)	Appx. 130 g Appx. 0.287 lb (4.59 ounces)
Ingress protection	IP66 and IP68 (IP rating is for entire product)
Operating temperature	-20°C to +60°C (-4°F to 140°F)
Operating pressure	80 kPa to 120 kPa 11.6 PSI to 17.40 PSI
Operating humidity	0% to ~95% RH
Display	3.5 in TFT color LCD (RGB) 480 × 800 resolution Operating temperature: -20°C to +60°C/ -4°F to 140°F Backlight color: white
Controls	3 front-panel buttons and 1 configurable side button
Standard connectivity	Bluetooth® Low Energy (BLE), standard on all devices Near Field Communication (NFC), standard on all devices
Integrated sensors	Ambient light sensor for automatic LCD backlight brightness adjustment Flow Sensor for pump flow monitoring and blockage detection Temperature, Humidity, and Pressure (THP) Sensor Accelerometer for Man-Down Alarm
Side button functions	1- Disable 2- Trigger SOS (Panic) Alarm (Default) 3- Trigger Zero Calibration (Fresh Air) 4- Switch between Alarm Focus View and Alarm Normal View
Audio alarm	Buzzer 95 dB at 30 cm/ 11.8 in
Visual alarm	6 LEDs, 3 LEDs each side, switch on and off synchronously
Vibration	2 internal vibration motors
Sampling interval	1 to 3600 seconds (default 60 seconds)
Storage capacity (datalog)	Stores Up to 180 days at a 60-second sampling interval (based on 8 hours/day operation, 2 minutes/day alarm events, and 2 daily power cycles)
Pump type & sensor	Servicable diaphram pump (easy replacement)
Pump flow	300 cm^3/min 10.1 fl oz/min
Flow sensor	Automatic Flow Adjustment <210 cm^3/min triggers low flow rate warning <150 cm^3/min triggers pump block alarm <7.10 fl oz/min triggers low flow rate warning <5.07 fl/min triggers pump block alarm
Pump life	More than 200 calendar weeks (based on 8 hours of use per day, 5 days work per calendar week)
Sampling modes	Pump mode, with or without a gas probe; supports a single separation tube cartridge and a water trap
Maximum sampling distance	45 m (147.64 ft)
Flashlight	2 high-intensity white LEDs
Cartridge replacement	Quick-release, slide-and-lock design; the sensor cartridge can be changed or replaced in the field
Sensor bias backup	A coin cell keeps the sensors biased while the cartridge is removed from the instrument

Honeywell ModRAE technical specifications continued

Battery Specifications	
Battery type	Polymer Li-ion Rechargeable Battery
Battery voltage and capacity	3.7V, 5700mAh
Battery runtime	>12 hours in worst-case configuration at room temperature >10 hours in worst-case configuration at –20°C (American) Worst-case configuration: Device operating continuously in measurement mode All sensor installed, including 1 PID sensor and 2 high-power sensors Backlight enabled in outdoor applications Alarm activation for 2 minutes per day Wireless module enabled
Charging time	< 5.5 hours at ambient temperatures between 10°C to 30°C (50°F to 86°F) < 7.5 hours at ambient temperatures between 0°C to 10°C and 30°C to 40°C (86°F to 104°F) Charging is automatically suspended when ambient temperature is below 0°C or above 40°C (32°F or above 104°F)
Charging indicators	2 LEDs on battery sides
Charging current	1.6 A at ambient temperatures of 10°C to 30°C (50°F to 86°F) 1.0 A at ambient temperatures of 0°C to 10°C and 30°C to 40°C (32°F to 50°F and 86°F to 104°F)
Battery standby	Appx. 80% battery capacity retained after 2 weeks in storage

Cellular Wireless Module	
Band	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/ B13/B18/B19/B20/B25/B26/ B28/B66 LTE-TDD B34/B38/B39/B40/B41 Please refer to the "Global 4G frequency band division and frequency bands of various operators" for more information
SIM card support	Support physical uSIM, 4FF (Nano)
GNSS Reviever type	GPS/QZSS, Galileo, GLONASS, BeiDou
GNSS position accuracy	10 m (32.8 ft) R95 (radius at 95%)

LoRa Wireless Module	
Supported frequencies	868MHz/915MHz ISM bands
Range	Line of sight 600m (to external antenna) (American)
GNSS reviever type	GPS/QZSS, Galileo, GLONASS, BeiDou
GNSS position accuracy	10 m (32.8 ft), R95 (radius at 95%) - Outdoor

Certification and Approvals	
IECEx (Certification Number IECEx CSA 26.0034X)	Ex ia IIC T4 Ga, -20°C to 60°C
ATEX (Certification Number CSA Ne26ATEX1097X)	II 1G Ex ia IIC T4 Ga, -20°C~60°C
US & Canada (Certification Number CSA 26CA80282060X)	Class I, Division 1, Groups A,B,C&D, T4; Ex ia IIC T4 Ga; Class I, Zone 0, AEx ia IIC T4 Ga, -20°C ~60°C (American)
Wireless approvals	RE-D, FCC ID, IC, RCM
ROHS	RoHS compliance, EU RoHS Directive (EU) 2015/863 UAE RoHS Regulation (Decision No.10 of 2017)
EMC approvals	EN50270; 47CFR Part 15; ANSI C63.4, ICES-003
REACH	REACH compliance, Entry 20 of Regulation (EU) No 276/2010
TSCA	US EPA Toxic Substances Control Act compliance
BCS	Federal Regulated Battery Charger System compliance, 10C.F.R. Section 430.23(aa) compliance
Bluetooth SIG qualified	Bluetooth SIG qualified (D047102)

Honeywell ModRAE sensor specifications

Sensors Specifications							
Lamp	**10.6eV**	**10.6eV**	**10.6eV**	**10.6eV**	**10.6eV**	**9.8eV**	**11.7eV**
Lamp life	≥10,000 hours	≥10,000 hours	≥10,000 hours	≥10,000 hours	≥10,000 hours	≥10,000 hours	≥500 hours
Measurement range (Isobutelene)	100 ppm	2,000 ppm	5,000 ppm	15,000 ppm	20,000 ppm	5,000 ppm Isobutylene 200 ppm Benzene	5,000 ppm
Resolution	1 ppb @ ≤100 ppm	100 ppb @ ≤1,000 ppm 1 ppm @ >1,000 ppm	10 ppb @ ≤1,000 ppm 100 ppb @ >1,000ppm	100 ppb @ ≤5,000 ppm 1 ppm @ >5,000 ppm	1 ppb @ ≤100 ppm 10ppb @ 100 ppm to 1000 ppm 100 ppb @ 1,000 ppm to 10,000 ppm 1 ppm @ >10,000 ppm	1 ppb @ ≤100 ppm 10 ppb @ 100 ppm to 1,000 ppm 100 ppb @ >1,000 ppm	0.1 ppm @ ≤100 ppm 1 ppm @ 100 ppm to 1,000 ppm 10 ppm @ >1,000 ppm
Accuracy*	±10%	±15%	±15%	±15% @≤5,000ppm ±20% @ >5,000ppm	±15% @≤5,000ppm ±20% @ >5,000ppm	±15% @≤1,000ppm ±20% @>1,000ppm	±15% @≤1,000ppm ±20% @>1,000ppm
SPAN (Default) User configurable	Low: 10 ppm High: 100 ppm	Low: 100 ppm High: 1,500 ppm	Low: 100 ppm High: 4,000 ppm	Low: 100 ppm High: 12,000 ppm	Low: 100 ppm High: 15,000 ppm	Low: 100 ppm High: 4,000 ppm	Low: 100 ppm High: 4,000 ppm
Response time (T90)	≤5 sec @100 ppm (For Isobutylene)						
Warm up time	Time to operation: 5 second						
Dimension	ø21.4 mm × 24.8 mm (ø0.84 × 0.98 in)						
Weight	< 20g (<0.71 oz)(<0.044 lb)						
Pin output	5Pins, Size: ø1.0 mm × 4.0 mm (ø.04 in × 0.16 in) Pin's define: 1-Vcc, 2-CS, 3-Tx, 4-Rx, 5-GND						
Power consumption	220mW (average) = 4.4V × 50mA 270mW (peak) = 4.5V × 60mA						
Supply voltage(V)	4.4 ±0.1 VDC						
Current	Average: 50mA Peak: 60mA						
Temperature range	-20°C to +60°C (-4°F to 140°F)						0°C to 60°C (32°F to 140°F)
Temperature effect	±20%						±10% (at calibration point, based on isobutylene calibration at 20°C (68°F) and 1ATM)
Humidity range	0 to 95%RH, Non-condensing						
Humidity effect	±20%RH						
Operating pressure	80 kPa to 120 kPa (11.6 PSI to 17.4 PSI)						
Certificate	IECEx: Ex ia IIC Ga						
Service parts	Maintaining & replacement: lamp, electrode						

* Accuracy values are specified for measurements ranging from 20% to 150% of the lower calibration point.

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For more information
https://automation.honeywell.com/

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