Honeywell MultiRAE Portable Multi Gas Monitor User Guide

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Honeywell MultiRAE Portable Multi Gas Monitor

Product Information

The MultiRAE is a wireless, portable multi-gas monitor with advanced VOC detection. It is designed to accurately measure and monitor multiple gases in various environments. The monitor is equipped with a user-friendly interface, display, and three keys for easy operation. It also features a rechargeable battery and charging capabilities.

WARNINGS

Read Before Operating

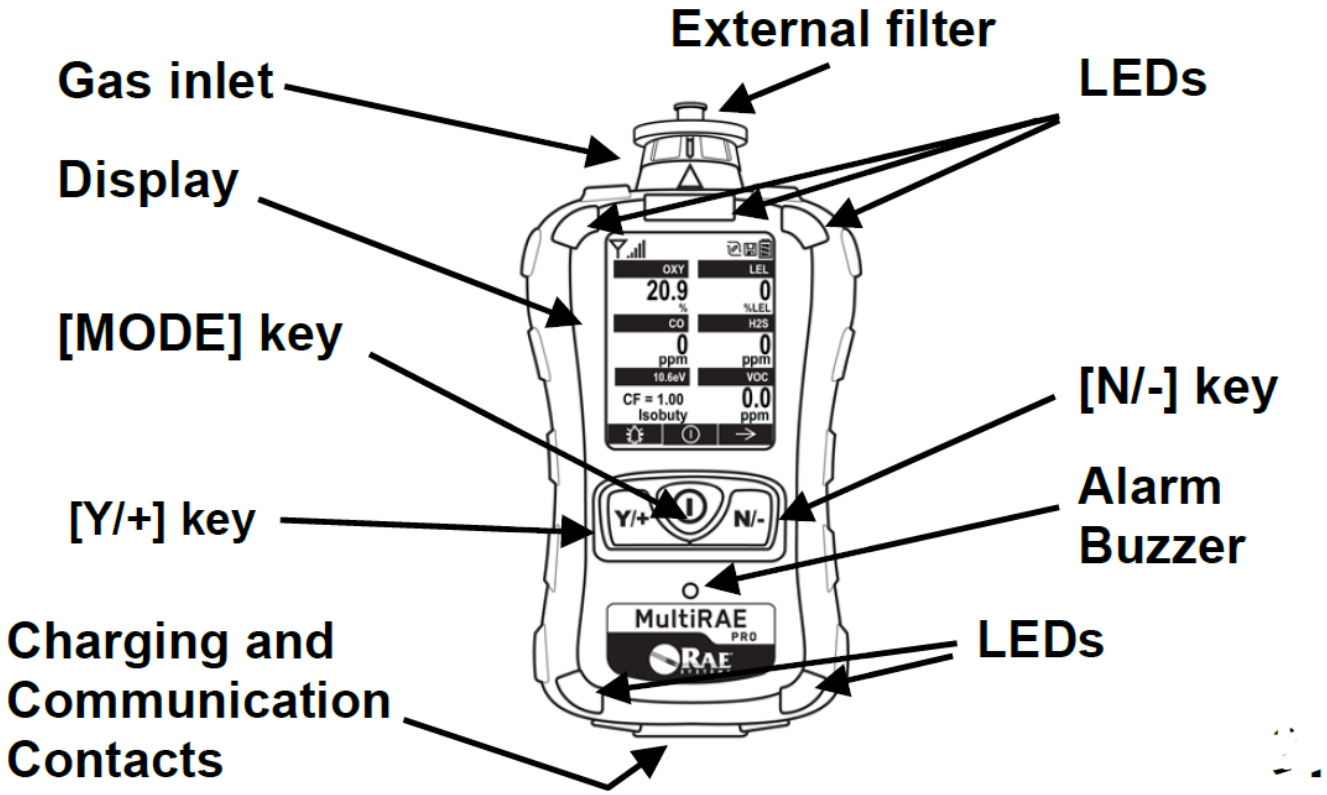
- The MultiRAE User's Guide must be carefully read by all individuals who have or will have the responsibility of using, maintaining, or servicing this product. The product will perform as designed only if it is used, maintained, and serviced in accordance with the manufacturer's instructions.

CAUTION

- Never operate the monitor when the rear cover is re-moved. Remove rear cover, sensors, and/or battery only in an area known to be non-hazardous. Never use the instrument with the calibration adapter installed, as this can cause distorted readings, a potential safety threat.
- **Note**: If the Multi RAE is equipped with a gamma sensor, it comes pre-calibrated from the factory and no calibration is required. You can challenge it anytime with a radioactive check source.

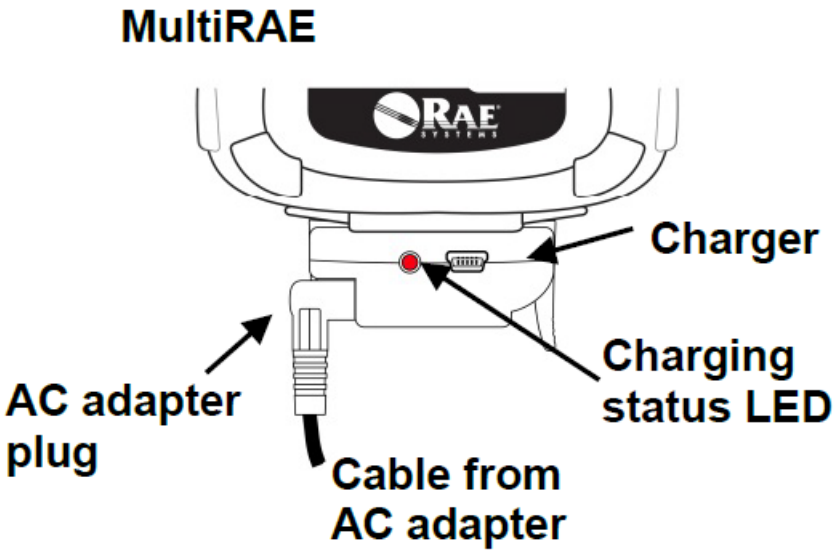
User Interface

- The MultiRAE's user interface consists of the display and three keys, [Y/+], [MODE] and [N/-]. The flappable LCD displays information such as monitored threats, real-time readings, measurement units, alarm type (when in alarm, including cal. overdue), battery and pump status, data log (if on), and radio and connection quality (if available).



Charging the MultiRAE

- Always fully charge the battery before use. Contacts on the bottom of the MultiRAE meet the Travel Charger's or Charging Cradle's contact pins, transferring power. Make sure the charger and MultiRAE are firmly attached. Then connect the AC Adapter's plug to the charger and plug its transformer into an AC outlet. While charging, the LED on the cradle glows red. When the battery is fully charged, the LED glows green.



Turning the MultiRAE On

- With the instrument turned off, press and hold the [MODE] key until the audible alarm stops, and then release. During startup, the battery, buzzer, vibration alarm, and LEDs are tested, and then the MultiRAE performs self-testing of its other functions. When the main measurement screen appears, the MultiRAE is ready for calibration or use.
- **Note**: If the battery is completely empty, then the display briefly shows the message “Battery Fully Discharged,” and the MultiRAE shuts off. You should charge the battery or replace it with a fully charged battery before turning it on again.
- **Note**: If Fast Startup is enabled on the instrument, fewer screens are shown during startup, compared to Normal Startup sequence.

Turning the MultiRAE Off

- Press and hold [MODE]. A 5-second countdown to shut-off begins. You must continue pressing on the key for the entire shutoff process. If you remove your finger from the key during the countdown, the shutoff operation is canceled and the MultiRAE continues normal operation.
- When the countdown ends and the screen displays “Unit Off,” release your finger from the [MODE] key. The MultiRAE is now off.

Testing the Alarms

- Under normal-operation mode and non-alarm conditions, the buzzer, vibration alarm, LED, and backlight can be tested anytime by pressing [Y/+] once. If any alarm does not respond, check the Alarm Settings in Programming Mode to make sure all alarms are enabled. If any alarms are enabled but are not functional, do not use the instrument.

Bump Testing and Calibration Setup

- The MultiRAE can be automatically bump tested and calibrated using the Aurorae 2 Test and Calibration System (refer to its User’s Guide for instructions). Manually calibrate using a fixed-flow regulator (flow rate between 0.5 and 1.0 liters per minute) and the supplied special calibration adapter that covers the gas inlet

1. Connect the gas cylinder, flow regulator, tubing (must use Teflon tubing for PID sensor), and calibration adapter to the MultiRAE.
2. With the MultiRAE in Normal Mode, enter Programming Mode by pressing and holding both [MODE] and [N/-] until the password screen appears.
3. Input the 4-digit password. (The default password is “0000.” If you do not know the password, select “Done.”) Then follow the menus to select single- or multi-sensor bump test, zero, or span calibration.

Important! After a bump test or calibration, remove the calibration adapter to ensure correct readings.

Bump (Functional) Testing

- Bump test to confirm that the sensors and alarms are functional.
- **Important**! Test the alarms, as described in panel 6 (above), prior to performing a bump test.
- **Important**! Make sure all sensors have warmed up before performing the bump test. You can tell a sensor has warmed up if you see a reading next to it name on the display. If it has not warmed up, you see three dashes next to it.

With the MultiRAE in Normal Mode

- Enter the Bump Test menu. Follow instructions in panel 7 (above) or use the easy shortcut: Press both the [Y/+] and [N/-] buttons at the same time and hold them for 5 seconds. The Multi-Bump menu then appears.

Zero & Fresh Air Calibration

- The MultiRAE should be zero-calibrated in clean air with 20.9% oxygen or with a cylinder of clean zero air. In Programming Mode, select “Fresh Air.” Then:
- Press [Y/+] to start a Fresh Air calibration for the listed sensors. All are fresh-air calibrated at once.

To individually zero calibrate sensors

1. Select “Single Sensor Zero” and select a sensor.
2. Press [Y/+] to select a sensor to zero calibrate.
3. Start the flow of the zero gas, if used, and press [Y/+].
4. The screen says, “Zeroing” and counts down.
5. When done, it says, “Zero Calibration Passed” (the reading should be 0 or very close to it for VOC and toxic gas sensors, and 20.9% Vol. for an oxygen sensor).
6. Shut off the flow of zero air (if used) and remove the calibration adapter.

Note: If your MultiRAE is equipped with a CO2 sensor, it must be zero calibrated using 100% Nitrogen (N2), or isobutylene, instead of fresh air or zero air.

1. The bump test process consists of two steps, each requiring its own calibration gas.
2. The LEL and O2 sensors are tested first, followed by the PID sensor. Press [Y/+] to start the bump test. While the bump test is being performed, the readings for each sensor are shown.
3. Once the bump test completes, pass/fail results are shown for each sensor.
4. Press OK to proceed to the PID sensor test. Connect Isobutylene gas and press [Y/+] to start the test. After the test completes, pass/fail results are shown.
5. Press OK to return to the main measurement screen.
6. Turn off the gas flow.
7. Remove the calibration adapter.

Span Calibration

In Programming Mode, and with “Multi Sensor Span” or “Single Sensor Span” highlighted

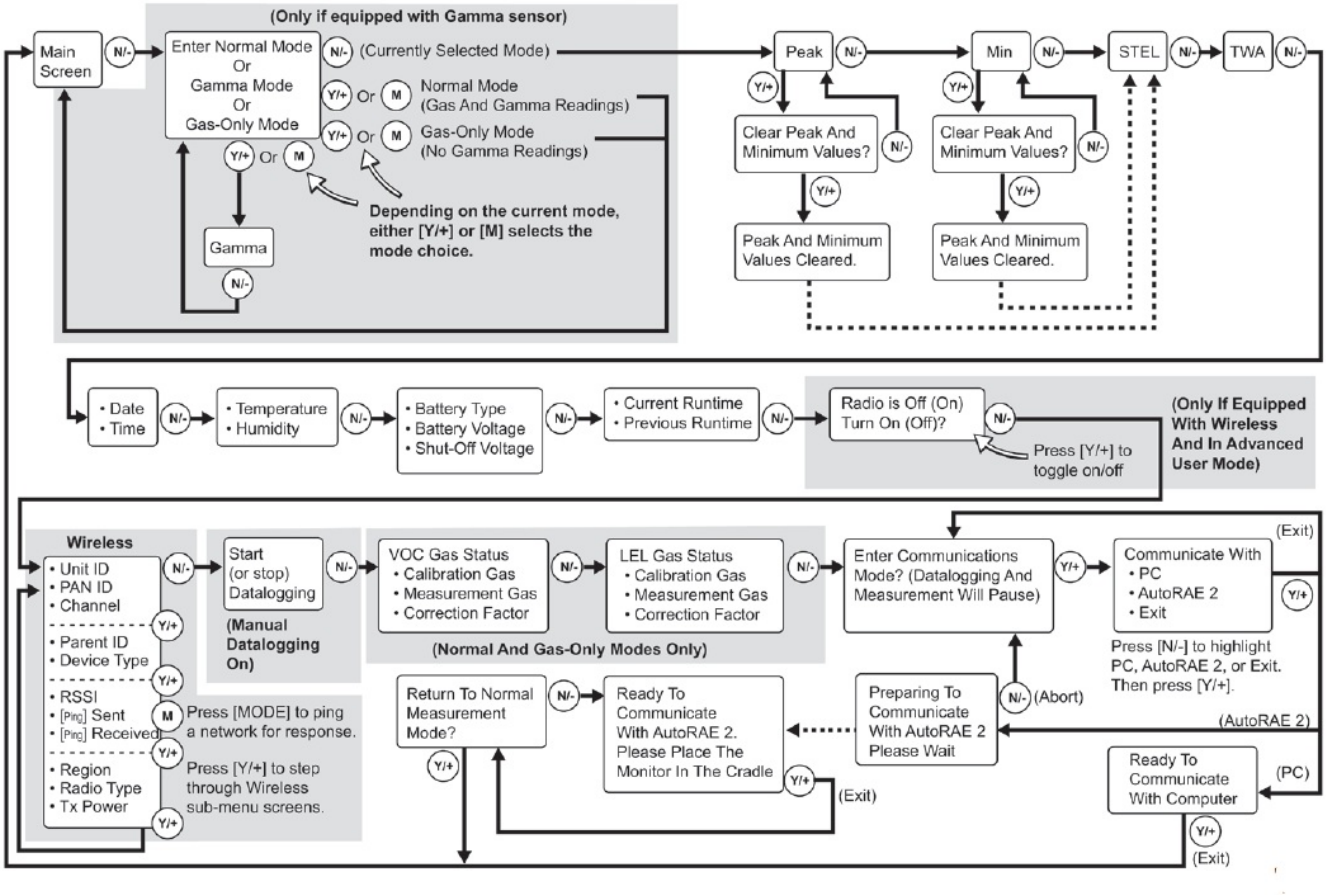
1. Press [Y/+]. The screen displays the sensor(s) to be calibrated.
    - · Multi: The list is shown.
    - · Single: Select a sensor and press [Y/+]
2. Attach the calibration adapter, connect the calibration gas cylinder's flow regulator to the MultiRAE, and start the gas flow.
3. Press [Y/+] to start calibration.
4. Upon completion, a pass/fail calibration result appears and the readings are shown (they should be within ±10% of the span gas value).
   Note: If a VOC sensor is installed, a second calibration can be performed to enhance linearity, requiring different calibration gas.
5. Turn off the gas and remove the calibration adapter.

BATTERY PACKS

- A Li-Ion battery pack (PN: M01-3051-000 or M01-3053-000) and an alkaline battery adapter (PN: M01-3052-000 or M01-3054-000) are supplied with each MultiRAE.
- There are two types of output power for battery packs or adapters. The battery pack (PN: M01-3051-000) and adapter (PN: M01-3052-000) are used for MultiRAE model number PGM-62×0. Battery pack (PN: M01-3053-000) and adapter (PN: M01-3054-000) are used for model number PGM-62×6/PGM-62×8.
- The alkaline battery adapter accepts four AA alkaline batteries (use only Duracell MN1500). Do not mix old and new batteries or batteries from different manufacturers.

Basic Menu Navigation in Hygiene Mode

- Pressing [N/-] repeatedly allows you to step through the screens as shown here.
  Note: The first gray box only applies if a gamma radiation sensor is installed.
- The second gray box indicates the data log functions when datalogging is in Manual mode. When datalogging is in Automatic mode, this screen does not appear. Refer to the User's Guide for information on selecting Automatic, Manual, or Snapshot datalogging.
  Note: Dashed line indicates automatic progression.



Wireless Operation

- If your MultiRAE is equipped with a wireless modem, its settings are controlled via the menu items under “Wireless.” In order to save time while operating the MultiRAE in a network, it is best to configure the settings before taking the MultiRAE into the field. Consult the User’s Guide for more detailed instructions.

1. Enter Programming Mode by pressing and holding [MODE] and [N/-] simultaneously until the password screen appears.
2. Input the 4-digit password. (The default password is “0000.” If you do not know the password, select “Done.”) Then follow the instructions for individual or multiple zero and span calibration.
3. Press [N/-] repeatedly until “Wireless” is highlighted.
4. Press [Y/+] to select Wireless Settings.
5. Check that the radio is turned on, the PAN ID matches the PAN ID of the network, and match the channel of the network, too. Select Join Network if a network is already established. You may also set the reporting interval and turn on the off-network alarm.
6. When you are done with the settings, press [MODE] to go back to the programming screen, and [MODE] again to return to the main screen.
7. Start the RAELink3 Mesh wireless modem and Safety Suite Device Configurator (SSDC) on your computer.
8. The antenna icon and signal-strength bars should be shown on the screen’s upper-left corner.
9. Check that data is being received by Safety Suite Device Configurator (SSDC).

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  www.sps.honeywell.com

WIRELESS CERTIFICATION

Complies with the following

FCC Part 15

- R&TTE Directive (1999/5/EC)
- **Wireless Approval for UAE In Middle East TRA REGISTERED No: ER36636/15 DEALER No:** HONEYWELL INTERNATIONAL MIDDLE EAST – LTD – DUBAI BR
- **Wireless Approval for QATAR In Middle East ictQATAR Type Approval Reg. No.** : R4697

SPECIAL CONDITIONS FOR SAFE USE

1. The PGM-62xx shall only be fitted with RAE Systems Battery Pack type M01-3051-000 or M01-3053-000 or Battery Adapter M01-3052-000 or M01-3054-000 fitted with Duracell MN1500 batteries.
2. The PGM-62xx shall only be charged outside hazardous areas.

- No precautions against electrostatic discharge are necessary for portable equipment that has an enclosure made of plastic, metal, or a combination of the two, except where a significant static-generating mechanism has been identified. Activities such as placing the item in a pocket or on a belt, operating a keypad or cleaning with a damp cloth, do not present a significant electrostatic risk.
- However, where a static-generating mechanism is identified, such as repeated brushing against clothing, then suitable precautions shall be taken, e.g., the use of anti-static footwear.
- **Note**: Users are recommended to refer to ISA-RP12.13, Part II-1987 for general information on installation, operation, and maintenance of combustible gas detection instruments.
- The MultiRAE multi-gas detector must be calibrated if it does not pass a bump test, or at least once every 180 days, depending on use and sensor exposure to poisons and contaminants.

HAZARDOUS LOCATION APPROVALS

- Exia Class I, Division 1, Groups A, B, C, D, T4
- SIRA 11ATEX2152X, 0575 II 1G Ex ia IIC T4 Ga (for PGM62x0/PGM62x6)
- SIRA 11ATEX2152X, 0575 II 2G Ex ia d IIC T4 Gb (for PGM62x8)

UM = 20V

- IECEx SIR 11.0069X, Ex ia IIC T4 Ga (for PGM62x0/PGM62x6)
- IECEx SIR 11.0069X, Ex ia d IIC T4 Gb (for PGM62x8

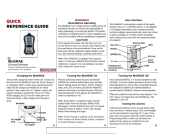
WARNING

- To reduce the risk of ignition of hazardous atmospheres, recharge, remove, or replace the battery only in an area known to be non-hazardous

WARNING

- ANY RAPID UP-SCALE READING FOL-LOWED BY A DECLINING OR ERRATIC READING MAY INDICATE A GAS CONCEN-TRATION BEYOND UPPER SCALE LIMIT, WHICH MAY BE HAZARDOUS.
- TOUTE LECTURE RAPIDE ET POSITIVE, SUIVE D'UNE BAISSE SUBITE AU ERRATIQUE DE LA VALEUR, PEUT INDIQUER UNE CONCENTRATION DE GAZ HORS GAMME DE DÉTECTION QUI PEUT ÊTRE DANGEREUSE.
- ONLY THE COMBUSTIBLE GAS DETECTION PORTION OF THIS INSTRUMENT HAS BEEN ASSESSED FOR PERFORMANCE.
- **CAUTION**: HIGH OFF-SCALE READINGS MAY INDICATE AN EXPLOSIVE CONCENTRATION.
- **ATTENTION**: DES LECTURES HAUTES ET HORS D'ECHELLE PEUVENT INDIQUER DES CONCENTRATIONS DE GAZ INFLAMMABLES.
- **CAUTION**: SUBSTITUTION OF COMPO-NENTS MAY IMPAIR INTRINSIC SAFETY.
- **CAUTION**: BEFORE EACH DAY'S USAGE, SENSITIVITY OF THE LEL SENSOR MUST BE TESTED ON A KNOWN CONCENTRATION OF METHANE GAS EQUIVALENT TO 20 TO 50% OF FULL-SCALE CONCENTRATION. ACCURACY MUST BE WITHIN 0 AND +20% OF ACTUAL. ACCURACY MAY BE CORRECTED BY CALIBRATION PROCEDURE.
- **ATTENTION**: AVANT CHAQUE UTILISATION JOURNALIERE, VERIFIER LA SENSIBILITE DU CAPTEUR DE LIE AVEC UNE CONCENTRATION CONNUE DE METHANE EQUIVALENTE DE 20 A 50% DE LA PLEINE ECHELLE. LA PRECISION DOIT ETRE COMPRISE ENTRE 0 ET 20% DE LA VALEUR VRAIE ET PEUT ETRE CORRIGEE PAR UNE PROCEDURE D'ETALONNAGE.

Documents / Resources

	Honeywell MultiRAE Portable Multi Gas Monitor [pdf] User Guide MultiRAE, MultiRAE Portable Multi Gas Monitor, Portable Multi Gas Monitor, Multi Gas Monitor, Gas Monitor, Monitor

References

- Safety and Productivity Solutions | Honeywell
- User Manual

Manuals+,