MultiRAE Lite Diffusion QuickStart Guide

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WARNINGS

Read Before Operating

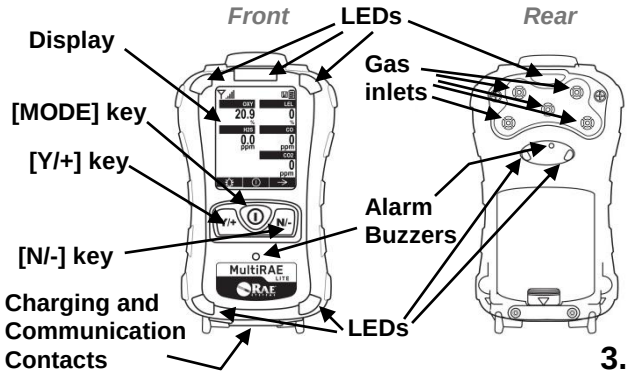
The MultiRAE User's Guide must be carefully read by all individuals who have or will have the responsibility of using, maintaining, or servicing this product. The product will perform as designed only if it is used, maintained, and serviced in accordance with the manufacturer's instructions.

CAUTION!

Never operate the monitor when the rear cover is removed. 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.

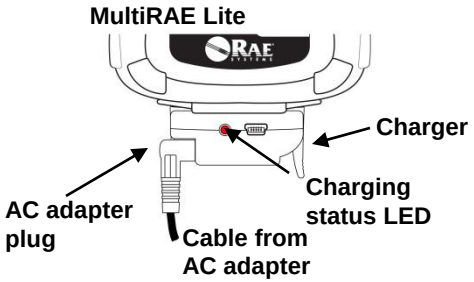
User Interface

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



Charging The MultiRAE Lite

Always fully charge the battery before use. Contacts on the bottom of the MultiRAE Lite meet the Travel Charger's or Charging Cradle's contact pins, transferring power. Make sure the charger and MultiRAE Lite 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 Lite 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 Lite 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 Lite 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 Lite Off

Press and hold [MODE]. A 5-second countdown to shutoff 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 Lite 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 Alarm

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.

Calibration

The MultiRAE Lite can be automatically bump tested and calibrated using the AutoRAE 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. To begin calibration, connect the zero air or calibration gas cylinder, flow regulator, and calibration adapter to the MultiRAE Lite.
2. Enter Programming Mode by pressing and holding [MODE] and [N/-] simultaneously 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 instructions for individual or multiple zero and span calibration.

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

Zero & Fresh Air Calibration

The MultiRAE Lite 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 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 Lite is equipped with a CO_2 sensor, it must be zero calibrated using 100% Nitrogen (N_2), or isobutylene, instead of fresh air or zero air.

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, and connect the calibration gas cylinder's flow regulator to the MultiRAE Lite, 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).
5. Turn off the gas and remove the calibration adapter.

Bump (Functional) Testing

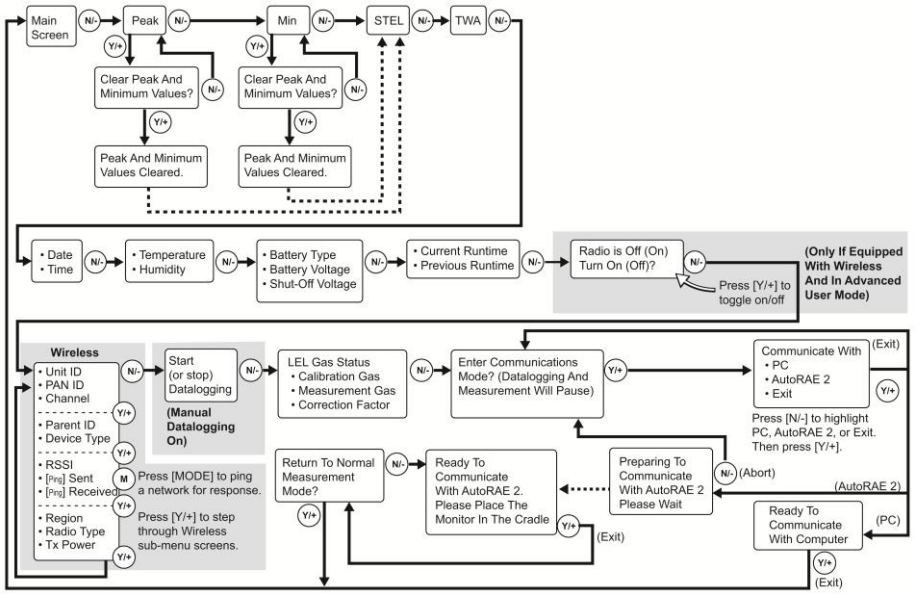
RAE Systems recommends periodic bump testing to confirm that the sensors and alarms are functional. Test each sensor with an appropriate test gas in a concentration not less than the sensor's low alarm setting. To pass, each sensor should go at least to a low alarm. With the MultiRAE Lite in Normal Mode:

1. Connect the calibration gas cylinder, flow regulator, and calibration adapter to the MultiRAE Lite and start the gas flow.
2. Make sure the unit goes into at least a low alarm for each of the tested sensors and that the buzzer produces at least two beeps per second, the LED lights flash on and off, and the vibration alarm functions. The display backlight should illuminate and an alarm message should be shown in the display.
3. Turn off the gas flow.
4. Remove the calibration adapter.

Basic Menu Navigation In Hygiene Mode

Pressing [N/-] repeatedly allows you to step through the screens as shown here.

Note: The gray box indicates the datalog 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.



P/N: M01-4017-000 Rev C 201403

WARNINGS

ANY RAPID UP-SCALE READING FOLLOWED BY A DECLINING OR ERRATIC READING MAY INDICATE A GAS CONCENTRATION 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.

12.

ONLY THE COMBUSTIBLE GAS DETECTION PORTION OF THIS INSTRUMENT HAS BEEN ASSESSED FOR PERFORMANCE.

UNIQUMENT, LA PORTION POUR DÉTECTOR LES GAZ COMBUSTIBLES DE CET INSTRUMENT A ÉTÉ ÉVALUÉE.

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 COMPONENTS MAY IMPAIR INTRINSIC SAFETY.

13.

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.

14.

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 Lite 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.

15.

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.
3. 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.

16.

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

Do not replace sensors in hazardous locations.

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-62x0. Battery pack (PN: M01-3053-000) and adapter (PN: M01-3054-000) are used for model number PGM-62x6/PGM-62x8.

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.

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)

WIRELESS CERTIFICATION

Complies with the following:

FCC Part 15

R&TTE Directive (1999/5/EC)

Wireless Operation

If your MultiRAE Lite 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 Lite in a network, it is best to configure the settings before taking the MultiRAE Lite 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 ProRAE Guardian 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 ProRAE Guardian.