



Using the QRAE II



PROTECTION THROUGH DETECTION

Agenda

- Charging the QRAE II
- Turning the QRAE II ON
- Update list firmware and hardware
- Understanding the display
- Testing the Alarms
- Turning the QRAE II OFF



Agenda

- Operating the QRAE II
- Normal Mode
- Programming Mode
- Diagnostic Mode



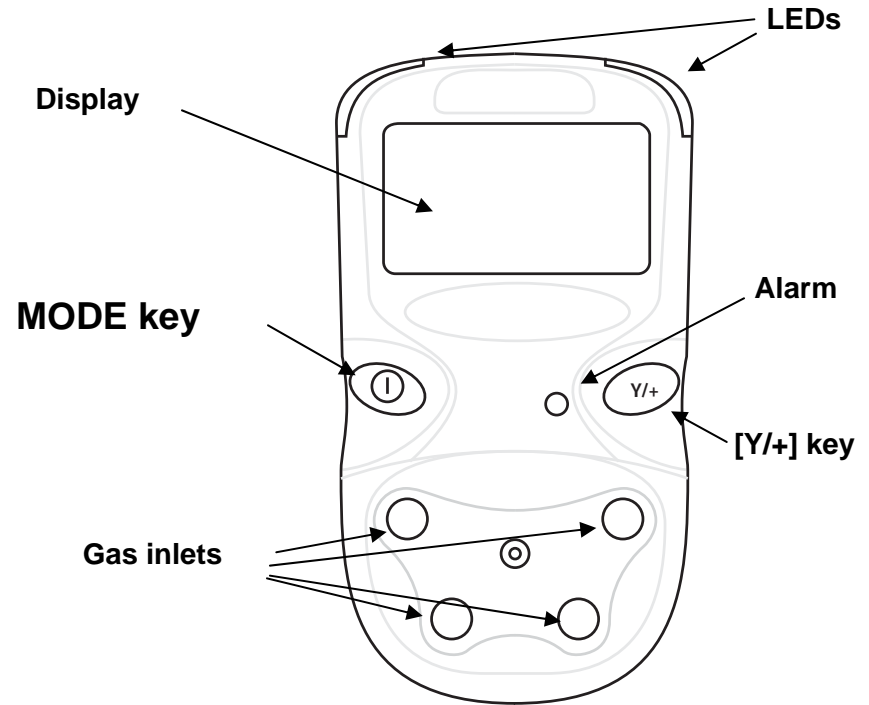
Charging the QRAE II

- The QRAE II should be stored in the charger
- Charging is complete when the Charging LED is green



Turning the QRAE II ON

1. Remove the QRAE II from the charger
2. Hold the [MODE] key down until the detector beeps



Turning the QRAE II ON

- The display will show a set of warm-up screens as follows
 - On...
 - RAE Systems Inc.
 - QRAE II
 - <Language version 1/Language version 2>



Turning the QRAE II ON

- This is followed by a progression of screens that tell you the QRAE II's current settings:
 - Firmware version number and serial number
 - List of installed sensors
 - Last Calibration date and time
 - Alarm Mode, battery voltage, shutoff voltage
 - Datalog Time Left



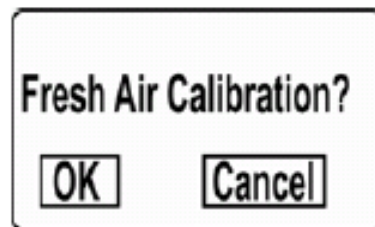
Turning the QRAE II ON

- The QRAE performs a final checkout and the screen shows a 15-second countdown to full operational functionality
- If Datalog is on, this message is displayed after the countdown:
 - Datalog Started



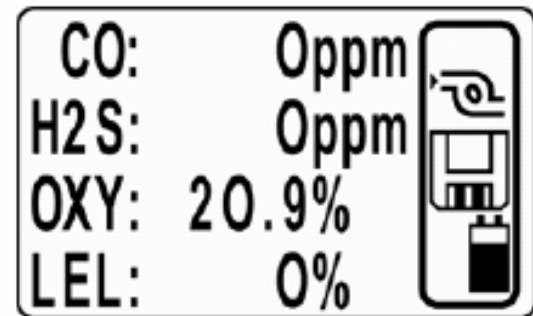
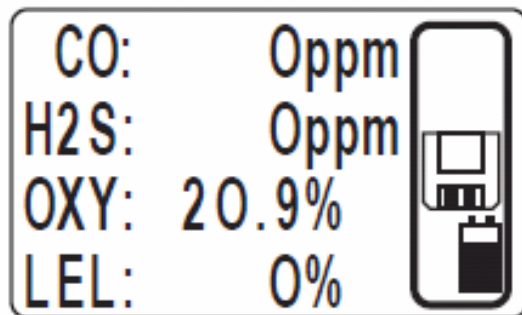
Cal due expired and fresh air calibration

- If the QRAE displays “CAL due expired”
This indicate the present calibration interval has been expired and a calibration must be performed
- If Fresh air calibration is activated this screen will be displayed



Turning the QRAE II ON

- When the QRAE II is ready for use, it shows this screen:



QRAE II Update list hardware

- The QRAE II Updates when introducing the pumped version

With the pumped version hardware upgrade

- Supporting built-in pump
- Supporting CO or SO₂ in slot 2
- Supporting H₂S in slot 1



QRAE II Update list firmware










- The QRAE II Updates when introducing the pumped version

With the pumped version firmware upgrades

- **Fresh air calibration user selectable**
- 2 pump speeds high and low
- Calibration due date



Understanding the Display

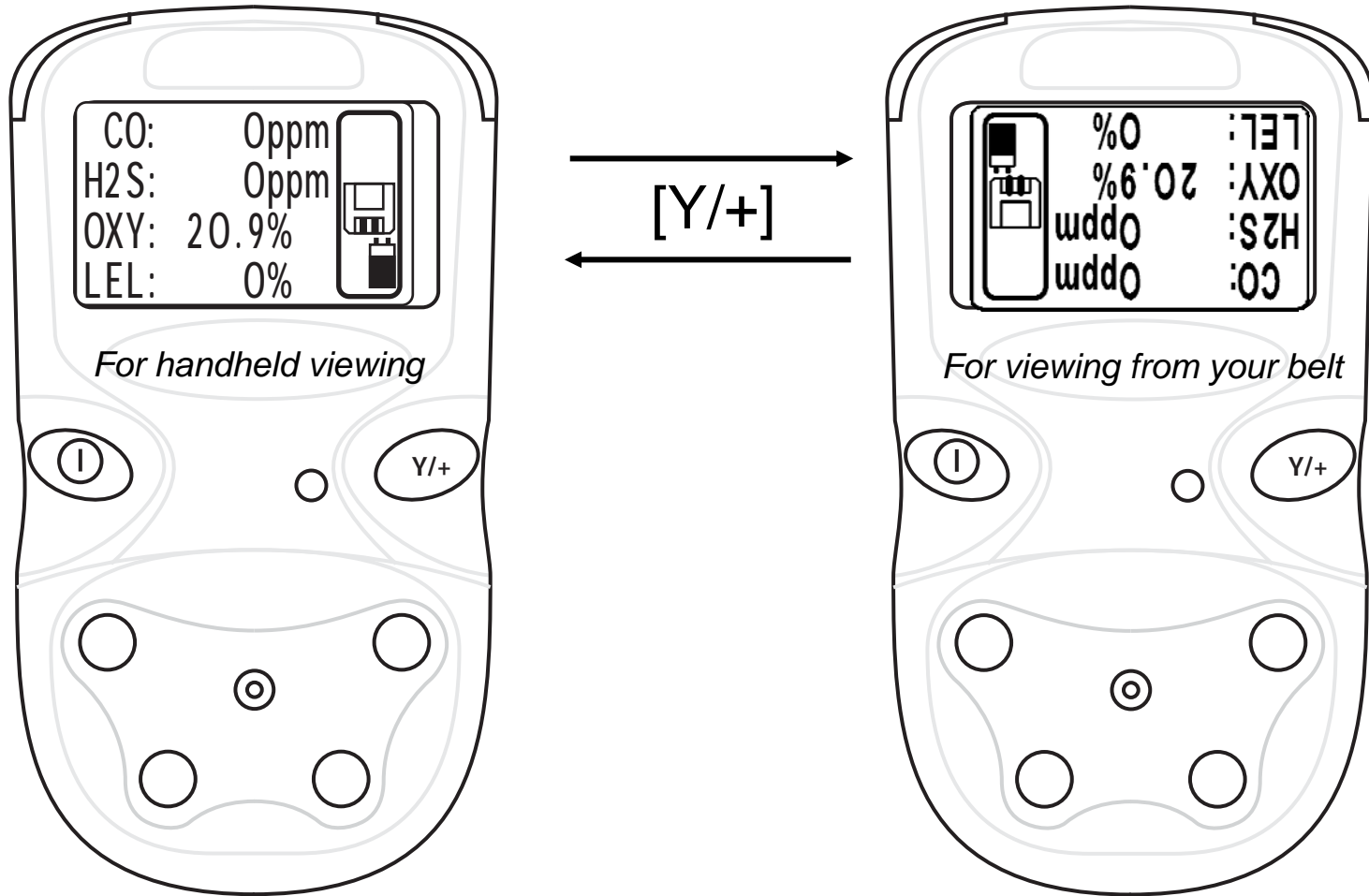
Icon	Indication
	Battery Voltage low (flashing) Battery Low alarm triggered
	Battery fully charged
	Battery charging
	Alkaline Battery Adapter in use
	Alkaline Battery cannot be charged
	Pump
	Pump blocked (blinks on and off)
	Datalogging active (flashing)
	Datalog memory full

Understanding the Display

- Inverting the display
 - The QRAE II can be viewed from the hand or from the belt
 - To flip the screen, press the [Y/+] key and hold it down for 3 seconds. When the image inverts, release the key



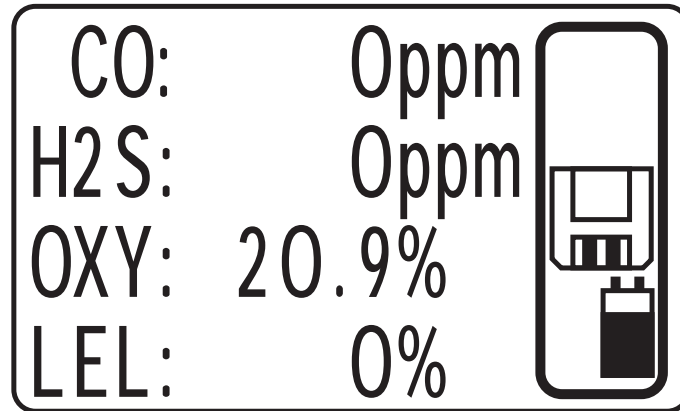
Inverting the Display



Testing the Alarms

- Under normal non-alarm conditions, the buzzer, vibration alarm, LED, and backlight can be tested at any time by pressing [Y/+] once.

Turning the QRAE II ON



- If there are no alarms, and the sensor readings are as shown above, then the QRAE II is ready for use.

Turning the QRAE II OFF

- Press and hold [MODE] .
 - In 2 seconds, a 5-second countdown to shutoff begins.
 - You must hold your finger 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 QRAE II continues normal operation.
- The 5-second countdown proceeds with an alarm beep and light flash at each step



Operating the QRAE II

- Mode Overview
 - The QRAE II has three operational modes:
 - Normal
 - Programming
 - Diagnostic



Normal Mode

- This is the default mode when you turn on the QRAE II
- No password needed

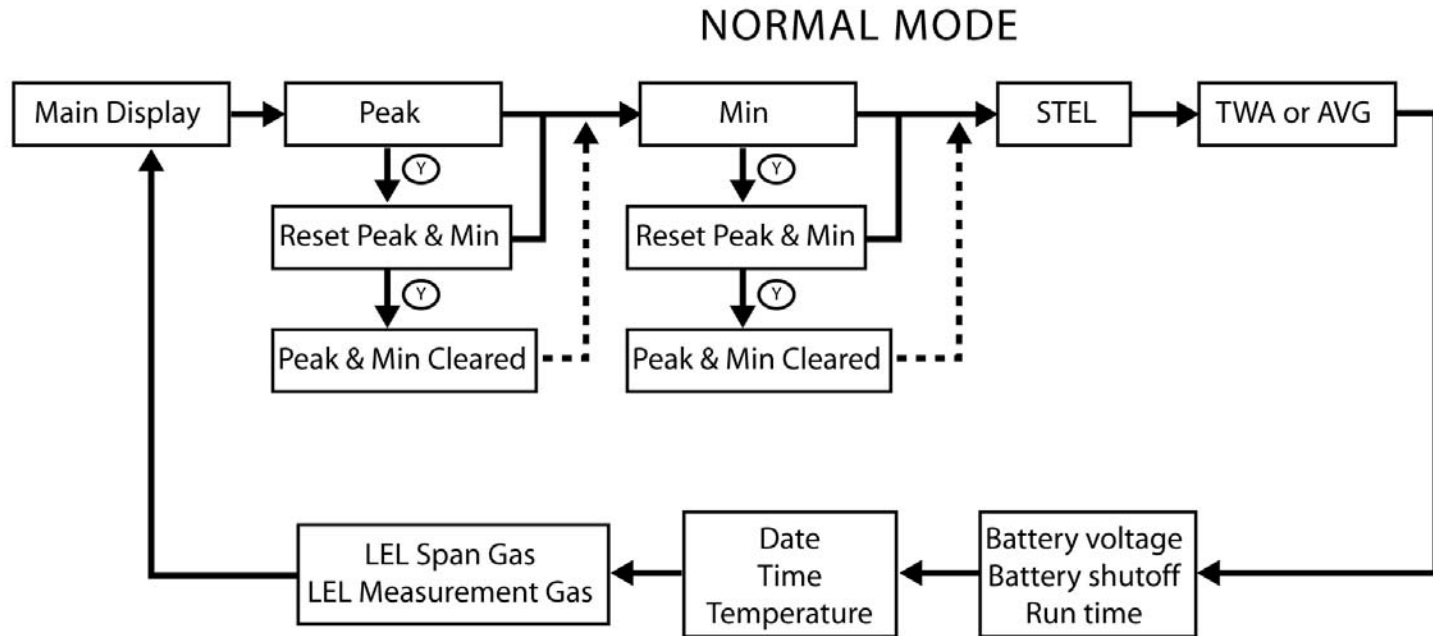


Normal Mode

- Provides the indications and data you need for most typical monitoring applications, including:
 - Measurements of carbon monoxide (CO), hydrogen sulfide (H₂S), oxygen (O₂), and Lower Explosive Limit (LEL).
 - Peak.
 - Min (minimum).
 - STEL (short-term exposure limit).
 - TWA (time-weighted average).
 - Battery level.
 - Run time since the QRAE II was turned on.
 - Time, date, and temperature.
 - Names of the LEL span and measurement gas(es) used for calibration.



Normal Mode



Use MODE key (M) to advance, except where noted.

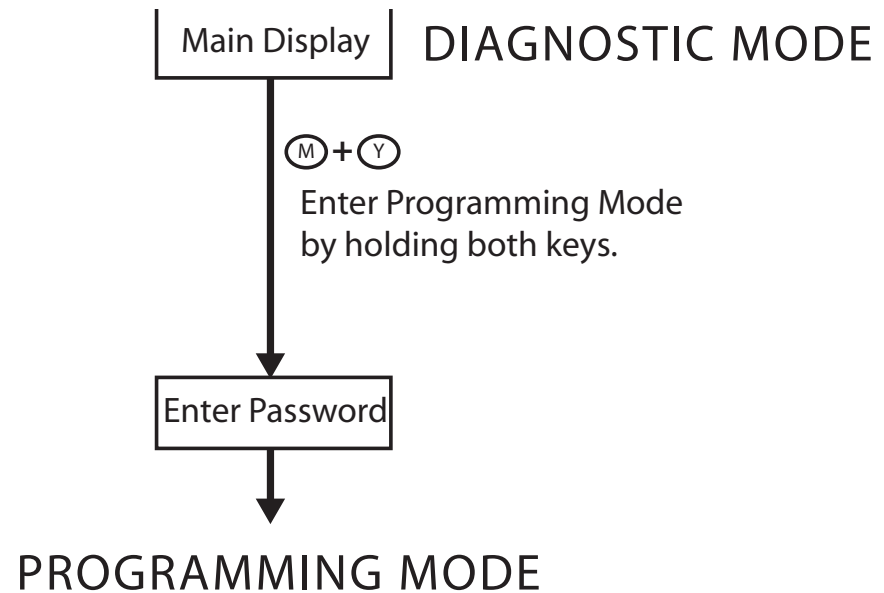
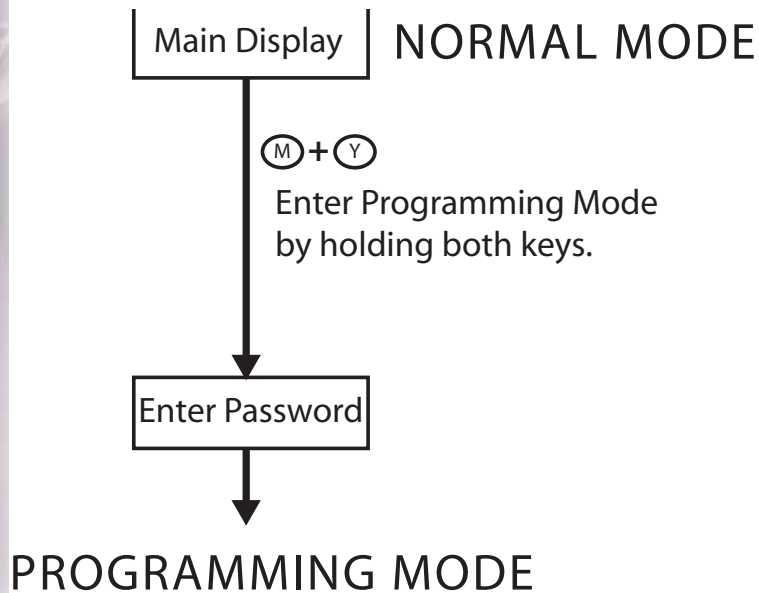
Programming Mode

- This mode contains most of the adjustable settings for the QRAE II. It is organized into five submenus:
 - Calibrate Monitor
 - Change Alarm Limits
 - Change Datalog
 - Change Monitor Setup
 - Change Sensor Configuration



Programming Mode

- Programming Mode can be entered from Normal Mode or Diagnostic Mode.



Programming Mode

- To enter Programming Mode, hold down [MODE] and [Y/+] simultaneously for 3 seconds.
- To exit Programming Mode, press [MODE] repeatedly until the main concentration display shows.

Programming Mode

- When you enter Programming mode, you see:

Enter Password
0000
OK Cancel

- Increase a digit by pressing the [Y/+] key
 - After 9 it will go back to zero
- Advance to the next digit or function by pressing the [MODE] key

Programming Mode

- Once you are satisfied with the password, advance to **OK** using [MODE], and press [Y/+].

Enter Password

0000

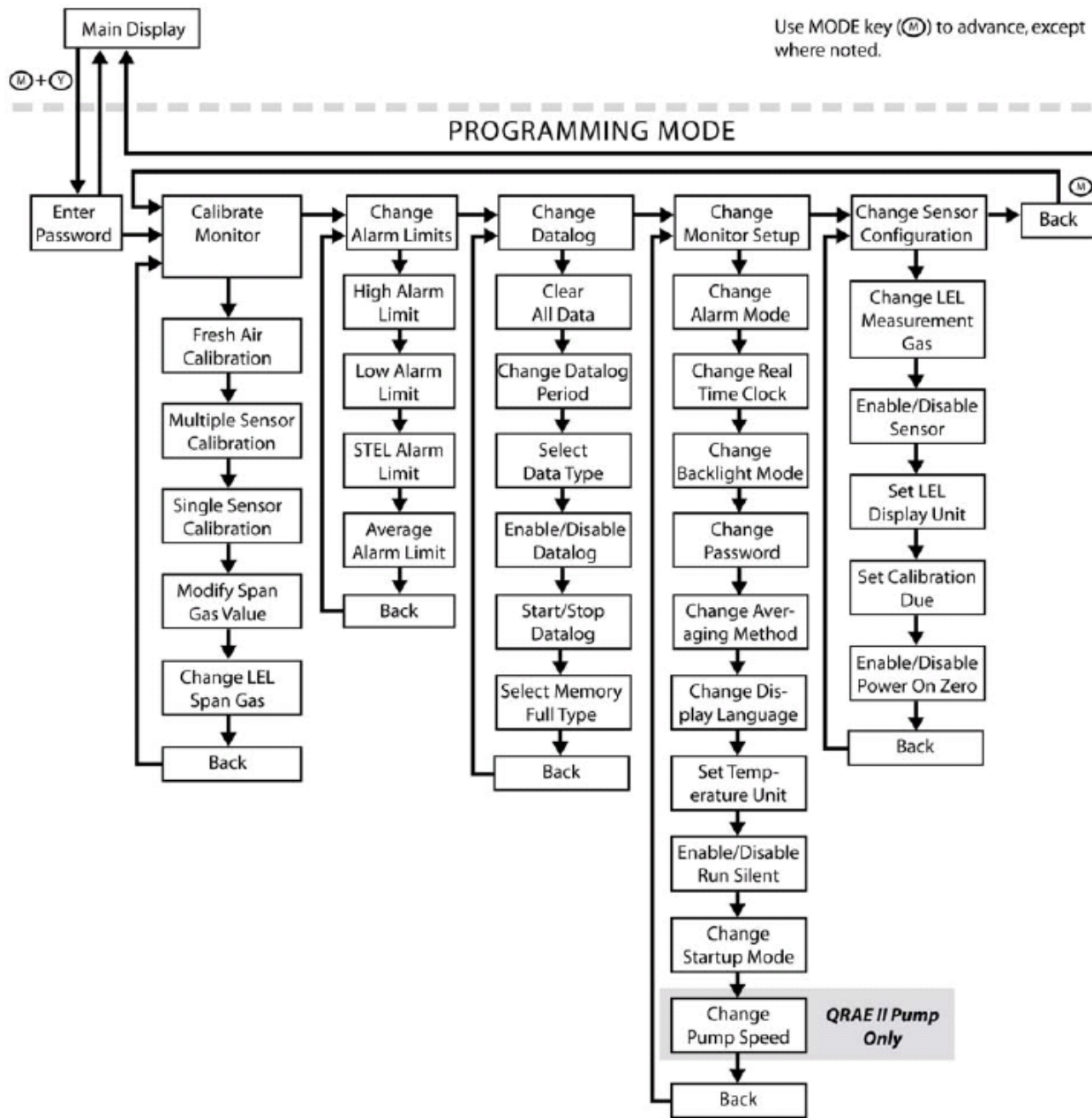
OK Cancel

- If you want to cancel, advance to **Cancel** and press the [Y/+] key.

Programming Mode

- The default password is 0000
- If you change the password, write it down and save it in a safe location.
- You do not have to change the password from 0000. You can simply continue using 0000, step through the digits until the cursor lands on OK and then press the [Y/+] key to enter Programming Mode.





Diagnostic Mode

- The QRAE II's Diagnostic Mode can only be accessed at startup time.
- **To Enter Diagnostic Mode**
 - With the QRAE II turned off, press and hold both [MODE] and [Y/+].
 - When the display turns on, release the keys.

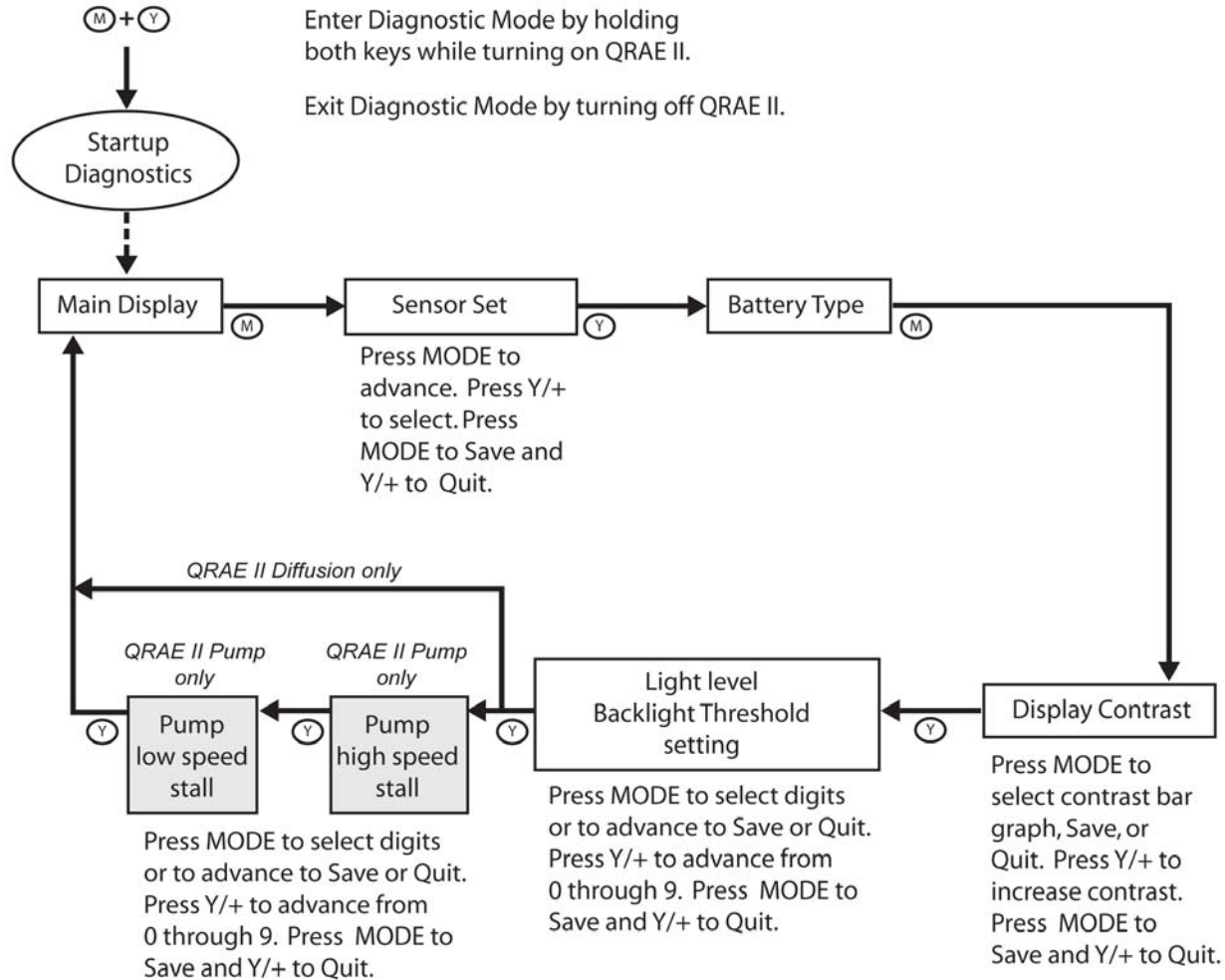


Diagnostic Mode

- **To Exit Diagnostic Mode:**
 - Turn off the QRAE II by pressing and holding [MODE]. There will be a standard shutoff countdown.
 - When it shuts off, you will be alerted.



Diagnostic Mode



Questions?



PROTECTION THROUGH DETECTION