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|  | STANDARD OPERATING GUIDELINE | | | |  |
| | EQUIPMENT | | | | |
| | AIM 600 4-GAS DETECTOR | | | | |
| | Effective: 01/May/96 | Revised: 01/Nov/2020 | S.O.G. #: E-209 | Page: 1 of 3 | |

1.0 Purpose

- 1.1 The purpose of this guideline is to establish the proper operating procedures for using the AIM 600 Series 4-Gas Detector.

2.0 Responsibility

- 2.1 It is the responsibility of all Department personnel to understand the procedures documented in this Standard Operating Guideline.

3.0 General Operating Guidelines

- 3.1 The 600 detector is very easy to operate working off of the "turn-it-on and go " principle. It allows you to check PEAK readings when necessary and to perform easy calibration.

3.2 Operating Keys

- 3.2.1 **ON** - Turns the detector on and automatically initiates an internal diagnostic SELFTEST and then the display of atmospheric readings.
- 3.2.2 **OFF** - Depress and hold the OFF key for four (4) seconds to deactivate the detector. This is a safety feature to prevent inadvertent deactivation of the detector.
- 3.2.3 **PEAKS** - When the PEAKS key is used, the most recently detected peak gas levels are recalled and displayed.
- 3.2.4 **CAL** - This key is used to calibrate the meter to test gas. This key will only be used by personnel who will be doing the calibration on the meter.

3.3 Turning On The Detector and Getting Started



- 3.3.1 The detector has only four (4) operating activities. They are:

- 3.3.1.1 Start-up (SELFTEST)
- 3.3.1.2 Sensing
- 3.3.1.3 Recalling (PEAKS)
- 3.3.1.4 Performing (CALIBRATION)

- 3.3.2 The start-up of SELFTEST automatically provides diagnostic and current system information every time the detector is turned on. The Sensing mode provides information and gas level readings from the sensors in the detector. PEAKS lets you recall the last highest gas level reading for each sensor and CALIBRATION lets you adjust the sensors to compensate for degradation over time.

3.4 Start-up Information and Diagnostics

- 3.4.1 Turning on the detector initiates a diagnostic and SELFTEST routine designed to check certain operating parameters prior to commencing full operations. The detector is turned on by depressing the ON button.
- 3.4.1.1 Please pay close attention each time you turn on the detector. Make sure that all of the displays and the sensing and alarm LEDs light up and that the buzzer sounds. The onus is on the operator to ensure that, through this start-up procedure, any errors or compromised operating conditions are observed. Should information or diagnostic test procedures be incomplete or unsuccessful, do not use the detector.

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- 3.4.2 As part of the SELFTEST, the detector will display the sensor configuration of the detector following the buzzer check.
- 3.4.3 Following the SELFTEST is the Sensor Display. This is the actual gas-sensing activity where information from the sensors is displayed and can include:
 - 3.4.3.1 Sensor level readings
 - 3.4.3.2 Operating information
 - 3.4.3.3 Errors and fault messages
- 3.4.4 Sensing is indicated by the flashing green light labeled SENSING
- 3.5 Sensing Mode
 - 3.5.1 The detector has two atmospheric operating modes. The primary mode (this being the mode we will operate in most of the time) of operation is the Atmospheric Sensor Display. This is when the SENSING LED flashes green and gas level readings are displayed for each sensor. The second mode is the menu mode. That is covered in the operating manual located in the carrying case.
 - 3.5.1.1 To confirm that your detector is actively sensing, check that the SENSING LED illuminates green every few seconds. The green SENSING LED switches to red when the detector is in the menu mode.
 - 3.5.2 When the detector is in the sensing mode, the buzzer will beep every five (5) seconds to indicate an error or every thirty (30) seconds as a “watch dog “reminding you that the detector is operating.
 - 3.5.3 Watch for sensor error messages when sensing. Consult the operating manual when this occurs.
- 3.6 Monitor Sensor Display Readings
 - 3.6.1 Sensor readings should occur within thirty (30) seconds of exposure to the atmospheric source. A complete response may, however, take from sixty (60) to one hundred and twenty (120) seconds. This can happen whenever aspirator pumps with tubing extensions are used to remotely test the atmospheric source.
- 3.7 Using the Backlighting
 - 3.7.1 Each sensor's dedicated LED display incorporates automatic backlighting to improve reading or monitoring sensor display levels in low ambient light.
 - 3.7.2 Each reading is automatically illuminated if the concentration reaches a level of one half the alarm concentration levels. This feature will continue to backlight the respective displays while the gas concentration remains at or above the 50% warning level.
 - 3.7.3 All displays can be temporarily backlit manually for six (6) seconds, as desired, by simply pressing the ON key. This is useful to briefly illuminate the displays for checking atmospheric concentrations in low ambient light. Shortly after illumination, the backlighting will automatically turn off.
- 3.8 Gas Levels and Alarms
 - 3.8.1 The detector is primarily designed as an “exit tool “. This means that if an alarm condition is indicated by the detector, it must be a safety rule-of-thumb that you exit the hazardous atmosphere.
 - 3.8.2 Along with displaying gas levels, the detector also reports gas concentrations in two ways with the warning LED. They are:
 - 3.8.2.1 Solid red always means “alarm”
 - 3.8.2.2 Solid green means “caution”

3.9 Instantaneous Alarm Levels

3.9.1 An instantaneous alarm is the atmospheric gas concentration level required to activate the single red LED and continuous audio warning beep. It is the point at which the gas concentration level is considered immediately dangerous to one's health and safety.

3.9.2 The concentration levels for each sensor's instantaneous alarm are set at the factory. The following are the alarm settings:

| | | Pre-Alarm Caution Green LED | Full Alarm Warning Red LED |
|---------|----|-----------------------------|----------------------------|
| 3.9.2.1 | OX | 20.2% VOL | 19.5% VOL |
| 3.9.2.2 | EX | 5% LEL | 10% LEL |
| 3.9.2.3 | CO | 18 PPM | 35 PPM |
| 3.9.2.4 | HS | 5 PPM | 10 PPM |

3.9.3 A green warning LED is a 50% pre-warning level and indicates that an increasing hazardous gas concentration has at least reached the half-way concentration point, and may be approaching the full 100% instantaneous alarm concentration level.

3.10 Pre-Alarm Caution Indications

3.10.1 For each sensor installed, the detector indicates a pre-alarm concentration level by the warning indicator LED illuminating green. This cautionary green LED indicator denotes 50% to 99% of the concentration of a full alarm level. If any one of the sensors detects a pre-alarm increasing level of gas, the warning LED will turn green and the automatic backlighting will illuminate for the display associated with any sensor that has reached its pre-alarm concentration.

3.10.2 The detector will sound the audio alarm and switch the warning LED from green to red for a full 100% alarm concentration level. If any one of the sensors detects a full alarm level of gas, the warning LED will turn red. Full alarm warning conditions take precedence over any pre-alarm conditions.

3.11 To deactivate the detector, take the unit out to a clean atmosphere and let the unit continue to run for approximately one (1) minute. Turn the unit off and return it to the carrying case.

3.12 Cleaning and maintenance

3.12.1 The unit can be wiped off with a wet sponge and dried.

3.12.2 If the unit malfunctions, attach a Job Order highlighting the problem and forward the unit to your Battalion Chief.

4.0 Reference

4.1 Highland Park Fire Department

4.2 AIM Corporation

Approved:  Fire Chief