



# VM-1 User Guide

<b>Copyright</b>	<p>© 2016 Walter Kidde Portable Equipment, Inc. All rights reserved.</p> <p>This document may not be copied in whole or in part or otherwise reproduced without prior written consent from Walter Kidde Portable Equipment, Inc., except where specifically permitted under US and international copyright law.</p>
<b>Trademarks and patents</b>	<p>The Kidde name and logo are trademarks of Walter Kidde Portable Equipment, Inc.</p> <p>Other trade names used in this document may be trademarks or registered trademarks of the manufacturers or vendors of the respective products.</p>
<b>Version</b>	<p>This document applies to VM-1 control panels with C-CPU firmware version 1.x.</p>
<b>Contact information</b>	<p>For contact information, see <a href="http://www.kiddelifesafety.com">www.kiddelifesafety.com</a>.</p>

# Content

	Important information	iii
<b>Chapter 1</b>	<b>Introduction</b>	<b>1</b>
	System overview	2
	System hardware capabilities	2
	Overview of panel controls and indicators	3
	System operation	10
	Event messages	11
	User access levels	12
	Using the paging microphone	13
	Using the firefighters telephone	14
	Remote annunciation	14
	Email and text communication	18
<b>Chapter 2</b>	<b>Basic operating instructions</b>	<b>21</b>
	Checking for active points	22
	Finding detectors that may need servicing	23
	Viewing history reports	24
	Finding firmware and database version numbers	25
	Viewing the alarm count	25
	Determining panel TCP/IP settings	26
	Determining if your VM-DACT is NFPA 72 compliant	26
	Silencing the panel buzzer	27
	Silencing alarm signals	27
	Acknowledging events	28
	Resetting the fire alarm system	28
	Performing a lamp test	29
	Activating alarm signals manually	29
	Changing the LCD screen language	30
<b>Chapter 3</b>	<b>Advanced operating instructions</b>	<b>31</b>
	Changing detector alarm sensitivity	32
	Changing event message routes	32
	Disabling and enabling devices	33
	Disabling and enabling zone groups	34
	Setting the system time and date	35
	Using a TCP/IP connection to write to the panel	35
	Using a TCP/IP connection to read from the panel	36
	Testing a carbon monoxide (CO) detector	37

<b>Chapter 4</b>	<b>Preventive maintenance and testing</b>	<b>39</b>
	Introduction	40
	Service provider information	40
	Visual inspection schedule	41
	Troubleshooting	43
<b>Appendix A</b>	<b>System addressing</b>	<b>45</b>
	Address formats	46
	Card address	46
	Hardware layer device addresses	48
	Operator layer device address	49
	Remote annunciator device addresses	50
	<b>Glossary</b>	<b>59</b>
	<b>Index</b>	<b>61</b>

# Important information

## Limitation of liability

To the maximum extent permitted by applicable law, in no event will Walter Kidde Portable Equipment, Inc. be liable for any lost profits or business opportunities, loss of use, business interruption, loss of data, or any other indirect, special, incidental, or consequential damages under any theory of liability, whether based in contract, tort, negligence, product liability, or otherwise. Because some jurisdictions do not allow the exclusion or limitation of liability for consequential or incidental damages the preceding limitation may not apply to you. In any event the total liability of Walter Kidde Portable Equipment, Inc. shall not exceed the purchase price of the product. The foregoing limitation will apply to the maximum extent permitted by applicable law, regardless of whether Walter Kidde Portable Equipment, Inc. has been advised of the possibility of such damages and regardless of whether any remedy fails of its essential purpose.

Installation in accordance with this guide, applicable codes, and the instructions of the authority having jurisdiction is mandatory.

While every precaution has been taken during the preparation of this guide to ensure the accuracy of its contents, Walter Kidde Portable Equipment, Inc. assumes no responsibility for errors or omissions.

## Advisory messages

Advisory messages alert you to conditions or practices that can cause unwanted results. The advisory messages used in this document are shown and described below.

---

**WARNING:** Warning messages advise you of hazards that could result in injury or loss of life. They tell you which actions to take or to avoid in order to prevent the injury or loss of life.

---

---

**Caution:** Caution messages advise you of possible equipment damage. They tell you which actions to take or to avoid in order to prevent the damage.

---

**Note:** Note messages advise you of the possible loss of time or effort. They describe how to avoid the loss. Notes are also used to point out important information that you should read.

## VM-1 FCC compliance

This equipment can generate and radiate radio frequency energy. If the equipment is not installed in accordance with this guide, it may cause interference to radio communications. This equipment has been tested and found to comply with the limits for Class A computing devices pursuant to Subpart B of Part 15 of the FCC Rules. These rules are designed to provide reasonable protection against such interference when this equipment is operated in a commercial environment. Operation of this equipment is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

## VM-DACT FCC compliance

### Cautions

- To ensure proper operation, this dialer must be installed according to the enclosed installation instructions. To verify that the dialer is operating properly and can successfully report an alarm, it must be tested immediately after installation, and periodically thereafter, according to the enclosed test instructions.
- In order for the dialer to be able to seize the phone line to report an alarm or other event when other customer equipment (telephone, answering system, computer modem, etc.) connected to the same line is in use, the dialer *must* be connected to a properly installed RJ-31X jack. The RJ-31X jack must be connected in series with, and ahead of, all other equipment attached to the same phone line. Series installation of an RJ-31X jack is depicted in the wiring diagram. If you have any questions concerning these instructions, you should consult your telephone company or a qualified installer.

### Testing

When programming emergency numbers or making test calls to emergency numbers, remain on the line and briefly explain to the dispatcher the reason for the call. Perform programming and testing activities in the off-peak hours, such as early morning or late evenings.

### Compliance

- **For equipment approved before July 23, 2001:** This dialer complies with Part 68 of the FCC rules. A label attached to the dialer contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

**For equipment approved after July 23, 2001:** This dialer complies with Part 68 of the FCC rules and the requirements adopted by the Administrative Council for Terminal Attachments (ACTA). A label attached to the dialer contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this information must be provided to the telephone company.

- The plug and jack used to connect the dialer to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by ACTA. The dialer must be connected to a compliant RJ-31X or RJ-38X jack using a compliant cord. If a modular telephone cord is supplied with the dialer, it is designed to meet these requirements. See installation instructions for details.
- A ringer equivalence number (REN) is used to determine how many devices you can connect to a telephone line. If the total REN value for all devices connected on a telephone line exceeds that allowed by the telephone company, the devices may not ring on an incoming call. In most (but not all) areas the total REN value should not exceed 5.0. To be certain of the total REN value allowed on a telephone line, contact the local telephone company.

For products approved after July 23, 2001, the REN is part of the product identifier in the format US:AAAEQ##TXXXX. The digits ## represent the REN without a decimal point. Example: 03 is an REN of 0.3. For earlier products the REN is listed separately.

- If the dialer is harming the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify you as soon as possible. You will also be advised of your right to file a complaint with the FCC, if you believe it is necessary.
- The telephone company may make changes to its facilities, equipment, operations, or procedures that could affect the operation of the dialer. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.
- If you are experiencing problems with the dialer, contact the manufacturer for repair or warranty information. If the dialer is harming the telephone network, the telephone company may request that you disconnect the dialer until the problem is resolved.
- The dialer contains no user serviceable parts. In case of defects, return the dialer for repair.

- You may *not* connect the dialer to a public coin phone or a party line service provided by the telephone company.

## VM-DACT Industry Canada information

**Note:** The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. Industry Canada does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user disconnect the equipment.

---

**Caution:** Users should not attempt to make connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

---

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

**Note:** The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirements that the sum of the Load Numbers of all the devices does not exceed 100.

## Fire alarm system limitations

The purpose of an automatic fire alarm system is to provide early detection and warning of a developing fire. There are a number of uncontrollable factors that can prevent or severely limit the ability of an automatic fire alarm system to provide adequate protection. As such, an automatic fire alarm system cannot guarantee against loss of life or loss of property.



Two main causes of system failures are improper installation and poor maintenance. The best way to minimize these types of system failures is to have only trained fire alarm system professionals design, install, test, and maintain your fire alarm system in accordance with national and local fire codes.

Fire alarm systems will not operate without electrical power. As fires frequently cause power interruption, we suggest that you discuss ways to safeguard the electrical system with your local fire protection specialist.

In the event your VM-1 control panel needs servicing, please contact your system service provider as soon as possible. Refer to “Service provider information” on page 40 for their name and contact information.

## **Intended audience**

The intent of this document is to provide the VM-1 life safety system owner with control panel operating instructions. You may assume that your site-specific software has been installed and that the final overall system testing has been completed prior to you using this guide. The extent of your use with panel buttons, indicators, and menus is dependent upon your access privileges.



# Chapter 1

## Introduction

### Summary

This chapter provides information about your VM-1 control panel to give you a basic understanding of its operation..

### Content

System overview	2
System hardware capabilities	2
Overview of panel controls and indicators	3
System operation	10
Event messages	11
User access levels	12
Using the paging microphone	13
Using the firefighters telephone	14
Remote annunciation	14
Email and text communication	18

## System overview

The VM-1 control panel can operate as a stand-alone panel or as part of a 24-node VM-1 life safety network.

The VM-1 user interface contains operator controls and indicators that make you aware of event activations and provide you with the ability to take action. When an event occurs, the alarm state on the VM-CPU main board changes and activates the control panel LEDs and buzzer, and displays an event message on the 240 × 320 pixel liquid crystal display (LCD) screen. Alarm, supervisory, trouble, and monitor event messages provide information that allows you to locate the active point and respond accordingly.

The panel also gives you the ability to access message details and system reports, and to enable and disable devices and groups. With the correct access level passwords, you can activate and restore sensitivity settings and message routing, test system devices, and other tasks.

## System hardware capabilities

The VM-1 control panel, in its basic configuration, supports up to:

- 250 addressable devices
- Four Class B notification appliance or auxiliary power output circuits
- 30 remote or graphic annunciators for a total of 30 sets of common controls, 3,840 LED indicators, and 1,920 switches
- Two RS-232 ports (one RJ-11 modular jack for panel programming and diagnostics and one terminal block connection for connecting accessory devices)

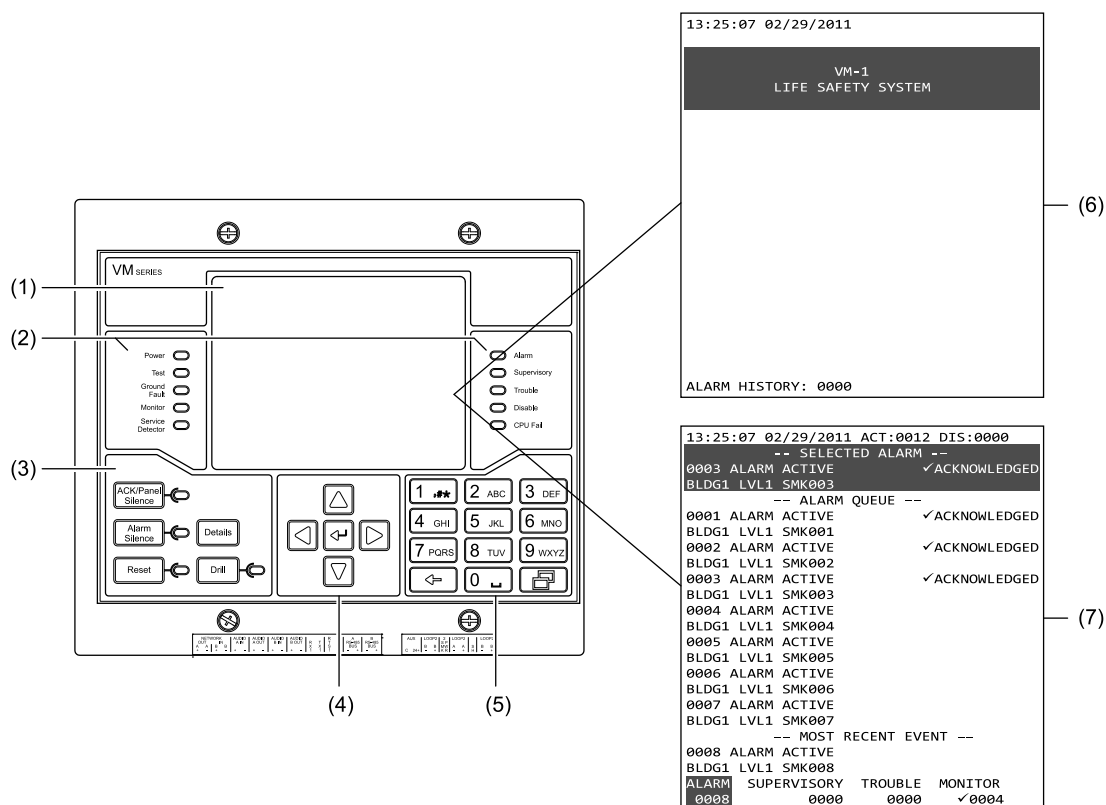
With the proper hardware options, you can expand the VM-1 control panel to support:

- 750 additional addressable devices (1,000 total)
- Four Class A notification appliance circuits
- Three reverse polarity outputs
- Three control-indicating modules for a total of 72 local LED indicators and 36 local switches
- Two dialer outputs

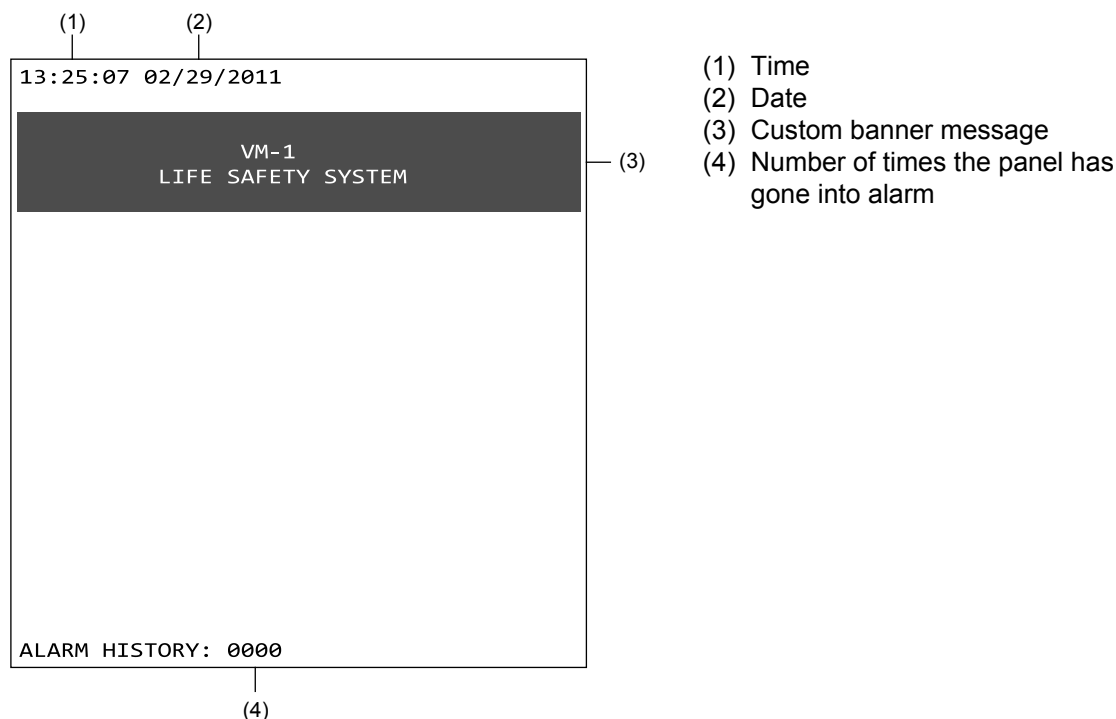
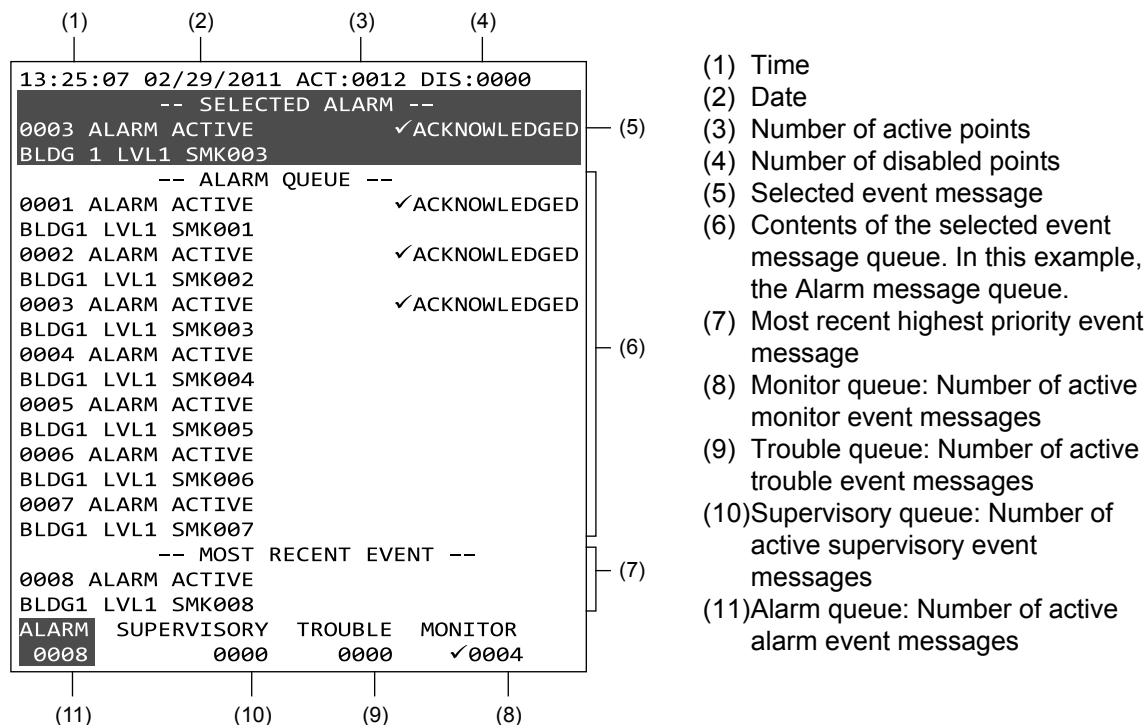
- One Ethernet connection for panel programming and diagnostics
- Live voice and prerecorded audio messaging
- Two-way firefighter telephone communication
- Connection to a VM-1 life safety network using copper, fiber optics, or both (maximum network size may not exceed 24 nodes)

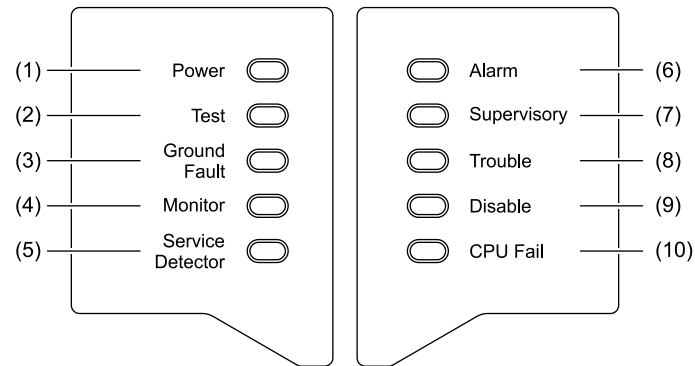
## Overview of panel controls and indicators

Figure 1: VM-LCD User Interface

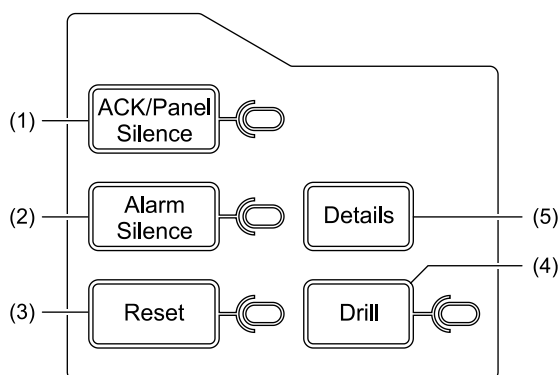


- (1) Display
- (2) System status indicators (see Figure 4 on page 5 for details)
- (3) Common Controls keypad (see Figure 5 on page 6 for details)
- (4) Cursor keypad (see Figure 6 on page 7 for details)
- (5) Alphanumeric keypad (see Figure 7 on page 7 for details)
- (6) Normal display screen (see Figure 2 on page 4 for details)
- (7) Off-normal display screen (see Figure 3 on page 4 for details)

**Figure 2: Normal display screen****Figure 3: Off-normal display screen**

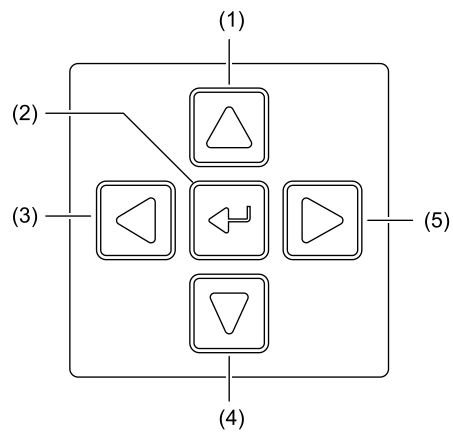
**Figure 4: System status indicators detail****Table 1: System status indicators**

Item	Indicator	Description
1	Power	Indicates the primary (AC) power status. The LED is on when the panel has primary power. The LED is off when the panel does not have primary power or when another panel in the life safety network does not have primary power.
2	Test	Indicates that a part of the system is in test mode.
3	Ground Fault	Indicates that a ground fault was detected in the system wiring.
4	Monitor	Flashes when there is an active monitor event and is steady once the event is acknowledged.
5	Service Detector	Indicates when a detector needs servicing.
6	Alarm	Serves as a common alarm event indicator.
7	Supervisory	Serves as a common supervisory event indicator.
8	Trouble	Serves as a common trouble event indicator.
9	Disable	Indicates when a device, card, group, time control, switch, or LED has been manually disabled.
10	CPU Fail	Indicates that the VM-CPU module has detected a processor failure.

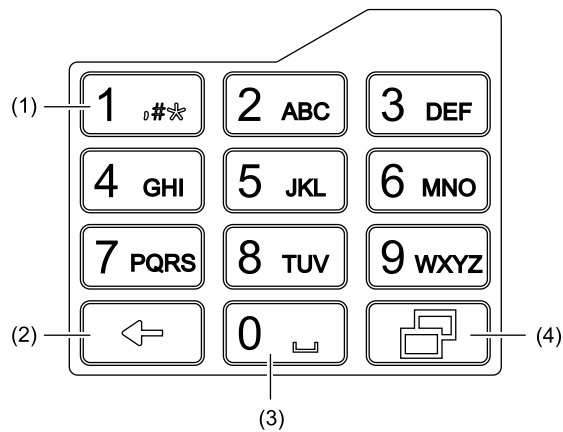
**Figure 5: Common Controls keypad details****Table 2: Common Controls keypad**

Item	Control/Indicator	Description
1	ACK/Panel Silence button and LED	Pressing the button acknowledges an active event. The LED indicates that the panel is in an off-normal condition and that the panel has been placed in Panel Silence mode.
2	Alarm Silence button and LED	Pressing the button silences all audible alarm signals and, if configured, all visible alarm signals. The LED indicates that the active notification circuits have been silenced.
3	Reset button and LED	<p><b>WARNING:</b> Risk of death or serious injury. The protected premises may be occupied. Do not reset the fire alarm system until the proper authorities have determined that the threat of fire is no longer present.</p> <p>Pressing the button restores the system to the normal state. The LED turns on during the reset process.</p>
4	Drill button and LED	Pressing the button activates the drill command function. The LED turns on while the drill is active. Pressing the button a second time stops the drill.
5	Details button	Pressing the button displays additional information about the event highlighted on the LCD screen.

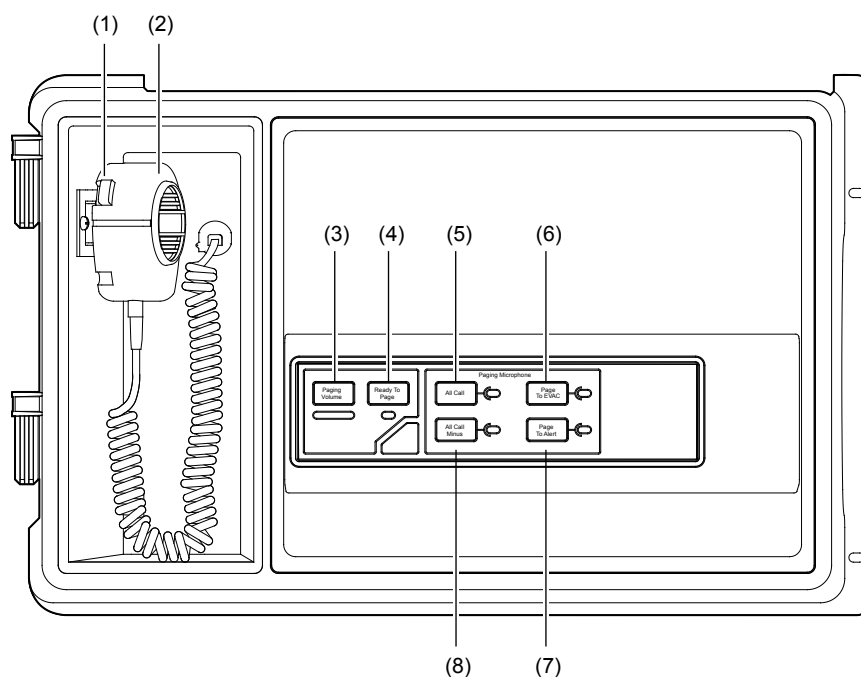


**Figure 6: Cursor keypad details**

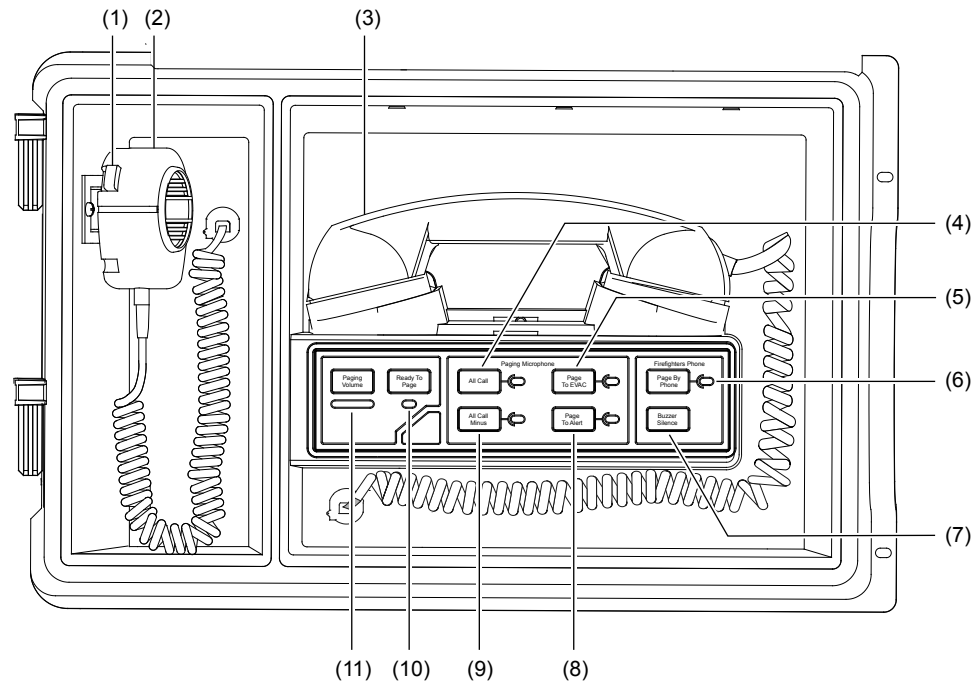
- (1) Up button
- (2) Enter button
- (3) Left button
- (4) Down button
- (5) Right button

**Figure 7: Alphanumeric keypad details**

- (1) Number buttons
- (2) Backspace button
- (3) Space button
- (4) Menu button

**Figure 8: VM-PMI Paging Microphone Interface****Table 3: VM-PMI controls and indicators**

Item	Control/Indicator	Description
1	Push-to-talk (PTT)	Pressing the PTT button lets you broadcast live voice messages.
2	Paging microphone	Handheld microphone used to broadcast live voice messages.
3	Paging Volume	LED shows the audio level of the person speaking into the microphone.
4	Ready To Page	LED flashes during a preannouncement tone and is steady when the system is ready to page.
5	All Call	Pressing the All Call button broadcasts a live voice message throughout the facility. Pressing the button a second time exits the All Call mode. The LED turns on when the system is in All Call mode.
6	Page To Evac	Pressing the Page To EVAC button broadcasts a live voice message to areas configured to receive evacuation signals. Pressing the button a second time exits the Page To EVAC mode. The LED turns on when the system is in Page To EVAC mode.
7	Page To Alert	Pressing the Page To Alert button broadcasts a live voice message to areas configured to receive alert signals. Pressing the button a second time exits the Page To Alert mode. The LED turns on when the system is in Page To Alert mode.
8	All Call Minus	Pressing the All Call Minus button broadcasts a live voice message to areas that are not configured to receive evacuation or alert signals. Pressing the button a second time exits the All Call Minus mode. The LED turns on when the system is in All Call Minus mode.

**Figure 9: VM-PMI with VM-MFK Firefighters Telephone****Table 4: VM-PMI with VM-MFK controls and indicators**

Item	Control/Indicator	Description
1	Push-to-talk (PTT)	Pressing the PTT button lets you to broadcast live voice messages.
2	Paging microphone	Handheld microphone used to broadcast live voice messages.
3	Telephone handset	Handset used to communicate with dedicated firefighter telephone stations that are strategically located throughout the facility.
4	All Call	Pressing the All Call button broadcasts a live voice message throughout the facility. Pressing the button a second time exits the All Call mode. The LED turns on when the system is in All Call mode.
5	Page To Evac	Pressing the Page To EVAC button broadcasts a live voice message to areas configured to receive evacuation signals. Pressing the button a second time exits the Page To EVAC mode. The LED turns on when the system is in Page To EVAC mode.
6	Page by Phone	Pressing the Page by Phone button allows you to broadcast live voice messages using the telephone handset instead of the paging microphone.
7	Buzzer Silence	Pressing the Buzzer Silence button silences the phone call-in buzzer.
8	Page To Alert	Pressing the Page To Alert button broadcasts a live voice message to areas configured to receive alert signals. Pressing the button a second time exits the Page To Alert mode. The LED turns on when the system is in Page To Alert mode.

Item	Control/Indicator	Description
8	All Call Minus	Pressing the All Call Minus button broadcasts a live voice message to areas that are not configured to receive evacuation or alert signals. Pressing the button a second time exits the All Call Minus mode. The LED turns on when the system is in All Call Minus mode.
10	Ready To Page	LED flashes during a preannouncement tone and is steady when the system is ready to page.
11	Paging Volume	LED shows the audio level of the person speaking into the microphone.

## System operation

The basic function of the VM-1 control panel is to monitor status changes in the life safety system and to activate outputs according to the site-specific software. Status change signals, also called events, are classified as follows:

- **Alarm (highest priority):** Events that signal fire alarms or other life-threatening emergencies
- **Supervisory:** Events that signal off-normal conditions with sprinkler and extinguishing systems and other equipment related to property safety
- **Trouble:** Events that signal faults within the system
- **Monitor (lowest priority):** Events that signal the operation of ancillary equipment

During normal operation (no events), the VM-1 control panel displays the Normal screen (see Figure 2 on page 4). When a point in the automatic fire detection system signals a status change, the VM-1 control panel:

- Posts the event message for the point that signaled the change into the appropriate event message queue and displays the off-normal screen (see Figure 3)
- Turns on the corresponding system status LED
- Turns on the panel buzzer to the pattern for the highest priority active event
- Displays the most recent, highest priority event message (see Figure 3)
- Activates common relays and programmed outputs

## Event messages

The VM-1 control panel uses event messages to identify points that signal a status change. The first line of the event message displays the event number and the event name. The second line displays the message text. The message text is either the address of the point that activated the event or, if programmed, a location description.

Event messages are stored in queues. There is one queue for each type of event message (see Figure 3).

The VM-1 control panel automatically displays the content of the highest priority event message queue, except when you are viewing event messages in another queue. If you are viewing event messages in one queue when a higher priority event message is placed in another queue, the VM-1 control panel continues to display the content of the current queue until the user timeout period expires or until you select the other queue.

### **To view an event message in the current queue:**

1. Press the Up or Down button to select the event message. The selected event message appears in the highlighted area at the top of the display.

### **To view an event message in another queue:**

1. Press the Left or Right button to select the event message queue.
2. Press the Up or Down button to select the event message.

### **To get details about an event message:**

1. Select the event message.
2. Press the Details button.

## User access levels

The VM-1 control panel uses access levels to prevent unauthorized users from operating certain controls and menu commands. Access level 1 does not require a password, access levels 2 to 5 do. Operators are restricted to levels 1 and 2.

Once you have entered an access level password you do not have to enter it again for any operator control or menu command with the same access level or lower unless the user timeout period expires. The timeout period is configured by your system service provider and can be set from 5 to 99:59 minutes. The default setting is 5 minutes.

Table 5 lists the controls and menu commands available for each operator access level. See your project documentation for the access level passwords programmed for your system, as well as the programmed timeout period.

**Table 5: User access level privileges**

User access level	Privileges
Level 1 (No password required)	<ul style="list-style-type: none"> <li>• Alarm silence function (button) [1]</li> <li>• Ack/Panel silence function (button)</li> <li>• Reset function (button) [1]</li> <li>• Drill function (button) [1]</li> <li>• Details function (button)</li> <li>• Event details</li> <li>• Statuses</li> <li>• Reports</li> <li>• Output selection</li> <li>• Display/printer selection</li> <li>• Toggle language</li> </ul>
Level 2	<p>All level 1 privileges, plus:</p> <ul style="list-style-type: none"> <li>• Devices (enable/disable)</li> <li>• Zone groups (enable/disable)</li> <li>• Remote read lock (activate/restore)</li> <li>• Remote write unlock (activate/restore)</li> <li>• Gas accel response (activate/restore)</li> <li>• Alternate sensitivity (activate)</li> <li>• Alternate message route (activate)</li> <li>• Primary sensitivity (restore)</li> <li>• Primary message route (restore)</li> <li>• Change time (program)</li> <li>• Change date (program)</li> <li>• Change password for level 1 (program)</li> </ul>

[1] May be programmed to require an access level password. See your project documentation for details.

## Using the paging microphone

The VM-PMI Paging Microphone Interface (see Figure 8 on page 8) gives emergency responders the ability to broadcast instructions to occupants throughout the protected premises. There are four types of page you can make:

- **All Call:** Broadcasts live voice messages throughout the facility. For example, use the All Call button to announce the arrival of the fire department, and make any necessary announcements.
- **Page to Evac:** Broadcasts live voice messages only to areas receiving evacuation signals. For example, use the Page To Evac button to reinforce the evacuation of the occupants in areas receiving the evacuation signal.
- **Page to Alert:** Broadcasts live voice messages only to areas receiving alert signals. For example, use the Page To Alert button to notify occupants in areas not in immediate danger to prepare to evacuate, or to advise occupants that people from evacuating areas may be entering their safe area.
- **All Call Minus:** Broadcasts live voice messages only to areas that are not receiving evacuation signals or alert signals. For example, use the All Call Minus button to make announcements to areas of the facility such as stairwells.

### To make an announcement using the paging microphone:

1. Select the areas to receive the page by pressing the appropriate page function button. The button's LED indicates when the system is ready for you to speak.
2. Press the PTT button on the microphone. The Ready to Page LED will flash while the preannouncement tone is sounding.
3. Begin speaking once the Ready to Page LED is on steady. Adjust your voice level so that the Paging Volume indicator only flickers occasionally in the middle. Avoid speaking so loud that the Paging Volume indicator lights all the way to the right.
4. When you are finished speaking, release the PTT button, and then press the page function button again to cancel the page and return the system to its previous condition.

**Note:** The system automatically cancels the page and returns to its previous condition after a short delay if you do not cancel the page manually.

## Using the firefighters telephone

The VM-MFK Master Firefighters telephone provides two-way communication between firefighters in the building and the Fire Command Center. You can also use the telephone handset as the paging microphone.

### To answer an incoming call:

1. Pick up the telephone handset.
2. Press the Buzzer Silence button.
3. Press the appropriate *phone call connect* button.

**Note:** Typically, the *phone call connect* buttons are located above the firefighters telephone on a control-indicating display module, and labeled “Floor 1 Phone” or equivalent.

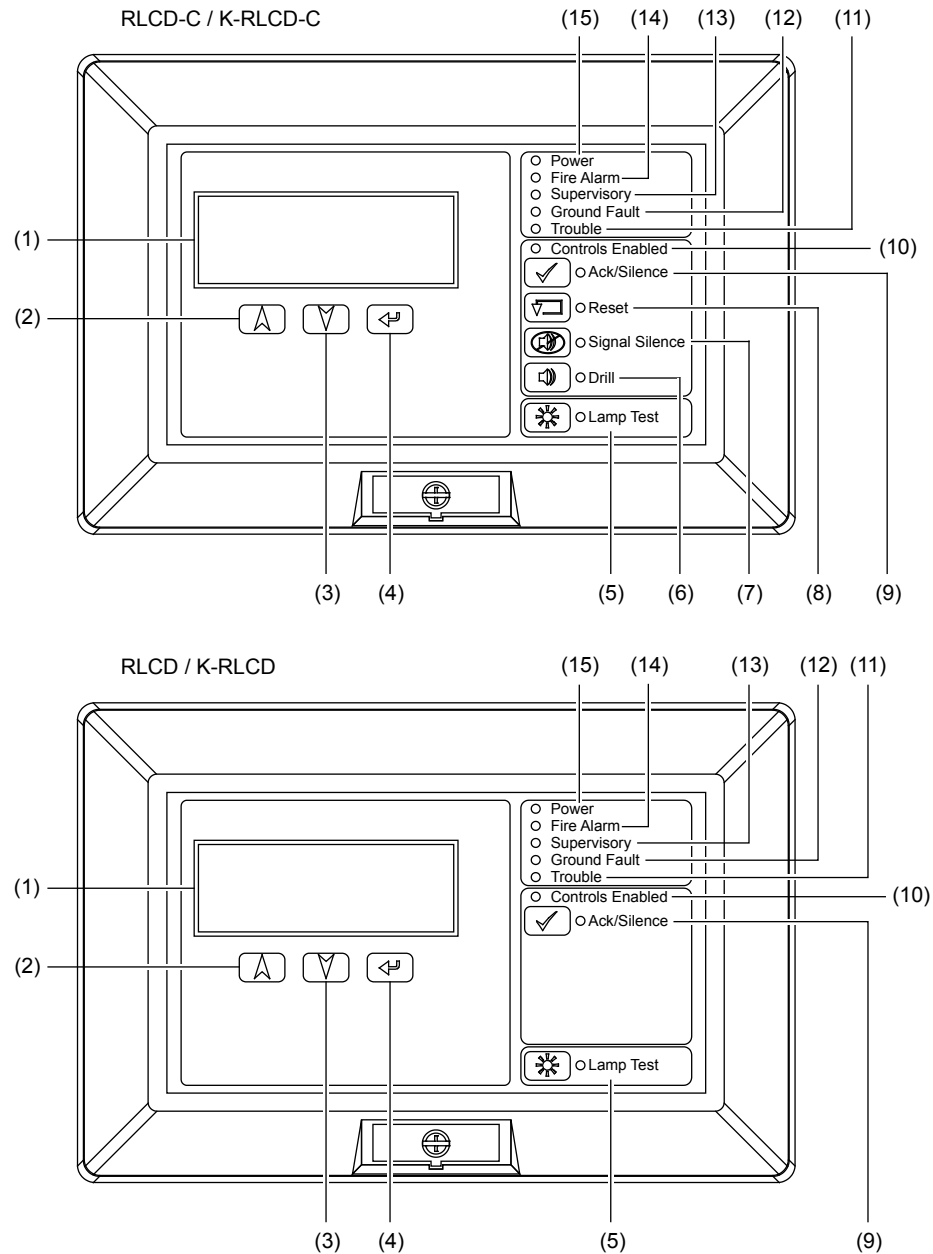
### To make an announcement using the handset:

1. Select the area to receive the page by pressing the appropriate page function button. The button’s LED will light when the system is ready to receive the page.
2. Press the Page by Phone button then wait for the LED to light.
3. Begin speaking.

## Remote annunciation

R-Series and K-R-Series remote annunciators are VM-1 control panel accessories that communicate with the panel through RS-485 communication. They provide common control switches, system status indicators, zone event messages, and zone status indicators at remote locations throughout the protected premises. R-Series and K-R-Series remote annunciators that are compatible with the VM-1 life safety system are shown in Figure 10 on page 15 and Figure 11 on page 17. See the *R-Series Remote Annunciators and Expanders Installation and Operation Guide* (P/N 3100969-EN) or *K-R-Series Remote Annunciators and Expanders Installation and Operation Guide* (P/N 3102382-EN) for more information.

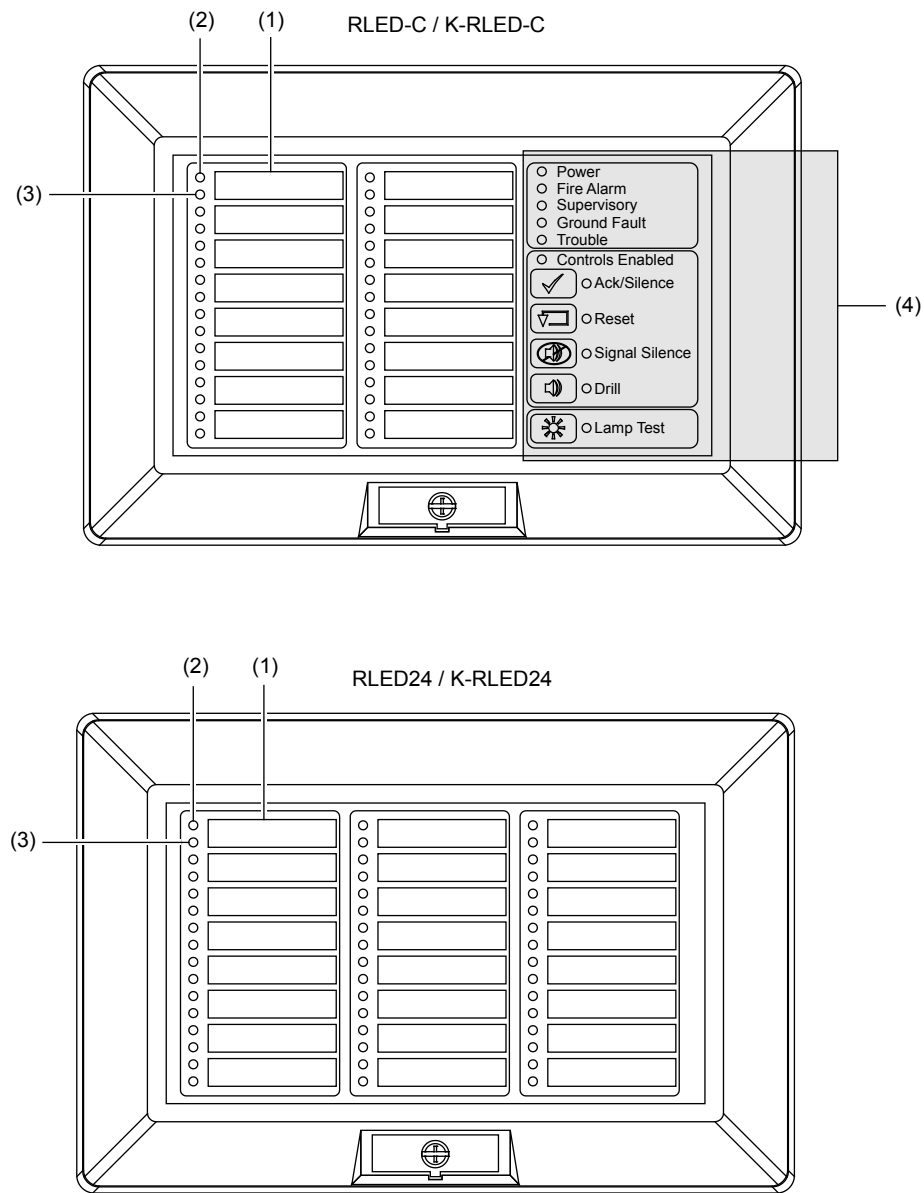


**Figure 10: LCD model remote annunciator controls and indicators****Table 6: LCD model remote annunciator controls and indicators**

Item	Control/Indicator	Description
1	LCD screen	Displays system status, event messages, and event message details.
2	Up button	Pressing the Up button scrolls up through the messages in the event message queue and scrolls up through characters for password entry.

Item	Control/Indicator	Description
3	Down button	Pressing the Down button scrolls down through the messages in the event message queue and scrolls down through characters for password entry.
4	Enter button	Pressing the Enter button displays message details for the current message and enters the password character selected.
5	Lamp Test button and LED	Pressing the Lamp Test button turns on all LEDs and displays a test pattern on the LCD. The LED indicates the lamp test is running.
6	Drill button and LED [1]	Pressing the Drill button turns on all audible and common alarm output devices and, if configured, all visible devices. Pressing the button again turns them off. The LED indicates the function is active. Requires a password to operate.
7	Signal Silence button and LED [1]	Pressing the Signal Silence button turns off all active audible and common alarm output devices and, if configured, all visible devices. Pressing the button again turns them back on. The LED indicates the function is active. Requires a password or the enable controls key to operate.
8	Reset button and LED [1]	Pressing the Reset button restores the system to the normal state. The LED indicates the reset function is active. Requires a password or the enable controls key to operate.
9	ACK/Silence button and LED	Pressing the ACK/Silence button silences the panel buzzer and acknowledges all current events. The LED indicates the function is active. Requires a password or the enable controls key.
10	Controls Enabled LED	Blue LED indicates the controls in that group are enabled at the annunciator. Requires a password or the enable controls key.
11	Trouble LED	Yellow LED indicates an active trouble state.
12	Ground Fault LED	Yellow LED indicates a ground fault.
13	Supervisory LED	Yellow LED indicates an active supervisory state.
14	Fire Alarm LED	Red LED indicates an active fire alarm state.
15	Power LED	Green LED indicates the annunciator is energized.

[1] Control and indicator is not on the RLCD or K-RLCD remote annunciator.

**Figure 11: LED model remote annunciator and expander controls and indicators****Table 7: LED model remote annunciator and expander controls and indicators**

Item	Control/Indicator	Description
1	Zone description label	User-defined zone or device description
2	Active LED	Red LED indicates an active zone or device alarm state
3	Trouble LED	Yellow LED indicates an active zone or device trouble state
4	Controls and indicators [1]	See items 5 through 15 in Table 6 on page 15

[1] Controls and indicators are not on the RLED24 or K-RLED24 remote expander.

## Email and text communication

For VM-1 systems using VM-CU version 1.30 or later, events can be transmitted through any VM-1 control panel with an installed Ethernet card to external devices such as computers and smartphones. Communication occurs over Ethernet using IP services such as email and text messaging through email.

During system configuration, your service provider may have added your email address or smartphone number to a distribution list for notification of system events. Figure 12 below and Figure 13 on page 19 are examples of email and text messages that can be generated. If you receive a message, take the action shown in the message or as instructed by the local authority.

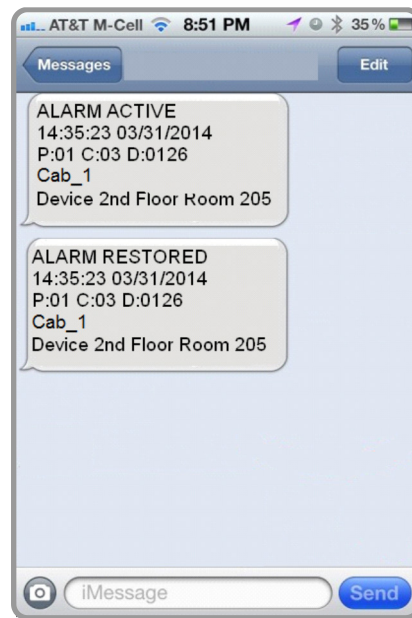
**Figure 12: Email message example**

**From:** admin@email.com  
**To:** someone@youremail.com, someone@gmail.com, someone@yahoo.com  
**Subject:** ALARM\_ACTIVE, Device 2nd Floor, Room 205  
ALARM\_ACTIVE, Device 2nd Floor, Room 205

ALARM ACTIVE: 14:35:23 08/14/2014 P:01 C:03 D:0126  
CAB\_1 Device 2nd Floor Room 205

Please alert emergency personnel. A fire condition may exist.  
Please alert manager at 999-999-9999.

Do not reply to this email. This message is generated from an automated source. Incoming email to this account is not monitored and will be automatically removed.

**Figure 13: Text message example**



# Chapter 2

## Basic operating instructions

### Summary

This chapter provides instructions for operating the basic features of your VM-1 life safety system. Basic features are those that anyone can operate. Typically, basic features do not require passwords.

### Content

Checking for active points	22
Finding detectors that may need servicing	23
Viewing history reports	24
Finding firmware and database version numbers	25
Viewing the alarm count	25
Determining panel TCP/IP settings	26
Determining if your VM-DACT is NFPA 72 compliant	26
Silencing the panel buzzer	27
Silencing alarm signals	27
Acknowledging events	28
Resetting the fire alarm system	28
Performing a lamp test	29
Activating alarm signals manually	29
Changing the LCD screen language	30

## Checking for active points

The VM-1 control panel provides the following status reports to help you find out if any points in the system are in an active or other off-normal state:

- All Active Points: Lists all points that are in an active or other off-normal state (trouble, disable, etc.)
- Alarm: Lists all alarm points that are in the active state
- Supervisory: Lists all supervisory points that are in the active state
- Trouble: Lists all points that are in the trouble state
- Monitor: Lists all monitor points that are in the active state
- Test: Lists all points in an active service group that are in the active or trouble state
- Disabled Points: Lists all points that are in the disabled state
- Outputs: Lists all output points that are in the active state (audibles, visibles, panel LEDs)

### To check for active points:

1. From the Main Menu, choose Status.
2. Choose one of the reports described above.
3. Enter the panel address (PP).
4. Choose Display and scroll through the report.

— or —

Choose Print Locally.

5. When finished, press the Backspace button to return to the Status Menu or press the Menus button to exit.



## Finding detectors that may need servicing

The VM-1 control panel provides the following maintenance reports to help you find out if any addressable smoke detectors need servicing. Any of the reports can be displayed on the LCD screen or printed on a local printer.

The reports show the %Dirty values of the devices. This value is an indication of a smoke detector's ability to compensate for dust and dirt buildup inside the chamber. Smoke detectors with higher %Dirty values are less able to compensate. The available reports are:

- **Dirty Devices > 80%:** Lists all addressable smoke detectors that have a %Dirty value of greater than 80%. Smoke detectors that are more than 80% dirty should be cleaned or replaced as soon as possible. To view this report you must know the panel address.
- **Dirty Devices > 20%:** Lists all addressable smoke detectors that have a %Dirty value greater than 20%. A smoke detector that is more than 20% dirty should be noted for possible cleaning or replacing. To view this report you must know the panel address.
- **Single Device:** Lists the %Dirty value for a single smoke detector. The report also includes the smoke detector's model type, primary and alternate alarm sensitivity values, and, if programmed, a location description. To view this report you must know the panel, card, and device address of the smoke detector.
- **Devices on a Card:** Lists the %Dirty value for all of the smoke detectors on a signaling line circuit. The report also includes each smoke detector's model type, primary and alternate alarm sensitivity values, and, if programmed, a location description. To view this report you must know the panel number, card number, and loop number of the signaling line circuit.

### To find detectors that may need servicing:

1. From the Main Menu, choose Reports, and then choose Device Maintenance.
2. Choose one of the reports described above.
3. Enter the requested address.
4. Choose Display and scroll through the report.

— or —

Choose Print Locally.

5. When finished, press the Backspace button to return to the Reports Menu or press the Menus button to exit.

## Viewing history reports

The history report lists the last 1,000 events or operator instructions processed by the control panel or since its history was cleared. The event or system command name, address, time and date of occurrence, and the source that initiated the event or command are included.

The report is structured with the most recent event or instruction listed first. The report can be displayed for viewing on the LCD screen or printed to a local printer. The history reports are listed below.

- History with Text: Provides a history of events and operator commands logged by the panel. For each point that activated or restored, the detail includes the point's message text.
- History without Text: Provides a history of events and operator commands logged by the system. For each point that activated or restored, the detail includes the point's device address.

### To view a history report:

1. From the Main Menu, choose Reports, and then choose History.
2. Choose one of the reports described above.
3. Enter the panel address (PP).
4. Choose Display and scroll through the report.

— or —

Choose Print Locally.

5. When finished, press the Backspace button to return to the Reports Menu or press the Menus button to exit.

## Finding firmware and database version numbers

By viewing a Revisions report, you can find the version numbers for the following:

- The CPU firmware
- The project database and the VM-CU used to compile and download the project database
- The audio database, if equipped with a paging microphone
- The application code (firmware), bootloader code, and database for each card installed in the panel.

### To view the Revisions report:

1. From the Main Menu, choose Reports, and then choose Revisions.
2. Enter the panel address (PP).
3. Choose Display and scroll through the report.

— or —

Choose Print Locally

4. When finished, press the Backspace button to return to the Reports Menu or press the Menus button to exit.

## Viewing the alarm count

The VM-1 control panel records how many times it went into the alarm condition. During normal operation, the alarm count is displayed on the LCD. When the VM-1 user interface displays the off-normal screen, you must run a Revisions report to see the alarm count.

### To view the alarm count:

1. From the Main Menu, choose Reports, and then choose Revisions.
2. Enter the panel address (PP).

3. Choose Display and scroll through the report. The alarm count is on the second line of the report.  
  
— or —  
  
Choose Print Locally.
4. When finished, press the Backspace button to return to the Reports Menu or press the Menus button to exit.

## Determining panel TCP/IP settings

If your panel is equipped with an Ethernet (TCP/IP) connection, you may be asked to provide the IP address, subnet mask, and gateway settings.

### To determine the panel TCP/IP settings:

1. From the Main Menu, choose Reports, and then choose Revisions.
2. Enter the panel address (PP).
3. Choose Display and scroll through the report. The settings are at the bottom of the report.  
  
— or —  
  
Choose Print Locally.
4. When finished, press the Backspace button to return to the Reports Menu or press the Menus button to exit.

## Determining if your VM-DACT is NFPA 72 compliant

A DACT Compliance report tells you if the VM-DACT installed in the panel meets NFPA 72 configuration requirements. The report does not indicate why the VM-DACT may be noncompliant.

### To view the DACT Compliance report:

1. From the Main Menu, choose Reports, and then choose DACT Compliance.
2. Enter the panel address (PP).

3. Choose Display and scroll through the report.  
— or —  
Choose Print Locally.
4. When finished, press the Backspace button to return to the Reports Menu or press the Menus button to exit.

## Silencing the panel buzzer

The VM-1 control panel sounds the panel buzzer when an event message is posted into one of the event message queues. Pressing the Ack/Panel Silence button or acknowledging the event message silences the buzzer. The panel buzzer automatically re-sounds when a new event message is posted or when the panel trouble re-sound timer expires (typically after 24 hours).

### Notes

- The panel buzzer may be configured to sound periodically to remind that the panel has been silenced.
- For nonlatching events, the panel buzzer automatically silences when the event is restored.
- Pressing the Panel Silence button also silences the buzzer on remote annunciators, provided that the remote annunciators are communicating.

### To silence the panel buzzer:

1. Press the Ack/Panel Silence button or acknowledge the event message.

## Silencing alarm signals

---

**WARNING:** Risk of death or serious injury. The protected premises may be occupied. Do not silence alarm signals or reset the control panel unless you are authorized to do so and only after all occupants have been evacuated.

---

Pressing the Alarm Silence button silences all audible alarm signals and, if configured, all visible alarm signals.

Depending on the system configuration, the alarm silence operation:

- May be inhibited for 1 to 3 minutes after an alarm event

- May not turn off visible notification appliances
- May not silence notification appliances if water is flowing through the sprinkler system
- May automatically silence notification appliances after 1 to 60 minutes

Silenced alarm signals automatically turn back on when:

- The Alarm Silence button is pressed a second time
- Another alarm input activates
- Another alarm input in the same zone activates, unless the system is configured to prevent it

**To silence alarm signals:**

1. Press the Alarm Silence button.
2. If prompted, enter the access level password.

## Acknowledging events

Acknowledging an event confirms that you have seen the event message. When you acknowledge an event, the VM-1 control panel places a check mark and the word “Acknowledged” next to the event. On proprietary systems, you cannot silence the panel until all events have been acknowledged.

**To acknowledge an event:**

1. Press the Ack/Panel Silence button.

## Resetting the fire alarm system

---

**WARNING:** Risk of death or serious injury. The protected premises may be occupied. Do not reset the fire alarm system until the proper authorities have determined that the threat of fire is no longer present.

---

Pressing the Reset button restores the fire alarm system to its normal state — *provided that all latched inputs have been restored*. If alarm signal initiating devices have not been restored, active alarm signals remain active and silenced alarm signals remain silenced.

## Notes

- System programming may render the Reset button inoperable for up to three minutes following an alarm event.
- Resetting the system does not enable disabled points or restore outputs activated by a switch.

### To reset the fire alarm system:

1. Press the Reset button.
2. If prompted, enter the access level password.

## Performing a lamp test

Use the Lamp Test command on the Test menu to verify the operation of the LCD and LED indicators. The lamp test command temporarily turns on the panel buzzer, all LED indicators, and every pixel on the LCD. The lamp test command only operates the indicators on the panel from which the command is initiated.

### To perform a lamp test:

1. From the Main Menu, choose Test, and then choose Lamp Test.

## Activating alarm signals manually

The VM-1 drill feature lets you activate alarm signals manually without putting the panel into alarm. When you activate a drill, all audible alarm signals turn on and, if configured, all visible alarm signals turn on, but other automatic fire alarm responses are not activated. The alarm signals remain active until the drill is canceled.

### To activate a drill:

1. Press the Drill button.
2. If prompted, enter the access level password.

### To cancel a drill:

1. Press the Drill button.

## Changing the LCD screen language

Use the Toggle Language command on the Program Menu to toggle the LCD screen text to a secondary language.

**Note:** The panel must be configured for a secondary language.

### **To change the LCD screen language:**

1. From the Main Menu, choose Program.
2. Choose Toggle Language.



# Chapter 3

## Advanced operating instructions

### Summary

This chapter provides instructions for operating the advanced features of your VM-1 life safety system. Advanced features alter system operation and require the access level 2 password or greater.

### Content

Changing detector alarm sensitivity	32
Changing event message routes	32
Disabling and enabling devices	33
Disabling and enabling zone groups	34
Setting the system time and date	35
Using a TCP/IP connection to write to the panel	35
Using a TCP/IP connection to read from the panel	36
Testing a carbon monoxide (CO) detector	37

## Changing detector alarm sensitivity

Your fire alarm system can be programmed with two different alarm sensitivity settings. The alarm sensitivity setting determines how easily automatic fire detectors can sense a fire alarm condition. Typically, the primary alarm sensitivity setting is programmed for daytime operation and the alternate alarm sensitivity setting is programmed for nighttime and weekend operation.

### **To activate the alternate alarm sensitivity settings:**

1. From the Main Menu, choose Activate.
2. Choose Alt Sensitivity.
3. Enter the access level password.

### **To restore the primary alarm sensitivity settings:**

1. From the Main Menu, choose Restore.
2. Choose Primary Sensitivity.
3. Enter the access level password.

## Changing event message routes

Your fire alarm system can be programmed with a primary message route and an alternate message route. The message route setting determines where event messages are displayed. Typically, the primary message route is programmed for daytime operation and the alternate message route is programmed for nighttime and weekend operation.

In most applications, a time control is used to automatically switch event messages over to their alternate route setting. When the time control is restored, event messages are automatically switched back to their primary route settings.

### **To activate alternate message routing:**

1. From the Main Menu, choose Activate.
2. Choose Alt Message Route.
3. Enter the access level password.

**To restore primary message routing:**

1. From the Main Menu, choose Restore.
2. Choose Primary Msg Route.
3. Enter the access level password.

## Disabling and enabling devices

Disabling a device prevents the VM-1 control panel from processing status change signals from the device, or changing the output state of the device, until the device is enabled. For example, the VM-1 control panel does not generate an alarm active event when you activate a disabled detector, but will do so after the detector is enabled.

The VM-1 control panel keeps track of how many times you disable and enable a device. You must enable a device the same number of times you disable it in order to return the device to its initial condition.

Device addresses are listed in Appendix A “System addressing” on page 45.

**Notes**

- You cannot disable a device configured as a common alarm output.
- Disabling the device address for the dialer or a dialer account deletes all event messages sent to that account before they are transmitted. The dialer still transmits the account’s test-abnormal message and any message that was in the dialer queue before the account was disabled.
- Disabling all of the devices in a zone group automatically disables the zone group. Enabling any device in the zone group automatically enables the zone group.

**To disable a device:**

1. From the Main Menu, choose Disable.
2. Choose Device, and then enter the device address (PPCCDDDD).
3. Enter the access level password.

**To enable a device:**

1. From the Main Menu, choose Enable.
2. Choose Device, and then enter the device address (PPCCDDDD).
3. Enter the access level password.

## Disabling and enabling zone groups

Disabling a zone group prevents the VM-1 control panel from processing status change signals from every device in the zone group until the zone group is enabled. For example, the VM-1 control panel does not generate an alarm active event when you activate a detector in a disabled zone group, but will do so after the zone group is enabled.

The VM-1 control panel keeps track of how many times you disable and enable a zone group. You must enable a zone group the same number of times you disable it in order to return the zone group to its initial condition.

**Notes**

- The control panel tracks events from a disabled zone group but does not process them until the zone group is enabled.
- If you disabled the zone group by disabling all of the devices in the zone group, enabling the zone group enables all of the devices in the zone group.

**To disable a zone group:**

1. From the Main Menu, choose Disable.
2. Choose Group, and then choose Zone Group.
3. Scroll through the list and choose the desired zone group.
4. Enter the access level password.

**To enable a zone group:**

1. From the Main Menu, choose Enable.
2. Choose Group, and then choose Zone Group.
3. Scroll through the list and choose the desired zone group.
4. Enter the access level password.

## Setting the system time and date

The VM-1 control panel incorporates a system clock to time stamp events and to activate time controls. The time is presented in 24-hour format. The date is presented in month-day-year format.

### To set the time:

1. From the Main Menu, choose Program, and then choose Change Time.
2. Enter the access level password.
3. Enter the hour, minutes, and seconds (HHMMSS).

Examples:

000000 = midnight

010000 = 1:00 a.m.

120000 = noon

130000 = 1:00 p.m.

235900 = 11:59 p.m.

### To set the date:

1. From the Main Menu, choose Program, and then choose Change Date.
2. Enter the access level password.
3. Enter the date (MMDDYYYY).

## Using a TCP/IP connection to write to the panel

If your VM-1 control panel is equipped with an Ethernet card, your service provider can use the TCP/IP connection to write (download) the project database to the panel instead of using an RS-232 connection. By default, this feature is “locked” to prevent someone from changing the project database without permission. You cannot write to the panel until it is “unlocked.”

### Notes

- Activating and restoring the Remote Write Unlock command does not affect downloading the project database using an RS-232 connection.
- The Remote Write Unlock command times out after 15 minutes.

- This function should only be used by the installer or service provider. Changes to the fire alarm system must be tested and may require local authority approval.

**To allow writing to the panel:**

1. From the Main Menu, choose Activate.
2. Choose Remote Write Unlock.
3. Choose By Panel, and then enter the panel address (PP).

— or —

Choose All Panels.

4. Enter the access level password.

**To prevent writing to the panel:**

1. From the Main Menu, choose Restore.
2. Choose Remote Write Unlock.
3. Choose By Panel, and then enter the panel address (PP).

— or —

Choose All Panels.

4. Enter the access level password.

## Using a TCP/IP connection to read from the panel

If your VM-1 control panel is equipped with an Ethernet card, your service provider can use the TCP/IP connection to read status and diagnostic information from the panel instead of using an RS-232 connection. By default, this feature is “unlocked.” Locking this feature prevents you from reading from the panel until it is unlocked.

**Notes**

- The Remote Read Lock command *does not* automatically time out.
- Activating and restoring the Remote Read Lock command does not affect reading panel status and diagnostic information using an RS-232 connection.

**To prevent reading from the panel:**

1. From the Main Menu, choose Activate.
2. Choose Remote Read Lock.
3. Choose By Panel, and then enter the panel address (PP).  
— or —  
Choose All Panels.
4. Enter the access level password.

**To allow reading from the panel:**

1. From the Main Menu, choose Restore.
2. Choose Remote Read Lock.
3. Choose By panel, and then enter the panel address (PP).  
— or —  
Choose All Panels.
4. Enter the access level password.

## Testing a carbon monoxide (CO) detector

V-Series carbon monoxide (CO) detectors have an accelerated response mode that you can use when testing. In normal mode, V-Series CO detectors activate after carbon monoxide levels reach 400 ppm (parts per million) for 4 minutes. In accelerated response mode, V-Series CO detectors activate within 4 to 8 seconds after reaching 400 ppm.

**Notes**

- The V-Series CO detector normal response rate mimics the normal absorption rate of CO in the bloodstream.
- If you do not restore the response mode, CO detection returns to its normal response time after 4 hours.

**To change the CO rate of detection:**

1. From the Main Menu, choose Activate.

2. Choose Gas Accel Response, and then enter the device address (PPCCDDDD).
3. Enter the access level password.

**To restore the CO rate of detection:**

1. From the Main Menu, choose Restore.
2. Choose Gas Accel Response, and then enter the device address (PPCCDDDD).
3. Enter the access level password.



# Chapter 4

## Preventive maintenance and testing

### Summary

This chapter provides instructions for maintaining and testing your VM-1 life safety system.

### Content

Introduction 40  
Service provider information 40  
Visual inspection schedule 41  
    Routine maintenance schedule 42  
Troubleshooting 43

## Introduction

Periodic visual inspections and maintenance testing must be performed on your VM-1 life safety system to ensure that it is operating correctly and as required by the local authority having jurisdiction (AHJ). Maintenance testing is performed by your service provider or a qualified technician with a complete understanding of the system hardware and functions.

Visual inspection and maintenance schedules are provided in this section, as well as a form to document your service provider's contact information.

## Service provider information

Fill in the contact information of your service provider on the form below. If more than one service provider is assigned, use the additional form.

VM-1 Service Provider	
Name	
Address	
City	
State	
Country	
Postal code	
Telephone	
E-mail	
Fax	

VM-1 Service Provider	
Name	
Address	
City	
State	
Country	
Postal code	
Telephone	
E-mail	
Fax	

# Visual inspection schedule

Perform visual inspections in accordance with Table 8 below or more often if required by the local AHJ.

**Table 8: Visual inspection schedule**

Component	Frequency	Recommended procedure
Radiant energy fire detectors (heat detectors)	Monthly	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance. Clean if necessary.
Supervisory signal devices	Monthly	Verify that the module's green LED flashes. Ensure that there are no changes that may adversely affect equipment performance.
Waterflow devices	Monthly	Verify that the module's green LED flashes. Ensure that there are no changes that may adversely affect equipment performance.
Batteries	Semiannually	Inspect batteries for corrosion or leakage. Verify that the battery connections are tight and secure. Clean the connections, if required. Replace batteries every 5 years, or sooner if conditions warrant.
Control unit trouble signals	Semiannually	Ensure that there are no changes that may adversely affect equipment performance.
Emergency voice/alarm communication equipment	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance.
Remote annunciators	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance.
Duct detectors	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance.
Electromechanical releasing devices	Semiannually	Ensure that there are no changes that may adversely affect equipment performance.
Fire extinguishing systems or suppression systems	Semiannually	Ensure that there are no changes that may adversely affect equipment performance.
Fire alarm boxes	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance.
Heat detectors	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance. Clean if necessary.

Component	Frequency	Recommended procedure
Smoke detectors	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance. Clean if necessary.
Interface equipment	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance.
Alarm notification appliances	Semiannually	Verify that the module's green LED flashes. Ensure that there are no changes that may adversely affect equipment performance.
Supervising station fire alarm system transmitters	Semiannually	Ensure that there are no changes that may adversely affect equipment performance.
Control unit	Annually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance.
Fiber optic cable connections	Annually	Inspect the cables for any visible signs of damage, loose connections, or other changes that may adversely affect performance

## Routine maintenance schedule

Routine maintenance and testing should be scheduled for your VM-1 life safety system in accordance with Table 9 below or more often if required by the local AHJ.

**Note:** Only your system service provider or a qualified technician with a complete understanding of the system hardware and functions should perform system maintenance and tests.

**Table 9: Routine maintenance schedule**

Component	Frequency
Control equipment [1]	Quarterly / Annually
Supervisory signal devices (except valve tamper switches)	Quarterly
Off-premises transmission equipment	Quarterly
Waterflow devices	Semiannually
Valve tamper switches	Semiannually
Batteries [2]	Annually
Control unit trouble signals	Annually
Fiber optic cable connections	Annually

Component	Frequency
Emergency voice/alarm communication equipment	Annually
Remote annunciators	Annually
Smoke detectors	Annually
Heat detectors	Annually
Fire alarm boxes	Annually
Fire extinguishing systems or suppression systems	Annually
Interface equipment	Annually
Audible notification appliances	Annually
Textual audible notification appliances (speakers)	Annually
Visible notification appliances	Annually
Supervising station fire alarm system transmitters	Annually

[1] Test control equipment quarterly when it is not connected to a supervising station.

[2] Replace batteries every five years, or sooner if conditions warrant.

## Troubleshooting

Problems with your VM-1 life safety system can generally be classified in two categories: application programming problems and hardware (including firmware) problems. Many times hardware problems are identified by the system itself. Application programming problems are typically suspected when an incorrect response happens, or when a response fails to happen or happens at the wrong time.

Only your system service provider or a qualified technician with a complete understanding of the system hardware and functions should perform system servicing and repairs. Refer to “Service provider information” on page 40 for their contact information. Refer to the *VM-1 Technical Reference Manual* (P/N 3101890-EN) for detailed troubleshooting information.

Before contacting your service provider, make note of the following:

- Messages shown on the LCD screen
- Construction in the area that may have caused the problem
- Adverse weather that may have caused the problem
- Damage to any equipment



# Appendix A

## System addressing

### Summary

This appendix provides an easy way to look up card and device addresses.

### Content

Address formats 46  
Card address 46  
Hardware layer device addresses 48  
Operator layer device address 49  
Remote annunciator device addresses 50

## Address formats

VM-1 addresses are in PPCCDDDD format, where:

- PP is the cabinet number. Possible values are: 01 (single panel systems) or 01 to 08 (networked systems).
- CC is the card's logical address. Possible values are listed in Table 10.
- DDDD is the device number. Possible values are listed in Table 11, Table 12, and Table 13.

## Card address

Cards have a physical address and a logical address. The physical address identifies the card's location in the panel. The logical address identifies the card in the CPU database. See Table 10 below and Figure 14 on page 47.

**Table 10: VM-1 card addresses**

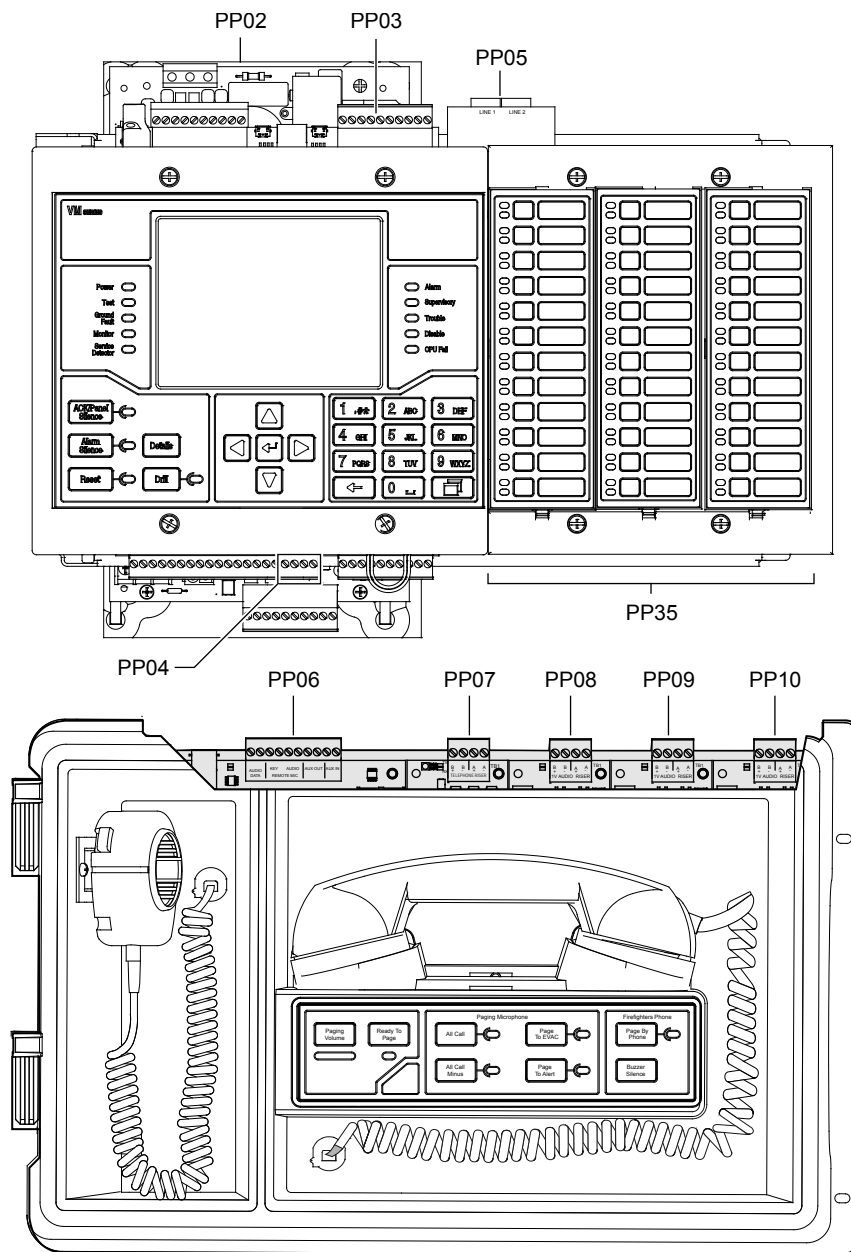
	VM-PMI and VM-MFK	VM-PMI only	AMK-RN only
Card or circuit	Logical Addresses		
VM-CPU Main Board	00	00	00
VM-LCD User Interface	00	00	00
PS10-4B Power Supply	02	02	02
Loop controller on the VM-CPU	03	03	03
Display modules	35	35	35
VM-DACT Dual Line Dialer Card [1]	05	05	05
VM-SLCXB Loop Controller Module [1]	05	05	05
Remote annunciator interface	04	04	04
VM-PMI Paging Microphone Interface	06	06	N/A
VM-MFK Firefighters Telephone	07	N/A	N/A
1st ACHS card [2]	08	07	06
2nd ACHS card [2]	09	08	07
3rd ACHS card [2]	10	09	08

[1] Either a VM-DACT card *or* a VM-SLCXB module can be installed in the slot.

[2] ACHS card logical address values vary according to system configuration, as shown in this table. The AMK-RN does not have a logical address.



**Figure 14: Logical addresses for a VM-1 with a VM-PMI and a VM-MFK**



## Hardware layer device addresses

Table 11 below lists the device addresses for points on the VM-1 hardware layer.

**Table 11: VM-1 hardware layer device addresses**

Card	Device or circuit	Address
PS10-4B	NAC/AUX 1	PP020001
	NAC/AUX 2	PP020002
	NAC/AUX 3	PP020003
	NAC/AUX 4	PP020004
VM-CPU		
Loop Circuit 1	Detectors	PP030001 to PP030125
	Modules	PP030126 to PP030250
Loop Circuit 2	Detectors	PP030251 to PP030375
	Modules	PP030376 to PP030500
VM-SLCXB		
Loop 1	Detectors	PPCC0001 to PPCC0125
	Modules	PPCC0126 to PPCC0250
Loop 2	Detectors	PPCC0251 to PPCC0375
	Modules	PPCC0376 to PPCC0500
VM-PMI		
	Default_Normal_PP_08	PP060001
	Default_Alert_PP_08	PP060002
	Default_Evac_PP_08	PP060003
	Default_Pre_PP_08	PP060004
	MSG_005 to MSG_255	PP060005 to PP080255
ACHS 1		
	Channel_1_Relay_Confirmation	PPCC0003
	Channel_2_Relay_Confirmation	PPCC0004
	Channel_3_Relay_Confirmation	PPCC0005
	Channel_4_Relay_Confirmation	PPCC0006
ACHS 2		
	Channel_1_Relay_Confirmation	PPCC0003
	Channel_2_Relay_Confirmation	PPCC0004
	Channel_3_Relay_Confirmation	PPCC0005
	Channel_4_Relay_Confirmation	PPCC0006
ACHS 3		
	Channel_1_Relay_Confirmation	PPCC0003
	Channel_2_Relay_Confirmation	PPCC0004
	Channel_3_Relay_Confirmation	PPCC0005
	Channel_4_Relay_Confirmation	PPCC0006

# Operator layer device address

Figure 15 identifies the LEDs and switches on a D12LS-VM card. Table 12 lists the device addresses for the points on the VM-1 operator layer.

Figure 15: D12LS-VM LED and switch numbering

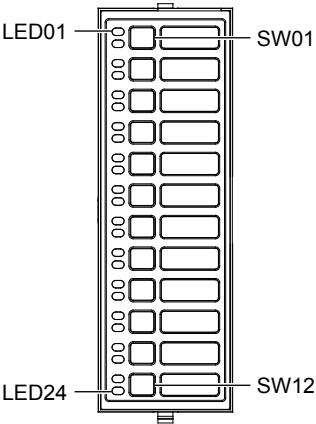


Table 12: VM-1 operator layer device addresses

Module type	Switch / LED	Address
1st D12LS-VM	SW01 to SW12 LED01 to LED24	PP350001 to PP350012 PP351001 to PP351024
2nd D12LS-VM	SW01 to SW12 LED01 to LED24	PP350101 to PP350112 PP351101 to PP351124
3rd D12LS-VM	SW01 to SW12 LED01 to LED24	PP350201 to PP350212 PP351201 to PP351224

## Remote annunciator device addresses

Table 13 on page 53 lists the device addresses for LEDs and switches on RLED-C and K-RLED-C remote annunciators, RLED24 and K-RLED24 expanders, GCI and GCI-NB graphic annunciator cards, and GCIX expander cards. See also Figure 16, Figure 17, and Figure 18.

**Figure 16: RLED-C / K-RLED-C and RLED24 / K-RLED24 LED numbering**

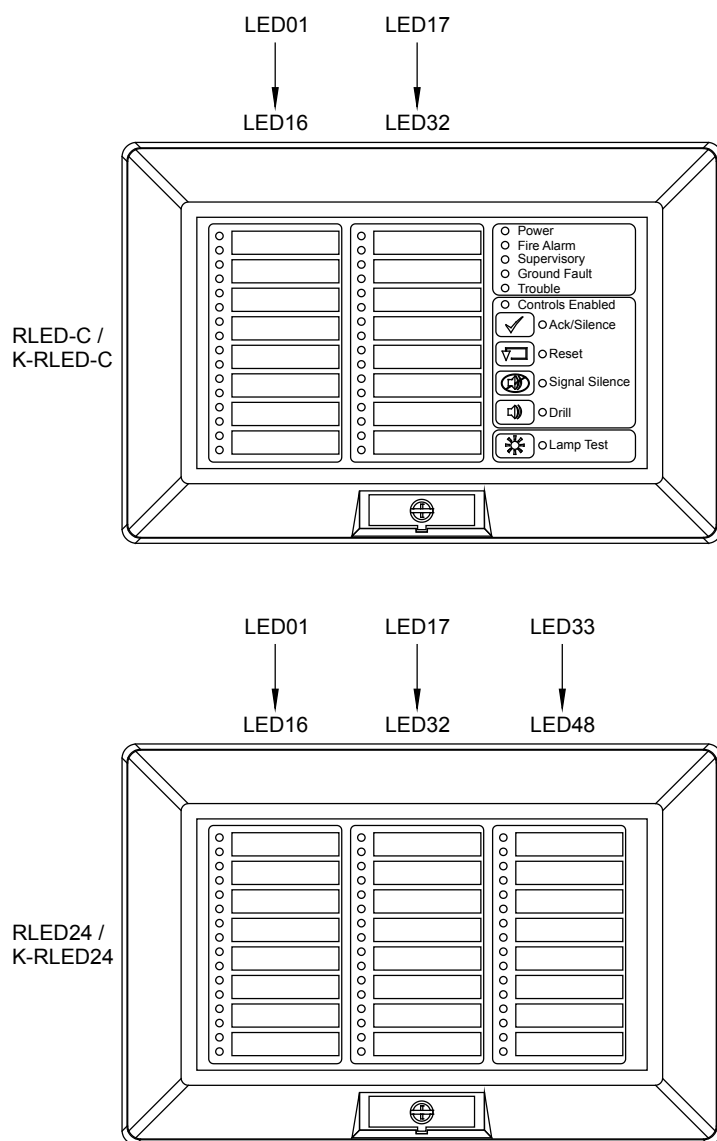
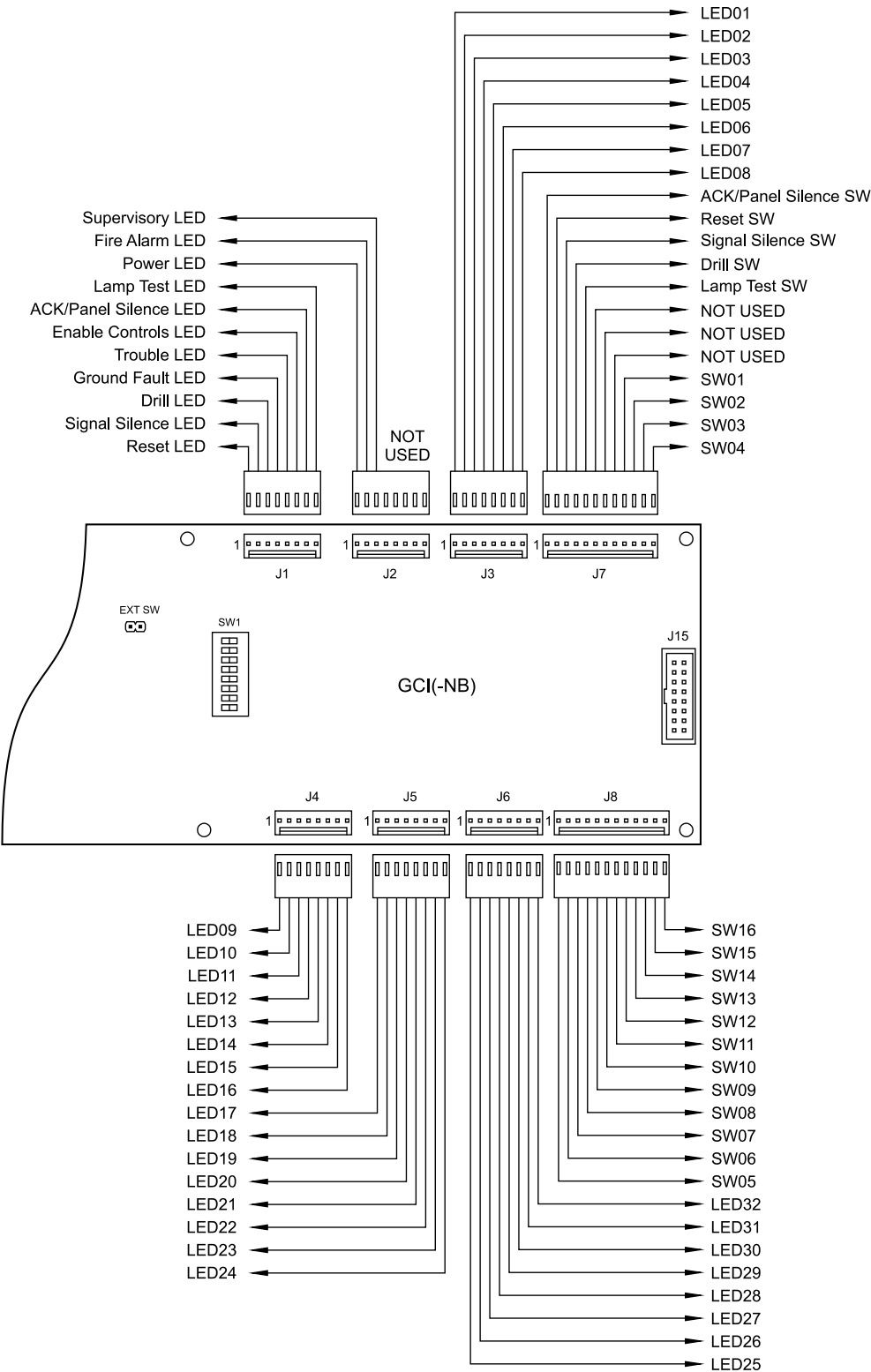
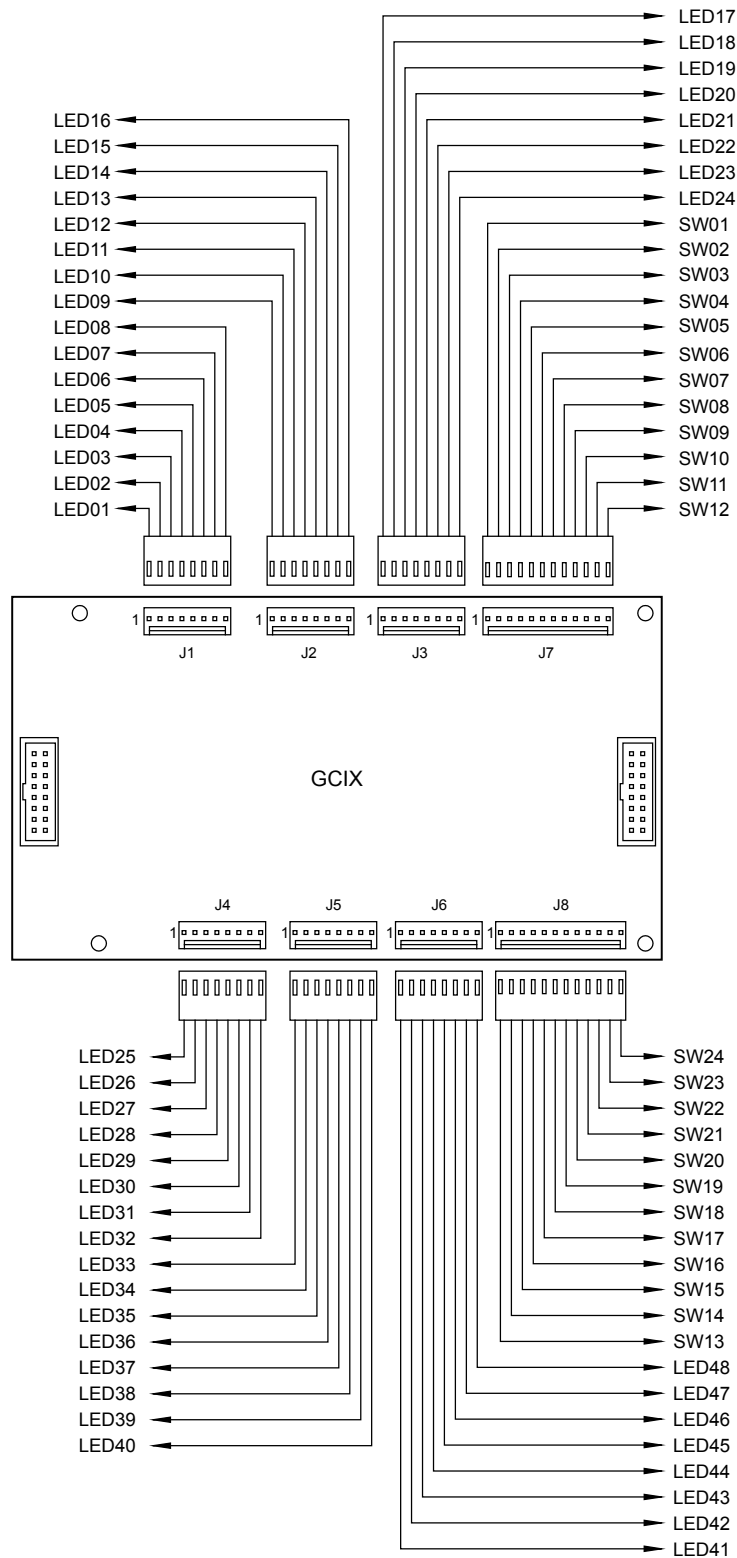


Figure 17: GCI and GCI-NB cards LED and switch numbering



**Figure 18: GCIX card LED and switch numbering**



**Table 13: Remote annunciator device addresses**

No.	Type	LED or switch	Address
1	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP040201 to PP040232 PP020249 to PP040264
	Expander 1	LED01 to LED48 SW01 to SW24	PP040301 to PP040348 PP040349 to PP040372
	Expander 2	LED01 to LED48 SW01 to SW24	PP040401 to PP040448 PP040449 to PP040472
2	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP040501 to PP040532 PP020549 to PP040564
	Expander 1	LED01 to LED48 SW01 to SW24	PP040601 to PP040648 PP040649 to PP040672
	Expander 2	LED01 to LED48 SW01 to SW24	PP040701 to PP040748 PP040749 to PP040772
3	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP040801 to PP040832 PP020849 to PP040864
	Expander 1	LED01 to LED48 SW01 to SW24	PP040901 to PP040948 PP040949 to PP040972
	Expander 2	LED01 to LED48 SW01 to SW24	PP041001 to PP041048 PP041049 to PP041072
4	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP041101 to PP041132 PP021149 to PP041164
	Expander 1	LED01 to LED48 SW01 to SW24	PP041201 to PP041248 PP041249 to PP041272
	Expander 2	LED01 to LED48 SW01 to SW24	PP041301 to PP041348 PP041349 to PP041372
5	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP041401 to PP041432 PP021449 to PP041464
	Expander 1	LED01 to LED48 SW01 to SW24	PP041501 to PP041548 PP041549 to PP041572
	Expander 2	LED01 to LED48 SW01 to SW24	PP041601 to PP041648 PP041649 to PP041672
6	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP041701 to PP041732 PP021749 to PP041764
	Expander 1	LED01 to LED48 SW01 to SW24	PP041801 to PP041848 PP041849 to PP041872
	Expander 2	LED01 to LED48 SW01 to SW24	PP041901 to PP041948 PP041949 to PP041972

No.	Type	LED or switch	Address
7	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP042001 to PP042032 PP022049 to PP042064
	Expander 1	LED01 to LED48 SW01 to SW24	PP042101 to PP042148 PP042149 to PP042172
	Expander 2	LED01 to LED48 SW01 to SW24	PP042201 v PP042248 PP042249 to PP042272
8	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP042301 to PP042332 PP022349 to PP042364
	Expander 1	LED01 to LED48 SW01 to SW24	PP042401 to PP042448 PP042449 to PP042472
	Expander 2	LED01 to LED48 SW01 to SW24	PP042501 to PP042548 PP042549 to PP042572
9	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP042601 to PP042632 PP022649 to PP042664
	Expander 1	LED01 to LED48 SW01 to SW24	PP042701 to PP042748 PP042749 to PP042772
	Expander 2	LED01 to LED48 SW01 to SW24	PP042801 to PP042848 PP042849 to PP042872
10	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP042901 to PP042932 PP022949 to PP042964
	Expander 1	LED01 to LED48 SW01 to SW24	PP043001 to PP043048 PP043049 to PP043072
	Expander 2	LED01 to LED48 SW01 to SW24	PP043101 to PP043148 PP043149 to PP043172
11	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP043201 to PP043232 PP043249 to PP043264
	Expander 1	LED01 to LED48 SW01 to SW24	PP043301 to PP043348 PP043349 to PP043372
	Expander 2	LED01 to LED48 SW01 to SW24	PP043401 to PP043448 PP043449 to PP043472
12	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP043501 to PP043532 PP043549 to PP043564
	Expander 1	LED01 to LED48 SW01 to SW24	PP043601 to PP043648 PP043649 to PP043672
	Expander 2	LED01 to LED48 SW01 to SW24	PP043701 to PP043748 PP043749 to PP043772



No.	Type	LED or switch	Address
13	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP043801 to PP043832 PP043849 to PP043864
	Expander 1	LED01 to LED48 SW01 to SW24	PP043901 to PP043948 PP043949 to PP043972
	Expander 2	LED01 to LED48 SW01 to SW24	PP044001 to PP044048 PP044049 to PP044072
14	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP044101 to PP044132 PP044149 to PP044164
	Expander 1	LED01 to LED48 SW01 to SW24	PP044201 to PP044248 PP044249 to PP044272
	Expander 2	LED01 to LED48 SW01 to SW24	PP044301 to PP044348 PP044349 to PP044372
15	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP044401 to PP044432 PP044449 to PP044464
	Expander 1	LED01 to LED48 SW01 to SW24	PP044501 to PP044548 PP044549 to PP044572
	Expander 2	LED01 to LED48 SW01 to SW24	PP044601 to PP044648 PP044649 to PP044672
16	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP044701 to PP044732 PP044749 to PP044764
	Expander 1	LED01 to LED48 SW01 to SW24	PP044801 to PP044848 PP044849 to PP044872
	Expander 2	LED01 to LED48 SW01 to SW24	PP044901 to PP044948 PP044949 to PP044972
17	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP045001 to PP045032 PP045049 to PP045064
	Expander 1	LED01 to LED48 SW01 to SW24	PP045101 to PP045148 PP045149 to PP045172
	Expander 2	LED01 to LED48 SW01 to SW24	PP045201 to PP045248 PP045249 to PP045272
18	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP045301 to PP045332 PP045349 to PP045364
	Expander 1	LED01 to LED48 SW01 to SW24	PP045401 to PP045448 PP045449 to PP045472
	Expander 2	LED01 to LED48 SW01 to SW24	PP045501 to PP045548 PP045549 to PP045572

No.	Type	LED or switch	Address
19	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP045601 to PP045632 PP045649 to PP045664
	Expander 1	LED01 to LED48 SW01 to SW24	PP045701 to PP045748 PP045749 to PP045772
	Expander 2	LED01 to LED48 SW01 to SW24	PP045801 to PP045848 PP045849 to PP045872
20	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP045901 to PP045932 PP045949 to PP045964
	Expander 1	LED01 to LED48 SW01 to SW24	PP046001 to PP046048 PP046049 to PP046072
	Expander 2	LED01 to LED48 SW01 to SW24	PP046101 to PP046148 PP046149 to PP046172
21	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP046201 to PP046232 PP046249 to PP046264
	Expander 1	LED01 to LED48 SW01 to SW24	PP046301 to PP046348 PP046349 to PP046372
	Expander 2	LED01 to LED48 SW01 to SW24	PP046401 to PP046448 PP046449 to PP046472
22	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP046501 to PP046532 PP046549 to PP046564
	Expander 1	LED01 to LED48 SW01 to SW24	PP046601 to PP046648 PP046649 to PP046672
	Expander 2	LED01 to LED48 SW01 to SW24	PP046701 to PP046748 PP046749 to PP046772
23	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP046801 to PP046832 PP046849 to PP046864
	Expander 1	LED01 to LED48 SW01 to SW24	PP046901 to PP046948 PP046949 to PP046972
	Expander 2	LED01 to LED48 SW01 to SW24	PP047001 to PP047048 PP047049 to PP047072
24	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP047101 to PP047132 PP047149 to PP047164
	Expander 1	LED01 to LED48 SW01 to SW24	PP047201 to PP047248 PP047249 to PP047272
	Expander 2	LED01 to LED48 SW01 to SW24	PP047301 to PP047348 PP047349 to PP047372

No.	Type	LED or switch	Address
25	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP047401 to PP047432 PP047449 to PP047464
	Expander 1	LED01 to LED48 SW01 to SW24	PP047501 to PP047548 PP047549 to PP047572
	Expander 2	LED01 to LED48 SW01 to SW24	PP047601 to PP047648 PP047649 to PP047672
26	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP047701 to PP047732 PP047749 to PP047764
	Expander 1	LED01 to LED48 SW01 to SW24	PP047801 to PP047848 PP047849 to PP047872
	Expander 2	LED01 to LED48 SW01 to SW24	PP047901 to PP047948 PP047949 to PP047972
27	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP048001 to PP048032 PP048049 to PP048064
	Expander 1	LED01 to LED48 SW01 to SW24	PP048101 to PP048148 PP048149 to PP048172
	Expander 2	LED01 to LED48 SW01 to SW24	PP048201 to PP048248 PP048249 to PP048272
28	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP048301 to PP048332 PP048349 to PP048364
	Expander 1	LED01 to LED48 SW01 to SW24	PP048401 to PP048448 PP048449 to PP048472
	Expander 2	LED01 to LED48 SW01 to SW24	PP048501 to PP048548 PP048549 to PP048572
29	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP048601 to PP048632 PP048649 to PP048664
	Expander 1	LED01 to LED48 SW01 to SW24	PP048701 to PP048748 PP048749 to PP048772
	Expander 2	LED01 to LED48 SW01 to SW24	PP048801 to PP048848 PP048849 to PP048872
30	RLED-C / K-RLED-C or GCI(-NB)	LED01 to LED32 SW01 to SW16	PP048901 to PP048932 PP048949 to PP048964
	Expander 1	LED01 to LED48 SW01 to SW24	PP049001 to PP049048 PP049049 to PP049072
	Expander 2	LED01 to LED48 SW01 to SW24	PP049101 to PP049148 PP049149 to PP049172



# Glossary

Term	Definition
activate	To turn on or energize. Pertains to outputs (including logical outputs).
alarm	The state of a fire alarm initiating device that has detected a smoke or fire condition. The state of a security device that has been triggered.
AHJ	Authority having jurisdiction.
Alphanumeric LCD	Backlit liquid crystal display, 240 × 320 pixels, 24 lines of 40 characters. The LCD provides supplemental information relevant to the current condition of the control panel.
card	Modules that connect to the electronics chassis and control-display modules.
device	Modules, circuits, buttons, or LEDs that exist on the electronics chassis and all addressable devices connected by field wiring.
disable	Prevents an input, output, or system feature from functioning.
enable	Permits an input, output, or system feature to function.
group	A collection of Signature devices that is treated as a single entity for programming purposes. Groups can have messages and responses over and above the messages and responses of the individual group members.
input	A signal generated by a field device and sent to the control panel for evaluation and responses as determined by the system database. Inputs to the system are detectors, modules, and switches.
Normal state	The system is in a quiet state. The LCD screen shows no event messages.
Off-normal state	The system enters the fire alarm, trouble, disabled, or test state. The LCD screen shows event messages and system LEDs indicate off-normal statuses.
output	A signal generated by the system, based upon responses defined in the system database, and sent to external field devices. Outputs are LEDs, and modules.

Term	Definition
pseudo point	An input or output point that is not a physical device. For example, ground fault and communication fault notifications.
reset	Refers to a condition of an input, where the input is not active. It also refers to the condition of an output where the output is not in its SET or RESET condition and does not have a priority value associated with it.
RS-232	A serial communications format normally used for serial peripheral devices (i.e., printers) from a computer.
SMTP	Simple Mail Transfer Protocol. The Internet standard for email transmission.
VM-CU	Configuration Utility. A Windows-based program used to enter and modify information contained in the system.

# Index

## A

- ACK/Panel Silence button, 6
- Acknowledge button, 28
- acknowledging events, 28
- addressing, 46
- alarm
  - count, 25
  - report, 22
- Alarm LED, 5
- Alarm Silence button, 6, 27
- All Active points report, 22
- All Call, 8, 9
- All Call Minus, 8, 10
- alphanumeric keypad, 7
- Alternate Sensitivity, 32
- announcements. *See* paging

## B

- basic function, 10
- buzzer, 27
- Buzzer Silence, 9

## C

- capabilities, 2
- carbon monoxide detection, 37
  - change rate, 37
  - restore rate, 38
- changing
  - alarm sensitivity, 32
  - CO detection rate, 37
  - event message routes, 32
- CO detection, 37
  - change rate, 37
  - restore rate, 38
- common controls, 6
- controls and indicators
  - K-RLCD, 15
  - K-RLCD-C, 15
  - K-RLED, 17

- controls and indicators (continued)

- K-RLED-24, 17
  - RLCD, 15
  - RLCD-C, 15
  - RLED, 17
  - RLED-24, 17
  - VM-PMI, 8
  - VM-PMI with VM-MFK, 9

- cursor keypad, 7

## D

- DACT
  - FCC compliance, iv
  - Industry Canada information, vi
- database download, 35
- date, 35
- Details button, 6
- device
  - disable, 33
  - drill, 29
  - enable, 34
  - maintenance report, 23
- dirty detectors, 23
- Disable LED, 5
- disabled points report, 22
- disabling
  - devices, 33
  - zones, 34
- displaying
  - device maintenance reports, 23
- downloading database, 35
- drill, 29
- Drill button, 6

## E

- email messages, 18
- enabling
  - devices, 34
  - zone groups, 34
- event messages, 11

## F

finding  
    database versions, 25  
    firmware versions, 25  
    VM-DACT compliance, 26  
firefighter telephone, 9, 14

## G

Gas Accel command, 37  
gateway address, 26  
Ground Fault LED, 5

## H

history reports, 24

## I

IP address, 26

## K

keypad  
    alphanumeric, 7  
    cursor, 7  
K-RLCD controls and indicators, 15  
K-RLCD-C controls and indicators, 15  
K-RLED controls and indicators, 17  
K-RLED-24 controls and indicators, 17  
K-R-Series remote annunciators, 14, 15, 17

## L

lamp test, 29  
language, 30  
listed services, 2

## M

maintenance  
    device report, 23  
    preventive, 40  
    routine schedule, 42  
    schedules, 40  
    service provider, 40  
    tests, 40  
    visual inspection schedule, 41  
messaging  
    email, 18  
    text through email, 18  
microphone, 8, 9  
    local, 13  
Monitor LED, 5  
monitor report, 22

## N

normal display screen, 4

## O

operator controls  
    paging interface, 8  
Outputs report, 22  
overview  
    controls and indicators, 3  
    system, 2

## P

Page by Phone, 9  
page function buttons, 13  
Page To Alert, 8, 9  
Page To Evac, 8, 9  
paging, 13  
    local microphone, 13  
    operator controls, 8  
Paging Volume, 8, 10  
panel buzzer, 27  
Panel Silence button, 27  
Power LED, 5  
Primary Sensitivity, 32  
printing  
    device maintenance reports, 23  
Push-to-talk button (PTT), 8, 9, 13

## R

Ready To Page, 8, 10  
remote annunciators, 14  
Remote Read Lock, 36  
Remote Write Unlock, 35  
reports  
    device maintenance, 23  
    history, 24  
Reset button, 6, 28  
RLCD controls and indicators, 15  
RLCD-C controls and indicators, 15  
RLED controls and indicators, 17  
RLED-24 controls and indicators, 17  
R-Series remote annunciators, 14, 15, 17

## S

schedule  
    routine maintenance, 42  
    visual inspection, 41  
screen language, 30  
selecting  
    alternate alarm sensitivity, 32



- selecting (continued)
  - primary alarm sensitivity, 32
- Service Detector LED, 5
- service provider, 40
- setting time and date, 35
- silencing
  - alarm signals, 27
  - panel buzzer, 27
- status
  - indicators, 5
  - reports, 22
- Status Menu commands
  - Alarm, 22
  - All Active, 22
  - Disabled Points, 22
  - Monitor, 22
  - Outputs, 22
  - Supervisory, 22
  - Test, 22
  - Trouble, 22
- subnet mask, 26
- Supervisory LED, 5
- supervisory report, 22
- system
  - addresses, 46
  - capabilities, 2
  - common controls, 6
  - normal display screen, 4
  - operation, 10
  - overview, 2
  - reset, 28
  - service provider, 40
  - status indicators, 5

## T

- TCP/IP
  - communications, 36
  - settings, 26
- telephone, 9
- test
  - lamp test, 29
  - preventive maintenance, 40
  - report, 22
- Test LED, 5
- text messages through email, 18
- time, 35
- Trouble LED, 5
- trouble report, 22
- troubleshooting, 43

## U

- user access levels, 12

- user timeout period, 12

## V

- viewing
  - event messages, 11
  - status reports, 22
- VM-DACT compliance, 26

## Z

- zone
  - disable, 34
  - enable, 34

