4. Choose Device.
5. If the panel has multiple loops, choose the loop to be configured.
6. Enter the device address to be configured. Device details are displayed.
7. Set the Base Type option to Relay.
8. Set the Follow option to None.
9. Set the Latched option to Yes.
10. Choose Type and select one of the Latched Outputs types listed in Table 28 on page 100.
11. Press the Menu button to exit menu mode, or continue programming.

Loops 1, 2, 3, and 4 mapping enable

If your system is using multiple device loops, you must enable loops 1, 2, 3, or 4 so that they can be programmed.

To enable loops 1, 2, 3, or 4:

1. Press the Menu button and choose Programming.
2. Choose Advanced Program and enter the level 2 password.
3. Choose Loop Configuration.
4. Choose Mapping.
5. Choose Loop 1, 2, 3, or 4 Enable.
6. Select:

   Yes to enable the selected loop
   No to disable the selected loop
7. Repeat steps 3 and 4 for each loop you want to enable.
8. Choose Save.
9. Press the Menu button to exit menu mode, or continue programming.

Selecting loop classes

The loop class must be programmed Class A or Class B based on how the devices are wired on the loop). The default setting is Class B.

To select a loop class:

1. Press the Menu button and choose Programming.
2. Choose Advanced Program and enter the level 2 password.
3. Choose Loop Class.
4. Select the loop. If you only have one loop, the loop is automatically selected.

5. Select either Class A or Class B.
6. Choose Save.
7. Press the Menu button to exit menu mode, or continue programming.

Mapping loop device circuits

To use mapping, you must enable it for each loop in the system. Mapping a device data circuit provides useful information about the circuit that can be used for troubleshooting or documenting the electrical positions of devices in the system when used in conjunction with a PC running the configuration utility (CU). When viewing the Map screen on the CU, each SLC map can be retrieved from the system, displaying the physical position of each addressable device in relationship to one another in a riser-style schematic diagram. Additionally, mapping allows a technician to replace devices without requiring any system programming.

When the system begins mapping the devices on the panel, "mapping in progress" is displayed on the LCD, the monitor LED flashes, and the panel buzzer sounds. Depending on the number of devices on the panel, the amount of time it takes to map can vary.

Enabling and disabling mapping

When you enable mapping, you allow the panel to automatically identify all devices installed on the loop.

To enable or disable mapping:

1. Press the Menu button and choose Programming.
2. Choose Advanced Program and enter the level 2 password.
3. Choose Loop configuration
4. Choose Mapping.
5. If the panel has multiple loops, select the loop to be configured.
6. Select Yes to enable mapping or No to disable mapping.
7. Choose Save.
8. Press the Menu button to exit menu mode, or continue programming.

Correcting a map mismatch

You can work with maps using the front panel or by using the configuration utility. Accepting a map refers to saving the map in the control panel's database either from the front panel or through the configuration utility.

When mapping is enabled, the control panel stores two maps in memory, a map in RAM and a map in the database. When these two maps do not match, a map mismatch is generated at the front panel.

There are several reasons why the maps may not match. For example, if you just enabled mapping, the panel maps the devices in the system and stores the map in panel RAM, but because there is no map in the panel database, you get a map mismatch.

Saving the map in the panel database synchronizes the two maps and removes the map fault from the system.

Another way to get a map mismatch is by adding a new device to the system. The panel sees the device and generates a new map in RAM. This map is not the same as the map in the panel database, so a map mismatch is generated. From the map mismatch screen, you can save the map in the panel database, which synchronizes the two maps and removes the map mismatch from the system.

To accept a map using front panel controls:

1. On the loop map mismatch event screen, press Enter.

   The details screen is displayed.

2. Press Enter.

   The Enter Password screen is displayed if you are not logged on. If you are already logged on, the Accept Map screen is displayed.

3. Enter a level two password.

   The Accept Map screen is displayed.

4. Press Enter to save the map in the control panel database.

   Saving the map clears the mismatch.

If mapping is enabled, you may have a discrepancy between the map that was downloaded to the panel from the configuration utility and the map that resides in the control panel RAM. If the two maps do not match, the system generates a map mismatch event. If you get a map mismatch, you have to either accept the control panel map and save it in the control panel database or adjust the database (and download it again) so that it matches the control panel map.

For example, if you add a new device in the configuration utility, but the device has not been physically wired into the system, when you download to the panel from the configuration utility, the configuration utility map will not match the panel map, generating a map mismatch. You can then either leave the map mismatch in the system until you install the new device, at which time the panel detects the device and clears the map mismatch or, you can accept the panel map as it is, which will not include the new device. When you install the new device, the panel will map the device and generate a map mismatch. You can redownload to the panel when this occurs. The configuration utility map and panel map will then match and the map mismatch event will clear.

Note: For details about using the configuration utility, refer to the online help system.

Using the configuration utility to map the system

If mapping is enabled, you may have a discrepancy between the map that was downloaded to the panel from the configuration utility and the map that resides in the control panel RAM. If the two maps do not match, the system generates a map mismatch event. If you get a map mismatch, you have to either accept the control panel map and save it in the control panel database or adjust the database (and download it again) so that it matches the control panel map.

For example, if you add a new device in the configuration utility, but the device has not been physically wired into the system, when you download to the panel from the configuration utility, the configuration utility map will not match the panel map, generating a map mismatch. You can then either leave the map mismatch in the system until you install the new device, at which time the panel detects the device and clears the map mismatch or, you can accept the panel map as it is, which will not include the new device. When you install the new device, the panel will map the device and generate a map mismatch. You can redownload to the panel when this occurs. The configuration utility map and panel map will then match and the map mismatch event will clear.

Note: For details about using the configuration utility, refer to the online help system.

Zone programming

Notes

- For background information about zones, see "What is a zone?" on page 39.
- If the system does not have zones, no programming is required in this section. If the panel is not configured for zone or zone/device reporting, programming here has no effect on the system except for CMS reporting.

Table 29: Zone programming options

Option	Description
Type	Set the zone type to one of the following values. Alarm: For circuits with smoke detectors and contact devices. All activations are immediately considered as alarms. Circuit cannot be restored until devices are restored to normal and panel is reset. Monitor: Monitoring of normally open switches for other functions (fire door position, etc.). Not approved for use under CAN-ULC-S527 in Canada. Supervisory: For supervisory devices. Momentary activation of normally open devices immediately places the panel in a supervisory state and turns on the supervisory LED and relay. The device types of the devices in a supervisory zone determine whether the zone is latching or nonlatching. If all devices in the zone are latching devices, or if you mix latching and nonlatching devices, the zone will operate as latching.

Option	Description
	Waterflow: Activates alarm events when a waterflow switch closes. Select this zone type when the devices in the zone are only connected to waterflow switches. **Note:** Do not mix device and zone types. For example, do not place a nonlatching supervisory device in an alarm zone. When the supervisory device activates and an alarm event is initiated, the alarm event automatically clears when the device restores without having to reset the panel.
Label	Enter a text label for the zone (two lines of 20 characters). When you have finished, choose Save.
Correlation groups	Enter the number of the correlation group. Choose Yes or No. • "Yes" adds the item to the group. • "No" removes the item from the group When you have finished, choose Save. For more information on correlation groups, see "What is a correlation group?" on page 39.
Event notification	Set the active, trouble, disable, prealarm, alarm verify, maintenance alert, and test event information by choosing one and then setting the notification information. When you have finished, choose Save. See "Factory default settings" on page 44 for zone event notification default settings. **Note:** If your CMS is set to zone reporting, the event notification information sent to the receiver comes from the programming in this section. Printer: Yes or No. This controls whether event information is sent to the printer Dialer: • Acct 1 & 2: Event information is sent to both dialer accounts • Acct 1: Event information is sent to dialer account one • Acct 2: Event information is sent to dialer account two • None: Event information is not sent to the dialer NET: Yes or No. Controls whether event information is sent to the connected network CID: Contact ID event code (000 to 999)

To program a zone:

1. Press the Menu button and choose Programming.
2. Choose Advanced Program and enter the level 2 password.
3. Choose Loop Configuration.
4. Choose Zone and enter the zone number.
5. Program each zone in the system using Table 30 on page 104.
6. When you finish programming an option, choose Save, and then continue.
7. Press the Menu button to exit menu mode, or continue programming.

Panel programming

The panel options to be configured include:

- NAC circuits ("NACs")
- Annunciator class
- Annunciator
- Dialer and network ("CMS device")
- Printer/FSB
- IP Settings

Most options have a factory default setting that you can accept or change. See "Factory default settings" on page 44.

Notes

- The option "CMS device" is only available if a dialer or network card is installed
- The option "Printer" is only available if a printer (RS-232) card or USB connection is installed
- The option "IP Settings" is only available if a network card is installed.

To program panel configuration options:

1. Press the Menu button and choose Programming.
2. Choose Advanced Program and enter the level 2 password.
3. Choose Panel Configuration.
4. Program the options.

NAC programming

The NAC circuits connected to the system must be programmed with the type of NAC, label, correlation groups, and event notification. Each NAC must be programmed separately.

Table 30: NAC programming options

Option	Description
Class	Select either Class A or Class B. **Note:** NAC 3 and 4 cannot be set to Class A. If NAC 1 and 2 are set to Class A, NAC 3 and 4 automatically configure to accept the Class A return.
Type	Set the NAC type to one of the following values. Continuous (silenceable or nonsilenceable): For strobes and notification appliances that generate a temporal pattern Temporal (silenceable or nonsilenceable): Universal 3-3-3 pattern required for evacuation signals by NFPA 72. Used when notification appliances are not capable of generating a temporal pattern.

Option	Description
	Genesis (nonsilenceable or with audible silence or with audible/visible silence): For Genesis horns and strobes and Enhanced Integrity strobes. Genesis and Enhanced Integrity appliances maintain synchronization per UL 1971. When using Genesis or Enhanced Integrity notification appliances, you must select one of the Genesis NAC types for proper system-wide strobe synchronization. • Nonsilenceable: Horns cannot be silenced and strobes flash • Audible silence: Horns can be silenced while strobes continue to flash • Audible/visible silence: For Genesis devices only, connected horns can be silenced and strobes turn off Coder (basic, continuous, 120 SPM, or temporal): Used to provide four-digit coded output in response to alarm conditions. When the device goes into alarm, the coded output is played a minimum of four times by the NAC circuit. The code comes from the active initiating device or zone. Note: The panel can only play one code at a time. For example, device 1 is coded as 1-2-3-4 and is associated with NAC1 and device 2 is coded as 5-6-7-8 and is associated with NAC2. If device 1 activates, NAC1 plays 1-2-3-4. If, while NAC1 is playing 1-2-3-4, device 2 activates, NAC2 will also play 1-2-3-4 until the rounds are complete and then both NACs will play 5-6-7-8 until those rounds are complete. If you are programming NACs as coded, remember that only one code can play at a time. • Basic: Four rounds of the four-digit coded output are played • Continuous: Four rounds of the four-digit coded output are played and then continuous is played • 120 SPM: Four rounds of the four-digit coded output are played and then 120 times per minute is played • Temporal: Four rounds of the four-digit coded output are played, and then a temporal pattern is played Continuous Non-Silenceable (Latched): For programming NAC as latched output City tie: Outputs an unsynchronized, 24-volt continuous (steady) signal that cannot be silenced. Select this NAC type when the NAC is connected to a city tie module.
Label	Enter a text label for the NAC (two lines of 20 characters). When you have finished, choose Save.

Option	Description
Correlation groups	Enter the number of the correlation group. Press Enter to toggle the group's status. • "Included" adds the item to the group. • "Excluded" removes the item from the group When you have finished, choose Exit. A correlation group is a collection of addressable input devices (detectors and input modules) and output devices (panel NACs, NAC modules, relay modules, sounder and relay bases). When one or more inputs become active and meet the required activation count, all outputs assigned to the group activate. As you configure the loop devices, you must correlate and assign the desired input device or zone to the correlation group that you want to activate. For an addressable device to activate an output, you must assign the output to a correlation group. Next, assign the device to a zone, and then assign the zone to the correlation group containing the output. You can assign inputs and outputs to multiple correlation groups. For more information on correlation groups, see "What is a correlation group?" on page 39.
Event notification	Set the NAC trouble, disable, and test event information when it is to be sent to a printer, dialer, or network card), by choosing one and then setting the notification information. When you have finished, choose Save. See "Factory default settings" on page 44 for NAC event notification default settings. Printer: Yes or No. This controls whether event information is sent to the printer Dialer: • Acct 1 & 2: Event information is sent to both dialer accounts • Acct 1: Event information is sent to dialer account one • Acct 2: Event information is sent to dialer account two • None: Event information is not sent to the dialer CID: Contact ID event code (000 to 999) NET (1-8): Yes or No. Controls whether event information is sent to the connected network

To program an NAC:

1. Display the panel configuration options menu. See "Panel programming" on page 106.
2. Choose Panel NAC.
3. Enter the NAC (number) you want to program, and then press Enter.

   Note: NAC 3 and 4 are not available if either NAC 1 or 2 or both are set to Class A.
4. Program each NAC in the system using Table 31 on page 106.
5. When you finish programming each option, choose Save.
6. Press the Menu button to exit menu mode, or continue programming.

Setting annunciator classes

Program the annunciator's wiring class (Class A or Class B). You must install the optional SA-CLA module if you have class annunciator wiring on the 64 point panel.

Default: Class B

To set the annunciator class:

1. Display the panel configuration options menu. See "Panel programming" on page 106.
2. Choose Ann. Class.
3. Select either Class A or Class B.
4. Program other panel configuration options or choose Save if you're finished.
5. Press the Menu button to exit menu mode, or continue programming.

Annunciator programming

Each annunciator on the annunciator loop must be programmed for type, number of expanders, label, and event notification. Up to eight annunciators can be connected on the loop and each must be programmed separately. You must also set the address on each annunciator by using the DIP switch on the back of the annunciator.

Table 31: Annunciator options

Option	Description
Annunciator type	Set annunciator type to: Off: No annunciator is connected. If type is set to Off, Number expanders, Label, and Reporting configuration are not available. LCD-C: The annunciator has a display and common controls LCD: The annunciator has a display only (no common controls) LED: The annunciator has LEDs and common controls (no display) Graphic: Graphics controller interface for the third-party LED graphic annunciator

Option	Description
Expanders	Set expanders to None, 1, or 2. This is the number of LED expander modules you are using with the annunciator.
Label	Enter a text label for the annunciator (two lines of 20 characters). When you have finished, choose Save.
Event notification	Set the trouble event information by setting the notification information. When you have finished, choose Save. See "Factory default settings" on page 44 for annunciator event notification default settings. Printer: Yes or No. This controls whether event information is sent to the printer Dialer: • Acct 1 & 2: Event information is sent to both dialer accounts • Acct 1: Event information is sent to dialer account one • Acct 2: Event information is sent to dialer account two • None: Event information is not sent to the dialer CID: Contact ID event code (000 to 999) NET (1-8): Yes or No. Controls whether event information is sent to the connected network

Table 32: C

Option
CMS Path
Dialer
Network

To program an annunciator:

1. Press the Menu button and choose Programming.
2. Choose Advanced Program and enter the level 2 password.
3. Choose Panel Configuration.
4. Choose Annunciator.
5. Choose the annunciator you want to program.
6. Program each annunciator in the system using Table 32 on page 109.
7. When you finish programming each option, choose Save.
8. Press the Menu button to exit menu mode, or continue programming.

Central monitoring station device programming

CMS device programming

CMS devices are the devices that transmit system events to a central monitoring station's receiver. This includes the dialer and the network.

Table 32: CMS device options

Option	Description
CMS Path	Type: Select from the following CMS paths. • Telco Only (Default) Used to select a single CMS Path using the Telco Dialer configured Dialer Type settings. An SA-DACT must be installed in the panel. If Telco Only is selected as the CMS path, all eight IP accounts become inactive and disabled. • IP/Telco Used to select IP as the primary CMS Path and Telco as the backup CMS path. • Telco/IP Used to select Telco as the Primary CMS Path and IP as the backup CMS path for event transmission to a Central Station per all applicable codes and standards. **Notes** System events are routed to the selected backup only when all primary configured accounts have exhausted their programmed Retry Count. This could be due to an abnormal condition not allowing the configured system to acknowledge a successful transmission. Active Dialer Line faults are not reported using the IP Receiver when the dialer fails. Subsequent events after the dialer faults are reported using the IP Receiver. • IP Only Used to select a single CMS Path using the Telco Dialer configured IP Dialer Settings. A SA-ETH must be installed in the panel. If IP Only is selected as the CMS path, both Telco accounts are deactivated by setting the Dialer Mode property to None. If the backup IP account is disabled, default values will be populated once IP Only is selected. • Telco and IP Used to select both Telco and IP active accounts for the CMS Path. Select this option if the following is required for the system application: 1. A primary/backup configuration is not needed. 2. Event transmissions are needed to go out concurrently over both mediums.
Dialer	See “Dialer programming” on page 113.
Network	See “CMS network (transmitter) programming” on page 116.

Option	Description
Swinger shutdown	Set swinger shutdown to Off or 1 to 255 repetitions. When you have finished, press Enter to save. **Note:** Off is the only acceptable setting for UL/ULC installations. See "UL/ULC programming requirements" on page 37 for details. This automatically inhibits the number of consecutive times a single trouble event is transmitted over a 24-hour period before it is no longer sent. Some trouble events are not affected when swinger shutdown is set. They are: - Loop 1 initializing - Loop 1 uncfgrd alarm - Loop 1 map mismatch - Loop 1 over limits - Loop 1 device 000 - Loop 1 mapping - Loop 1 map fault - Loop 2 initializing - Loop 2 map mismatch - Loop 2 over limits - Loop 2 uncfgrd alarm - Loop 2 device 000 - Loop 2 mapping - Loop 2 map fault - Loop 3 initializing - Loop 3 uncfgrd alarm - Loop 3 map mismatch - Loop 3 over limits - Loop 3 device 000 - Loop 3 mapping - Loop 3 map fault - Loop 4 initializing - Loop 4 uncfgrd alarm - Loop 4 map mismatch - Loop 4 over limits - Loop 4 device 000 - Loop 4 mapping- Loop 4 map fault - System startup - Reset - Reset/Sil inhibit - Panel silence - Program mode - Signal silence - Date - Drill - Walk test - Test fire - Time - Clear history - Common alarm - Common disable - Common monitor - Common supervisory - Common trouble - Battery charger - Battery low - Battery missing - Local AC power - System-wide AC power - Self test fault - Dialer dsbl/rem disc - Dialer normal test - Dialer abnormal test - Dialer configuration

Option	Description
Event notification	**Note:** Programming event notification here is only required if you selected "Event" as your dialer account or network event notification setting. See "Dialer programming" below. Set the alarm, supervisory, monitor, trouble, disable, prealarm, alarm verify, maintenance alert, and test event information by choosing one and then setting the notification information. When you have finished, choose Save. See "Factory default settings" on page 44 for CMS device event notification default settings. Dialer: • Acct 1 & 2: Event information is sent to both dialer accounts • Acct 1: Event information is sent to dialer account one • Acct 2: Event information is sent to dialer account two • None: Event information is not sent to the dialer NET (1-8): Yes or No. Controls whether event information is sent to the connected network CID: Contact ID event code (000 to 999)

To program CMS devices:

1. Press the Menu button and choose Programming.
2. Choose Advanced Program, and then enter the level 2 password.
3. Choose Panel Configuration.
4. Choose CMS Device.
5. Choose the option you want to program.
6. Program each device and option using Table 33 on page 111. For dialer options, see Table 34 on page 114. For network options, see Table 35 on page 117.
7. After programming each device option, choose Save.
8. Press the Menu button to exit menu mode, or continue programming.

Dialer programming

The dialer has a number of options that you can program. Use the dialer to send event information to the central monitoring station. You can also use it as a modem for dial-in programming and status and report retrieval. To program the dialer (DACT), you must install and enable the SA-DACT.

Table 33: Dialer programming options

Option	Description
Type	Set the dialer type to one of the following values. Dual line: Uses LINE 1 and LINE 2 to transmit events to the central station receiver and performs modem functions. In this mode, the dialer supervises and reports faults on both lines. Single line: Uses LINE 1 only to transmit events to the central station receiver and performs modem functions. In this mode, the dialer supervises and reports faults only on LINE 1. Modem only: Dialer provides interface for outbound communications and the ability for dial-in programming and status and report retrieval. If Modem Only is selected, only Rings to Answer, Ring Type, and Callback Number can be programmed. No other dialer options are displayed in the menu. The modem function only works with LINE 1. In this mode, neither line is supervised. None: No dialer is installed or if a dialer is installed, disables the dialer.
Account 1 and 2	Program account 1 options, and then program account 2 options. When you have finished programming each account, choose Save.
Account ID	Enter account 1 and 2's four-digit ID code. FFFF is not valid.
Primary receiver number	Enter the primary receiver's phone number. This can contain up to 20 digits (0-9, *, #, and ,). The comma causes a two-second delay in dialing. The number or hash symbol (#) and the asterisk symbol (*) are used with calling feature codes and services. Consult your telephone service provider.
Secondary receiver number	Enter the secondary receiver's phone number. This can contain up to 20 digits (0-9, *, #, and ,). The comma causes a two-second delay in dialing. The number or hash symbol (#) and the asterisk symbol (*) are used with calling feature codes and services. Consult your telephone service provider.
Format	CID: Contact ID is the alarm format that the monitoring facility's Digital Alarm Communicator Receiver (DACR) will receive. See "Default contact ID event codes" on page 49. Set send restorals to: Yes: Sends off-normal event restorals to the monitoring facility DACR. Required setting for UL/ULC installations. See "UL/ULC programming requirements" on page 37 for details. No: Does not send off-normal event restorals to the monitoring facility DACR
Retry time seconds	Set retry time to 1 to 45 seconds. Specifies the wait time between each time the dialer attempts a connection to the DACR. See "UL/ULC programming requirements" on page 37 for details.
Retry count	Set the retry count to 5 to 10 attempts. Specifies how many times the dialer will attempt to call the DACR before timing out.
Event notification	Set event notification (event reporting) to: Device: Only device information is reported or transmitted, no zone information. This setting uses device event notification settings for reporting events. Make sure your device event notification settings are correct. See "Central monitoring station device programming" on page 110.

	Zone: When a device is a member of a zone, only the zone information is reported or transmitted. Device information is not reported or transmitted. This setting uses zone event notification settings for reporting events. Make sure the zone event notification settings are correct. See "Loop event programming" on page 133. Event: Only the event type (alarm, supervisory, trouble, etc.) is reported or transmitted, no device or zone information. This setting uses the CMS event notification settings for reporting events. Make sure the event notification settings are correct. See "Central monitoring station device programming" on page 110.
Dial Tone wait	Set tone wait to Off or 0 to 30 seconds. Specifies how long the dialer waits to get a dial tone.
Call disconnect seconds	Set call disconnect to Off or 0 to 45 seconds. Specifies the length of time the dialer seizes the line (to disconnect parallel devices) before attempting to dial out.
Test frequency hours	Set test frequency to 0 to 240 hours. Specifies how often the dialer performs a test call. The default setting is 6 hours to comply with agency requirements. See "UL/ULC programming requirements" on page 37 for details.
Test time	Set the test time to the desired time of day for running the test.
Rings to answer	Set rings to answer to Off or 0 to 15 rings. Specifies how many rings before the dialer answers incoming calls.
Ring type	Set ring type to Any or Normal. Specifies the type of ring expected when an incoming call is received.
Callback	Select Enabled or Disabled to enable or disable callback security. With callback security enabled, the dialer will answer an incoming call, and then hang up and redial the callback number in an attempt to connect to the PC running the configuration utility. Use this feature to increase security and to limit your connect to only the PC at the preprogrammed number.
Line 1 and 2	Program line 1 options, and then program line 2 options. When you have finished programming each line, choose Save.
Dialing:	Select Tone or Pulse dialing.
Cut duration/supervision	Set the cut duration/supervision to Off or 10 to 120 seconds. Specifies the length of time a phone line trouble is detected before reporting the trouble.
Callback number	Enter the callback phone number (up to 20 digits). This specifies the phone number that is used for call back.

Note: Select Off to set to 0 wait time, no frequencies, or no occurrence.

To program the dialer:

1. Press the Menu button and choose Programming.
2. Choose Advanced Program and enter the level 2 password.
3. Choose Panel Configuration.
4. Choose CMS Device.
5. Choose Dialer.

6. Program the dialer using Table 34 on page 114. For dialer default settings, see "Factory default settings" on page 44.
7. When you have finished programming each option, choose Save.
8. Press the Menu button to exit menu mode, or continue programming.

CMS network (transmitter) programming

Note: Connecting to a central monitoring station (CMS) using a TCP/IP Ethernet network does not comply with CAN/ULC S559 3rd edition requirements.

The information programmed here pertains to the central monitoring station (CMS) network that the control panel uses to communicate with the CMS. This is a TCP/IP Ethernet network. Event information is sent to the CMS just as it is when using a dialer; however, the transmission is over an Ethernet network rather than the telephone lines.

To program the panel for network reporting, you must install and enable the optional SA-ETH Ethernet module. Once installed, program only the network card connected to a compatible network receiver, as listed in the appropriate compatibility guide.

Obtain the following information from the central monitoring station's network administrator when programming FireWorks.

- An IP address
- Port number
- Receiver number
- Line number

For Sur-Gard receivers, download the *VS IP Dialer Configuration Worksheet* (P/N 3102787) from the My-Eddie website to guide you through what information to gather. To access the website, enter www.edwardsfiresafety.com in your web browser, click Login to log on to the My-Eddie website.

Notes

- CID is the only format that can be transmitted to the CMS over an Ethernet network.
- When the CMS account is configured as FireWorks, you must enter a different port number for each account. If you enter the same port number for multiple accounts, the panel will enable one account and disable all others.
- Firmware version 4.3 and above: When configuring FireWorks receivers, the primary port number and IP address should *not* be same as the secondary Port number and IP address for any IP account. By default, the port number is 3061 and it must be updated to a unique port number when FireWorks accounts are configured.
- Outputs activation state will not be sent to CMS.

Table 34: CMS network (transmitter) programming options

Option	Description
Type	Sur-Gard: Used to select Sur-Gard as the IP receiver. FireWorks: Used to select FireWorks as the IP receiver.
Enabled	Yes: Enables the CMS network operation No: Disables the CMS network operation
Account ID	Type the account's four-digit customer hexadecimal identification number. The properties are different depending on whether you have Sur-Gard or FireWorks selected as the IP Receiver. The Account ID must be unique for each account. **FireWorks** Possible values: 0000 to FFFF Default: FFFF **Note:** FFFF is reserved. Use FFFF only if you do not want to send events to this account. **Sur-Gard** Possible values: 0000 to 9999 Default: 0000
Hello time	Specifies the amount of time in between "hello" messages sent by the panel to the CMS to maintain communications. The properties are different depending on whether you have Sur-Gard or FireWorks selected as the Type. The time must be less than the hello timeout set on the CMS, otherwise the CMS will lose communication with the panel. Hello Time is also referred to as the Heartbeat for Sur-Gard applications. **FireWorks** Possible values: 10 to 255 Default: 25 **Sur-Gard** Possible values: 1 to 7200 Default: 60 **Note:** If the firmware version of the OH2000 line card (OH-TCP/IP-LC) is earlier than V2.2, set the Hello Time value to 75 and the line card's line cut timer value to 175.

Option	Description
Timeout seconds	Type how long you want the control panel to wait for an acknowledge signal from the central station receiver over a TCP/IP connection before indicating a trouble event. The properties are different depending on whether you have Sur-Gard or FireWorks selected as the IP Receiver. Time Out is also referred to as Supervision Timeout for Sur-Gard applications. Values indicate seconds. **FireWorks** Possible values: 31 to 255 Default: 40 **Sur-Gard** Possible values: 1 to 86400 Default: 120 **Note:** If the firmware version of the OH2000 line card (OH-TCP/IP-LC) is earlier than V2.2, set the Time Out value to 60 and the line card's line cut timer value to 175.
Send restorals	Set send restorals to: Yes: Sends off-normal event restorals to the monitoring facility DACR No: Does not send off-normal event restorals to the monitoring facility DACR
Event notification	Set event notification (event reporting) to: Device: Only device information is reported or transmitted, no zone information. This setting uses device event notification settings for reporting events. Make sure the device event notification settings are correct. See "Central monitoring station device programming" on page 110. Zone: When a device is a member of a zone, only the zone information is reported or transmitted, no device information. This setting uses zone event notification settings for reporting events. Make sure the zone event notification settings are correct. See "Central monitoring station device programming" on page 110. Event: Only the event type (alarm, supervisory, trouble, etc.) is reported or transmitted, no device or zone information. This setting uses the CMS event notification settings for reporting events. Make sure the event notification settings are correct. See "Central monitoring station device programming" on page 110.
DNIS Enable	If the IP Receiver Type is set to Sur-Gard, the property allows you to enable or disable the Dialed Number Identification Service (DNIS). Possible values: Enable Yes or Enable No Default: Enable No
DNIS Number	If the IP Receiver Type is set to Sur-Gard, enter a 10-digit hexadecimal number that is used by the central station to determine the source of an inbound call. The default setting is 0000000000.
Primary Receiver	This property allows you to configure primary Sur-Gard or FireWorks IP receivers.
IP	Enter the IP address for the CMS. This number is provided by the central station. Possible values: 0.0.0.0 to 255.255.255.255 Default: 192.168.1.254

Option	Description
TCP/IP port	Type the central station receiver's port number. This number is provided by the central station. Possible values: 1025 to 65535, 1024 is not allowed Default setting: 3061
Response Time	This property is only available if the IP Receiver Type is set to Sur-Gard. Enter or select the amount of time for receiving a reply from the receiver. Typically, the default is not changed unless communication issues arise because of retries. When the time expires, the panel retries communication with the alternate server for the Maximum Attempts configured. If the retries fail, the panel generates a trouble event. Possible Settings: 1 to 300 Default Setting: 5
Account Code	This property is only available if the IP Receiver Type is set to Sur-Gard. Enter the account code that identifies the CMS receiver. The receiver account code, also referred to as Fibro Account Number, is provided by the central monitoring station. Possible Settings: Up to a 10 digit hexadecimal number Default Setting : 0000000000 **Note:** Account codes of less than 10 digits will always contain leading 0's.
Secure Comm	This property is only available if the IP Receiver Type is set to Sur-Gard. The Secure Communication property specifies whether you want to encrypt the IP receiver connection. Select Yes to display the Primary Encryption Key property that will enable encrypted communication between the panel and the central monitoring station. Possible settings: Yes or No Default Setting : Yes
Encryption Key	This property is only available if the IP Receiver Type is set to Sur-Gard, and the Secure Communication is set to Yes. Enter the encryption key number provided by the CMS that will enable encrypted communication between the panel and the CMS. Possible Settings: Up to 32 digit hexadecimal number Default Setting : 00000000000000000000000000000000
Secondary Receiver	This property allows you to configure secondary Sur-Gard or FireWorks IP receivers. Possible settings Enabled: Yes or No Default Setting : No IP: Enter the IP address for the CMS. This number is provided by the central station. Possible values: 0.0.0.0 to 255.255.255.255 Default: 192.168.1.255 IP Port: Type the central station receiver's port number. This number is provided by the central station. Possible values: 1025 to 65535, 1024 is not allowed Default setting: 3061

Option	Description
	Response Time: Enter or select the amount of time for receiving a reply from the receiver. Typically, the default is not changed unless communication issues arise because of retries. When the time expires, the panel retries communication with the alternate server for the Maximum Attempts configured. If the retries fail, the panel generates a trouble event. Possible Settings: 1 to 300 Default Setting: 5
	Account Code: Enter the account code that identifies the CMS receiver. The receiver account code, also referred to as Fibro Account Number, is provided by the central monitoring station. Possible Settings: Up to a 10 digit hexadecimal number Default Setting: 0000000000 **Note:** Account codes of less than 10 digits will always contain leading 0's.
	Secure Comm: The Secure Communication property specifies whether you want to encrypt the IP receiver connection. Select Yes to display the Primary Encryption Key property that will enable encrypted communication between the panel and the central monitoring station. Possible settings: Yes or No Default Setting: Yes
	Encryption Key: Enter the encryption key number provided by the CMS that will enable encrypted communication between the panel and the CMS. Possible Settings: Up to 32 digit hexadecimal number Default Setting : 00000000000000000000000000000000

Option
Test Message
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Option	Description
Test Message	If the IP Receiver Type is set to Sur-Gard, the Test Message property is displayed. The Test Message property specifies whether you want the IP receiver service to transmit an automatic test message and when. Enabled: Used to select if a test messasge should be sent. Possible settings: Yes or No Default Setting : No Normal: The Normal message property specifies the dialer test message that the IP receiver service sends if the system is in the normal state when the automatic test signal transmission is initiated. Possible settings: 9-digit decimal number- 000000000 to 999999999 Default Setting : 160200000 Abnormal: The Abnormal message property specifies the dialer test message that the IP receiver service sends if the system is not in the normal state when the automatic test signal transmission is initiated. Possible settings: 9-digit decimal number- 000000000 to 999999999 Default Setting : 160800000 Test Freq: Specifies how often you want the IP receiver service to transmit a test signal to the selected CMS account. Possible settings: 1 to 45 days Default Setting : 01 Test Time: Specifies the time you want the IP receiver service to transmit the first test signal to the selected CMS account. Possible settings: 00:00 to 23:59 Default Setting : 12:00 (12:00 PM) Mask Mon Evnts: The Mask Monitor Events property specifies whether you want the IP receiver service to ignore active monitor events when determining whether to send the abnormal periodic test message. Possible settings: Yes or No Default Setting : No
Max Attempts	If the IP Receiver Type is set to Sur-Gard, the property specifies how many times the IP receiver service attempts to send a dialer message before reporting a trouble condition. Enter a number from 1 to 10, with 5 being the default.
Receiver number	If the IP Receiver Type is set to FireWorks, the property specifies the CMS receiver number that receives system event messages. This number is part of the receiver message. Enter the CMS receiver number (0 to 9999) assigned to this panel by the CMS administrator.
Line number	If the IP Receiver Type is set to FireWorks, the property specifies the receiver's line number where system event messages are sent. Enter the CMS receiver line number (0 to 9999) assigned to this panel by the CMS administrator.

To program the CMS network (transmitter):

1. Press the Menu button and choose Programming.
2. Choose Advanced Program and enter the level 2 password.
3. Choose Panel Configuration.
4. Choose CMS Device.
5. Choose Network, and then select a network from the list (1 through 8).
6. Program the network using Table 35 on page 117. For network default settings, see "Factory default settings" on page 44.
7. When you have finished programming each option, choose Save.
8. Press the Menu button to exit menu mode, or continue programming.

Printer programming

If a printer is connected to the system, you must set the printer type and configure printer event notification options. This controls where printer trouble events are sent and displayed. To communicate with a printer, you must install the optional SA-232 module in the panel and connect it to a compatible serial (RS-232) printer or install the optional SA-USB card in the panel and connect it to a compatible USB printer.

To program a printer/FSB:

1. Display the panel configuration options menu. See "Panel programming" on page 106.
2. Choose Printer/FSB.
3. Choose Type.
4. Select the printer type.
   - Supervised: The printer connection is supervised for a single open and positive ground (refer to the printer's switch settings)
   - Unsupervised: The printer connection is not supervised
   - None/CU: There is no printer or you are connecting a computer running the configuration utility to the panel
   - FSB Unsupervised: Used to connect to the Field Server Bridge
5. Choose Event Notification.
6. Set printer trouble event notification. See "Factory default settings" on page 44 for printer event notification default settings.

   Printer: Yes or No. This controls whether event information is sent to the printer
7. Choose Save (on the Printer menu).
8. Press the Menu button to exit menu mode, or continue programming.

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IP programming

If you are using the optional Ethernet network card (SA-ETH), you must configure the IP Settings so that it can communicate with the network. You can choose static IP or dynamic IP (DHCP).

Contact your network administrator to obtain this information or use the default settings. You can also use the network card to send event information to a central monitoring station, download to the panel from the configuration utility, or upload and view system reports using the configuration utility. To use the configuration utility, the dynamic IP (DHCP) must be disabled or the CU must be connected in the same DHCP network as the panel to allow communication between the CU computer and the panel.

Note: If the firmware version of the OH2000 line card (OH-TCP/IP-LC) is earlier than V2.2, set the Hello Time value to 75 and the line card's line cut timer value to 175.

Table 35: IP Settings options

Option	Description
IP	Configure the following to use static IP. The default settings are shown below. IP: 192.168.001.003 Mask: 255.255.255.000 Gateway: 000.000.000.000
DHCP Mode	Set the DHCP options for dynamic IP so that the panel IP address, Subnet Mask, and Gateway details can be obtained from the DHCP server. The panel will renew the IP address from the DHCP server every 60 minutes. If the panel fails to renew the IP address after 5 tries, the DHCP service will be restarted. The default IP setting is DHCP Mode for a newly added panel. **Note:** The panel requests a new IP address from the DHCP server during startup, power cycle, or when DHCP is switched from static mode (disabled) to dynamic mode (enabled).). If a DHCP Communication fault is reported during a network change, then use one of the these methods to clear the fault. Yes: Assigns the panel IP address, Subnet Mask, and Gateway details obtained from the DHCP server. No: Disables the dynamic IP.
DHCP Super	Sets the DHCP SUPV options. DHCP must be enabled to use this feature. Yes: If the panel fails to renew the IP address after 5 tries, the DHCP service will be restarted. A DHCP communication fault will be reported to the panel if the panel cannot talk to the DHCP server after the retry count of 5 times. Once the panel can communicate with the DHCP server, the fault is restored. The default setting is Enable. No: Provides no supervision of the DHCP (default setting).

Option	Description
DNS IP Settings	Configure the following DNS IP settngs. The default settings are shown below. Pre: 192.168.001.001 Alt: 000.000.000.000
DNS DYNAMI	Set the DNS options if using a domain name server in your system. DHCP must be enabled to use this feature. Yes: Used when a domain name server is being used in your system using dynamic IP services (default setting). No: Used when no domain name server is being used in your system (default setting).
DNS SUP	Sets the DNS SUPV options. DNS must be enabled to use this feature. DNS supervision is only available if the default DNS IP settings are used. If the setting are manually set, supervision is not supported. Yes: Enables supervision of the DNS Server. No: Provides no supervision of the DNS Server (default setting).
PORT CU	Used to set the port that the CU communicates through to the panel. The default is 02505.
Cloud Conn	Used to connect or disconnect the panel from the cloud using the KESMobile or Web Portal applications. The default setting is No. Yes: Used with the KESMobile and Web Portal applications to connect the panel to the cloud. No: Used with the KESMobile and Web Portal applications to disconnect the panel from the cloud.
Save	Used to save changes to the panel settings.

To program network receivers using static IP:

1. Display the panel configuration options menu. See "Panel programming" on page 106.
2. Choose IP Settings, and then choose IP.
3. Enter the network card's IP address.
4. Choose MSK.
5. Enter the network card's subnet mask number.
6. Choose GWY.
7. Enter the network card's gateway number.
8. Choose Save.
9. Press the Menu button to exit menu mode, or continue programming.

To program network receivers using dynamic IP (DHCP):

1. Display the panel configuration options menu. See "Panel programming" on page 106.

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2. Choose IP Settings.
3. Choose DHCP.
4. Choose Enable to select using dynamic IP. Choose Disable to use static IP.
5. Choose DHCP Supv.
6. Choose Enable to supervise the DHCP connections. Choose Disable to not supervise the DHCP connections.
7. Choose Save.
8. Press the Menu button to exit menu mode, or continue programming.

To program network receivers using a domain name server (DNS):

1. Display the panel configuration options menu. See "Panel programming" on page 106.
2. Choose IP Settings.
3. Choose DNS.
4. Choose Enable to select using dynamic IP. Choose Disable to use static IP.
5. Choose DNS Spvr.
6. Choose Enable to supervise the DNS connections. Choose Disable to not supervise the DNS connections.
7. Choose Save.
8. Press the Menu button to exit menu mode, or continue programming.

Port CU programming

To communicate with the CU, you must enter the same TCP/IP port number that you defined in the CU's TCP IP Port field.

To set the port CU:

1. Display the panel configuration options menu. See "Panel programming" on page 106.
2. Choose Port CU.
3. Enter the TCP/IP port number (1025 to 65535) that you entered in the Configuration Utility. The default is 2505. (Ports 1 to 1024 are reserved.)

Setting the Lock Remote Read function

Lock remote read controls incoming TCP/IP communications when a network card is installed and it is connected to a LAN or WAN. It restricts telnet, ping, and CU read requests at the panel so that unwanted access to the panel is restricted, almost like a firewall.

Note: If lock remote read is set to Yes, it remains active when no one is logged on to the panel or when someone uses a level one password to log on. When you log with a level two password, all communication options are available and there are no restrictions.

To set the Panel Configuration lock remote read option:

1. Display the panel configuration options menu. See "Panel programming" on page 106.
2. Choose Lock Rmt Read.
3. Select either:

   Yes: telnet, ping, and CU read access to the panel are restricted.

   No: telnet is restricted, but ping and CU read access to the panel are allowed.
4. Program other panel configuration options or choose Save if you're finished.
5. Press the Menu button to exit menu mode, or continue programming.

AC voltage programming

AC voltage is used to select the rated voltage of the mains supply connected to the control panel. The possible values are 110, 115, 120, 220, 230, and 240 VAC.

Note: Use 110, 115, and 120 only on 120 VAC control panel models. Use 220, 230, and 240 only on 230 VAC control panel models.

To set the AC voltage:

1. Display the panel configuration options menu. See "Panel programming" on page 106.
2. Choose AC Voltage.
3. Select 110, 115, 120, 220, 230, or 240.
4. Program other panel configuration options or choose Save if you're finished.
5. Press the Menu button to exit menu mode, or continue programming.

Panel operation programming

The panel operation options control how the panel operates. Most options have a factory default setting that you can accept or change. See "Factory default settings" on page 44.

Table 36: Panel operation options

Option	Description
Language	Select the desired display language: English, French, Portuguese, or Spanish.
Marketplace	Select the desired marketplace: US, CANADA, or Intl. (International)

Option	Description
AC fail delay	Set the AC fail delay time to: Off: Off-premises notification of an AC power failure is immediate. The "off" setting is not acceptable for UL/ULC installations. See "UL/ULC programming requirements" on page 37 for details. 1 to 15 hours: Delays the off-premises notification of an AC power failure by the time period selected. **Note:** The programmed delay in reporting an AC fail condition is applicable only when the system is normal (no events on the panel). If the system is in off-normal state (one or more events on panel), then the AC fail condition shall be reported immediately.
Zone resound	Set zone resound to: On: NACs resound each time a device in the zone goes into alarm even if they were silenced. Off: Inhibits the NACs from turning on again (after they were silenced) when a second device in the zone goes into alarm. The "off" setting is not acceptable for UL/ULC installations. See "UL/ULC programming requirements" for details.
Reset inhibit	Set the time to: Off: Panel reset is operational immediately after NACs turn on. 1 minute: Panel reset is operational one minute after NACs turn on.
Auto signal silence	Set auto signal silence to: Off: Does not allow the panel to automatically silence the signals. 5 to 30 minutes: Allows the panel to automatically silence the signals after the selected time period expires.
Suite signal silence	Set the timer duration. The range of possible values is 1 to 10 minutes. The default value is 10 minutes.
Daytime start	Set the start time for daytime sensitivity.
Nightime start	Set the start time for nighttime sensitivity.
Date	Set the date format to: U.S.: MM/DD/YYYY Canada: DD/MM/YYYY
LCD banner	Enter the desired banner text for line one and line two using the keypad. Each line can have up to 20 characters. When you have finished, choose Save. The LCD banner does not display when the panel is in any off-normal state.
Aux power reset	On: "Reset" temporarily turns off the resettable aux power output. This is required when the output is used for powering four-wire smoke or four-wire duct smoke detectors. Off: "Reset" does not turn off the resettable aux power output. This is required when the output is used to power remote annunciators.
Event notification	Set event notification to:

Option	Description
	Zone: When a device is a member of a zone, only the zone information is sent to the LCD, LEDs, printer, and dialer. Note, device level reporting configuration is not available. Zone/device: Zone information is sent to the LCD and LEDs. Device information is sent to the printer and dialer. Zone/device reporting locations can be configured through custom programming. Device: Only device information is reported, no zone information. LED annunciator operation *note: If you are* using the optional LED expanders, the zone LEDs are assigned to device addresses 1 to 32 on loop 1. For example, zone 1 LEDs (red and yellow) are assigned to device 1 on loop 1. If the device is a dual element detector (single address), then only the primary element is assigned to zone LED. All activations from the secondary element are ignored by the zone LED. Remote annunciator operation note: If you are using the optional remote annunciators, when an event takes place on loop 1, the loop displays on the annunciator LCD as loop 17 (not loop 1). The device number of the device reporting the event is the correct device number. So, if an event takes place on loop 1, the remote annunciators will display it as loop 17. Loop 2 events will display on the annunciator LCD as loop 2 events. Loop 3 events will display on the annunciator LCD as loop 3 events. Loop 4 events will display on the annunciator LCD as loop 4 events.
Standalone mode	When Standalone mode is selected Yes, and an SLC (loop) card loses communication with the panel for more than 18 seconds, the SLC card will enter standalone mode of operation. In this mode, the panel will: • Enter standalone alarm mode if the determined "alarm" input is part of standalone alarm configuration matrix. • Perform loop startup, closing isolators, monitoring input (Query alarm and Query status signature commands will be used for alarm confirmation) and activating outputs during standalone alarm condition • Not perform device startup, configuration or supervision operations. Device supervision (involving hardware type, personality, configuration, or mapping) is not performed during this mode. • Not perform any find serial number or find new status operations so that these statuses will remain available for use by the panel's loop controller code when communication restores. • Trigger outputs and relay groups based on the configuration provided by panel. • Generate routine sync strobe Signature messages. Synchronization will only be maintained on a per SLC card basis. • Display a Loop Card Fault on the panel with a Communication Fault in the details. **Note:** Refer to "Device type descriptions" on page 53 for device types supported by Standalone mode.
Save	Save your option settings.

To program Panel Operation options:

1. Press the menu button and choose Program.
2. Choose Advanced Program.
3. Enter a level two password.
4. Choose Panel Operation.
5. Program the options using Table 37 on page 126.

   Not all options shown in the table will be displayed on all systems.
6. When you finish programming each option, choose Save.
7. Press the Menu button to exit menu mode, or continue programming.

Event programming

Panel event programming

Panel events, such as reset, system startup, and battery low have an event notification setting for contact ID, dialer, NET, and printer, which controls where the event is sent when it takes place. Each event has a factory default setting that can be used with no additional programming (see Table 37 and Table 38).

Table 37: Default panel event settings

Panel event	Printer	Dialer	NET (1-8)	CID
Alarm ON	Yes	Acct 1	Yes	115
Aux. power 1 (disable)	Yes	None	No	n/a
Aux. power 1 (trouble)	Yes	Acct 1	No	312
Aux. power 2 (disable)	Yes	None	No	n/a
Aux. power 2 (trouble)	Yes	Acct 1	No	312
Battery charger (disable)	Yes	None	No	n/a
Battery charger (trouble)	Yes	Acct 1	No	309
Battery low (disable)	Yes	None	No	500
Battery low (trouble)	Yes	Acct 1	No	302
Battery missing (disable)	Yes	None	No	n/a
Battery missing (trouble)	Yes	Acct 1	No	311
Clear history	No	Acct 1	No	621
Cloud Provision Fault	Yes	None	No	354
Cloud Communication Fault	Yes	None	No	354
Panel Certificate Fault	Yes	None	No	354

Panel event	Printer	Dialer	NET (1-8)	CID
Common alarm	No	Acct 1	No	110
Common disable	No	Acct 1	No	500
Common monitor	No	None	No	n/a
Common supervisory	No	Acct 1	No	200
Common trouble	No	None	No	n/a
Common trouble for network dialer	Yes	None	No	n/a
Common trouble for telco dialer	No	Acct 1	No	373
Date	No	Acct 1	No	625
Dialer disable/remote disconnect	Yes	Acct 1	No	n/a
Dialer line 1 fault (disable)	Yes	None	No	n/a
Dialer line 1 fault (trouble)	Yes	Acct 1	No	351
Dialer line 2 fault (disable)	Yes	None	No	n/a
Dialer line 2 fault (trouble)	Yes	Acct 1	No	352
Dialer deliver fail	Yes	Acct 1	No	354
Dialer normal test	No	Acct 1	No	602
Dialer abnormal test	No	Acct 1	No	608
Dialer configuration	Yes	None	No	n/a
Drill	Yes	None	No	n/a
Internal fault	Yes	Acct 1	No	307
IP gateway trouble	Yes	None	Yes	n/a
Local AC power (disable)	Yes	None	No	n/a
Local AC power (trouble)	Yes	None	No	n/a
Net rcvr conf fault	Yes	Acct 1	No	354
Net comm fault (1-8) (disable)	Yes	None	No	500
Net comm fault (1-8) (trouble)	Yes	Acct 1	No	354
Outputs are latched	Yes	None	No	n/a
Panel silence	No	None	No	315
Program mode	Yes	Acct 1	No	627
Reset	Yes	Acct 1	No	305
Reset/Silence inhibit	No	None	No	n/a
Self test fault	Yes	None	No	n/a
Signal silence	Yes	None	No	n/a

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Panel event	Printer	Dialer	NET (1-8)	CID
System ground fault (disable)	Yes	None	No	n/a
System ground fault (trouble)	Yes	Acct 1	No	310
System startup	Yes	None	No	n/a
System wide AC power (disable)	Yes	None	No	n/a
System wide AC power (trouble)	No	Acct 1	No	301
Test fire	No	None	No	n/a
Time	No	Acct 1	No	625
Walk test	Yes	Acct 1	No	607
DHCP Communication Fault	Yes	Acct 1	No	354
DNS Communication Fault	Yes	Acct 1	No	354
Net Receiver 1 Primary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 2 Primary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 3 Primary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 4 Primary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 5 Primary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 6 Primary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 7 Primary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 8 Primary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 1 Secondary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 2 Secondary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 3 Secondary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 4 Secondary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 5 Secondary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 6 Secondary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 7 Secondary Communication Trouble	Yes	Acct 1	No	354
Net Receiver 8 Secondary Communication Trouble	Yes	Acct 1	No	354
IP Dialer Account 1 Normal Test	No	Acct 1	Yes	602
IP Dialer Account 2 Normal Test	No	Acct 1	Yes	602
IP Dialer Account 3 Normal Test	No	Acct 1	Yes	602
IP Dialer Account 4 Normal Test	No	Acct 1	Yes	602
IP Dialer Account 5 Normal Test	No	Acct 1	Yes	602
IP Dialer Account 6 Normal Test	No	Acct 1	Yes	602

Panel event	Printer	Dialer	NET (1-8)	CID
IP Dialer Account 7 Normal Test	No	Acct 1	Yes	602
IP Dialer Account 8 Normal Test	No	Acct 1	Yes	602
IP Dialer Account 1 Abnormal Test	No	Acct 1	Yes	608
IP Dialer Account 2 Abnormal Test	No	Acct 1	Yes	608
IP Dialer Account 3 Abnormal Test	No	Acct 1	Yes	608
IP Dialer Account 4 Abnormal Test	No	Acct 1	Yes	608
IP Dialer Account 5 Abnormal Test	No	Acct 1	Yes	608
IP Dialer Account 6 Abnormal Test	No	Acct 1	Yes	608
IP Dialer Account 7 Abnormal Test	No	Acct 1	Yes	608
IP Dialer Account 8 Abnormal Test	No	Acct 1	Yes	608

Table 38: List of non-restoring events

Panel event	CID
Test fire	n/a
Clear history	621
Panel silence	315
Set time	625
Set date	625
Dialer Normal Test	602
Dialer Abnormal test	608
IP Dialer Account 1 Surgard Normal Test	602
IP Dialer Account 2 Surgard Normal Test	602
IP Dialer Account 3 Surgard Normal Test	602
IP Dialer Account 4 Surgard Normal Test	602
IP Dialer Account 5 Surgard Normal Test	602
IP Dialer Account 6 Surgard Normal Test	602
IP Dialer Account 7 Surgard Normal Test	602
IP Dialer Account 8 Surgard Normal Test	602
IP Dialer Account 1 Surgard Abnormal Test	608
IP Dialer Account 2 Surgard Abnormal Test	608
IP Dialer Account 3 Surgard Abnormal Test	608
IP Dialer Account 4 Surgard Abnormal Test	608
IP Dialer Account 5 Surgard Abnormal Test	608
IP Dialer Account 6 Surgard Abnormal Test	608

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Panel event	CID
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IP Dialer Account 8 Surgard Abnormal Test	608

To program panel events:

1. Press the Menu button and choose Program.
2. Choose Advanced Program.
3. Enter a level two password.
4. Choose Panel Events.
5. Select the event to be programmed.
6. Choose Event Notification.
7. Configure the event notification options. See the default settings in the table above. Not all options shown here are displayed on all systems.

   Printer: Yes or No. This controls whether event information is sent to the printer

   Dialer:

   - Acct 1 & 2: Event information is sent to both dialer accounts
   - Acct 1: Event information is sent to dialer account one
   - Acct 2: Event information is sent to dialer account two
   - None: Event information is not sent to the dialer

   CID: Contact ID event code (000 to 999)

   Network: Controls whether event information is sent to the connected network
8. When you have finished configuring each page, choose Save.
9. Repeat steps 6 to 9 for each panel event.
10. Press the Menu button to exit menu mode, or continue programming.

Loop event programming

Loop events, such as loop fault, map fault, and loop initialization have an event notification setting for contact ID, dialer, NET (1-8), and printer, which controls where the event is sent when it takes place. Each event has a factory default setting that can be used with no additional programming.

Table 39: Default loop event settings

Loop event	Printer	Dialer	NET (1-8)	CID
Loop 1 initialization	Yes	None	No	n/a
Loop 1 fault (disable)	Yes	None	No	n/a

Loop event	Printer	Dialer	NET (1-8)	CID
Loop 1 fault (trouble)	Yes	Acct 1	No	331
Loop 1 map fault	Yes	Acct 1	NoNo	331
Loop 1 card fault (disable) (e.g., line fault)	Yes	None	No	n/a
Loop 1 card fault (trouble) (e.g., line fault)	Yes	Acct 1	No	333
Loop 1 Uncfgrd alarm (disable)	Yes	None	No	n/a
Loop 1 Uncfgrd alarm (trouble)	Yes	Acct 1	No	110
Loop 1 Uncfgrd trbl (disable)	Yes	None	No	n/a
Loop 1 Uncfgrd trbl (trouble)	No	None	No	n/a
Loop 1 map mismatch	Yes	None	No	n/a
Loop 1 over limits	Yes	None	No	n/a
Loop 1 mapping	Yes	None	No	n/a
Loop 2 initialization	Yes	None	No	000
Loop 2 fault (disable)	Yes	None	No	500
Loop 2 fault (trouble)	Yes	Acct 1	Yes	331
Loop 2 map fault	Yes	Acct 1	No	331
Loop 2 card fault (disable) (e.g., line fault)	Yes	None	No	500
Loop 2 card fault (trouble) (e.g., line fault)	Yes	Acct 1	No	333
Loop 2 Uncfgrd alarm (disable)	Yes	None	No	500
Loop 2 Uncfgrd alarm (trouble)	Yes	Acct 1	No	110
Loop 2 Uncfgrd trbl (disable)	Yes	None	No	500
Loop 2 Uncfgrd trbl (trouble)	No	None	No	331
Loop 2 map mismatch	Yes	None	No	331
Loop 2 over limits	Yes	None	No	331
Loop 2 mapping	Yes	None	No	000
Loop 3 initialization	Yes	None	No	000
Loop 3 fault (disable)	Yes	None	No	500
Loop 3 fault (trouble)	Yes	Acct 1	Yes	331
Loop 2 map fault	Yes	Acct 1	No	331
Loop 3 card fault (disable) (e.g., line fault)	Yes	None	No	500
Loop 3 card fault (trouble) (e.g., line fault)	Yes	Acct 1	No	333
Loop 3 Uncfgrd alarm (disable)	Yes	None	No	500
Loop 3 Uncfgrd alarm (trouble)	Yes	Acct 1	No	110
Loop 3 Uncfgrd trbl (disable)	Yes	None	No	500
Loop 3 Uncfgrd trbl (trouble)	No	None	No	331

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Loop event	Printer	Dialer	NET (1-8)	CID
Loop 2 map mismatch	Yes	None	No	331
Loop 3 over limits	Yes	None	No	331
Loop 2 mapping	Yes	None	No	000
Loop 4 initialization	Yes	None	No	000
Loop 4 fault (disable)	Yes	None	No	500
Loop 4 fault (trouble)	Yes	Acct 1	Yes	331
Loop 2 map fault	Yes	Acct 1	No	331
Loop 4 card fault (disable) (e.g., line fault)	Yes	None	No	500
Loop 4 card fault (trouble) (e.g., line fault)	Yes	Acct 1	No	333
Loop 4 Uncfgrd alarm (disable)	Yes	None	No	500
Loop 4 Uncfgrd alarm (trouble)	Yes	Acct 1	No	110
Loop 4 Uncfgrd trbl (disable)	Yes	None	No	500
Loop 4 Uncfgrd trbl (trouble)	No	None	No	331
Loop 2 map mismatch	Yes	None	No	331
Loop 4 over limits	Yes	None	No	331
Loop 2 mapping	Yes	None	No	000

To program loop events:

1. Press the Menu button and choose Programming.
2. Choose Advanced Program and enter the level 2 password.
3. Choose Loop Events.
4. Select the loop event.
5. Choose Event Notification.
6. Set the event notification. See the default settings in the table above.

   Printer: Yes or No. Specifies if event information is printed.

   Dialer:

   - Acct 1 & 2: Event information is sent to both dialer accounts
   - Acct 1: Event information is sent to dialer account one
   - Acct 2: Event information is sent to dialer account two
   - None: Event information is not sent to the dialer

   NET (1-8): Yes or No. Specifies if event information is sent to the connected network

   CID: Contact ID event code (000 to 999)
7. When finished, choose Save.

8. Repeat steps 6 to 9 for each loop event.
9. Press the Menu button to exit menu mode, or continue programming.

Unconfigured alarm event programming

You can assign the unconfigured alarm event to a correlation group and use it to turn on an output device. When assigned to a correlation group, every unconfigured alarm event turns on every output device in the correlation group. You can also program the event notification CID code for the unconfigured alarm. Auto programming will not assign an unconfigured alarm to a correlation group.

To program the unconfigured alarm event:

1. Press the Menu button and choose Programming.
2. Choose Advanced Program and enter the level 2 password.
3. Choose Unconfigured Alarm.
4. Choose the desired Loop Uncfgrd Alarm. (Loops 2 through 4 options are displayed only if you have more than one loop).
5. Choose Correlation Groups and enter the number of the correlation group.
6. Press Enter to toggle between possible values:

   To add the event to the group, choose Included.

   — or —

   To remove it from the group, choose Excluded.
7. Repeat steps 7 to 9 to add or remove the event from any remaining correlation groups to be configured.
8. Choose Save.
9. Choose Event Notification.
10. Choose Active.
11. Configure active event notification. (Not all the options shown here are displayed on all systems.)

    Printer: This controls whether event information is sent to the printer. Press Enter to toggle between Yes and No.

    Coder: Four-digit coded output that is played in response to alarm conditions (00-00-00-00 to 99-99-99-99).

Dialer options are listed below.

- Acct 1 & 2: Event information is sent to both dialer accounts
- Acct 1: Event information is sent to dialer account one
- Acct 2: Event information is sent to dialer account two
- None: Event information is not sent to the dialer.

CID: Contact ID event code (000 to 999).

NET (1-8): Yes or No. This controls whether event information is sent to the connected network.

12. When you have finished, choose Save.
13. Press the Menu button to exit menu mode, or continue programming.

Common trouble event programming

The common trouble event can be assigned to a correlation group and turn on an output device. When the common trouble is assigned to a correlation group, every output device in the correlation group turns on. Event notification can also be programmed for the common trouble.

Notes

- Every trouble event turns on the output devices in the correlation group it is assigned to, so make sure you are not assigning the common trouble to an output group that turns on devices that you do not want to turn on (e.g., NACs).
- If you assigned a NAC and the common trouble event to a correlation group and the NAC goes into trouble, when the NAC trouble clears the NAC outputs *do not* turn off even though the common trouble condition cleared because the NACs are not supervised. To turn off the NAC outputs, you must manually restore the NAC from the front panel's Control menu option.

To program the common trouble event:

1. Press the Menu button and choose Programming.
2. Choose Advanced Program and enter the level 2 password.
3. Choose Common Trouble.
4. Choose Trouble.
5. Choose Correlation Groups.
6. Enter the correlation group number to be programmed. (Values range from 001 to 199.).
7. Select Yes to add the common trouble to the correlation group or No to not add the common trouble to the correlation group.
8. Repeat steps 8 and 9 until the common trouble is added or removed from each correlation group needed.
9. Choose Save.

10. Choose Event Notification.
11. Choose Trouble.
12. Set trouble event notification.

    Printer: Yes or No. This controls whether event information is sent to the printer

    Coder:
    - Enter the four-digit coded output that is played in response to alarm conditions if a bell coder is installed. Values range from 00-00-00-00 to 99-99-99-99

    Dialer:
    - Acct 1 & 2: Event information is sent to both dialer accounts
    - Acct 1: Event information is sent to dialer account one
    - Acct 2: Event information is sent to dialer account two
    - None: Event information is not sent to the dialer
    - NET (1-8): Yes or No. Controls whether event information is sent to the connected network
    - CID: Contact ID event code (000 to 999)
13. When you have finished, choose Save.
14. Press the Menu button to exit menu mode, or continue programming.

Chapter 3
System operation

Summary

This chapter covers the front panel display, operating the panel, and controlling devices, NACs, and zones.

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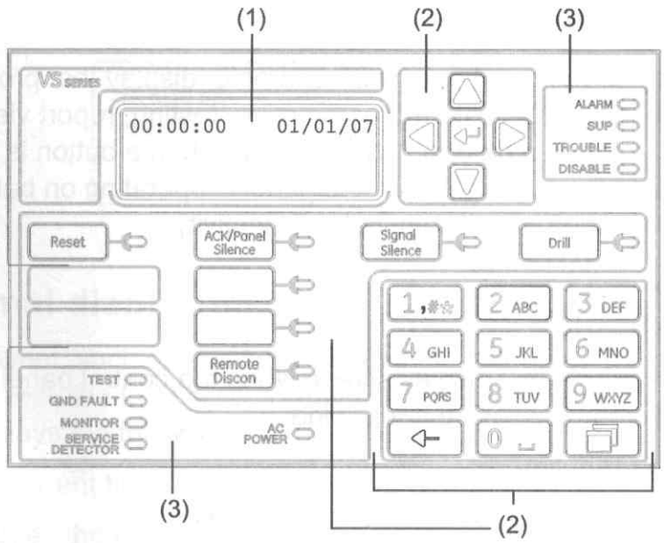
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Operation overview

Front panel display

The front panel display is the user interface for the control panel. The display is comprised of the LCD, LED indicators, and control buttons that are used to operate and program the panel.

Figure 48: Front panel display layout



(1) LCD display
(2) Control buttons
(3) System LEDs

Control panel operations

The control panel operates in either normal mode or off-normal mode.

Normal mode

The panel operates in normal mode in the absence of any alarm, supervisory, trouble, or monitor events. In normal mode, the control panel monitors the system. The panel and LCD remote annunciators display the time, date, and banner text, if programmed.

Off-normal mode

The panel operates in off-normal mode any time an event is introduced into the system. When this happens, the panel:

- Changes contact positions on appropriate common relays
- Activates alarm outputs (for alarm events only)
- Turns on the appropriate LEDs and the panel buzzer

- Executes the appropriate programmed output response for the input that signaled the event
- Communicates event information to the LCD display and the remote annunciator
- Sends a record of the event to the remote annunciator and to the control panel's history log
- Transmits event messages to a central monitoring station as programmed
- Prints event information on the printer if one is connected to the panel

LCD display screen

The liquid crystal display (LCD) is a 4-line by 20-character display that provides the user interface with the control panel for system programming, testing, report viewing, and off-normal event notification. The LCD has a backlight that turns on when a button is pushed or when an alarm event takes place in the system. When the panel is operating on battery power, the backlight automatically turns off after one minute of inactivity.

System normal display screen

The LCD shows the system normal display screen when the control panel is in the normal (quiescent) state. The screen displays the following:

- Time: Displays the current time.
- Date: Displays the current date in month/day/year format.
- Login: When you are logged on, the LCD shows "login:" and the password level in the top-right of the display, alternating with the date and other information being displayed in that area of the screen (e.g., reset).
- Banner area: Nothing is displayed in this area unless a custom banner has been added. See "Panel operation programming" on page 126.

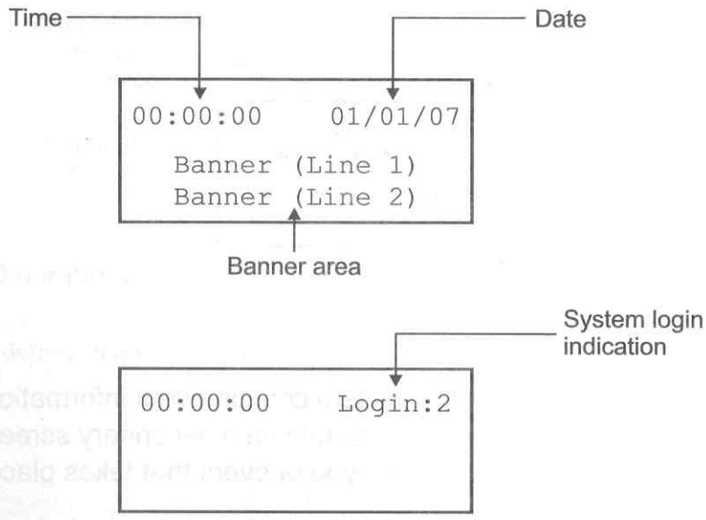
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Figure 49: LCD under normal conditions

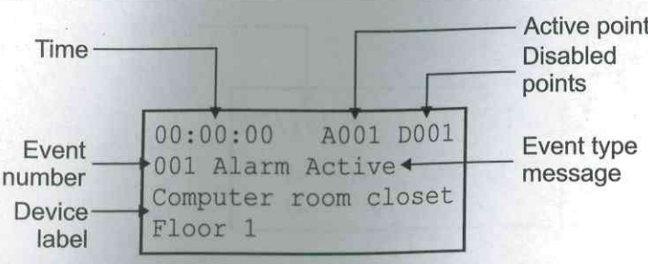


System off-normal display screen

During an off-normal event, such as an alarm, supervisory, monitor, trouble, prealarm, alarm verify, disablement, or test, the LCD screen changes to display important information about the event. The screen displays the following:

- Time: Displays the current time.
- Active points: Indicates the number of active points in the system. Increments or decrements as devices activate and restore. If you are logged on, this information toggles with "login."
- Disabled points: Indicates the number of disabled points in the system. If you are logged on, this information toggles with "login."
- Event number: The event number for the active event currently displayed in the queue.
- Event type message: The event message for the type of event taking place. Example: Alarm, Active, Waterflow, Trouble, Supervisory, or Monitor.
- Device label: The label for the device, either the default label (Loop ## Device ###) or a custom programmed label with up to forty characters.

Figure 50: LCD under off-normal conditions



Event details display screens

The off-normal events that take place in the system contain event information that is displayed on the LCD screen. Additional information is available on a secondary screen. The screen displays the following information based on the type of event that takes place:

- Loop number: The loop the device is on
- Device number: The device address (number)
- Device type: The device type that was assigned in programming
- Serial number: The serial number assigned to the device
- Internal event number: See "Event ID numbers and descriptions" on page 156
- Zone number and device label for devices in zones
- Annunciator number and label
- Other information when it is available

Figure 51: Device event details display screen

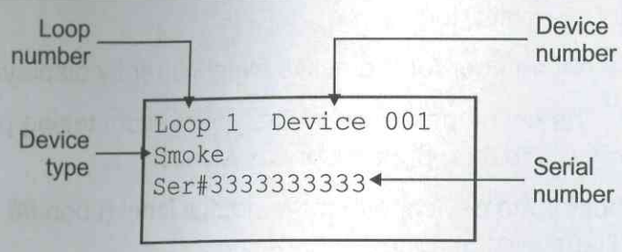
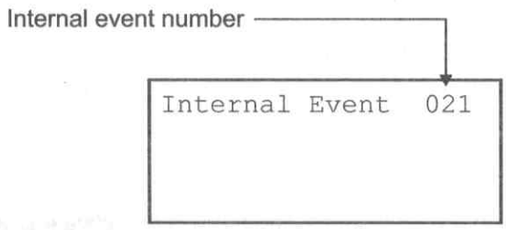
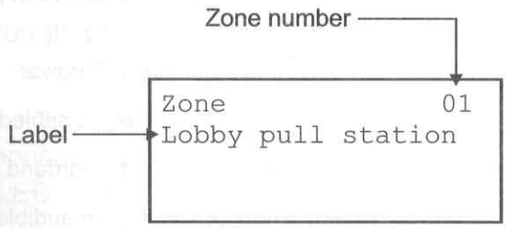


Figure 52: Internal event (panel and loop events) details display screen



Note: See "Event ID numbers and descriptions" on page 156 for a list of event numbers.

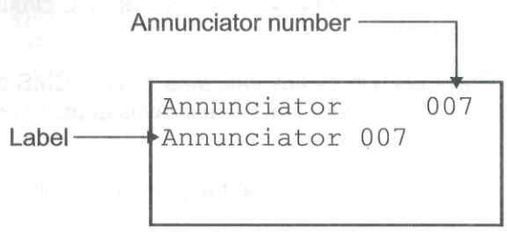
Figure 53: Zone event details display screen



Note: You can scroll through the list of all devices in the zone reporting an event:

- Navigate to the desired active zone using the up arrow or down arrow buttons.
- When at the desired active zone, press the enter button to view active devices inside the zone.
- Once inside the zone, press the down arrow button to see each active device within that zone.

Figure 54: Annunciator event details display screen



To view event details:

1. When an event takes place, press Enter on the front panel.
2. View the event details.

   The event details screen is displayed for 15 seconds and then returns to the previous screen if there is no activity.

System LEDs

LEDs indicate system events and system operation.

Table 40: System LEDs

LED	Description
Alarm	Red LED. Flashes when there is an active alarm event on any loop. On steady once acknowledged.
Trouble	Yellow LED. Flashes when there's a fault with a monitored circuit or system component or when a circuit is disabled. On steady once acknowledged.
Sup (Supervisory)	Yellow LED. Flashes when there is an active supervisory event on any loop. On steady once acknowledged.
AC Power	Green LED. On when the panel has AC power.
Disable	Yellow LED. On steady when there is a disabled circuit or alarm relay.
Ground Fault	Yellow LED. On steady during an active ground fault.
Test	Yellow LED. Steady when performing an audible walk test. Flashing indicates a silent test.
Monitor	Yellow LED. Flashes when there is an active monitor event on any loop. On steady once acknowledged.
Service Detector	Yellow LED. Indicates that detector needs servicing. Six months before the detector goes end of life, the panel posts a device maintenance alert and the Service Detector LED goes on steady. When the detector reaches end of life, the detector goes into trouble and the panel posts a device trouble alert. The Service Detector LED goes off, and the Trouble LED flashes.
Signal Silence	Yellow LED. On steady indicates that NAC circuits are turned off but the panel is still in alarm.
Remote Disconnect	Yellow LED. On steady indicates that the CMS devices (dialer and network card) are disabled or that the alarm relay is enabled or disabled when the dialer is set to modem only.
Drill	Yellow LED. Indicates that the panel is in drill.
Reset	Yellow LED. Indicates that the panel is going through a reset.
Panel Silence	Yellow LED. Indicates that the panel has been silenced during an active trouble, supervisory, monitor, or alarm event and indicates that new event activations have been acknowledged.
User keys	Yellow LED. Indicates that the programmed key function is active.

LED display expander LEDs

The D16L-VS LED Display Expander provides LED annunciation for up to 16 zones. The expander provides two LEDs for each zone. You can install two display expanders in the panel.

LED operation zones 1 through 12

(Also applies to zones 17 through 28 if the second LED expander is installed.)

- LED 1 - Alarm: Red LED flashes
- LED 2 - Trouble: Yellow LED flashes

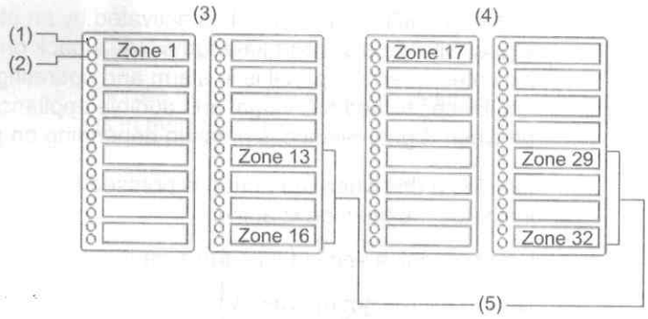
LED operation zones 13 through 16

(Also applies to zones 29 through 32, if the second LED expander is installed.)

- LED 1 - Bicolor
  Alarm: Red LED flashes
  Non-alarm (Monitor/Supervisory) active: Yellow LED flashes
- LED 2 - Trouble: Yellow LED flashes

For CAN/ULC-S527compliant installations, CO detectors with a CO alarm device type must be programmed using zones with bicolor LEDs (zones 13 through 16 (16 zone expander) and 29 through 32 (32 zone expander)) and the zone type must be set to Supervisory. The panel Event Notification must be set to Zone. Using this configuration ensures that when the "CO alarm" device type goes active, the panel displays a yellow LED indication instead of a red.

Figure 55: LED zone designations



(1) LED 1
(2) LED 2
(3) LED expander 1
(4) LED expander 2
(5) Alarm/non-alarm and trouble zone LEDs

Control buttons

Common control buttons

Common control buttons on the front panel perform a variety of functions. Table 41 below identifies the common controls and describes their functions.

Table 41: Common controls

Button	Description
Remote Disconnect	CMS devices (dialer and network card): Disables or enables the dialer and network CMS connection and purges all pending event transmission to the CMS. Has no effect on the alarm relay. Dialer set to modem only (and no network card CMS configured): Disables or enables the common alarm relay. Systems with a panel or device NAC configured as city tie: Disables or enables the city tie NACs. The button LED indicates that the function is active. **Note:** A minimum of a level one password is required to operate.
Reset	Initiates a system reset. The button LED indicates the function is active.
ACK/Panel Silence	Silences the panel and annunciator sounders during an active trouble, supervisory, or alarm event and acknowledges new event activations. The button LED indicates the function is active.
Signal Silence	Silences notification appliances activated by an alarm condition. Pressing Signal Silence a second time turns NACs back on. The button LED indicates when the panel is in alarm and operating with notification appliances turned off. Visual and audible appliances may or may not turn off when Signal Silence is pressed depending on panel programming.
Drill	Initiates a drill when the button is pressed for two seconds. The button LED indicates the function is active. Pressing drill a second time turns off the drill function. **Note:** Drill will not operate with an active alarm or supervisory event at the panel.

Buttons for working with menus and entering text

Table 42 below describes the menu command buttons and the buttons on the alphanumeric keyboard.

Use the alphanumeric keypad to enter passwords, create text labels, and enter device and group numbers. Values appear on the LCD screen as you press the button.

Note: You can use each number button to enter multiple values. For example, use the "2" button to enter either the number "2" or the letters "A," "B," "C," or "a," "b," "c."

To enter text, numbers, or symbols:

1. Press the button once to enter the number, or press again to scroll through the alternate values. Wait for the cursor to move to the next position.
2. Enter the next number, character, or symbol.

   Note: To select an alternate case, continue to press the key until the letter shows in the desired case. The following letters appear in the same case.
3. When you have finished, press the Enter button.

Table 42: Buttons for working with menus and entering text

Button	Description
Menu 	Opens and exits menu mode. Menu mode allows you see the report, test, control, program, and diagnostic options.
Left Arrow 	Moves the cursor to the left (when the panel is in display mode) Scrolls through the available values for a programming option (when the panel is in menu mode)
Right Arrow 	Moves the cursor to the right (when the panel is in display mode) Opens a submenu or scrolls through available values for a programming option (when the panel is in menu mode)
Up Arrow 	Scrolls back to the previous event (when the panel is in display mode) Moves the cursor up (when the panel is in menu mode)

Button	Description
Down Arrow 	Scrolls forward to the next event (when the panel is in display mode) Moves the cursor down (when the panel is in menu mode)
Enter 	Displays detailed information about the selected event (when the panel is in display mode) Opens a submenu or jumps to the Save function in the menu so you can quickly save your changes (when the panel is in menu mode) Enters the selected data into the system (when you are entering data)
Cancel 	Returns to the previous screen Erases the previous character (when you are entering data) Exits the detailed information display and returns to the event list (when the panel is in display mode) Returns to the previous menu level or (if you are at the highest menu level) exits menu mode Clears the current entry and moves the cursor to the left (when you are entering data) Exits entry mode and returns to menu mode (if the cursor is at the leftmost position)
Space 	Enters the number "0" (when pressed once) Enters a space (when pressed twice)
Symbol 	Enters the symbol "#" (when pressed once) Enter the "*" symbol (when pressed twice) Enters a comma (when pressed three times)

Note: When the line on the LCD displays ">", "<", or "<>" as its last character, use the arrow keys to make your selection; otherwise, use the Enter key.

Programmable buttons (Key #1 and Key #2)

You can program the two unlabeled control buttons on the front panel to operate the LCD and perform the functions listed in Table 43 on page 151. Operating the buttons requires a level 2 password. Label the buttons for their function using the slip-in label.

Table 43
Functio
Activate
Disable
Unlatch
Restore
None
Alarm ON
Progr
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Rest
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