Operating the DS9400 Fire Alarm Control/Communicator
Outline

I. Description
II. Features
III. Installation
IV. System Operation
V. System Programming
VI. UL Requirements
VII. Fire Safety
VIII. System Options
I. Description

What is the DS9400 AddressiFire™ 255 Fire Alarm Control/Communicator?
I. Description

The DS9400 AddressiFire™ 255 Fire Alarm Control/Communicator is a four-zone panel (expandable to eight zones) that can support up to 20 conventional two-wire detectors per loop, or any number of four-wire detectors (depending on available power).
I. Description

- Two Notification Appliance Circuits (NACs) provide up to 4A of 24V power to operate horns, strobes, bells and other notification appliances.
I. Description

- By adding a DS9431 Multiplex Expansion Module, the DS9400’s conventional system features are enhanced by adding addressable point capability, increasing the number of relay outputs and allowing for more system users.
II. Features

BUILT-IN ALPHA KEYPAD SUPPORT:

• The keypad built into the Control/Communicator is an alphanumeric keypad that provides a two-line, 16-character (per line) LCD display.

• Text is freely programmable for zone descriptions.

• The system is completely keypad programmable. No need for expensive hand-held programmers.
II. Features

REMOTE ALPHA KEYPAD SUPPORT:

• The DS9447 Remote LCD Keypad functions like the built-in keypad on the DS9400. It provides a two-line, 16-character (per line) LCD display. Text is freely programmable for zone descriptions. Up to four DS9447 Remote LCD Keypads are allowed per system.

• Maximum Wire Length per DS9447: 1,000 ft.

• Maximum Wire Length Total in System: 4,000 ft.

• Wire Type: 4-conductor #22 AWG or #18 AWG.

• NOTE: No more than 2 keypads are allowed on any 1,000-ft. run.
II. **Features**

**EASY USER INTERFACE:**

- Nine labeled function keys allow the user to easily silence bells/sirens, reset smoke detectors or view history events. Menu-driven keypad programming allows for customizing of the control panel.

*Function Keys:* Clear, Prog, Cmnd, Drill, Disable Test, History, Silence, Reset
II. Features

16 PERSONAL ID NUMBERS (PINs):

• The system supports 16 4-digit PINs.

• The PINs may contain any combination of digits, and may be programmed with 4 different levels of authority.

• These PINs may be restricted from silencing, resetting, disabling and/or programming the system.
II. Features

ZONES:

- The DS9400 accepts up to 4 (expandable to 8) input zones. These zones are completely flexible and can be programmed to provide several different functions.

- **Zone Inputs:** 4 circuits, expandable to 8; 2.21K End-of-Line resistor

- **Initiating Circuits:** All zones work with two-wire or four-wire smoke detectors. 20 two-wire detectors maximum per zone. 3mA maximum total detector standby current per point.
II. Features

SMOKE DETECTOR ALARM VERIFICATION:

- Should an alarm occur, the DS9400 may be programmed to perform an automatic reset on the smoke detectors.

- If a second alarm on any zone occurs within the verification window, an immediate fire alarm results.

- Potential false alarm occurrences are reduced, and fast response to an alarm is still provided.
II. Features

100 EVENT HISTORY BUFFER:

• A 100 event history buffer, which can be read at the built-in keypad or the DS9447 Remote LCD Keypads, keeps track of events by time and date.
II. Features

FLEXIBLE DIGITAL COMMUNICATION:

• The communicator will work into most alarm receivers that are in use today. The DS9400 supports these formats:

  • SIA (100 or 300 Baud)

  • Contact ID

  • BFSK

  • 4/2 Tone Burst

  • 3/1 Tone Burst
II.  Features

THREE TELEPHONE NUMBERS:

• The system supports two 20-digit telephone numbers with a three or four digit account code for each.

• Each phone number can be individually configured for the type of communication format and choice of pulse or tone dialing.

• The third phone number is reserved for remote programming.
II. Features

EE MEMORY:

• The panel uses EEPROM technology, thereby allowing it to retain all program memory through a total power failure.

• None of the system programming or user codes will be lost.
II. Features

ENCLOSURE:

• The standard enclosure is manufactured from 18 Ga., cold-rolled steel.

• A keyed lock is included, and the LEDs and display are visible through the door.

• The transformer and backup batteries are housed inside the enclosure.

• **Dimensions:** 15 in. W x 20.75 in. H x 4.25 in. D
II. Features

POWER REQUIREMENTS:

• **Input Power:** 120 VAC, 1.5 A

• **NAC Power:** 20 - 30 VDC unfiltered, 4 A

• **Auxiliary Power:** 20 - 30 VDC unfiltered, 1 A

• **Initiating Circuit (Smoke) Power:** 20.4 - 28.2 VDC filtered, 1A

• **Option Bus Power:** 12 V ± 5%, 500 mA

• **Optional Standby Batteries:** Two 12 V (in series), 7 - 40 AH
II. Features

ON-BOARD OUTPUTS AND RELAYS:

• Outputs: There are two on-board NAC outputs (NAC 1 and NAC 2) on the DS9400 board. These are 24 V outputs for notification appliances with up to 2.5 A capacity (limited by overall 4.0 A capacity) on each circuit. Both outputs are wired for standard Class B operation.

• Relays: The DS9400 has two on-board Form “C” relays rated at 1 A, 28 VDC. These relays can be programmed for a variety of system events.
II. Features

REMOTE ANNUNCIATORS:

• The DS9400 supports a maximum of 8 DS9445 LCD Annunciators. These annunciators can identify the location of a fire alarm for up to eight zones.

• **Maximum Wire Length:** 1,000 ft.

• **Wire Type:** 4-conductor, unshielded #18 AWG quad fire rated wire; can be home-run or daisy-chained

• **Maximum Wire Length Total:** 4,000 ft. per bus
• **NOTE:** No more than one annunciator is recommended on any 1,000 ft. run.
II. Features

MULTIPLEX EXPANSION TECHNOLOGY:

• The addition of a DS9431 Multiplex Expansion Module enhances the DS9400’s conventional system features:

  • Expands the base system to 255 total points

  • Increases the number of relay outputs to 58

  • Adds an additional 400 events to the history buffer for a total of 500 non-volatile events

  • Allows for up to 100 system users (an addition of 84 PINs to base system)
II. Features

LISTINGS:

• Commercial Fire Alarm

• **Type Service:** Auxiliary, Local, Central Station and Remote Station

• **Initiating:** Automatic, Manual, Sprinkler Supervisory and Waterflow

• UL Standard UL864
II. Features

BOARD LAYOUT:

Before servicing this equipment, remove all power including the transformer, battery and phone lines.

IMPORTANT!
III. Installation

When Installing the DS9400:

- The control panel must be installed in accordance to the National Electrical Code (NFPA 70), the National Fire Alarm Code (NFPA 72) and the Authority Having Jurisdiction.

- The DS9400’s enclosure should be mounted in a convenient location for servicing and maintenance.

- Mount the DS9400’s enclosure to the desired wall and the DS9400 board in the enclosure using the supplied hardware in accordance to the installation guide.

- Field wiring is routed into and out of the enclosure via knockouts provided on the enclosure.

- When all circuits are determined to be free of earth grounds and wire-to-wire shorts, connect the primary power to the DS9400 board and then install the batteries in the locations provided in the enclosure.
III. Installation

Terminal Connections: Power Supply

Incorrect connections to any of the terminals can result in personal injury and damage to the DS9400.

WARNING!

To unswitched 120 V, 60 Hz circuit
III. Installation

Terminal Connections: Backup Batteries

- 24V operation requires two 12V batteries connected in series for a combined voltage of 24V.

Battery connection for 24V operation.

Replace the batteries every three to five years.
III. Installation

Terminal Connections: Typical Fire Wiring

- Two-wire Detector Wiring

Only use UL Listed compatible smoke detectors!

<table>
<thead>
<tr>
<th>Smoke Power: 24V, 1.0A max. (filtered)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refer to Technical Service Note P/N: 31142 for compatible devices.</td>
</tr>
</tbody>
</table>

| Aux. Power: 24V, 1.0A max. (unfiltered) |

| Earth Ground |

| Input Points 1-4: |
| (supervised) Points are intended for connection of Normally Open/Normally Closed alarm contacts. They may also be used for compatible 2-wire smoke detectors. |
| All EOL resistors are P/N: 25899, UL listed. |
| Initiating devices are Class B, Style B. |
| Two-Wire Compatibility Identifier “A”. |

See the System Option section for more details on detector wiring.
## III. Installation

### Terminal Connections: Typical Fire Wiring

- **Four-wire Detector Wiring**

  ![Diagram of detector wiring](image)

  **Only use UL Listed compatible smoke detectors!**

<table>
<thead>
<tr>
<th>Smoke Power: 24V, 1.0A max. (filtered)</th>
<th>Refer to Technical Service Note P/N: 31142 for compatible devices.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aux. Power:</strong> 24V, 1.0A max.</td>
<td>(unfiltered)</td>
</tr>
<tr>
<td><strong>Earth Ground</strong></td>
<td></td>
</tr>
</tbody>
</table>
  | **Input Points 1-4:**                | (supervised) Points are intended for connection of Normally Open/ Normally Closed alarm contacts. They may also be used for compatible 2-wire smoke detectors. All EOL resistors are P/N: 25899, UL listed. Initiating devices are Class B, Style B. Two-Wire Compatibility Identifier “A”.

**IMPORTANT!**

Only use UL Listed compatible smoke detectors!

See the System Option section for more details on detector wiring.

**NOTE:**
III. Installation

Terminal Connections: NAC Wiring

**IMPORTANT!**

Only use UL Listed compatible NAC devices!

**NOTIFICATION APPLIANCE CIRCUIT:**

<table>
<thead>
<tr>
<th>NAC 1+ NAC 1-</th>
<th>+24V while in alarm; ground while in standby. Ground while in alarm; supervisory voltage while in standby.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAC 2+ NAC 2-</td>
<td>+24V while in alarm; ground while in standby. Ground while in alarm; supervisory voltage while in standby.</td>
</tr>
<tr>
<td>BAT - BAT +</td>
<td>Requires two 12V batteries, in series, for a combined voltage of 24V. Charge current = 1.1A, max. Caution: Do not short terminals - explosion and burn hazard.</td>
</tr>
</tbody>
</table>

**NOTE:**

Shared cable is not recommended for NAC wiring.
III. Installation

Terminal Connections: Option Bus

- All option bus devices must be connected to the same bus, either Bus A or Bus B.

- Do not connect some devices to Bus A data terminals (“YA”, “GA”) and some to Bus B data terminals (“BA”, “BB”).

- Power (“RA”, “RB”) and ground (“BA”, “BB”) terminals may be connected interchangeably to either set of terminals.

Shared cable is not recommended for Option Bus wiring.

NOTE:
III. Installation

Terminal Connections: Relays

Relay 2
Contacts rated at 5.0A, 24V
Relay 1

For connection to listed power limited Class 2 or Class 3 sources only.
III. Installation

Terminal Connections: Phones

Shared cable is not recommended for telephone wiring.
IV. System Operation

Understanding the Built-in Keypad

POWER LED: the green Power LED is on when AC power is present, and flashes when the unit is operating from battery power.

TROUBLE LED: the yellow Trouble LED is lit whenever the system has detected a problem with its wiring or internal circuitry. The Trouble LED flashes while programming mode is active, and whenever inputs are not active, as during smoke power reset or alarm verification.

ALARM LED: the red Alarm LED lights whenever the system has registered an alarm and has not been reset.

SILENCED LED: the yellow Silenced LED lights when an alarm or trouble condition has been manually silenced by the user. It turns off when the condition that was silenced is corrected.
IV. System Operation

Understanding the Built-in Keypad

**DRILL Key:** The Drill key is used to activate the NACs manually. It creates a history log entry and can optionally be reported to the central station.

**DISABLE Key:** The Disable Key allows the system to disable or re-enable inputs, NACs or relays (outputs) and the dialer.

**TEST Key:** The Test Key allows one of 7 special test modes to be selected.

**HISTORY Key:** The History Key allows the record of system events to be viewed.

**CLEAR Key:** The Clear Key can be used to delete incorrectly entered data. While programming, it can be used to exit menus or exit the programming mode entirely.
IV. System Operation

Understanding the Built-in Keypad

**PROG Key:** The Programming Key will select the programming mode.

**CMND Key:** The Command Key is used to accept data when in the programming mode.

**SILENCE Key:** The Silence Key quiets the bells/sirens for an alarm or trouble condition if the system has been configured accordingly.

**RESET Key:** The Reset Key briefly turns off power to the detectors to reset them and clears any off-normal conditions.
IV. System Operation

Understanding the DS9447 Keypad

• The DS9447 Remote LCD Keypad is an alphanumeric LCD keypad.

• Up to 4 of these keypads can be mounted apart from the main control/communicator to provide additional locations for system status and control.

• The LCD display and keys operate identically to those of the built-in keypad on the control panel.
IV. System Operation

Understanding the DS9447 Keypad

To increase the volume, press the [1] key.

To decrease the volume, press the [4] key.

To adjust the volume, press and hold the [*] key.

To adjust the volume, press and hold the [*] key.
To adjust the display backlight intensity, press and hold the [1] key.

To increase the display backlight intensity, press the [3] key.

To decrease the display backlight intensity, press the [6] key.

To adjust the display backlight intensity, press and hold the [1] key.
IV. System Operation

Understanding the DS9447 Keypad

- Any of special test modes can be selected using the Test Key found on the built-in and DS9447 keypads: Walk Test, Communicator Test, Call for Remote Programming, Test Battery/NAC Circuits, Answer for Remote Programming, Manually Activate Outputs, Read Zone Input Levels, Addressable Point Test (MUX Test) and Sensitivity Test.
IV. System Operation

Modes of Operation

There are three modes of system operation for the DS9400 Control/Communicator:

• ALARM

• TROUBLE

• NORMAL
IV. System Operation

Modes of Operation: ALARM

• When an alarm occurs, the top line of the display will show “FIRE ALARM”, or a similar message depending on the type of alarm. This display will override any other system display.

• The second line of the display will show the number of the point that is in alarm, alternating with the programmed description for that point.

• If more than one alarm (or other off-normal condition) is active, they will be shown on the second line of the display one after another.

• The built-in sounder turns on with a steady tone and outputs programmed to activate with the current alarm condition(s) will activate.

• When the panel is not scanning the inputs, as during smoke power reset, alarm verification delay, or on-site programming, the trouble LED flashes to indicate this condition.
IV. System Operation

Modes of Operation: ALARM

• If the system is configured to allow alarm silencing, the [Silence] key turns off the horns/bells, but does not reset the alarm status and does not return the tripped input to normal service.

• Detectors that were tripped will stay in alarm and can be checked (usually by means of an LED on the detector) to see which one caused the alarm.

• Once the detector(s) causing the alarm has been identified, the system should be reset to return it to normal service.
IV. System Operation

Modes of Operation: ALARM

• The [Reset] key clears the system alarm status and briefly turns off the power to reset the detectors.

• This command is required after any fire alarm affecting a point programmed for latching operation (the normal configuration).

• This operation is also required to reset a Class A, Style 6 Multiplex Signaling Line Circuit (SLC) wiring fault troubles, and to reset trouble indications from DS9411 Class A Zone Converters.
IV. System Operation

Modes of Operation: TROUBLE

- When a trouble condition occurs (e.g. wiring for a point is cut, AC power fails, etc.), the sounder will activate with a beep every 10 seconds.

- The Trouble LED will light and the LCD will display “SYSTEM TROUBLE”, followed by a description of the trouble condition.

- The system can diagnose and display a variety of trouble conditions, including those affecting the input points, NAC circuits, power, battery, system grounding and internal operations of the fire panel.

**IMPORTANT!** Notify the installing company immediately if the system trouble message is displayed!
IV. System Operation

Modes of Operation: TROUBLE

• The system trouble beep can be silenced with the [Silence] key. After the problem has been fixed, press the [Reset] key to clear the “SYSTEM TROUBLE” display.

• To prevent intermittent system faults (such as ground fault or initiating loop open fault) from interfering with central station operations, the panel has a feature to limit reporting to 100 trouble reports in 24 hours.

• When this limit is exceeded, the panel transmits a “DATA LOST” report and inhibits additional trouble reports. Non-trouble reports are not limited.

• The 24-hour period resets at 9:00 AM or when a manual test report is sent.
IV. System Operation

Modes of Operation: TROUBLE

• Control panel alarms and problems are indicated by one of the following messages on the top line of the display:

<table>
<thead>
<tr>
<th>DISPLAY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE ALARM</td>
<td>One or more points is in alarm.</td>
</tr>
<tr>
<td>SUP’VISORY ALARM</td>
<td>A supervisory condition exists (e.g. a shut-off valve is closed).</td>
</tr>
<tr>
<td>SYSTEM TROUBLE</td>
<td>A trouble condition exists (e.g. wiring for a point is cut, AC power fails, etc.).</td>
</tr>
<tr>
<td>POINT TROUBLE</td>
<td>One of the points is not responding to the control panel.</td>
</tr>
<tr>
<td>DISABLED DEVICE</td>
<td>An input or output device has been disabled.</td>
</tr>
</tbody>
</table>

Contact the installing company if these problems persist.

IMPORTANT!
IV. System Operation

Modes of Operation: NORMAL

• When the system is operating normally, it displays “SYSTEM NORMAL” on the top line of the display, the Power LED is on steady and no other LEDs are lit.

• If the system is programmed to require a PIN, the second line of the LCD screen will display “ENTER PIN”.

• If no PIN is needed, the control panel will show a rotating menu of possible user actions.
Basic Use of System: Scrolling Menus

- Once a PIN number, if required, has been entered, the keypad will display “SYSTEM NORMAL” on the top line and “SELECT:” on the bottom line followed by these scrolling menu items: PROG/0, CMND/#, TEST, HISTORY, DISABLE and DRILL.

- The scrolling menu items will flash one at a time at 1-second intervals through the list and then start over.
IV. System Operation

Basic Use of System: Selecting Menu Items

• Depending on what system level you are at (menu, sub menu, sub-sub-menu, etc.), there are 3 ways to select an item:

1) In the Main Menu, TEST, HISTORY, DISABLE and DRILL each have an exclusive button on the keypad. To select one of these menu items, press the corresponding button.
IV. System Operation

Basic Use of System: Selecting Menu Items

2) As in the cases of Main Menu items PROG and CMND, the PROG and CMND keys are not exclusive - they are shared with other characters. The character sharing the corresponding key is displayed in the second line following a forward slash. To select one of these items, press the corresponding key.
IV. System Operation

Basic Use of System: Selecting Menu Items

3) The corresponding key to a sub-menu item may be displayed in the second line preceding a dash. Press the corresponding key to select that item.

While a menu like this is active, you do not have to wait for the desired menu item to appear before making your selection. Any item on the current menu rotation can be selected at any time.
IV. System Operation

Basic Use of System: Other Functions

- **Once You Have Selected a Main Menu Item:** When a Main Menu item is selected, the keypad may prompt you to enter your PIN. If so, enter your number and press the [Cmd/#] key. The display will automatically go to the sub-menu display.

- **Backtracking Through a Menu:** To return to a previous screen at any time, press the [Clear/*] key. To return to the SYSTEM NORMAL display, press the [Clear/*] key and backtrack out of the menu until you reach SYSTEM NORMAL.

- **Entering Data:** When a sub-menu item prompts you to enter data, do so followed by the [#] key. If data already exists at a particular location, it will be displayed. You can either accept that data or enter new data over it. When the [#] key is pressed to enter the data, the display will return to the sub-menu display you were previously in.
IV. System Operation

Basic Use of System: Other Functions

• **Drill:** The drill command activates all NACs and no relays. It creates a history log entry and can optionally be reported to the central station.

• **Disable:** The disable command is used to disable input points, outputs or the dialer. When any device is disabled, the system will show this condition on the LCD and on the system trouble LED. The “disable all” inputs operation takes several seconds to perform, during which time the system display remains fixed.

• **History:** The history option lists all the system events that have occurred. This option can be selected from the Main Menu by pressing the [History] key. After pressing the [History] key, the most recent system event will be displayed on the top line of the LCD with the time and date below it.
IV. System Operation

Basic Use of System: Other Functions

• **History example:** You have already started at the Main Menu and pressed the [History] key.

• Press [7] to backtrack through the history buffer.

• Press [9] to scroll to the next event record.

![](image)

In systems without a DS9431 Multiplex Expansion Module, all history events will be cleared if the system loses all power.

**IMPORTANT!**
IV. System Operation

Point/Zone Mapping

- The panel supports a flexible system to map input points to output points.
- The system is defaulted so that all NAC outputs are activated by a fire alarm.
- By programming output zones, you can implement almost any desired output activation scheme, such as “floor above/floor below” activation or conditional elevator recall.

- **Input Points**: Initiating devices such as smoke detectors, pull stations, etc.

- **Zone**: A group of input points (Zones 1-50 are configurable, 52-63 are activated automatically).

- **Output Points**: NAC devices such as bells, strobes, etc. Relays are also output points.

  Inputs activate zones; zones activate outputs.

**IMPORTANT!**
IV. System Operation

Point/Zone Mapping

Inputs activate zones; zones activate outputs.

1 1
2 2
3 3

Input Points Zones Output Points
IV. System Operation

Point/Zone Mapping

Zones 1-50 are available for the installer to program. Each input may activate one zone, however, any number of inputs may drive the same zone.

Zones above 50 are automatically activated by inputs. For example, any input that is configured as a “waterflow” type will activate Zone 61 when it is alarmed. Any output driven by Zone 61 will activate when any waterflow type point is alarmed.

Zones drive outputs. Up to 4 zones may drive each output, and when any of the zones driving an output are active, the output will be active.
IV. System Operation

Personal Identification Numbers

Your system may have up to 100 different PINs. Each PIN is 4 digits long.

A PIN may be assigned to each User Number 00-15.

User codes 16-99 are available with the installation of a DS9431 Multiplex Expansion Module.

There is one PIN for each User Number. Attempting to assign the same PIN to multiple User Numbers will result in the 3-beep error tone, and the change will not be made.

User Number 00 is designated as a Master Code. It can be used to silence alarms, reset, disable and program the unit.
IV. System Operation

PIN Authority Levels

Authority levels are assigned to PINs to determine which functions each user will be able to perform.

<table>
<thead>
<tr>
<th>PIN Authority Level</th>
<th>Allowed Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum (1)</td>
<td>All panel operations, including programming.</td>
</tr>
<tr>
<td>Medium (2)</td>
<td>System test modes, fire drill, reset, disable, silence, view history.</td>
</tr>
<tr>
<td>Minimum (3)</td>
<td>Silence, view history.</td>
</tr>
<tr>
<td>None (0)</td>
<td>None.</td>
</tr>
</tbody>
</table>

PINs should never be programmed with common sequences such as 1111, 1234 or 2468 because they are easily violated.
V. System Programming

How to Program: Point Programming

• Each of the points in the system can be programmed with its own characteristics.

• **Point functions** simplify the programming of points by allowing you to define a common set of characteristics for similar points, and then assigning those characteristics to selected points as a *point function*.

• There are 16 point functions, each of which has these programmable features:
  
  • Configuration (fire,水流, etc.)
  • Local Only Operation
  • Silencing
  • Loop Response

*Function:* An action; it does something. 8 total.

*Point Function:* Pre-programmed “package”, or “slot” to be filled with functions. 16 total.
V. System Programming

How to Program: Point Programming

• Each point is assigned to use the characteristics of one point function, and then is individually programmed for these additional characteristics:
  
  • Response to an Open Circuit
  • Enabled Status
  • Output Zone
  • Verification
  • Latching
  • Point Description
V. System Programming

How to Program: Point Programming

• Before programming the panel, it is best to first determine the types of functions that are required, and then map the various input points to the functions.

• For example, you may determine that you have the following functions:

  • 1 = pull station
  • 2 = smoke detector
  • 3 = reset keyswitch
  • 4 = silence keyswitch
  • 5 = supervisory input
  • 6 = monitor input
  • 7 = local test
  • 8 = waterflow sensor
V. System Programming

How to Program: Point Programming

• This table shows the characteristics that correlate with each function:

<table>
<thead>
<tr>
<th>Function</th>
<th>Configuration</th>
<th>Local Only?</th>
<th>Silenceable?</th>
<th>Loop Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pull Station</td>
<td>Fire</td>
<td>No</td>
<td>No</td>
<td>Fast</td>
</tr>
<tr>
<td>2. Smoke Detector</td>
<td>Fire</td>
<td>No</td>
<td>No</td>
<td>Fast</td>
</tr>
<tr>
<td>3. Reset Keyswitch</td>
<td>Reset</td>
<td>Yes</td>
<td>No</td>
<td>Fast</td>
</tr>
<tr>
<td>4. Silence Keyswitch</td>
<td>Silence</td>
<td>Yes</td>
<td>No</td>
<td>Fast</td>
</tr>
<tr>
<td>5. Supervisory Input</td>
<td>Supervisory</td>
<td>No</td>
<td>Yes</td>
<td>Fast</td>
</tr>
<tr>
<td>6. Monitor Input</td>
<td>Monitor</td>
<td>Yes</td>
<td>Yes</td>
<td>Fast</td>
</tr>
<tr>
<td>7. Local Test</td>
<td>Fire</td>
<td>Yes</td>
<td>Yes</td>
<td>Fast</td>
</tr>
<tr>
<td>8. Waterflow Sensor</td>
<td>Waterflow</td>
<td>No</td>
<td>No</td>
<td>Programmed</td>
</tr>
</tbody>
</table>

NOTE: A point function consists of the function and the programmed settings for Configuration, Local Only?, Silenceable and Loop Response.
• As shown above, a function can be assigned to a point function, which can be assigned to several different zones.
V. System Programming

How to Program: Alpha Programming

- When programming the Point Descriptions, the numeric keys are used to enter alphanumeric information similar to the way telephone buttons are used to process information over phone lines - each key represents 4 or more letters or symbols.

- A different character will be entered each time a numeric key is pressed.

* Press [1] nine times to reach this value.

** Press the listed key 4 times to reach this value.

<table>
<thead>
<tr>
<th>Key</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SPACE</td>
</tr>
<tr>
<td>2</td>
<td>A</td>
</tr>
<tr>
<td>3</td>
<td>D</td>
</tr>
<tr>
<td>4</td>
<td>G</td>
</tr>
<tr>
<td>5</td>
<td>J</td>
</tr>
<tr>
<td>6</td>
<td>M</td>
</tr>
<tr>
<td>7</td>
<td>P</td>
</tr>
<tr>
<td>8</td>
<td>T</td>
</tr>
<tr>
<td>9</td>
<td>W</td>
</tr>
<tr>
<td>0</td>
<td>Q</td>
</tr>
<tr>
<td>#</td>
<td>CMD</td>
</tr>
<tr>
<td>*</td>
<td>CLEAR</td>
</tr>
<tr>
<td>SILENCE</td>
<td></td>
</tr>
<tr>
<td>DISABLE</td>
<td></td>
</tr>
</tbody>
</table>

Enters the description and returns to the programming menu.

Returns to the programming menu without entering changes.

Moves the cursor one space to the right.

Moves the cursor one space to the left.
V. System Programming

How to Program: Format Programming

• 4/2: When 4/2 format is used, reports generated by points consist of an event type (1st digit) and a point number (2nd digit). Digits may be programmed for fire alarm, fire restoral, waterflow alarm, supervisory alarm, point trouble, trouble restore, point disable, disable restoral and monitor alarm. The same event type (1st digit) will be sent for any point. The point number is the second digit. Each point may be programmed to a different digit.

• SIA: The report that is sent by the SIA format when the panel is silenced may be programmed. By default, the panel will send “KB” when silenced. Any letters may be programmed to be sent for this condition by entering the hexadecimal ASCII code. All other SIA reports are fixed and do not need to be programmed.
V. System Programming

How to Program: Format Programming

• **BFSK**: 5 system events may be programmed for two unique digits each when the BFSK format is used.

• **Contact ID**: The Contact ID reports are all fixed and do not need to be programmed.

• **3/1**: The 3/1 reporting codes are determined by the programming of the 4/2 codes. Only Digit 1 (left digit of the two-digit code) is transmitted. Also, only the first 3 digits of the account number are transmitted.
V. System Programming

How to Program: Understanding Shortcuts

- Shortcuts provide speedy instructions to panel programming by reducing repetition.
- Shortcuts list the buttons to push to get to the desired level.
- Three levels in programming shortcut:
  - **Level 1:** Main Menu. <PROG/0> is Main Menu choice for all system programming. First number in shortcut is 0.
  - **Level 2:** Provides 8 options to choose from: PROG TIME, SECURITY, PROG SYSTEM, PROG INPUTS, PROG OUTPUTS, PROG ACCOUNTS, PROG FORMATS and HISTORY DEFAULTS. Second shortcut number enters the Level 2 option and brings you to Level 3. DS9431 Multiplex Expansion Module adds ninth option: PROGRAM MUX.
  - **Level 3:** Third shortcut number represents Level 3 options.
V. System Programming

How to Program: Understanding Shortcuts

Shortcut = 0 1 2

Press “0” to select PROG from the Main Menu which scrolls at the System Normal display.

Press “1” to select PROG TIME from Sub-Level 2.

Press “2” to select AUTO TEST from Sub-Level 3. At this point, you should follow the procedural description.

LEVEL 1 (MAIN MENU)

LEVEL 2

LEVEL 3

LEVEL 4

1- PROG TIME

1- SYSTEM

TEST FREQ

TEST TIME

2- AUTO TEST

The above example is the shortcut to TEST FREQ and TEST TIME.
V. System Programming

Programming: Menus

Main Menu

SYSTEM NORMAL
SELECT: PROG/0
SELECT: CMD/#
SELECT: TEST
SELECT: HISTORY
SELECT: DISABLE
SELECT: DRILL

Programming Menu

PROG/0
1- PROG TIME
2- SECURITY
3- PROG SYSTEM
4- PROG INPUTS
5- PROG OUTPUTS
6- PROG ACC’NTS
7- PROG FORMATS
8- HISTORY DEFLTS
9- PROGRAM MUX

NOTE: In the Programming Menu, Option #9 is only possible with the addition of a DS9431 Multiplex Expansion Module.
V. System Programming

PROG TIME

Programming Tree for PROG TIME functions:
V. System Programming

PROG TIME: System

PROG TIME Menu

<table>
<thead>
<tr>
<th>Menu Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROG TIME</td>
</tr>
<tr>
<td>1- SYSTEM</td>
</tr>
<tr>
<td>2- AUTO TEST</td>
</tr>
<tr>
<td>3- DAYLIGHT SAV</td>
</tr>
</tbody>
</table>

**System**

Shortcut: 0- PROG, 1- PROG TIME, 1- SYSTEM

ENTER DATE
MMDDYY: ___________ Enter the date followed by the [#] key.

ENTER TIME
HHMM: _____________ Enter the time followed by the [#] key.
V. System Programming

PROG TIME: Auto Test

PROG TIME Menu

| PROG TIME | 1- SYSTEM | 2- AUTO TEST | 3- DAYLIGHT SAV |

Automatic Test: Test Time

Shortcut: 0- PROG, 1- PROG TIME, 2- AUTO TEST, 1- TEST TIME

This feature allows you to program the time of day at which the automatic tests occur and uses a 24-hour clock (11:00 pm = 2300).

AUTO TEST TIME
HHMM: ________

Enter the time followed by the [#] key.
V. System Programming

PROG TIME: Auto Test

PROG TIME Menu

PROG TIME
1- SYSTEM
2- AUTO TEST
3- DAYLIGHT SAV

Automatically Test: Test Frequency

Shortcut: 0- PROG, 1- PROG TIME, 2- AUTO TEST, 2- TEST FREQNCY

This feature allows you to program how often the automatic test reports are sent. The first test will be sent when the programmed test time matches the system time. Subsequent reports will be sent according to the selected interval.

AUTO FREQNCY (_)
1- 6 HOURS
2- 12 HOURS
3- 24 HOURS
4- 7 DAYS
5- 28 DAYS

Press the number key that corresponds to your selection.
V. System Programming

PROG TIME: Daylight Savings

PROG TIME Menu

PROG TIME
1- SYSTEM
2- AUTO TEST
3- DAYLIGHT SAV

Daylight Savings
Shortcut: 0- PROG, 1- PROG TIME, 3- DAYLIGHT SAV

This feature enables automatic adjustment of system time for Daylight Savings. The dates for the adjustment are pre-programmed in the system.

DAYLIGHT SAV
1- DISABLE
2- ENABLE

V. System Programming

SECURITY

Programming Tree for SECURITY functions:

```
Level 1 (Main Menu)  Level 2  Level 3  Level 4  Level 5
PROG/0  →  2 - SECURITY  →  1- PINS  2- AUTHORITY  →  1- PROGRAMR
              |         
              2- USERS
```
V. System Programming

SECURITY: PINs

SECURITY Menu

SECURITY
1- PINS
2- AUTHORITY

PINs: Programmer PIN

Shortcut: 0- PROG, 2- SECURITY, 1- PINS, 1- PROGRAMR PIN

🌟 The Programmer PIN is the code used by the installer to configure and operate the panel. Factory default code is 9876 and may be changed at any time.

Press [1] for Programmer PIN.

PROGRAM PINS
1- PROGRAMR PIN
2- USER PINS

Enter the PIN and press [#].

PINs should never be programmed with common sequences such as 1111, 1234 or 2468 because they are easily violated.

IMPORTANT!
V. System Programming

SECURITY: PINs

PIN Menu

PROGRAM PINS
1. PROGRAMR PIN
2. USER PINS

PINs: User PINs
Shortcut: 0- PROG, 2- SECURITY, 1- PINS, 2- USER PINS

Up to 15 additional user codes (or up to 100 when the DS9431 is installed) can be programmed for the unit to protect the system from unauthorized operation and allow a record to be kept of actions by individual system users.


Enter the user for which you want to program a PIN and press [#]. For example, for User 5, press [5].

Enter the PIN and press [#].
V. System Programming

SECURITY: Authority

This feature determines which system actions a user can perform.

Enter the user for which you want to program authority and press [#].

Press the number key that corresponds to your selection.
V. System Programming

PROG SYSTEM

Programming Tree for PROG SYSTEM functions:

Level 1 (Main Menu) Level 2 Level 3 Level 4 Level 5

PROG/0 → 3- PROG SYSTEM →

1- (reserved)
2 - TIMERS
3 - AC LINE SYNC
4 - OPTION BUS
5 - PIN REQUIRED?
6 - (reserved)
7 - REMOTE PGM

1- SMOKE RESET
2 - AC FAIL DELAY
3 - AUTO SILENCE
4 - (reserved)
5 - DISPLAY RATE

1- UPDATE BUS
2- SETUP KEYPAD

1- LOCAL
2- REMOTE
V. System Programming

PROG SYSTEM: Program Timers

PROG SYSTEM Menu

<table>
<thead>
<tr>
<th>PROG SYSTEM</th>
<th>1- (reserved)</th>
<th>2- TIMERS</th>
<th>3- AC LINE SYNC</th>
<th>4- OPTION BUS</th>
<th>5- PIN REQUIRED?</th>
<th>6- (reserved)</th>
<th>7- REMOTE PGM</th>
</tr>
</thead>
</table>

Program Timers

Shortcut: 0- PROG, 3- PROG SYSTEM, 2- TIMERS

From the PROG SYSTEM Menu, press [2] to reach the Program Timers Menu.

TIMERS
1- SMOKE RESET
2- AC FAIL DLY
3- AUTO SILENCE
4- (reserved)
5- DISPLAY RATE

Press [1] to program the Smoke Reset Timer.
V. System Programming

PROG SYSTEM: Program Timers

Program Timers Menu

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMERS</td>
<td></td>
</tr>
<tr>
<td>1- SMOKE RESET</td>
<td></td>
</tr>
<tr>
<td>2- AC FAIL DLY</td>
<td></td>
</tr>
<tr>
<td>3- AUTO SILENCE</td>
<td></td>
</tr>
<tr>
<td>4- (reserved)</td>
<td></td>
</tr>
<tr>
<td>5- DISPLAY RATE</td>
<td></td>
</tr>
</tbody>
</table>

Program Timers: Smoke Reset

Shortcut: 0- PROG, 3- PROG SYSTEM, 2- TIMERS, 1- SMOKE RESET

This feature designates the length of time that the smoke detector power is turned off after reset. No alarms are registered by the system for 5 seconds after the power is turned back on.

Current Setting

SMOKE RESET (0-16 SECS): ______

From the Program Timers Menu, press [1] for Smoke Reset. Enter the value and press [#].
V. System Programming

PROG SYSTEM: Program Timers

Program Timers Menu

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMERS</td>
<td></td>
</tr>
<tr>
<td>1-</td>
<td>SMOKE RESET</td>
</tr>
<tr>
<td>2-</td>
<td>AC FAIL DLY</td>
</tr>
<tr>
<td>3-</td>
<td>AUTO SILENCE</td>
</tr>
<tr>
<td>4-</td>
<td>(reserved)</td>
</tr>
<tr>
<td>5-</td>
<td>DISPLAY RATE</td>
</tr>
</tbody>
</table>

Program Timers: AC Fail Delay

Shortcut: 0- PROG, 3- PROG SYSTEM, 2- TIMERS, 2- AC FAIL DLY

This feature sets the number of hours the DS9400 will wait after an AC failure before sending an AC Failure report.

Option 1, Wait for DC, causes the AC fail report to be sent when the battery has been 25% depleted based on the measured voltage of the battery. Press [1] if this is the desired setting. When Wait for DC is the current selection, the Enter Time menu will display 24 as the time in hours.

Option 2, Enter Time, allows you to set the time when the AC fail report is sent. Press [2] if this is the desired setting.

Enter the time and press [#].
V. System Programming

PROG SYSTEM: Program Timers

Program Timers Menu

<table>
<thead>
<tr>
<th>Timers</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-</td>
<td>SMOKE RESET</td>
</tr>
<tr>
<td>2-</td>
<td>AC FAIL DLY</td>
</tr>
<tr>
<td>3-</td>
<td>AUTO SILENCE</td>
</tr>
<tr>
<td>4-</td>
<td>(reserved)</td>
</tr>
<tr>
<td>5-</td>
<td>DISPLAY RATE</td>
</tr>
</tbody>
</table>

**Program Timers: Auto Silence**

Shortcut: 0- PROG, 3- PROG SYSTEM, 2- TIMERS, 3- AUTO SILENCE

★ This feature will silence the sounding of an alarm condition on selected NACs after a certain amount of time.


**Current Setting**

AUTO SILENCE ( )
(0, 5-99 min): _____

Enter the desired length of time (or 0 to disable) and press [#].

Entering 0 will disable the feature and the only way to turn off an alarm will be to manually silence it. Entering between 5 and 99 minutes means that the alarm will sound for that much time before automatically silencing.

If the condition is not rectified after an alarm is silenced (automatically or manually), the alarm will sound again after 24 hours. The system must be reset after silencing to allow the alarmed zones to restore and detect new alarms.
V. System Programming

PROG SYSTEM: Program Timers

Program Timers Menu

<table>
<thead>
<tr>
<th>TIMERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- SMOKE RESET</td>
</tr>
<tr>
<td>2- AC FAIL DLY</td>
</tr>
<tr>
<td>3- AUTO SILENCE</td>
</tr>
<tr>
<td>4- (reserved)</td>
</tr>
<tr>
<td>5- DISPLAY RATE</td>
</tr>
</tbody>
</table>

Program Timers: Display Rate

Shortcut: 0- PROG, 3- PROG SYSTEM, 2- TIMERS, 5- DISPLAY RATE

This feature allows you to set the speed at which menus are displayed on the LCD (in units of ¼ sec.).


AUTO SILENCE (0, 5-99 min): _____

Enter the desired value and press [#].
V. System Programming

PROG SYSTEM: AC Line Synch

PROG SYSTEM Menu

PROG SYSTEM
1- (reserved)
2- TIMERS
3- AC LINE SYNCH
4- OPTION BUS
5- PIN REQUIRED?
6- (reserved)
7- REMOTE PGM

AC Line Synch

Shortcut: 0- PROG, 3- PROG SYSTEM, 3- AC LINE SYNCH

When AC power is available, the panel uses the line frequency to stabilize the real time clock. This setting must match the frequency of the local AC power (60 Hz in US).


AC LINE SYN ( )
1- 50 Hz
2- 60 Hz

Current Setting

Press the number key that corresponds to your selection and press [#].
V. System Programming

PROG SYSTEM: Option Bus

OPTION BUS Menu

- OPTION BUS
- 1- UPDATE BUS
- 2- SETUP KEYPADS

Option Bus: Update Bus

Shortcut: 0- PROG, 3- PROG SYSTEM, 4- OPTION BUS, 1- UPDATE BUS

When devices are added or removed from the option buses, this feature queries both buses and updates the list of connected devices. This enables the new devices and removes supervision from devices no longer present.


UPDATE COMPLETE
TOT BUS DEV: X

The above window will appear once the Update Bus operation is complete.

Be sure the device count displayed when this operation completes matches the number of devices installed on both buses. Devices not detected during the update bus operation will not operate and will not be supervised.

IMPORTANT!
This feature tells the system how many keypads should be supervised. It automatically performs an update bus operation as it finishes.


Enter the desired value and press [#].
V. System Programming

PROG SYSTEM: PIN Required?

PIN REQUIRED? Menu

| PIN REQUIRED? | 1- LOCAL | 2- REMOTE |

Pin Required?: Local

 Shortcut: 0- PROG, 3- PROG SYSTEM, 5- PIN REQUIRED?, 1- LOCAL

A PIN can be required before operations can be performed using the local, built-in keypad.

From the PROG SYSTEM menu, press [5] for Pin Required?.
From the Pin Required? menu, press [1] to require a PIN at the local keypad.

Local Keypad PIN?

Current Setting: YES (1) NO (2)

Press the number key that corresponds to your selection.
V. System Programming

PROG SYSTEM: PIN Required?

PIN REQUIRED? Menu

| PIN REQUIRED? | 1- LOCAL | 2- REMOTE |

*Pin Required?: Remote*

Shortcut: 0- PROG, 3- PROG SYSTEM, 5- PIN REQUIRED?, 2- REMOTE

A PIN can be required before operations can be performed using a DS9447 Remote LCD Keypad.


Current Setting

REMOTE KEYPD PIN?

__ : YES (1) NO (2)

Press the number key that corresponds to your selection.

IMPORTANT!

A PIN can be required before operations can be performed using the remote keypads on the option bus. If the remote keypads are not otherwise secured, this option must be set to YES to comply with NFPA and UL requirements.
V. System Programming

PROG SYSTEM: Remote Programming

REMOTE PGM Menu

REMOTE PGM
0- DISABLE
1- ENABLE

Remote Programming

Shortcut: 0- PROG, 3- PROG SYSTEM, 7- REMOTE PGM

Remote programming allows the panel to be called by phone from a remote site to reconfigure any of the programmable options. This option should be left set to DISABLE.


REMOTE PGM
0- DISABLE
1- ENABLE

Press [0] to select DISABLE, or [1] to ENABLE.

According to NFPA 72-1996, a complete functional checkout of the control unit operation is required after any programming, especially remote programming.

IMPORTANT!
V. System Programming

PROG INPUTS

Programming Tree for PROG INPUTS functions:

- **Level 1** (Main Menu)
- **Level 2**
- **Level 3**
- **Level 4**
- **Level 5**

0 - FUNCTION
1 - ALARM/TROUBLE
2 - OUTPUT ZONE
3 - VERIFICATION
4 - LATCHING
5 - DESCRIPTION

<DRILL> NEXT PNT
<HIST> PREV PNT

0 - CONFIGURE
1 - LOCAL ONLY
2 - (reserved)
3 - SILENCEABLE
4 - LOOP RESPONSE
5 - (reserved)

<DRILL> NEXT FCT
<HIST> PREV FCT

1 - FIRE
2 - WATERFLOW
3 - SUPERVISORY
4 - MONITOR
5 - RESET
6 - SILENCE

1 - COPY FROM POINT ___
2 - COPY TO FIRST POINT ___
3 - COPY TO LAST POINT ___

PROG/0

4 - PROG INPUTS

1 - POINT NUMBER

2 - POINT FUNCTION

3 - POINT COPY

V. System Programming

PROG INPUTS: Point Number

PROG INPUTS Menu

- PROG INPUTS
- 1- POINT NUMBER
- 2- POINT FUNCT
- 3- POINT COPY

Point Number

Shortcut: 0- PROG, 4- PROG INPUTS, 1- POINT NUMBER

Version 2.0 of the DS9400 firmware introduces the concept of “point functions”. Point functions allow for quick programming of similarly functioning points with common settings (for example: pull stations, smoke detectors).

POINT NUMBER
(1-4): ______

Press the number key that corresponds to your selection.

Pressing the [DRILL] button will bring you to the next point (for example: If you are programming Point 2, the [DRILL] button will move you to Point 3).

Pressing the [HIST] button will return you to the previous point (for example: If you are programming Point 2, the [HIST] button will move you to Point 1).
V. System Programming

PROG INPUTS: Point Number

POINT NUMBER Menu

<table>
<thead>
<tr>
<th>PROG POINT</th>
<th>0- FUNCTION</th>
<th>1- ALARM/TROUBL</th>
<th>2- OUTPUT ZONE</th>
<th>3- VERIFICATION</th>
<th>4- LATCHING</th>
<th>5- DESCRIPTION</th>
<th>&lt;DRILL&gt; NEXTPNT</th>
<th>&lt;HIST&gt; PREV PNT</th>
</tr>
</thead>
</table>

Assigning Point Functions

Shortcut: 0- PROG, 4- PROG INPUTS, 1- POINT NUMBER, 0- FUNCTION

This feature is for assigning each point to one point function. A point function is a set of characteristics that you can assign to selected points. There are 16 point functions to choose from.

From the Point Number menu, press [0] to select Point Function.

```
POINT FUNC. ( )
(01-16): _____
```

Enter the function number you wish to assign to the point and press [#].
V. System Programming

PROG INPUTS: Point Number

POINT NUMBER Menu

| PROG POINT | 0- FUNCTION | 1- ALARM/TROUBL | 2- OUTPUT ZONE | 3- VERIFICATION | 4- LATCHING | 5- DESCRIPTION | <DRILL> NEXTPNT | <HIST> PREV PNT |

Alarm/Trouble Status

**Shortcut:** 0- PROG, 4- PROG INPUTS, 1- POINT NUMBER, 1- ALARM/TROUBL

This feature allows you to program the system to an open loop condition. A shorted loop will always cause an alarm condition. ALARM: when a point goes into an open circuit state, the system alarms. TROUBLE: when the point goes into an open circuit state, the system responds with a trouble condition.

From the Point Number menu, press [1] to select Alarm/Trouble Status..

Current Setting

OPEN STATUS ( )

1- ALARM
2- TROUBLE

Press [1] to select ALARM on open loop and ALARM on shorted loop, or press [2] to select TROUBLE on open loop and ALARM on shorted loop.
V. System Programming

PROG INPUTS: Point Number

POINT NUMBER Menu

- PROG POINT
- 0- FUNCTION
- 1- ALARM/TROUBL
- 2- OUTPUT ZONE
- 3- VERIFICATION
- 4- LATCHING
- 5- DESCRIPTION
- <DRILL> NEXTPNT
- <HIST> PREV PNT

Output Zones

Shortcut: 0- PROG, 4- PROG INPUTS, 1- POINT NUMBER, 2- OUTPUT ZONE

From the Point Number menu, press [2] to select Output Zone.

Enter the point number you wish to program and press [#]. Press the number key that corresponds to your selection. ZZZ indicates the point being programmed.
V. System Programming

PROG INPUTS: Point Number

POINT NUMBER Menu

<table>
<thead>
<tr>
<th>PROG POINT</th>
<th>0- FUNCTION</th>
<th>1- ALARM/TROUBL</th>
<th>2- OUTPUT ZONE</th>
<th>3- VERIFICATION</th>
<th>4- LATCHING</th>
<th>5- DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;DRILL&gt; NEXTPNT</td>
<td>&lt;HIST&gt; PREV PNT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Verification**

Shortcut: 0- PROG, 4- PROG INPUTS, 1- POINT NUMBER, 3- VERIFICATION

This feature resets the detector once to see if the alarm recurs before annunciating or sending a signal. The total delay introduced by this feature is equal to the smoke power reset time plus 5 seconds. Alarm verification cannot be selected for points that are configured as WATERFLOW or SUPERVISORY types.

From the Point Number menu, press [3] to select Verification.

Current Setting

<table>
<thead>
<tr>
<th>ALARM VERIF (ZZZ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>____ : YES (1) NO (2)</td>
</tr>
</tbody>
</table>

Press either [1] to verify or [0] to not verify. ZZZ indicates the point being programmed.
V. System Programming

PROG INPUTS: Point Number

POINT NUMBER Menu

PROG POINT
0- FUNCTION
1- ALARM/TROUBL
2- OUTPUT ZONE
3- VERIFICATION
4- LATCHING
5- DESCRIPTION
<DRILL> NEXTPNT
<HIST> PREV PNT

Latch

Shortcut: 0- PROG, 4- PROG INPUTS, 1- POINT NUMBER, 4- LATCHING

If a zone is non-latching, the system will reset alarm status automatically (but not reset smoke power) when the input restores to the standby condition. Otherwise, the system must be manually reset.

From the Point Number menu, press [4] to select Latching.

Current Setting

LATCHING? ZZZ

______:YES (1) NO (2)

Press the number key that corresponds to your selection. ZZZ indicates the point being programmed.
V. System Programming

PROG INPUTS: Point Number

POINT NUMBER Menu

PROG POINT
0- FUNCTION
1- ALARM/TROUBL
2- OUTPUT ZONE
3- VERIFICATION
4- LATCHING
5- DESCRIPTION
<DRILL> NEXT PNT
<HIST> PREV PNT

Point Description

Shortcut: 0- PROG, 4- PROG INPUTS, 1- POINT NUMBER, 5- DESCRIPTION

For this feature, the numeric keys are used to enter alphanumeric information to identify each input (initiating circuit). One 16-character description is allowed per input.

From the Point Number menu, press [5] to select Point Description.

PNT DSCRPTN ZZZ: ____________________________

Enter the description using the numeric, SILENCE and HISTORY keys, then press [#] to save the description.
V. System Programming

PROG INPUTS: Point Function

Point Function

**Shortcut:** 0- PROG, 4- PROG INPUTS, 2- POINT FUNCTION

There are 16 point functions, each of which has programmable features for configuration (fire, workflow, etc.), local only operation, silencing and loop response.


```
POINT FUNC: ( )
(01-16): _____
```

Enter the function number you wish to program and press [#].

```
PROG FUNCT
0- CONFIGURE
1- LOCAL ONLY
2- (reserved)
3- SILENCEABLE
4- LOOP RESPONS
5- (reserved)
<DRILL> NXT FCT
<HIST> PREV FCT
```

Enter the function you wish to program.
V. System Programming

PROG INPUTS: Point Function

Configure

Shortcut: 0- PROG, 4- PROG INPUTS, 2- POINT FUNCTION, 0- CONFIGURE

Fire: When activated, point displays “FIRE ALARM” on panel and keypads, activates selected output devices and sends a fire alarm report (if programmed). Fire points are forced to a latching characteristic when first configured.

Waterflow: When activated, point displays “WATERFLOW ALARM” on panel and keypads, activates selected devices and sends a waterflow alarm report (if programmed). Waterflow points are forced to a non-verify characteristic when first configured.

Supervisory: When activated, point displays “SUPERVISORY ALARM” on panel and keypads, and sends a supervisory alarm report (if programmed). Supervisory points are forced to a non-verify characteristic when first configured.

Monitor: When activated, point displays “MONITOR ALARM” on panel and keypads, activates selected devices and sends a fire alarm report (if programmed). If using the SIA format for communication to the central station, a “UA” alarm will be sent instead of an “FA” alarm.

Reset: When activated, point initiates a panel reset operation to clear alarms and reset smoke detectors. Only Points 1-8 can be configured as reset points.

Silence: When activated, point initiates a panel silence operation to turn off sounders if the panel is configured to allow silencing. Only Points 1-8 can be configured as silence points.
V. System Programming

PROG INPUTS: Point Function

POINT FUNCTION Menu

<table>
<thead>
<tr>
<th>PROG FUNCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0- CONFIGURE</td>
</tr>
<tr>
<td>1- LOCAL ONLY</td>
</tr>
<tr>
<td>2- (reserved)</td>
</tr>
<tr>
<td>3- SILENCEABLE</td>
</tr>
<tr>
<td>4- LOOP RESPONS</td>
</tr>
<tr>
<td>5- (reserved)</td>
</tr>
<tr>
<td>&lt;DRILL&gt; NXT FCT</td>
</tr>
<tr>
<td>&lt;HIST&gt; PREV FCT</td>
</tr>
</tbody>
</table>

Configure

Shortcut: 0- PROG, 4- PROG INPUTS, 2- POINT FUNCTION, 0- CONFIGURE

From the Point Function Menu, press [0] for Configure.

ACTVTN TYPE ( ) Current Setting

1- FIRE
2- WATERFLOW
3- SUPERVISORY
4- MONITOR
5- RESET
6- SILENCE

Press the number key that corresponds to your selection.
**V. System Programming**

**PROG INPUTS: Point Function**

**POINT FUNCTION Menu**

- PROG FUNCT
- 0- CONFIGURE
- 1- LOCAL ONLY
- 2- (reserved)
- 3- SILENCEABLE
- 4- LOOP RESPONS
- 5- (reserved)
- <DRILL> NXT FCT
- <HIST> PREV FCT

**Local Only**

Shortcut: 0- PROG, 4- PROG INPUTS, 2- POINT FUNCTION, 1- LOCAL ONLY

Enabling this feature means the input point gives local annunciation only with no communicator report.

From the Point Function Menu, press [1] for Local Only.

**Current Setting**

**LOCAL ONLY**

Press either [1] to enable or [0] disable.
V. System Programming

PROG INPUTS: Point Function

POINT FUNCTION Menu

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PROG FUNCT</td>
<td></td>
</tr>
<tr>
<td>0- CONFIGURE</td>
<td></td>
</tr>
<tr>
<td>1- LOCAL ONLY</td>
<td></td>
</tr>
<tr>
<td>2- (reserved)</td>
<td></td>
</tr>
<tr>
<td>3- SILENCEABLE</td>
<td></td>
</tr>
<tr>
<td>4- LOOP RESPONS</td>
<td></td>
</tr>
<tr>
<td>5- (reserved)</td>
<td></td>
</tr>
<tr>
<td>&lt;DRILL&gt; NXT FCT</td>
<td></td>
</tr>
<tr>
<td>&lt;HIST&gt; PREV FCT</td>
<td></td>
</tr>
</tbody>
</table>

Silenceable

Shortcut: 0- PROG, 4- PROG INPUTS, 2- POINT FUNCTION, 3- SILENCEABLE

This feature determines if a user may silence the system or not.


Press either [1] to enable or [0] disable.

FF indicates the function being programmed.

When an output is controlled by at least one zone activated by a silenceable point or a silenceable zone (Zone 53), it becomes a silenceable output even if other non-silenceable zones activate it.
V. System Programming

PROG INPUTS: Point Function

POINT FUNCTION Menu

- PROG FUNCT
- 0- CONFIGURE
- 1- LOCAL ONLY
- 2- (reserved)
- 3- SILENCEABLE
- 4- LOOP RESPONS
- 5- (reserved)
- <DRILL> NXT FCT
- <HIST> PREV FCT

Loop Response

Shortcut: 0- PROG, 4- PROG INPUTS, 2- POINT FUNCTION, 4- LOOP RESPONS

This feature allows you to configure points to activate with standard response time (Setting 1) or one system-wide programmed response time (Setting 2).


RESPNS TIME ( )
- 1- FAST (0.5 sec)
- 2- PRGRMMED

Press the number key that corresponds to your selection.
V. System Programming

PROG INPUTS: Point Function

Loop Response

Shortcut: 0- PROG, 4- PROG INPUTS, 2- POINT FUNCTION, 4- LOOP RESPONS

When a programmed response time is selected, the system will prompt you to enter a response time from 1-89 seconds which will be applied to ALL functions. All functions share a single programmable response time setting. If this time is set for multiple functions, the last time set will be used. Multiplex points installed on the DS9431 have a response time tolerance of +/- 3 seconds and on-board points have a tolerance of +/- 1 second.

A limit of 20 points may be assigned to point functions that have been programmed with a response time other than Fast. If more than 20 points are assigned to functions programmed with a response time other than Fast, an error message will be displayed: MAX PROGRAMD POINTS EXCEEDED. Switching a point function from Fast to Programmed may cause this, depending on how many points reference the point function.
V. System Programming

PROG INPUTS: Point Copy

From the PROG INPUTS Menu, press [3] for Point Copy.

COPY FROM POINT: _____ Enter the point you wish to copy from and press [#].

COPY TO FIRST POINT: _____ Enter the first point you wish to copy from and press [#].

COPY TO LAST POINT: _____ Enter the last point you wish to copy from and press [#].

The description is not copied by this feature.
V. System Programming

PROG OUTPUTS

Programming Tree for PROG OUTPUTS functions:

- Level 1 (Main Menu)
- Level 2: PROG OUTPUTS
- Level 3: NAC # 1, NAC # 2, NAC # 3 (options same as NAC # 1), NAC # 4
- Level 4: 1 - LOCAL, 2 - REMOTE 1, 3 - REMOTE 2
- Level 5: 1 - (reserved), 2 - CONFIGURATION, 3 - ZONE ASSIGNS

- CHOOSE RELAY #
- OUTPUT ZONE
V. System Programming

PROG OUTPUTS: NACs

**PROG OUTPUTS Menu**

<table>
<thead>
<tr>
<th>PROG OUTPUTS Menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROG OUTPUTS</td>
</tr>
<tr>
<td>1- NACs</td>
</tr>
<tr>
<td>2- RELAYS</td>
</tr>
</tbody>
</table>

**Programming NACs**

**Shortcut:** 0- PROG, 5- PROG OUTPUTS, 1- NACs

The main panel includes two local NACs (NAC 1 and NAC 2). It may be expanded with a DS9482 ENAC Module to add NAC 3 and NAC 4. The DS9400 can also support up to two DS9484 Remote NAC Expanders, which offers a total of 8 remote NACs (4 NACs per RNAC).

From the PROG OUTPUTS Menu, press [1] for NACs.

<table>
<thead>
<tr>
<th>NAC OUTPUTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- LOCAL</td>
</tr>
<tr>
<td>2- REMOTE 1</td>
</tr>
<tr>
<td>3- REMOTE 2</td>
</tr>
</tbody>
</table>

Press the number key that corresponds to your selection.
V. System Programming

PROG OUTPUTS: NACs

NAC OUTPUTS Menu

- NAC OUTPUTS
- 1- LOCAL
- 2- REMOTE 1
- 3- REMOTE 2

Programming NACs: Local NACs

Shortcut: 0- PROG, 5- PROG OUTPUTS, 1- NACs, 1- LOCAL

From the NAC OUTPUTS Menu, press [1] for Local NACs.

ONBOARD NAC
- 1- NAC #1
- 2- NAC #2
- 3- NAC #3
- 4- NAC #4

Press the number key that corresponds to your selection.

PROG NACs
- 1- (reserved)
- 2- CONFIGURATION
- 3- ZONE ASSIGNS

Press the number key that corresponds to your selection.
V. System Programming

PROG OUTPUTS: NACs

NAC OUTPUTS Menu

<table>
<thead>
<tr>
<th>NAC OUTPUTS Menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- LOCAL</td>
</tr>
<tr>
<td>2- REMOTE 1</td>
</tr>
<tr>
<td>3- REMOTE 2</td>
</tr>
</tbody>
</table>

Programming NACs: Local NACs

Shortcut: 0- PROG, 5- PROG OUTPUTS, 1- NACs, 1- LOCAL


Current Setting

This controls the pattern (code) for the selected NAC.
Press the number key that corresponds with the desired pattern.

Steady: output turns on and stays on while NAC is active.

Pulsing: output turns on and off each second.

Pulsing: output turns on and off to implement ANSI standard evacuation pattern (Code 3).

Wheelock: output is configured to support Wheelock devices with sync capability, including the ability to silence the horn of a combination horn/strobe. The Wheelock configuration is not supported by remote NACs implemented using a DS9484 Remote NAC Power Supply.
V. System Programming

PROG OUTPUTS: NACs

NAC OUTPUTS Menu

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LOCAL</td>
</tr>
<tr>
<td>2</td>
<td>REMOTE 1</td>
</tr>
<tr>
<td>3</td>
<td>REMOTE 2</td>
</tr>
</tbody>
</table>

**Programming NACs: Local NACs**

**Shortcut:** 0- PROG, 5- PROG OUTPUTS, 1- NACs, 1- LOCAL


PROG NACs

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(reserved)</td>
</tr>
<tr>
<td>2</td>
<td>CONFIGURATION</td>
</tr>
<tr>
<td>3</td>
<td>ZONE ASSIGNS</td>
</tr>
</tbody>
</table>

OUTPUT ZONE A (XX)

(00 - 63):

Current Setting

Enter the desired zone to activate this output and press [#]. You will be prompted to enter up to 4 zones (A, B, C, D). Enter “00” (or leave set at “00”) for any unused zones to prevent unintentional output activation.
V. System Programming

PROG OUTPUTS: NACs

• Select from this table when entering zone assignments for Local NAC programming:

<table>
<thead>
<tr>
<th>Zone</th>
<th>Pre-assigned Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>General Fire Alarm (non-silenceable)</td>
</tr>
<tr>
<td>53</td>
<td>General Fire Alarm (silenceable)</td>
</tr>
<tr>
<td>54</td>
<td>Ground Start</td>
</tr>
<tr>
<td>57</td>
<td>Communication Trouble</td>
</tr>
<tr>
<td>58</td>
<td>General Supervisory Alarm (silenceable)</td>
</tr>
<tr>
<td>59</td>
<td>Alarm Verification</td>
</tr>
<tr>
<td>60</td>
<td>AC Failed</td>
</tr>
<tr>
<td>61</td>
<td>General Waterflow Alarm (silenceable)</td>
</tr>
<tr>
<td>62</td>
<td>General Trouble</td>
</tr>
<tr>
<td>63</td>
<td>General Alarm (non-silenceable)</td>
</tr>
</tbody>
</table>

Pressing the CLEAR key will enter 00 for the current zone selection and continue onto the next zone. The CLEAR key will NOT exit this menu.

NOTE:
V. System Programming

PROG OUTPUTS: NACs

NAC OUTPUTS Menu

<table>
<thead>
<tr>
<th>NAC OUTPUTS Menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAC OUTPUTS</td>
</tr>
<tr>
<td>1- LOCAL</td>
</tr>
<tr>
<td>2- REMOTE 1</td>
</tr>
<tr>
<td>3- REMOTE 2</td>
</tr>
</tbody>
</table>

Programming NACs: Remote NACs

Shortcut: 0- PROG, 5- PROG OUTPUTS, 1- NACs, 2- REMOTE 1, 3- REMOTE 2

Use only with the DS9484 Remote NAC Power Supply.


<table>
<thead>
<tr>
<th>REM EXP NAC #1</th>
<th>REM EXP NAC #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- NAC #1</td>
<td>1- NAC #1</td>
</tr>
<tr>
<td>2- NAC #2</td>
<td>2- NAC #2</td>
</tr>
<tr>
<td>3- NAC #3</td>
<td>3- NAC #3</td>
</tr>
<tr>
<td>4- NAC #4</td>
<td>4- NAC #4</td>
</tr>
</tbody>
</table>

OR

Press the number key that corresponds with the NAC you want to program.

<table>
<thead>
<tr>
<th>PROG NACs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- (reserved)</td>
</tr>
<tr>
<td>2- CONFIGURATION</td>
</tr>
<tr>
<td>3- ZONE ASSIGNS</td>
</tr>
</tbody>
</table>

The Remote NAC options are the same as for Local NACs, except that the Wheelock configuration is not supported on remote NACs.
V. System Programming

PROG OUTPUTS: Relays

PROG OUTPUTS Menu

<table>
<thead>
<tr>
<th>1- NACs</th>
<th>2- RELAYS</th>
</tr>
</thead>
</table>

Programming Relays

Shortcut: 0- PROG, 5- PROG OUTPUTS, 2- RELAYS

The main panel includes two on-board relays (Relay 1 and Relay 2). The DS9400 can also support up to two DS7488 OCtal Relay Modules (Remote Relay 1 and Remote Relay 2), which offers a total of 16 remote relays (8 relays per module).


<table>
<thead>
<tr>
<th>RELAY OUTPUTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- LOCAL</td>
</tr>
<tr>
<td>2- REMOTE 1</td>
</tr>
<tr>
<td>3- REMOTE 2</td>
</tr>
<tr>
<td>4- MULTIPLEX</td>
</tr>
</tbody>
</table>

Press the number key that corresponds to your selection.

The option for multiplex relay programming will only be visible if the DS9431 Multiplex Expansion Module is installed.
V. System Programming

PROG OUTPUTS: Relays

Relay Outputs Menu

<table>
<thead>
<tr>
<th>RELAY OUTPUTS</th>
<th>1- LOCAL</th>
<th>2- REMOTE 1</th>
<th>3- REMOTE 2</th>
<th>4- MULTIPLEX</th>
</tr>
</thead>
</table>

Programming Relays: Local Relays

Shortcut: 0- PROG, 5- PROG OUTPUTS, 2- RELAYS, 1- LOCAL


ONBOARD RELAY (1-2):

Enter the number corresponding with the relay to be programmed and press [#].

OUTPUT ZONE A: __
(00 - 63): ____

Enter the first zone (00-63) you want to map to drive this output and press [#]. A similar display for Zones B, C and D will appear to allow up to 4 zones to drive this output.

Pressing the CLEAR key will enter 00 for the current zone selection and continue onto the next zone. The CLEAR key will NOT exit this menu.
V. System Programming

PROG OUTPUTS: Relays

• Select from this table when entering zone assignments for Local Relay programming:

<table>
<thead>
<tr>
<th>Zone</th>
<th>Pre-assigned Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>General Fire Alarm (non-silenceable)</td>
</tr>
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<td>53</td>
<td>General Fire Alarm (silenceable)</td>
</tr>
<tr>
<td>54</td>
<td>Ground Start</td>
</tr>
<tr>
<td>57</td>
<td>Communication Trouble</td>
</tr>
<tr>
<td>58</td>
<td>General Supervisory Alarm (silenceable)</td>
</tr>
<tr>
<td>59</td>
<td>Alarm Verification</td>
</tr>
<tr>
<td>60</td>
<td>AC Failed</td>
</tr>
<tr>
<td>61</td>
<td>General Waterflow Alarm (silenceable)</td>
</tr>
<tr>
<td>62</td>
<td>General Trouble</td>
</tr>
<tr>
<td>63</td>
<td>General Alarm (non-silenceable)</td>
</tr>
</tbody>
</table>

An output point cannot be assigned to more than 4 zones. However, it is not necessary that each output be mapped to 4 zones. Each zone can have any number of outputs mapped to it.
V. System Programming

PROG OUTPUTS: Relays

Relay Outputs Menu

<table>
<thead>
<tr>
<th>RELAY OUTPUTS</th>
<th>1- LOCAL</th>
<th>2- REMOTE 1</th>
<th>3- REMOTE 2</th>
<th>4- MULTIPLEX</th>
</tr>
</thead>
</table>

Programming Relays: Local Relays

Shortcut: 0- PROG, 5- PROG OUTPUTS, 2- RELAYS, 2- REMOTE 1, 3- REMOTE 2


REMOTE RELAY @ x

(1 - 8):

The @_ shows the address of the relay module in the system. The lower # address is Relay 1; the higher one is Relay 2.

Enter the relay you wish to assign and press [#].

OUTPUT ZONE A: __

(00 - 63): ____

Enter the output number (00-63) you want to map to Zone A and press [#]. A similar display for Zone B.

Pressing the CLEAR key will enter 00 for the current zone selection and continue onto the next zone. The CLEAR key will NOT exit this menu.
V. System Programming

PROG OUTPUTS: Relays

• Select from this table when entering zone assignments for Remote Relay programming:

<table>
<thead>
<tr>
<th>Zone</th>
<th>Pre-assigned Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>General Fire Alarm (non-silenceable)</td>
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<tr>
<td>53</td>
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</tr>
<tr>
<td>63</td>
<td>General Alarm (non-silenceable)</td>
</tr>
</tbody>
</table>

An output point cannot be assigned to more than 4 zones. However, it is not necessary that each output be mapped to 4 zones. Each zone can have any number of outputs mapped to it.
V. System Programming

PROG OUTPUTS: Relays

Relay Outputs Menu

<table>
<thead>
<tr>
<th>RELAY OUTPUTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- LOCAL</td>
</tr>
<tr>
<td>2- REMOTE 1</td>
</tr>
<tr>
<td>3- REMOTE 2</td>
</tr>
<tr>
<td>4- MULTIPLEX</td>
</tr>
</tbody>
</table>

Programming Relays: Local Relays

Shortcut: 0- PROG, 5- PROG OUTPUTS, 2- RELAYS, 4- MULTIPLEX


Enter the number corresponding with the output to be programmed and press [#]. To determine the output number of a multiplex relay, note that multiplex relays are the second point of an I/O module. Adding 1 to the address of the I/O module gives the address of the relay in the module. Once the relay is selected, the display will prompt you to enter 4 zones to activate this output.

Enter the first zone (00-63) you want to map to drive this output and press [#]. A similar display for Zones B, C and D will be displayed.

An output point cannot be assigned to more than 4 zones. However, it is not necessary that each output be mapped to 4 zones. Each zone can have any number of outputs mapped to it.

NOTE:
V. System Programming

PROG ACCOUNTS

Programming Tree for PROG ACCOUNTS functions:
V. System Programming

PROG ACCOUNTS: Phone Numbers

PROG ACC’NTS Menu

<table>
<thead>
<tr>
<th>PROGRAM ACC’NTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- PHONE NUMS</td>
</tr>
<tr>
<td>2- PHON CONTROL</td>
</tr>
<tr>
<td>3- RPT STEERING</td>
</tr>
<tr>
<td>4- RING COUNT</td>
</tr>
<tr>
<td>5- COMM. TRIES</td>
</tr>
<tr>
<td>6- MACH. BYPASS</td>
</tr>
</tbody>
</table>

Phone Numbers

Shortcut: 0- PROG, 6- PROG ACC’NTS, 1- PHONE NUMS

The system can be programmed with two reporting phone #s. Phone #1 is used with Account #1; Phone #2 is used with Account #2. Remote programming occurs on Phone Line 1 using Phone #3 (COMPTR PHONE). For installations with only one phone line, set Line Monitor = No, Format = 0 to disable a phone line.

From the PROG ACC’NTS Menu, press [1] for Phone Numbers.

Press the number key that corresponds with the phone number you wish to configure (example is Phone #1. Phone #2 programming is same as Phone #1.).

Press the number key that corresponds with your selection.
V. System Programming

PROG ACCOUNTS: Phone Numbers

Phone #1 Menu

<table>
<thead>
<tr>
<th>PHONE NUMBER #1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- NUMBER</td>
</tr>
<tr>
<td>2- FORMAT</td>
</tr>
<tr>
<td>3- ACCT NUMS</td>
</tr>
<tr>
<td>4- TONE</td>
</tr>
</tbody>
</table>

Phone Numbers: Number

Shortcut: 0- PROG, 6- PROG ACC’NTS, 1- PHONE NUMS, 1- NUMBER

From the Phone #1 Menu, press [1] to set the Phone Number.

PHN NMBR 1: ????
????????????????
Enter the phone number and press [#].

Several special control characters can be included in the phone number by pressing the [TEST] key followed by a digit:

<table>
<thead>
<tr>
<th>Press</th>
<th>See</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>[TEST] 1</td>
<td>*</td>
<td>Touch Tone “*”</td>
</tr>
<tr>
<td>[TEST] 2</td>
<td>#</td>
<td>Touch Tone “#”</td>
</tr>
<tr>
<td>[TEST] 3</td>
<td>/</td>
<td>3-second Delay</td>
</tr>
<tr>
<td>[TEST] 4</td>
<td>&gt;</td>
<td>Wait for Dial Tone</td>
</tr>
</tbody>
</table>

Some keys can assist when entering phone numbers:

<table>
<thead>
<tr>
<th>Press</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>[SILENCE]</td>
<td>Advance to next position</td>
</tr>
<tr>
<td>[DISABLE]</td>
<td>Go back one position</td>
</tr>
<tr>
<td>[RESET]</td>
<td>Clear position</td>
</tr>
</tbody>
</table>
V. System Programming

PROG ACCOUNTS: Phone Numbers

Phone #1 Menu

<table>
<thead>
<tr>
<th>PHONE NUMBER #1</th>
<th>1- NUMBER</th>
<th>2- FORMAT</th>
<th>3- ACCT NUMS</th>
<th>4- TONE</th>
</tr>
</thead>
</table>

Phone Numbers: Format

Shortcut: 0- PROG, 6- PROG ACC’NTS, 1- PHONE NUMS, 2- FORMAT

★ This feature allows you to select which communication format to use or disables communication for the phone number. To disable the dialer, set the format for Phone Lines 1 and 2 to “disabled” and turn off the monitoring features of both lines.

From the Phone #1 Menu, press [2] for Format.

<table>
<thead>
<tr>
<th>PHONE FORMAT ( )</th>
<th>Current Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0- DISABLE</td>
<td>Press the number key that corresponds to your selection.</td>
</tr>
<tr>
<td>1- 3/1 REPORT</td>
<td></td>
</tr>
<tr>
<td>2- 4/2 REPORT</td>
<td></td>
</tr>
<tr>
<td>3- BSFK REPORT</td>
<td></td>
</tr>
<tr>
<td>4- SIA, 110 RPRT</td>
<td></td>
</tr>
<tr>
<td>5- CONTACT ID</td>
<td></td>
</tr>
<tr>
<td>6- SIA, 300 RPRT</td>
<td></td>
</tr>
</tbody>
</table>
V. System Programming

PROG ACCOUNTS: Phone Numbers

Phone #1 Menu

<table>
<thead>
<tr>
<th>PHONE NUMBER #1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- NUMBER</td>
</tr>
<tr>
<td>2- FORMAT</td>
</tr>
<tr>
<td>3- ACCT NUMS</td>
</tr>
<tr>
<td>4- TONE</td>
</tr>
</tbody>
</table>

Phone Numbers: Account Numbers

Shortcut: 0- PROG, 6- PROG ACC’NTS, 1- PHONE NUMS, 3- ACCT NUMS

🌟 The account numbers identify the panel when it reports to the central station.

From the Phone #1 Menu, press [3] for Account Numbers

ACCOUNT #1: 0000
NEW NUMBER: 0000

The existing number is shown on the top line. Enter the new number on the second line and press [#]. The hexadecimal digits A - F can be entered by pressing the [TEST] key: 1 = A, 2 = B, 3 = C, 4 = D, 5 = E and 6 = F.
V. System Programming

PROG ACCOUNTS: Phone Numbers

Phone Numbers: Tone

Shortcut: 0- PROG, 6- PROG ACC’NTS, 1- PHONE NUMS, 4- TONE

The tone/freq. programming items modify the reporting format when 3/1 or 4/2 tone burst reporting is selected for the format. Three parameters are selected with one setting: data tone frequency, acknowledge tone frequency and data rate. The frequency that the panel uses to send data pulses may be set for 1900 Hz (19D) or 1800 Hz (18D). The frequency of the acknowledge tone from the receiver that the panel will respond to can be set to 1400 Hz (14A) or 2300 Hz (23A). Finally, the rate at which the data pulses are sent can be set from 10, 20 or 40 pulses per second (10PS, 20PS or 40PS).

From the Phone #1 Menu, press [4] for Tone.

Press the number key that corresponds to your selection.
V. System Programming

PROG ACCOUNTS: Phone Control

**PROG ACC’NTS Menu**

<table>
<thead>
<tr>
<th>PROG ACC’NTS</th>
<th>1- PHONE NUMS</th>
<th>2- PHON CONTROL</th>
<th>3- RPT STEERING</th>
<th>4- RING COUNT</th>
<th>5- COMM. TRIES</th>
<th>6- MACH. BYPASS</th>
</tr>
</thead>
</table>

Phone Control

**Shortcut:** 0- PROG, 6- PROG ACC’NTS, 2- PHON CONTROL

In addition to features that are associated with each phone number, there are features that are associated with each phone line.

From the PROG ACC’NTS Menu, press [2] for Phone Control.

**PHONE CONTROL**

| 1- LINE #1 |
| 2- LINE #2 |

Press the number key that corresponds to your selection.
V. System Programming

PROG ACCOUNTS: Phone Control

Phone Control Menu

PHONE CONTROL # 1
1- MONITOR LINE
2- DIALING TYPE

Phone Control: Monitor Line

Shortcut: 0- PROG, 6- PROG ACC’NTS, 2- PHON CONTROL,
1- LINE #1 or 2- LINE #2, 1- MONITOR LINE

The phone line monitor can be disabled for each phone line.

From the Phone Control Menu, press [1] for Monitor Line.

PRESS YES (1) NO (2) for Yes or [0] for No.

Line #1 is shown above as an example. Line #2 is programmed
in the same manner as Line #1.
V. System Programming

PROG ACCOUNTS: Phone Control

Phone Control Menu

PHONE CONTROL # 1
1- MONITOR LINE
2- DIALING TYPE

Phone Control: Dialing Type

Shortcut: 0- PROG, 6- PROG ACC’NTS, 2- PHON CONTROL,
1- LINE #1 or 2- LINE #2, 2- DIALING TYPE

★ This feature determines what format the panel will use for dialing on each phone line. The tone/pulse setting will first try tone dialing, and if that fails, will switch to pulse dialing.

From the Phone Control Menu, press [2] for Dialing Type

PHONE CONTROL ( )
1- PULSE ONLY
2- TONE/PULSE
3- TONE ONLY

Press the number key that corresponds to your selection.

NOTE:

Line #1 is shown above as an example. Line #2 is programmed in the same manner as Line #1.
V. System Programming

PROG ACCOUNTS: Report Steering

PROG ACCOUNTS Menu

PROG ACCOUNTS Menu

<table>
<thead>
<tr>
<th>PROG ACC’NTS</th>
<th>1- PHONE NUMS</th>
<th>2- PHON CONTROL</th>
<th>3- RPT STEERING</th>
<th>4- RING COUNT</th>
<th>5- COMM. TRIES</th>
<th>6- MACH. BYPASS</th>
</tr>
</thead>
</table>

Report Steering

Shortcut: 0- PROG, 6- PROG ACC’NTS, 3- RPT STEERING

Different classes of reports can be directed to different phone numbers. Non-supervisory alarms include fire alarms, waterflow alarms and monitor alarms. Supervisory alarms come from points configured as a supervisory type. Non-supervisory restorals include fire, waterflow and monitor restorals. Supervisory restorals come only from points configured as a supervisory type. Trouble reports include all point and system troubles and restorals. Tests include auto tests, manual tests and off-normal at test reports. The panel allows the special reports “silence”, “reset” and “drill” to be individually directed.

V. System Programming

PROG ACCOUNTS: Report Steering

Report Steering Menu

REPORT STEERING
1- NONSUP ALRM
2- SUPVSRY ALRM
3- NONSUP RSTR
4- SUPVSRY RSTR
5- TROUBLE
6- TESTS
7- SILENCE
8- RESET
9- FIRE DRILLS

Report Steering

Shortcut: 0- PROG, 6- PROG ACC’NTS, 3- RPT STEERING

From the PROG ACC’NTS Menu, press the number key that corresponds to your selection. This window’s heading will vary depending on selection. For this example, 1- NONSUP ALRM has been chosen.

NONSUP ALRM ( )
1- PHONE 1 ONLY
2- PHONE 2 ONLY
3- PHON 1 AND 2
4- PHN 2 BACKUP
5- NO REPORT

PHONE 1 ONLY: Report sent to Phone #1 only.
PHONE 2 ONLY: Report sent to Phone #2 only.
PHONE 1 AND 2: Report sent to Phones #1 and #2.
PHONE 2 BACKUP: Report sent to Phone #1, then to Phone #2 if #1 fails.
NO REPORT: No report is sent.

Press the number key that corresponds to your selection.
V. System Programming

PROG ACCOUNTS: Ring Count

PROG ACCOUNTS Menu

<table>
<thead>
<tr>
<th>PROG ACC’NTS</th>
<th>1- PHONE NUMS</th>
<th>2- PHON CONTROL</th>
<th>3- RPT STEERING</th>
<th>4- RING COUNT</th>
<th>5- COMM. TRIES</th>
<th>6- MACH. BYPASS</th>
</tr>
</thead>
</table>

Ring Count

Shortcut: 0- PROG, 6- PROG ACC’NTS, 4- RING COUNT

The number of phone rings before the panel will seize the line to attempt remote programming must be left set to “0” for UL864 local, auxiliary or remote station installations.


RING COUNT (01-15, 00=DIS) An entry of “00” will disable ring detection. Enter the information and press [#].
V. System Programming

PROG ACCOUNTS: Communication Tries

The system will always attempt 10 times to communicate an event to each phone number. The parameter determines after which attempt the system will indicate a failure condition.


Enter the information and press [#].

Attempts are counted separately for each phone number. If you program 10 attempts, 10 attempts will be made on Phone Number 1 and 10 attempts will be made on Phone Number 2. This gives a total of 20 attempts.
V. System Programming

PROG ACCOUNTS: Machine Bypass

PROG ACCOUNTS Menu

PROG ACC’NTS
1- PHONE NUMS
2- PHON CONTROL
3- RPT STEERING
4- RING COUNT
5- COMM. TRIES
6- MACH. BYPASS

Machine Bypass

Shortcut: 0- PROG, 6- PROG ACC’NTS, 6- MACH. BYPASS

The downloading computer dials back if an answering machine answers the phone before the control. If the control detects the phone line ringing within one minute of when the last ringing cycle stopped, then it will answer on the first ring and seize the phone line.


MACHINE PYPASS : YES(1) NO (2)

Enter the information and press [#].
V. System Programming

PROG FORMATS

Programming Tree for PROG FORMATS functions:

```
Level 1 (Main Menu) Level 2 Level 3 Level 4 Level 5

PROG/0 → 7- PROG FORMATS

1- 4/2 POINT RPT
2- 4/2 RPT CODS
3- 4/2 BFSK CODS
4- 4/2 SIA SIL RPT
```
V. System Programming

PROG FORMATS

PROG FORMATS Menu

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4/2 ZONE REPT</td>
</tr>
<tr>
<td>2</td>
<td>4/2 RPT CODES</td>
</tr>
<tr>
<td>3</td>
<td>BFSK RPT CODES</td>
</tr>
<tr>
<td>4</td>
<td>SIA SIL RPT</td>
</tr>
</tbody>
</table>

Program Formats

Shortcut: 0- PROG, 7- PROG FORMATS

This feature offers the use of hex digits (0 through F). Because the specific keys A through F are not available on the keypad, the keys listed below have been substituted.

- [History]: A
- [Test]: B
- [Disable]: C
- [Drill]: D
- [Silence]: E
- [Reset]: F
V. System Programming

PROG FORMATS: 4/2 Zone Report

PROG FORMATS Menu

| PROG FORMATS | 1- 4/2 ZONE REPT | 2- 4/2 RPT CODS | 3- BFSK RPT CODS | 4- SIA SIL RPT |
---|---|---|---|---|

Program Formats: 4/2 Zone Report

Shortcut: 0- PROG, 7- PROG FORMATS, 1- 4/2 ZONE REPT

4/2 reports consist of an event type (first digit) and a point number (second digit). These reports apply to points, and only when 3/1 or 4/2 format has been selected.


| 4/2 ZONE RPT | 0- FIRE ALRM D1 | 1- FIRE RSTR D1 | 2- WATERFLOW D1 | 3- SUPERVISE D1 | 4- TROUBLE D1 | 5- TRBL RSTR D1 | 6- DISABLE D1 | 7- DSBL RSTR D1 | 8- MONITOR | 9- MORE |
---|---|---|---|---|---|---|---|---|---|---|

Press the number key that corresponds with your selection of event type. D1 stands for Digit #1.
V. System Programming

PROG FORMATS: 4/2 Zone Report

PROG FORMATS Menu

1- 4/2 ZONE REPT
2- 4/2 RPT CODS
3- BFSK RPT CODS
4- SIA SIL RPT

Program Formats: 4/2 Zone Report

Shortcut: 0- PROG, 7- PROG FORMATS, 1- 4/2 ZONE REPT

Pressing [9] for MORE will bring you to the second digit options (point numbers).

4/2 ZONE RPT
1- POINT 1 D2
2- POINT 2 D2
3- POINT 3 D2
4- POINT 4 D2
5- POINT 5 D2
6- POINT 6 D2
7- POINT 7 D2
8- POINT 8 D2
9- MORE

Press the number key that corresponds with your selection of event type. D2 stands for Digit #2.
V. System Programming

**PROG FORMATS: 4/2 Zone Report**

*Program Formats: 4/2 Zone Report*

**Shortcut:** 0- PROG, 7- PROG FORMATS, 1- 4/2 ZONE REPT

Pressing [9] for MORE will bring you to the second digit options (point numbers).

| 4/2 ZONE RPT | 1- POINT 9 D2 | 2- POINT 10 D2 | 3- RETURN TO D1 |

Press the number key that corresponds with your selection. A window allowing entry of hex digits will display (heading is dependent on item previously selected).

<table>
<thead>
<tr>
<th>FIRE ALARM D1</th>
<th>0 THRU 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;HISTORY&gt;: A</td>
<td></td>
</tr>
<tr>
<td>&lt;TEST&gt;: B</td>
<td></td>
</tr>
<tr>
<td>&lt;DISABLE&gt;: C</td>
<td></td>
</tr>
<tr>
<td>&lt;DRILL&gt;: D</td>
<td></td>
</tr>
<tr>
<td>&lt;SILENCE&gt;: E</td>
<td></td>
</tr>
<tr>
<td>&lt;RESET&gt;: F</td>
<td></td>
</tr>
</tbody>
</table>

Enter the hex digit that should be reported for the selected condition by pressing a number key or one of the special keys if a hex character is needed. Press [#] to continue.
V. System Programming

PROG FORMATS: 4/2 Report Codes

PROG FORMATS Menu

<table>
<thead>
<tr>
<th>PROG FORMATS Menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROG FORMATS</td>
</tr>
<tr>
<td>1- 4/2 ZONE REPT</td>
</tr>
<tr>
<td>2- 4/2 RPT CODS</td>
</tr>
<tr>
<td>3- BFSK RPT CODS</td>
</tr>
<tr>
<td>4- SIA SIL RPT</td>
</tr>
</tbody>
</table>

Program Formats: 4/2 Report Codes

Shortcut: 0- PROG, 7- PROG FORMATS, 2- 4/2 RPT CODS

4/2 Report Codes apply to system conditions but only when 3/1 or 4/2 format has been selected. Two digits can be programmed to be sent for each condition. The conditions that can be programmed are as follows:

- **system in test, system in test restore**: sent for walk test operations
- **silence**: sent when the [Silence] key is pressed
- **fire drill, fire drill restore**: sent for fire drill operations
- **open reset report**: sent when the reset key is pressed
- **low battery, low battery restore, AC failure, AC failure restore**: sent for power problems
- **test report**: sent for manual or automatic communicator tests
- **off normal at test**: sent if the panel is off-normal at the automatic test time
- **phone trouble, restore**: sent for phone line problems
- **system trouble, restore**: sent for general system problems
V. System Programming

PROG FORMATS: 4/2 Report Codes

<table>
<thead>
<tr>
<th>PROG FORMATS Menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROG FORMATS</td>
</tr>
<tr>
<td>1- 4/2 ZONE REPT</td>
</tr>
<tr>
<td>2- 4/2 RPT CODS</td>
</tr>
<tr>
<td>3- BFSK RPT CODS</td>
</tr>
<tr>
<td>4- SIA SIL RPT</td>
</tr>
</tbody>
</table>

Program Formats: 4/2 Zone Report

Shortcut: 0- PROG, 7- PROG FORMATS, 1- 4/2 ZONE REPT

Pressing [9] for MORE will bring you to the second digit options (point numbers).

<table>
<thead>
<tr>
<th>4/2 ZONE RPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- POINT 1 D2</td>
</tr>
<tr>
<td>2- POINT 2 D2</td>
</tr>
<tr>
<td>3- POINT 3 D2</td>
</tr>
<tr>
<td>4- POINT 4 D2</td>
</tr>
<tr>
<td>5- POINT 5 D2</td>
</tr>
<tr>
<td>6- POINT 6 D2</td>
</tr>
<tr>
<td>7- POINT 7 D2</td>
</tr>
<tr>
<td>8- POINT 8 D2</td>
</tr>
<tr>
<td>9- MORE</td>
</tr>
</tbody>
</table>

Press the number key that corresponds with your selection of event type. D2 stands for Digit #2.
V. System Programming

PROG FORMATS: 4/2 Report Codes

Program Formats: 4/2 Report Codes

Shortcut: 0- PROG, 7- PROG FORMATS, 2- 4/2 RPT CODS

Press the number key that corresponds to your selection. Pressing [9] will return you to the previous reporting codes.

<table>
<thead>
<tr>
<th>4/2 RPT CODS</th>
<th>SYSTEM IN TST ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0- AC FAIL RST</td>
<td>0 THRU 9</td>
</tr>
<tr>
<td>1- TEST REPORT</td>
<td>&lt;HISTORY&gt;: A</td>
</tr>
<tr>
<td>2- OFF NORM TEST</td>
<td>&lt;TEST&gt;: B</td>
</tr>
<tr>
<td>3- PHONE 1 TRB</td>
<td>&lt;DISABLE&gt;: C</td>
</tr>
<tr>
<td>4- PN 1 TRB RST</td>
<td>&lt;DRILL&gt;: D</td>
</tr>
<tr>
<td>5- PHONE 2 TRBL</td>
<td>&lt;SILENCE&gt;: E</td>
</tr>
<tr>
<td>6- PN 2 TRB RST</td>
<td>&lt;RESET&gt;: F</td>
</tr>
<tr>
<td>7- SYSTEM TROUB</td>
<td></td>
</tr>
<tr>
<td>8- SYS TRB RST</td>
<td></td>
</tr>
</tbody>
</table>

A window allowing entry of two hex digits will display (heading is dependent on item previously selected). Enter digits that should be reported for the selected condition by pressing the number key or one of the special keys if a hex character is needed. Press the [#] to continue.
V. System Programming

PROG FORMATS: BFSK Report Codes

When BFSK reporting is used, most reporting codes are fixed and do not to be programmed. 5 reports that the panel can send that are not standard BFSK codes can be programmed, however.


**Shortcut:** 0- PROG, 7- PROG FORMATS, 3- BFSK RPT CODS

BFSK RPT CODS

1- OFF NORM TEST
2- OPEN/RESET
3- SILENCE
4- FIRE DRILL
5- FR DRIL RSTR

- **Off normal at test:** sent if the panel is off-normal at the automatic test time
- **Open reset report:** sent when the reset key is pressed
- **Silence:** sent when the silence key is pressed
- **Fire drill, fire drill restore:** sent for fire drill operations

Press the number key that corresponds to your report code selection. A window allowing entry of two hex digits will display.
V. System Programming

PROG FORMATS: SIA SIL RPT

Program Formats: SIA SIL RPT

Shortcut: 0-PROG, 7-PROG FORMATS, 4-SIA SIL RPT

When SIA reporting is used, all reporting codes but one are fixed and do not need to be programmed. The silence report is not a standard SIA code and can be programmed, however. The required ASCII value is entered using hexadecimal numbers, one for the left character/byte, and one for the right character/byte. It is recommended that the factory default “KB” = 0x4B, 0x42 be used.

From the PROG FORMATS menu, press [4] for SIA SIL RPT.

SIA SIL RPT
1- LEFT BYTE
2- RIGHT BYTE

Press [1] to select the left byte. Enter the digits and press [#].

The right byte is entered in a similar fashion.
V. System Programming

HISTORY DEFAULTS

Programming Tree for HISTORY DEFLTS functions:

Level 1 (Main Menu) → Level 2

1- CLEAR HSTRY
2- DEFAULT EE
3- ALT 4/2 CDES

Level 3

8- HISTORY DEFLTS
V. System Programming

HISTORY DEFAULTS: Clear History

HISTORY DEFLTS Menu

<table>
<thead>
<tr>
<th>PROG DEFAULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- CLEAR HISTRY</td>
</tr>
<tr>
<td>2- DEFAULT EE</td>
</tr>
<tr>
<td>3- ALT 4/2 CDES</td>
</tr>
</tbody>
</table>

History Defaults: Clear History

Shortcut: 0- PROG, 8- HISTORY DEFLTS, 1- CLEAR HSTRY

It is possible to clear some or all of the history records in the system using this menu item.

From the HISTORY DEFLTS menu, press [1] for CLEAR HSTRY.

HIST ITEMS= _____ Enter the number of history events you wish to delete and press [#].
DEL OLDEST 00
V. System Programming

HISTORY DEFAULTS: Default EE

**HISTORY DEFLTS Menu**

<table>
<thead>
<tr>
<th>PROG DEFAULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- CLEAR HISTRY</td>
</tr>
<tr>
<td>2- DEFAULT EE</td>
</tr>
<tr>
<td>3- ALT 4/2 CDES</td>
</tr>
</tbody>
</table>

*History Defaults: Clear History*

**Shortcut: 0- PROG, 8- HISTORY DEFLTS, 2- DEFAULT EE**

It is possible to set the panel back to the original factory-programming configuration with this option. **This option is available only from the local keypad.**

From the HISTORY DEFLTS menu, press [2] for DEFAULT EE.

**SETTING EEPROM TO DEFAULT...**

This operation takes several minutes when the DS9431 is installed. The previous menu will appear when this operation is complete.

**IMPORTANT!**

All programming, including zone configurations and option installations, will be lost when this operation is performed. It is necessary to turn panel power off and back on after defaulting to reinstall the four zone expander, local NAC expander and MUX expander. It is necessary to update the option bus and setup keypads (PROG SYSTEM menu) to reinstall option bus devices.
V. System Programming

HISTORY DEFAULTS: Alt 4/2 Codes

HISTORY DEFLTS Menu

PROG DEFAULTS
1- CLEAR HISTRY
2- DEFAULT EE
3- ALT 4/2 CDES

History Defaults: Alt 4/2 Codes
Shortcut: 0- PROG, 8- HISTORY DEFLTS, 3- ALT 4/2 CDES

It is possible to set all of the programming for 4/2 codes to an alternative set of default reports. To completely default the panel, it is necessary to first use the default EE option, followed by this option if desired.

From the HISTORY DEFLTS menu, press [3] for ALT 4/2 CDES.

The previous menu will appear when this operation is complete.
V. System Programming

PROGRAM MUX

Programming Tree for PROGRAM MUX functions:

Level 1 (Main Menu) Level 2 Level 3 Level 4 Level 5

0- NO DEVICE
2- SINGLE INPUT
3- I/O MODULE
4- MUX SMOKE
5- SMOKE W/ FRZ
6- DUAL INPUT
7- OCTAL INPUT

1- NORMAL
2- FAST

1- CLASS A
2- CLASS B
V. System Programming

PROGRAM MUX

PROGRAM MUX Menu

- PROGRAM MUX
- 1- MUX EDIT
- 2- MUX PROGRAM
- 3- BUS TYPE

Program MUX

Shortcut: 0- PROG, 9- PROGRAM MUX

This menu is accessible only when the DS9431 Multiplex Expansion Module is installed. Intermittent trouble reports from a particular MUX point address may indicate that more than one device has been programmed to that address.

IMPORTANT!

Unprogrammed devices on the bus will not operate or be supervised. Do not install more than one device programmed to the same address on the bus. Doing so may inhibit alarm reporting from both devices.
V. System Programming

PROGRAM MUX: MUX Edit

PROGRAM MUX Menu

PROGRAM MUX
1- MUX EDIT
2- MUX PROGRAM
3- BUS TYPE

Program MUX: MUX Edit

Shortcut: 0- PROG, 9- PROGRAM MUX, 1- MUX EDIT

To add MUX devices to the system without programming an address into the device itself, use the MUX Edit option. Each device must have a unique address programmed, however, perhaps using the MUX Program option on another panel, or using a hand-held programmer.

From the PROGRAM MUX menu, press [1] for MUX Edit.

<table>
<thead>
<tr>
<th>DEVICE TYPE</th>
<th>Description</th>
<th>Model #</th>
</tr>
</thead>
<tbody>
<tr>
<td>0- NO DEVICE</td>
<td>0- NO DEVICE</td>
<td></td>
</tr>
<tr>
<td>2- SINGLE INPUT</td>
<td>2- SINGLE INPUT</td>
<td>DS7457</td>
</tr>
<tr>
<td>3- I/O MODULE</td>
<td>3- I/O MODULE</td>
<td>DS7465</td>
</tr>
<tr>
<td>4- MUX SMOKE</td>
<td>4- MUX SMOKE</td>
<td>MX280, MX280TH</td>
</tr>
<tr>
<td>5- SMOKE W/FRZ</td>
<td>5- SMOKE W/FRZ</td>
<td>MX280THL</td>
</tr>
<tr>
<td>6- DUAL INPUT</td>
<td>6- DUAL INPUT</td>
<td>DS7460</td>
</tr>
<tr>
<td>7- OCTAL INPUT</td>
<td>7- OCTAL INPUT</td>
<td>DS7432</td>
</tr>
</tbody>
</table>

Press the number key that corresponds with the device being added, or select [0] if you are removing a device.
V. System Programming

PROGRAM MUX: MUX Edit

Program MUX: MUX Edit

Shortcut: 0- PROG, 9- PROGRAM MUX, 1- MUX EDIT

POINT NUMBER
(009 - 255) 009

Enter the address of the point being added and press [#]. The device type window will display to allow additional devices to be added.

If the device being added is an I/O module, you will be prompted to enter the four zones to drive the relay output.

OUTPUT ZONE A: __
(00 - 63): ____

Enter the first zone (00-63) you want to map to drive this output and press [#]. A similar display for Zones B, C and D will appear to allow up to 4 zones to drive this output.

Pressing the [Clear] key will enter 00 for the current zone selection, and continue onto the next zone. The [Clear] key will not exit this menu.

NOTE: Pressing the [Clear] key will enter 00 for the current zone selection, and continue onto the next zone. The [Clear] key will not exit this menu.
V. System Programming

PROGRAM MUX: MUX Program

Program MUX: MUX Program

Shortcut: 0- PROG, 9- PROGRAM MUX, 2- MUX PROGRAM

To simultaneously add MUX devices while programming an address into the device itself, use the MUX Program option. This programs a specified address into the device and also sets the device. The DS7432 is programmed by switches, and thus cannot be added using the MUX Program feature - use MUX Edit instead.

From the PROGRAM MUX menu, press [2] for MUX Program.
If there are no devices on Bus A, the following window will display.
Otherwise, an error message will display.

PROGRAM MUX
1- NORMAL
2- FAST

Select normal programming to add one or two devices.
Select fast programming to program larger quantities of identical devices to sequential addresses.

All devices must be removed from MUX Bus A before starting programming by removing power from the system, disconnecting the wires to the field devices and re-powering the system. Failure to disconnect devices will result in all devices on Loop A being programmed to the new address.

All programming is performed on Bus A, including addresses 129-255 which can only be installed on Bus B for operation. Connect devices with addresses 129-255 to Bus B, not Bus A.

IMPORTANT!
V. System Programming

PROGRAM MUX: MUX Program

Program MUX: MUX Normal Programming

Shortcut: 0- PROG, 9- PROGRAM MUX, 2- MUX PROGRAM, 1- NORMAL

Press the number key that corresponds with the device being added, or select [0] if you are removing a device.

<table>
<thead>
<tr>
<th>DEVICE TYPE ( )</th>
<th>Description</th>
<th>Model #</th>
</tr>
</thead>
<tbody>
<tr>
<td>0- NO DEVICE</td>
<td>0- NO DEVICE</td>
<td>DS7457</td>
</tr>
<tr>
<td>2- SINGLE INPUT</td>
<td>2- SINGLE INPUT</td>
<td>DS7465</td>
</tr>
<tr>
<td>3- I/O MODULE</td>
<td>3- I/O MODULE</td>
<td>DS7465</td>
</tr>
<tr>
<td>4- MUX SMOKE</td>
<td>4- MUX SMOKE</td>
<td>MX280, MX280TH</td>
</tr>
<tr>
<td>5- SMOKE W/FRZ</td>
<td>5- SMOKE W/FRZ</td>
<td>MX280THL</td>
</tr>
<tr>
<td>6- DUAL INPUT</td>
<td>6- DUAL INPUT</td>
<td>DS7460</td>
</tr>
<tr>
<td>7- OCTAL INPUT</td>
<td>7- OCTAL INPUT</td>
<td>DS7432</td>
</tr>
</tbody>
</table>

POINT NUMBER (009 - 255) 009

Enter the address of the point being added and press [#].

The display will prompt you to attach the device being programmed to the terminals for MUX Bus A. The device wires can simply be held on the terminals for the few seconds it takes to program. The programming operation will retry up to 3 times if the devices is not connected right away. The display will automatically show the following window.
V. System Programming

PROGRAM MUX: MUX Program

Program MUX: MUX Normal Programming

Shortcut: 0- PROG, 9- PROGRAM MUX, 2- MUX PROGRAM, 1- NORMAL

If the device added is an I/O module, you will be prompted to enter the 4 zones to drive the relay output.

OUTPUT ZONE A: __
(00 - 63): ___
Enter the first zone (00-63) you want to map to drive this output and press [#]. A similar display for Zones B, C and D will appear to allow up to 4 zones to drive this output.

Then it will confirm the programming operation and return to the previous menu.

POINT NUMBER 009 PROGRAMMED

If a device is defective, or not connected properly, the panel will display an error message.

ERROR - DEVICE FAILED

Pressing the [Clear] key will enter 00 for the current zone selection, and continue onto the next zone. The [Clear] key will not exit this menu.
V. System Programming

PROGRAM MUX: MUX Program

MUX PROGRAM Menu

| PROGRAM MUX | 1- NORMAL | 2- FAST |

Program MUX: MUX Fast Programming

Shortcut: 0- PROG, 9- PROGRAM MUX, 2- MUX PROGRAM, 2- FAST


Fast programming proceeds the same as normal programming, except that when the device is programmed you will be prompted as follows:

POINT NUMBER 009
REMOVE DEVICE

You will then be prompted to attach the next device at the next address.

POINT NUMBER 009
ATTACH DEVICE

This process will continue until you press the [Clear] key. All devices to be programmed must be of the same type.
V. System Programming

PROGRAM MUX: MUX Bus Type

Program MUX Menu

- PROGRAM MUX
- 1- MUX EDIT
- 2- MUX PROGRAM
- 3- BUS TYPE

MUX Bus Type

Shortcut: 0- PROG, 9- PROGRAM MUX, 3- BUS TYPE

This option allows the MUX buses to be configured as two independent Class B, Style 3.5 buses allowing addresses up to 255, or a single Class A, Style 6 bus allowing addresses up to 128. When installed as a Class A, Style 6 bus, both MUX bus + terminals are connected with a field wire loop, and both MUX bus - terminals are connected with a field wire loop. Then, MUX devices are connected between the loops.

From the Program MUX menu, press [3] for Bus Type.

MUX BUS TYPE ( )
- 1- CLASS A
- 2- CLASS B

Press the number key that corresponds with the desired bus type.

DS7432 devices may not be used on a Class A, Style 6 Bus. The panel cannot supervise the integrity of the data wiring due to the external power wires for this module.

IMPORTANT! IMPORTANT! IMPORTANT!
VI. UL Requirements

UL Listings:

• Commercial Fire Alarm

• **Type Service:** Auxiliary, Local, Central Station and Remote Station

• **Type Initiating:** Automatic, Manual, Sprinkler Supervisory and Waterflow

• The DS9400 shall be installed in accordance with NFPA 72 for Commercial Fire installations.

**IMPORTANT!**

Failure to install and program the DS9400 in accordance with UL requirements voids the listing mark of Underwriters Laboratories, Inc.
VI. UL Requirements

Installation Considerations:

- The standby battery capacity is 40 Ah @ 24 VDC.
- The total nominal current must not exceed 1,140 mA in standby nor 4 A when in alarm.
- The DS9400 control board must be mounted indoors and within the protected area.
- Grounding must be in accordance with Article 250 of the NEC (NFPA 70).
- Points must be connected to UL Listed compatible devices.
VI. UL Requirements

Installation Considerations:

- The ground wire provided with the enclosure must be connected between the door and the enclosure using the supplied nuts.

- The ground start feature shall not be programmed.

- Phone monitoring must be selected if the DACT feature is used.

- The system must be tested after installation and after any reprogramming, including programming performed by downloading.
VII. Fire Safety

NO FIRE DETECTION DEVICE OR SYSTEM IS 100% FOOLPROOF!

• The DS9400 can provide early warning of a developing fire. It does not ensure protection against property damage or loss of life resulting from a fire!

• The DS9400 must be tested regularly (when installed, serviced and once annually thereafter) to ensure continued reliable operation in accordance with NFPA 72-1996.
VII. Fire Safety

If Installed in Family Residences

Adherence to NFPA 72-1996 can lead to reasonable fire safety when the following items are practiced:

- Minimize Hazards!
  
  Smoking in bed, leaving children home alone and cleaning with flammable liquids are the three traditional fire killers.

- Provide a fire warning system!

  Most fire deaths occur in the home, the majority during sleeping hours. The minimum level of protection requires smoke detectors to be installed outside of each separate sleeping area and on each additional story of the dwelling. For added early warning protection, install detectors in basements, bedrooms, dining rooms, utility rooms, hallways and other separated areas.
VII. Fire Safety

If Installed in Family Residences

- A fire warning system may be wasted unless the family has planned in advance for a rapid and safe exit.

- Draw a floor plan of entire house. Show two exits from each bedroom and two from the house. Provide exits from windows (if stairways are blocked).

- Pre-arrange a meeting place outside and away from residence. All members should immediately go there once out of building.

- Provide a barricade between family members and fire, smoke and toxic gases (close all bedroom and hallway doors before retiring for the night).

- Teach children how to open bedroom windows and safely exit through them. If exiting is not possible, they should open them and shout out for help until it arrives.
VII. Fire Safety

If Installed in Family Residences

- If fire occurs after retiring for night, wake children by shouting to them from behind your closed door. Tell them to keep their bedroom doors closed.

- If the top of bedroom door is uncomfortably hot, do not open it! Shout to all family members to keep their doors closed and exit via alternate routes.

- If the top of the door is not uncomfortably hot, brace the bottom of the door with your foot and the top with one hand and open it one inch. Slam the door if there is any pressure against it or if any hot air rushes in.

- If there is no excessive heat or pressure, leave room and shut door. Shout appropriate instructions to others. Drop to hands and knees and crawl if heavy smoke is present.

PRACTICE THE PLAN WITH ALL FAMILY MEMBERS!
VII. Fire Safety

If Installed in Family Residences

Proper location of detection devices is one of the most critical factors in a fire alarm system:

- Avoid “dead air” spaces or areas close to ventilating or air conditioning outlets when installing smoke detectors - smoke may be circulated away from detectors. Locations near air inlets should be favored.

- Avoid areas subject to normal smoke concentrations such as kitchens, garages or fireplaces.

- Do not install smoke detectors where normal air temperatures are above 100°F (38°C) or below 32°F (0°C).

- Avoid areas of high humidity and dust concentrations.

- The edge of ceiling mounted detectors should be no closer than 4 inches (10 cm) from any wall. Place the top edge of wall mounted detectors between 4 and 12 inches (10 & 30 cm) from the ceiling.
VII. Fire Safety

If Installed in Family Residences

- Refer to NFPA 72-1996 when considering detectors for residential applications.

A smoke detector should be located on each story including basements, but excluding crawl spaces and unfinished attics.

Locate smoke detectors between sleeping areas and family living areas.
VIII. System Options

DS7432 Addressable Eight-Point Remote Module

Provides eight supervised points for connection of additional Normally Open inputs. Connects to multiplex bus.

![Diagram of DS9400 FACP and DS7432 Eight Input Remote Module]

Power + may be connected to RA or RB on the FACP Option Bus terminal strip. Power - may be connected to BA or BB on the FACP Option Bus.

Bus + and Bus - are connected to MUX A terminals for addresses 9 - 128. MUX B terminals are for addresses 129 - 255.

Example: DS250 in a MB4W base

Example: EOL200

P/N: 28010
VIII. System Options

**DS7457 Single Point Input Module**

Provides one supervised input zone for connection of conventionally Normally Open inputs. Connects to multiplex bus.

**DS9341 Multiplex Expansion Module**

I/O Module for the DS9431 Multiplex Expansion Module

**DS9400 FACP**

Bus + and Bus - are connected to MUX A terminals for addresses 9 - 128. MUX B terminals are for addresses 129 - 255.

**NOTE:** Bus A or Bus B may be used

**SMK**

Smoke Detector (e.g.: DS250/MB4W)

**EOL P/N: 28010**

**DS7457**

**Bus**

Alarm

Tamper

**Tamper Switch** (Normally Closed)

**Bus**

**EOL Relay** (e.g.: EOL200)

**NOTE:** Bus A or Bus B may be used
VIII. System Options

**DS7460 Dual Point Input Module**

Provides two supervised input zones for connection of conventional Normally Open inputs. Connects to multiplex bus.

**DS9431 Multiplex Expansion Module**

I/O Module for the DS9431 Multiplex Expansion Module

**NOTE:**
Bus A or Bus B may be used

**DS9400 FACP**

Bus + and Bus - are connected to MUX A terminals for addresses 9 - 128. MUX B terminals are for addresses 129 - 255.

**DS7460**

Loop 2+
Ground
Loop 1+
Multiplex Bus -
Multiplex Bus +

**Smoke Detector (e.g.: DS250/MB4W)**

**EOL Relay (e.g.: EOL200)**

**EOL P/N: 28010**

**DS9400 Loop 2+**

**Ground**

**DS9400 Loop 1+**

**Multiplex Bus -**

**Multiplex Bus +**

**EOL P/N: 28010**

**47K ohm**
VIII. System Options

**DS7465 Input/Output Module**

Provides one supervised input for connection of conventional Normally Open inputs. Also provides one Form “C” relay which can be programmed to follow system events or the status of specific zones. Connects to addressable bus. Up to 20 per bus can be used on the DS9400.

**DS9431 Multiplex Expansion Module**

I/O Module for the DS9431 Multiplex Expansion Module

**NOTE:**
Bus A or Bus B may be used

Bus + and Bus - are connected to MUX A terminals for addresses 9 - 128. MUX B terminals are for addresses 129 - 255.
VIII. System Options

DS7488 Octal Relay Module

Provides eight Form “C” relay outputs. These outputs are fully programmable and can be activated by several different system events. Connects to option bus. Up to 2 per DS9400 system.
VIII. System Options

**DS9411 Class A Zone Converter**

Converts a Class B, Style B initiating circuit on the panel to a Class A, Style D circuit for connection to field wiring. The DS9411 connects to one of the panel’s conventional inputs.
VIII. System Options

**DS9414 Class A to Class B NAC Converter**

Converts a reversing Class B Notification Appliance Circuit (NAC) to a Class A circuit. It is compatible with any Class B, Style Y NAC that uses a 2.2K ohm EOL resistor. When used on a Class B, Style Y NAC, the DS9414 implements a Class A, Style Z NAC. The DS9414 connects to the NAC output on the panel.
VIII. System Options

DS9431 Multiplex Expansion Module

Provides either two 2-wire (Class B, Style 4) multiplex buses or a 4-wire (Class A, Style 6) multiplex bus for connecting up to 247 remote points. The DS9431 connects directly to the DS9400. Only 1 DS9431 per DS9400 system.
**VIII. System Options**

**DS9434 Four-Point Expander**

The DS9434 plugs into the control and provides four additional Class B, Style B loops that are identical in characteristics to the loops on the control. Only 1 per DS9400 system.
DS9346 Fire Annunciator Keypad

4-wire LCD annunciator keypad is capable of showing all messages normally displayed on the DS9400 via a 2-line, 16-char. Display. 4 LEDs for easy reading of annunciator status from a distance. Silence and Reset keys for system control are secured with a keyswitch. Connects to the option bus. Up to 4 allowed per DS9400 system.
VIII. System Options

**DS9445 LED Annunciator**

Identifies the location of a fire for up to eight zones. Connects to the option bus. Up to 8 are allowed per DS9400 system.
VIII. System Options

**DS9447 Remote LCD Keypad**

4-wire alphanumeric keypad that combines system annunciator and controller functions. It operates identically to the built-in user interface on the DS9400. Up to 4 allowed per DS9400 system.

Option Power (A + B) 500mA, max

Option Bus A  |  Option Bus B
--- | ---
+12 Com  |  +12 Com
Data 15mA max | Data 15mA max

DS9447 Terminal Strip

R  |  B  |  G  |  Y
--- | --- | --- | ---
RA | BA | GA | YA
RB | BB | GB | YB
VIII. System Options

**DS9484 Power NAC 6A**
Remote NAC power supply that adds 4 NFPA 72 Class B, Style Y NACs via the option bus, and is supervised by the control panel. The DS9484 connects to either 4-wire option bus on the DS9400. Up to 2 allowed per DS9400 system.
VIII. System Options

MX280 Series Smoke Detectors
Multiplex Photoelectric Smoke Detectors with Chamber Check® Self Diagnostics. MX280TH includes 135°F heat sensor. MX280THL includes 135°F heat sensor and low temperature detector. Connects to the multiplex bus.
DS9400 Quiz

Directions: This is an open-book quiz. You may use the handouts you were given to complete this quiz. Please circle the letter that represents your answer.

1) How many zones does the DS9400 system consist of?
   A) 2     B) 6     C) 2, expandable to 4     D) 4, expandable to 8

2) How many on-board NACs are there on the DS9400?
   A) 4     B) 2     C) 8     D) 4 with the DS9431 MUX Expansion Module

3) Which is not a feature added by the DS9431 MUX Expansion Module?
   A) Increased number of relay outputs     B) Allows for more system users
   C) Adds additional NACs     D) Adds addressable point capability

4) The DS9400’s Event History Buffer can hold up to 100 events. When the DS9431 MUX Expansion Module is added, the capacity of the Event History Buffer is expanded to:
   A) 500 events     B) 400 events     C) 200 events     D) None of these

5) Which reporting format is supported by the DS9400?
   A) SIA     B) 4/2 Tone Burst     C) BFSK     D) All of these

6) The DS9400 supports three phone numbers. What is the third number used for?
   A) Account #1     B) Keypad programming
   C) Remote programming     D) Account #2

7) Which choice best defines an input point?
   A) A group of point functions     B) A NAC device
   C) A group of zones     D) A smoke detector

8) How many point functions are there to choose from when programming the DS9400?
   A) 16     B) 4, expandable to 8     C) 10     D) 100

9) What does a point function consist of?
   A) A point, a zone and a detector     B) A point, a zone and a NAC
   C) A function and settings for Configuration, Local Only, Silenceable and Loop Response
   D) Settings for Local Only, Silenceable and Loop Response

10) What does the second number represent in this shortcut: 0-4-2-2?
    A) Security Menu     B) Programming Level 2
    C) The second digit in the factory default PIN     D) None of these