

4010 Fire Alarm

Front Panel Installing, Operating, and
Programming Instructions

574-052
Rev. E



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Cautions and Warnings

SYSTEM REACCEPTANCE TEST AFTER SOFTWARE CHANGES - To

ensure proper system operation, this product must be tested in accordance with NFPA72-1996, Chapter 7 after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

READ AND SAVE THESE INSTRUCTIONS. Follow the instructions in the installation, operating and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. Fire Alarm Control Panel (FACP) operation and reliability depend upon proper installation.

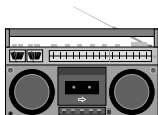


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ELECTRICAL HAZARD - Disconnect electrical power when making any internal adjustments or repairs. Servicing should be performed by qualified Simplex Representatives.



RADIO FREQUENCY ENERGY - This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Codes and Standards

The 4010 is listed for the following listing categories.

UL 864 Listings for Type of System:

- UL 864 Power-Limited Fire Alarm Control Unit
- Local (formerly NFPA 72A)
Requires the sounding of an alarm via listed notification appliance(s)
- Auxiliary (formerly NFPA 72B)
Requires 4010-9809 City Circuit Module
- Remote Station - protected premise (formerly NFPA 72C)
Requires 4010-9809 City Circuit Module or the 4010-9810 or -9816 DACT
- Proprietary - protected premise (formerly NFPA 72D)
Requires 4010-9817 (with 4010-9818 or 4010-9819) or 4010-9821 Network Interface Modules
- Central Station - protected premise (formerly NFPA 71)
Requires 4010-9810 or -9816 DACT
- Suppression Releasing Service
Requires 4010-9814 Suppression Kit

UL 864 Listings for Type of Service:

- Automatic, Manual, Waterflow, and Sprinkler Supervisory

UL 864 Listings for Type of Signaling:

- Coded, Non-Coded, March-Time and DACT
Requires the 4010-9810 or -9816 DACT

Factory Mutual Approved:

- Same as UL above

Local Approvals:

- CSFM*
 - MEA
 - City of Chicago (pending)
-

*This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing No. 7170-0026:226 for allowable values and/or conditions for use concerning material presented in this document.

Codes and Standards (continued)

The installer should be familiar with the relevant codes listed below as well as any other applicable local codes and standards, when installing a fire alarm system.

- NFPA 72 National Fire Alarm Code
- NFPA 11 Standard for Low-Expansion Foam and Combined Agent Systems
- NFPA 11A Standard for Medium- and High-Expansion Foam Systems
- NFPA 12 Standard on Carbon Dioxide Extinguishing Systems
- NFPA 12A Standard on Halon 1301 Fire Extinguishing Systems
- NFPA 13 Standard for the Installation of Sprinkler Systems
- NFPA 14 Standard for the Installation of Standpipe and Hose Systems
- NFPA 15 Standard for Water Spray Fixed Systems for Fire Protection
- NFPA 16 Standard for the Installation of Deluge Foam-Water Sprinkler and Foam-Water Spray Systems
- NFPA 16A Standard for the Installation of Closed-Head Foam-Water Sprinkler Systems
- NFPA 17 Standard for Dry Chemical Extinguishing Systems
- NFPA 17A Standard for Wet Chemical Extinguishing Systems
- NFPA 25 Standard for Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
- NFPA 70 National Electrical Code
- NFPA 80 Standard for Fire Doors and Fire Windows
- NFPA 90A Standard for the Installation of Air Conditioning and Ventilation Systems
- NFPA 90B Standard for the Installation of Warm Air Heating and Air Conditioning Systems
- NFPA 92A Recommended Practice for Smoke-Control Systems
- NFPA 92B Guide for Smoke Management Systems in Malls, Atria, and Large Areas
- NFPA 101 Life Safety Code
- NFPA 170 Standard for Fire Safety Symbols
- NFPA 231C Standard for Rack Storage of Materials
- NFPA 1221 Standard on the Installation, Maintenance, and Use of Public Fire Service Communication Systems

About this Manual

The following conventions are used in this publication to identify special names or text.

- When a membrane panel key (located below the display) is referenced in this manual, it is normally shown between left and right arrows. Examples are <ALARM SILENCE> and <SYSTEM RESET>.
- Text enclosed in quotation marks indicates the title of a chapter or section of the manual, such as "About this Manual."
- Bulleted lists, such as this one, provide you with information. They are also used to indicate alternatives in numbered procedural steps.
- Numbered lists indicate procedures with steps that you must carry out sequentially.

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Chapter 1

4010 FACP Overview

Introduction

The 4010 is a single-channel, addressable, modular Fire Alarm Control Panel (FACP) that monitors and controls up to 250 IDNet addressable devices. The Standard Function Input/Output (SFI/O) card, power supply, and cabinet provide a complete fire alarm control panel for most applications. Optional modules mount to the chassis to provide additional inputs and outputs, network communication, and additional power. Additionally, the 4010 can automatically control supplementary equipment such as fire doors and fans during an alarm condition using its auxiliary relay outputs.

The 4010 provides audible and visible indications during trouble, supervisory, or alarm (fire) conditions. Should any of these conditions occur, the system activates the applicable notification appliance(s), LEDs, and the panel tone-alert. The indications continue until someone appropriately acknowledges the condition.

This publication describes how to install, configure, operate, program, and test the Simplex 4010 Fire Alarm Control Panel (FACP).

In this Chapter

This chapter discusses the following topics:

Topic	See Page #
Related Documentation	1-2
Base System Module	1-3
Optional System Modules	1-5
User Interface	1-9
Passcodes, Access Levels, and Logging In and Out	1-12
Menu Structure	1-14

Related Documentation

The following table lists publications that provide specific information concerning field wiring, replacement parts, optional modules, and application information.

Publication Title	Part Number
<i>4010-9806 Class A Module - Installation Instructions</i>	574-055
<i>4010-9809 City Circuit Card - Installation Instructions</i>	574-056
<i>4010 Fire Alarm Expansion Power Supplies Installation Instructions</i>	574-057
<i>4010 Fire Alarm RS232 Interface and Service Modem Cards Installation Instructions</i>	574-058
<i>4010-9820 Battery Meter Module - Installation Instructions</i>	574-165
<i>4010-9814 Suppression Kit - Installation Instructions</i>	574-166
<i>4010 Fire Alarm DACT Modules - Installation Instructions</i>	574-167
<i>4010 Fire Alarm 4120 Network Interface Cards Installation Instructions</i>	574-168
<i>4010 Fire Alarm - Parts List</i>	574-424
<i>4098 Detectors, Sensors, and Bases - Application Manual</i>	574-709
<i>4010 Fire Alarm - Field Wiring Diagrams</i>	842-058

Base System Module

Overview

The 4010 Base System includes the SFI/O card, power supply, and cabinet.

SFI/O

The SFI/O contains all connections for optional modules as well as N2 annunciator communication, IDNet, NAC, Auxiliary Power, Auxiliary Relay, PC Programmer (service port), and expansion power connections.

The User Interface provides a 2x40 LCD screen, LEDs, operational and programming keys, all of which are visible with the cabinet door closed. See “User Interface,” later in this chapter for additional information about the user interface.

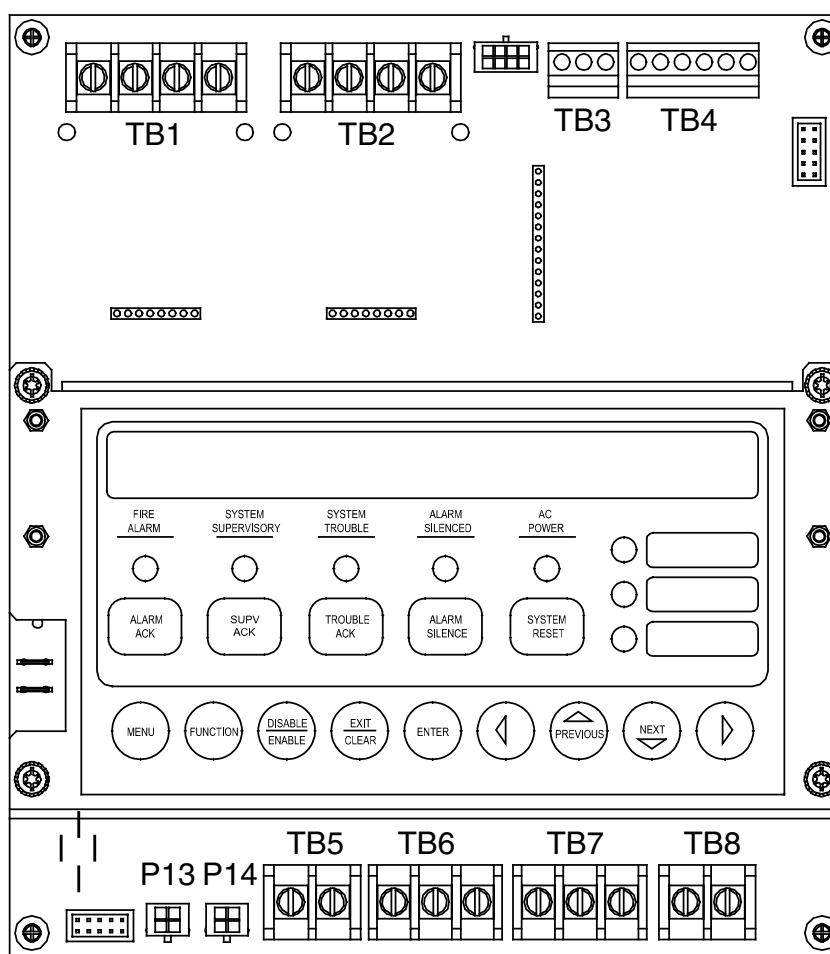


Figure 1-1. 4010 SFI/O with User Interface

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Base System Module, *Continued*

Power Supply – Base System

Base System:

- 120VAC +10% / -15%, 60Hz or 220/240VAC +10% / -15%, 50/60Hz
- 24VDC (unregulated) 4A alarm power
- 24VDC, 1/2 Amp auxiliary power
- Battery Charger for 25Ah Batteries, 24-hour recharge at 120VAC (for larger battery capacity, use the 4081-9301, -9302, -9303, or -9304 External Battery Cabinet w/Charger)

Note: The 4010 back box can accommodate up to 25Ah batteries.

Default Settings

All switches and potentiometers are set at the factory before shipping. Although the settings should be accurate, you can change the settings on the following components as indicated.

- LCD Adjustment (R143) – If necessary, use a small flat head screwdriver, turn the R143 Potentiometer located below TB1 to adjust the contrast on the LCD for the 4010.
- Baud Rate Setting (SW2) - Baud rate settings for the 4010 communications are shown in Table 1-1 below. If you receive a communications trouble at the panel, verify that SW2 is set correctly.

Table 1-1. SW2 Switch Settings

Baud Rate	SW2-1	SW2-2
OFF LINE	ON	ON
9,600	OFF	ON
19,200	ON	OFF
19,200	OFF	OFF

Important: You must set all cards to the same baud rate in order for the 4010 to operate properly. If you have a 4010 with a Network or DACT card, you must set the SW2 dip switch to the 9600 baud rate. It is recommended that you use the 19,200 option when uploading/downloading information to a PC.

Environmental Specifications

Temperature:

The 4010 operates normally with ambient temperatures from 32° F to 120° F (0°C to 49°C), inclusive.

Humidity:

The 4010 operates normally under non-condensing humidity conditions up to 85% relative humidity @ 86° F (30°C).

Optional System Modules

Overview

The following is a list of optional modules for the 4010. Refer to the individual instructions that accompany each module for more information. Those instructions and their part numbers are listed in the “Related Documentation” section of this chapter. Refer to the label inside the door of the 4010 for the placement of optional modules.

Note: Certain modules are mutually exclusive. For example:

- One DACT or One City Circuit Card is allowed.
- One 4120 Network Card or One DACT is allowed.
- One Dual RS232 Card or One RS232/Modem is allowed.
- One Battery Meter Module or One 24VDC Extender Terminal Block.

Optional Modules with Dedicated Hardware Slots

The 4010 has five dedicated mounting locations to support the following modules.

4010-9806 Class A Adapter Card for NACs

The four NACs found on the SFI/O board are Class B (Style Y). To support Class A (Style Z) you must install an adapter card that mounts to the SFI/O board. Each adapter card supports two NACs.

4010-9809 City Circuit Card

The city circuit card connects to the SFI/O with a ribbon harness to provide UL-listed connections to either Remote Station (reverse polarity) or Public Service Fire Communications Center (local energy) receiving units (selectable). The card has two circuits -- Circuit 1 reports only alarm events and Circuit 2 can be configured to report Trouble events or Trouble and Supervisory events. In the event of a CPU failure, a city card configured for a Trouble Output sends a trouble to the city circuit. The card is mounted to the right of the SFI/O at the top of the chassis.

Newer versions of the 4010 FACP (Version 2.01 or later) provide the ability to reset the City Circuit in the following situation.

- If the device(s) in alarm is physically removed.
- No other devices are in an alarm state.
- System Reset is performed.

Enabling City Circuit reset is done via Custom Control. Refer to “Application-Specific Examples” at the end of Chapter 8 for specific information. Be sure to consult the AHJ before enabling the City Circuit Reset option.

Continued on next page

Optional System Modules, *Continued*

Optional Modules with Dedicated Hardware Slots (*continued*)

4010-9813 Expansion Power Supply

When more than 4A of Notification or AUX power is required, an expansion power supply may be added. The expansion power supply provides filtered 24VDC, 4A power for Notification and Auxiliary use. The expansion power supply is mounted to the right of the SFI/O at the bottom of the chassis.

4010-9814 Suppression Kit

The 4010-9814 suppression kit consists of an expansion power supply designed to provide regulated 24VDC power for suppression circuits and a suppression system appliqué that is applied to the outside of the FACP. The suppression kit mounts in the same hardware slot as the expansion power supply.

4010-9820 Battery Meter Module

The 4010-9820 Battery Meter Module provides an indication of the charge/discharge state of the FACP's batteries (internal or external). The module also provides a constant reading of the current and voltage of the monitored batteries. This module mounts to the right of the city module.

Optional Modules for Expansion Slots

The 4010 has a maximum of two expansion slots available to support the following cards.

4010-9810 and -9816 DACT Cards. Two versions of the DACT are offered:

4010-9810 — *Event Reporting DACT* - Five categories of status changes are supported with this card. The Central Station is notified of Alarm, Trouble, Supervisory or Waterflow status changes. AC Fail trouble is delayed for 6 to 12 hours before reporting to the Central Station. In the event of a CPU failure, the card sends a "CPU Trouble" message to the Central Station.

4010-9816 — *Per Point Reporting DACT* - Specific information is available about which point in the system experiences a status change. The report sent to the Central Station includes the specific point address along with the point status. The DACT supervises the system CPU via N2 communication. In the event of a CPU failure, the DACT sends a "CPU Trouble" message to the Central Station.

Continued on next page

Optional System Modules, *Continued*

Optional Modules for Expansion Slots *(continued)*

4010-9811 Dual RS232 Card

The Dual RS232 Card is connected to the N2 communication lines. The 4010 can vector messages to RS232 ports by category. The RS232 ports may be configured as follows:

- Two serial printers (80 or 40 column).
- One serial printer and one CRT/Keyboard (command line interface).

The RS232 ports on the option card are electrically isolated from earth, allowing connection of an AC powered printer or CRT/keyboard.

Note: Only the 80-column printer can be used to print 4010 system reports.

4010-9812 RS232/Service Modem Card

This card is similar to the above dual RS232 card except that one port is a dedicated Service Modem port (command line interface). The second port may be programmed for use with a serial printer or left unused. Event vectoring by category is supported on the modem and RS232 ports.

4010-9817, -9818, -9819, and -9821 4120 Network Cards

A 4120 Network card can be added to the 4010. This card communicates with the system CPU via N2 communication. The 4010 system can be a node on a 4120 Network, however it has limited functionality. Points on the 4010 may be declared as Public. No points on other nodes may be declared as External to the 4010. Set Host and Remote Download functions are fully supported.

Remote Optional Modules

The following optional modules mount remotely from the 4010 FACP.

4606-9101 LCD Remote Annunciator

The 4606 LCD annunciator for the 4010 provides remote area annunciation of the 4010 panel's status. Pass-key protected, the user interface provides a 2x40 LCD screen, indicating LEDs, and operator membrane keys.

4605-8401 24-Point I/O

The 24-Point I/O Card for the 4010 is capable of using any combination of 24 inputs or outputs to control LEDs, lamps, and relays, and to monitor contact closure inputs. The outputs can be ON continuous or flashed, at a slow or fast rate. Inputs may be unsupervised, supervised for opens, supervised for open and shorts, depending upon how the switch is wired externally.

Continued on next page

Optional System Modules, *Continued*

Other Compatible Equipment

The 4010 is compatible with the equipment listed below provided all equipment meets the applicable agency listings for the intended use.

- 4003 Voice Control Panel (VCP). Since the 4010 does not contain hardwired monitor points, the alarm/trouble output from the 4003 is connected to a Zone Adapter Module (ZAM). One of the NACs on the 4010 can be used to activate the 4003.
- 4009A and 4009R IDNet NAC Extender.
- The 4010 is compatible with the following 4098 smoke/heat sensors and bases:

PID	Description
4098-9710	Quickconnect, TrueAlarm, Photo Smoke Sensor
4098-9713	Quickconnect, TrueAlarm, Photo Smoke Sensor with sounder.
4098-9714	TrueAlarm, Photo Smoke Sensor (requires separate base)
4098-9717	TrueAlarm, Ion Smoke Sensor (requires separate base)
4098-9733	TrueAlarm Heat Sensor (requires separate base)
4098-9789, -9791 thru -9793	Sensor Bases

- Power supplies that are power-limited and listed for fire-protective signaling use can be used with the 4010 when wired according to power-limited guidelines.
 - The 4010 is compatible with the 4120 network. In order to use the 4010 as a node on the network, you must have
 - 4100 master software must be Rev. 8.01 or higher and GCC/NPU must be Rev. 2.03 or higher.
 - 4120 network firmware must be Rev. 3.01 or greater. (Rev. 3.02.99 or later is recommended.)
 - 4010 network firmware must be Rev. 3.03.99 or later.
-

User Interface

Overview

The user interface of the 4010 system consists of control keys, LEDs, a 2-line by 40-character backlit LCD, and a tone-alert mounted in the control panel. The purposes of the Operator and Menu keys are listed below.

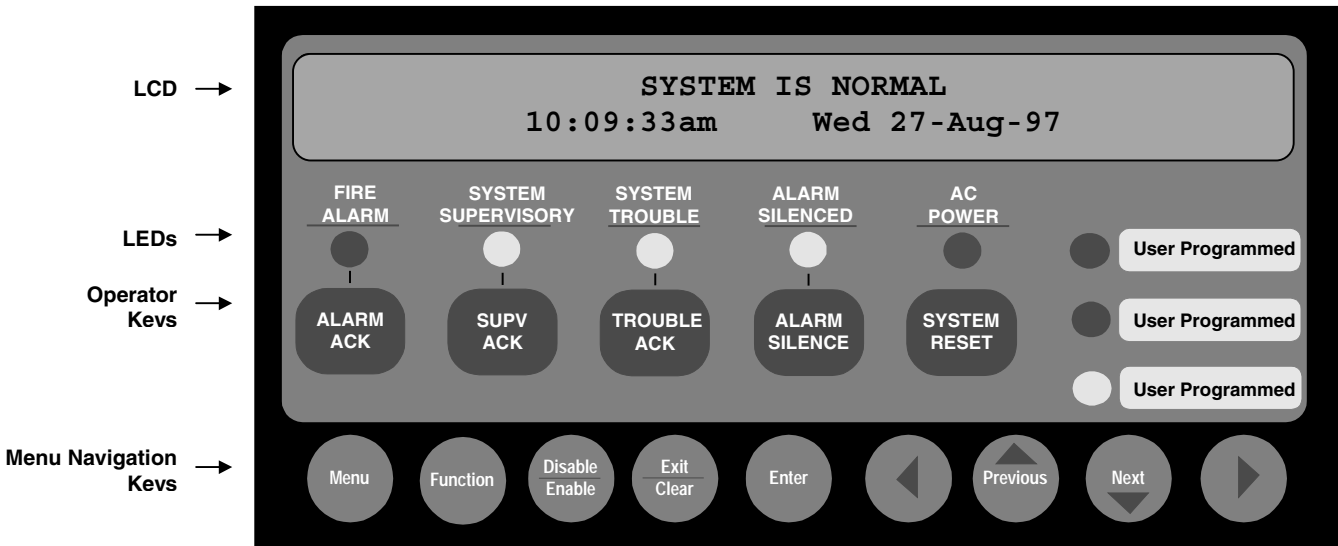


Figure 1-2. 4010 Operator Interface, Showing High-Level Status Screen

Operator Key Definitions

The following information defines the operator (rectangular) keys on the 4010 panel.



- Alarm Acknowledge <ALARM ACK>**
The <ALARM ACK> key is used to acknowledge any unacknowledged fire alarms in the system and to scroll through the alarms in the active Alarm List.
- Supervisory Acknowledge <SUPV ACK>**
The <SUPV ACK> key is used to acknowledge any unacknowledged supervisories in the system and to scroll through the supervisory conditions in the active Supervisory List.
- Trouble Acknowledge <TROUBLE ACK>**
The <TROUBLE ACK> key is used to acknowledge any unacknowledged troubles in the system and to scroll through the troubles in the active Trouble List.

Continued on next page

User Interface, Continued

Operator Key Definitions (continued)



Alarm Silence <ALARM SILENCE>

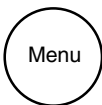
The <ALARM SILENCE> key is used to silence any silenceable output types (generally all non-visible notification appliances).



System Reset <SYSTEM RESET>

The <SYSTEM RESET> key allows you to reset all alarm notification appliances and controls, remove alarms from the Alarm List, silence all silenceable outputs, reset detectors, and return the system to a normal state (provided that no alarms are present). The display will indicate that a reset is in progress and whether or not a reset completes successfully.

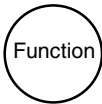
Menu Navigation Key Definitions



The following information defines the menu navigation (round) keys on the 4010 panel. These keys perform access level dependent functions defined in the "Passcodes, Access Levels, and Logging In and Out" section of this chapter.

Menu <Menu>

The <Menu> key always brings you to the top of the main menu structure unless you are in Programming or Quick-CFIG menus (see the Menu Structure at the back of this chapter).



Function <Function>

The Function Menu is displayed when the <Function> key is pressed at the High-Level Status screen. Use the < Previous> and < Next> keys to scroll through the functions list. The function key provides access to commonly used control and display "functions," and is also used for list editing.



Disable/Enable <Disable/Enable>

The <Disable/Enable> key allows the operator to quickly disable or enable any point that is currently displayed (passcode protected). A confirmation screen is displayed requesting <Enter> be pressed before performing the actual enable or disable.



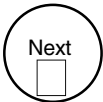
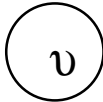
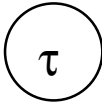
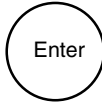
Exit/Clear <Exit/Clear>

The <Exit/Clear> key is used to back out of menus or displays to get to the top-level menu structure (refer to the "Menu Structure" at the end of this chapter). Where possible, the <Exit/Clear> key will back out one level at a time. There are cases, however, that the <Exit/Clear> key will return the operator directly to the top level.

Continued on next page

User Interface, *Continued*

Menu Navigation Key Definitions *(continued)*



Enter <Enter>

The <Enter> key is used to confirm selections. When pressed, this key provides additional information about the point shown on the display. In a programming screen, pressing <Enter> indicates that the information on the display is correct and can be entered. The <Enter> key is used in various other places within the menu structure, always for this same type of operation.

Right <↵> and Left Arrow <⬅>

The <↵> and <⬅> arrows are used in screens with multiple choices. The keys advance the focus (square brackets []) from field-to-field.

Previous < Previous> and Next < Next>

The < Previous> and < Next> keys allow you to move from screen-to-screen within any displayable object having multiple screens. This would include scrolling through an historical log, the point database, a list of points, or other similar activities. The < Next> key selects the next display screen in sequence, and the < Previous> key selects the previous screen. These keys are also used to view additional information about abnormal points or in viewing Historical Logs.

Passcodes, Access Levels, and Logging In and Out

Overview

Certain operator functions of the 4010 are passcode protected at different levels. This section describes logging in and out at specific access levels.

Passcodes and Access Levels

All operations in the 4010 are protected at a preset level with designated passcodes to access these operations. The table below shows the basic operations and menu choices for specific access levels. The default passcodes are listed for Levels 2 through 4. Refer to the Menu Structure later in this chapter for a complete quick-reference of the main 4010 FACP menus.

Table 1-2. Access Levels and Operations

ACCESS LEVEL	OPERATIONS
1	Ack Silence System Reset
2 Passcode = 2000	<i>All Level 1 Operations, plus:</i> Set Time/Date Point Control Enable/Disable Points
3 Passcode = 3000	<i>All Level 1 & 2 Operations, plus:</i> Clear Logs Clear Verification Tallies Programming <ul style="list-style-type: none">- Edit/Clear Point Label- Restore/Save CFG TrueTest Walk Test Reports
4 Passcode = 4000	<i>All Level 1,2, & 3 Operations, plus:</i> Quick CFG Run Diagnostics Upload/Download Programming <ul style="list-style-type: none">• Edit Cards• Edit SMPL Program• System Options Restart Panel <ul style="list-style-type: none">• Warm Start• Cold Start

Continued on next page

Passcodes, Access Levels, and Logging In and Out, *Continued*

Logging In and Out

To execute any of the functions protected at Level 2 or above, you must Login to the 4010 FACP using a passcode. After completing a task at a certain access level you should then Logout to return the access level to Level 1. When logged in at Level 2 or above and you do not press any front panel keys for more than ten minutes, the 4010 defaults to access level 1.

All passcodes consist of a four-digit number. Logging in at a Level 4 causes a Service Mode trouble. Note that this trouble can only be cleared by restarting the panel.

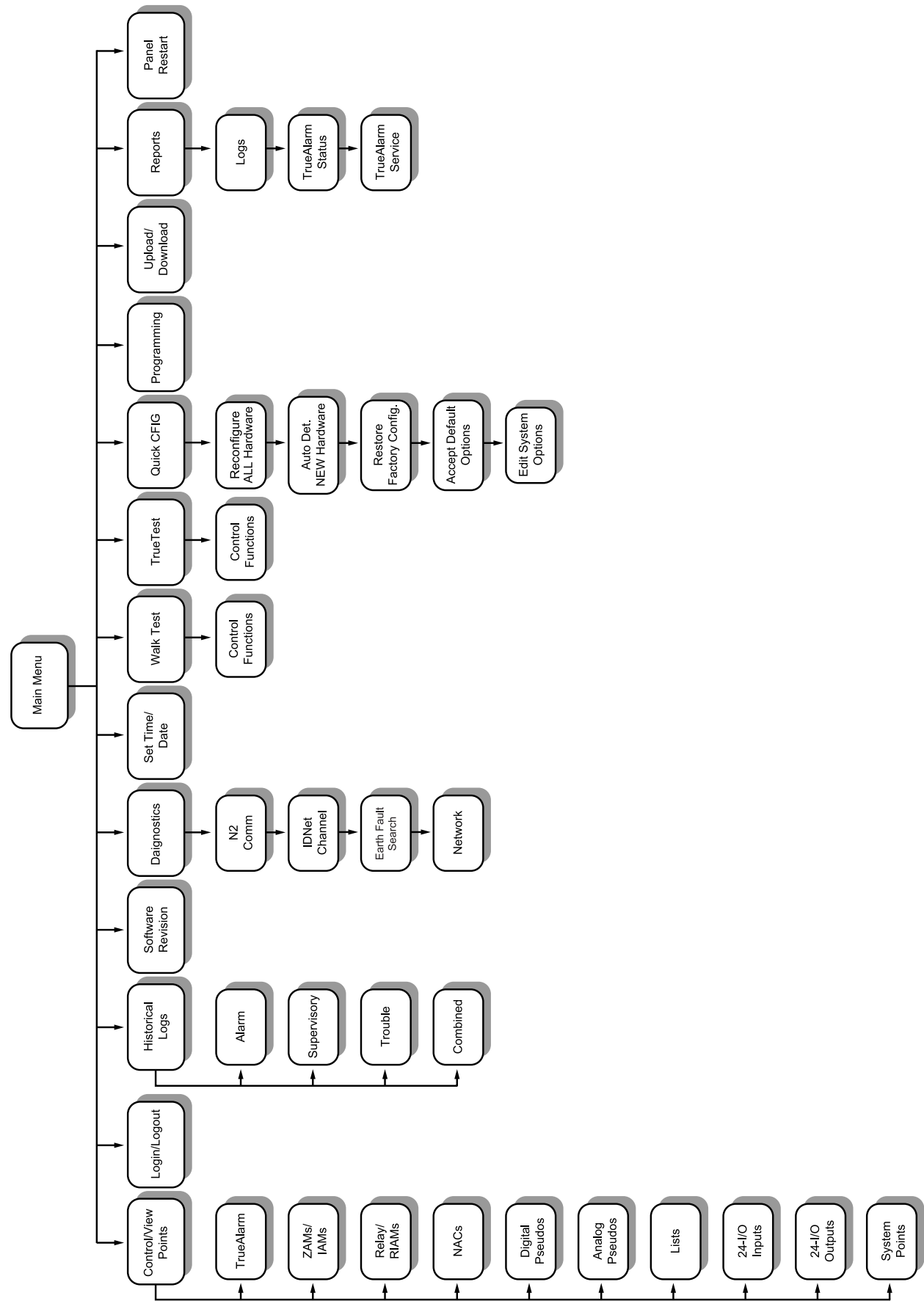
To Login, perform Steps 1 through 7 on a 4010 that is at the High-Level Status screen (refer to Figure 1-2 for an example of this screen). When moving from one digit to the next, an asterisk (*) appears in the place of an entered number for security purposes. See Table 1-2 in the previous section for the default passcodes.

1. Obtain the appropriate passcode information for the appropriate level.
2. Press <MENU>.
3. Press and hold < NEXT> until [Login/Logout] is displayed, and then press <ENTER>.
4. Press and hold < NEXT> until [Login] is displayed, and then press <ENTER>.
5. Press < NEXT> to scroll through the numbers on the display until the appropriate number is displayed.
6. Press the right arrow < > to move the focus brackets [] to the next digit in the passcode.
Repeat Steps 5 & 6 until all numbers are entered.
7. When the passcode is correct, press <ENTER> to Login.

A ****Login Accepted**** screen indicating your current access level is displayed briefly upon a successful Login attempt. If you did not enter the appropriate Login passcode, a ****Login is Invalid**** screen appears.

To Logout, perform Steps 1 through 4 above except for Step 4 where you need to wait until [Logout] is displayed.

Menu Structure



Chapter 2

Back Box Installation

Overview

This chapter contains instructions and guidelines for installing the 4010 FACP backbox.

In this Chapter

This chapter discusses the following topics:

Topic	See Page #
Before You Begin	2-2
Remove Chassis and Cut Conduit Openings	2-3
Mount the Backbox	2-4
Re-install the Chassis	2-5

Before You Begin

Unpacking the System

Unpack the 4010 using the following information:

- Carefully unpack the system and inspect for shipping damage.
- Select a location for the control panel in a clean, dry, vibration-free area with moderate temperature (see the “Environmental Specifications” section in Chapter 1).

Installation Guidelines

Before installing the 4010, read the following guidelines:

- Install the FACP in a readily accessible area with sufficient room to easily install and maintain the control panel.
- Locate the top of the cabinet approximately five feet above the floor with the door hinge on the left-hand side.
- Count the number of conductors needed for all devices and cut the appropriate knockouts. **Pay careful attention to the routing for Power-Limited and Non-Power Limited wiring. You must maintain a 1/4-inch separation between these two types of wiring. All terminal connections are Power-Limited except those to the AC power, Battery, and City Circuit, and contacts when switching Non-Power Limited sources.**
- Review the precautions and warnings at the front of this publication.
- All wiring must comply with the National and/or Local codes for fire alarm systems. All wiring must test free of grounds.
- Leave sufficient room for batteries in the bottom of the back box (see the label inside the 4010 back box for more information).
- Enclosure must be level and plumb when installed.

Standards and Codes

When installing the 4010, you should be familiar with the following standards:

- NEC Article 300 Wiring Methods
 - NEC Article 760 Fire Protective Signaling Systems
 - Applicable Local and State Building Codes
 - Requirements of the Local Authority Having Jurisdiction (AHJ)
-

Remove Chassis and Cut Conduit Openings

Overview

The 4010 ships from the factory completely assembled in the back box, or as a single piece electronics assembly that is shipped separately from the back box, retainer, and door. The system electronics (SFI/O and power supply) are mounted to a steel chassis. Refer to the 526-407 label inside the back box for additional information.

Step 1. Remove the Chassis

Prior to installation you must remove the chassis containing the 4010 SFI/O and power supply from the back box. Use the following steps to remove the chassis.

1. Remove the door grounding wire from the back box. Remove the door from the hinges and set it aside.
2. Remove the metal retainer by gently lifting and pulling the bottom of the retainer out from the back box. Then, being careful not to drop the retainer, slide the top of the retainer out from under the lip of the top of the back box.
3. Remove the AC wiring Quick-Disconnect connector from the chassis by firmly squeezing the release tabs and pulling it free. The Quick-Disconnect connector is located directly below the chassis. Dress the wires so that they do not interfere with back box installation.
4. Loosen or remove the four mounting screws holding the chassis to the back box.
5. Lift the chassis out of the back box and store in a clean, dry, safe area for re-installation later.

Step 2. Cut Conduit Entrances



Determine the amount and proper location of conduit/service entrances. Make all appropriate entrances into back box (see Figure 2-1).

Caution: Power-Limited and Non-Power-Limited wiring must enter through separate conduit/service entrances. AC power entrance into back box is recommended at the bottom right side of the back box.

If a Bus Bar is required to terminate wire shields, see Figure 2-1 for proper mounting location. Entrances for shielded wire must be located within two inches of the bus bar. Maximum intrusion into box for conduit is 1/2-inch.

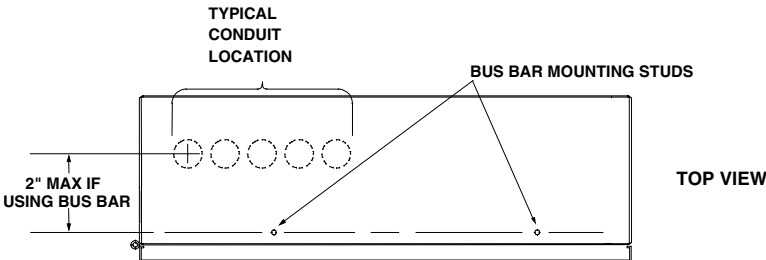


Figure 2-1. Conduit and Bus Bar Mounting Locations.

Mount the Backbox

Surface Mounting the Back Box

1. Using the pre-cut holes in the back of the box as a guide, mark off where you want to mount the back box (see the “Before You Begin” section of this chapter).
2. Using mounting hardware capable of supporting a fully loaded 4010 (approximately 50 lbs.), screw two screws into the wall where the top two teardrop holes of the back box are to be located. Tighten the screws leaving about a 1/8-inch gap from the seated position.
3. Carefully lift the back box and place the two teardrop holes over the mounting screws.
4. Screw two mounting screws into the two bottom back box holes and tighten all screws.

Semi-Flush Mounting the Back Box

1. Remove the mounting knockouts from both sides of the back box. See Figure 2-2 for their location.
2. Make the appropriate opening in the wall or wall board to accommodate the back box. Dimensions of the backbox are 22” (55.8 cm) W x 18 (45.7 cm) H x 6 ¼ (15.8 cm) D.
3. Frame the opening to accommodate the back box. Fit the back box into the opening. Use wall stud guides to ensure free movement of the door.
4. Using mounting hardware capable of supporting a fully loaded 4010, screw or nail back box to the studs.

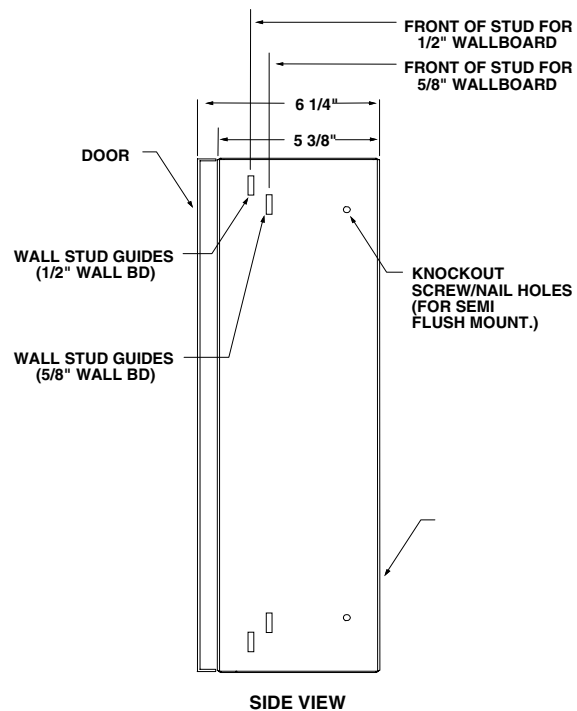


Figure 2-2. Wall Stud Guides

Continued on next page

Re-install the Chassis

Procedure

Use the following steps to re-install the 4010 chassis containing the SFI/O and power supply into the back box.

1. Insert two mounting screws into the top two mounting holes for the chassis. Tighten the screws leaving a 1/8-inch gap from the seated position.



Caution: When mounting the chassis, pay careful attention to any wiring inside the back box. Do not crimp any wiring behind the chassis when mounting.

2. Carefully hang the chassis on the two top mounting screws using the top teardrop holes on the chassis.
3. Insert two mounting screws into the bottom two teardrop chassis mounting holes and tighten all screws.
4. Re-hang the door on the back box hinges and re-attach the door grounding wire to the back box.
5. You can re-install the retainer now before wiring or later after wiring is complete. Re-install the retainer by guiding the top lip of the retainer under the top lip of the back box and carefully sliding the bottom of the retainer into place.



WARNING: DO NOT APPLY POWER TO THE 4010 AT THIS TIME!
DO NOT connect the quick-disconnect AC connector to the chassis. Refer to the “Power-Up and Checkout” section of this publication for more information.

Chapter 3

Wiring

Overview

This chapter contains instructions and guidelines for wiring the 4010 FACP.

This chapter describes how to wire the base 4010 FACP. Use the information in this chapter, the 526-407 and 526-408 labels located on the inside door of the FACP, and the 842-058 Field Wiring Diagram to wire the base panel.

Refer to the publications listed in Chapter 1 to wire all optional modules.

In this Chapter

This chapter discusses the following topics:

Topic	See Page #
Overview	3-2
NAC Wiring	3-4
IDNet Wiring	3-5
AC Power and Battery Wiring	3-6
Auxiliary Relays	3-9
System Power Up and Checkout	3-10
Periodic Testing and Maintenance	3-13

Overview

Power Limited Versus Non-Power Limited Systems



The 4010 system can be wired as either a Power Limited or Non-Power Limited system. Adhere to the following guidelines and consult the NEC for specifics.

- When installing the 4010 as a Power Limited system, *you must* observe the following guidelines:
 - Maintain ¼ inch of space between Power Limited wiring and AC Power or Battery wiring.
 - Run AC Power wiring in a separate conduit that enters the back box in the upper or lower right corner.
 - Route AC Power, battery wiring, city circuit connections, and non-Power Limited Relay wiring only through the shaded areas shown in Figure 3-1. Do not route Power Limited wiring through the shaded areas shown in the figure.
- The 4010 FACP can be reclassified as a non-Power Limited system when installed in accordance with the latest version of NEC 760. In this case, all references to Power Limited must be removed from the panel's labels.

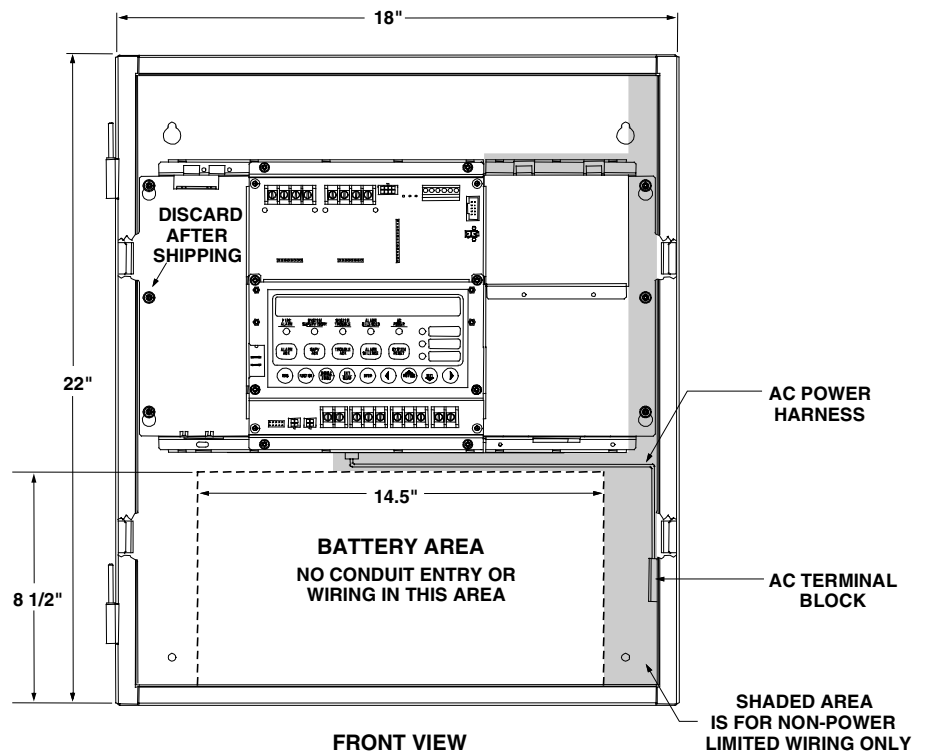


Figure 3-1. Location of Non-Power Limited Wiring Area

Overview, Continued

Locations of Terminal Connections

Figure 3-2 shows the location of all terminal connections for the system components. Refer to the appropriate section later in this chapter for specific information on wiring a component.

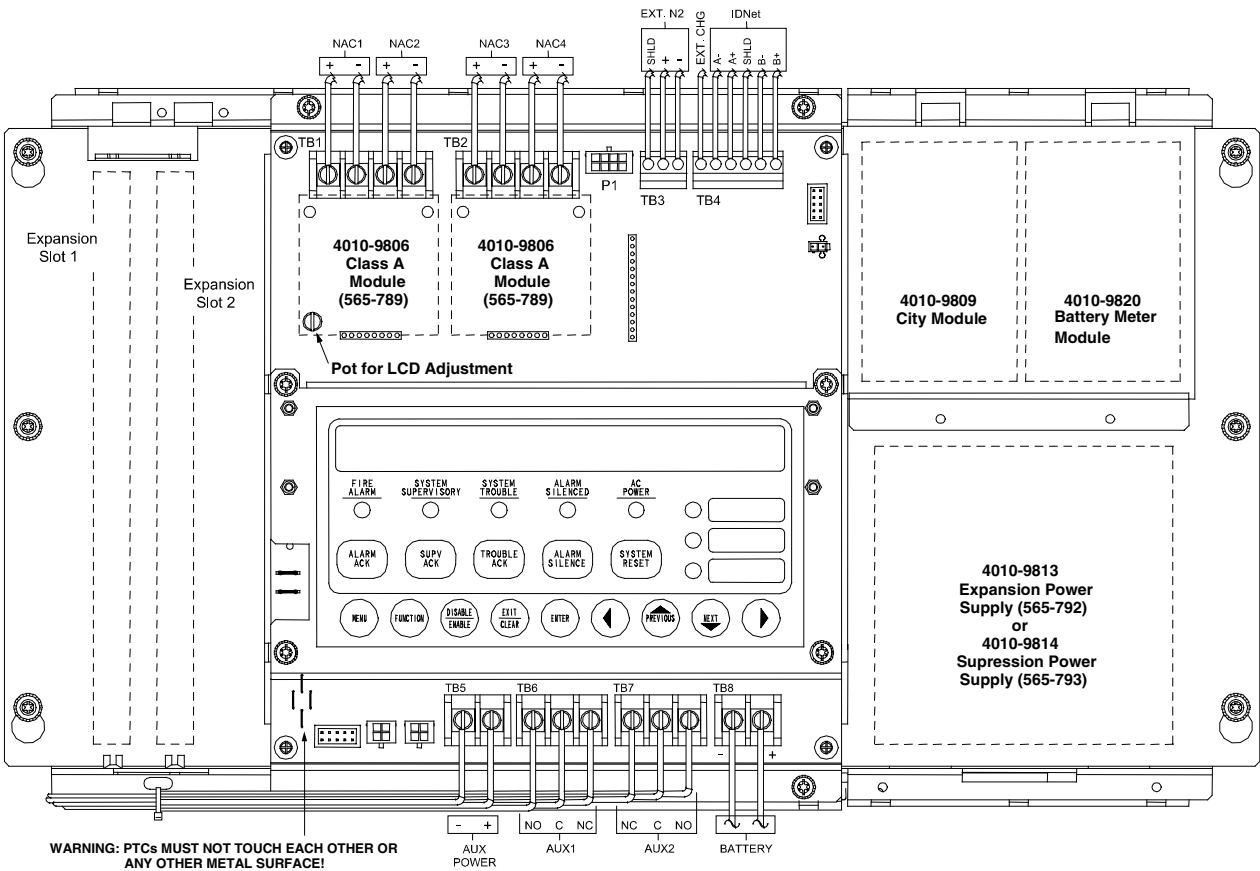


Figure 3-2. Base Panel Wiring

NAC Wiring

Overview

The 4010 provides four NACs for notification appliances such as horns and strobes. These NACs are standard Class B (Style Y). Optional Class A (Style Z) operation can be achieved using an adapter. Refer to the 4010-9806 Class A Module - Installation Instructions, Part No. 574-055 for information on the Class A NAC adapter.

The NACs supervise for short or open circuit troubles. In the event of a short, the NAC does not energize. Each NAC is rated at 2A. Up to 4A of NAC power is available from the base unit. If more power is needed, NAC 3 and NAC 4 can be connected to an expansion power supply.

An auxiliary (AUX) power connection (rated at 1/2A, 24VDC) is provided at TB5 located to the left of the auxiliary (AUX) relay terminal blocks at the bottom center of the SFI/O. Current drawn from TB5 must be deducted from the 4A total NAC power.

Each NAC can be configured as “On until Silence” or “On until Reset” and can be coded or non-coded (refer to “Chapter 6 - Configuring Points” for more information). The 4010 can disconnect each NAC individually to aid in locating earth faults.

Terminal Connections

The NAC’s wiring connects to TB1 and TB2 as shown in Figure 3-3. These terminal blocks are barrier strip type that can accommodate 12-18 AWG wires. TB1 and TB2 are located in the upper left corner of the SFI/O. Refer to the 842-058 wiring diagram for Alarm Current, Wiring Distance, and Line Resistance values.

TB1-1: NAC 1 + Alarm	TB2-1: NAC 3 + Alarm
TB1-2: NAC 1 - Alarm	TB2-2: NAC 3 - Alarm
TB1-3: NAC 2 + Alarm	TB2-3: NAC 4 + Alarm
TB1-4: NAC 2 - Alarm	TB2-4: NAC 4 - Alarm

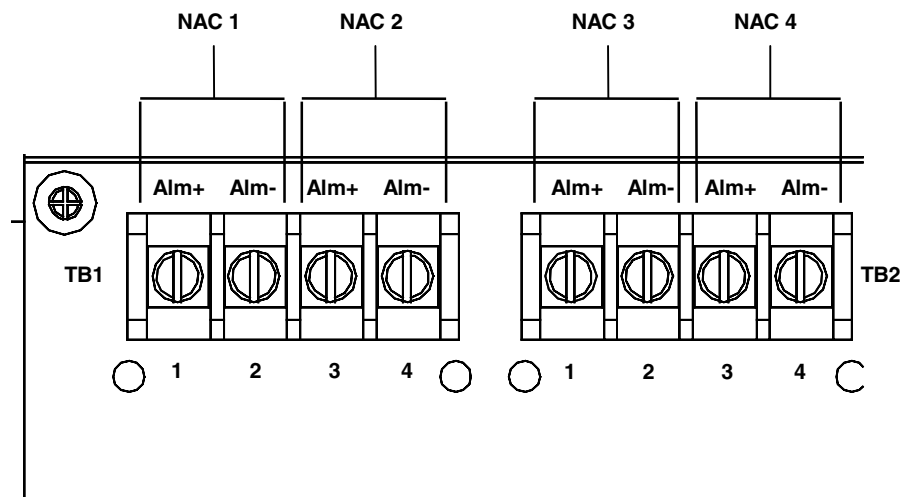


Figure 3-3. NAC Wiring

IDNet Wiring

Overview

The 4010 uses addressable IDNet devices (smoke and heat detectors/sensors and pull stations, 4009 IDNet NAC Extender, etc.). The 4010 supports 250 devices on a single pair of wires on a single channel.

The IDNet channel supports Style 4 and 6 as part of the base system. Refer to the 4010 Field Wiring Diagram (842-058) for all wiring information.

IDNet communication also supports the detection of duplicate devices. IDNet detects if two devices are set to the same address. This function is activated from the front panel (see IDNet Diagnostics in the Diagnostic/Troubleshooting section of this publication).

Terminal Connections

Use the information below to wire the IDNet communication lines (14-18 AWG) to TB4 located in the upper right corner of the SFI/O.

- To connect Class A wiring, wire the “B” terminals (TB4-1 and -2) to each device in succession without T-taps (observe polarity). At the last device in the loop, return the B+ wire to the A+ terminal (TB4-4) and the B- wire to the A- terminal (TB4-5).
- To connect Class B wiring, jumper B+ to A+ and B- to A- using 14-18 AWG insulated wire (T-taps are allowed). Connect B+ to all devices (positive connection) and connect B- to all devices (negative connection).

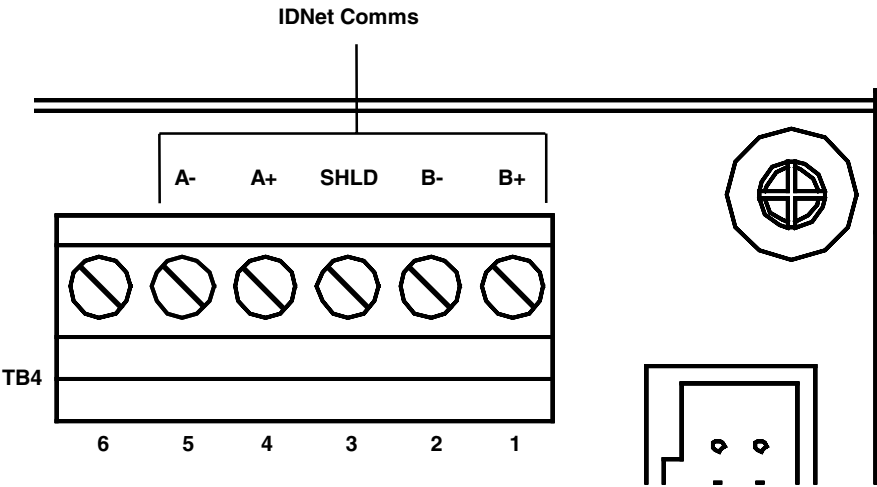


Figure 3-4. IDNet Connections

AC Power and Battery Wiring

AC Power

When the 4010 FACP is installed as a Power-Limited system, AC power lines must be run in a separate conduit, and should enter the back box in the lower right corner. Use the shaded area of Figure 3-5 only for routing of AC power wiring. All wiring must be neatly dressed within the back box. Use the wiring guides inside the back box when possible.

- The FACP requires connection to a separate dedicated AC fire alarm circuit, which must be labeled “Fire Alarm.”
- The AC power circuit must connect to the line side of the main power feed of the protected premises.
- No other equipment can be powered from the fire alarm circuit.
- The AC power circuit wiring must run continuously, without any disconnect devices, from the power source to the FACP.
- Over-current protection for this circuit must comply with Article 760 of the National Electric Code as well as local codes.
- Use 12AWG wire with 600-volt insulation for this circuit.

1. Match incoming Neutral and Hot wires to their corresponding wires leading from the terminal block located in the lower right corner of the back box to the Quick-Disconnect harness and screw into place.
2. The safety ground wire from the AC source must be connected to the ground stud located below the terminal block. Do the following to connect the ground wire to the stud:
 - a) Run the ground wire to the stud and cut it, leaving a little slack for adjustment.
 - b) Crimp a spade terminal (Part No. 474-144 or -015) onto the ground wire.
 - c) Place a lock washer on the stud, followed by the terminal and then another lock washer.
 - d) Securely fashion a nut (Part No. 322-128) onto the stud.

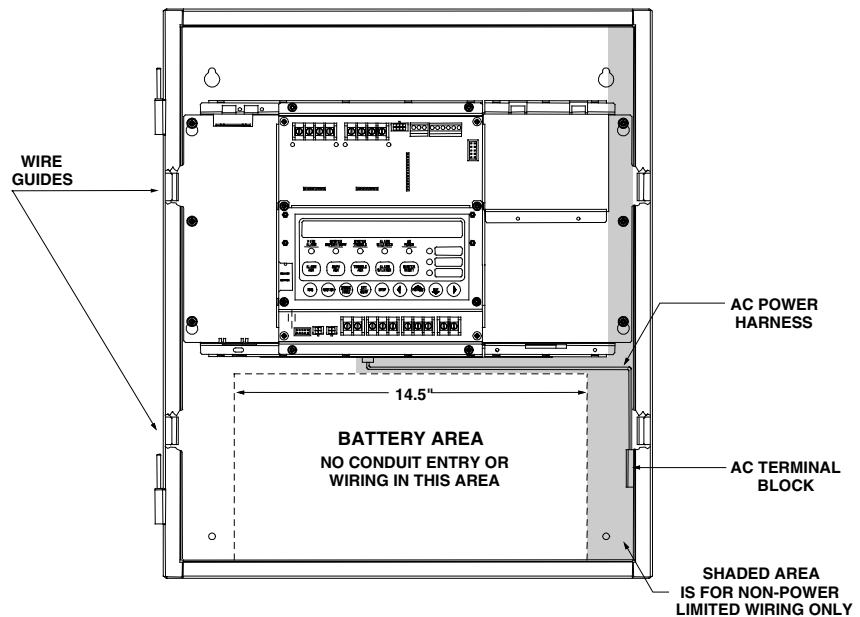


Figure 3-5. AC Power Wiring

Continued on next page

AC Power and Battery Wiring, *Continued*

Installing and Connecting Batteries

The base 4010 FACP accommodates (and charges) up to 25 Ah capacity batteries. The following is a list of compatible batteries.

- 2081-9272, 6.2 Ah
- 2081-9274, 10 Ah
- 2081-9275, 18 Ah
- 2081-9288, 12.7 Ah
- 2081-9287, 25 Ah

Install the batteries in the area shown on the label located in the bottom of the back box. Use the following steps, Part No. 733-945 battery harness (733-903 for Canadian systems), and Figure 3-6 to connect the batteries to TB8 located in the lower left corner of the SFI/O.

Domestic systems should use the following procedure.

1. Using the short white wire crimped at both ends, jumper one positive (+) terminal of one battery to the negative (-) terminal of the other battery.
2. Take the non-crimped end of the red wire from the harness and connect this to the + side of TB8. Connect the Fast-on connector on the other end of the Red wire to the Positive terminal of one of the batteries.
3. Take the non-crimped end of the black wire from the harness and connect this to the - side of TB8. Connect the Fast-on connector on the other end of the Black wire to the Negative terminal of one of the batteries.

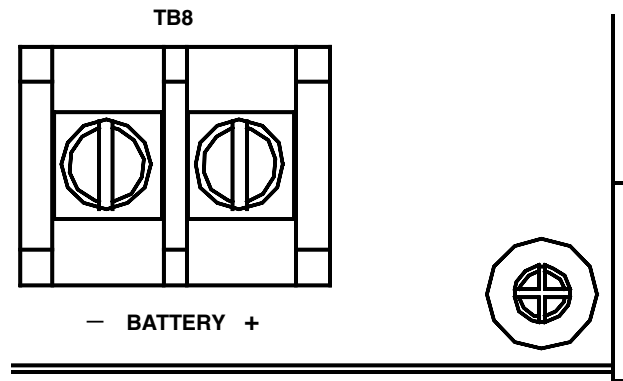


Figure 3-6. Battery Connections – Domestic System

Canadian systems should use Figure 3-7 as an installation guide.

WARNING: DO NOT APPLY BATTERY POWER TO THE 4010 AT THIS TIME! DO NOT connect crimped ends of the red and black wires to the battery. Refer to the “Power-Up and Checkout” section of this publication for more information.



Continued on next page

AC Power and Battery Wiring, *Continued*

Installing and Connecting Batteries *(continued)*

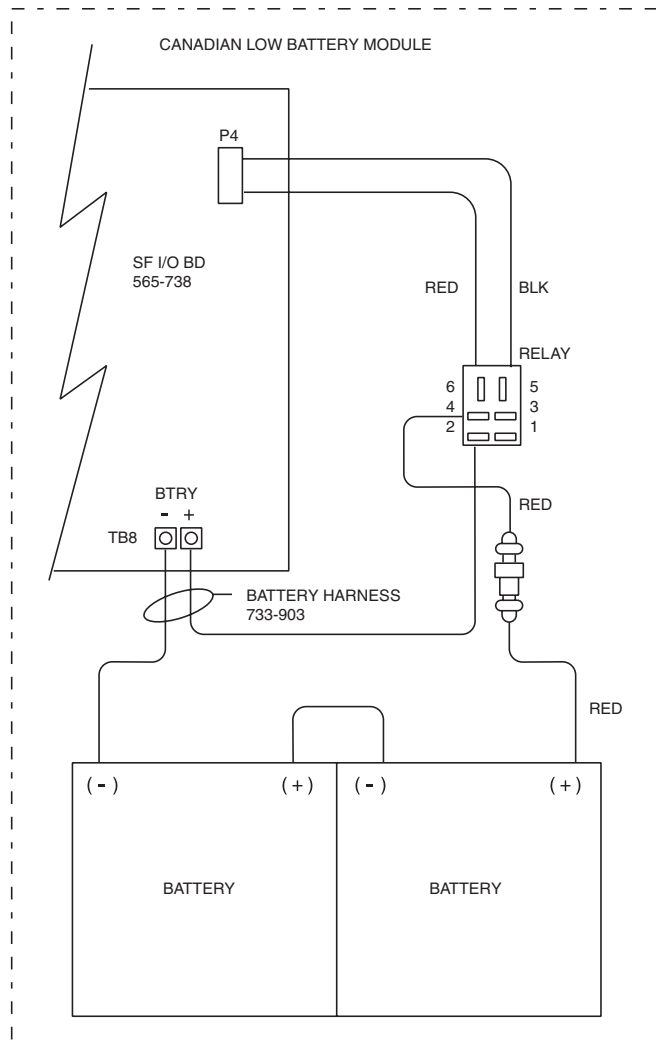


Figure 3-7. Canadian Battery Wiring



WARNING: DO NOT APPLY BATTERY POWER TO THE 4010 AT THIS TIME! DO NOT connect crimped ends of the red and black wires to the battery. Refer to the “Power-Up and Checkout” section of this publication for more information.

Auxiliary Relays

Auxiliary Relays



The 4010 provides two auxiliary (AUX) relay circuit connections; one at TB6 and the other at TB7. Each circuit provides one form “C” contact (normally open or normally closed) rated at 2A (24VDC), or 0.5A (120 VAC) with optional 120 Volt auxiliary relay kit.

The default operation for AUX1 is an Alarm Relay and AUX2 is a Trouble Relay. The AUX relay circuits can also be programmed for other desired operations using the front panel (see “Chapter 6 - Configuring Points”).

Use Figure 3-8 to wire the AUX relay circuits. TB6 and TB7 are located at the bottom of the SFI/O near the center.

When power for the AUX relay contacts is from TB5 (AUX Power), 4010-9813, or 4010-9814 expansion power supplies, the circuit is power-limited. When power for the AUX relay contacts IS NOT from the sources listed above, use an in-line fuse (Part No. 208-165). If power source is non-power-limited, wiring must be routed through the non-power-limited spaces shown in Figure 3-1 and “power-limited” markings must be obliterated.

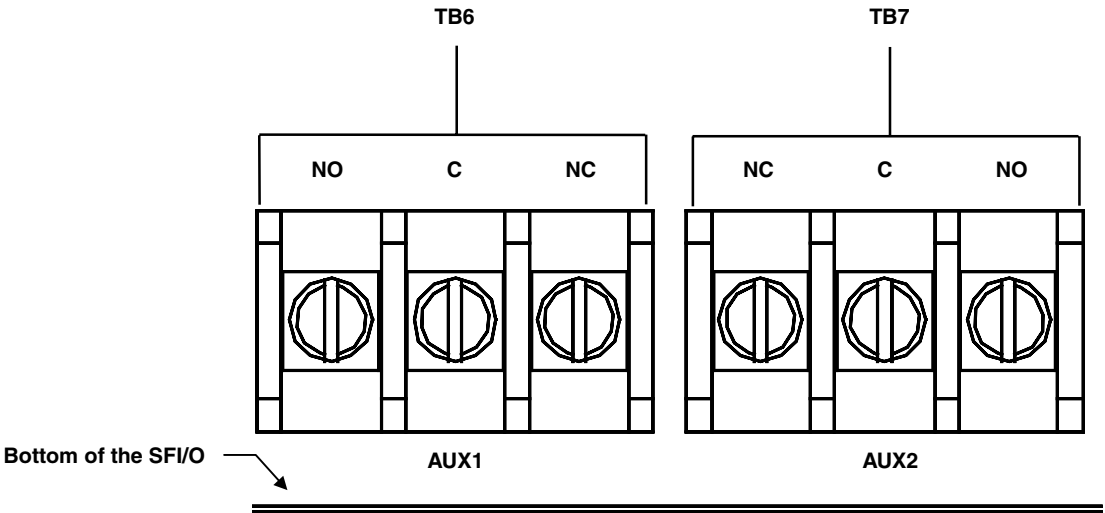


Figure 3-8. AUX Relay Connections

System Power-Up and Checkout

Connect AC & Battery Power

Use the following steps to apply AC and battery power to the 4010 FACP.

1. Re-connect the AC power harness removed in previous steps
2. Connect the crimped ends of the 733-945 battery harness (733-903 for Canadian systems) to the batteries. Observe polarity (red to +, black to -) when connecting batteries.



WARNING: Battery contains sulfuric acid which can cause severe burns to the skin and eyes, and can destroy fabrics. Replace any leaking or damaged battery. If contact is made with sulfuric acid, immediately flush skin or eyes with water for 15 minutes and seek immediate medical attention.

Power-Up and Checkout

Caution: Notify fire, central station, and/or building personnel before testing the system.


Power-Up

After applying power to the system, use the following list to check the 4010 for proper operation.

- Check that the green AC Power LED is ON.
- Check that all yellow and red LEDs are OFF.
- Use the Lamp Test procedure in “Chapter 11 - Operation” of this publication to verify that all 4010 LEDs and LCD segments work properly.

On power-up, the 4010 performs the following:

- Displays revision of boot-loader software
- Self Test - CPU Hardware Checkout
- Linkscan - Checking for a Programmer Unit Connection
- Memory Scan - Checking for Incorrect Application
- Start up - 4010 FACP Startup



Start up

Figure 3-9. 4010 Start Up Screen

Continued on next page

System Power-Up and Checkout, *Continued*

Power-Up and Checkout (continued)

If the 4010 passes its start up self-test, the FACP starts and the system is normal, the High-Level Status screen shown in Figure 3-10 displays. If troubles exist in the system, Figure 3-11 displays after pressing <ACK>.

Note: The High-Level Status screen is the first screen shown on a 4010 whether in a normal or a trouble/supervisory/fire alarm state before any keys are pressed.

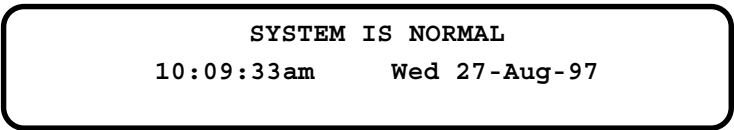


Figure 3-10. System Normal (High Level Status) Screen

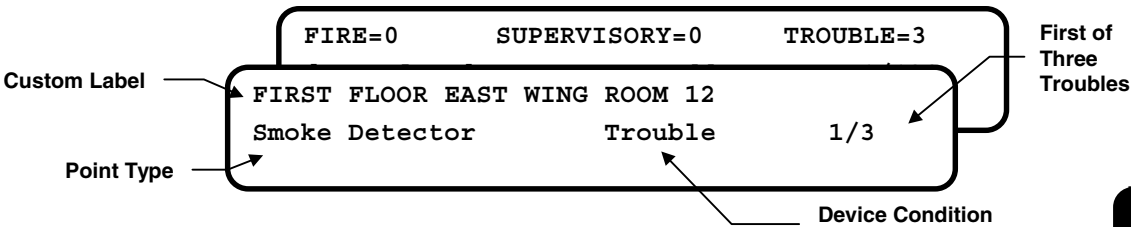


Figure 3-11. System Trouble Screen

Note: If the self-test fails, the 4010 displays the error code and waits 45 seconds before attempting a restart. Refer to Chapter 10 for a list of error codes.

Checkout



Caution: Before proceeding with the acceptance test procedures, do the following:

- Notify the fire department and the central alarm receiving station if transmitting alarm conditions.
- Notify building personnel of the test so that alarm sounding devices are disregarded during the test session.
- When necessary, disable activation of alarm notification appliances and speakers to prevent their sounding.

Continued on next page

System Power-Up and Checkout, *Continued*

Acceptance Test

When finished with the original installation and all modifications, conduct a complete operational test on the entire installation to verify compliance with applicable NFPA standards. Testing should be conducted by a Simplex-trained technical representative in the presence of a representative of the Authority Having Jurisdiction, and the customer's representative. Follow the procedures outlined in Chapter 7 "Inspection, Testing, and Maintenance" of NFPA Standard 72-1996 and the following steps.

1. Activate an initiating device (smoke, pull, etc.) and check that all active notification appliances (strobes, horns, etc.) function. Reset the alarm initiating device, the FACP, and any other associated equipment. Repeat this step for each initiating device.
2. Remove AC power, activate an initiating device, and check that active notification appliances sound, and alarm indicators illuminate. Measure the battery voltage with notification appliances active. Replace any battery with a voltage of less than 24VDC and reapply AC power.

Note: Step 2 requires fully charged batteries. If batteries are new or discharged due to a recent power outage, allow the batteries to charge for 48 hours before testing. Refer to "Periodic Testing and Maintenance" section for more information on testing batteries.

3. Reapply AC power and check that all yellow and red LEDs are OFF and the green AC Power LED is ON.



Caution: Notify fire, central station, and/or building personnel when you finish testing the system.

Periodic Testing and Maintenance

Overview

Periodic testing and maintenance of the FACP, all initiating and notification devices, and any other associated equipment is essential to ensure proper and reliable operation. Test and maintain the FACP according to the schedules and procedures outlined in the following publications:

- NFPA Standard 72-1996, Chapter 7, “Inspection, Testing, and Maintenance.”
- Installation Instructions for the peripheral devices installed in your system. Correct any trouble condition or malfunction immediately.

Periodic testing and maintenance of the system batteries must be done to ensure proper and reliable back-up operation. Test and maintain the system batteries using the following information.

Battery Testing Information

All sealed lead-acid batteries in fire alarm service should be tested annually. Replace all sealed lead-acid batteries that have been in service for four or more years.

It is recommended that a battery tester made specifically for checking sealed lead-acid batteries be used. Such a tester is available under Service Part No. 553-602.

If a battery tester is unavailable, the “voltage response test” described in the following information can be used to detect batteries with very low capacity or shorted cells.



Caution: A defective battery charger circuit can cause battery failure. Check the condition of the battery charger when either a battery tester or a voltage response test reveals weakened batteries.

Voltage Response Test

1. Disconnect battery from system.
2. Connect a digital voltmeter across the battery.
3. Connect the appropriate sized resistor(s) (see Table 3-1) across the battery’s terminals for the listed test time.



Caution: Resistors will get hot during test! Use 12AWG wire for battery-to-resistor hookup.

4. Record the end voltage reading.
5. Treat the battery as described in Table 3-2.

Continued on next page

Periodic Testing and Maintenance, *Continued*

Battery Testing Information (continued)

Table 3-1. Battery Testing

Voltage	Amp Hr	Resistor (Ohms)	Watts	Part No. and Description	Test Time
12	6.2	6.0	50	380-031	2 Seconds
12	8	4.5	50	380-031 (adj to 4.5 Ohm)	2 Seconds
12	10	4.0	50	380-031 (adj to 4 Ohm)	2 Seconds
12	18	2.0	100	380-031 (3 in parallel)	2 Seconds
12	25	1.5	100	382-090 (2 in parallel)	2 Seconds
12	33	1.0	150	382-090 (3 in parallel)	2 Seconds
6*	50	1.0	150	382-090 (3 in parallel)	4 Seconds
12	110	1.0	150	382-090 (3 in parallel)	4 Seconds

*Test 2 batteries in series for 12V

Table 3-2. Battery Readings and Instructions

If end voltage reading of battery is:	Instructions
11.8V or more	Put in Service
11.7V to 11.0V	Charge Battery*
10.9V or less	Discard Battery

*Retest battery after charging

Discard battery after four or more years of service. Dispose of according to manufacturer's guidelines.

Chapter 4

Quick CFG

Overview

The Quick CFG option provides you with the ability to quickly and automatically program the components and features of the 4010. Quick CFG is especially useful for programming basic system components following a new installation, and for adding components to an existing installation.

Quick CFG functions include the following:

- Reconfigure All Hardware
- Autodetect all new hardware added since CFG was last saved
- Restore the Factory CFG
- Accept default settings for system options
- Edit settings of system options

Cautions and Warnings



Be alert to the following when using Quick CFG:

- **WARNING:** The 4010 System will NOT continue to operate as a Fire Alarm System during the programming of Quick CFG operations.
- Quick CFG performs an IDNet duplicate address search, and terminates if duplicate addresses are found.
- Using the Quick CFG options changes the 4010 configuration. When changing the configuration, information could be lost.
- Quick CFG is not allowed if a DACT or Network card is installed. Use Quick CFG first, and then program the DACT or network card.
- Class A Adapters are not automatically detected by Quick CFG. Refer to Chapter 6 for information on programming a Class A NAC.
- QuickAlert functions are not accessible through Quick CFG. You must manually program the appropriate NACs with the QuickAlert point type to enable QuickAlert operation. Refer to Chapter 6 for information on manually programming a NAC's point type.
- Quick CFG automatically configures the hardware device type for a 4009 (4009A, R4009A, 4009A8, R4009A8). All 4009 NACs are set for Class B operation and assigned a point type of SSIGNAL.

In this Chapter

This chapter discusses the following topics:

Topic	See Page #
Reconfigure All Hardware	4-2
Auto Detect New Hardware	4-3
Restore Factory CFG	4-4
Accept Default Settings for System Options	4-5
Edit Settings for System Options	4-6

Reconfigure ALL Hardware

Overview

This option starts the 4010 with a new configuration. If a configuration already exists and this option is selected, it clears the current configuration and adds all currently connected devices to the CFG.

Procedure

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [Quick CFG] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

```
Please Wait . . .  
Fire Alarm Operation Suspended
```

3. Press <ENTER> to continue with the Quick-CFG option.
4. Press <NEXT> or <PREVIOUS> until <RECONFIGURE ALL HARDWARE> is displayed and then press <ENTER>. A warning appears, indicating that this will delete the current configuration.

```
WARNING    <Enter> to Continue    WARNING  
This will DELETE current configuration
```

5. Press <ENTER> to continue. Another warning appears, indicating that you need to press <ENTER> to confirm the deletion.

```
WARNING    <Enter> to Continue    WARNING  
Press <Enter> to confirm deletion
```

A message appears indicating that Quick CFG is reconfiguring the hardware. This message is followed by another, which indicates that Quick CFG is scanning for IDNET devices. The Reconfigure ALL Hardware function is complete when a message similar to the following appears.

```
** Automatic Hardware Detection Completed **  
Total IDNet Devices Added: 128
```

Refer to “Save CFG Option” at the end of this chapter for information on saving the CFG once you have reconfigured the hardware.

Auto Detect NEW Hardware

Overview

This option adds new hardware that is not currently in the CFG. All existing hardware and programming remains the same.

Procedure

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [Quick CFG] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

```
Please Wait . . .  
Fire Alarm Operation Suspended
```

3. Press <ENTER> to continue with the Quick-CFG option.
4. Press <NEXT> or <PREVIOUS> until <AUTO DETECT NEW HARDWARE> is displayed and then press <ENTER>. A warning appears, indicating that this will change the current configuration.

```
WARNING  <Enter> to Continue  WARNING  
This will CHANGE current configuration
```

5. Press <ENTER> to continue. Another warning appears, indicating that you need to press <ENTER> to confirm the hardware detection operation.

```
WARNING  <Enter> to Continue  WARNING  
Press <Enter> to confirm Detect NEW
```

A message appears indicating that Quick CFG is reconfiguring the hardware. This message is followed by another, which indicates that Quick CFG is scanning for IDNET devices. The Auto Detect NEW Hardware function is complete when a message similar to the following appears.

```
** Automatic Hardware Detection Completed **  
Total IDNet Devices Added: 128
```

Refer to “Save CFG Option” at the end of this chapter for information on saving the CFG once you have reconfigured the hardware.

Restore Factory CFG

Overview

This option restores the 4010 to its original (factory default) CFG. All pseudo points (Analog and Digital) are cleared, Custom Control is erased, etc.

Procedure

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [Quick CFG] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue with the Quick-CFG option.
4. Press <NEXT> or <PREVIOUS> until <RESTORE FACTORY CONFIG.> is displayed and then press <ENTER>. A warning appears, indicating that this will delete the current configuration.

WARNING <Enter> to Continue WARNING
This will DELETE current configuration

5. Press <ENTER> to continue. The following message appears, indicating that the system is restoring the factory default configuration.

** Restoring Factory Default Panel **

This message is followed by a series of internal test messages. The High-Level Status screen appears when the operation is complete.

Accept Default Settings for System Options

Procedure

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [Quick CFIG] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue with the Quick-CFIG option.
4. Press <NEXT> or <PREVIOUS> until <ACCEPT DEFAULT OPTIONS> is displayed and then press <ENTER>. A warning appears, indicating that this operation may change current settings.

WARNING <Enter> to Continue WARNING
This may CHANGE current setting

5. Press <ENTER> to continue. The following message appears, indicating that the system is restoring the default settings for system options.

** Default Settings Restored **

Edit Settings for System Options

Overview

Once this action is selected from the Quick CFG menu, you can set these options by scrolling through the choices shown in Table 4-1 and selecting the appropriate settings for each. For timer options, selecting “0” initiates the action immediately.

Procedure

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [Quick CFG] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue with the Quick-CFG option.
4. Press <NEXT> or <PREVIOUS> until <EDIT SYSTEM OPTIONS> is displayed and then press <ENTER>.
5. Use the <NEXT> and <PREVIOUS> keys to scroll through the system options. Edit each of the system options as necessary, using the information in Table 4-1. Refer to Chapter 7 for specific information on system options.

Table 4-1. System Options and Available Settings

System Option	Settings
Time/Date Format	Choose 12 or 24-Hour Format
Active Status Reminder	Choose: <ul style="list-style-type: none">• On/Off; default Off• Set Reminder Interval (1-12 Hours); default = 8• Signal Duration (0-60 Secs.) 0=ON til clear default = 5
Alarm Silence/Reset Inhibit	Choose a timer range from 0 - 60 Mins; default = 0
Alarm Cut-out Timer	Choose a timer range from 0 - 60 Mins; default = 0
Door Drop on Alarm	Choose a timer range from 0 - 60 Secs; default = 0
Door Drop on AC Power Loss	Choose a timer range from 0 - 60 Mins; default = 0
Audible NAC Operation	Choose: <ul style="list-style-type: none">• Audible NACs: Steady• Audible NACs: Slow March• Audible NACs: Fast March• Audible NACs: Temporal (default)

Continued on next page

Edit Settings for System Options, *Continued*

Procedure (*continued*)

Table 4-1. System Options and Available Settings (*continued*)

System Option	Settings
Visual NAC Operation	Choose: <ul style="list-style-type: none"> • Visual NACs: Steady • Visual NACs: Slow March • Visual NACs: Fast March • Visual NACs: Temporal • Visual NACs: Synchronous (default)
QuickAlert NAC Horn Operation	Choose: <ul style="list-style-type: none"> • Temporal (default) • Steady • Slow March
Depleted Battery Cutout	Choose ON or OFF; default = OFF. Note: Set Depleted Battery Cutout to ON for suppression release systems.
Stagger Start AHU	Choose a timer range from 0 - 60 Secs; default = 30
Enable City Circuit	Choose ON or OFF; default = OFF
Expansion Power	Choose ON or OFF; default = OFF
Suppression Release (refer to "Chapter 7 - System Options" for more information)	Choose: <ul style="list-style-type: none"> • ON or OFF (default = OFF) • Dual Detector (default = OFF) • Detector Delay (default = 60) • Manual Delay (default = 30)
Edit Passcodes*	Change Passcode Designations
Logical Zone Labels*	Apply Zone Labels

*Available under Quick-CFIG System Options Menu Only.

Save CFG Option

Overview

Depending on whether or not you will be doing additional programming (such as changing hardware and point types, etc.), you may want to save the CFG following the Quick CFG operation.

The Save CFG option saves all information to the 4010 configuration *after* or *during* programming. Choose this option if you wish to save all of your edits and modifications you made during your programming session to the 4010 configuration. You can Save CFG by choosing the menu option or pressing Exit/Clear to back out of Programming mode and then choosing the Save CFG option from the 4010 prompts.

When exiting the programming mode, your 4010 re-boots and becomes operational as a fire alarm system.

Chapter 5

Configuring Cards

Overview

The 4010 allows you to manually configure each option card in the system. This chapter describes how to add, delete, or modify optional cards in the 4010 FACP.

Note: The system must be powered down before cards are added to the system.

In this Chapter

This chapter discusses the following topics:

Topic	See Page #
Card Addresses	5-2
Adding, Deleting, or Modifying 4010 Cards	5-3

Card Addresses

Card Addresses

All card addresses (whether hardware or logical cards) are shown in Table 5-1.

Table 5-1. 4010 Card Addresses

Card Address	Reserved Cards
0	CPU Board
1	NAC/Relay circuits
2	Power Supply
3	IDNet Channel
4	Dual RS232 or Service Modem
5 - 7	Unused
8	4120 Network or DACT cards
9 - 14	N2 Slaves (24-Point I/O or LCD Annunciator)
15 - 16	Unused
17	4009 IDNet NAC Extender
18	System Digital Pseudo Points
19	User Digital Pseudo Points
20	System Analog Pseudo Points
21	User Analog Pseudo Points
22	System List Pseudo Points
23	User List Pseudo Points

Adding, Deleting, or Modifying 4010 Cards

Overview

This section describes how to add, delete, or modify cards in a 4010 FACP. Be aware of the following configuration rules when adding, deleting, or modifying cards.

- Cards 1 through 3 and 17 through 23 cannot be deleted.
- Certain cards are mutually exclusive. For example:
 - One 4120 Network Card or One DACT is allowed.
 - One Dual RS232 Card or One RS232/Modem is allowed.
- The City Circuit card and Expansion Power Supply are enabled via the System Options menu. Refer to Chapter 7 for information on doing this.
- The DACT and Network cards are programmed and added to the 4010 FACP via the 4010 PC Programming tool.

Adding a Card

Use the following steps to add a card to the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <CONFIGURE CARDS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> until <ADD 4010 CARD> is displayed.
6. Press <NEXT> or <PREVIOUS> to scroll through the choices listed below.
 - RS232 Card (Card Address 4)
 - Modem Card (Card Address 4)
 - 24IO Card (Card Address 9 through 14)
 - LCD (Card Address 9 through 14)
7. Once the desired card is displayed, press Enter. The RS232 and Modem cards are automatically set to card address 4. Follow the prompts to confirm this action.

Continued on next page

Adding, Deleting, or Modifying 4010 Cards, *Continued*

Adding a Card (*continued*)

- When first adding a 24-Point I/O or LCD Annunciator cards to the 4010, you must choose an available address of 9 through 14. (The system automatically picks the next available address.) When selecting 24IO or LCD and then pressing Enter, the following figure appears.

```
Card= [09]
Card Type=LCD Card
```

- Press <NEXT> or <PREVIOUS> to scroll through the available addresses, select the appropriate address for your card, and then press Enter. Follow the prompts to confirm this action.

Deleting a Card

Use the following steps to delete a card from the 4010 FACP.

- Press <MENU>.
- Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

```
Please Wait . . .
Fire Alarm Operation Suspended
```

- Press <ENTER> to continue.
- Press <NEXT> or <PREVIOUS> until <CONFIGURE CARDS> is displayed and then press <ENTER>.



Caution: Deleting 4010 Cards also deletes any modes and SMPL (Custom Control) programming associated with that card.

- After selecting Delete a 4010 Card as your option under the Configure Cards menu, press <NEXT> or <PREVIOUS> to scroll through the cards configured in the 4010 FACP.
- When the card you wish to delete is displayed, press Enter.
- Follow the prompts to confirm this action.

Continued on next page

Adding, Deleting, or Modifying 4010 Cards, *Continued*

Modifying a Card

Use the following steps to Modify a card in the 4010 FACP. The only cards you can modify from this menu are the Dual RS232, Modem/RS232, and LCD Annunciator cards.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <CONFIGURE CARDS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> until <MODIFY A 4010 CARD> is displayed.
6. Press <NEXT> or <PREVIOUS> to scroll through the cards configured in the 4010 FACP.
7. When the card you wish to modify is displayed, press Enter. The available modifications you can make per card are shown in Table 5-2. The 4010 prompts you on which keys to press to execute different options.

Continued on next page

Adding, Deleting, or Modifying 4010 Cards, *Continued*

Modifying a Card *(continued)*

Table 5-2. Modification Options for 4010 Cards

4010 Card	Modifications
RS232 Card Port A and Port B	Device: PRT40U (unsupervised 40-Column printer) PRT40S (supervised 40-Column printer) PRT80U (unsupervised 80-Column printer) PRT80S (supervised 80-Column printer) UNUSED COMMAND (For use with a CRT on Port B Only) Baud Rates: 1200, 2400, 4800, 9600, 19200, 38400 Parity: NONE, EVEN, ODD Note: To print 4010 reports, you must have an 80-column printer.
Modem Card Port A and Port B	Device: PRT40U (unsupervised 40-Column printer) PRT40S (supervised 40-Column printer) PRT80U (unsupervised 80-Column printer) PRT80S (supervised 80-Column printer) UNUSED COMMAND (For use with a CRT on Port B Only) Baud Rates: 1200, 2400, 4800, 9600, 19200, 38400 Parity: NONE, EVEN, ODD
LCD Card	Enter selects ALL events to report to the LCD, Default Key Operation, and Default Overrides. Pressing Next allows you to choose Yes or No for the following: EVENTS: Fire, Supervisory, Trouble, Reset/Silence, Test, CCE Print Events KEY OPERATION: Fire Ack, Supv Ack, Trouble Ack, System Reset, Alarm Silence OVERRIDE ON ALARM: Fire Ack, Supv Ack, Trouble Ack, System Reset, Alarm Silence

Chapter 6

Configuring Points

Overview

The 4010 allows you to manually program each point in the system. This chapter describes how to add, delete, edit, etc., points in the 4010 FACP. The following information assumes you have all cards properly installed. If your cards are not installed properly or need modification, refer to “Chapter 5 - Configuring Cards.”

In this Chapter

This chapter discusses the following topics:

Topic	See Page #
Overview	6-1
Configure Points Menu	6-2
Configuring TrueAlarm Points	6-3
Configuring ZAM/IAM/RIAM Points	6-6
Configuring Relay and NAC Points	6-9
Configuring Digital and Analog Pseudo Points	6-11
Configuring 24-Point I/O Points	6-14
Configuring List Points	6-18
Configuring User-Defined SW/LED Points	6-21

Configure Points Menu

Configuring Points Menu

All options for configuring 4010 points are located in the Configure Points menu. Figure 6-1 shows the structure of this menu.

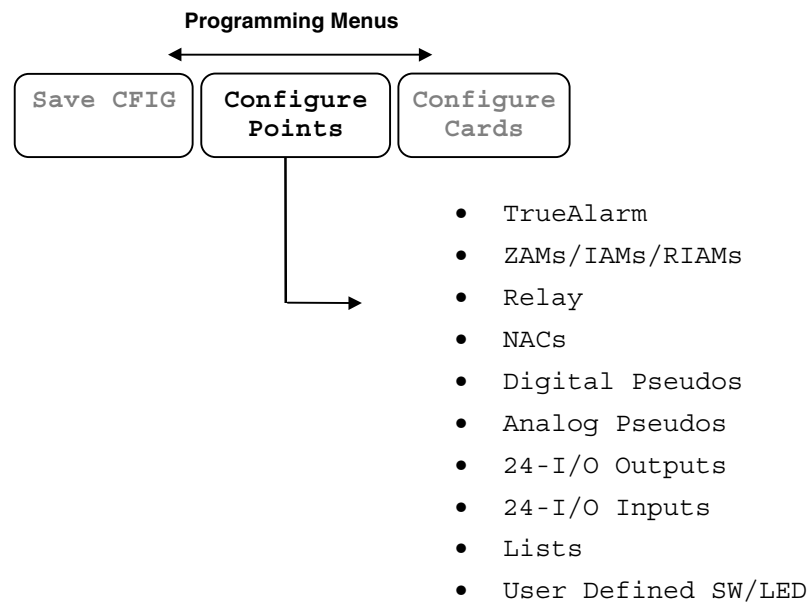


Figure 6-1. Configure Points Menu

Configuring TrueAlarm Points

Overview This section describes how to Add an IDNet Point, Edit a TrueAlarm Point, and Delete a TrueAlarm Point.

Add IDNet Point Use the following steps to Add an IDNet point to the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <TRUEALARM> is displayed and then press <ENTER>.
6. Use <NEXT> or <PREVIOUS> to scroll through your choices until **<Add IDNet Point>** is displayed and then press Enter.
7. The first unused point in the system (for example, M1-1) is displayed. Press <NEXT> or <PREVIOUS> to scroll through your list of unused points until the desired point is displayed and then press Enter.
8. Follow the prompts to confirm this action.

Note: If there are 250 devices present in the 4010 (maximum allowed), the system informs you that the IDNet channel is full and does not allow you to add any more points.

Edit TrueAlarm Point Use the following steps to Edit a TrueAlarm point in the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <TRUEALARM> is displayed and then press <ENTER>.

Continued on next page

Configuring TrueAlarm Points, *Continued*

Edit TrueAlarm Point (continued)

6. Use <NEXT> or <PREVIOUS> to scroll through your choices until <Edit IDNet Point> is displayed and then press Enter.
7. Press <NEXT> or <PREVIOUS> to scroll through your list of TrueAlarm points until the desired point is displayed and then press Enter.
8. Press <NEXT> or <PREVIOUS> to scroll through your list of choices until the desired option is displayed and then press Enter. Your choices are shown in Table 6-1.

Table 6-1. TrueAlarm Configuration Choices

Function	Description
Edit Device Type (See Note 1)	Changes the Hardware Device Type of the Point
Edit Point Type (See Notes 1 and 2)	Changes the Software Point Type of the Point
Edit Point Label (See Note 2)	Changes the 40-Character Label of the Point
Clear Point Label (See Note 2)	Blanks the 40-Character Label of the Point
Edit Mode (See Note 1)	Changes the Mode of Operation for the Point

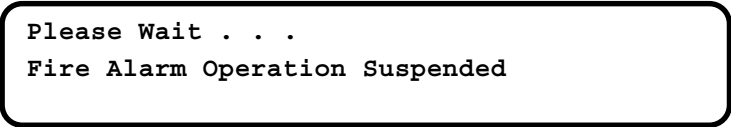
Notes:

1. For a complete list of your choices for these edit functions, refer to “Appendix A. Device and Point Types.”
2. To complete these functions, refer to their appropriate section in this publication.

Delete TrueAlarm Point

Use the following steps to delete a TrueAlarm point from the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.



3. Press <ENTER> to continue.

Continued on next page

Configuring TrueAlarm Points, *Continued*

Delete TrueAlarm Point (continued)



-
4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.
 5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <TRUEALARM> is displayed and then press <ENTER>.
 6. Use <NEXT> or <PREVIOUS> to scroll through your choices until <DELETE IDNet POINT> is displayed and then press Enter.
 7. Press <NEXT> or <PREVIOUS> to scroll through your list of IDNet points until the desired point is displayed and then press Enter.
 8. Follow the prompts to confirm this action.

Caution: Any Custom Control equations and LED/Switch Modes referencing the deleted point are also deleted.

Configuring ZAM/IAM/RIAM Points

Overview

This section describes how to Add, Edit, and Delete an ZAM/IAM/RIAM point.

Adding ZAM/IAM/RIAM Point

Use the following steps to add a ZAM/IAM/RIAM point to the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <ZAMs/IAMs/RIAMs> is displayed and then press <ENTER>.
6. Use <NEXT> or <PREVIOUS> to scroll through your choices until <Add IDNet Point> is displayed and then press Enter.
7. The first unused point in the system (for example, M1-1) is displayed. Press <NEXT> or <PREVIOUS> to scroll through your list of unused points until the desired point is displayed and then press Enter.
8. Follow the prompts to confirm this action.

Note: If there are 250 devices present in the 4010 (maximum allowed), the system informs you that the IDNet channel is full and does not allow you to add any more points.

Editing a ZAM/IAM/RIAM Point

Use the following steps to edit a ZAM/IAM/RIAM point in the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <ZAMs/IAMs/RIAMs> is displayed and then press <ENTER>.

Continued on next page

Configuring ZAM/IAM/RIAM Points, *Continued*

Editing a ZAM/IAM/RIAM Point *(continued)*

- 6. Use <NEXT> or <PREVIOUS> to scroll through your choices until <Edit IDNet Point> is displayed and then press Enter.
- 7. Press <NEXT> or <PREVIOUS> to scroll through your list of ZAM/IAM/RIAM points until the desired point is displayed and then press Enter.
- 8. Press <NEXT> or <PREVIOUS> to scroll through your list of choices until the desired option is displayed and then press Enter. Your choices are shown in Table 6-2.

Table 6-2. ZAM/IAM/RIAM Configuration Choices

Function	Description
Edit Device Type (See Notes 2 and 3)	Changes the Hardware Device Type of the Point
Edit Point Type (See Notes 2 and 3)	Changes the Software Point Type of the Point
Edit Point Label (See Note 3)	Changes the 40-Character Label of the Point
Clear Point Label (See Note 3)	Blanks the 40-Character Label of the Point
Edit Mode (See Note 1)	Changes the Mode of Operation for the Point

Notes:

- 1. This function not allowed for ZAM/IAM/RIAM points.
- 2. For a complete list of your choices for these edit functions, refer to “Appendix A. Device and Point Types.”
- 3. To complete these functions, refer to their appropriate section in this publication.

Continued on next page

Configuring ZAM/IAM/RIAM Points, *Continued*

Deleting ZAM/IAM/RIAM IDNet Point

Use the following steps to delete a ZAM/IAM/RIAM point from the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <ZAMs/IAMs/RIAMs> is displayed and then press <ENTER>.
6. Use <NEXT> or <PREVIOUS> to scroll through your choices until <DELETE IDNet POINT> is displayed and then press Enter.
7. Press <NEXT> or <PREVIOUS> to scroll through your list of IDNet points until the desired point is displayed and then press Enter.
8. Follow the prompts to confirm this action.



Caution: Any Custom Control equations and LED/Switch Modes referencing the deleted point are also deleted.

Configuring Relay and NAC Points

Overview	<p>This section describes how to configure a Relay, NAC, or User-Defined SW/LED point. The following assumes that you have chosen Relay, NAC, or User-Defined SW/LED as your option after entering the Configure Points menu.</p>
Procedure	<p>Use the following steps to configure a Relay or NAC point in the 4010 FACP.</p> <ol style="list-style-type: none">1. Press <MENU>.2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.<div><p>Please Wait . . .</p><p>Fire Alarm Operation Suspended</p></div>3. Press <ENTER> to continue.4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <RELAY> or <NAC> is displayed and then press <ENTER>.6. Use <NEXT> or <PREVIOUS> to scroll through your NAC or RELAY points until the desired point is displayed and then press Enter.7. Press <NEXT> or <PREVIOUS> to scroll through your list of choices until the desired option is displayed and then press Enter. Your choices are shown in Table 6-3.

Continued on next page

Configuring Relay and NAC Points, *Continued*

Procedure (*continued*)

Table 6-3. Relay and NAC Point Configuration Choices

Function	Description
Edit Device Type (See Note 2)	Changes the Hardware Device Type of the Point
Edit Point Type (See Notes 2 and 3)	Changes the Software Point Type of the Point
Edit Point Label (See Note 3)	Changes the 40-Character Label of the Point
Clear Point Label (See Note 3)	Blanks the 40-Character Label of the Point
Edit Mode (See Notes 1 and 2)	Changes the Mode of Operation for the Point

Notes:

1. This function not allowed for NAC and Relay points.
2. For a complete list of your choices for these edit functions, refer to “Appendix A. Device and Point Types.”
3. To complete these functions, refer to their appropriate section in this publication.

Configuring Digital and Analog Pseudo Points

Overview	This section describes how to configure Digital and Analog Pseudo Points.
Configuring Digital Pseudo Points	<p>This section describes how to configure digital pseudo points P76 through P150. P1 through P75 are system points and cannot be edited. Use the following information to configure digital pseudo points in a 4010 FACP.</p> <ol style="list-style-type: none">1. Press <MENU>.2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode. <div>Please Wait . . . Fire Alarm Operation Suspended</div> <ol style="list-style-type: none">3. Press <ENTER> to continue.4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <DIGITAL PSEUDOS> is displayed and then press <ENTER>.6. Use <NEXT> or <PREVIOUS> to scroll through your points until the desired point (P76 through P150) is displayed and then press Enter.7. Press <NEXT> or <PREVIOUS> to scroll through your list of choices until the desired option is displayed and then press Enter. Your choices are shown in Table 6-4.

Continued on next page

Configuring Digital and Analog Pseudo Points, *Continued*

Configuring Digital Pseudo Points *(continued)*

Table 6-4. Digital Pseudo Point Configuration Choices

Function	Description
Edit Device Type (See Note 1)	Changes the Hardware Device Type of the Point
Edit Point Type (See Notes 2)	Changes the Software Point Type of the Point. Your choices are: <ul style="list-style-type: none">• Utility Point• Fire Point• Trouble Point• Supervisory
Edit Point Label (See Note 2)	Changes the 40-Character Label of the Point
Clear Point Label (See Note 2)	Blanks the 40-Character Label of the Point
Edit Mode (See Note 1)	Changes the Mode of Operation for the Point

Notes:

1. This function not allowed for Digital Pseudo points.
2. To complete these functions, refer to their appropriate section in this publication.

Configuring Analog Pseudo Points

This section describes how to configure analog pseudo points A27 through A50. A1 through A26 are system points and cannot be edited. Use the following information to configure analog pseudo points in a 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue.

Continued on next page

Configuring Digital and Analog Pseudo Points, *Continued*

Configuring Analog Pseudo Points *(continued)*

4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <ANALOG PSEUDOS> is displayed and then press <ENTER>.
6. Use <NEXT> or <PREVIOUS> to scroll through your points until the desired point (A27 through A50) is displayed and then press Enter.
7. Press <NEXT> or <PREVIOUS> to scroll through your list of choices until the desired option is displayed and then press Enter. Your choices are shown in Table 6-5.

Table 6-5. Analog Pseudo Point Configuration Choices

Function	Description
Edit Device Type (See Note 1)	Changes the Hardware Device Type of the Point
Edit Point Type (See Notes 2 and 3)	Changes the Software Point Type of the Point. Your choices are: <ul style="list-style-type: none">• Analog• Timer• Counter
Edit Point Label (See Note 3)	Changes the 40-Character Label of the Point
Clear Point Label (See Note 3)	Blanks the 40-Character Label of the Point
Edit Mode (See Note 1)	Changes the Mode of Operation for the Point

Notes:

1. This function not allowed for Analog Pseudo points.
2. For a complete list of your choices for these edit functions, refer to “Appendix B. Hardware and Pseudo Points.”
3. To complete these functions, refer to their appropriate section in this publication.

Configuring 24-Point I/O Points

Overview

The 4010 allows you to use the 4605 24-Point I/O card to monitor input points (switches) and control output points (Lamps, Tone-alerts, and Relays).

Configuring 24-Point Input Points

Use the following steps to configure input points on the 24-Point I/O card.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <24 IO INPUTS> is displayed and then press <ENTER>.
6. Use <NEXT> or <PREVIOUS> to scroll through your points until the desired point is displayed and then press Enter.
7. Press <NEXT> or <PREVIOUS> to scroll through your list of choices until the desired option is displayed and then press Enter. Your options are shown in Table 6-6.

Configuring 24-Point I/O Points, *Continued*

Configuring 24-Point Input Points *(continued)*

Table 6-6. 24-Point Input Points Configuration Choices

Function	Description
Edit Device Type	Changes the Hardware Device Type of the Point. Choose Input or Output
Edit Point Type	Changes the Software Point Type of the Point. Your choices for Input points are: <ul style="list-style-type: none">• USWITCH (2-position unsupervised switch)• OSWITCH (2-position Open supervised switch)• SSWITCH (2-position Open/Short supervised Switch)• TSWITCH (3-position supervised switch)
Edit Point Label*	Changes the 40-Character Label of the Point
Clear Point Label*	Blanks the 40-Character Label of the Point
Edit Mode	Changes the Mode of Operation for the Point. Your choices for modes are: <ul style="list-style-type: none">• SMPL (SMPL controlled)• Ack (Acknowledge)• Fire Ack (Fire alarm acknowledge)• Supv. Ack (Supervisory alarm acknowledge)• Trouble Ack (Trouble acknowledge)• Reset (System reset)• LTEST (Lamp test)• ONOFF (On/Off switch)• TOF (Toggle On Off switch)• PBT (Push button track)• PBH (Push button hold)• DE (Disable/enable)• TDE (Toggle disable/enable)

*This function not allowed for 24-Point Input points.

Continued on next page

Configuring 24-Point I/O Points, *Continued*

Configuring 24-Point Output Points

Use the following steps to configure output points on the 24-Point I/O card.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <24 IO OUTPUTS> is displayed and then press <ENTER>.
6. Use <NEXT> or <PREVIOUS> to scroll through your points until the desired point is displayed and then press Enter.
7. Press <NEXT> or <PREVIOUS> to scroll through your list of choices until the desired option is displayed and then press Enter. Your options are shown in Table 6-7.

Continued on next page

Configuring 24-Point I/O Points, *Continued*

Configuring 24-Point Output Points *(continued)*

Table 6-7. 24-Point Output Point Configuration Choices

Function	Description
Edit Device Type	Changes the Hardware Device Type of the Point. Choose Input or Output
Edit Point Type	Changes the Software Point Type of the Point. Your choices for Output points are: <ul style="list-style-type: none">• LAMP (Lamp or LED output)• PIEZO (Piezo output)• RELAY (Generic relay)• RRELAY (Relay on 'til reset)
Edit Point Label*	Changes the 40-Character Label of the Point
Clear Point Label*	Blanks the 40-Character Label of the Point
Edit Mode	Changes the Mode of Operation for the Point. Your choices for modes are: <ul style="list-style-type: none">• SMPL (SMPL controlled)• Fire (Fire alarm LED)• Supervisory (Supervisory LED)• Trouble (Trouble LED)• Disable (Disable LED)• On (ON LED)• Off (OFF LED)• LF (Local fire acknowledge)• LS (Local supervisory acknowledge)• LT (Local trouble acknowledge)

*This function not allowed for 24-Point Output points.

Configuring List Points

Overview

This section describes how to configure a List.

Configure a List

Use the following steps to configure a List in the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .
Fire Alarm Operation Suspended

3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <LIST> is displayed and then press <ENTER>.
6. Use <NEXT> or <PREVIOUS> to scroll through your lists until the desired list is displayed and then press Enter.
7. Press <NEXT> or <PREVIOUS> to scroll through your list of choices until the desired option is displayed and then press Enter. Your choices are shown in Table 6-8.

Table 6-8. List Configuration Choices

Function	Description
Add Point (See Note 2)	Allows you to add specific point(s) to a List
Delete Point	Allows you to delete specific point(s) from a List
Delete ALL Points	Allows you to delete all points from a List
Edit Point Label (See Notes 1 and 3)	Allows you to change the 40-Character label of the List
Clear Point Label (See Notes 1 and 3)	Blanks the 40-Character Label of the List
Edit Point Type (See Notes 1, 2, and 3)	Changes the Point Type for the List

Notes:

1. This function not allowed for all Lists.
2. For a complete list of your choices for these edit functions, refer to “Appendix B. Hardware and Pseudo Points.”
3. To complete these functions, refer to their appropriate section in this publication.

Continued on next page

Configuring List Points, *Continued*

Add a Point to a List

Use the following steps to Add a point to a List on the 4010 FACP. A TrueAlarm point is used as an example in the following steps.

1. After selecting Lists as your option under the Configure Points menu, use <NEXT> or <PREVIOUS> to scroll through your lists until the desired list is displayed and then press <FUNCTION>.
2. Press <NEXT> or <PREVIOUS> until Add Point is displayed and then press Enter (Figure 6-2 is displayed).

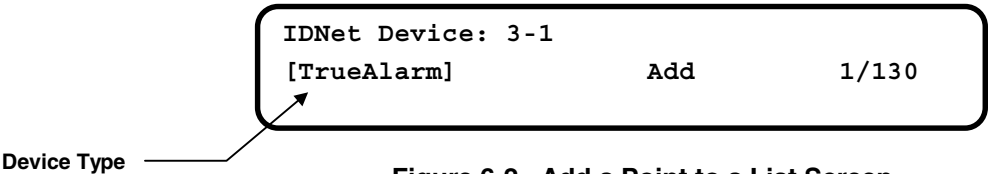


Figure 6-2. Add a Point to a List Screen

3. Press <NEXT> or <PREVIOUS> to scroll through the device types shown in the focus brackets ([]) until the desired device type is displayed (in this example, TrueAlarm).
4. Press the Right Arrow to move the focus brackets ([]) to the Add option.
5. Press <NEXT> or <PREVIOUS> to scroll through the points you wish to add to the list.
6. Once the correct point is displayed, press Enter to add that point to the list.

Repeat Steps 5 and 6 to Add all desired points to your chosen List.

Delete a Point from a List

Use the following steps to Delete a point from a List on the 4010 FACP. A TrueAlarm point is used as an example in the following steps.

1. After selecting Lists as your option under the Configure Points menu, use <NEXT> or <PREVIOUS> to scroll through your lists until the desired list is displayed and then press Enter.
2. Press <NEXT> or <PREVIOUS> until the point you wish to delete is displayed and then press Enter.
3. Press <NEXT> or <PREVIOUS> until Delete Point is displayed and then press Enter.
4. Follow the prompts to confirm this action.

Continued on next page

Configuring List Points, *Continued*

Delete ALL Points from a List

Use the following steps to Delete ALL points from a List on the 4010 FACP.

1. After selecting Lists as your option under the Configure Points menu, use <NEXT> or <PREVIOUS> to scroll through your lists until the desired list is displayed and then press <FUNCTION>.
 2. Press <NEXT> or <PREVIOUS> until Delete ALL Points is displayed and then press Enter.
 3. Follow the prompts to confirm this action.
-

Configuring User-Defined SW/LED

Overview

This section describes how to configure a User-Defined Switches and LEDs. The following assumes that you have chosen User Defined SW/LED as your option after entering the Configure Points menu.

Configure a User-Defined Switch or LED

Use the following steps to configure a User-Defined Switch or LED in the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.

Please Wait . . .

Fire Alarm Operation Suspended

3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <CONFIGURE POINTS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <USER DEFINED SW/LED> is displayed and then press <ENTER>.
6. Press <NEXT> or <PREVIOUS> to scroll through the choices listed below. Once your choice is displayed, press Enter.
 - User LED 1
 - User LED 2
 - User LED 3
 - User Defined Key 1
 - User Defined Key 2
7. Press <NEXT> or <PREVIOUS> to scroll through your list of choices until the desired option is displayed and then press Enter. Your choices are shown in Table 6-9.

Continued on next page

Configuring User-Defined SW/LED, *Continued*

Configure a User-Defined Switch or LED (*continued*)

Table 6-9. User-Defined SW/LED Configuration Choices

Function	Description
Edit Device Type (See Notes 1 and 2)	Changes the Hardware Device Type of the Point
Edit Point Type (See Note 2)	Changes the Software Point Type of the Point
Edit Point Label (See Note 1)	Changes the 40-Character Label of the Point
Clear Point Label (See Note 1)	Blanks the 40-Character Label of the Point
Edit Mode	Changes the Mode of Operation for the Point

Notes:

1. **This function not allowed for User-Defined SW/LED.**
2. **Your Point Type choices for LEDs are Yellow LED or NON-Yellow LED. The switches default to USWITCH point type and is not editable.**

Edit a Mode of a User-Defined SW/LED

This section describes how to edit the mode of a User-Defined SW/LED. Use the following steps to edit the mode of a User-Defined Switch or LED in the 4010 FACP.

1. After selecting User Defined SW/LED as your option under the Configure Points menu, press <NEXT> or <PREVIOUS> to scroll through the choices listed below. Once your choice is displayed, press Enter.
 - User LED 1
 - User LED 2
 - User LED 3
 - User Defined Key 1
 - User Defined Key 2
2. Press <NEXT> or <PREVIOUS> to scroll through your list of choices until Edit Mode is displayed and then press Enter. Your modes for Switches and LEDs are shown in Table 6-10.

Continued on next page

Configuring User-Defined SW/LED, *Continued*

Edit a Mode of a User-Defined SW/LED *(continued)*

Table 6-10. User-Defined SW/LED Modes

User-Defined SW/LED	Modes
Switch Modes	<ul style="list-style-type: none">• SMPL• Ack• Fire Ack• Supv. Ack• Trouble Ack• Reset• Silence• LTEST• ON-OFF• TOF• PBT• PBH• DE• TDE
LED Modes	<ul style="list-style-type: none">• SMPL• Fire• Supervisory• Trouble• Disable• On• Off• LF• LS• LT

3. Select the appropriate mode and then press Enter.
4. Follow the prompts to confirm this action.

Chapter 7

System Options

Overview

This chapter describes how to set system options such as Time/Date Format, Active Status Reminder, etc. These options are custom functions for the 4010. The System Options (shown in Figure 7-1) can also be set from the Quick-CFIG menus.

In this Chapter

This chapter discusses the following topics:

Topic	See Page #
System Options Menu	7-2
Time/Date Format	7-3
Active Status Reminder	7-4
Silence/Reset Inhibit	7-5
Alarm Cut-Out Timer	7-6
Door Drop on Alarm	7-7
Door Drop on AC Loss	7-8
Audible and Visual NAC Operation	7-9
QuickAlert Horn Operation	7-10
Depleted Battery Cut-Out	7-11
Stagger Start AHUs	7-12
Enable City Circuit	7-13
Expansion Power	7-14
Single Station	7-15
Suppression Release	7-16

System Options Menu

Introduction

All 4010 system options are accessed via the System Options menu choice, which is located in the Programming menu tree. Figure 7-1 shows the structure of the System Options menu.

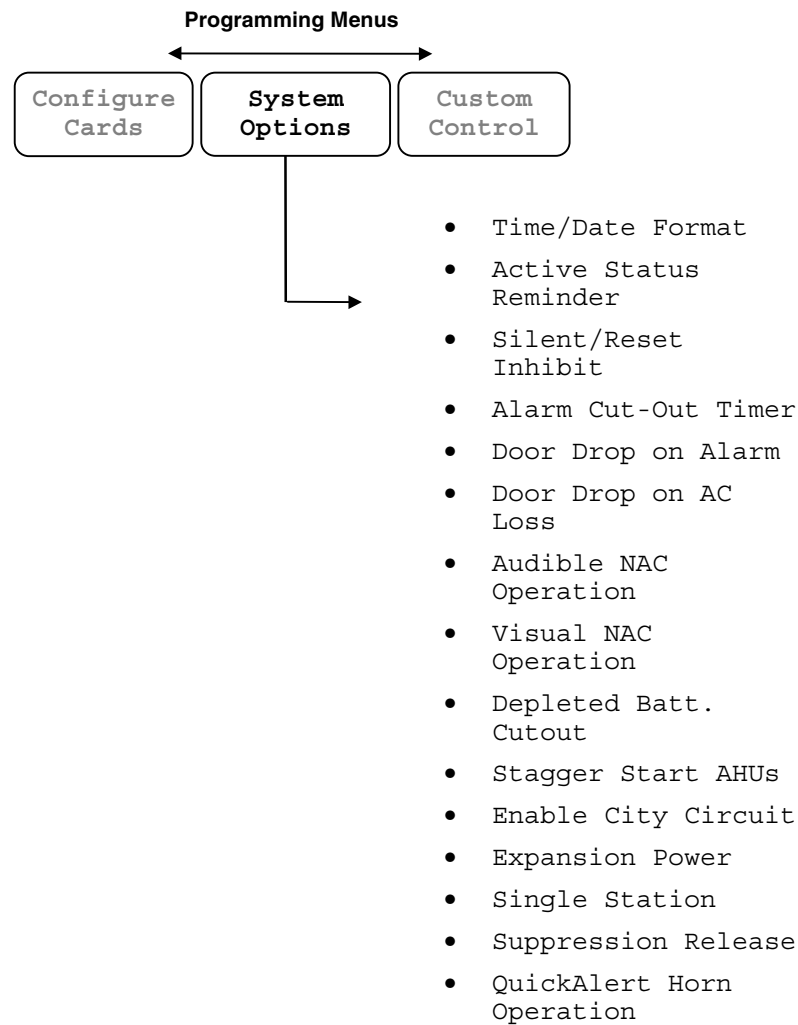


Figure 7-1. System Options Menu

Time/Date Format

Overview

When setting the Time/Date Format, you are only setting the Time format in 12 or 24-hour format. That is, the time is displayed in 12-hour format with the AM (morning) or PM (afternoon) indications or in 24-hour (military style) format. The date is always displayed in the following format and cannot be changed:

Wed 27-Aug-97
Day of week, date, month, year

The Time format directly affects how time is displayed on the 4010 not only at the high-level status screen but in the Historical Logs.

Setting the Time Format

Use the following steps to set the Time format on the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <TIME/DATE FORMAT> is displayed and then press <ENTER>.
6. Press <NEXT> or <PREVIOUS> to scroll through the options until 12 Hour or 24 Hour is displayed and then press Enter.
7. Follow the prompts to confirm this action.

Active Status Reminder

Overview

The Active Status Reminder option allows you to set an interval and duration in which the 4010 reminds operators of the FACP that a FIRE, SUPV, or TBL condition still exists in the panel. Your choices are as follows:

- ON/OFF Status (turn the option ON or OFF). A setting of ON activates the option with a default Reminder Interval of 8 hours with a 5-second Acknowledge Option signal duration.
- Reminder Interval (set a reminder interval from 1-12 hours).
- Acknowledge Option (set a signal duration of 1-60 seconds). A setting of 0 seconds has the following effect:
 - For a Trouble condition, the signal sounds until the condition is acknowledged at the front panel.
 - For an Alarm (FIRE) condition, the signal sounds until the alarm condition is cleared.

Setting the Active Status Reminder

Use the following steps to set the Active Status Reminder on the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <ACTIVE STATUS REMINDER> is displayed and then press <ENTER>.
6. Press <NEXT> or <PREVIOUS> to scroll through the options until On/Off Status is displayed and then press Enter.
7. Press <NEXT> or <PREVIOUS> to select ON or OFF and then press Enter. Follow the prompts to confirm this action.
8. Press <NEXT> or <PREVIOUS> to scroll through the options until Reminder Interval is displayed and then press Enter.
9. Press <NEXT> or <PREVIOUS> to select an interval from 1-12 hours and then press Enter. Follow the prompts to confirm this action.
10. Press <NEXT> or <PREVIOUS> to scroll through the options until Acknowledge Option is displayed and then press Enter.
11. Press <NEXT> or <PREVIOUS> to select a signal duration from 0-60 seconds and then press Enter. Follow the prompts to confirm this action.

Silence/Reset Inhibit

Overview

You can inhibit the Alarm Silence/System Reset on a 4010 FACP for a set duration. The range for the Silence/Reset Inhibit timer is 0-60 minutes with zero (No Inhibit) being the default setting.

Setting the Silence/Reset Inhibit

Use the following steps to set the Silence/Reset Inhibit timer on the 4010 FACP.

1. Press <MENU>.
 2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
 3. Press <ENTER> to continue.
 4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
 5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <SILENCE/RESET INHIBIT> is displayed and then press <ENTER>.
 6. Press <NEXT> or <PREVIOUS> to set the timer from 0-60 minutes and then press Enter.
 7. Follow the prompts to confirm this action.
-

Alarm Cut-Out Timer

Overview

The Alarm Signal Cut-Out Timer allows you to set a duration for how long signals sound after an alarm. In other words, when an alarm condition exists, the signals sound until silenced. With this option set at two minutes, building signals sound on alarm for two minutes and then automatically stop sounding. However, the alarm condition does remain active in the panel. The default setting for this option is No Cutout (meaning a manual Alarm Silence is required to shut off signals).

Setting the Alarm Cut-Out Timer

Use the following steps to set the Alarm Signal Cut-Out timer on the 4010 FACP.

1. Press <MENU>.
 2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
 3. Press <ENTER> to continue.
 4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
 5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <ALARM CUT-OUT TIMER> is displayed and then press <ENTER>.
 6. Press <NEXT> or <PREVIOUS> to set the timer from 0-60 minutes and then press Enter.
 7. Follow the prompts to confirm this action.
-

Door Drop on Alarm

Overview

The Door Holder - Alarm Door Drop Timer allows the 4010 to hold doors open for a set duration during an alarm condition. After that duration has expired, the 4010 shuts off the door holder relays and the doors close. The range for the timer is 0-60 seconds with a default setting of zero seconds. To have door holders drop the doors immediately, leave the timer set to zero seconds.

Setting the Door Drop on Alarm Timer

Use the following steps to set the Door Holder Alarm Door Drop timer on the 4010 FACP.

1. Press <MENU>.
 2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
 3. Press <ENTER> to continue.
 4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
 5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <DOOR DROP ON ALARM > is displayed and then press <ENTER>.
 6. Press <NEXT> or <PREVIOUS> to set the timer from 0-60 seconds and then press Enter.
 7. Follow the prompts to confirm this action.
-

Door Drop on AC Loss

Overview

The Door Holder - AC Fail Door Drop Timer allows the 4010 to hold doors open for a set duration during an AC power loss condition. After that duration has expired, the 4010 shuts off the door holder devices and the doors close. The range for the timer is 0-60 minutes, with a default setting of 5 minutes. To have door holders drop the doors immediately upon AC power loss, set the timer to zero minutes.

Setting the Door Drop on AC Loss Timer

Use the following steps to set the Door Holder AC Fail Door Drop timer on the 4010 FACP.

1. Press <MENU>.
 2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
 3. Press <ENTER> to continue.
 4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
 5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <DOOR DROP ON AC LOSS> is displayed and then press <ENTER>.
 6. Press <NEXT> or <PREVIOUS> to set the timer from 0-60 minutes and then press Enter.
 7. Follow the prompts to confirm this action.
-

Audible and Visible NAC Operation

Overview

The Audible and Visible ON ‘til Silence Notification Appliance Circuits (NACs) can be set to the choices shown in Table 7-1. The default setting for the Audible NACs is Temporal coding and the default setting for the Visible NACs is Steady. Refer to “Appendix C - Glossary of Terms” for more information on the types of coding.

Setting the Audible or Visual NAC Operation

Use the following steps to set the Audible and/or Visual NAC operation on the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <AUDIBLE NAC OPERATION> or <VISUAL NAC OPERATION> is displayed and then press <ENTER>.
6. Press <NEXT> or <PREVIOUS> to choose the settings shown in Table 7-1.

Table 7-1. Audible and Visual NAC Operation Settings

System Option	Choices
Audible NAC Operation	Choose: <ul style="list-style-type: none">• Audible NACs: Temporal*• Audible NACs: Steady• Audible NACs: Slow March• Audible NACs: Fast March
Visual NAC Operation	Choose: <ul style="list-style-type: none">• Visual NACs: Steady*• Visual NACs: Slow March• Visual NACs: Fast March• Visual NACs: Temporal• Visual NACs: Synchronous

* Default Settings

Follow the prompts to confirm this action.

QuickAlert Horn Operation

Introduction

The QuickAlert Horn Operation option defines the way in which QuickAlert Horns function when activated. The default function is Temporal.

Setting the QuickAlert Horn Option

Use the following steps to set the QuickAlert Horn system option.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <QUICKALERT HORN OPERATION> is displayed and then press <ENTER>.
6. Press <NEXT> or <PREVIOUS> to choose the settings shown in Table 7-2.

Table 7-2. Audible and Visual NAC Operation Settings

System Option	Choices
QuickAlert Horn Operation	Choose: <ul style="list-style-type: none">• Temporal*• Steady• Slow March

* Default Settings

Follow the prompts to confirm this action.

Depleted Battery Cut-Out

Overview

This option selects the mode of operation for the 4010 FACP if an alarm occurs during an AC power loss while a Depleted Battery trouble exists. The specific operation of this option differs slightly, depending on whether you have a domestic or Canadian system.

Domestic Operation. The default setting for the option is OFF and the threshold voltage is $19.4 \text{ VDC} \pm 5\%$. Operation of this option for a domestic system is as follows:

- If the system is in alarm and a depleted battery condition occurs, any NACs that are active remain active.
- If the system is not in alarm and a depleted battery condition occurs, the NACs are prevented from activating.

Canadian Operation. The default setting for the option is OFF and the threshold voltage is $19.4 \text{ VDC} \pm 5\%$. Operation of this option for a Canadian system is as follows:

- When a depleted battery condition occurs, power is turned off to the 4010. AC power must be restored to re-activate the 4010.

Setting the Depleted Battery Cut-Out

Use the following steps to set the Depleted Battery Cut-Out on the 4010 FACP.

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <DEPLETED BATT. CUTOFF> is displayed and then press <ENTER>.
6. Press <NEXT> or <PREVIOUS> to set the option to ON or OFF and then press Enter.
7. Follow the prompts to confirm this action.

Stagger Start AHUs

Overview

This option allows you to set the 4010 to stagger start any Air Handling Units (AHUs) control points (point types AHUR, AHUO, and AHUF) in the 4010 FACP . This option protects against power spikes that may cause the circuit breakers to trip when AHUs start simultaneously. The range for stagger starting the AHUs is 0-60 seconds. The default setting for this option is 30 seconds. A setting of zero allows the AHUs to start immediately.

The 4010 displays an AHU Stagger Start message when the sequence starts and an AHU Stagger Start Complete message when the sequence ends.

Setting the Stagger Start AHU Delay Timer

Use the following steps to set the Stagger Start AHUs timer on the 4010 FACP.

1. Press <MENU>.
 2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
 3. Press <ENTER> to continue.
 4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
 5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <STAGGER START AHUS> is displayed and then press <ENTER>.
 6. Press <NEXT> or <PREVIOUS> to set the timer from 0-60 seconds and then press Enter.
 7. Follow the prompts to confirm this action.
-

Enable City Circuit

Overview

You must enable the City Circuit via the 4010 System Options menu when installing the city circuit card. The default setting for the city circuit is OFF.

Setting the Enable City Circuit Option

Use the following steps to set the Enable City Circuit option on the 4010 FACP.

1. Press <MENU>.
 2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
 3. Press <ENTER> to continue.
 4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
 5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <ENABLE CITY CIRCUIT > is displayed and then press <ENTER>.
 6. Press <NEXT> or <PREVIOUS> to set the option to ON or OFF and then press Enter.
 7. Follow the prompts to confirm this action.
-

Expansion Power

Overview

You must enable the Expansion Power Supply via the 4010 System Options menu when installing the expansion power supply. The default setting for the expansion power supply is OFF.

Setting the Expansion Power Option

Use the following steps to set the Expansion Power Supply option on the 4010 FACP.

1. Press <MENU>.
 2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
 3. Press <ENTER> to continue.
 4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
 5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <EXPANSION POWER> is displayed and then press <ENTER>.
 6. Press <NEXT> or <PREVIOUS> to set the option to ON or OFF and then press Enter.
 7. Follow the prompts to confirm this action.
-

Single-Station

Overview

Single station has the following effect.

- Sounder activates when the associated sensor is above its alarm threshold.
 - Sounder silences when sensor is below its alarm threshold.
 - Alarm remains at panel until reset is performed.
-

Enabling Single-Station

Use the following steps to set the Single-Station option on the 4010 FACP. The default setting for this option is ON.

1. Press <MENU>.
 2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
 3. Press <ENTER> to continue.
 4. Press <NEXT> or <PREVIOUS> until <SYSTEM OPTIONS> is displayed and then press <ENTER>.
 5. Press <NEXT> or <PREVIOUS> to scroll through your choices until <SINGLE STATION OVERRIDE> is displayed and then press <ENTER>.
 6. Press <NEXT> or <PREVIOUS> to set the option to ON or OFF and then press Enter.
 7. Follow the prompts to confirm this action.
-

Suppression Release

Overview

In order for the Suppression Release function of the 4010 to work correctly you must follow certain steps.

Step	Description
1	Assign the appropriate point types to your Suppression Release monitoring devices.
2	Add the points in Step 1 to the appropriate Suppression Release lists.
3	Assign the appropriate point types to your Suppression Release NACs.
4	Add the NACs in Step 3 to the appropriate Suppression Release output list.

Use the following information to program the 4010 for Suppression Release functions. After you are finished programming for suppression release, the 4010 is set up for the default values for delay and dual detector operation. In the following example, a TrueAlarm point is used.

Note 1. Do not use the PC Programmer to change the point type of a suppression release point; doing this causes the PC Programmer to change the point type back to its default setting. To change the point type of a suppression release point, *you must use the front panel programmer.*

Note 2. Set the Depleted Battery Cutout (discussed earlier in this chapter) to ON for suppression release systems.

Example

In the following example, the list definitions are as follows. Refer to Appendix B for specific List definitions.

- L9 Automatic Suppression Release Points
- L10 Suppression Manual Release Points
- L11 Suppression Release Abort Points
- L12 Suppression Release Output Points

For example: any points in L9 have a default delay of 60 seconds before L12 activates, any points in L10 have a default delay of 30 seconds before L12 activates. Once points in L10 are activated, L12 activates after the default 30-second delay regardless of the state of abort switches in L11. When Dual Detector operation is ON, this requires two points in L9 to activate before suppression release operation is initiated.



WARNING: When any points in L11 are activated during the cycling of a delay function, the delay timers continue to count down to zero. If you release the abort switch that is in L11 after the timer has reached zero, points in L12 activate immediately.

Continued on next page

Suppression Release, *Continued*

Step 1. Turn ON Suppression Release

1. Press <MENU>, followed by <NEXT> until Programming is displayed. Press <ENTER> in response to the prompts to access the Programming menu.
2. Use the <NEXT> button to move through the Programming menu options. Press <ENTER> when System Options is displayed.
3. Use the <NEXT> button to move through the System Options menu. Press <ENTER> when <SUPPRESSION RELEASE> is displayed.
4. At the On/Off Status screen press Enter. Press Next to select ON and then press Enter. Follow the prompts to activate this function.
5. Press Exit/Clear until the System Options choice is shown.

Step 2. Assign Suppression Monitor Point Types to Suppression Release Monitor Points

1. Press Next until the Configure Points choice is shown and then press Enter.
2. Press Next until the TrueAlarm choice is shown and then press Enter.
3. Press Next until Edit TrueAlarm Point is displayed and then press Enter.
4. Press Enter to select the first device shown [3-1]. Press Next until Edit Point Type is displayed and press Enter.
5. Press Next to scroll through the point types to find the appropriate point type for your device. The following are monitor point types for suppression release functions.
 - SUPDET Suppression Release detector zone
 - SUPABRT Suppression Release abort zone
 - SUPDUMP Suppression Release manual dump
 - SUPPRES Suppression Release pressure monitorOnce the appropriate point type is displayed, press Enter to assign that point type to the device at address [3-1]. Follow the prompts to confirm this selection.
6. Press Exit/Clear until Configure Point: TrueAlarm is displayed.

Step 3. Create Suppression Release Monitor Lists

This section describes adding Suppression Release monitor points to a Suppression Release list.

1. Press Next until Lists is displayed and then press Enter.
2. Press Next until the desired list is displayed. The following are the choices for your suppression release lists. L9 through L11 are your suppression initiating device lists.
 - L9 Automatic Suppression Release Points
 - L10 Suppression Manual Release Points
 - L11 Suppression Release Abort Points
 - L12 Suppression Release Output PointsOnce the appropriate list is displayed, press Function.

Continued on next page

Suppression Release, *Continued*

Step 3. Create Suppression Release Monitor Lists (*continued*)

3. Press Next until Add Point is displayed and press Enter.
 4. Press Next to scroll through the points you wish to add to the list. In this case [3-1].
 5. Press the Right Arrow to move the focus brackets ([]) to the Add option and then press Enter.
 6. Press Exit/Clear until Lists is displayed.
-

Step 4. Assign Point Types to Suppression Outputs

1. Press Next until NACs is displayed and then press Enter.
 2. Press Next until the appropriate NAC is displayed (SIG 1) and then press Enter.
 3. Press Next until Edit Point Type is displayed and then press Enter.
 4. Press Next until the appropriate point type is displayed (SUPREL, Suppression agent discharge release output) and press Enter. Follow the prompts to confirm this action.
 5. Press Exit/Clear until Configure Points is displayed and then press Enter.
-

Step 5. Create Suppression Release Output Lists

This section describes adding Suppression Release points to the Suppression Release Output list.

1. Press Next until Lists is displayed and then press Enter.
2. Press Next until the desired list is displayed. L12 is your suppression NAC list. Once the appropriate list is displayed, press Function.
3. Press Next until Add Point is displayed and press Enter.
4. Press Next to scroll through the points you wish to add to the list (in this case SIG 1).
5. Press the Right Arrow to move the focus brackets ([]) to the Add option and then press Enter.
6. Press Exit/Clear until the Restore CFIG / Save CFIG options are displayed. Press the arrow to move the focus brackets to Save CFIG and press Enter. Follow the prompts to confirm this action.

The 4010 now restarts and saves all programming information to the configuration.

Chapter 8

Custom Control

Introduction

This chapter provides an overview of the Simplex Multi-functional Programming Language (SMPL), which is also known as Custom Control (both terms are equivalents and are used interchangeably throughout this publication).

In this Chapter

This chapter discusses the following topics:

Topic	See Page #
Overview	8-2
SMPL Opcodes and Operators	8-3
Custom Control Equation	8-6
Custom Control Programming	8-7
Application-Specific Examples	8-26

Overview

Introduction

Custom Control is used for custom functions such as selective signaling/control, cross zoning pre-signal, and many other possible functions. Equations are written by the programmer to describe the various operations of the 4010 FACP. SMPL programming can be used to customize the operation of various points while the remaining points operate as general alarm points. SMPL programming is programmed through the front panel interface or from the PC Programmer tool.

The 4010 base panel is configured (and shipped) as a general alarm system. You must program the Custom Control option when more sophisticated operations are required.

Custom Control equations are developed to define specified operations. Each equation contains interrelated statements, which consists of the INPUT SIDE and OUTPUT SIDE. Version 2.01 or later of the 4010 accepts up to 60 programming equations, each consisting of up to six statements total from the front panel. Older versions of the panel accept 40 equations.

Custom Control is used to customize the operation of an output, while the rest of the system continues to operate as a general alarm system. SMPL also allows the programmer to modify the operation of points to be used in non-alarm functions. A point can be selected as a non-alarm, tracking (non-latching) point.

The 4010 has resident editing capability. Once the programming mode is selected, the Custom Control is programmed through a series of menu options.

Once all the equations are entered, you can scroll through the Custom Control programming to review its contents. If errors are found, you can then insert new data or delete existing data. When you are satisfied with the program, you must exit the Custom Control mode to save all data to the 4010 CFG chip.

Once programmed with Custom Control and back on line, the 4010 handles its inputs and outputs differently. The 4010 checks to see what inputs and outputs have been changed by the Custom Control programmed equations. Outputs not used in the Custom Control program remain general alarm outputs. Outputs which have new defined operations operate as specified in the Custom Control equations.



Caution: Once an output is used in a Custom Control equation, it no longer responds to the general alarm monitor points.

SMPL Opcodes and Operators

Input Opcodes

The following is a list of valid Input Opcodes, Input Operators, and Relational Operators for the 4010 Custom Control option.

Table 8-1. Input Opcodes

Input Opcodes	Description
FIRE DETECT	Fire Detect State
FIRE	Fire State
FIRE ACK	Fire Acknowledge State (needs ACK)
SUPV	Supervisory State
SUPV ACK	Supervisory Acknowledge State
TBL	Trouble State
TBL ACK	Trouble Acknowledge State
PHY NORM	Physically Normal State
PHY ABN	Physically Abnormal State
PHY OPEN	Physically Open State
PHY SHORT	Physically Short State
ABN DET	Abnormal Detect State
OPEN DET	Open Detect State
SHORT DET	Short Detect State
CTRL ON	Control ON State
CTRL OFF	Control OFF State
DISABLE	Disable State
CLASS A TROUBLE	Class A Trouble State
ON/CODE	On coding State
OFF	OFF State
COMP CNST	Compare to a Constant Value
COMP VAR	Compare to a Variable Value
EMPTY	Empty state of a list
ANY	Any number of elements in a list
ALL	All elements in a list
SAVE	Save the state of an equation
RECALL	Recall the state of an equation
DELAY CNST	Delay for a constant value
DELAY VAR	Delay for a variable value
CYCLE CNST	Cycle for a constant value
CYCLE VAR	Cycle for a variable value
DIRTY	Dirty detector state
SMOKE LEV	A percentage smoke level

Continued on next page

SMPL Opcodes and Operators, *Continued*

Input and Relational Operators

Table 8-2 lists the Input and Relational Operators.

Table 8-2. Input and Relational Operators

Input Operators	<ul style="list-style-type: none">• OR• AND• NOT• SAVE• RECALL• DELAY (Constant and Variable)• CYCLE (Constant and Variable)
Relational Operators	<ul style="list-style-type: none">• EQ (Equal To)• (Not Equal To)• (Greater Than)• (Greater Than or Equal To)• (Less Than)• (Less Than or Equal To)

Continued on next page

SMPL Opcodes and Operators, *Continued*

Output Opcodes

Table 8-3 lists Output Opcodes for the 4010 Custom Control option.

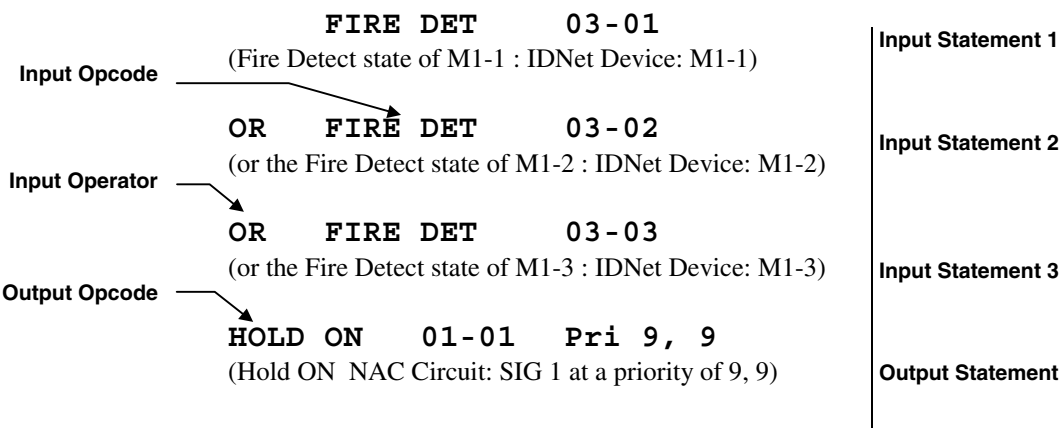
Table 8-3. Output Opcodes

Output Opcodes	Description
SET ON	Set Point ON (refreshes continuously)
SET OFF	Set Point OFF (refreshes continuously)
SET PRI	Set Point's priority (refreshes continuously)
TRACK ON	Track Point ON
TRACK OFF	Track Point OFF
TRACK PRI	Track Point's Priority
HOLD ON	Hold Point ON
HOLD OFF	Hold Point OFF
HOLD PRI	Hold Point's Priority
ACK	Acknowledge Point
DISABLE	Disable Point
ENABLE	Enable Point
RESET	Reset
LOAD CNST	Load Analog Pseudo Point w/Constant Value
LOAD VAR	Load Analog Pseudo Point w/Variable Value
PULSE CNST	Pulse Analog Pseudo Point w/Constant Value
PULSE VAR	Pulse Analog Pseudo Point w/Variable Value
LED OFF	Turn LED/Lamp OFF
LED ON	Turn LED/Lamp ON
F FLASH	Fast Flash Point (LED)
S FLASH	Slow Flash Point (LED)
S MARCH	Slow March Code the Point
F MARCH	Fast March Code the Point
TEMPORAL	Temporal Code the Point
CHAN CODE (IDNet)	Set up IDNet Channel Code (ON\Temporal\March Time)
DEV CODE (TrueAlarm sensor outputs)	Device Code
ALARM THR	Set Alarm Threshold (sensitivity)
ROR HEAT	Rate-of-Rise Heat (set for sensitivity)

Custom Control Equation

Custom Control Example

The following is an example of a valid Custom Control equation.

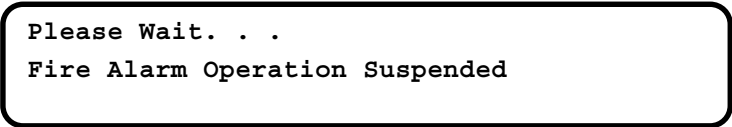


Custom Control Programming

To Start Custom Control Programming

You must log in at the appropriate level and use the following steps to begin a Custom Control session.

1. From the High-Level Status screen, press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [Programming] is displayed and then press <ENTER>. Figure 8-1 appears briefly to warn you that the 4010 is no longer in the Fire Alarm Operation mode.



Please Wait. . .
Fire Alarm Operation Suspended

Figure 8-1. Fire Alarm Operation Suspended Screen

3. A confirmation screen appears. Follow the prompts to enter programming. Press <NEXT> or <PREVIOUS> to select [Custom Control] and then press <ENTER>.

Continued on next page

Custom Control Programming, *Continued*

Custom Control Menu Navigation

Using <Next> and <Previous>, you can scroll through all the existing equations of the Custom Control program.

Note: All insertions are done above the current location.

If you wish to create a new equation before the first equation in the program, press <Next> to scroll to Equation 1 and then select Insert. When the new equation has been created and saved it will become Equation 1 and all other equations are incremented by 1.

If you wish to add a new equation to the end of the program, press <Next> or <Previous> until **** End of Program **** is displayed on the screen. Select Insert from the menu to create a new equation at the end of the current equation list with the number of the last equation plus 1.

Note: Selecting Insert does NOT change the current focus. That is, if you insert at the *end of program* marker when the action is completed, the current focus is still at the **** End of Program **** marker. This facilitates sequentially entering a program when none is present or adding a sequence of equations within the existing program.

When you enter Custom Control programming you see one of the screens in Figure 8-2. (A) in Figure 8-2 shows the active equation number and how many equations exist in the program. (B) in Figure 8-2 is displayed if no equations exist in the database or when you have scrolled past the last equation in the program.

Note:
You are required to select the Insert option to create a new equation. If you attempt to edit or delete the **** End of Program **** marker, an error message is displayed.

Equation 1	1/4
[Edit]	Insert Delete

End of Program
[Edit] Insert Delete

Figure 8-2

Continued on next page

Custom Control Programming, *Continued*

Equation Level

You enter the equation level by selecting an existing equation to edit or you elect to Insert a new equation. When creating a new equation, you are shown an empty equation with the active indicator (signified by a leading asterisk [*]) on the *End of Input* marker (remember all inserts go above the current focus). An empty equation consists of the “Input Side” header, the “End of Input” marker, and the “End of Output” marker (see A in Figure 8-3 below). If an equation exists, you are shown the first input statement in the equation (see B in Figure 8-3 below).

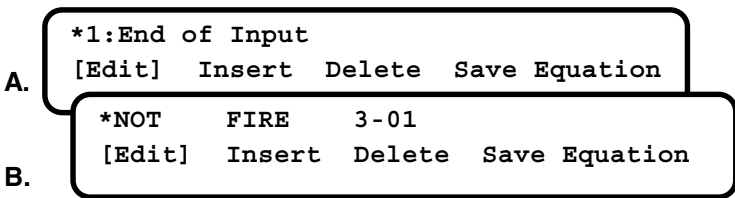


Figure 8-3

Press <Next> and <Previous> to scroll through the statements of the selected equation.

When the active statement (indicated by the *) to be modified is displayed, you may enter the statement level by pressing <Enter> or by pressing <▲> or <▼> to move the focus brackets ([]) to select another menu option and then pressing <Enter>.

The menu options are...

- Edit: To change the current statement.
- Insert: To create a new statement ABOVE the current statement.
- Delete: To remove the current statement from the equation.
- Save Equation: To update the program with the new equation and return to the program level.

Custom Control Level

After entering the statement level you can work on the individual parts of a Custom Control statement. The display shows the current statement on the top line with the current “field” of the statement marked with focus brackets ([]). The current option selection is shown in focus brackets on the lower line of the display. Use < > or < > to move between the statement fields on the top line and <Next> and <Previous> to scroll through the options for the current field (and display the new selection) on the lower line. Press <Enter> to move the new option from the lower line to the selected field in the top line. This also moves the field focus to the next field.

Continued on next page

Custom Control Programming, *Continued*

Equations

Version 2.01 or later of the 4010 system supports up to 60 Custom Control equations. A Custom Control equation consists of up to six statements. Each equation consists of two sides: an INPUT SIDE and an OUTPUT SIDE. An equation can be better understood as an “IF/THEN” command. “IF” the INPUT SIDE is true, “THEN” execute the OUTPUT SIDE.

Each equation is made up of one or more input statement and one or more output statement (for a total of six statements). The equation in Figure 8-4 has four statements: two input statements and two output statements.

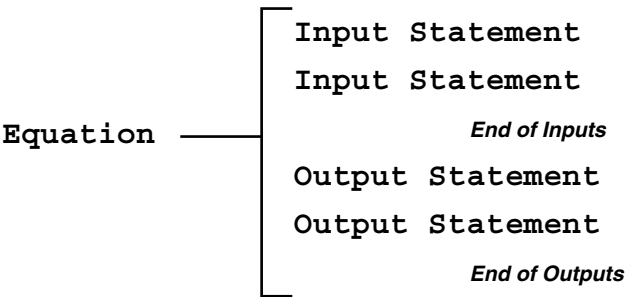


Figure 8-4

Input Side (IF)

Each input statement is made up of four fields.

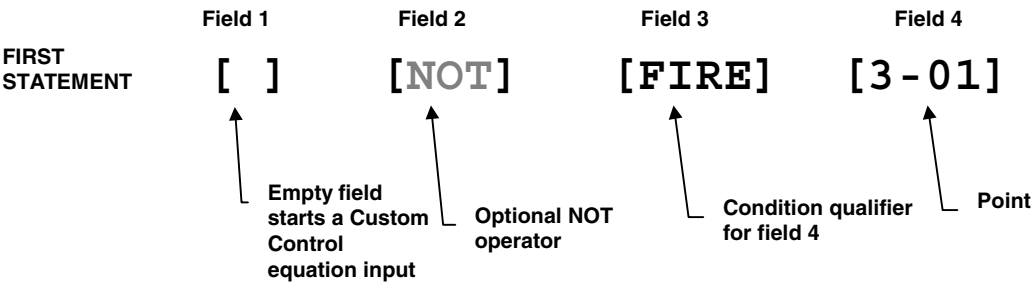


Figure 8-5

Field 1

Field 1 is always empty in the first statement of any Custom Control equation. In subsequent statements, Field 1 will contain one of the two Link operators:

- AND — which links the statement in “Series” with *all* previous statements
- OR — which links the statement in “Parallel” with *all* previous statements.

Continued on next page

Custom Control Programming, *Continued*

Field 1 (*continued*)

AND

The AND Link operator links the current statement in Series with *all* previous statements in an equation (see Figure 8-6).

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[FIRE]	[3-01]
SECOND STATEMENT	[AND]	[]	[FIRE]	[3-02]

Figure 8-6

In Figure 8-6, IF the condition of 3-01 is Fire AND the condition of 3-02 is Fire, then the INPUT SIDE is true. Another way to look at this equation is shown in Figure 8-7. In order to cross from the INPUT SIDE of the equation to the OUTPUT SIDE, *both* of the statements must be true.

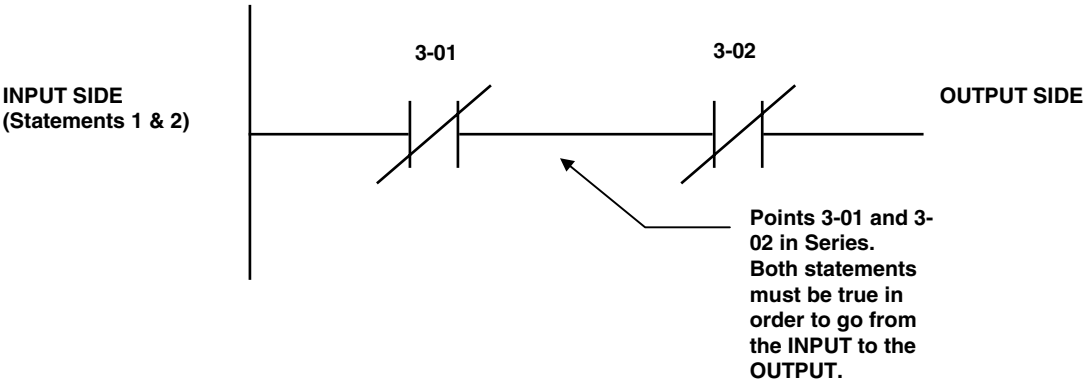


Figure 8-7

Continued on next page

Custom Control Programming, *Continued*

Field 1 (*continued*)

OR

The OR Link operator links the current statement in Parallel with *all* previous statements in an equation (see Figure 8-8).

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[FIRE]	[3 - 01]
SECOND STATEMENT	[OR]	[]	[FIRE]	[3 - 02]

Figure 8-8

In Figure 8-8, IF the condition of 3-01 is Fire OR the condition of 3-02 is Fire, then the INPUT SIDE is true. Another way to look at this equation is shown in Figure 8-9. In order to cross from the INPUT SIDE of the equation to the OUTPUT SIDE, *one* of the statements (3-01 or 3-02) must be true.

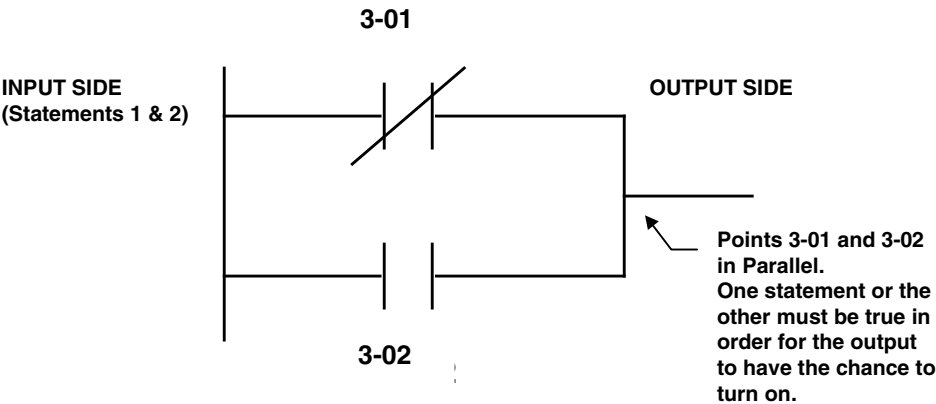


Figure 8-9

Continued on next page

Custom Control Programming, *Continued*

Field 1 (*continued*)

AND (first) & OR (second)

In Figure 8-10 the first and second statements are linked in Series and the third statement is linked in Parallel with the first and second statements. Remember, a Link operator links that statement with *all* previous statements, not just the statement before it.

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[FIRE]	[3-01]
SECOND STATEMENT	[AND]	[]	[FIRE]	[3-02]
THIRD STATEMENT	[OR]	[]	[FIRE]	[3-03]

Figure 8-10

In Figure 8-10, IF the condition of 3-01 is Fire AND the condition of 3-02 is Fire, OR the condition of 3-03 is Fire, then the INPUT SIDE is true. Another way to look at this equation is shown in Figure 8-11. In order to cross from the INPUT SIDE of the equation to the OUTPUT SIDE, the first and second statements (together) or the third statement must be true.

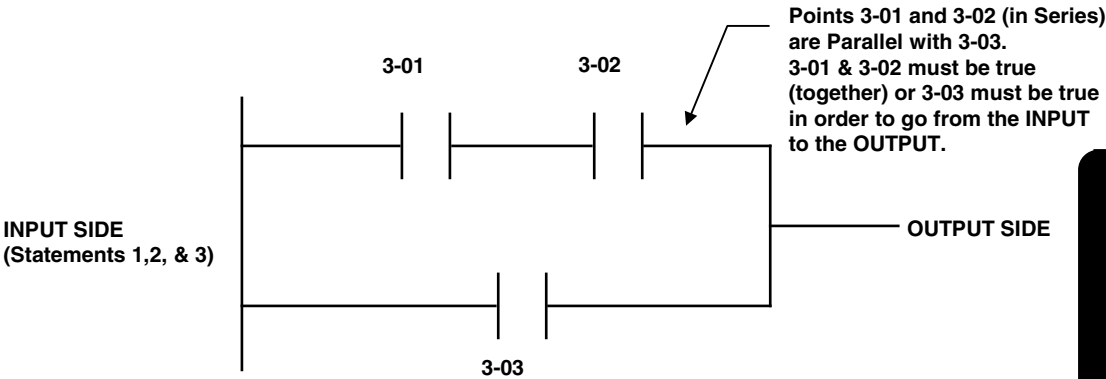


Figure 8-11

Continued on next page

Custom Control Programming, *Continued*

Field 1 (*continued*)

OR (first) & AND (second)

In Figure 8-12 the first and second statements are linked in Parallel and the third statement is linked in Series with the first and second statements. Remember, a Link operator links that statement with *all* previous statements, not just the statement before it.

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[FIRE]	[3 - 01]
SECOND STATEMENT	[OR]	[]	[FIRE]	[3 - 02]
THIRD STATEMENT	[AND]	[]	[FIRE]	[3 - 03]

Figure 8-12

In Figure 8-12, IF the condition of 3-01 is Fire OR the condition of 3-02 is Fire, AND the condition of 3-03 is Fire, then the INPUT SIDE is true. Another way to look at this equation is shown in Figure 8-13. In order to cross from the INPUT SIDE of the equation to the OUTPUT SIDE, the first or second statements and the third statement must be true.

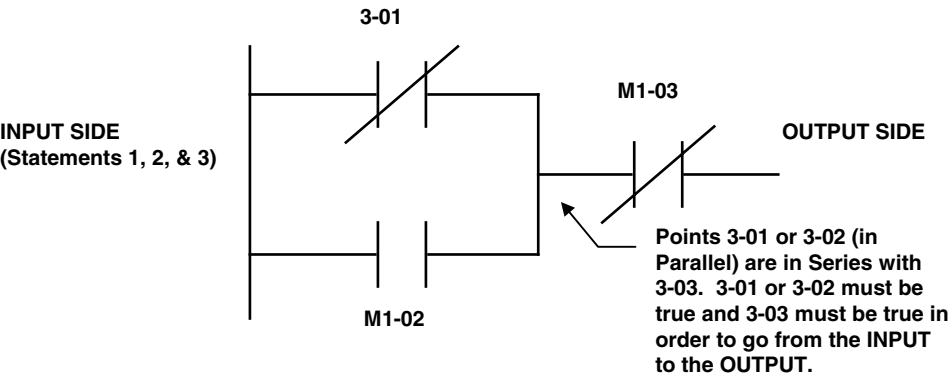


Figure 8-13

Continued on next page

Field 2

Field 2 can be empty or contain the negative operator NOT. NOT is used in Figure 8-14 to state IF point 3-01 is NOT in a FIRE condition, THEN that statement is true.

AND & NOT

The AND Link operator links the current statement in Series with *all* previous statements in an equation (see Figure 8-14).

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[FIRE]	[3-01]
SECOND STATEMENT	[AND]	[NOT]	[FIRE]	[3-02]

Figure 8-14

In Figure 8-14, if the condition of 3-01 is Fire AND the condition of 3-02 is NOT Fire then the INPUT SIDE is true. Another way to look at this equation is shown in Figure 8-15. In order to cross from the INPUT SIDE of the equation to the OUTPUT SIDE, the first and second statements must be true.

Note: The NOT gate is shown as a normally closed contact. This statement is true because there is a path from the Input to the Output.

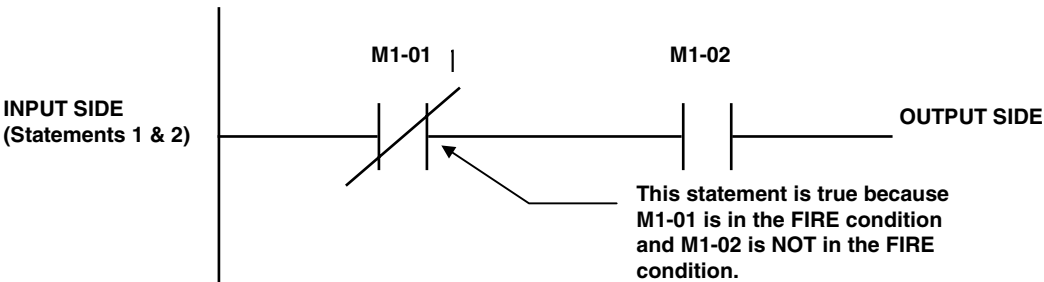


Figure 8-15

Continued on next page

Custom Control Programming, *Continued*

Field 2 (continued)

OR & NOT

The OR Link operator links the current statement in Parallel with *all* previous statements in an equation (see Figure 8-16).

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[FIRE]	[3 - 01]
SECOND STATEMENT	[OR]	[NOT]	[FIRE]	[3 - 02]

Figure 8-16

In Figure 8-16, if the condition of 3-01 is Fire OR the condition of 3-02 is NOT Fire then the INPUT SIDE is true.

Another way to look at this equation is shown in Figure 8-17. In order to cross from the INPUT SIDE of the equation to the OUTPUT SIDE, the first or the second statement must be true.

Note: The NOT gate is shown as a normally closed contact. This statement is true because there is a path from the Input to the Output .

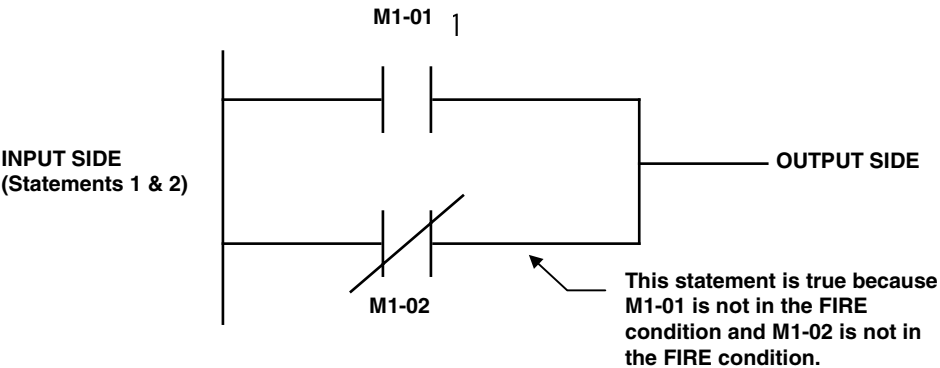


Figure 8-17

Fields 3 & 4

Field 3 contains the condition qualifier for the point listed in Field 4 (refer to Table 8-1 for all INPUT SIDE condition qualifiers). Field 4 options change per Condition Qualifier selected.

Continued on next page

Custom Control Programming, Continued

Fields 3 & 4 (continued)

FIRE

When using the input condition qualifier FIRE, a statement is true when the point indicated in Field 4 is in the FIRE state. Field 4 Choices for the FIRE qualifier are:

- System Card Points
- Digital Pseudo Points

Note: The statement holds true until the system is no longer in the FIRE state.

When the condition of 3-01 is FIRE, the input is true, and the output is executed. If the system is *not* reset, and the condition of 3-02 becomes FIRE after 3-01, the system outputs ignore 3-02. In other words, if the output executes from the FIRE condition of 3-01, the output will not re-execute from the FIRE condition of 3-02.

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[FIRE]	[3-01]
SECOND STATEMENT	[OR]	[]	[FIRE]	[3-02]

Figure 8-19

Example: The condition of 3-01 is FIRE. The 4010 is reset from the Fire Alarm Control Panel (FACP). After the system is reset (and there are no alarms) the condition of 3-02 is FIRE. The appropriate notification appliances now activate for the FIRE condition of 3-02.

FIRE DET

When using the input condition qualifier FIRE DET (Fire Detect), a statement is true when the point indicated in Field 4 is activated. Field 4 Choices for the FIRE DET qualifier are:

- IDNet Points
- Digital Pseudo Points

Note: When using the FIRE DET qualifier, the statement holds true for one 4010 polling cycle (typically less than one second). This allows the output to re-execute after a signal silence.

Continued on next page

Custom Control Programming, *Continued*

Fields 3 & 4 (Continued)

When the condition of 3-01 is FIRE DET, the input is true for one 4010 polling cycle which can vary depending upon your application, and the output is executed. If the condition of 3-02 becomes FIRE DET after 3-01, the system re-executes the output. In other words, if the output executes from the FIRE DET condition of 3-01, the output will re-execute from the FIRE DET condition of 3-02.

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[FIRE DET]	[3 - 01]
SECOND STATEMENT	[OR]	[]	[FIRE DET]	[3 - 02]

Figure 8-20

Example: The condition of 3-01 is FIRE DET. The appropriate notification appliances are silenced from the FACP. After the notification appliances are silenced the condition of 3-02 is FIRE DET. The notification appliances now resound for the FIRE DET condition of 3-02.

FIRE ACK

When using the input condition qualifier FIRE ACK (Fire Acknowledge), a statement is true when the point indicated in Field 4 is activated. Field 4 Choices for the FIRE ACK qualifier are:

- IDNet Points
- Digital Pseudo Points

Note: The statement holds true until the point indicated in Field 4 is Acknowledged.

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[FIRE ACK]	[3 - 01]
SECOND STATEMENT	[OR]	[]	[FIRE ACK]	[3 - 02]

Figure 8-21

Example: The condition of 3-01 is FIRE ACK. The input of the equation remains true until the point indicated in Field 4 is acknowledged. The same holds true for 3-02.

Continued on next page

Custom Control Programming, Continued

Fields 3 & 4 (Continued)

SUPV

When using the input condition qualifier SUPV (Supervisory), a statement is true when the point indicated in Field 4 is activated. Field 4 Choices for the SUPV qualifier are:

- System Card Points
- Digital Pseudo Points

Note: The statement holds true until the point indicated in Field 4 clears.

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[SUPV]	[3 - 01]

Figure 8-22

Example: The condition of 3-01 is SUPV. The input of the equation remains true until the point indicated in Field 4 is cleared.

SUPV ACK

When using the input condition qualifier SUPV ACK (Supervisory Acknowledge), a statement is true when the point indicated in Field 4 is activated. Field 4 choices for the SUPV ACK qualifier are:

- System Card Points
- Digital Pseudo Points

Note: The statement holds true until the point indicated in Field 4 is Acknowledged.

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[SUPV ACK]	[3 - 01]

Figure 8-23

Example: The condition of 3-01 is SUPV ACK. The input of the equation remains true until the point indicated in Field 4 is acknowledged from the FACP.

Continued on next page

Fields 3 & 4 (*Continued*)

TBL

When using the input condition qualifier TBL (Trouble), a statement is true when the point indicated in Field 4 is in trouble. Field 4 choices for the TBL qualifier are:

- CPU Card Points
- System Card Points
- Power Supply Points
- Digital Pseudo Points

Note: The statement holds true until the point indicated in Field 4 not in trouble.

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[TBL]	[3 - 01]

Figure 8-24

Example: The condition of 3-01 is TBL. The input of the equation remains true until the point indicated in Field 4 is not in trouble.

TBL ACK

When using the input condition qualifier TBL ACK (Trouble Acknowledge), a statement is true when the point indicated in Field 4 is in trouble and requires an acknowledge. Field 4 choices for the TBL ACK qualifier are:

- CPU Card Points
- System Card Points
- Power Supply Points
- Digital Pseudo Points

Note: The statement holds true until the point indicated in Field 4 (in trouble) is Acknowledged.

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[TBL ACK]	[3 - 01]

Figure 8-25

Example: The condition of 3-01 is TBL ACK. The input of the equation remains true until the point indicated in Field 4 is acknowledged.

Continued on next page

Fields 3 & 4 (*Continued*)

ON/CODE and OFF

When using the input condition qualifier ON/CODE (On Coding), a statement is true when the point indicated in Field 4 is On or Coding. Field 4 choices for the ON/CODE qualifier are:

- CPU Card Points
- System Card Points
- Power Supply Points
- Digital Pseudo Points
- Analog Pseudo Points

Note: The statement holds true until the point indicated in Field 4 is OFF.

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[ON/CODE]	[3 - 01]

Figure 8-26

Example: The condition of 3-01 is ON/CODE. The input of the equation remains true until the point indicated in Field 4 is OFF.

When using the input condition qualifier OFF, a statement is true when the point indicated in Field 4 is OFF. Field 4 choices for the OFF qualifier are:

- CPU Card Points
- System Card Points
- Power Supply Points
- Digital Pseudo Points
- Analog Pseudo Points

Note: The statement holds true until the point indicated in Field 4 is ON or Coding.

	Field 1	Field 2	Field 3	Field 4
FIRST STATEMENT	[]	[]	[OFF]	[3 - 01]

Figure 8-27

Example: The condition of 3-01 is OFF. The input of the equation remains true until the point indicated in Field 4 is ON or Coding.

Continued on next page

Fields 3 & 4 (*Continued*)

COMP CNST, ANY, ALL, & DELAY CNST

The COMP CNST (Compare Constant) ANY, ALL, and DELAY CNST input condition qualifiers are two-stage qualifiers. Additional programming is necessary in order for these qualifiers to work correctly. When selecting these qualifiers, you must press Enter to program the second stage. In this second stage there are four additional fields with the following choices: Analog Points, numbers, relational qualifiers, and Lists. The choices for the different fields are related directly to the qualifier selected.

COMP CNST

When using the input condition qualifier COMP CNST, a statement is true when the value of the Analog Pseudo point in Field B is the proper relationship (Field C relational qualifier) to the number in Field D (see Figure 8-28). The choices for Fields B, C, and D are as follows:

- Field B —Analog Pseudo points 21-01 through 21-25 (20-01 through 20-07 are system Analog Pseudo points)
- Field C —Relational Qualifiers **EQ** (Equal), **NE** (Not Equal), **GT** (Greater Than), **LT** (Less Than), **GE** (Greater Than or Equal), and **LE** (Less Than or Equal)
- Field D —Number Value (00000 to 65535)

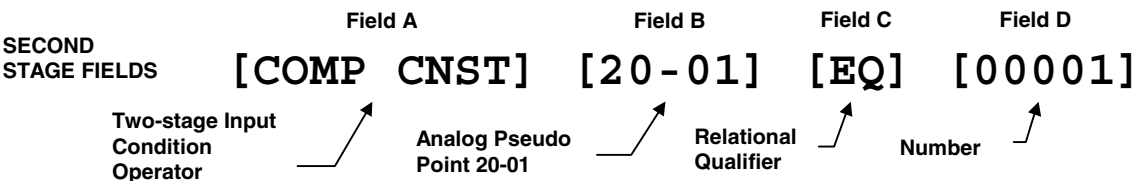


Figure 8-28

***Example:** When the value of the Analog Pseudo point equals 1, then execute the output.*

Continued on next page

Custom Control Programming, *Continued*

Fields 3 & 4 (*Continued*)

ANY

When using the input condition qualifier ANY, a statement is true when the specified number of points from Field B equals the number of points in the List identified in Field D that are in the condition specified by Field C. The choices for Fields B, C, and D are as follows:

- Field B —Point number value 001 to 255
- Field C —Conditions FIRE ACK, SUP ACK, TBL ACK, FIRE, SUP, TBL, ON IN, ON CODE, PHY NRM, PHY ABN, PHY SHR, FIRE DET, DISABLE, MAN
- Field D —List Pseudo Points 23-01 through 23-25 are user points (List Points 22-01 through 22-12 are system List Pseudo Points)

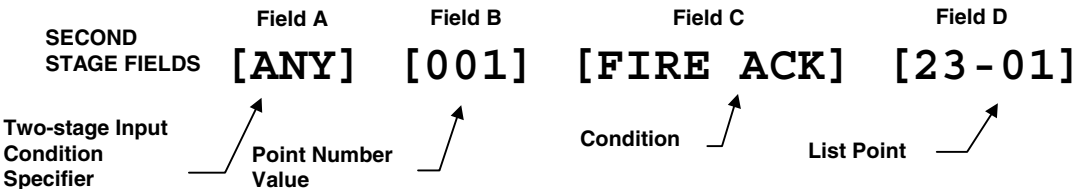


Figure 8-29

Example: When any one (1) point's condition in the List 22-01 is FIRE ACK, then execute the output.

ALL

Note: When choosing the ALL condition qualifier, there are only three fields open for programming.

When using the input condition qualifier ALL, a statement is true when all points specified in Field C are in the condition specified in Field B. The choices for Fields B and C are as follows:

- Field B —Conditions FIRE ACK, SUP ACK, TBL ACK, FIRE, SUP, TBL, ON IN, ON CODE, PHY NRM, PHY ABN, PHY SHR, FIRE DET, DISABLE, MAN
- Field C —List Points 23-01 through 23-25

Continued on next page

Custom Control Programming, *Continued*

Fields 3 & 4 (Continued)

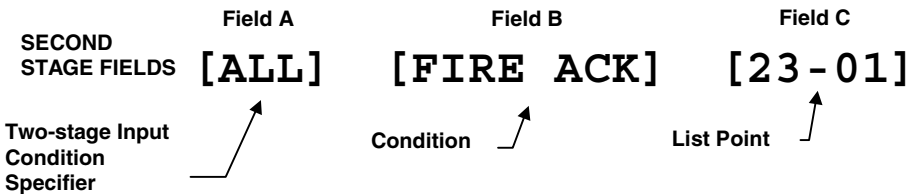


Figure 8-30

Example: When all points in List 23-01 are in the condition of FIRE ACK, then execute the output.

DELAY CNST

When using the input condition qualifier DELAY CNST, and the input statement is true, the output action is delayed for a specified amount of time (in seconds).

Note: The input must be true for the entire delay time specified.

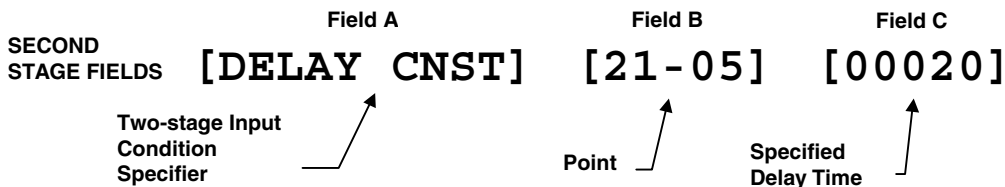


Figure 8-31

Output Side (THEN)

Each output statement is made up of three fields.

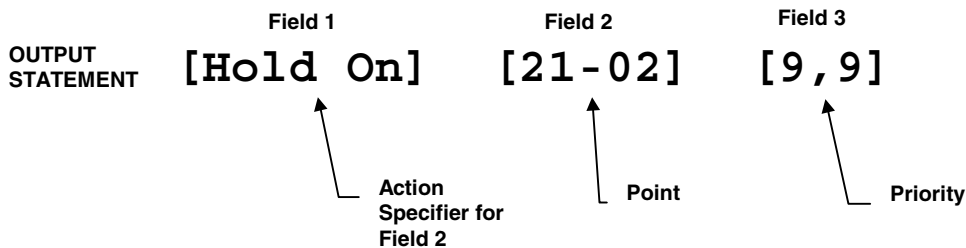


Figure 8-32

Continued on next page

Custom Control Programming, *Continued*

Output Side (THEN) (Continued)

FIELD 1

Field 1 contains the Action Operators listed in Table 8-3.

FIELD 2

When using any action operator, Field 2 choices are:

- CPU Card Points
- System Card Points
- Power Supply Points
- Digital Pseudo Points
- List Pseudo Points

FIELD 3

Field 3 contains the Set and Reset Priorities of control equipment (relays) and Pseudo points. This eliminates confusion of when a point is under control of one statement and another statement tries to take control (see Figure 8-31).

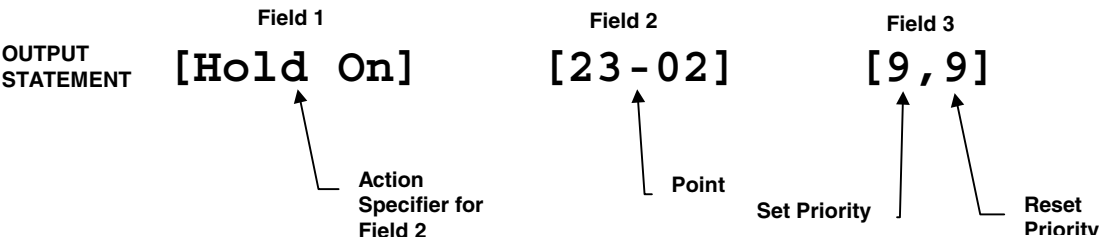


Figure 8-33

In Figure 8-32, point 23-02 will HOLD ON (IF the Input is true) at a Set priority of 9. This Output statement will maintain control of this point until another output statement with an equal (9) or greater Set priority takes over. The possible ranges for a priority are from 1 to 15, 1 being the highest and 15 being the lowest priority. By default, the priority is 9. When changing a priority, press Function and then press < > to place the cursor under the Set priority. Use <Next> and <Previous> to scroll through the priorities. Press < > to place the cursor under the Reset priority. Use <Next> and <Previous> to scroll through the priorities and then press <Enter> to program the priorities selected.

Application-Specific Examples

Introduction

The following examples detail the use of the 4010's newer Custom Control features.

Day Night Programming Example

M1-1 is a TrueAlarm Photo sensor. Customer wants normal 2.5% sensitivity during working hours (7am – 6pm) and higher sensitivity (1.0%) at night. (A11 is current hour analog pseudo point.)

Equation 1:

```
IN:
    A11    GREATER THAN    7           (7 is 7am)
OUT:
    SET THRESHOLD M1-1 LEVEL 5 (level 5 is
                                2.5% obscuration)
END:
```

Equation 2:

```
IN:
    A11    GREATER THAN    18          (18 is 6pm)
OUT:
    SET THRESHOLD M1-1 LEVEL 2 (level 2 is 1.0%
                                obscuration)
END:
```

TrueAlarm Heat Utility Monitoring Example

A customer wants a supervisory alert when an impending freeze is detected by a TrueAlarm heat sensor. M1-1 is a HEAT sensor programmed with the UTILITY point type. P75 is a user defined digital point with the SUPERVISORY point type.

```
IN:
    M1-1    LESS THAN    38           (38 is degrees F)
OUT:
    TRACK  ON  P75    PRI=9,9
END:
```

City Circuit Alarm-Output Programming Example

A customer only wants the city circuit's alarm output to activate when a waterflow alarm occurs. In this example, L25 is a user-created list of all Waterflow monitor points.

```
IN:
    L25     ALARM
OUT:
    TRACK  ON  P60    PRI=7,7    (Use priority greater than
                                9 to control this point)
END:
```

Continued on next page

Application-Specific Examples, *Continued*

AHJ City Circuit Reset Operation Example

This example shows how to program the panel or AHJ City Reset operation.

IN:

A4 ON

OUT:

HOLD ON P16 PRI=9,9

END:

Chapter 9

Saving a CFG

Introduction

The 4010 FACP provides the ability to continue making edits, save or discard changes that you make to the panel's programming.

In this Chapter

This chapter discusses the following topics:

Topic	See Page #
Viewing CFG Properties	9-2
Continue, Restore CFG, and Save CFG	9-3

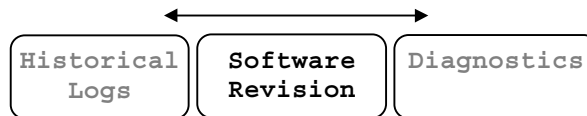
Viewing CFIG Properties

Introduction

CFIG properties include information such as the System Revision, the job name and its revision, and the system's current time and date.

Procedure

The Software Revision menu allows access to the CFIG properties. It is located at the topmost level of the 4010 menu structure.



1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> to scroll through the options until SOFTWARE REVISION is displayed and then press <ENTER>.
3. Press <ENTER>. Information *similar* to the following appears. The exact revision number and Job Rev. that you see depends on the revision level of the software installed on your 4010.

Sys Rev 2.00.06	4010 System
JOB REV: 1	12:00:00 am Wed 27-Aug-97

Figure 9-1. CFIG Properties

Continue, Restore CFG, and Save CFG

Continue

The Continue option allows you continue an edit session without saving or restoring the information stored in the Edit Buffer to the CFG. This option appears when you use the Exit/Clear button to back out of programming mode.

Restore CFG

The Restore CFG option restores all information to the 4010 configuration *prior* to any programming modifications. Select this option if you *do not* wish to save any edits or modifications you made during your programming session to the 4010 configuration.

You can restore a CFG by choosing the menu option as described below or by pressing Exit/Clear to back out of Programming mode and then choosing the Restore CFG option from the 4010 prompts. In both cases, your 4010 re-boots and becomes operational as a fire alarm system.

To access the Restore CFG menu option, follow these steps:

1. Press <MENU>.
 2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
 3. Press <ENTER> to continue.
 4. Press <NEXT> or <PREVIOUS> until <RESTORE CFG> is displayed and then press <ENTER>.
-

Save CFG

The Save CFG option saves all information to the 4010 configuration *after* or *during* programming. Choose this option if you wish to save all of your edits and modifications you made during your programming session to the 4010 configuration.

You can save CFG by choosing the menu option as described below or by pressing Exit/Clear to back out of Programming mode and then choosing the Save CFG option from the 4010 prompts. In both cases, your 4010 re-boots and becomes operational as a fire alarm system.

To access the Restore CFG menu option, follow these steps:

1. Press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [PROGRAMMING] is displayed and then press <ENTER>. A warning appears, indicating that the 4010 is no longer in the Fire Alarm Operation mode.
3. Press <ENTER> to continue.
4. Press <NEXT> or <PREVIOUS> until <SAVE CFG> is displayed and then press <ENTER>.

When exiting the programming mode, your 4010 re-boots and becomes operational as a fire alarm system.

Chapter 10

Diagnostics and Troubleshooting

Overview

This chapter describes the diagnostic tools provided with the 4010 FACP and describes some simple techniques used to help you troubleshoot the 4010 before calling Simplex Technical Support.

Before Calling Tech Support

DID YOU...

- Verify all system wiring?
- Test all power circuits (AC and Batteries) and fuses for opens?
- Ensure that all IDNet devices are correctly addressed?
- Verify that all hardware has been added to the system either individually or via the Quick CFG option?
- Verify that all switches and adjustable potentiometers are correctly set, and End-of-Line Devices are in place (refer to “Chapter 1 - Overview, Default Settings and End-of-Line Devices” for correct settings)?

WHEN YOU CALL, HAVE THE FOLLOWING AT HAND...

- Any error messages from the front panel.
- History Logs for all Alarm, Trouble, and Supervisory information.
- Revision Level of your system as well as any option cards.

Note: An accurate time and date are essential for the proper operation of the 4010 FACP. Make sure to check the time and date at least once a month, and reset it if necessary. Changing the time and date are described in Chapter 11 of this manual.

Diagnostics

Overview

The 4010 has the capability to run diagnostics of the N2 communication lines, the IDNet channel, the Network communication lines, and to locate an Earth Fault between IDNet devices. This section shows how to run the diagnostic utility on the 4010.

Running Diagnostics

Running diagnostics is the easiest way to ensure proper communication between the FACP and its various devices. To use the Diagnostics, you must be logged in at a Level 4. Follow Steps 1 through 3 to run diagnostics on the 4010.

1. From the High-Level Status screen, press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [Diagnostics] is displayed and then press <ENTER>.
3. Press <NEXT> or <PREVIOUS> to select the desired diagnostic option and then press <ENTER>.

The Diagnostic options are shown in Figure 10-1.

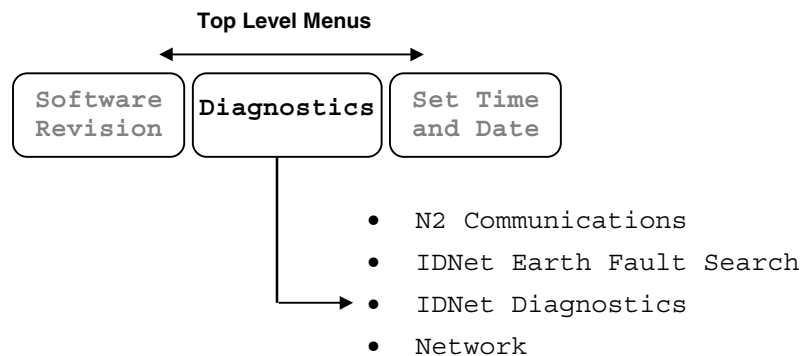


Figure 10-1. Diagnostic Options

Continued on next page

Diagnostics, *Continued*

Diagnostic Options

Once a diagnostic option is selected, you can set the options by pressing <NEXT> or <PREVIOUS> to scroll through the choices shown in Table 10-1.

Table 10-1. Diagnostic Options

Diagnostic Option	Settings
N2 Comm	Choose On or Off
IDNet Earth Fault Search	Choose On or Off
IDNet Diagnostics	Choose: <ul style="list-style-type: none"> • IDNet Weak Answer (On/Off) • IDNet Duplicate Device (On/Off)
Network	Choose: <ul style="list-style-type: none"> • Node Number (displays the current node number for the 4010) • Topology • Attendance

N2 Comm Diagnostics

Use the N2 Comms Diagnostics to check for noisy N2 comm lines and other N2 comm errors. The screen in Figure 10-2 shows a typical N2 Communication Diagnostic screen. This screen informs you of the amount of messages sent, the amount of message retries and the amount of card failures. Note that these tallies are only kept while diagnostics are active.

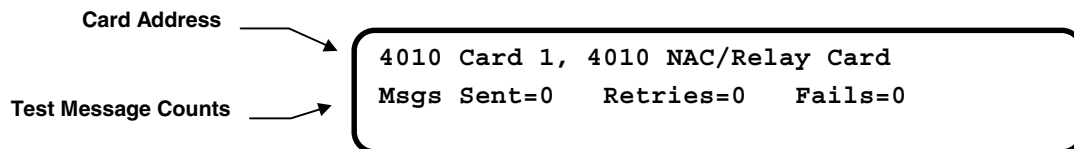


Figure 10-2. N2 Communication Diagnostic Screen

Pressing <NEXT> or <PREVIOUS> scrolls through the available cards that are communicating on the N2 lines and displays that card's N2 diagnostic information.

Pressing <ENTER> (while a particular card's information is displayed) prompts you to press <ENTER> again to clear the message counts for that card.

IDNet Diagnostics

Duplicate Devices

To detect devices set to the same address you can activate the IDNet Diagnostics - Duplicate Device option. Once activated, there is a trouble in the panel indicating that you have activated the option. The two devices set to the same address then come in as a duplicate device trouble for that address. Acknowledge the trouble and view the point information to determine the address that the devices are set to and correct the problem.

Continued on next page

Diagnostics, Continued

IDNet Diagnostics (continued)

Weak Answer Devices

When receiving a Weak Answer Trouble you can determine which device is causing the trouble by activating the IDNet Diagnostics - Weak Answer option. When activated there is a trouble in the panel informing you that the option is active. Acknowledge the trouble and wait. Any device which is weak will then report NO ANSWER when the Weak Answer Diagnostic is run.

IDNet Earth Fault Search Diagnostics

Use the IDNet Earth Fault Search Diagnostics to locate an “earth” between the panel and the first IDNet isolator device or to another isolator device. Note that the 4010 FACP does not function as a fire panel for the duration of an Earth Fault search.

If an “earth” cannot be isolated or there are no isolators configured on the system, the 4010 returns a “**Unable to Isolate Earth Fault**” message.

If the “earth” is isolated between the first isolator and the FACP, the 4010 returns a “**Earth Fault Between Panel and 1st Device**” message.

If the “earth” is isolated to any other device, the 4010 returns a “**Earth Fault Isolated to Device M1-X**” where X is the isolator address.

Network Diagnostics

Once the 4010 is “networked” to other panels using the PC Programmer (see *4010 Fire Alarm - PC Programming Instructions*, Part No. 574-187) you can check the node number of the 4010, network topology, and network attendance.

Figure 10-3 shows a typical Network Topology screen. Topology information shows how the network is physically wired and whether there are any breaks in the network loop.

M = Monitor Node
L = LEFT End Node
R = RIGHT End Node
(_) = This Node
■ = Missing Node

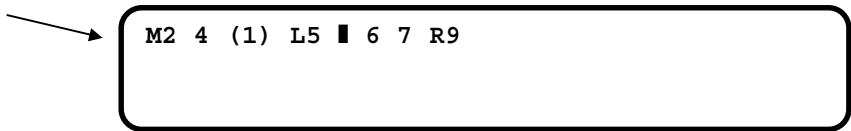


Figure 10-3. Network Topology Screen

Continued on next page

Diagnostics, *Continued*

Network Diagnostics (continued)

Attendance information shows if the network nodes are configured. Each position on the 4010's LCD represents a node's address for a maximum of 80 nodes (only 80 nodes can be displayed because there are only 80 positions on the 2 by 40 character LCD). Each node can only be represented by one character. Figure 10-4 is NOT a typical Attendance screen, it is shown for reference only.

1 = Node Number 1

M = Monitor Node (Node Number 2)

. = No node configured at this address

4 = Node Number 4

L = Node Number 5 (fifth position on the screen) and it is the Left End Node.

■ = Missing Node

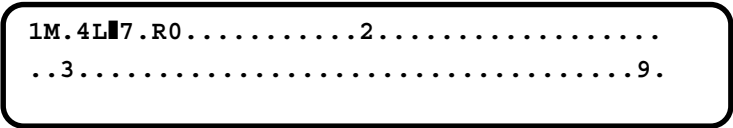
7 = Node Number 7

R = Node Number 9 (ninth position on the screen and it is the Right End Node.

2 = Node Number 22 (twenty-second position on the screen)

3 = Node Number 43 (forty-third position on the screen)

9 = Node Number 79 (seventy-ninth position on the screen)



```

1M.4L■7.R0.....2.....
..3.....9.
  
```

Figure 10-4. Network Attendance Screen

Walk Test

Overview

Walk Test allows one person to test the functionality of the 4010. Once the panel is placed into Walk Test mode, any device can be tested in any order. For each device, you should simulate both an alarm and trouble. If an audible or visible indication is used, wait for the indication before moving on to the next device. Walk Test options are viewed by selecting the **WalkTest** entry at the main menu. The Walk Test screens allow you to customize the Walk Test operation. The signals (if enabled) annunciate device coding for Walk Test. Earth Faults are signaled during Walk Test on both the front panel display/tone-alert and by activating audible and visible notification circuits for 4 seconds. Suppression release outputs are NOT activated by Walk Test.

Walk Test automatically aborts after eight hours and restores the panel to normal operation.

Using Walk Test

To activate Walk Test, follow Steps 1 through 5.

1. From the High-Level Status screen, press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [WalkTest] is displayed and then press <ENTER>.
3. Press < > or < > to move the focus brackets to the desired option.
4. Press <NEXT> or <PREVIOUS> to scroll through the following choices:
 - On/Off — *Walk Test mode.*
 - Log/No Log — *allows events to be recorded to the Historical Logs.*
 - Signal/Silent — *activate/deactivate Signals.*
5. Press <ENTER> to activate Walk Test.

Continued on next page

Walk Test, Continued

Using Walk Test (continued)

The Walk Test options are shown in Figure 10-5.

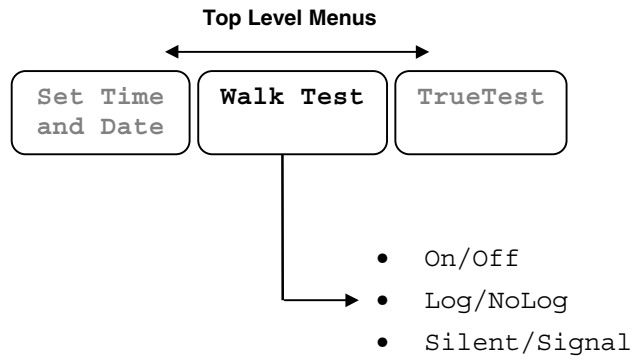


Figure 10-5. Walk Test Options

Figure 10-6 shows an example of the Walk Test screen with the default values.

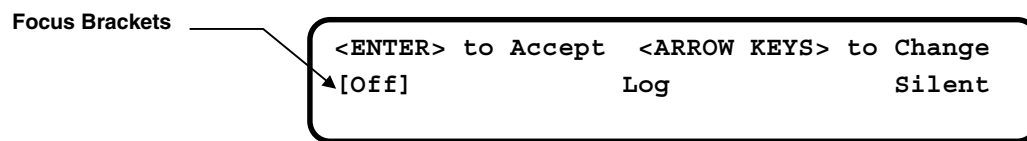


Figure 10-6. Walk Test Screen

TrueTest

Overview

The TrueTest feature provides a simple method of testing the application specific software in the FACP without the need to manually activate the initiating device circuits. In other words, TrueTest provides an easy method of testing the Input/Output programming to verify that the programming is written as the customer specified.

Once the panel is in TrueTest mode, you can modify a point's status by selecting the desired point at the front panel and pressing <NEXT> or <PREVIOUS> until the TrueTest screen is displayed. The point's custom label and device address are displayed along with an option select box allowing you to select the desired TrueTest physical state.

The choices for the TrueTest state depend on the currently selected point's attributes. For monitor hardware device type points, the options are NORMAL, ABNORMAL, OPEN, and SHORT. For TrueAlarm sensors, the sensitivity threshold possibilities available for the selected device are presented (see Appendix A for sensitivities and levels). Press <NEXT> or <PREVIOUS> to scroll through the possible choices for that point type.

Once you have selected the desired state, pressing <ENTER> forces the state change as a TrueTest simulated event. Pressing <EXIT/CLR> exits the TrueTest menu without making any changes.

When a TrueTest simulated event occurs, the system responds as if that point had actually entered the specified state up to the point of activating control outputs if NoCTRL is selected. If CTRL is selected, selected outputs activate. Any control point activation, DACT reporting, printing, and logging is selected in the TrueTest menu (refer to Table 10-2 for options). Any LEDs programmed to track any point also operate (there is no way to disable this).

Table 10-2. TrueTest Menu Options

TrueTest Option	Description
On/Off	Activates or deactivates TrueTest.
Log/NoLog	Determines whether the TrueTest events are sent to the logs.
Print/NoPrint	Determines whether the TrueTest events are sent to a printer.
DACT/NoDACT	Determines whether any events occurring in TrueTest are reported to the DACT.
NoCTRL/CTRL	By default no control circuits of any kind are activated during the test. If desired, all control points may be activated during the test by selecting CTRL. This category includes all control points (audibles, visibles, and any other control points).

Continued on next page

TrueTest, Continued

Using TrueTest

Use Steps 1 through 5 and Figures 10-7 and 10-8 to activate TrueTest.

1. From the High-Level Status screen, press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [TrueTest] is displayed and then press <ENTER>.
3. Press < > or < > to move the focus brackets to the desired option.
4. Press <NEXT> or <PREVIOUS> to enable the options listed in Table 10-2.
5. Once all options are set, press <ENTER> to activate TrueTest.

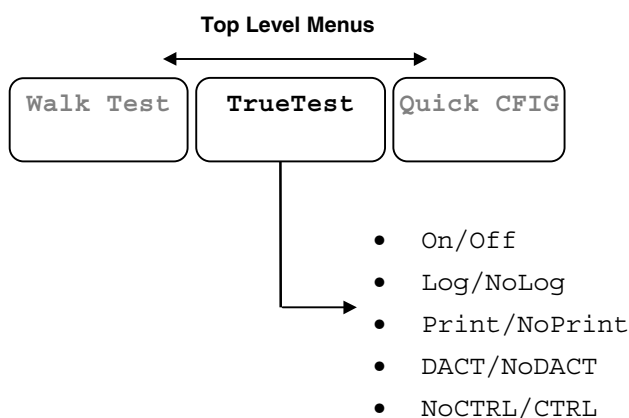


Figure 10-7. TrueTest Options

Figure 10-8 shows an example of the TrueTest screen with the default values.

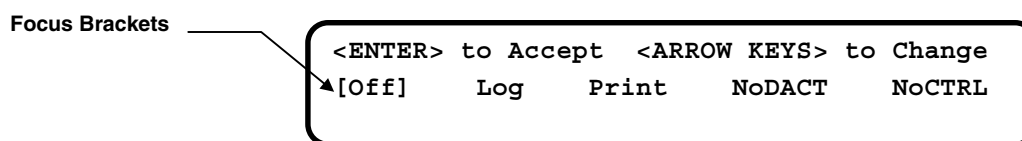


Figure 10-8. TrueTest Screen

Crash Codes

Table 10-3. Crash Codes

Code	Meaning	Cause	Corrective Action
0	Illegal Crash Code	Erroneous call to crash handler.	Code not supported by 4010
1	RAM Memory Fail	RAM memory failed pattern check or the newly calculated checksum did not restore correctly.	Replace hardware
2	Hardware Stack Fail	Not used – erroneous call to crash handler.	Code not supported by 4010
3	Bad Message Index	Call to get message string with illegal value.	Reload application
4	Bad Switch Value	Default for switch when illegal value cannot be defaulted.	Reload application
5	ROM Memory Fail	ROM memory failed its CRC check, either BOOT or Application.	Reload application Replace Hardware
6	OS Initialization Fail	The 4010 Application failed trying to define an OS object.	Reload application Replace Hardware
7	Unexpected Interrupt	An interrupt vector was executed when that interrupt was not enabled.	Reload application Replace Hardware
8	Unexpected Function	The 4010 application called a BOOT function that does not exist.	Reload application Replace Hardware
9	Internal RAM Fail	The on-chip RAM failed integrity check during startup.	Replace hardware
A	Keypad Missing	The 4010 keypad is missing.	Check keypad connections / Replace hardware
B	CFIG Format Mismatch	Indicates a mismatch between the EXEC and programmer software. For example, using a version 1 EXEC with a version 2 programmer.	Upgrade EXEC and programmer software to same revision.
C	Invalid SMPL Opcode	The SMPL interpreter failed trying to execute a corrupt program.	Reload job. Check versions of tools and panel
D	Invalid Card Address	A database routine failed trying to access an illegal card number.	Reload job. Check versions of tools and panel
E	Invalid Point Number	A database routine failed trying to access an illegal point number.	Reload job. Check versions of tools and panel
F	I/O Scan Time-Out	Not used – erroneous call to crash handler.	Code not supported by 4010.
10	Invalid Get Status	The application tried to get a type of data that is not associated with the data point it was intended for. This can be caused by using the PC programmer to assign a point type of “unavailable” to a NAC or 24 PT I/O	Reload job. Check versions of tools and panel
11	Invalid Put Status	The application tried to save a type of data that is not associated with the data point it was intended for.	Reload job. Check versions of tools and panel
12	Flash Erase Failure	The Flash chip erase function returned an error.	Replace hardware
13	Flash Write Failure	The Flash chip write function returned an error.	Replace hardware
14	Empty Mail Event	The OS signaled a mail event but had no mail for the process.	Reload application
15	No Comm. Memory	The system was unable to allocate a required communication buffer.	Reduce cards/reload job

Continued on next page

Crash Codes, *Continued*

Table 10-3. Crash Codes (*continued*)

Code	Meaning	Cause	Corrective Action
16	Bad Card State	The state index for a card was invalid for the card's type	Reload BIN File
17	Failed Restoring SMPL	Not Used. Erroneous call to the crash handler	*
18	Unable to Restore CFG	The flash chip copy to RAM function returned an error	Replace Hardware
19	Task 1 Stopped	Supervisor task watchdog timer has expired.	*
1A	Task 2 Stopped	Front panel task watchdog timer has expired.	Reload CFG. Check versions of panel and tools.
1B	Task 3 Stopped	System operation task watchdog timer has expired	Reload CFG. Check versions of panel and tools.
1C	Task 4 Stopped	Communication task watchdog timer has expired	Reload CFG. Check versions of panel and tools.
1D	Task5 Stopped	Serial port task watchdog timer has expired.	Reload CFG. Check versions of panel and tools.
1E	Task 6 Stopped	Not used. Erroneous call to the crash handler.	*
1F	Task 7 Stopped	Not used. Erroneous call to the crash handler.	*
20	Common Overrun	Execution across the common code area boundary was detected.	Reload BIN file.
21	Bank 0 Overrun	Execution across the code bank 0 area boundary was detected.	Reload BIN file.
22	Bank 1 Overrun	Execution across the code bank 1 area boundary was detected.	Reload BIN file.
23	Bank 2 Overrun	Execution across the code bank 2 area boundary was detected.	Reload BIN file.
24	Bank 3 Overrun	Execution across the code bank 3 area boundary was detected.	Reload BIN file.
25	Bank 4 Overrun	Execution across the code bank 4 area boundary was detected.	Reload BIN file.
26	Bank 5 Overrun	Execution across the code bank 5 area boundary was detected.	Reload BIN file.
27	Bank 6 Overrun	Execution across the code bank 6 area boundary was detected.	Reload BIN file.
28	Bank 7 Overrun	Execution across the code bank 7 area boundary was detected.	Reload BIN file.
29	Bank 8 Overrun	Execution across the code bank 8 area boundary was detected.	Reload BIN file.
2A	Bank 9 Overrun	Execution across the code bank 9 area boundary was detected.	Reload BIN file.
2B	Bank 10 Overrun	Execution across the code bank 10 area boundary was detected.	Reload BIN file.
2C	Bank 11 Overrun	Not used. Erroneous call to the crash handler.	*
2D	Bank 12 Overrun	Not used. Erroneous call to the crash handler.	*
2E	Bank 13 Overrun	Not used. Erroneous call to the crash handler.	*
2F	Bank 14 Overrun	Not used. Erroneous call to the crash handler.	*
30	Bank 15 Overrun	Not used. Erroneous call to the crash handler.	*
31	Bank 16 Overrun	Not used. Erroneous call to the crash handler.	*

Continued on next page

Crash Codes, *Continued*

Table 10-3. Crash Codes (*continued*)

Code	Meaning	Cause	Corrective Action
32	Network Buffer Error	The network card local port buffer handler lost a buffer	Reload Job / Check versions of tools and panel / reload BIN File
33	Bad Mapnet Packet	The mapnet card received a packet that failed its consistency check.	Reload Job / Check versions of tools and panel / reload BIN File
34	Bad Parameter	An LCD function was passed an illegal or impossible value.	Reload Job / Check versions of tools and panel / reload BIN File
35	Out of Memory	The LCD processing failed to allocate a global memory buffer	Reload Job / Check versions of tools and panel / reload BIN File
36	CFIG Consistency	The RAM CFIG area failed its CRC calculation during a background check.	Reload Job / Check versions of tools and panel / reload BIN File
37	Bad String Length	The system called the string format function (sprintf) with a format string greater than 59 characters.	Reload Job / Check versions of tools and panel / reload BIN File
38	Illegal Crash Code	Erroneous call to the crash handler.	*

* denotes a code that should never appear.

Chapter 11

Operation

Overview

This chapter describes common tasks that need to be performed following installation and programming of the 4010 FACP.

An operator logged into the system at Level 1 can perform all tasks described in this chapter.

In this Chapter

This chapter discusses the following topics:

Topic	See Page #
Handling Abnormal Conditions	11-2
Viewing and Clearing Historical Logs	11-5
Viewing and Controlling Points	11-7
Editing Custom Labels	11-10
User Control Functions	11-12
Setting the Time and Date	11-14

Handling Abnormal Conditions

Normal Operation

The 4010 shows the following under normal conditions:

- Green AC power LED ON (indicating that AC power is applied)
- All other panel indicator LEDs OFF
- System Information on the LCD (SYSTEM NORMAL with the current time and date)

Abnormal Conditions

Abnormal conditions are indicated on the 4010 by flashing the alarm, supervisory, or trouble LED and sounding the tone-alert. The display provides information as to the point status (alarm, supervisory, and trouble), time, date, type of device (smoke detector, pull station, etc.), number of abnormal conditions in the system, and a custom description of the abnormal condition causing the alarm. Alarm, supervisory, and trouble conditions each have their respective acknowledge key. Pressing the appropriate acknowledge key silences the tone-alert. However, the LED indicator remains ON until all initiating devices are restored to normal.

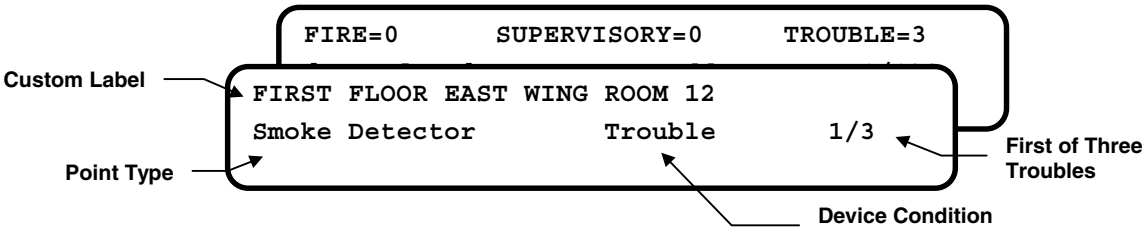


Figure 11-1. Example Abnormal Condition Screens

When the 4010 senses an Alarm Condition, the tone-alert sounds at a march time rate, and the FIRE ALARM LED turns ON and flashes, indicating that an alarm condition is present. In addition, the appropriate indications are shown on the display.

When the 4010 senses a Supervisory Condition, the tone-alert sounds steady, the SYSTEM SUPERVISORY LED turns ON and flashes, and various programmed events occur.

When the 4010 senses a malfunction within the system (loss of power, hardware failure, etc.), a Trouble Condition is announced by the system. The tone-alert sounds steady, the SYSTEM TROUBLE LED flashes, and various programmed events occur.

The tone-alert may be programmed to sound at specified time intervals to serve as a reminder that any active status condition still exists within the system (Active Status Reminder).

Continued on next page

Handling Abnormal Conditions, *Continued*

Acknowledging an Alarm, Trouble, or Supervisory Condition

The 4010 is a Global Acknowledge System which means ONE (1) press of an <ACK> key globally acknowledges every abnormal point in the system in that category. When acknowledged, an appropriate message is displayed.

When a point is acknowledged, the appropriate LED remains ON and the tone-alert is silenced. The total number of alarm, trouble, and supervisory conditions is shown in an alternating sequence on the display along with a prompt to the press <ACK> for point review. Pressing <ACK> scrolls through the selected list in chronological order. Each list is different and contains information concerning a particular abnormal condition. In some cases, additional information is available on the condition by pressing <ENTER>.

Silencing Alarms

When an alarm condition exists, various signals, auxiliary relays, the city connection, and the tone-alert may activate, depending on the system configuration and the stage of the alarm condition. Turning signals, tone alerts, etc. off is known as Alarm Silencing.

An important feature to be aware of when silencing alarms on the 4010 is its “re-sound” capability. If, after silencing the signals, the 4010 detects another abnormal condition, the zone with the abnormal condition is indicated on the panel display, the appropriate indicator again flashes, and the signals sound again.



Caution: Pressing the Alarm Silence key causes fire alarm evacuation signals to turn OFF. Follow local procedures to silence alarm evacuation signals.

To silence an alarm, press the <ALARM SILENCE> key. Two actions occur when you do this:

- The <ALARM SILENCE> key, when pressed, turns OFF all circuits programmed to follow the Alarm Silence key.
- The ALARM SILENCED LED turns ON and remains ON.

Note: If Waterflow/Sprinkler Devices are activated, notification appliances may or may not be silenced (depending on local code requirements). Usually, a dedicated bell continues to sound to indicate waterflow.

Continued on next page

Handling Abnormal Conditions, *Continued*

Resetting the System

The <SYSTEM RESET> key is used to return the system to its normal state after an alarm condition has been cleared. When the <SYSTEM RESET> key is pressed, it causes any latched circuits to reset automatically. Also reset are initiating devices, relays (including the city relay), notification appliances, and all LEDs and indicators which are programmed to reset with the <SYSTEM RESET> key. The message, SYSTEM RESET IN PROGRESS, is displayed when the key is pressed.

To reset the system, perform the following steps:

1. Restore/replace all affected devices in accordance with the instructions provided with each device.
2. Press the <SYSTEM RESET> key.

If a device stays in alarm during the reset period, the system reset is aborted, and the system remains in an alarm state. The display indicates the total number of alarms present in the system along with a prompt to use the <ACK> key to review the points. These points **do not** require acknowledgment. The alarm LED remains ON to indicate that a device is still in an alarm condition.

If the system does not reset, and the display still shows an alarm, read the display to determine the type of device and the address of the device still in alarm. Follow local procedures to investigate the area of the building with the alarm. Look for devices still in alarm. Most devices latch until they are reset, either by the system or manually.

Viewing and Clearing Historical Logs

Overview

This section describes how to view and clear the Historical Logs on the 4010.

The 4010 has three logs; Alarm, Supervisory, and Trouble. The logs can be viewed separately, or they can be viewed in chronological sequence as a single Combined log. Each log records information about the event and the time the event occurred. Table 11-1 describes the different logs and their stored events.

Table 11-1. Historical Logs and Events

Historical Log	Stored Events
ALOG Alarm Log (up to 100 entries)	<ul style="list-style-type: none">AlarmsAlarm Ack (global only)Log clearedAlarm SilenceSystem Reset
SLOG Supervisory Log (up to 50 entries)	<ul style="list-style-type: none">Supervisory conditionsSupervisory Ack (global only)Log cleared
TLOG Trouble Log (up to 300 entries)	<ul style="list-style-type: none">All card and system troublesLogin/Logout for Level 2 or higherLog clearedWalk Test events (abnormal and trouble)TrueAlarm peak values (if selected)
CLOG Combined Log (all entries)	<ul style="list-style-type: none">All Events in chronological order

Figure 11-2 shows an example of an Alarm Log.

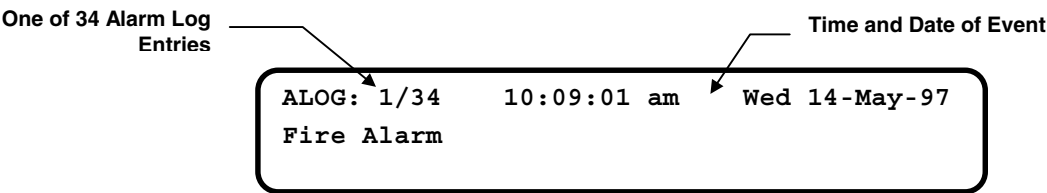


Figure 11-2. Sample Alarm Log Screen

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Viewing and Clearing Historical Logs, *Continued*

Using the Historical Logs

To view the Historical Logs, follow Steps 1 through 4.

1. From the High-Level Status screen, press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [Historical Logs] is displayed and then press <ENTER>.
3. Press <NEXT> or <PREVIOUS> to view the desired log and then press <ENTER>.
4. Press <NEXT> or <PREVIOUS> to scroll through the log entries.

To clear the log you are viewing, press <ENTER> and follow the prompts to confirm this action.

The Historical Log options are shown in Figure 11-3.

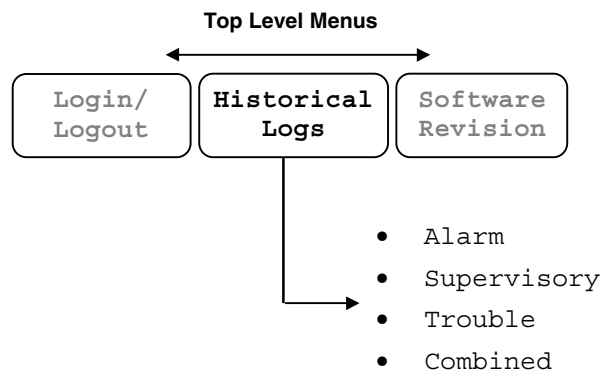


Figure 11-3. Historical Log Options

Viewing and Controlling Points

Overview

The 4010 allows you to view each configured point in the system and, depending on your access level, control and disable/enable the point you are viewing. This section describes how to view, control, and enable/disable points.

Controlling/Viewing Points

Use the Steps 1 through 5 and Figure 11-4 to Control/View Points in a 4010. A TrueAlarm device type and point are used as an example in this section.

1. From the High-Level Status screen, press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [Control/View Points] is displayed and then press <ENTER>.
3. Press <NEXT> or <PREVIOUS> to scroll through the point types until the desired device type is displayed [TrueAlarm] and then press <ENTER>.
4. Press <NEXT> or <PREVIOUS> to scroll through the points until the point you wish to view/control is displayed and then press <ENTER>.
5. Press <ENTER> to activate control of that point and to view additional information about that point. Press <NEXT> or <PREVIOUS> to scroll through the allowable functions for the point you are viewing.

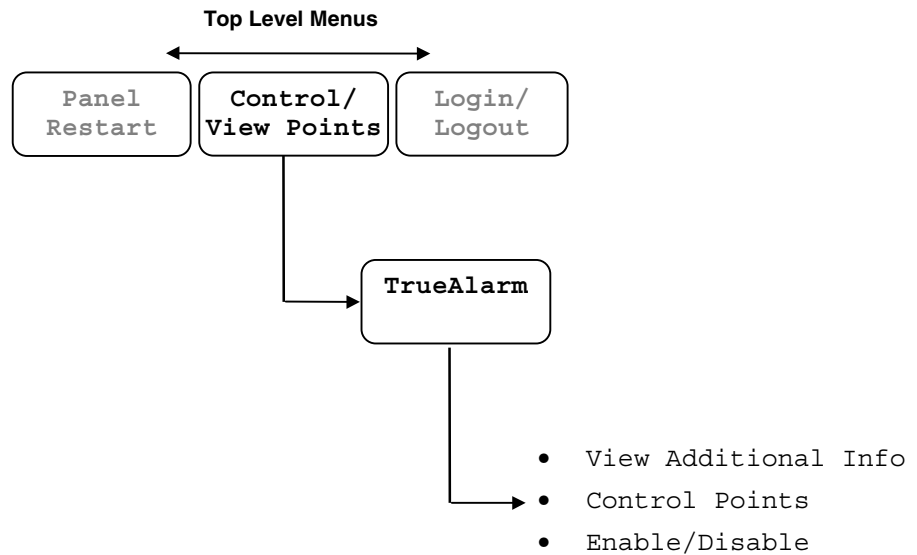


Figure 11-4. Control/View Points Menu

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Viewing and Controlling Points, *Continued*

Controlling/Viewing Points (continued)

The control functions for each point type is listed in Table 11-2.

Table 11-2. Device Type and Control Functions

Device Type	Control Functions	View Functions
TrueAlarm	Control: <ul style="list-style-type: none">• Clear Verification Tally• Force on Device LED• Change Sensitivity• Clear Peak Value• Change TrueTest State• Manually Control Sounder, Relay or Isolator	View: <ul style="list-style-type: none">• Address• Device Type• Point Type• Sensitivity
ZAMS/IAMs	Control: <ul style="list-style-type: none">• Clear Verification Tally• Force on Device LED• Change TrueTest State	View: <ul style="list-style-type: none">• Address• Device Type• Point Type
Relay/RIAMs	Control: <ul style="list-style-type: none">• ON/OFF/Auto/Change Priority	Same as ZAMS/IAMs
NACs	Control: <ul style="list-style-type: none">• ON/OFF/Auto/Change Priority	Same as ZAMS/IAMs
Digital Pseudos	Control: <ul style="list-style-type: none">• ON/OFF/Change Priority	Same as ZAMS/IAMs
Analog Pseudos	SET analog value for the point (Range - 0 to 65535)	Same as ZAMS/IAMs
Lists	Control: ON/OFF/Auto View: <ul style="list-style-type: none">• List Counts• List Contents	Same as ZAMS/IAMs
24-I/O Inputs	Turn on Card LED	Same as ZAMS/IAMs
24-I/O Outputs	Control: <ul style="list-style-type: none">• ON/OFF/Auto/Change Priority	Same as ZAMS/IAMs
System Points	VIEW ONLY, NO CONTROL ALLOWED	Same as ZAMS/IAMs

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Viewing and Controlling Points, *Continued*

How to Disable/Enable Points

Use Steps 1 through 6 to disable/enable points in a 4010. A TrueAlarm device type and point are used as an example in this section.

1. From the High-Level Status screen, press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [Control/View Points] is displayed and then press <ENTER>.
3. Press <NEXT> or <PREVIOUS> to scroll through the point types until the desired device type is displayed [TrueAlarm] and then press <ENTER>.
4. Press <NEXT> or <PREVIOUS> to scroll through the points until the point you wish to disable/enable is displayed and then press <Disable/Enable>.
5. Press <NEXT> or <PREVIOUS> to select [Enable] or [Disable] and then press <ENTER>.
6. Press <ENTER> to disable/enable the viewed point.

A Disable Trouble sounds at the FACP when *disabling* points. NACs are isolated when disabled. The 4010 preserves the disable state of a point on a warm start.

When a disabled monitor point is *enabled*, the 4010 displays a 30 second count down, displaying the time until the point is enabled. When enabling a point that is still in an alarm state, the FACP warns you that the point is in alarm. The FACP gives you 30 seconds that allows you to abort the enabling of that point.

How to Disable Points in Alarm

Use the Steps 1 through 3 to disable/enable points in alarm on a 4010. You must be logged in at the appropriate level to disable/enable points.

1. From the High-Level Status screen, press <Alarm ACK>.
2. Continue to press <Alarm ACK> until the desired point is displayed and then press <Disable/Enable>.
3. Press <ENTER> to confirm this action.

Editing Custom Labels

How to Edit a Custom Label

To Edit a Custom Label of a point, use Steps 1 through 11. As an example, editing the label of a TrueAlarm point is used in the following steps and in Figure 11-5. **Once in the Programming Mode, the 4010 is OFF-LINE.**

1. Login to the 4010 at the appropriate level.
2. Press <MENU>.
3. Press < NEXT> or < PREVIOUS> to scroll through the menu until [Programming] is displayed and then press <ENTER>.
4. Press < NEXT> or < PREVIOUS> to scroll through the menus until [Configure Points] is displayed and then press <ENTER>.
5. Press < NEXT> or < PREVIOUS> to scroll through the menus until the type of point you wish to configure is displayed [TrueAlarm] and then press <ENTER>.
6. Press < NEXT> or < PREVIOUS> to scroll through the menus until [Edit TrueAlarm Point] is displayed and then press <ENTER>.
7. Press < NEXT> or < PREVIOUS> to scroll through the TrueAlarm points until the point you wish to edit is displayed and then press <ENTER>.
8. Press < NEXT> or < PREVIOUS> to scroll through the menus until [Edit Point Label] is displayed and then press <ENTER>.

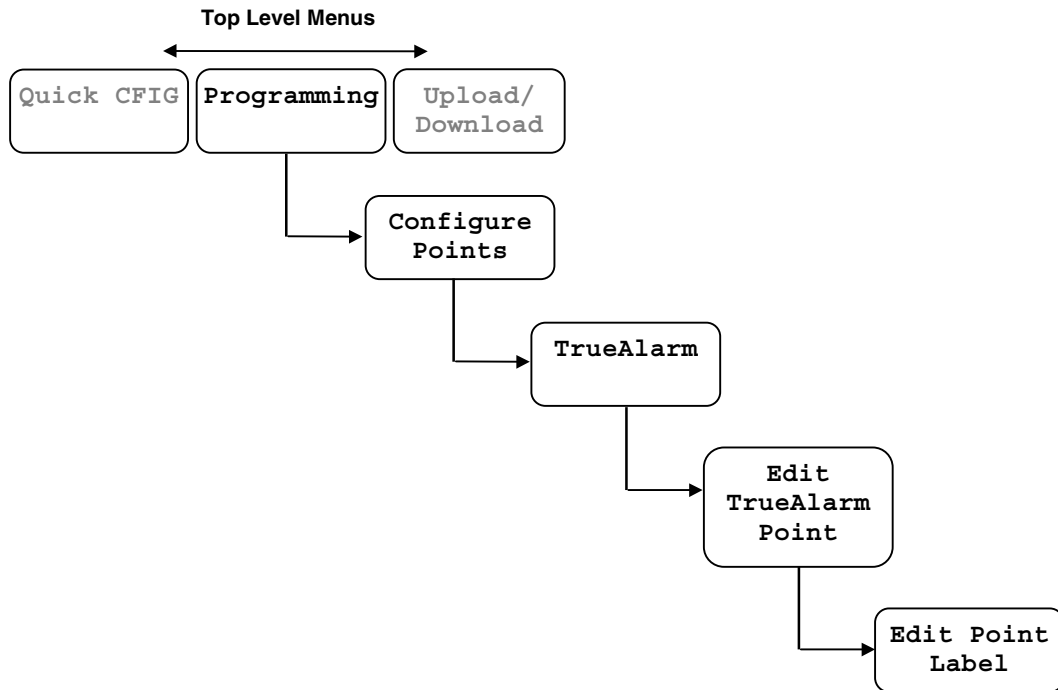


Figure 11-5. Editing a Custom Label Menu Structure

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Editing Custom Labels, *Continued*

How to Edit a Custom Label *(continued)*

An edit point label screen appears (Figure 11-6) with the first character of the existing label underlined.



Figure 11-6. Edit Point Label Screen

9. Press < NEXT> or < PREVIOUS> to scroll through the character set. Use < > or < > to move to the next character in the label. The <Disable/Enable> key overwrites characters with a space.

Pick a label that best suits the location of the device. The 4010 provides up to 40 characters per line (including spaces). The available characters are as follows:

— Digits	0-9
— Alpha	A-Z (only capital letters are available)
— Punctuation	comma space & () * + - period / : ‘ # ! @ \$ % ^ = ? ;

10. Press <ENTER> once the label reads correctly. Press <ENTER> again to confirm the change to the label. For changes to take effect, press <EXIT/CLEAR> until a confirmation screen appears.
11. Once you complete the editing, the 4010 prompts you to save the new information to the CFG. Press < > or < > to select [Save CFG] and press <ENTER> to save the information.

User Control Functions

Overview

User control functions, such as Manual Evac, City Disconnect, Control Point Bypass and Elevator Recall Bypass, are available from the High Level Status screen by pressing <FUNCTION>. Pressing <FUNCTION> also accesses operations including latching earth faults, displaying the current time and date when the system is abnormal, and performing lamp test.

In addition to the pre-defined functions listed above, the 4010 supports two “User-Defined” function keys. The two user-defined key choices in the function menu are “User Defined 1” and “User Defined 2.” These user-defined keys may be programmed to perform often used functions. A 40-character custom label may be assigned to these user-defined keys.

Using the Function Options

Use Steps 1 through 3 to access the Function Control menu.

1. From the High-Level Status screen, press <Function>.
2. Press <NEXT> or <PREVIOUS> to scroll through the function options (see Table 11-3) until the desired option is displayed and then press <ENTER>.
3. Press <NEXT> or <PREVIOUS> to select ON or OFF for that option and then press <ENTER>.

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User Control Functions, *Continued*

Using the Function Options (*continued*)

Table 11-3 lists the function options and their descriptions.

Table 11-3. Function Menu Options and Descriptions

Function Option	Description
Manual Evacuation	Activates the Manual Evacuation operation (NACs activate and Fire Alarm LED flashes until Ack'd).
City Circuit Disconnect*	Disconnects the City Circuit.
Control Point Bypass*	Bypasses the following Control Points: <ul style="list-style-type: none">• On until Silence signals• Resettable signals• AHU outputs
Elevator Bypass*	Bypasses the Elevator Recall.
Doorholder Bypass*	Bypasses Doorholder operation.
Lamp Test	Illuminates all LEDs and all LCD segments on the display.
Earth Fault Latch	Latches intermittent Earth Fault Troubles into the 4010.
User Defined Key 1	One of two user-defined function keys.
User Defined Key 2	One of two user-defined function keys.
Display Current Time	Displays current time during abnormal conditions.

***Activation of these options causes a trouble at the FACP.**

Setting the Time and Date

Use Steps 1 through 5 and Figures 11-6 to set the time and date.

An accurate time and date setting is essential to the proper operation of the 4010 system. The time and date should be checked at least once a month and reset, as described below, if necessary.

1. From the High-Level Status screen, press <MENU>.
2. Press <NEXT> or <PREVIOUS> until [Set Time/Date] is displayed and then press <ENTER>.
3. Press < > or < > to move the focus brackets to the desired field (hours, minutes, date, month, year).
4. Press <NEXT> or <PREVIOUS> until the desired value is displayed.
5. Once all fields are set, press <ENTER> to set the time and date.

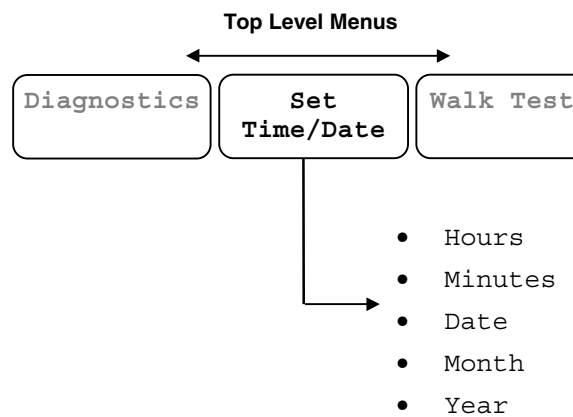


Figure 11-7. Set Date/Time

Appendix A

Device and Point Types

Overview

Each point in the 4010 has both a hardware device type and a software point type. The hardware device type is determined by the hardware used. This is used to determine what physical states exist for the point. The hardware device type also determines the valid software point types that can be assigned to a point.

The software point type defines which "banner" and "status" is used in displaying a point when it changes state on the display or is logged to the historical log. The software point type, especially for output points, also defines the default application programming. For example a NAC with a point type of SSIGNAL indicates that the signal circuit activates on alarm until silence.

This chapter describes the Hardware Device and Software Point Types available with the 4010. For more information on Analog, Digital, List, and 24-Point I/O point types, refer to "Appendix B. Hardware and Pseudo Points" in this publication.

In this Chapter

This chapter discusses the following topics:

Topic	See Page #
Overview	A-1
Hardware Device Types	A-2
Software Point Types	A-5

Hardware Device Types

Overview

The 4010 supports IDNet devices as Fire Alarm input and output, as well as four hardwired output points, and two auxiliary relay output points.

TrueAlarm Hardware Device Types

Table A-1 lists the TrueAlarm Hardware Device Types available with the 4010 FACP.

Table A-1. TrueAlarm Hardware Device Types

Device Type	Description
PHOTO	TrueAlarm photoelectric sensor
SPHOTO	TrueAlarm photoelectric sensor with sounder base
RPHOTO	TrueAlarm photoelectric sensor with relay base
IPHOTO	TrueAlarm photoelectric sensor with isolator base
XPHOTO	TrueAlarm extra-sensitive photoelectric sensor
XSPHOTO	TrueAlarm extra-sensitive photoelectric sensor with sounder base
XRPHOTO	TrueAlarm extra-sensitive photoelectric sensor with relay base
XIPHOTO	TrueAlarm extra-sensitive photoelectric sensor with isolator base
ION	TrueAlarm ionization sensor
SION	TrueAlarm ionization sensor with sounder base
TION	True Alarm single station ionization sensor
RION	TrueAlarm ionization sensor with relay base
IION	TrueAlarm ionization sensor with isolator base
HEAT	TrueAlarm fixed temperature heat sensor
SHEAT	TrueAlarm fixed temperature heat sensor with sounder base
RHEAT	TrueAlarm fixed temperature heat sensor with relay base
IHEAT	TrueAlarm fixed temperature heat sensor with isolator base
OHEAT	TrueAlarm fixed temperature and rate of rise heat sensor
SOHEAT	TrueAlarm fixed temperature and rate of rise heat sensor with sounder base
ROHEAT	TrueAlarm fixed temperature and rate of rise heat sensor with relay base
IOHEAT	TrueAlarm fixed temperature and rate of rise heat sensor with isolator base

Continued on next page

Hardware Device Types, *Continued*

TrueAlarm Levels and Sensitivities

Sensitivities and corresponding levels are shown in Table A-2 for TrueAlarm types.

Table A-2. TrueAlarm Levels and Sensitivities

Levels	Sensitivities			
	PHOTOs	XPHOTOs	IONs	HEATs
Level 1	0.5%	0.2%	0.5%	117°F (X°C)
Level 2	1.0%	0.5%	0.9%	135°F (57°C)
Level 3	1.5%	1.0%	1.3%	155°F (68°C)
Level 4	2.0%	1.5%	1.7%	155°F (68°C)
Level 5	2.5%	2.0%	1.7%	155°F (68°C)
Level 6	3.0%	2.5%	1.7%	155°F (68°C)
Level 7	3.7%	3.7%	1.7%	155°F (68°C)

Monitor Hardware Device Types

Table A-3 lists the Monitor Hardware Device Types for the 4010.

Table A-3. Monitor Hardware Device Types

Device Type	Description
MAZAM	Class A Monitor ZAM (T-sense)
MBZAM	Class B Monitor ZAM (T-sense)
ADRPUL	Addressable Pull Station
SIAM	Supervised IAM (T-sense)
CANPUL	Canadian 2-stage Pull Station
KACPUL	International KAC Pull Station

Continued on next page

Hardware Device Types, *Continued*

4009A Hardware Device Types

Table A-4 lists the 4009A hardware device types. (Note: Each 4009A is located at “virtual card” address 17.)

Table A-4. 4009A Hardware Device Types

Device Type	Description
4009A	Standard 4009A
R4009A	4009A with repeater
4009A8	4009A with four-NAC option board
R4009A8	4009A with four-NAC option board and repeater

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Software Point Types

Monitor Point Types

Table A-5 lists the monitor point types and their descriptions.

Table A-5. Monitor Point Types

Point Type	Description
FIRE	Fire alarm (generic)
WATER	Waterflow switch
HEAT	Heat detector
DUCT	Duct detector
FLAME	Flame detector
PULL	Pull station - manual
SMOKE	Smoke detector
VSMOKE	Verified smoke zone
ABORT	Abort Zone (pre-signal)
EMERG	Emergency Alarm
SFIRE	Combination Smoke/Fire zone
VSFIRE	Verified Combination Smoke/Fire zone
SPULL	Combination Smoke/Pull zone
VSPULL	Verified Combination Smoke/Pull zone
GENMON	Generator monitor
SGENMON	Supervisory generator monitor
FPUMP	Fire pump monitor
SFPUMP	Supervisory fire pump monitor
S2STAGE	2-stage monitor (abn=pre-signal, short=alarm)
SO	Sprinkler supervision (normally open)
WSO	Waterflow/sprinkler supervision (normally open)
LATSUPV	Latching supervisory
SDUCT	Supervisory Duct Detector
SUPDET	Suppression Release detector zone
SUPABRT	Suppression Release abort zone
SUPDUMP	Suppression Release manual dump
SUPPRES	Suppression Release pressure monitor
SUPV	Supervisory (generic)
UTIL	Non-alarm utility
DAMPER	Damper Monitor (open/closed)
TROUBLE	Trouble monitor
STYLEC	Current limit = fire alarm, short/open = trouble
GVMON	Generic verified monitor

Continued on next page

Software Point Types, *Continued*

Signal Point Types

Every 4010 has four Notification Appliance (signal) points. The default configuration is SIG1 & SIG2 “on ‘til silence” (point type = SSIGNAL) and SIG3 & SIG4 “on ‘til reset” (point type = RSIGNAL).

Table A-6 lists the signal point types and their descriptions.

Table A-6. Signal Point Types

Point Type	Description
SIGNAL	Generic signal (no default operation)
SSIGNAL	Alarm signal - on 'til silence (temporal coded)
RSIGNAL	Alarm signal - on 'til reset
SVISUAL	Visual - on 'til silence
RVISUAL	Visual - on 'til reset
SWATER	Waterflow signal - on 'til silence
RWATER	Waterflow signal - on 'til reset
SUPV	Sprinkler supervisory signal - on 'til ack
SUPREL	Suppression (agent discharge) release output
PRIMARY	Elevator capture - primary
ALTERN	Elevator capture - alternate
AHUR	AHU on/off relay - single relay control
AHUO	AHU on relay - dual relay control
AHUF	AHU off relay - dual relay control
DHOLDER	Doorholder control
TSIGNAL	Trouble/supervisory signal - on 'til clear
BSIGNAL	Trouble/supervisory "bell" signal - on 'til acknowledged
RELAY	Generic Relay

Continued on next page

Software Point Types, Continued

Relay Point Types

The 4010 includes two AUX relay points configured as AUX1 and AUX2. The default point type settings for AUX1 set as an Alarm relay on until reset (point type = RRELAY) and AUX2 set as a Trouble/Supervisory relay on until clear (point type = TRELAY).

Table A-7 lists the Relay point types and their descriptions.

Table A-7. Relay Point Types

Point Type	Description
RELAY	Generic relay
PRIMARY	Elevator Capture - primary
ALTERN	Elevator Capture - alternate
AHUR	AHU on/off relay - single relay control
AHUO	AHU on relay - dual relay control
AHUF	AHU off relay - dual relay control
SRELAY	Alarm Relay - on 'til silence
RRELAY	Alarm relay - on 'til reset
TRELAY	Trouble relay - on til clear
BRELAY	Trouble relay - on til acknowledge
DHOLDER	Door Holder
SWATER	Waterflow relay - on 'til silence
RWATER	Waterflow relay - on 'til reset
RSUPV	Supervisory relay
SVISUAL	Visual - on 'til silence
RVISUAL	Visual - on 'til reset
SUPREL	Suppression (agent discharge) release output
SIGNAL	Generic Signal (no default operation)

Continued on next page

Software Point Types, *Continued*

QuickAlert Point Types

QuickAlert operation for a particular NAC is enabled by selecting the QALERT software point types. Two types of points exist – one under system control and one with no system mode, which allows you to use Custom Control to perform selective signaling.

Table A-8. QuickAlert Point Types

Point Type	Description
QALERT	This point type has no automatic operation. All operations for this point type must be programmed using Custom Control.
SQALERT	<p>When the SQALERT point type is selected, the system does the following:</p> <ul style="list-style-type: none">- Automatically turns ON the designated circuit on alarm detect.- Issues the Horn Silence command upon Alarm Silence.- Turns OFF the circuit at the completion of System Reset. <p>Any point programmed with this point type will not be available for Custom Control programming.</p>

Appendix B

Hardware and Pseudo Points

Overview

This chapter describes the points that may exist in all 4010 systems. The points are broken up into two major groups, hardware points and pseudo points. Furthermore, each of these groups is broken down by card. For more information on Analog, Digital, List, and 24-Point I/O point types, refer to the *4010 Fire Alarm—Programming Instructions* (574-054) and the *4010 Fire Alarm—PC Programmer Instructions* (574-187).

In this Chapter

This chapter discusses the following topics:

Topic	See Page #
Overview	B-1
Hardware Points	B-2
Pseudo Points	B-14

Hardware Points

Introduction

There are many different types of hardware points that exist in the 4010 system. They include system points that are read only to the user, points on the IDNet channel, points on optional cards, public 4120 network points, and card status points. Many of these points may be referenced in Custom Control in both the input and output sides of an equation, depending on the Custom Control operation, and the type of point (refer to “Chapter 8 - Custom Control and Restoring/Saving CFG” for more information). The following sections will describe each hardware point for each card in the system, both default and optional.

General Card Status Point Information

This section describes attributes that apply to all card status points in the 4010. Card status points are used to indicate card troubles in the system. Card status points may only be viewed from the Active Trouble List, the Historical Logs, or on a RS232 port (if available). When viewing a card status point, a banner will be displayed that will indicate that the trouble is a card status trouble, and which card the point is associated with. A card status point label will also be displayed to indicate the type of card status trouble it is.

Note: A card status point cannot be used in Custom Control or with LED mode programming.

Master Controller Card

The Master Controller Card resides at Card Address 0 and contains 13 hardware points. The Master Controller Card is required in all 4010 configurations.

Master Controller Card Status Points

The Master Controller Card does not have any card status points associated with it.

Master Controller Points

The Master Controller Card has 13 hardware points associated with it. Of the 13 hardware points, eight are system points which are not editable by the user. The other five master points can be configured by the user. Table B-1 shows a list of the Master Controller points. The type field denotes which class the point falls into (R=System point that is Read Only to user, U=User Configurable Points).

Continued on next page

Hardware Points, *Continued*

Master Controller Points

(continued)

Table B-1. Master Controller Points

Point	Type	Label	Description
0-1	R	Front Panel Piezo	Indicates the status of the Piezo Sounder on the 4010 Master.
0-2	R	External N2 Disconnect Relay	Indicates the status of the External N2 Disconnect Relay. Turns on when no slaves are communicating; turns off on System Reset.
0-3	R	Fire LED	Status of the front panel Alarm LED.
0-4	R	Supervisory LED	Status of the front panel Supervisory LED.
0-5	R	Trouble LED	Status of the front panel Trouble LED.
0-6	R	Alarm Silence LED	Status of the front panel Alarm Silence LED.
0-7	R	AC Power LED	Status of the front panel AC Power LED.
0-8	U	User LED 1	This point indicates the status and configuration of the first user programmable LED on the front panel.
0-9	U	User LED 2	This point indicates the status and configuration of the second user programmable LED on the front panel.
0-10	U	User LED 3	This point indicates the status and configuration of the third user programmable LED on the front panel.
0-11	U	User Defined Key 1	This point indicates the status and configuration of the first user programmable key (in the function menu).
0-12	U	User Defined Key 2	This point indicates the status and configuration of the second user programmable key (in the function menu).
0-13	R	LCD Backlight	Indicates the status of the LCD backlight on the front panel.

NAC Card

The NAC (Notification Appliance Circuit) Card is required for all 4010 configurations, and is located at Card Address 1. There are seven hardware points and eight card status points associated with the NAC card.

NAC Card Status Points

The NAC Card has eight card status points associated with it. Table B-2 describes the card status points for the NAC card.

Continued on next page

Hardware Points, *Continued*

NAC Card Status Points

(continued)

Table B-2. Card Status Points for NAC Card

Point	Label	Description
1-CS 1	Missing Card	This trouble indicates that the NAC card is not communicating with the master.
1-CS2	Wrong Card	This trouble indicates that the card returned a card type as something other than a NAC card type.
1-CS3	NACs 1 & 2 Class A	NAC 1 and 2 Class A card not inserted trouble. Only occurs if circuits are configured with NACA device type.
1-CS4	NACs 3 & 4 Class A	NAC 3 and 4 Class A card not inserted trouble. Only occurs if circuits are configured with NACA device type.
1-CS5	NAC 1 Signal Power	Indicates a signal power trouble for NAC 1.
1-CS6	NAC 2 Signal Power	Indicates a signal power trouble for NAC2.
1-CS7	NAC 3 Signal Power	Indicates a signal power trouble for NAC3.
1-CS8	NAC 4 Signal Power	Indicates a signal power trouble for NAC4.

NAC Card Points

The NAC has seven hardware points associated with it. Of the seven hardware points, six are points which may be programmed by the user. The other point is the City Circuit point which is not available for programming or viewing by the user. The following table is a list of the points on the NAC card. The type field denotes which class the point falls into (S=System point that is not available to the user for viewing or programming, U=User Configurable Points).

Table B-3. System and User Points of NAC Card

Point	Type	Label (default)	Description
1-1	U	NAC Circuit: SIG 1	NAC card Signal 1 status and configuration.
1-2	U	NAC Circuit: SIG 2	NAC card Signal 2 status and configuration.
1-3	U	NAC Circuit: SIG 3	NAC card Signal 3 status and configuration.
1-4	U	NAC Circuit: SIG 4	NAC card Signal 4 status and configuration.
1-5	U	AUX Circuit: AUX 1	NAC card Relay 1 status and configuration.
1-6	U	AUX Circuit: AUX 2	NAC card Relay 2 status and configuration.
1-7	S	City Circuit	Interface 4010 City Module.

Continued on next page

Hardware Points, *Continued*

Power Supply Card

The Power Supply Card is required for all 4010 configurations, and is located at Card Address 2. There are nine hardware points and two card status points associated with the Power Supply card.

Power Supply Card Status Points

The Power Card has two card status points associated with it. The following table describes the card status points for the Power Supply card.

Table B-4. Card Status Points for Power Supply Card

Point	Label	Description
2-CS1	Missing Card	This trouble indicates that the Power Supply card is not communicating with the master.
2-CS2	Wrong Card	This trouble indicates that the card returned a card type as something other than a Power Supply card type.

Power Supply Points

The Power Supply card has nine hardware points associated with it. All of the Power Supply points are system points that cannot be modified by the user. Table B-5 displays a list of the points on the Power Supply card.

Continued on next page

Hardware Points, *Continued*

Power Supply Points (continued)

Table B-5. Points on the Power Supply Card

Point	Label	Description
2-1	AC Power	This trouble point will indicate that the AC line voltage is too low for proper system operation.
2-2	Positive Earth Ground	This trouble point indicates that there is a fault condition between +24V and Earth.
2-3	Negative Earth Ground	This trouble point indicates that there is a fault condition between 0V and Earth.
2-4	Expansion Power Supply	This trouble point indicates Expansion Power Supply trouble. Only occurs if expansion supply is configured.
2-5	Expansion Power Supply Battery	This trouble point indicates Expansion Power Supply AUX Battery Power trouble. Only occurs if expansion supply is configured.
2-6	Battery Low	This trouble point indicates that the battery has a voltage less than 22.8V.
2-7	Battery Depleted or Disconnected	This trouble point indicates that the battery has a voltage less than 19.5V.
2-8	Battery Low Cutout	This trouble point indicates that AC Power has been lost and the batteries have reached a depleted state, the system shuts off.
2-9	Battery Charger	This utility point indicates the status of the battery charger (on/off).

IDNet Card

The IDNet Card is required for all 4010 configurations, and is located at Card Address 3. The IDNet Card defaults to a configuration with no hardware points (devices). However, up to 250 devices may be programmed for the IDNet Card. The IDNet Card also includes eight card status points.

IDNet Card Status Points

The IDNet Card has eight card status points associated with it. Table B-6 describes the card status points for the IDNet card.

Continued on next page

Hardware Points, Continued

IDNet Card Status Points (continued)

Table B-6 Card Status Points for the IDNet Card.

Point	Label	Description
3-CS1	Missing Card	This trouble indicates that the IDNet card is not communicating with the master.
3-CS2	Wrong Card	This trouble indicates that the card returned a card type as something other than a IDNet card type.
3-CS3	Channel Failure	This trouble indicates a channel failure on the IDNet line (no devices are communicating).
3-CS4	Extra Device	This trouble indicates that there is a device answering that is not included in the configuration (view the trouble log to determine the devices address).
3-CS5	Class A Status	This trouble indicates a Class A trouble condition on the IDNet line. This requires a System Reset to clear.
3-CS6	Power Supply Status	This point indicates a power supply trouble on the IDNet card.
3-CS7	Short Status	This trouble point indicates a short condition on the IDNet card.
3-CS8	Ground Fault Status	This trouble indicates that there is a ground fault in the IDNet line.

IDNet Points

The IDNet card can have up to 250 devices configured. All of the IDNet devices can be modified by the user. How the point is configured (i.e. software point type) determines what action is taken (trouble, alarm, etc.) when the point changes state. The following table is a list of the points that may be included on the IDNet card. The labels indicated for the points are the default labels assigned when the point is added from the front panel.

Table B-7. Points That May Appear on a IDNet Card

Point	Label (default)	Description
3-1	IDNet Device: M1-1	The point on the IDNet card configured for address 1.
3-2	IDNet Device: M1-2	The point on the IDNet card configure for address 2.
3-3	IDNet Device: M1-3	The point on the IDNet card configured for address 3.
↓ ↓		
3-249	IDNet Device: M1-249	The point on the IDNet card configured for address 249.
3-250	IDNet Device: M1-250	The point on the IDNet card configured for address 250.

Continued on next page

Hardware Points, *Continued*

RS232/Modem Card

Either an RS232 Card or Modem Card may be added to the 4010 system. Even though these cards are optional, if an RS232 or Modem card is configured, it must reside at Card Address 4. There are two hardware points and eight card status points associated with the both the RS232 card and Modem card.

RS232/Modem Card Status Points

Both the RS232 Card and the Modem Card have eight card status points associated with them. The card status points described in this section apply to either card. The following table describes the card status points for both the RS232 or Modem card.

Table B-8. Card Status Points for RS232 or Modem Card

Point	Label	Description
4-CS1	Missing Card	This trouble indicates that the card is not communicating with the master.
4-CS2	Wrong Card	This trouble indicates that the card returned a card type as something other than a RS232 or Modem card type (respectively).
4-CS3	Port A Disconnected	If Port A is a supervised port, and disconnected, this point will indicate this with a trouble.
4-CS4	Port B Disconnected	If Port B is a supervised port, and disconnected, this point will indicate this with a trouble.
4-CS5	Primary Telco	This point indicates a trouble in the Primary Telco line (not presently supported).
4-CS6	Secondary Telco	This point indicates a trouble in the Secondary Telco line (not presently supported).
4-CS7	Port A Ground Fault	This point indicates a ground fault trouble on Port A (not presently supported).
4-CS8	Port B Ground Fault	This point indicates a ground fault trouble on Port B (not presently supported).

RS232/Modem Points

The RS232 and Modem cards have two hardware points associated with them. Both of the RS232/Modem points are user configurable. However, the points have no labels associated with them, because they cannot be viewed on the front panel. Table B-9 is a list of the points on the RS232/Modem cards.

Continued on next page

Hardware Points, *Continued*

RS232/Modem Points (continued)

Table B-9. Points on the RS232/Modem Cards

Point	Label	Description
4-1	None	Port A point. Default to unsupervised 80 character Printer port.
4-2	None	Port B point. Default to command line port.

DACT Card

The DACT card is an optional card that may be added to the 4010 system. The DACT card is mutually exclusive with the Network card, and if configured, must reside at Card Address 8. There is one hardware point and seven card status points associated with the DACT card.

DACT Card Status Points

The DACT Card has seven card status points associated with it. The following table describes the card status points for the DACT card.

Table B-10. Card Status Points for SDACT Card

Point	Label	Description
8-CS1	Missing Card	This trouble indicates that the card is not communicating with the master.
8-CS2	Wrong Card	This trouble indicates that the card returned a card type as something other than an DACT card type.
8-CS3	Central Station	This trouble indicates that communication was lost with the Central Station.
8-CS4	Phone Line 1	This trouble indicates that Phone Line 1 has been disconnected.
8-CS5	Phone Line 2	This trouble indicates that Phone Line 2 has been disconnected.
8-CS6	Program Checksum	This trouble indicates that the on board DACT card checksum test has failed.
8-CS7	DB Version Mismatch	This trouble indicates that the configuration loaded on the DACT card differs from the configuration on the master.

SDACT Points

The SDACT card has one hardware point associated with it. The point does not have a label, because it cannot be viewed from the front panel. Table B-11 describes the point on the SDACT card.

Continued on next page

Hardware Points, *Continued*

SDACT Points *(continued)*

Table B-11. Point on the SDACT Card

Point	Label	Description
8-1	None	SDACT Port.

Network Card

The Network card is an optional card that may be added to the 4010 system. The Network card is mutually exclusive with the SDACT card, and if configured, must reside at Card Address 8. The network card allows the 4010 to serve as a network node for a 4120 network. Points on the 4010 may be declared public to the 4120 network. These points are the Network Status points, and will be described in this section. There are also seven card status points associated with the Network card.

Network Card Status Points

The Network Card has seven card status points associated with it. The following table describes the card status points for the Network card.

Table B-12. Card Status Points for the Network Card

8-CS1*	Missing Card	This trouble indicates that the card is not communicating with the master.
8-CS2	Wrong Card	This trouble indicates that the card returned a card type as something other than a Network card type.
8-CS3	Version Mismatch	This trouble indicates that the 4010's current configuration differs from versions on other nodes.
8-CS4	Net Comm Failure	This trouble indicates that communication was lost between the Network card and the 4120 network.
8-CS5	Ground Fault	This trouble indicates that there is a ground fault in the network line.
8-CS6	Duplicate Node	This trouble indicates that more than one node on the 4120 network is answering for the same address (not presently supported).
8-CS7	Network Miswire	This trouble indicates that the port-to-port network wiring is incorrect (i.e. left-to-left or right-to-right).

* CS = Card Status

Network Points

The Network card can have up to 511 network points configured. Table B-13 shows a list of the points that may be configured on the Network card. The Common Trouble Point is the only default point for the Network card.

Continued on next page

Hardware Points, *Continued*

Network Points *(continued)*

Table B-13. Points That May Be Configured on Network Card

Point	Label	Description
NetPt1	None	This point is the Network Common Trouble Point. This point is public on the network.
NetPt2	None	This point contains the Network Type, Class, Destination, and Reference for the second network public point.
NetPt3	None	This point contains the Network Type, Class, Destination, and Reference for the third network public point.
↓		
↓		
NetPt510	None	This point contains the Network Type, Class, Destination, and Reference for the 510th network public point.
NetPt511	None	This point contains the Network Type, Class, Destination, and Reference for the 511th network public point.

24I/O Card

The 4010 can have up to six annunciator cards added to the system. One of these cards is the 24I/O card. The 24I/O card can reside at addresses 9 through 14. There are 24 hardware points and two card status points associated with the 24I/O card.

24I/O Card Status Points

The 24I/O Card has two card status points associated with it. The following table describes the card status points for the 24I/O card.

Table B-14. Status Points on the 24I/O Card

Point	Label	Description
Card-CS1*	Missing Card	This trouble indicates that the card is not communicating with the master.
Card-CS2	Wrong Card	This trouble indicates that the card returned a card type as something other than an 24I/O card type.

*CS = Card Status

Continued on next page

Hardware Points, *Continued*

24I/O Points

Each 24I/O card has 24 hardware points associated with it. All hardware points on the 24I/O card can be programmed by the user. The functionality of the point depends on the device type (Input or Output), the point type, and modes programmed against it. The labels for the points on the 24I/O card are default labels, and cannot be changed by the user. The following table describes the organization of points on the 24I/O card.

Table B-15. Point Organization on the 24I/O Card

Point	Label	Description
Card-1	I/O Card #, Point 1	The 1st point on the 24I/O card.
Card-2	I/O Card #, Point 2	The 2nd point on the 24I/O card.
Card-3	I/O Card #, Point 3	The 3rd point on the 24I/O card.

↓

↓

Card-23	I/O Card #, Point 23	The 23rd point on the 24I/O card.
Card-24	I/O Card #, Point 24	The 24th point on the 24I/O card.

LCD Card

The 4010 can have up to six annunciator cards added to the system. One of these cards is the LCD card. The LCD card can reside at addresses 9 through 14. There are five hardware points and four card status points associated with the LCD card.

LCD Card Status Points

The LCD Card has four card status points associated with it. The following table describes the card status points for the LCD card.

Table B-16. Card Status Points for the LCD Card

Point	Label	Description
Card-CS1*	Missing Card	This trouble indicates that the card is not communicating with the master.
Card-CS2	Wrong Card	This trouble indicates that the card returned a card type as something other than an LCD card type.
Card-CS3	LCD Membrane	This trouble indicates that there is a problem with the keypad on the LCD card.
Card-CS4	LCD Display	This trouble indicates that there is a problem with the display on the LCD card.

* CS = Card Status

Continued on next page

Hardware Points, *Continued*

LCD Points

The LCD card has five hardware points associated with it. Only the first three hardware points (user LEDs) on the LCD card can be programmed by the user. The labels for the points on the LCD card are default labels, and cannot be changed by the user. The following table describes the points included on the LCD card.

Table B-17. Points on the LCD Card

Point	Label	Description
Card-1	LCD Card #, Point 1	The status of the First User LED on the LCD card. Programmable for color and mode.
Card-2	LCD Card #, Point 2	The status of the Second User LED on the LCD card. Programmable for color and mode.
Card-3	LCD Card #, Point 3	The status of the Third User LED on the LCD card. Programmable for color and mode.
Card-4	LCD Card #, Point 4	The status of the Alarm Silence LED on the LCD card.
Card-5	LCD Card #, Point 5	The status of the Piezo Sounder on the LCD card.

Pseudo Points

Introduction

Like the 4100 and 4005, there are three types of pseudo points that exist in every system. They include digital, analog, and list pseudos. Each of these types may be referenced in Custom Control in both the input and output sides of an equation. Reserved system pseudo points are used to indicate system trouble or alarm indications, control diagnostics or other system functions, and to communicate information between the 4010 Master and SMPL. Some pseudos are set by the system and are read only to the user. Other pseudos are either set from SMPL or from the front panel as a cue for the system to perform some operation. Pseudo cards contain no card status points.

Digital Pseudo Points

Every 4010 system has two Digital Pseudo "cards" at addresses 18 and 19. The first card is reserved for system pseudo points while the second is available to the user. Each contains 75 digital pseudo points which may be programmed as shown in Table B-18.

Table B-18. Programming Digital Pseudo Points

Type	Description
UTILITY	Utility point (ON/OFF - no acknowledge required).
ALARM	Fire alarm point.
SUPV	Supervisory point.
TROUBLE	Trouble point.

Each system digital pseudo point falls into one of the following three categories shown in Table B-19.

Table B-19. Categories for Digital Pseudo Points

Class	Description
R	Point is controlled by the 4010 master and is read only to the end user.
RW	Point is controlled by the 4010 master but may also be controlled by the end user (front panel or SMPL).
W	Point is controlled by the end user and is read by the 4010 Master in order to accomplish some function or operation.

Continued on next page

Pseudo Points, *Continued*

4010 System Digital Pseudos

The system digital pseudo card in the 4010 system is located at Card Address 18. It contains a total of 75 reserved system pseudo points that cannot be edited. The following table list the system pseudo points. The type field denotes which class (see above) the point falls into, and what its type is (U =UTIL, F=FIRE, T=TROUBLE, S=SUPERVISORY).

Table B-20. System Pseudo Points

Point	Type	Label	Description
D1	R U	Unacked Fire in System	On if unacked fire exists in system.
D2	R U	Unacked Supervisory in System	On if unacked supervisory exists in system.
D3	R U	Unacked Trouble in System	On if unacked trouble exists in system.
D4	R T	Extra N2 Card	Turned on at panel startup if an unprogrammed N2 slave card is detected. Only clears on panel restart.
D5	R T	External N2 Trouble	Turns on when panel is no longer communicating with ALL slave cards. Turns off on a System Reset.
D6	RW U	User SMPL Program	On when User SMPL program is active.
D7	R T	Cold Start	Indicates that panel has performed a cold start. Turns of when acknowledged.
D8	R T	Warm Start / Check Time and Date	Indicates that panel has performed a warm start. Turns off when acknowledged.
D9	RW F	Manual Evacuation	Turns on when Manual Evacuation is selected. Turns off on a System Reset.
D10	R T	System Time and Date	Indicates that the time and date is incorrect. Turns off when time and date is updated.
D11	R T	Simplex Service Mode	Indicates that the panel is in Service Mode. Turns off only on a panel restart.
D12	RW U	Keypad Inactivity Timer Disable	Disables Keypad Inactivity timer.
D13	R T	Active List Overflow	Turns on when the number of alarms, supervisories, or troubles is greater than the system active list size (100 fires, 50 supv, 300 troubles). Turns off on a panel restart.

Continued on next page

Pseudo Points, *Continued*

4010 System Digital Pseudos (continued)

Table B-20. System Pseudo Points (Continued)

Point	Type	Label	Description
D14	RW T	City Disconnect	On if city circuit is disconnected.
D15	R T	City Circuit Trouble	On if city circuit is in trouble.
D16	-	AHJ City Reset Utility Point	On if city circuit reset is enabled.
D17	RW T	Control Point Bypass	On if control points are bypassed.
D18	RW T	Elevator Bypass	On if elevator recall points are bypassed.
D19	RW T	Doorholder Bypass	On if doorholder points are bypassed.
D20	RW T	Verification Tally Limit Exceeded	On when any verified points tally limit exceeds 10. Off when all points tally limit is below 10.
D21	R T	Walk Test Active in System	On when Walk Test is active.
D22	R U	Earth Fault Latch	On when Earth Fault Latch diagnostic is active.
D23	R T	TrueTest Active in System	On when TrueTest is active.
D24	R T	Programming Mode - System Disabled	On when Programming or Quick-CFIG is entered. Panel is no longer operational.
D25	RW U	System Reset Activated	On when System Reset Starts.
D26	RW U	Alarm Silence Activated	On when Alarm Silence Starts.
D27-D30	-	Reserved System Pseudo Point	Unused.
D31	R U	Network Running in Style 4	On if network is running in Style 4.
D32- D35		Reserved System Pseudo Point	Unused.
D36	R U	No CRT Connected	On if no set-host session is active on network card.
D37- D44	-	Reserved System Pseudo Point	Unused.
D45	RW T	Duplicate IDNet Device Detection Active	When on (either through front panel or SMPL) it enables the duplicate device detection diagnostic on the IDNet card.
D46	-	Weak Answer	When on (either through front panel or SMPL) it detects devices beyond specifications by reducing sensitivity of receiver.
D47	R T	Event Queue Overflow	On when the RS232/LCD annunciator event queue is overflowed and events have been missed. Panel restart clears the trouble.

Continued on next page

Pseudo Points, *Continued*

4010 System Digital Pseudos (*continued*)

Table B-20 System Pseudo Points (*Continued*)

Point	Type	Label	Description
D48	W T	LCD Annunciator Sounder Disable	When on the panel tells all LCD Annunciators to disable their local sounder. Turning pseudo off will enable the sounders. Controllable from front panel only- not SMPL.
D49	W U	IDNet Boost	When on it boosts the IDNet levels.
D50	W U	Device Almost Dirty	When active it forces IDNet almost dirty troubles to report.
D51	W U	TrueAlarm Peak Log Enable	When on any peak value change recorded on IDNet devices is sent to the Trouble Log.
D52	R U	RS232 Port A Disconnected	On whenever nothing is connected to Port A on the RS232 or RS232/Modem card.
D53	R U	RS232 Port B Disconnected	On whenever nothing is connected to Port B on the RS232 or RS232/Modem card.
D54-D57	-	Reserved System Pseudo Point	Unused.
D58	R U	Network System Reset	
D59	R U	Network Signal Silence	
D60	-	Digital: P60	Unused.
↓			
↓			
D75	-	Digital: P75	Unused.

4010 User Digital Pseudos

The user digital pseudo card in the 4010 is at address 19. It has 75 points available for specialized applications programming. Any point may be programmed as one of the four types of digital pseudos (i.e. UTILITY, FIRE, etc.), and each may be assigned a 40 character custom label.

Note that any user pseudo points defined as FIRE type are not auto-generated in the General Alarm List (L1), and SUPERVISORY points are not generated into the Supervisory Monitor List (L8).

Continued on next page

Pseudo Points, *Continued*

Analog Pseudo Points

Analog pseudo points exist as counters or timers in the 4010 system. SMPL delay and cycle equations may be written referencing the user Analog pseudo points on the output side (for delay/cycle operations). Each analog point may contain a value from 0-65,535 and the point is considered ON when the value is non-zero. For delay and cycle purposes, the maximum allowable value gives a real-time range of just over 18 hours. There are two analog pseudo cards in the 4010 system - one reserved for system analogs, and one reserved for user points.

4010 System Analog Pseudos

The 4010 system has one analog pseudo card reserved for system use at Card Address 20. It contains a total of 25 points. At present, only the first seven are used but the remainder are reserved for future expansion.

Table B-21. 4010 System Analog Pseudos

Point	Label	Description
A1	Fire Count	Number of fire alarms active in system.
A2	Supervisory Count	Number of supervisory alarms active in system.
A3	Trouble Count	Number of troubles active in system.
A4	System Startup	Pulsed for one poll cycle during system startup.
A5	Almost Dirty Device Count	Total number of devices that have an almost dirty status (not necessarily a trouble).
A6	Dirty Device Count	Total number of devices that are in Dirty Trouble.
A7	Excessively Dirty Device Count	Total number of devices that are in Excessively Dirty Trouble.
A8	Current Year	
A9	Current Month	
A10	Current Day of Month	
A11	Current Hour	
A12	Current Minute	

4010 User Analog Pseudos

The user analog pseudo card in the 4010 is at Card Address 21. It has 25 points available for specialized applications programming. The analog user pseudos can have custom labels assigned to them.

Continued on next page

Pseudo Points, *Continued*

List Pseudo Points

List pseudo points provide a convenient way to group points in any manner the user desires. The 4010 contains two list pseudo cards - one reserved for the system and one for the user. The status of the list is determined by counts which are maintained for the following states:

- | | |
|---------------------|-----------------|
| • Fire Count | • Trouble Count |
| • Supervisory Count | • Normal |
| • Open | • Short |
| • Fire Ack | • Limited |
| • Supervisory Ack | • Trouble Ack |
| • On/Input | • Disable |
| • Manual Control | • On/Coding |

The 4010 restricts the total number of points in any one list to 255. It also restricts the total number of points available on any one list card to 500 (the total number of points in all lists on one list card cannot exceed 500).

4010 System Lists

The 4010 system reserves one list card at address 22 for system use. Currently, 12 of the 25 system lists are used by the 4010 application. All of these lists control application specific operation of the 4010 panel. Some are auto-generated by the system as points are added and may not be edited, while the remainder are filled by the user to activate pre-defined applications. The system lists are shown in Table B-22.

Continued on next page

Pseudo Points, Continued

4010 System Lists (continued)

Table B-22. 4010 System List

L1	General Alarm Monitor Points	<i>Auto-generated by the panel and not editable.</i> Contains all fire-alarm monitor points in the system plus the Manual Evac pseudo. User FIRE digital pseudos are not auto generated here.
L2	Waterflow Alarm Monitor Zones	<i>Auto-generated by the panel and not editable.</i> Contains all waterflow-type monitor points (WSO).
L3	Sprinkler Supervisory Monitor Zones	<i>Auto-generated by the panel and not editable.</i> Contains all sprinkler-type monitor points (SO).
L4	Primary Elevator Recall Monitors	Filled by the user. When in fire state, will activate the primary elevator recall function.
L5	Alternate Elevator Recall Monitors	Filled by the user. When in fire state, will activate the alternate elevator recall function.
L6	Control Points, Off With Silence	Filled by the user. Turns on when L1 is in FIRE detect, turns off with alarm silence.
L7	Control Points, Off With Reset	Filled by the user. Turns on when L1 is in FIRE detect, turns off with completed system reset.
L8	Supervisory Monitor Points	<i>Auto-generated by the system - may be edited.</i> Contains all Supervisory type monitor points.
L9	Automatic Suppression Release Points	Filled by the user. When in fire state, causes L12 to activate after automatic release delay timer expires.
L10	Suppression Manual Release Points	Filled by the user. When in the fire state, causes L 12 to activate after manual release delay timer expires.
L11	Suppression Release Abort Points	Filled by the user. When in the supervisory state, causes the suppression release sequence to abort.
L12	Suppression Release Output Points	Filled by the user. Activated by the panel when the suppression release algorithm completes.

4010 User Lists

The user list pseudo card in the 4010 is at Card Address 23. It has 25 points available that may be filled by the user for specialized applications. The user lists may have custom labels assigned to them.

Appendix C

Glossary of Terms

Overview

This appendix contains a glossary of common terms used throughout the manual.

Glossary

Alarm - A warning of fire danger.

Alarm Signal - A signal indicating an emergency requiring immediate action, such as a signal indicative of fire.

Alarm Verification - A feature to reduce unwanted alarms wherein smoke detectors must report alarm conditions for a minimum period of time, or confirm alarm conditions within a given time period, after being reset to be accepted as a valid alarm initiation signal.

Annunciator - A unit containing two or more indicating lamps, alpha-numeric displays, or other equivalent means in which each indication provides status information about a circuit, condition or location.

Authority Having Jurisdiction (AHJ) - The "authority having jurisdiction" is the organization, office or individual responsible for approving equipment, an installation or a procedure.

Class A - A four wire method of connecting IDC or NAC that guarantees operation with a single open conductor. See Style D (IDC) and Style Z (NAC).

Class B - A two wire method of connecting IDC or NAC that will cause a trouble indication with an open circuit. See Style B (IDC) and Style Y (NAC).

Current Limited IDC State - A "current limited" state exists when an initiating device shunts a resistor across the IDC.

Device Type - See Hardware Device Type.

Digital Alarm Communicator Transmitter (DACT) - A system component at the protected premises to which initiating devices or groups of devices are connected. The DACT will seize the connected telephone line, dial a preselected number to connect to a DACR, and transmit signals indicating a status change of the initiating device.

Display - The visual representation of output data other than printed copy.

Evacuation - The withdrawal of occupants from a building.

Continued on next page

Glossary *(continued)*

Evacuation Signal - A distinctive signal intended to be recognized by the occupants as requiring evacuation of the building.

FACP - Fire Alarm Control Panel. A system component that receives input from automatic and manual fire alarm devices and may supply power to detection devices and transponders or off-premises transmitters. The control panel may also provide transfer of power to the notification appliances and transfer of conditions to relays or devices connected to the control panel. The FACP can be a local fire alarm control panel or a master control panel.

Fire/Supervisory - An IDC point type that is zone selectable. This point type will initiate a "Supervisory Abnormal" condition at the FACP if a current limited state is detected.

Form C Contacts - A relay or switch configuration that provides access to both normally open and normally closed dry contacts.

Hardware Device Type - The Hardware Device Type is assigned to each point in an 4010 system. The Hardware Device was formerly known as Device Type. Valid Hardware Device Types include the Addressable Detector Base, Line Powered IAM, TrueAlarm Photoelectric Detector and other types of hardware that are assigned as points in the system. Each hardware device type is assigned a software point type (formerly point type) that defines system operation regarding that point. There are specific software point types that can be assigned to each hardware device type in the system.

Heat Detector - A device that detects abnormally high temperature or rate of temperature rise.

Initiating Device - A system component that originates transmission of a change of state condition, such as a smoke detector, manual fire alarm box, supervisory switch etc.

Initiating Device Circuit (IDC) - A circuit to which automatic or manual initiating devices are connected where the signal received does not identify the individual device operated.

Labeled - Equipment or materials to which has been attached a label, symbol or other identifying mark of an organization acceptable to the "authority having jurisdiction" and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

Continued on next page

Glossary *(continued)*

Listed - Equipment or materials included in a list published by an organization acceptable to the "authority having jurisdiction" and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

Logical State - The state of a point seen by the end user that is determined by point type and physical state (alarm, trouble, etc.).

March Time Code - A notification code that consists of a 50% duty cycle pulse train. The march time rate is specified in beats per minute (BPM). A 20 BPM March Time code consists of 20 on/off cycles in one minute.

Municipal Master Box - An initiating device intended to send an alarm condition to the public fire service communications center.

N2 COMMS - The communications protocol used by the 4010 to communicate from the CPU to "slaves" in the system.

Notification Appliance - A fire alarm system component such as a bell, horn, strobe, etc., which provides an audible or visible output, or both.

Notification Appliance Circuit (NAC) - A circuit or path directly connected to one or more notification appliances.

Open Circuit State (IDC) - An open circuit is defined as the absence of the end of line resistor, with or without a detector load.

Physical State - The control panels representation of the electrical state of a circuit or device (open, short, etc.).

Point Type - See Software Point Type.

Protected Premises - The physical location protected by a fire alarm system.

Remote Master Box - An initiating device intended to send alarm, supervisory and trouble signals to a remote location at which appropriate action is taken.

Smoke Detector - A device that detects visible or invisible particles of combustion.

Continued on next page

Glossary (continued)

Software Point Type - The software point type assigned to each hardware device in the system defines the software operation associated with that hardware device. This was formerly referred to as "point type." The software point type assigned to each hardware device defines status reporting, including the default point banner that is displayed, printed or logged upon point status changes. The hardware device type defines allowable software point types. Examples of software point types include Smoke Detector, Verified Smoke Detector and Heat Detector. The system will respond differently to certain status changes depending on the software point type assigned.

Style B - A method of connection for IDC that will provide a trouble indication in the event of an open circuit on the wiring loop. Also known as Class B.

Style C/Style E - An IDC point type. A trouble indication is provided if a short (+ to -) or open circuit condition exists on the wiring loop. An alarm is initiated if a "current limited" state exists. Style C is two wire, Style E is 4 wire.

Style D - A method of connecting initiating devices on IDCs that provides multiple signal paths so that circuit operation is maintained with a single open circuit connection. A trouble indication is provided in the event of an open circuit on the wiring loop. Also known as Class A.

Style Y - A method of connecting notification appliances on NACs that provides a trouble indication in the event of an open circuit on the wiring loop. Also known as Class B.

Style Z - A method of connecting notification appliances on NACs that provides multiple signal paths so that circuit operation is maintained with a single open circuit connection. A trouble indication is provided in the event of an open circuit on the wiring loop. Also known as Class A.

Supervisory Signal - A signal indicating the need of action in connection with the fire suppression system or equipment or with the maintenance features of related systems. (See Fire/Supervisory point type.)

Temporal Code - A three pulse coding pattern adopted by NFPA as a standard evacuation pattern for audible notification. The pattern consists of three 1/2-second pulses, each pulse separated by 1/2-second silence. Each group of three pulses is separated by 1.5 seconds of silence.

VSMOKE - A point type that is selectable for an IDC. This point type will initiate an immediate alarm from a contact closure Pull Station or Heat Detector, but will initiate the Alarm Verification sequence (see definition above) for a current limited alarm. A point configured as VSMOKE must NOT have any devices other than smoke detectors that initiate a current limited alarm.

Zone - A defined area within the protected premises. A zone may define an area from which a signal can be received, an area to which a signal can be sent, or an area in which a form of control can be executed.

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