D7024 Fire Alarm Control/Communicator

Operation and Installation Guide

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1.0 Notices

1.1 FCC Compliance Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

1.2 FCC Phone Connection to Users

This control complies with Part 68 of the FCC rules.

On the inside of the enclosure is a label that contains, among other information, the Ringer Equivalence Number (REN) for this equipment. You must, upon request, provide this information to your local telephone company.

The REN is useful to determine the quantity of devices that may be connected to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the RENs of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices that you may connect to your line, you may want to contact your local telephone company to determine the maximum REN for your local calling area.

This equipment may not be used on coin service provided by the telephone company. This control should not be connected to party lines.

Should this equipment cause harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advanced notice isn't practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this equipment, please contact the manufacturer for information on obtaining service or repairs.

The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning. **The manufacturer, not the user, must make the repairs to this equipment.**

To guard against accidental disconnection, there is ample room to mount the Telco jack to the inside of the Control cabinet.

The operation of this Control may also be affected if events such as accidents or acts of God cause an interruption in telephone service.

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Notices

1.3 Industry Canada Notice

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

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

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

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines **and internal metallic water pipe system, if present, are connected together.**

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician.

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2.0 Overview

2.1 System Overview

The D7024 Control/Communicator is a fully integrated hard-wire fire alarm system. It can support four input points (expandable to 248 using D7039 Multiplex Expansion Module with the D7042 Eight Input Remote Module) and 16 individual users (expandable to 100 with the D7039). The control panel has a built-in LCD keypad, and up to four additional keypads may be used to provide user interface with the system and programming access for the installer. The D7024 also includes the following features:

- Built-in Dual-line Communicator
- Menu Driven Keypad Programming
- Freely Programmable Alpha Display
- 99 Event History Buffer
- 16 User Codes
- UL Listed, CSFM, MEA Approved
- Year 2000 compliant

When the D7039 Multiplex Expansion Module is installed, these additional features are available:

- 240 Additional Addressable Input Points (248 Total)
- 499 Non-volatile Event History Buffer
- 100 User Codes

See Figure 1 for the location of the major items on the D7024 Control Board.

This manual applies to panels equipped with version 2.02 or higher software.

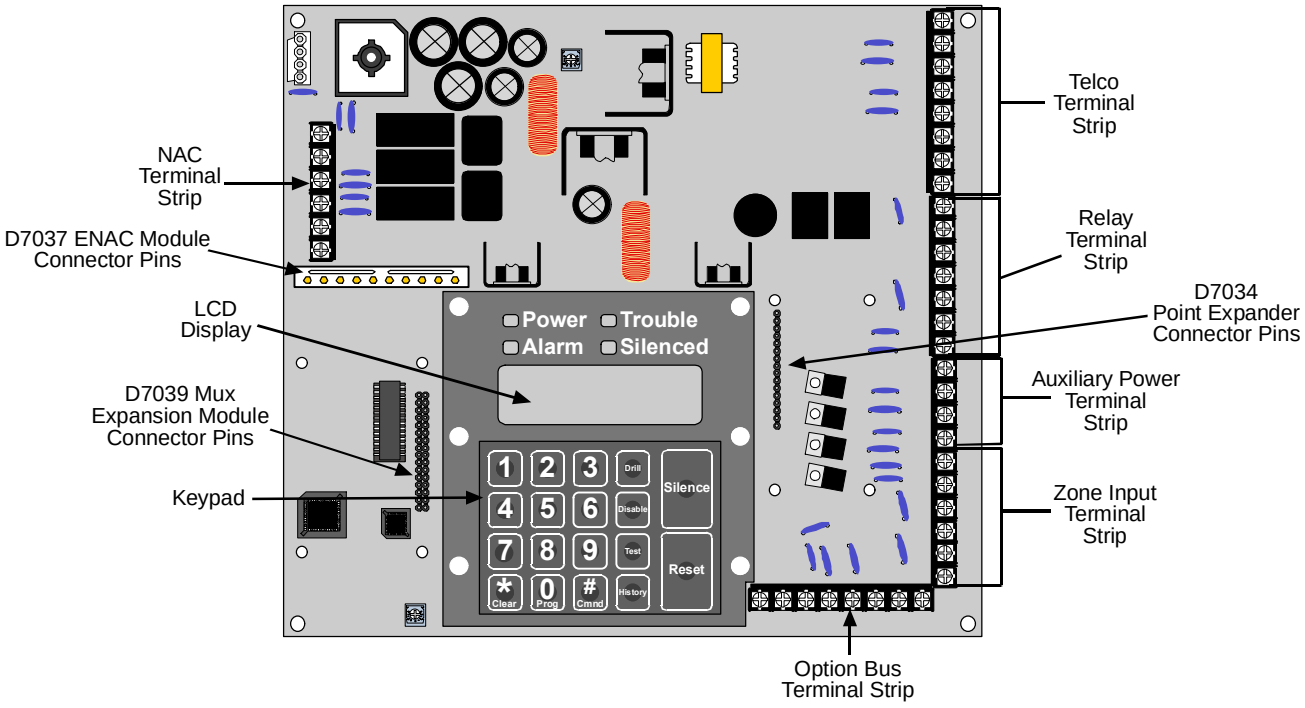

Figure 1: D7024 Control Board

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2.2 Specifications

2.2.1 Temperature

Storage and Operating Temperature: +32° to +120°F (0° to +49°C)

2.2.2 Power

Input Power: 120 V, 60 Hz, 1.5 A (max. 2 0 A fused supply circuit)

Notification Appliance Circuit (NAC) Power: Each NAC has 24 VDC nominal, unfiltered (special application) power with up to 2.5 A capacity (but limited by overall 4.0 A capacity). Refer to Technogram P/N: 34950 for compatible NAC devices.

Auxiliary Power: 24 VDC nominal, unfiltered, 1.0 A (special application)

Initiating Circuit (Smoke) Power: 24 VDC nominal, filtered, 1.0 A. Refer to Technogram P/N: 34445 for compatible smoke detection devices.

Option Bus Power: 12 VDC nominal, 500 mA

Optional Standby Batteries: Two 12 V (in series), 7 – 40 Ah

2.2.3 Notification Appliance Circuits (NACs)

Two on-board notification circuits - NAC 1 and NAC 2. These are 24 V outputs for notification devices with up to 2.5 A capacity (but limited by overall 4.0 A capacity) on each circuit.

Wired for standard Class B, Style Y operation (use model D7015 Class B to Class A NAC Converter to convert to Class A, Style Z as needed).

2.2.4 Relays

Local Relays: The main panel includes two Form “C” relays. The relay contacts are rated at 5 A, 28 VDC. No overcurrent limiting is performed on the contacts of these relays. The default selection for the relays is to indicate general alarm and general system trouble. By programming them using point/zone mapping, they can be programmed to activate on a wide variety of conditions.

Remote Relay Module (D7035): The D7035 is an Octal Relay Module that provides eight Form “C” relay outputs. It connects to the D7024 via the option bus. The outputs are fully programmable, exactly as the local relays are programmed. Each output operates independently of the other seven to provide complete flexibility. Communication with the D7035 is supervised.

Contact Rating: 5 A @ 28 VDC

Number of Modules: 2 units maximum

Wiring Requirements: Refer to Section 4.2, Option Bus Wiring Requirements.

2.2.5 On-board Conventional Points

All on-board points, and points implemented with the D7034 work with two- or four-wire detectors. The system has an optional alarm verification feature.

Number of 2-wire Circuits:	4 circuits, expandable to 8 using a D7034 Expander.
Type of Circuit:	Class B, Style B (use a D7014 Class A Zone Converter to convert to Class A, Style D as needed).
EOL Resistor:	2.21k ohms (P/N: 25899, UL listed).
Supervisory Current	8 – 20 mA.
Required Current for Alarm:	25 mA.
Maximum Short Circuit Current:	44 mA.
Maximum Line Resistance:	150 ohms.
Circuit Voltage Range:	20.4 - 28.2 VDC.
Maximum Detectors per Point:	20 detectors (2-wire).
Total Detector Standby Current:	3 mA maximum.
Response Time:	Either fast (500 mS) or programmable (from 1 to 89 seconds)

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2.2.6 Off-board Addressable Points (with D7039 Multiplex Expansion Module)

The D7039 Multiplex Expansion Module adds:

- Two Class B, Style 4 Signaling Line Circuits (SLCs)
- Each point is individually supervised for proper connection to the common bus (when over ten points are troubled, up to ten troubles will be shown per bus and the balance of the troubles will be indicated by a common bus failure message).
- Response time can be set to fast, or programmed from 1 to 89 seconds.

Input points on the SLCs are implemented with a D7042 Eight Input Remote Module.

2.2.7 Enclosure Housing

The standard enclosure is manufactured from 18 Ga., cold-rolled steel, and measures 15 in. (38.1 cm) Wide, by 20.75 in. (52.7 cm) High, by 4.25 in. (10.8 cm) Deep. A keyed lock is included, and the LEDs and LCD display are visible through the door.

2.2.8 Remote LCD Keypads

Maximum number of keypads: 4 D7033 keypads.

Wiring Requirements: Refer to Section 4.2, Option Bus Wiring Requirements.

2.2.9 Remote LED Annunciators

Maximum number of annunciators: 8 D7030 annunciators.

Wiring Requirements: Refer to Section 4.2, Option Bus Wiring Requirements.

All option bus devices must be connected to the same bus, either Bus A or Bus B. Do not connect some devices to Bus A data terminals ("YA", "GA") and some to Bus B ("YB", "GB"). Power ("RA", "RB") and ground ("BA", "BB") terminals may be connected interchangeably to either set of terminals.

To allow flexible configuration, LED annunciators display output zone information rather than point information. The first installed annunciator (the one with the lowest number address on the bus) displays zones 1-8 on the annunciator, and zones 9-16 on the D7032 Eight LED Annunciator Expander (available in a future release, requires D7030A for operation), which connects to the annunciator. The second annunciator/expander pair displays zones 17-32, and the third displays zones 33-48. The fourth annunciator/expander pair shows zones 49 and 50, along with some system zones:

LED	Zone Displayed	Description
1	49	user defined
2	50	user defined
3	(reserved)	
4	52	General Fire Alarm (non-silencable)
5	53	General Fire Alarm (silencable)
6	(reserved)	
7	(reserved)	
8	(reserved)	
9	(reserved)	
10	58	General Supervisory Alarm (non-silencable)
11	(reserved)	
12	(reserved)	
13	61	General Waterflow Alarm (silencable)
14	(reserved)	
15	63	General Alarm (non-silencable)
16	(reserved)	

Table 1: LED Assignments for LED Annunciators 4 and 8

This pattern repeats if additional annunicator/expander pairs are installed, with the fifth pair displaying zones 1-16, sixth displaying zones 17-32, etc.

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2.2.10 Communicator

The communicator can report to two (2) phone numbers with full single, double, and back-up reporting. Communicates in SIA, Modem IIIa^2™, Contact ID, BFSK, 3/1 and 4/2 Tone burst formats.

Phone Line and Phone Number Selection: To ensure the delivery of critical reports, the fire panel has two phone lines and two phone numbers which can be used for reporting. Reports can be "steered" to one or both of two phone numbers using the report steering feature in the panel programming. Note that account number 1 is used with phone number 1 and account number 2 is used with phone number 2. Except for test reports, the panel automatically selects the phone line to be used. Reporting starts using phone line 1, unless the line monitor shows it to be bad at the start of reporting. If the report is not successful after two attempts on line 1, the panel will automatically switch and use phone line 2. The one exception to this is when test reports (manual or automatic) are sent. Test reports are sent to alternating phone lines, regardless of phone monitor or initial failure to report. This allows both phone lines to be tested if the user sends two manual test reports. The first report will use one line and the second will use the other line. During normal operation, the automatic test will use a different line each day.

Since the panel automatically selects which line is to be used, both phone lines must use the same dialing sequences for reporting. For example, a line which requires a "9" to be dialed for an outside line cannot be paired with a line which does not require a "9". In any case, PBX lines and ground start phone lines do not comply with NFPA requirements for digital communication.

IMPORTANT

When the central station receives the automatic test report only every other day, this indicates that one phone line at the protected premises is inoperative. This condition must be corrected immediately, as other critical reports may be delayed during the time that the communicator is performing retries to send the test signal through the inoperative phone line (once each 48 hours).

While two independent phone lines are required for UL864 Central Station service, the FACP can be configured with one phone line if the communicator is only used for supplemental reporting on a Local, Remote Station or Auxiliary system.

Connect Jumper T1 to T2 and R1 to R2 if the panel is being installed with only one phone line.

IMPORTANT

Communicator reports may be delayed if the dialer outputs are not connected together on an installation where the panel has only one phone line.

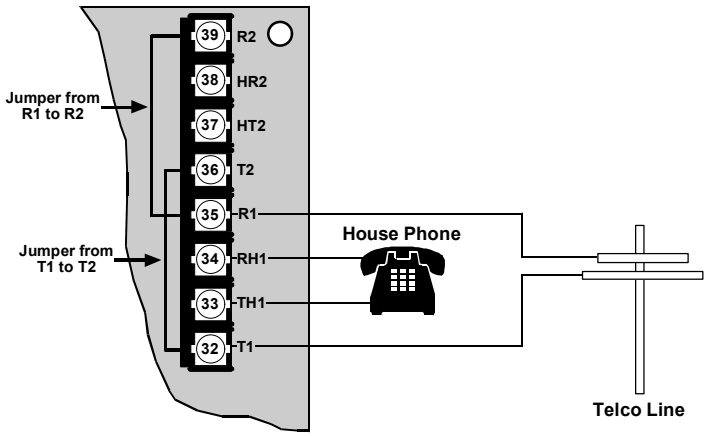

Figure 2: Supplemental Reporting

2.2.11 Users

The system allows up to 16 individual users (or up to 100 users when the D7039 is installed.) A Personal Identification Number (the four-digit code entered at the keypads) and an authority level (to determine which functions may be performed [see Section 5.6 Personal Identification Numbers]) can be assigned to each user.

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2.2.12 Lightning Protection

NOTE: This system is intended for installation entirely within one building.

MOVs and spark gaps provide protection from lightning surges and static discharges.

2.2.13 Backup Battery Calculation

Table 2 is used to calculate the standby battery capacity required by NFPA when using the D7024:

Device	Quantity	Standby Current/Device	Total Standby	Alarm Current/Device	Total Alarm
D7024 Control	1	200 mA	200 mA	380 mA	380 mA
D184A Local Energy Kit		10 mA		0.45 A	
D7014 Class A Zone Converter		11 mA		11 mA	
D7015 Class A NAC Converter		1 mA		46 mA	
D7030 8-Point LED Annunicator		27 mA		132 mA	
D7033 Keypad		80 mA		120 mA	
D7034 4-Point Expander		44 mA		156 mA	
D7035 Octal Relay		8 mA + 30 mA*		8 mA + 30 mA*	
D7039 MUX Expansion Module		150 mA		150 mA	
D7042 8-Input Module		8 mA		8 mA	
Smoke Detectors					
Bells, Horns, etc.					
Other Sensors					
Other					
		Grand Total Standby Current		***Grand Total Alarm Current***	

*add 30 mA for each relay activated

Table 2: Standby Battery Capacity Calculations

The 24 VDC current requirements for the D7030, D7033 and D7035 are shown at 75% of the 12 VDC level shown on the specification sheets for these models. The D7024 regulates 24 VDC power from the battery to 12 VDC for these accessories.

The required battery size to support the system can be calculated using Tables 3 and 4.

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Grand Total Standby Current (in amps)	CS	
Total Hours of Standby Required (usually 24 or 60):	HS	
Total Standby Capacity (multiply CS X HS)	TS= CS X HS	
Grand Total Alarm Current (in amps)	CA	
Total Hours of Alarm Time Required (usually 0.083 or 0.25):	HA	
Total Standby Capacity (multiply CA X HA)	TA= CA X HA	
Total Capacity Required (add TA + TS):	TC = TA + TS	
Required Capacity with 20% Derating (TC X 1.2)	C = TC X 1.2	

Table 3: Calculating the Required Battery Size

2.2.14 Standby Current Load

Use the first table to estimate the size of the battery required to support the standby load, then use the second table to estimate the size of the battery required to support the alarm load. Then add the results together for the total battery size. Select the next larger standard battery for the system. If the results show a requirement for a battery over 40 Ah, the current must be reduced or an external power supply must be added. The units shown in Table 4 are amp hours, and the figures include a 20% derating factor.

Standby Load Battery Size Chart	Capacity Required for 24 Hours	Capacity Required for 48 Hours	Capacity Required for 60 Hours	Capacity Required 72 Hours	Capacity Required for 80 Hours
Grand Total Standby Current					
100 - 200 mA	5.8	11.5	14.4	17.3	19.2
201 - 300 mA	8.6	17.3	21.6	25.9	28.8
301 - 400 mA	11.5	23.0	28.8	34.6	38.4
401 - 500 mA	14.4	28.8	36.0	X	X
501 - 600 mA	17.3	34.6	X	X	X
601 - 700 mA	20.2	X	X	X	X
701 - 800 mA	23.0	X	X	X	X
801 - 900 mA	25.9	X	X	X	X
901 - 1000 mA	28.8	X	X	X	X
1001 - 1100 mA	31.7	X	X	X	X
1101 - 1200 mA	34.6	X	X	X	X

Alarm Load Battery Size Chart	Capacity Required for 5 Minutes	Capacity Required for 10 Minutes	Capacity Required for 15 Minutes	Capacity Required 30 Minutes	Capacity Required for 45 Minutes
Grand Total Standby Current					
250 - 500 mA	0.1	0.1	0.2	0.3	0.5
501 - 999 mA	0.1	0.2	0.3	0.6	0.9
1.0 - 1.5 A	0.2	0.3	0.5	0.9	1.4
1.6 - 2.0 A	0.2	0.4	0.6	1.2	1.8
2.1 - 2.5 A	0.3	0.5	0.8	1.5	2.3
2.6 - 3.0 A	0.3	0.6	0.9	1.8	2.7
3.1 - 3.5 A	0.4	0.7	1.1	2.1	3.2
3.6 - 4.0 A	0.4	0.8	1.2	2.4	3.6
4.1 - 4.5 A	0.5	0.9	1.4	2.7	4.1
4.6 - 5.0 A	0.5	1	1.5	3	4.5
5.1 - 5.5 A	0.6	1.1	1.7	3.3	5

Table 4: Standby Load Battery Size (In amp hours)

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2.2.15 Compatible Devices

- **D7014 Class A Zone Converter:** This module converts a Class B, Style B initiating circuit on the panel to a Class A, Style D circuit for connection to field wiring. This connects to one of the panel's conventional inputs.
- **D7015 Class A NAC Converter:** This module converts a reversing Class B Notification Appliance Circuit (NAC) to a Class A circuit. It is compatible with any Class B, Style Y NAC that uses a 2.2 K ohm end-of-line resistor. When used on a Class B, Style Y NAC, it implements a Class A, Style Z NAC. This connects to NAC output on the panel.
- **D7030 Eight Point LED Annunciator:** This module identifies the location of a fire alarm for up to eight zones, and up to eight are allowed per system.
- **D7031 Eight Point LED Annunciator Expander (future release):** This module attaches to a D7030A (future release) and identifies the location of a fire alarm for eight additional zones, and up to eight are allowed per system. Requires D7030A for operation.
- **D7033 Four-Wire Alphanumeric LCD Keypad:** This keypad connects to either four-wire option bus and up to four are allowed per system.
- **D7034 Four Point Expander:** This device allows the D7024 control to support four additional points. The D7034 plugs into the control and provides four Class B, Style B loops that are identical in characteristics to the loops on the control. One D7034 is allowed per system.
- **D7035 Octal Relay Module:** This module provides eight Form "C" relay outputs for addition to the system. The outputs are fully programmable and can be activated by system events. Each output operates independently of the other seven outputs for complete flexibility. The D7035 connects to the option bus and up to two are allowed per system. Refer to the *D7035 Installation Guide* (P/N: 37280) for required enclosure modification.
- **D7038 Remote NAC Power Supply:** This device adds four NFPA 72 Class B, Style Y Notification Appliance Circuits via the option bus and is supervised by the control panel. The D7038 connects to either four-wire option bus of the D7024 control panel and up to two are allowed per system.
- **D7039 Multiplex Expansion Module:** This module provides either two 2-wire (Class B, Style 4) multiplex buses or a 4-wire (Class A, Style 6) multiplex bus. In Class A mode, up to 120 more addressable points may be added. In Class B Mode, up to 240 more addressable points may be added. The D7039 connects directly to the control panel and one is allowed per system.
- **D7042 Eight-Input Remote Module:** This module provides eight Class B, Style B input points. Up to 15 modules can be connected to MUX Bus A, and 15 on MUX Bus B. The D7042 is powered by 12 V supplied by the option bus power terminals, in addition to the two-wire data connection. The D7042 may not be used on an SLC configured for Class A, Style 6 operation.

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Table 5 summarizes address restrictions for the D7042 modules.

9*	10	11	12	13	14	15	16
17*	18	19	20	21	22	23	24
25*	26	27	28	29	30	31	32
33*	34	35	36	37	38	39	40
41*	42	43	44	45	46	47	48
49*	50	51	52	53	54	55	56
57*	58	59	60	61	62	63	64
65*	66	67	68	69	70	71	72
73*	74	75	76	77	78	79	80
81*	82	83	84	85	86	87	88
89*	90	91	92	93	94	95	96
97*	98	99	100	101	102	103	104
105*	106	107	108	109	110	111	112
113*	114	115	116	117	118	119	120
121*	122	123	124	125	126	127	128
129*	130	131	132	133	134	135	136
137*	138	139	140	141	142	143	144
145*	146	147	148	149	150	151	152
153*	154	155	156	157	158	159	160
161*	162	163	164	165	166	167	168
169*	170	171	172	173	174	175	176
177*	178	179	180	181	182	183	184
185*	186	187	188	189	190	191	192
193*	194	195	196	197	198	199	200
201*	202	203	204	205	206	207	208
209*	210	211	212	213	214	215	216
217*	218	219	220	221	222	223	224
225*	226	227	228	229	230	231	232
233*	234	235	236	237	238	239	240
241*	242	243	244	245	246	247	248
249	250	251	252	253	254	255	

Table 5: D7042 Address Restrictions

D7042 modules must be installed only at addresses followed by an asterisk (*).

Each module provides eight input points with numbers corresponding to the rows of Table 5.

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3.0 Installation and Setup

In the shipping box, you should find:

- One D7024 Control/Communicator in static-resistant bag
- One Enclosure with transformer
- One hardware pack
- One enclosure lock, washer, and keys
- Six End-of-Line (EOL) resistors

The hardware necessary for installing the control panel in the enclosure is located in the hardware pack.

3.1 Installing the Enclosure

Using the enclosure as a template, mark the top mounting holes on the mounting surface (see Figure 3).

Pre-start the mounting screws (not supplied) for these two holes. Slide the enclosure onto these screws so that the screws move up into the thinner section of the holes. Tighten the screws.

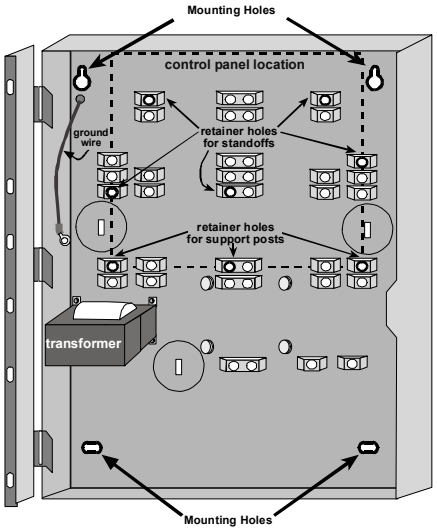

Figure 3: Enclosure Installation

Screw in the remaining two screws in either set of bottom mounting holes.

Knock out the desired wire entrances on the enclosure.

3.2 Installing the Control/Communicator

The D7024 control board is static sensitive. Make sure you touch ground before handling the control board. This will discharge any static electricity in your body. For example, run the ground wire to the enclosure before handling the control board. Continue touching the enclosure while installing the control board.

Insert the three support posts in the retainer holes on enclosure (see Figures 3 and 4).

Press the 1/8" nylon standoffs (P/N: 30503) into the retainer holes (see Figures 3 and 4).

Slide the top of the control into the retainer tabs (the slots under the top of the frame). Once in the retainer tabs, the control will rest on the posts.

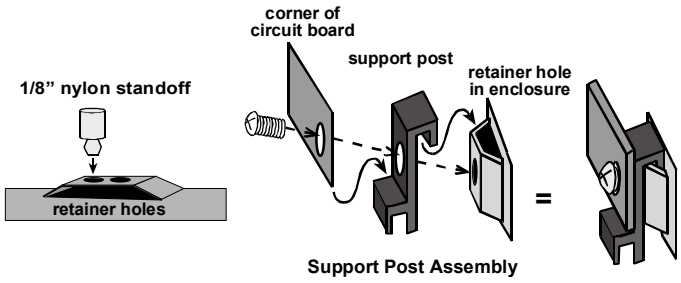

Figure 4: Standoff and Support Post Installation

Secure the bottom of the control by screwing the two bottom corners through the support posts and through to the control retainer holes (see Figure 4).

Once the control board is installed, be sure to connect the supplied ground wire between the door and the enclosure using the supplied nuts. A second ground wire is provided for connecting AC power ground. Both grounds connect to the stud in the enclosure to the left of the circuit board.

3.3 Installing Optional Equipment

There are two expansion options that connect directly to the panel, and are automatically detected and supervised when the panel is re-powered:

- D7034 Four Point Expander
- D7037 NAC Expander [This device not tested by Underwriters' Laboratories]
- D7039 Multiplex Expansion Module

When the panel is first re-powered after installing one of these options, the panel will display one of the following windows:

```
4Z EXP DETECTED
PRESS CLEAR KEY
```

```
NAC EXP DETECTED
PRESS CLEAR KEY
```

```
MUX DETECTED
PRESS CLEAR KEY
```

Press the [Clear] key to confirm the installation of the device and automatically set it up for supervision.

If the [Clear] key is not pressed during the power-up time-out period, the panel will resume operation using the last confirmed status of the affected expander, and display an installation error condition.

A similar process with similar displays is used to remove options from the system.

Refer to the installation instructions for these expanders for additional information.

When the D7039 Multiplex Expansion Module is first installed, in most cases the system will display an EEPROM fault. It is necessary to run the default procedure to synchronize the EEPROM on the expansion module with the EEPROM in the panel. Cycle power to the panel and re-install option bus devices after the default procedure.

Removal of an installed D7039 Multiplex Expansion Module and re-powering the system will cause all programmed PIN numbers to be lost. The PIN numbers can be re-entered manually.

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4.0 Control Terminal Connections

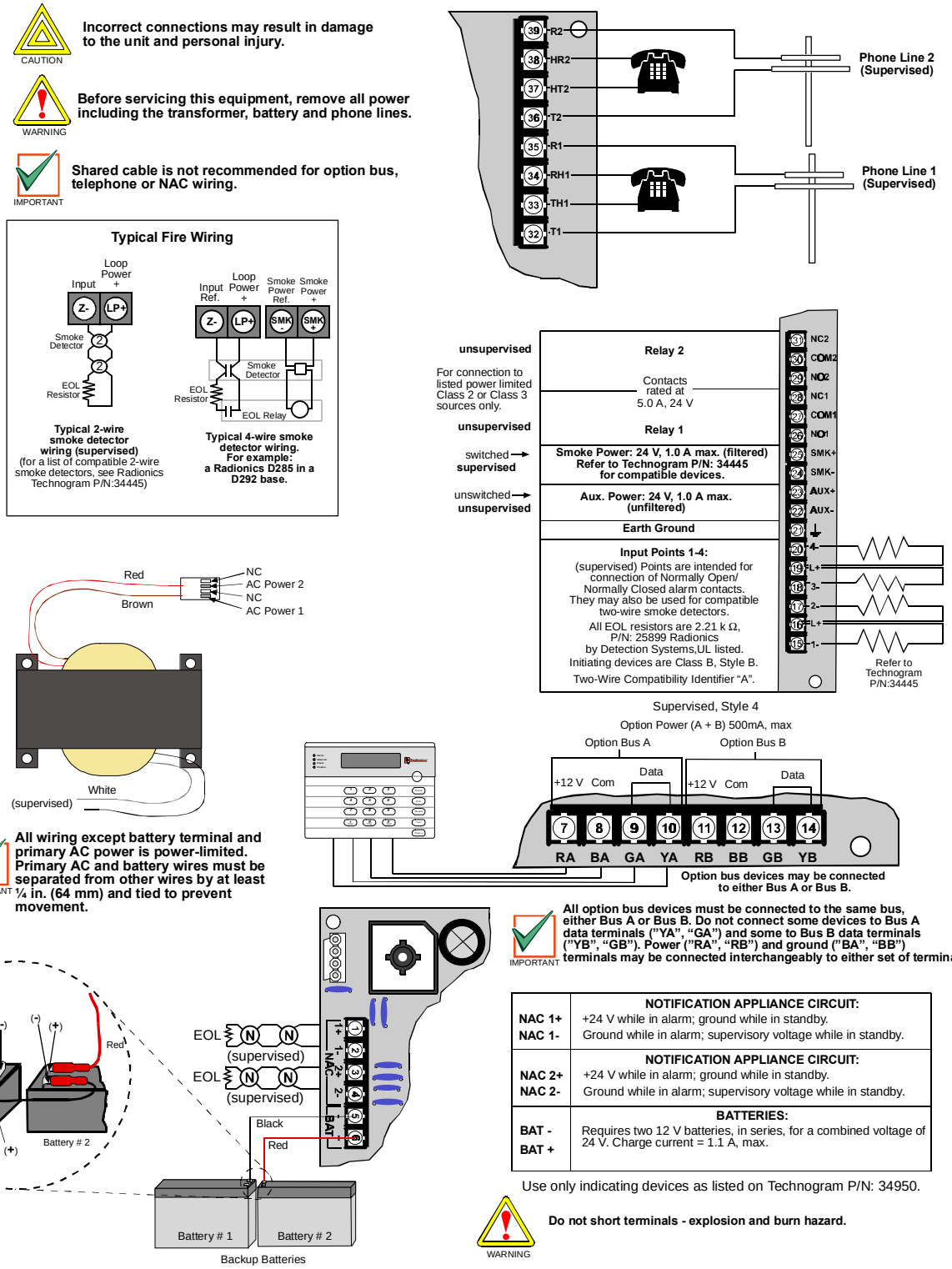

Figure 5: D7024 Control Terminal Connections

4.1 Power Supply Connections

Connect the primary side of the transformer (black and white wires) to the unswitched 120 V, 60 Hz circuit using wire nuts. Connect the earth ground to the threaded ground stud on the left side of the enclosure.

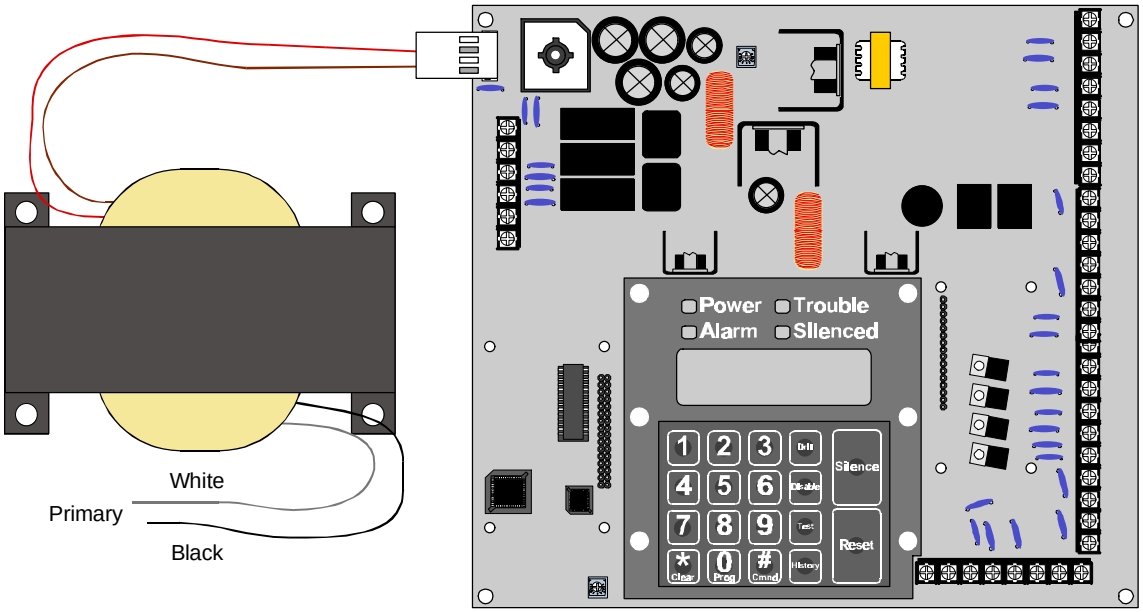

Figure 6: Connecting the Transformer to the D7024 Control Board

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4.2 Option Bus Wiring Requirements

Use #18 AWG (1.2 mm) or larger wire to connect option bus devices to the FACP. The total length of wire connected to the option bus terminals must not exceed 4,000 ft (1,219 m), regardless of the gauge wire used.

IMPORTANT

All option bus devices must be connected to the same bus, either Bus A or Bus B. Do not connect some devices to Bus A data terminals ("YA", "GA") and some to Bus B ("YB", "GB"). Power ("RA", "RB") and ground ("BA", "BB") terminals may be connected interchangeably to either set of terminals,

IMPORTANT

Shared cable is not recommended for option bus, addressable points bus, telephone, or NAC wiring.

Avoid shielded or twisted pair wire except for special applications where a reduced length of wiring (roughly 50%) is acceptable so that an unusually harsh electrical environment can be tolerated.

The length of wire allowed between the panel and the last device on a wiring run depends on the current drawn on that wiring run. Reducing the number of devices on a wiring run allows the individual runs to be longer. In the simplest case where devices are all of the same type on a given wire run, the following guidelines can be used:

Device Model Number	Number on Wiring Run	Maximum Allowed Cable Length to Last Device (#18 Wire)	Current Draw (for reference)
D7030 LED Annunciator	1	1000 ft. (304 m)	175 mA
D7030 LED Annunciator	2	500 ft. (152 m)	175 mA x 2 = 350 mA
D7030 LED Annunciator	4	250 ft. (76 m)	175 mA x 4 = 700 mA
D7033 Remote Keypad	1	2000 ft. (608 m)	100 mA
D7033 Remote Keypad	2	1000 ft. (304 m)	100 mA x 2 = 200 mA
D7033 Remote Keypad	4	500 ft. (152 m)	100 mA x 4 = 400 mA
D7035 Remote Relay	1	500 ft. (152 m)	330 mA
D7035 Remote Relay	2	250 ft. (76 m)	330 mA x 2 = 660 mA
D7038 Remote NAC	2	4000 ft. (1216 m)	< 50 mA each

Table 6: Option Bus Wiring Guidelines

In cases where more than one type of device will be installed on a given wiring run, it is necessary to add together the alarm current drawn by all the devices on the wiring run to determine the maximum allowed distance between the option bus terminals on the panel and the last device on the wire run (the device furthest from the panel).

Add up the total alarm load for option bus devices on the wire run, and use the chart below to determine the maximum allowed length for the run. For example, if the total load of option bus devices on a particular run is 400 mA, the maximum length of the run can be up to 500 ft. (152.4 m). No more than 4,000 ft. (1,219.2 m) of wire can be connected to the option bus terminals, even if the individual lengths of the runs are all within limits.

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Control Terminal Connections

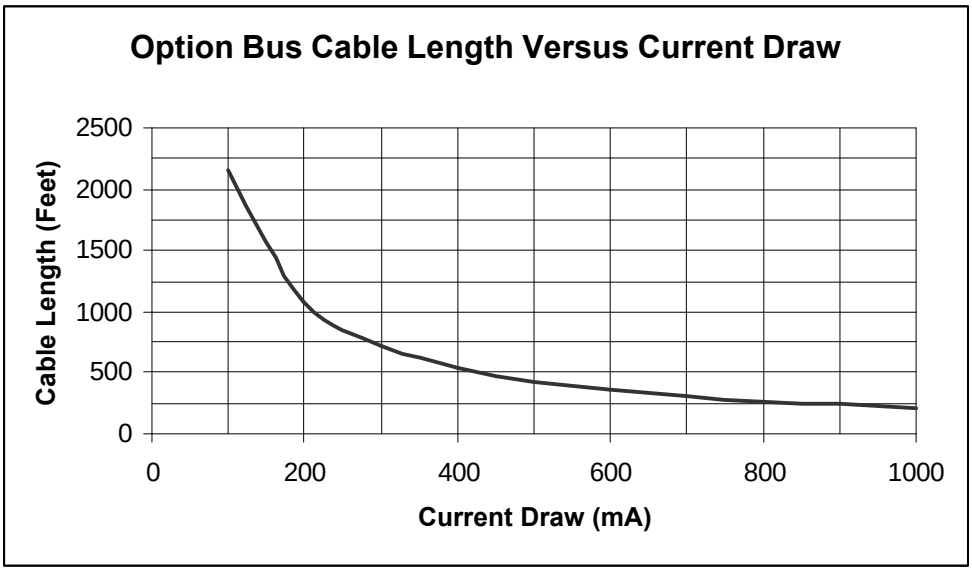

Figure 7: Option Bus Cable Length vs. Current Draw

The chart shows allowed lengths for #18 AWG (1.2 mm). For #16 AWG (1.5 mm) wire, cable lengths may be 1.5 times longer. For #14 AWG (1.8 mm) wire, cable lengths may be 2.5 times longer. However, the 4,000 ft. (1,219.2 m) maximum length of connected wire still applies.

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5.0 System Operation

5.1 Modes of Operation

There are three modes of system operation for the D7024 Control/Communicator: ALARM, TROUBLE, and NORMAL.

5.1.1 Alarm

When an alarm occurs, the top line of the display will show “FIRE ALARM”, or a similar message depending on the type of alarm. This display will override any other system display. The second line of the display will show the number of the point that is in alarm, alternating with the programmed description for the affected point. If more than one alarm (or other off-normal condition) is active, they will be shown on the second line of the display, one after another. The built-in sounder turns on with a steady tone, and outputs programmed to activate with the current alarm condition(s) will activate.

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

5.1.1.1 Fire Silence/Reset

During a fire alarm, exit the premises immediately. Do not enter the premises unless accompanied by the appropriate Emergency Services' personnel, or after they have given the OK to enter. When it has been determined that there is no fire, you may silence the horns/bells to allow further investigation of the devices that initiated the alarm, or you may reset the system to return it to normal operation.

Before the Reset key is used, determine which smoke detector has alarmed so the monitoring company may verify its operation.

If the system is configured to allow alarm silencing, the **Silence** key turns off the horns/bells, but does not reset the alarm status and does not return the tripped input to normal service. Detectors that were tripped will stay in alarm and can be checked (usually by means of an LED on the device) to see which detector caused the alarm. Once the detectors causing the alarm have been identified, the system should be reset to return it to normal service.

The **Reset** key clears the system alarm status, and briefly turns off power to the detectors to reset them. This command is required after any fire alarm affecting a point programmed for latching operation (which is the normal configuration). This operation is also required to reset a Class A, Style 6 multiplex (SLC) wiring fault troubles (future), and to reset trouble indications from D7014 Class A Zone Converters.

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5.1.2 Trouble

When a trouble condition occurs (e.g. wiring for a point is cut, AC power fails, etc.), the sounder will activate with a beep every 10 seconds. The Trouble LED will light and the LCD will display “SYSTEM TROUBLE”, followed by a description of the trouble condition. The system can diagnose and display a variety of trouble conditions, including those affecting the input points, NAC circuits, power, battery, system grounding, and internal operations of the fire control panel. Notify your installing company immediately if the system trouble message is displayed.

The system trouble beep can be silenced with the **Silence** key. After problems have been remedied, **Reset** should be pressed to clear the “SYSTEM TROUBLE” display.

To prevent intermittent system faults (such as ground fault or initiating loop open fault) from interfering with central station operations, the panel incorporates a feature to limit reporting to 100 trouble reports in 24 hours. When this limit is exceeded, the panel transmits a "DATA LOST" report and inhibits additional trouble reports as well as inhibiting automatic test reports. Non-trouble reports and off-normal at test reports are not limited. The 24-hour period resets at 9:00 AM or when a manual test report is sent. See Appendix B for trouble explanations.

The software incorporates a system supervisor function that automatically supervises the system software for proper operation. In the unlikely event of a system failure, a “CPU FAULT” message will be displayed, and the nature of the failure will be optionally recorded in the history buffer. History buffer recording for CPU faults can be enabled by programming output zone D of onboard Relay 2 to Zone 51 (unused). The history buffer message, if enabled, will display as CPUFLTxxx, where xxx is an error code. If the display shows ”CPU FAULT”, contact Radionics Technical Support and report the history buffer code along with a description of the operations that caused the fault. Unusual conditions during programming and debugging operations may result in a CPUFLT message in the history buffer. If, however, this is observed during times when the panel is in service, it should be reported to Technical Service.

5.1.2.1 Off-Normal Displays

Control panel alarms and problems are indicated by one of the following messages on the top line of the display. Contact your installing company if problems persist.

1. “FIRE ALARM”: One or more points is in alarm.
2. “SUP'VISORY ALARM”: A supervisory condition exists (e.g. a shut-off valve is closed).
3. “SYSTEM TROUBLE”: A trouble condition exists (e.g. wiring for a point is cut, AC power fails, etc.).
4. “POINT TROUBLE”: One of the points is not responding to the control panel.
5. “DISABLED DEVICE”: An input or output device has been disabled.

5.1.3 Normal

When the system is operating normally, it displays “SYSTEM NORMAL” on the top line of the display, the Power LED is on steady, and no other LEDs are lit. If the system is programmed to require a PIN, the second line of the LCD screen will display “ENTER PIN:”, otherwise the control panel will bypass this display and will show a rotating menu of possible user actions.

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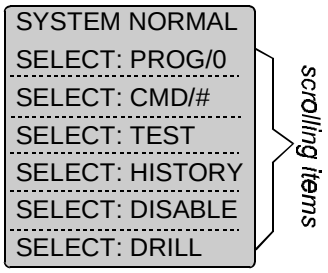
5.2 Basic Use of System

5.2.1 Scrolling Menus

A keypad that does not require a PIN number will (under normal conditions) display "SYSTEM NORMAL" on the top line and, "SELECT:" on the bottom line, followed by these scrolling menu items: PROG/0, CMND/# TEST, HISTORY, DISABLE, and DRILL. On a keypad that does require a PIN number, enter the PIN number first. The menu will then display. The scrolling menu items flash one at a time at 1-second intervals through the list and then start over. In the programming section of this manual, such items will be displayed in the following manner:

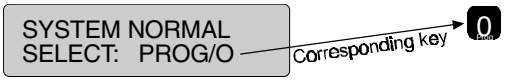


5.2.2 Selecting Menu Items

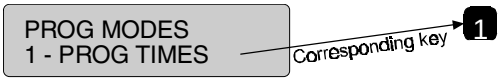
Depending on what level in the system you are at (i.e. menu, sub-menu, sub-sub-menu), there are three different ways to select an item:

1. In the main menu, TEST, HISTORY, DISABLE, and DRILL each have an exclusive button on the keypad. To select one of these menu items, press the corresponding button. For example, to select TEST, press the TEST button.

2. As in the cases of main menu items PROG and CMND, the PROG and CMND keys are not exclusive, but shared with other characters. The character sharing the corresponding key is displayed in the second line following a forward slash. To select one of these items, press the corresponding key. For example, the PROG key is also “0”.



3. The corresponding key to a sub-menu item may be displayed in the second line preceding a dash. Press the corresponding key to select that item. For example, press ‘1’ to select PROG TIMES.



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

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5.2.3 Once a Main Menu Item Has Been Selected

When a main menu item is selected, the keypad may prompt you to enter your PIN. If so, enter the number (factory default is 9876) and press the [Cmnd]/[#] key (or press the key labeled with the desired command directly). The display will automatically go to the sub-menu display.

5.2.4 Backtracking through a Menu

To return to a previous screen at any time, press the [Clear]/* key. To return to the SYSTEM NORMAL display, press the [Clear]/* key and backtrack out of the menu until you reach SYSTEM NORMAL. Once you reach SYSTEM NORMAL, you will not be able to backtrack back any further.

5.2.5 Entering Data

When a sub-menu item prompts you to enter data, do so followed by the [#] key. If data already exists at a particular location, it will be displayed. You can either accept that data or enter new data over it.

When the [#] key is pressed to enter the data, the display will return you to the sub-menu display you were in previously.

5.2.6 Drill

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

5.2.7 Disable

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

5.2.8 History

In systems without a D7039 Multiplex Expansion Module, in the event that the system loses all power (AC and standby battery), all history events will be cleared.

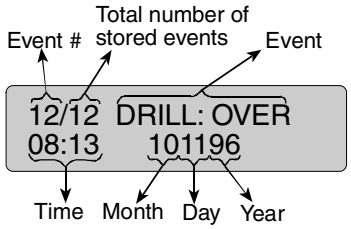
The HISTORY option is a list of system events that have occurred. The HISTORY option can be selected from the Main Menu (SYSTEM NORMAL display) by pressing the [History] key.

On a D7024 FACP with a D7039 Multiplex Expansion Module, up to 499 History events are supported.

On a D7024 FACP without a D7039 Multiplex Expansion Module, up to 99 History events are supported.

After you press the [History] key, the most recent system event will be displayed on the top line of the LCD with the time and date below it (see example below).

Example (You have already started at the Main Menu and pressed the [History] key):



While the first event is being displayed, as a reminder the bottom line will toggle every four seconds between the time/date that the event occurred (as in above example) and the following display:

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To backtrack through the history buffer, press **7**.To scroll to the next event record, press **9**. The following abbreviations are used in history events:

Abbreviation	Meaning	Abbreviation	Meaning
ALRM	Alarm	OFFNORM	Off Normal at Test
ARST	Alarm Restore	PH1	Phone Line 1
AUTOTST	Auto Test	PH2	Phone Line 2
BATT:LOW	Battery Low	RSTR	Restore
BAT:RSTR	Battery Restore	S	Supervisory
CPUFLT	Internal Error	SMK:FLT	Smoke Power Fault
DRILL:BEG	Drill Begin	SYSRESET	System Reset
DRILL:OVR	Drill Over	SYSRST	System Restore
DRST	Dirty Restore	SYSTRB	System Trouble
DRTY	Dirty	SYS:WDOG	Automatic CPU Reset (Watchdog)
DSBL	Disable	TRBL	Trouble
EE2	EEPROM	TRST	Trouble Restore
ENBL	Enable	TST:BEG	Test Begin
F	Fire	TST:OVR	Test Over
M	Monitor	W	Waterflow
MANULTST	Manual Test		

Table 7: History Event Abbreviations

See Appendix C for additional history log ID information.

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5.3 Understanding Keypads

5.3.1 Built-in Keypad

The keypad built into the control/communicator is an alphanumeric LCD keypad. It has a two-line by 16-character display to provide information on various control panel functions. In most instances, the first line displays general system status information, while the second line describes specific devices that may be relevant to the current system status. When keys are being pressed, the display usually shows the current action on the first line, while displaying rotating menu choices on the second line. A built-in sounder is used to annunciate keystroke entries and as a warning device.

For Abbreviations on Panel Display, see Appendix A.

A) The green Power LED is on when AC power is present, and flashes when the unit is operating from battery power.

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

C) The yellow Silenced LED illuminates when the user has manually silenced an alarm or trouble condition. It turns off when the condition that was silenced has been corrected.

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

E) The **Silence** key quiets the bells/sirens for an alarm or trouble condition only if the system is so configured.

F) The **Reset** key briefly (programmable from 1 to 16 seconds) turns off power to the detectors to reset them and clears any off-normal conditions.

G) The **History** key allows the record of system events to be viewed.

H) The **Command** key is used to accept data when in programming mode.

I) The **Programming** key will select the programming mode.

J) During programming, the **Clear** key can be used to exit menus or exit the programming mode entirely.

K) The **Test** key allows one of seven special test modes to be selected (see Section 5.4 Testing).

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

M) The red Alarm LED lights whenever the system has registered an alarm and has not been reset.

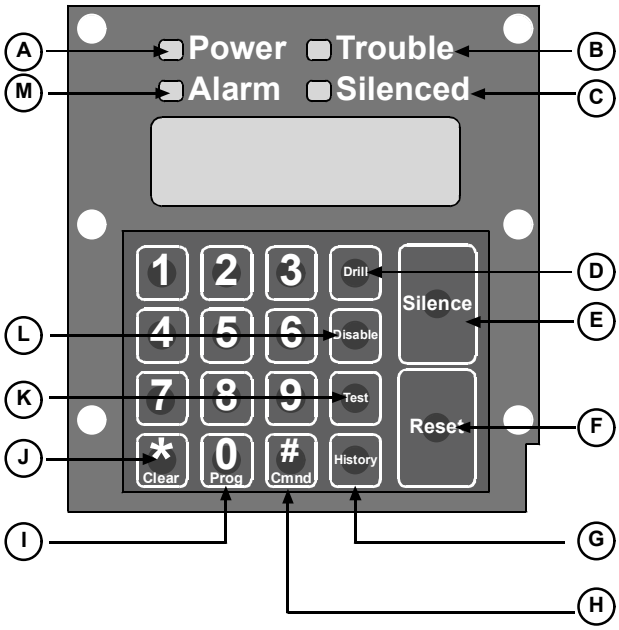

Figure 8: Understanding the Built-in Keypad

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5.3.2 D7033 Keypad

The D7033 Keypad is an alphanumeric LCD keypad. Up to four of these keypads can be mounted apart from the main control/communicator to provide additional locations for system status and control. The LCD display and keys operate identically to those of the built-in keypad on the control panel (see Appendix A).

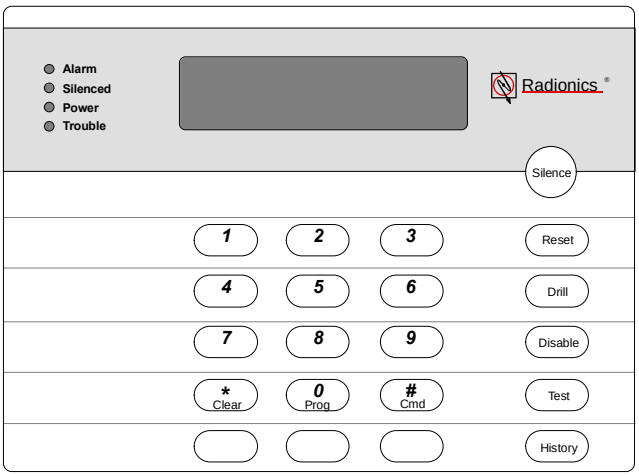

Figure 9: D7033 Keypad

5.4 Testing

Any of seven special test modes can be selected using the Test key found on the built-in and D7033 keypads.

5.4.1 Walk Test

Walk Test allows a technician to alarm each point manually to ensure that detectors connected to a point will report an alarm to the control. While in this mode, the LCD will show the system test status and the trouble sounder will sound every 10 seconds. Outputs programmed for general alarm or fire alarm output, or outputs mapped to points using zones will activate during this test as points are alarmed and restored:

When selecting this mode, three options are given for activation of outputs.

- **SHORT ACTIVE:** 1 second activation
- **LONG ACTIVE:** 5 second activation
- **NO ACTIVE:** outputs do not activate

As each point is alarmed, the outputs will activate once (if selected) and power will be reset. As each point is triggered, alarms and restorals will be logged in the panel's History Logger. When the point returns to standby, the outputs will activate twice. The panel will attempt to reset points 10 times to restore them. Points remaining alarmed when exiting walk test mode will cause an immediate alarm.

5.4.2 Communicator Test

The communicator will send a test report. While communication is in progress, the Power LED will flash. When the communication succeeds, a long keypad beep will be heard, the Power LED will return to normal, and the display will return to normal. Terminating the communicator test function (with the CLEAR key) will reset the communicator and discard all unsent reports. When an off-normal condition occurs during the communication test, the test is automatically reset, clearing all reports. The off-normal condition is then reported normally.

This test is available only if your system transmits alarms and system information to a monitoring service, and has been programmed by the security installing company to permit communicator tests.

Terminating the communicator test function (with the CLEAR key) will reset the communicator and discard all unsent reports. When an off-normal condition occurs during a communicator test, the test is automatically reset, clearing all reports, so the off-normal condition can be reported normally.

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5.4.3 Call for Remote Programming

Phone Numbers 1 and 3 must be programmed, along with Account Code 1. The panel will call Phone Number 3 and attempt to connect for downloading. If the panel is already using the phone line, it will sound the three-beep error tone. This function requires an access code with programming authority (Level 1).

5.4.4 Test Battery/NAC Circuits

If a power failure occurs, your control panel has a built-in battery that will continue to power the system for several hours. The control panel automatically recharges the battery when power is restored. In this test mode, the system will operate the local NAC circuits and test the battery for 2 seconds. The test result will be displayed at the end of the test, and will not be reported to the central station. Pressing the Clear key or the Command key will return the display to standby mode, or the unit will time out after three minutes.

5.4.5 Answer for Remote Programming

The panel will immediately pick up the phone line to answer a remote programming call. While programming is underway, the Trouble LED will flash. In addition to allowing a connection for remote programming, this will allow on-site PC downloading. If the panel is already using the phone line for a report communication, it will sound the three-beep error tone. This function requires an access code with programming authority (Level 1).

5.4.6 Manually Activate Outputs

Allows a selected output to be turned on and turned off manually.

5.4.7 Read Zone Input Levels

Shows the status of a selected on-board point. The loop current through the point is shown.

Normal loops show 11-15 mA. Loops in alarm show over 25 mA, and loops in trouble show less than 6 mA.

5.4.8 Addressable Point Test (MUX Test)

Allows activation of the special test mode for addressable (multiplex) devices (only applies if the optional D7039 Addressable Point Bus Expander module is installed).

When this test mode is selected, the system asks which bus should be tested, 1 or 2. Select 1 to test points 9-128 and select 2 to test points 129-255. The system then presents 5 options:

List Devices: The point numbers of all devices on the selected bus are shown. Note that some devices (such as a dual point module) may implement two or more points

Show Holes: Places on the bus that have no assigned device are listed. This can help to find programming errors or identify an available address for a new device.

Show Extras: The system scans the bus to identify devices that are present on the bus, but are not programmed into the system. It takes about 60 seconds to scan the bus, and about 60 seconds to restore the bus after scanning. The system cannot identify devices above address 128 on Bus 1, or below address 129 on Bus 2. If you know a device is connected to the system but it cannot be found, make sure it is connected to the correct bus: 9-128 for Bus 1, 129-255 for Bus 2.

Show Missing: Devices that are programmed into the system but are not present on the bus are listed. Note that unless a device has been programmed into the system (perhaps using MUX EDIT), it is not considered missing.

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Show Status: After you select a device and press ENTER, this test shows detailed status information for the selected device. Eight conditions (not all status conditions apply to or are supported by all devices) are shown using the following display (which updates automatically every 5 seconds). For this option, you may view the status of any MUX device regardless of which bus you selected to test when test mode was entered.

XxLxRxDxMxTxFxAx where x is either 0 or 1 depending on whether the condition is false or true, and the letters indicate the condition (see examples):

X: reserved for future use

L: commanded relay state - this is how the output relay should be set

R: actual relay state - this is how the output relay is actually set

D: detector dirty - the detector is excessively sensitive

M: missing device - the device cannot be found on the loop - note that unless a device has been programmed into the system (perhaps using MUX EDIT), it is not considered missing

T: tamper – the case of the sensor has been opened

F: loop fault - the loop from a contact input device is open, or device fault

A: loop alarm - the point is in alarm

Pressing [**CLR]** will terminate the display for any of these modes.

Examples: X0L0R0D0M0T0F0A0 (relay off, not dirty, not missing, no tamper, no fault and no alarm).

5.4.9 Sensitivity Test

This test item is reserved for future use.

5.5 Point/Zone Mapping

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

Input points: Smoke detectors, pull stations, etc.

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

Output points: NACs (bells, strobes, etc.) and relays.

Inputs activate zones, and zones activate outputs.

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

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

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

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The following example shows how inputs drive zones and zones drive outputs.

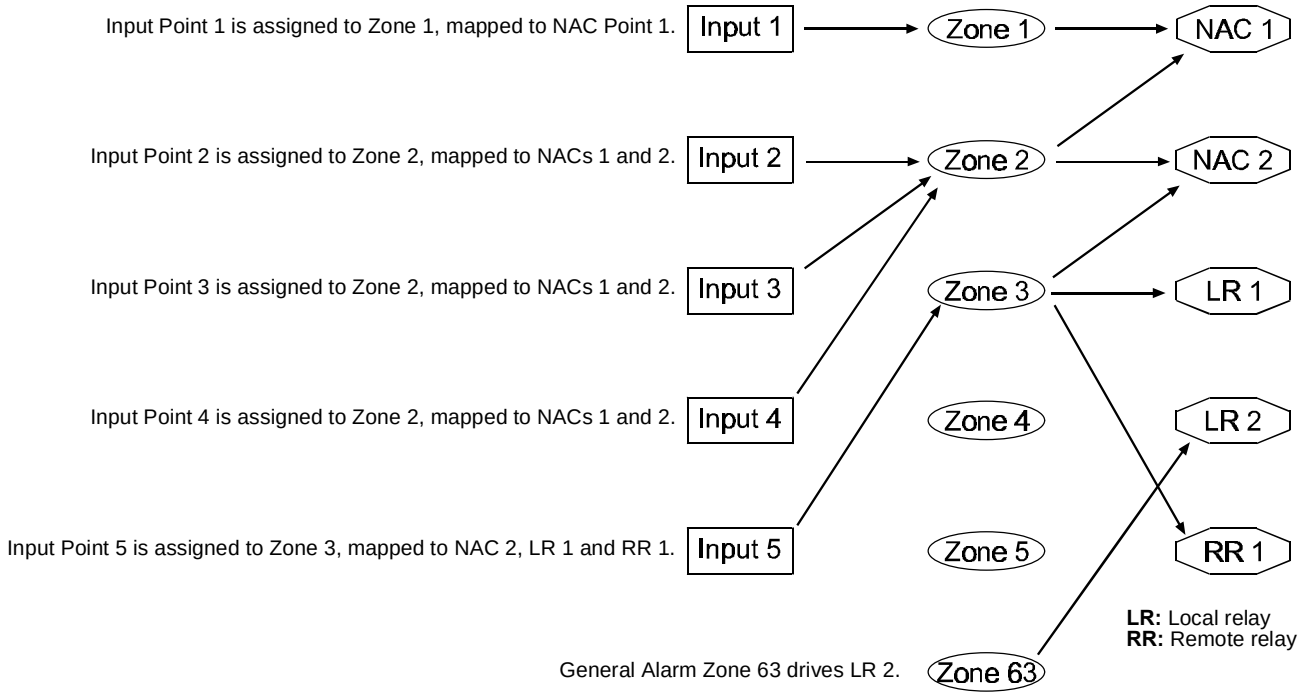

Figure 10: Mapping Inputs, Zones and Outputs

Up to 64 zones can be assigned. The installer can assign Zones 1 to 50. Zones 51 to 63 are hard-coded to **pre-assigned** conditions. See Table 8.

Zone	Pre-Assigned Condition
51	Reserved for future use.
52	General Fire Alarm (non-silenceable). Same as Zone 53, but remains active even while system is silenced.
53	General Fire Alarm (silenceable). Active when a fire alarm condition is present; does not activate for waterflow.
54	Activates for approximately 7 seconds before dialing, to initiate dial tone on a ground start phone system.
55	Reserved.
56	Reserved.
57	Communication Trouble. Active when the dialer has failed to communicate; remains active until communication through the digital communicator has been restored.
58	General Supervisory Alarm (non-silenceable). Active when any supervisory alarm condition is present.
59	Alarm Verification. Active while alarm verification is in progress. This starts with the first detection of an alarm to be verified and clears in two minutes, or when system is reset.
60	No AC. Active when AC power fails.
61	General Waterflow (silenceable). Active when any waterflow alarm is present.
62	General Trouble. Active while any system trouble is present, not active in test and programming modes.
63	General Alarm (non-silenceable). Active while any alarm, including supervisory, is present. Remains active even while system is silenced.

Table 8: Pre-Assigned Zones

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5.6 Personal Identification Numbers

The Personal Identification Number PIN) is the 4 digit code users enter at the keypad to gain access to the system. A PIN may be assigned to each User Number 00-15. The User Number identifies each person using the system. There are 16 possible User Numbers (00-15). User codes 00-99 are available with the installation of a D7039 Multiple Expansion Module. The Authority Level assigned to each User Number determines which functions each user will be able to perform.

Your system may have up to 100 different PINs, each 4 digits long. **There is one PIN for each User Number**. Attempting to assign the same PIN to multiple User Numbers will result in the three-beep error tone, and the change will not be made.

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

User Number 00 is shipped from the factory with the sequence of 9876. This code should be changed to one of your personal preference, and is automatically assigned maximum authority. PINs should never be programmed with common sequences such as 1111, 1234, or 2468 because they are easily violated.

Authority levels are assigned to PINs to determine which functions each user will be able to perform. Table 9 describes the four authority levels.

PIN Authority Level	Allowed Operations
Maximum (1)	All panel operations, including programming.
Medium (2)	System test modes, fire drill, reset, disable, silence, view history.
Minimum (3)	Silence, view history.
None (0)	None.

Table 9: PIN Authority Levels

5.7 Communicator Operation

The D7024 contains an integrated communicator that can be optionally enabled to send reports to a monitoring station. When enabled, operation of the communicator is fully automatic.

To disable a phone number, set the FORMAT to 0=disable. To completely disable the communicator, set FORMAT to 0=disable for both phone numbers, and set MONITOR to 0=NO for both phone lines.

When events occur, the communicator sends them to the monitoring station in priority order according to NFPA requirements. Fire and waterflow alarms are sent first, followed by supervisory alarms and trouble reports and finally all other reports. Priority reporting may send a restoral report after several alarm reports in a situation where a point sends multiple alarms, implying that a point is restored when it has returned to alarm. The sequence “alarm”, “restore”, “alarm” would be transmitted as “alarm”, “alarm”, “restore” when priority sorting is applied.

Priority sorting on events sent to a monitoring station may cause the message sequence to imply that a point is restored when it is not.

The communicator is able to store 32 events while waiting for the monitoring station to accept the events. If more than 32 reportable events occur before the monitoring station accepts events, some event information will be lost and a “data lost” report will be sent to the central station.

The D7024’s communicator is equipped with a line seizure relay to prevent interference with outgoing event reports. In a system where the fire communicator shares the phone line with other equipment on the premises, the phone line may be unavailable to the other equipment for up to 15 minutes if there is a fault with the central station acceptance of the event data. **Phone lines for fire control/communicators must not be shared with other equipment**.

This control/communicator must not be installed on a phone line that may be required for other emergency use.

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Notes:

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6.0 How to Program

After any programming change, and especially after remote program changes, a complete functional checkout of the operation of the control unit is required. Hazards to life and property may result if the system is not tested to detect possible improper programming.

When programming the system, enter only valid types of information within the ranges specified in the programming table. Incorrect programming will result in improper system operation. While using built-in programming, invalid input values may not be rejected in every case. Ensure that only the intended values are entered while programming to prevent improper system operation.

6.1 Point Programming

6.1.1 Point Functions Overview

Each of the points in the system can be programmed with its own characteristics. Point functions simplify the programming of points by allowing you to define a common set of characteristics for similar points, and then assigning those characteristics to selected points as a "point function". There are 16 point functions, each of which has programmable features for configuration (fire, waterflow, etc.), local only operation, silencing, and loop response. Each point is assigned to use the characteristics of one point function (see “Assigning Point Functions”), and then is individually programmed for additional characteristics: response to an open circuit, enabled status, output zone, verification, latching and point description.

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

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

1 = Pull Station 2 = Smoke Detector 3 = Reset Keyswitch 4 = Silence Keyswitch

5 = Supervisory Input 6 = Monitor Input 7 = Local Test 8 = Waterflow Sensor

See Table 10 for the characteristics that correlate with each function:

Function	Configuration	Local Only?	Silenceable?	Loop Resp.
1. Pull Station	Fire	No	No	Fast
2. Smoke Detector	Fire	No	No	Fast
3. Reset Keyswitch	Reset	Yes	No	Fast
4. Silence Keyswitch	Silence	Yes	No	Fast
5. Supervisory Input	Supervisory	No	Yes	Fast
6. Monitor Input	Monitor	Yes	Yes	Fast
7. Local Test	Fire	Yes	Yes	Fast
8. Waterflow Sensor	Waterflow	No	No	Programmed

Table 10: Point Function Characteristics

Use Table 11 to map input points to functions:

Function	Points
1. Pull Station	1, 6
2. Smoke Detector	2, 9 – 100
3. Reset Keyswitch	3
4. Silence Keyswitch	4
5. Supervisory Input	106 – 110
6. Monitor Input	111 – 116
7. Local Test	101 – 105
8. Waterflow Sensor	5

Table 11: Mapping Input Points to Functions

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6.2 Alpha Programming

When programming the point descriptions, the numeric keys are used to enter alphanumeric information similar to the way telephone buttons are used to process information over the phone lines: each key represents four or more letters or symbols. See Table 12.

Key	Values								
1	SPACE	1	,	‘	&	/	#	!	-*
2	A	B	C	2**					
3	D	E	F	3**					
4	G	H	I	4**					
5	J	K	L	5**					
6	M	N	O	6**					
7	P	R	S	7**					
8	T	U	V	8**					
9	W	X	Y	9**					
0 Prog	Q	Z	0						
# Cmnd	Enters the description and returns to the programming menu.								
* Clear	Returns to the programming menu without entering changes.								
Silence	Moves the cursor one space to the right.								
Disable	Moves the cursor one space to the left.								

A different character will be entered each time a numeric key is pressed. For example, pressing [2] repeatedly will enter A, B, C, 2, A, B, etc.

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

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

Table 12: Programming the Points Using the Alphanumeric Keys

A) The Number keys (including 0) are used to enter alphanumeric values.

B) The Clear key can be used to exit alpha programming, or exit the programming mode entirely.

C) The Silence key will move the cursor one space right.

D) The Disable key will move the cursor one space left.

E) The Command key is used to accept data when in programming mode.

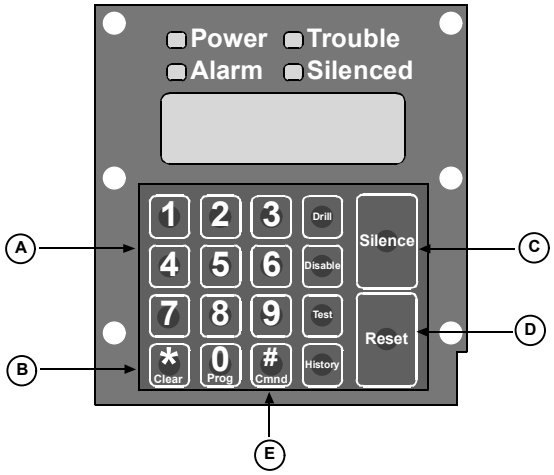

Figure 11: Keys Essential to Alpha Programming

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6.3 Format Programming

6.3.1 4/2

When 4/2 format is used, reports generated by points consist of an event type (first digit) and a point number (second digit). Digits may be programmed for the following events: fire alarm, fire restoral, waterflow alarm, supervisory alarm, point trouble, trouble restore, point disable, disable restoral, and monitor alarm. The same event type (first digit) will be sent for any point. The point number is the second digit. Each point may be programmed to a different digit. This programming is done under 7- PROG FORMATS, 1- 4/2 POINT RPT.

Additionally, 18 system events may each be programmed with a unique two-digit code. Events that may be programmed this way include, for example: system silence, fire drill, phone 1 trouble, and phone 2 restoral. This programming is done under 7- PROG FORMATS, 2- 4/2 RPT CODS.

The 4/2 (and 3/1) format is not able to report full point data for each points. Points 1-10 have unique reporting codes, and then the codes repeat every 10 points. For example, Point 31 will have the same point report as Points 11 and 21.

6.3.2 BFSK

Similar to the programming of system events for 4/2 formats, five system events may be programmed for two unique digits each when the BFSK format is used. This programming is done under 7- PROG FORMATS, 3- BFSK RPT CODS.

The BFSK format only supports a 3-digit account number. The panel transmits the first 3 digits that are programmed. The BFSK (and tone burst) format requires that an "A" (hex character) be entered at the panel to cause the receiver to display "0". The BFSK format can only report eight points, so points 8-255 are all reported as point “8”.

6.3.3 SIA

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

6.3.4 Contact ID

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

6.3.5 3/1

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

6.3.6 Modem IIIa^2™

The Modem IIIa^2™ reports are all fixed and do not need to be programmed.

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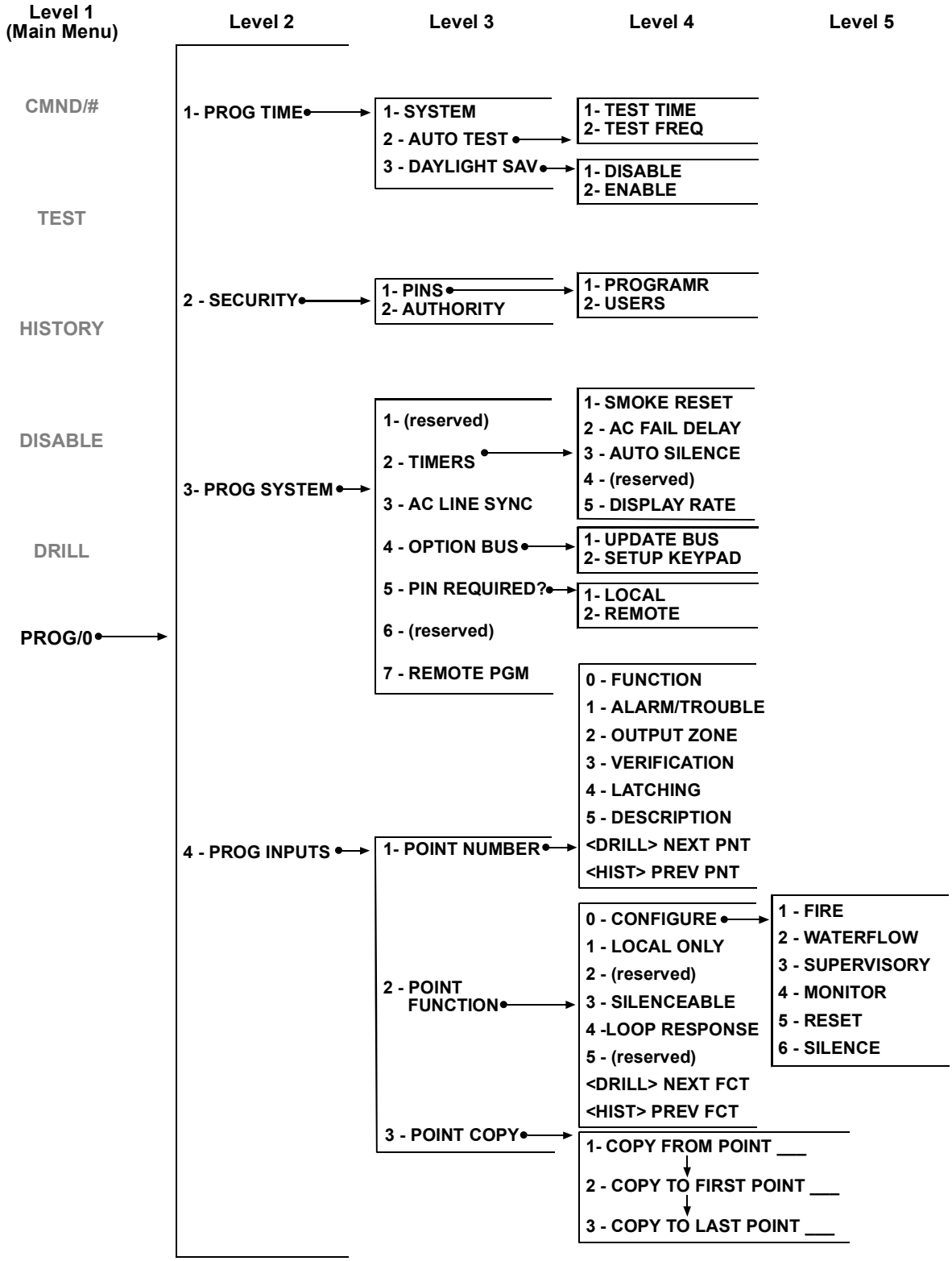
6.4 Program Menu Tree



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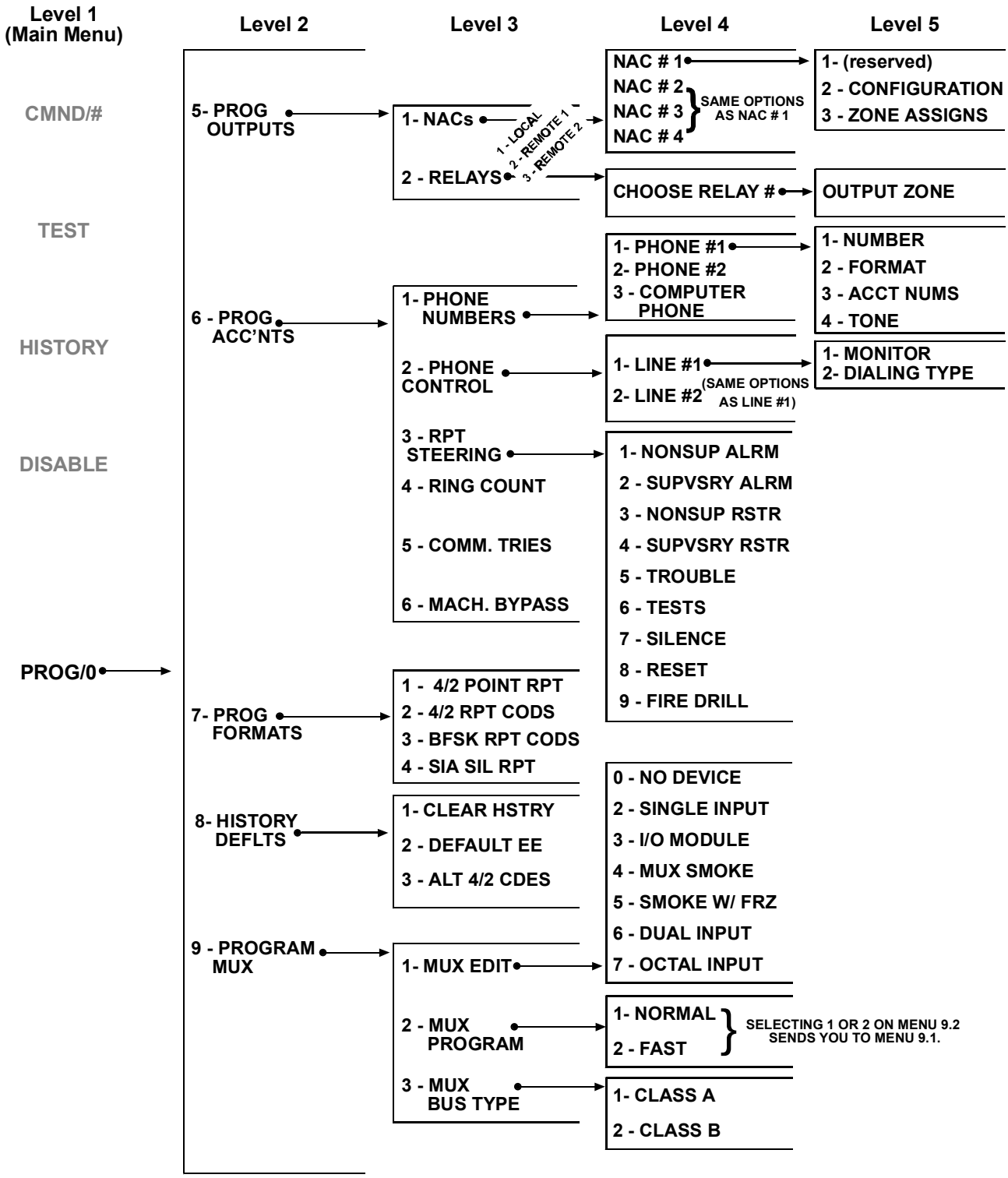

NOTE: Level 2 choices NAC 3 and NAC 4 are reserved for future use. Level 2 choice 9- PROGRAM MUX is also reserved for future use (except for Level 4 choice 7-OCTAL INPUT).

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6.5 Understanding Shortcuts

Shortcuts are used in this section to reduce repetition and provide speedy instructions to programming the panel.

The first level in the system is the Main Menu. For all system programming, <PROG/0> will be your Main Menu choice. Therefore, the first number in the shortcut is “0”.

The second level in your system provides eight options: PROG TIME, SECURITY, PROG SYSTEM, PROG INPUTS, PROG OUTPUTS, PROG ACCOUNTS, PROG FORMATS, and HISTORY DEFAULTS. The second number in the shortcut enters the Level 2 option and brings you to Level 3. When the D7039 MUX Expander is installed, a ninth option appears: PROGRAM MUX.

Level 3 provides the third set of options that branch from Level 2 (see Figure 11). The third number in the shortcut represents the option chosen in Level 3.

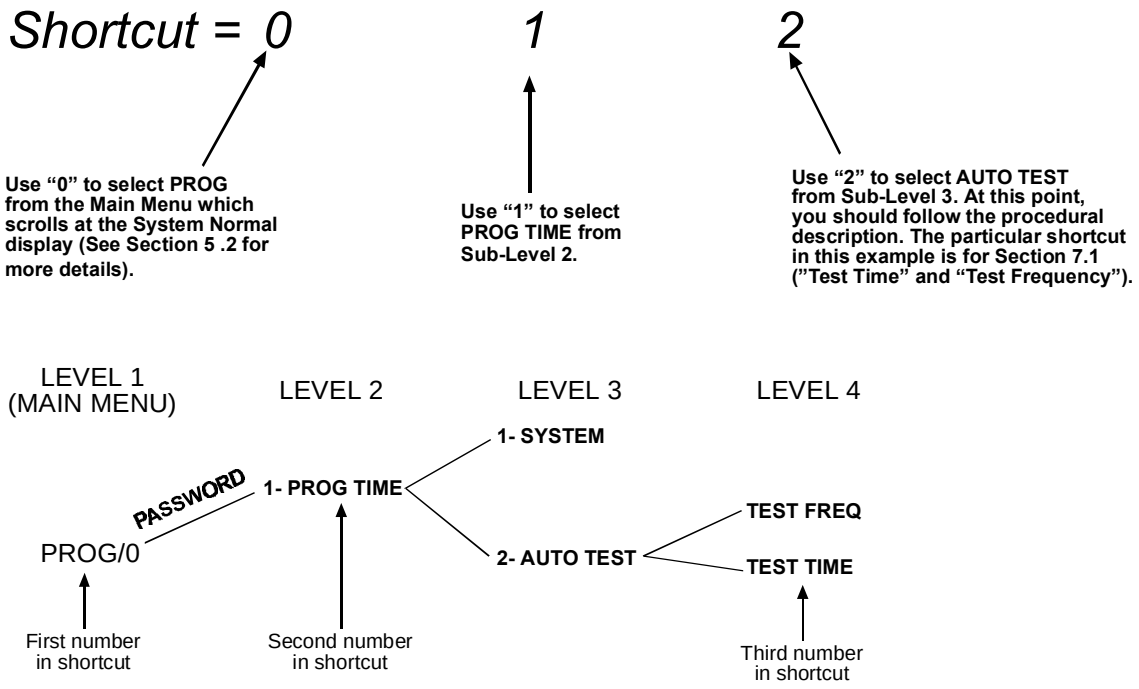

Figure 11: Example of a Programming Shortcut

The above example is the shortcut to TEST FREQ and TEST TIME. The sample of the Program Menu Tree shows that to get to TEST TIME and TEST FREQ, you have to go to PROG/0 in Level 1, PROG TIME in Level 2, and AUTO TEST in Level 3. Thus the shortcut is simply a list of the buttons you have to push to get to the desired fourth level option. Once you have entered the shortcut, follow the procedural description of the specific function you are programming.

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6.6 Remote Programming

The system remains operational during remote programming so that new alarms will terminate the remote programming session and report normally. Use of the keypads to perform other functions during remote programming, such as tests and disables, may cause remote programming to disconnect or other unexpected operation. Avoid downloading programming changes that will cause alarms, as the session will be disconnected as soon as the alarm occurs, before the session completes. To indicate that the system is in a special operating mode with user input inhibited (but alarm monitoring continuing), the system indicates “SYSTEM TROUBLE”, “RMT PRG ACTIVE” during remote programming. Sounders do not activate during this mode, but other outputs programmed for Zone 62, general system trouble, will activate.

Trouble conditions that occur during a remote programming session will not be annunciated at the panel until the remote programming session is ended. These conditions are available in the remote programmer diagnostic displays during the session, however. Alarm conditions will terminate remote programming and be shown immediately.

When remote programming is disabled, it is still possible to connect to the panel for diagnostics and to view the current programming (except PIN numbers). To actually change programming, it is necessary to enable remote programming.

To enable remote programming, refer to the following programming items:

- 0-3-7 Remote Programming (see section 7.3.5 Remote Programming)
- 0-6-1 Computer Phone (see section 7.6.1 Phone Numbers)
- 0-6-1 Account Number 1 (see section 7.6.1.3 Account Numbers)
- 0-6-2 Dialing Type (see section 7.6.2.2 Dialing Type)
- 0-6-4 Ring Count (see section 7.6.4 Ring Count)
- 0-6-6 Machine Bypass (see section 7.6.6 Machine Bypass)

An access code with maximum authority (1) is required to initiate remote programming from the panel.

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Notes:

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7.0 Panel Programming

Main Menu:

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

Programming Menu:

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

7.1 PROG TIME

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

7.1.1 Program Time

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

The following window will appear:

```
ENTER DATE
MMDDYY:_________
```

Enter the date followed by the [#] key. The following window will appear:

```
ENTER TIME
HHMM:___________
```

Enter the time followed by the [#] key.

7.1.2 Automatic Test

7.1.2.1 Test Time

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

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

The following window will appear:

```
AUTOMATIC TEST
1- TEST TIME
2- TEST FREQNCY
```

Press [1] to select Test Time. The following window will appear:

```
AUTO TEST TIME
HHMM:_______
```

Enter the time followed by the [#] key.

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7.1.2.2 Test Frequency

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

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

The following window will appear:

```
AUTOMATIC TEST
1- TEST TIME
2- TEST FREQNCY
```

Press [2] to select Test Frequency. The following window will appear:

```
AUTO FRQNCY (__)
1- 6 HOURS
2- 12 HOURS
3- 24 HOURS
4- 7 DAYS
5- 28 DAYS
```

Press the number key that corresponds to your selection. The current setting is displayed in parentheses on the first line. After you have programmed the test frequency, the previous window will appear.

7.1.3 Daylight Savings

***Shortcut: 0-**PROG, **1-**PROG TIME, **3-**DAYLIGHT SAV*

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

The following window will appear:

```
DAYLIGHT SAV
1- DISABLE
2- ENABLE
```

Press [1] to select DISABLE or to select [2] to ENABLE. After you have programmed this feature, the previous window will appear.

7.2 SECURITY

```
SECURITY
1- PINS
2- AUTHORITY
```

7.2.1 PINS

7.2.1.1 Programmer PIN

***Shortcut: 0-**PROG, **2-**SECURITY, **1-**PINS*

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

The following window will appear:

```
PROGRAM PINS
1- PROGRAMR PIN
2- USER PINS
```

Then press [1] for programmer PIN. The following window will appear:

```
USER 0
ENTER PIN:____
```

Enter the PIN and press [#]. After you have programmed the programmer PIN, the previous window will appear.

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7.2.1.2 Program User PINs

Shortcut: 0-*PROG,* ***2-****SECURITY,* ***1-****PINS*

Up to 15 additional user codes (or up to 99 additional users when the D7039 is installed) can be programmed for the unit to protect the system from unauthorized operation and allow a record to be kept of actions by individual system users.

The following window will appear:

```
PROGRAM PINS
1 - PROGRAMR PIN
2 - USER PINS
```

Then press [2] for user PINs. The following window will appear:

```
OTHER PINS
USER (01-15)
```

Enter the user for which you want to program a PIN and press [#]. Example: For User 5, press [5]. The following window will appear:

```
USER 5
ENTER PIN: _____
```

Enter the PIN and press [#]. After you have programmed the user PIN, the previous window will appear.

7.2.2 Authority

Shortcut: 0-*PROG,* ***2-****SECURITY,* ***2-****AUTHORITY*

This feature determines which system actions a user can perform. See Table 13.

PIN Authority Level	Allowed Operations
Maximum (1)	All panel operations, including programming.
Medium (2)	System test modes, fire drill, reset, disable, silence, view history.
Minimum (3)	Silence, view history.
None (0)	None.

Table 13: PIN Authority Levels

The following window will appear:

```
AUTHORITY
USER (01 - 15)
```

Enter the user for which you want to program authority and press [#]. The following window will appear and scroll through the following choices:

```
USER 1 ATHRY (  )
0- NONE
1- MAXIMUM
2- MEDIUM
3- MINIMUM
```

Press the number key that corresponds to your selection. The current setting is displayed in parentheses on the first line. After you have programmed the user authority, the previous window will appear.

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7.3 PROG SYSTEM

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

7.3.1 Program Timers

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

The following window will appear:

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

7.3.1.1 Smoke Reset

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

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

The display will scroll through the TIMERS options. Press [1] for Smoke Reset. The following window will appear:

SMOKE RESET (__) (1-16 SECS): __

Enter the value and press [#]. The current setting is displayed in parentheses on the first line. After you have programmed the smoke reset, the previous window will appear.

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7.3.1.2 AC Fail Delay

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

This feature sets the number of hours the control will wait after an AC failure before sending an AC Failure report. A setting of "DC" causes the system to send a report when 25% of the battery capacity has been used.

The display will scroll through the TIMERS options. Press [2] for AC FAIL DELAY. The following window will appear:

```
AC FAIL DELAY
1-  WAIT FOR DC
2-  ENTER TIME
```

The wait for DC function causes the AC fail report to be sent when the battery has been 25% depleted, based on the measured voltage of the battery. If you want to WAIT FOR DC (25 percent of capacity), press [1]. The current setting is displayed in parentheses on the first line, either "DC", or the number of hours selected. After you have programmed the AC Fail Delay, the previous screen will appear.

Or, If you want to ENTER TIME press [2]. The following window will appear:

```
AC FAIL DLY (___)
(01-24 HRS): ____
```

Enter the time and press [#]. The current setting is displayed in parentheses on the first line. After you have programmed the AC Fail Delay, the previous window will appear.

NOTE: When "Wait For DC" is the current selection, the Enter Time menu will display DC as the time in Hours.

7.3.1.3 Auto Silence

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

This feature will silence the sounding of an alarm condition on selected NACs after a certain amount of time. When you use Auto Silence, entering "0" will disable the feature and the only way to turn off an alarm will be to manually silence it. Entering between 5 and 99 minutes means that the alarm will sound for that much time before automatically silencing.

If the condition is not rectified after an alarm is silenced (automatically or manually), the alarm will sound again after 24 hours.

The system must eventually be reset after silencing to allow the alarmed zones to restore and detect new alarms.

The display will scroll through the TIMERS options. Press [3] for AUTO SILENCE. The following window will appear:

```
AUTO SILENCE (__)
(0, 5-99 min): ____
```

Enter desired length of time (or "0" to disable) and press [#]. The current setting is displayed in parentheses on the first line. After you have programmed the auto silence, the previous window will appear.

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7.3.1.4 Display Rate

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

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

The display will scroll through the TIMERS options. Press [5] for DISPLAY RATE. The following window will appear:

```
DSPLY RATE (__)
.25 X (1-16): ___
```

Enter desired value and press [#]. The current setting is displayed in parentheses on the first line. After you have programmed the display rate, the previous window will appear.

7.3.2 AC Line Synch

Shortcut: 0-*PROG,* ***3-****PROG SYSTEM,* ***3-****AC LINE SYNC*

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

The following window will appear:

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

Press the number key that corresponds to your selection and press [#]. The current setting is displayed in parentheses on the first line. After you have programmed AC Line Synch, the previous window will appear.

7.3.3 Option Bus

7.3.3.1 Update Bus

Shortcut: 0-*PROG,* ***3-****PROG SYSTEM,* ***4-****OPTION BUS*

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

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

These menu items are only allowed at the local keypad.

The following window will appear:

```
OPTION BUS (M/M)
1- UPDATE BUS
2- SETUP KEYPDS
```

Press [1] to program system to update bus. After you have programmed Update Bus, the following window will appear:

```
UPDATE COMPLETE
TOT BUS DEVS: X
```

Then the previous window will appear.

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7.3.3.2 Setup Keypad

Shortcut: 0-*PROG,* ***3-****PROG SYSTEM,* ***4-****OPTION BUS*

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

```
OPTION BUS
1- UPDATE BUS
2- SETUP KEYPDS
```

Press [2] to set up keypads. The following window will appear:

```
# OF KEYPADS (__)
(0-4): ____
```

Enter the desired value and press [#]. The current setting is displayed in parentheses on the first line. After you set up the keypads, the update bus operation proceeds (see above), then the previous window will display.

7.3.4 PIN REQUIRED

7.3.4.1 Local

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

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

The following window will appear:

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

Press [1] to require a PIN at the local keypad. The following window will appear:

```
LOCAL KEYPD PIN?
____:YES(1)NO(2)
```

Press the number key that corresponds to your selection. The current setting is displayed in front of the colon on the second line. After making your selection, the previous window will display.

7.3.4.2 Remote

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

The following window will appear:

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

Press [2] to select remote PIN. The following window will appear:

```
REMOTE KYPD PIN?
____: YES (1) NO (2)
```

Press the number key that corresponds to your selection and press [#]. The current setting is displayed in front of the colon on the second line. After you select the PIN requirement, the previous window will display.

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

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7.3.5 Remote Programming

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

Remote programming allows the panel to be called from a remote site by phone to reconfigure any of the programmable options. When remote programming is disabled, it is still possible to connect to the panel for diagnostics and to view the current program, except for PIN numbers which are suppressed while remote programming is disabled.

```
REMOTE PGM
0- DISABLE
1- ENABLE
```

Press [0] to select DISABLE or [1] to select ENABLE, and the previous window will display.

WARNING

After any programming change, and especially after remote program changes, a complete functional checkout of the operation of the control unit is required. Hazards to life and property may result if the system is not tested to detect possible improper programming.

7.4 PROG INPUTS

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

IMPORTANT

Version 2.0 of the firmware introduces the concept of "point functions." Point functions allow quick programming of similarly functioning points (for example, pull stations, smoke detectors) with common settings. See Section 6.1.1, "Point Function", for more information.

7.4.1 Point Number

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

```
POINT NUMBER
(1-4): __
```

Enter the point number you wish to program and press [#]. Once you have entered the point number, the display will scroll through the following PROG INPUT options:

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

Press the number key that corresponds to your selection.

Pressing [Drill] will bring you to the next point. For instance, if you are programming Point 2 and you press [Drill], you come to the setting for Point 3.

Pressing [History] will bring you to the previous point. For instance, if you are programming Point 2 and you press [History], you come to the setting for Point 1.

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7.4.1.1 Assigning Point Functions

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

This feature is for assigning each point to one point function. (A "point function" is a set of characteristics that you can assign to selected points. There are 16 point functions to choose from. Refer to Section 6.1, “Point Function”, for additional information.

See section 7.4.2 4 Loop Response for the limitations when assigning points to point functions that have been programmed with a response time other than Fast.

Enter the point number you wish to program and press [#]. The display will scroll through the PROG INPUT options.

Press [0] to select FUNCTION. The following window will appear:

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

Enter the function number you wish to assign to the point and press [#]. The current setting is displayed in parentheses on the first line. After you assign a point function, the previous window will display.

7.4.1.2 Alarm/Trouble Status

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

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

Enter the point number you wish to program and press [#]. The display will scroll through the PROG INPUT options.

Press [1] to select ALARM/TROUBLE. The following window will appear:

```
OPEN STATUS (__)
1- ALARM
2- TROUBLE
```

Press [1] to select ALARM on open loop and ALARM on shorted loop, or [2] to select TROUBLE on open loop and ALARM on shorted loop. The previous window will display. The current setting is displayed in parentheses on the first line.

7.4.1.3 Output Zones

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

Enter the point number you wish to program and press [#]. The display will scroll through the PROG INPUT options.

Press [2] to select OUTPUT ZONE. The following window will appear:

```
OUTPUT ZONE ZZZ
(00 - 50): ___
```

Press the number key that corresponds to your selection. **ZZZ** indicates the point being programmed with the current setting is displayed on the second line. After you set up the output zone, the previous window will display.

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7.4.1.4 Verification

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

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

Enter the point number you wish to verify and press [#]. The display will scroll through the PROG INPUT options.

Press [3] to select VERIFICATION. The following window will appear:

```
ALARM VERIF (ZZZ)
____:YES(1)NO(0)
```

ZZZ indicates the point being programmed with the current setting is displayed on the second line.

Press either [1] to verify or [0] to not verify. The previous window will display.

7.4.1.5 Latching

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

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

Enter the point number you wish to program and press [#]. The display will scroll through the PROG INPUT options.

Press [4] to select LATCHING. The following window will appear:

```
LATCHING? ZZZ
____:YES(1)NO(0)
```

ZZZ indicates the point being programmed with the current setting is displayed on the second line.

Press the number key that corresponds to your selection. The previous window will be displayed.

7.4.1.6 Point Description

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

For this feature, the numeric keys are used to enter alphanumeric information to identify each input (initiating circuit). The system allows one 16-character description per input.

Enter the point number you wish to program and press [#]. The display will scroll through the PROG INPUT options.

Press [5] to select DESCRIPTION. The following window will appear:

```
PNT DSCRPTN ZZZ:
________________
```

Enter the description using the numeric, **Silence** and **History** keys, then press [#] to save the description.

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7.4.2 Point Function

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

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

The following window will display:

```
POINT FUNC. (__)
(01 - 16): ___
```

Enter the function number you wish to program and press [#]. The following window will display:

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

Enter the function you wish to program.

7.4.2.1 Configure

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

- **Fire:** When activated, point displays “FIRE ALARM” on panel and keypads, activates selected output devices, and sends a fire alarm report (if programmed). Fire points are forced to a latching characteristic when first configured.
- **Waterflow:** When activated, point displays “WATERFLOW ALARM” on panel and keypads, activates selected output devices, and sends a waterflow alarm report (if programmed). Waterflow points are forced to a non-verify characteristic when first configured.
- **Supervisory:** When activated, point displays “SUPERVISORY ALARM” on panel and keypads, and sends a supervisory alarm report (if programmed). Supervisory points are forced to a non-verify characteristic when first configured.
- **Monitor:** When activated, point displays “MONITOR ALARM” on panel and keypads, activates selected output devices, and sends a fire alarm report (if programmed). If using the SIA format for communication to the central station, a “UA” alarm will be sent instead of an “FA” alarm.
- **Reset:** When activated, point initiates a panel-reset operation to clear alarms and reset smoke detectors. Only points 1-8 can be configured as reset points.
- **Silence:** When activated, point initiates a panel silence operation to turn off sounders if the panel is configured to allow silencing. Only points 1-8 can be configured as silence points.

Enter the point number you wish to program and press [#]. The display will scroll through the PROG FUNCTION options.

Press [0] to select CONFIGURE. The following window will appear:

```
ACTVTN TYPE (__)
1- FIRE
2- WATERFLOW
3- SUPERVISORY
4- MONITOR
5- RESET
6- SILENCE
```

Press the number key that corresponds to your selection. (The current setting is displayed in parentheses on the first line.) The previous window will appear.

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7.4.2.2 Local Only

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

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

Enter the point number you wish to program and press [#]. The display will scroll through the PROG FUNCTION options.

Press [1] to select LOCAL ONLY. The following window will appear:

```
LOCAL ONLY
____: YES (1)NO(0)
```

Press either [1] to enable or [0] to disable. The previous window will display.

7.4.2.3 Silenceable

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

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

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

Enter the point number you wish to program and press [#]. The display will scroll through the PROG FUNCTION options.

Press [2] to select SILENCEABLE. The following window will appear:

```
SILENCABLE? (FF)
____: YES (1)NO(0)
```

Press either [1] to enable or [0] to disable. The previous window will display.

FF indicates the function being programmed.

7.4.2.4 Loop Response

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

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

Enter the point number you wish to program and press [#]. The display will scroll through the PROG FUNCTION options.

Press [4] to select LOOP RESPONSE. The following window will appear:

```
RESPNS TIME (___)
1- FAST (.5 sec)
2- PRGRMMD
```

Press the number key that corresponds to your selection (the current setting is displayed in parentheses on the first line). The previous window will appear.

When a programmed response time is selected, the system will prompt you to enter a response time from 1-89 seconds which will be applied to ALL functions. All functions share a single programmable response time setting. If this time is set for multiple functions, the last time set will be used.

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When set for fast response operation, multiplex points typically have a response time (the maximum time an input must be held to guarantee an alarm) of approximately 1 second. Response time increases as points on the bus are left off-normal (in alarm or with a loop/detector trouble), to a maximum of 20 seconds in the extreme case of all points on the bus being in trouble and one point alarming. On a fully loaded system with only a few points in alarm or trouble, fast response time will remain at approximately 1 second. For programmed response, the response time tolerance is +/- 3 seconds when only a few points are off-normal, and increases by up to 20 seconds when all points are off-normal.

Onboard points have a response time tolerance of +/- 1 second for programmed response time, and +0.5/-0.25 seconds for fast response time. **A limit of 20 points may be assigned to point functions that have been programmed with a response time other than Fast. If more than 20 points are assigned to functions programmed with a response time other than Fast, an error message will be displayed: MAX PROGRAMD POINTS EXCEEDED. Note that switching a point function from Fast to Programmed may cause this, depending on how many points reference the point function.**

<DRILL> NEXT FCT: Pressing [Drill] will bring you to the next function. For instance, if you are programming Point Function 2 and you press [Drill]**,** you come to the setting for Point Function 3.

<HIST> PREV FCT: Pressing [History] will bring you to the previous function. For instance, if you are programming Point Function 2 and you press [History], you come to the setting for Point Function 1.

7.4.3 Point Copy

Shortcut: 0-*PROG,* ***4-****PROG INPUTS,* ***3-****POINT COPY*

Point copy allows you to copy the settings you have entered for one point to one or more other points.

The following window will appear:

```
COPY FROM
POINT: ____
```

Enter the point you wish to copy from and press [#].

```
COPY TO FIRST
POINT: ____
```

Enter the first point you wish to copy to and press [#].

```
COPY TO LAST
POINT:____
```

Enter the last point you wish to copy to and press [#]. The PROG INPUTS menu will display.

This feature does not copy the description. Point copy is only intended for use on input points. Do not copy from an output point (future use), or copy over a programmed output point (the copy operation will automatically stop, with an error message, if outputs are encountered. While copying to a large number of points, the remote keypads may briefly display “system fault”, as they are not updated during the copy operation.

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7.5 PROG OUTPUTS

```
PROG OUTPUTS
1- NACs
2- RELAYS
```

7.5.1 Programming NACs

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

The main panel includes two local NACs (NAC 1 and NAC 2). It may be expanded with a D7037 ENAC Module (available in future release) to add NAC 3 and NAC 4. The D7024 can also support up to two D7038 Remote NAC Power Supplies, which offers a total of eight remote NACs (4 NACs per RNAC).

The following window will appear:

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

Press the number key that corresponds to your selection.

7.5.1.1 Local NACs

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

The display will scroll through the NAC options. Press [1] for LOCAL.

The following window will display:

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

Press the number key that corresponds to your selection.

The display will scroll through the following selection:

```
PROG NAC
4- (reserved)
5- CONFIGRATION
6- ZONE ASSIGNS
```

Press the number key that corresponds to your selection.

If [2] is selected from the “PROG NACs” menu, the following selections will scroll:

```
NAC CONFIG ( )
1- STEADY
2- PULSING
3- TEMPORAL
4- WHEELOCK
```

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

- **Steady:** output turns on and stays on while the NAC is active.
- **Pulsing:** output turns on and off each second.
- **Temporal:** output turns on and off to implement the ANSI standard evacuation pattern (code 3).
- **Wheelock:** output is configured to support Wheelock devices with sync capability, including the ability to silence the horn of a combination horn/strobe. The Wheelock configuration is not supported by remote NACs implemented using a D7038 Remote NAC Power Supply.

After you have programmed the desired pattern configuration, the previous window will be displayed.

If 3 is selected from the “PROG NACs” menu, you will be prompted to enter four zones to activate this output .

```
OUTPUT ZONE A (XX)
(00-63):
```

Enter the desired zone to activate this output and press [#]. You will be prompted to enter up to four zones (A, B, C, D). Enter “00” (or leave it set at “00”) for any unused zones to prevent unintentional output activation. After all four zones have been programmed, the previous window will be displayed.

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Zone	Pre-Assigned Condition
52	General Fire Alarm (non-silenceable)
53	General Fire Alarm (silenceable)
54	Ground Start
57	Communication Trouble
58	General Supervisory Alarm (non-silenceable)
59	Alarm Verification
60	AC Failed
61	General Waterflow Alarm (silenceable)
62	General Trouble
63	General Alarm (non-silenceable)

"XX" indicates the current setting for each of the four output zone settings.

Table 14: Pre-Assigned Zone Quick Reference

7.5.1.2 Remote NACs

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

Use only with the D7038. The display will scroll through the NAC options. Press [2] for REMOTE 1 or **3** for REMOTE 2. One of the following windows will display:

```
REM EXP NAC #1)
1- NAC #1
2- NAC #2
3- NAC #3
4- NAC #4
```

or

```
REM EXP NAC #2)
1- NAC #1
2- NAC #2
3- NAC #3
4-  NAC #4
```

Press the number key that corresponds with the NAC you want to program. The display will scroll through the following selections:

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

The options for remote NACs are the same as for local NACs, except that the Wheelock configuration is not supported on remote NACs.

Configuration:

- **Steady:** Output programmed to turn on steady for a fire alarm.
- **Pulsing:** Output programmed to pulse for a fire alarm in the normal manner.
- **Temporal:** Output programmed to pulse for a fire alarm in Temporal 3.
- **Zone Assignment:** Each output can be assigned up to 4 zones. ZONE A, B, C, or D (00 = disabled) (1-63).

Press the number key that corresponds to your selection. After you have programmed the local NACs, the previous window will be displayed.

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7.5.2 Programming Relays

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

The main panel includes two onboard relays (Relay 1 and Relay 2). The D7024 can also support up to two D7035 Octal Relay Modules (Remote Relay 1 and Remote Relay 2), which offers a total of 16 remote relays (eight relays per module).

The following window will appear:

```
RELAY OUTPUTS
1- LOCAL
2- REMOTE 1
3- REMOTE 2
4- MULTIPLEX
```

Press the number key that corresponds to your selection.

NOTE: The option for multiplex relay programming will only be visible if the D7039 Multiplex Expander is installed, and is reserved for future use.

7.5.2.1 Local Relays

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

The display will scroll through the Relay options.

Press [1] for LOCAL. The following window will display:

```
ONBOARD RELAY
(1-2):
```

Enter the number corresponding with the relay to be programmed and press [#]. The display will then prompt you to enter four zones to activate this output:

```
OUTPUT ZONE A:___
(00 - 63):___
```

Enter the first zone (00-63) you want to map to drive this output and press [#]. A similar display for Zone B, C and D will appear to allow up to four zones to drive this output. When all four zones have been assigned, the previous window will be displayed.

Zone	Pre-Assigned Condition
52	General Fire Alarm (non-silenceable)
53	General Fire Alarm (silenceable)
54	Ground Start
57	Communication Trouble
58	General Supervisory Alarm (non-silenceable)
59	Alarm Verification
60	AC Failed
61	General Waterflow Alarm (silenceable)
62	General Trouble
63	General Alarm (non-silenceable)

Table 15: Pre-Assigned Zone Quick Reference

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

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7.5.2.2 Remote Relays

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

The display will scroll through the Relay options. Press [2] for REMOTE 1 or [3] for REMOTE 2. The following windows will display:

```
REMOTE RELAY @ x
(1 - 8):
```

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

Enter the relay you wish to assign and press [#]. The display will read:

```
OUTPUT ZONE A: __
(00-63):___
```

Enter the output number (00-63) you want to map to Zone A and press [#]. A similar display for Zone B will appear. When all four zones have been assigned, the previous window will be displayed.

Zone	Pre-Assigned Condition
52	General Fire Alarm (non-silenceable)
53	General Fire Alarm (silenceable)
54	Ground Start
57	Communication Trouble
58	General Supervisory Alarm (non-silenceable)
59	Alarm Verification
60	AC Failed
61	General Waterflow Alarm (silenceable)
62	General Trouble
63	General Alarm (non-silenceable)

Table 16: Pre-Assigned Zone Quick Reference

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

7.5.2.3 Multiplex Relays

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

Do not program addresses configured as inputs using this menu.

NOTE: This feature is reserved for future use. If it is accidentally accessed, press [Clear] to return to the programming menu.

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7.6 PROG ACCOUNTS

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

7.6.1 Phone Numbers

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

The system can be programmed with two reporting phone #'s. Phone #1 is used with Account Number 1; Phone #2 is used with Account Number 2. Remote programming occurs on Phone Line 1 using Phone #3.

- **PHONE #1:** Phone Number 1
- **PHONE #2:** Phone Number 2
- **COMPTR PHONE:** Sets the number to call for remote programming.

The following window will display:

```
PHONE NUMBER
1- PHONE #1
2- PHONE #2
3- COMPTR PHONE
```

Press the number key that corresponds with the phone number you wish to configure (example is Phone #1). The following window will appear:

```
PHONE NUMBER #1
1- NUMBER
2- FORMAT
3- ACCT NUMS
4- TONE
```

Press the number key that corresponds with your selection. See the next four sub-sections (**Number**, **Format**, **Account Numbers** and **Tone**) for explanations on the phone number options.

7.6.1.1 Number

The display will scroll through the Phone Number options. Press [1] for NUMBER. The following window will display:

```
PHN NMBR 1: ????
>???????????????
```

Press [Silence] to skip over the wait for dial tone character, enter the phone number and press [#]. The previous menu will display. Several special control characters can be included in the phone number by pressing [Test] followed by a digit:

Press	See	Action
[TEST] 1	*	Touch Tone "*"
[TEST] 2	#	Touch Tone "#"
[TEST] 3	/	3 second delay
[TEST] 4	>	Wait for dial tone

Table 17: Phone Number Control Characters

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There are several keys that assist when entering phone numbers:

Press	Action
[SILENCE]	Advance to next position
[DISABLE]	Go back one position
[RESET]	Clear position

Table 18: Phone Number Assistance Keys

NOTE: If “wait for dial tone” is not specified, the panel will wait seven seconds after going off-hook, and then dial whether or not the dial tone is present.

Except for unusual situations, all phone numbers should start with the “wait for dial tone” character. This ensures that reports are delivered as quickly as possible, even if an incoming phone call must be disconnected.

7.6.1.2 Format

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

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

The display will scroll through the Phone Number options. Press [2] for FORMAT. The following window will display:

```
PHONE FORMAT (__)
0-  DISABLE
1-  3/1 REPORT
2-  4/2 REPORT
3-  BSFK REPORT
4-  SIA, 110 RPRT
5-  CONTACT ID
6-  SIA, 300 RPRT
7-  MDM 3A2
```

Press the number key that corresponds to your selection. The previous window will be displayed.

7.6.1.3 Account Numbers

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

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

The display will scroll through the Phone Number options. Press [3] for ACCOUNT NUMS. The following window will display:

```
ACCOUNT #1:   0000
NEW NUMBER: 0000
```

The existing number is shown on the top line. Enter the new number on the second line and press [#]. The previous window will display. The hexadecimal digits A through F can be entered by pressing [Test] followed by [1] for A, [2] for B, [3] for C, [4] for D, [5] for E and [6] for F.

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7.6.1.4 Tone

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

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

The display will scroll through the Phone Number options (see Section 7.6.1 Phone Numbers). Press [4] for TONE. The following window will display:

```
FREQ (__)
1- 19D, 14A, 10PS
2- 18D, 23A, 10PS
3- 19D, 14A, 20PS
4- 18D, 23A, 20PS
5- 19D, 14A, 40PS
6- 18D, 23A, 40PS
```

Press the number key that corresponds to your selection. The previous window will be displayed.

7.6.2 Phone Control

Shortcut: 0-*PROG,* ***6-****PROG ACC'NTS,* ***2-****PHONE CONTROL*

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

```
PHONE CONTROL
1- LINE #1
2- LINE #2
```

Press the number key that corresponds with your selection. Line #1 was chosen for the example. Line #1 and Line #2 have the same options. The following window will display:

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

See **Monitor Line** and **Dialing Type** for explanations about the phone control options.

7.6.2.1 Monitor Line

Shortcut: 0-*PROG,* ***6-****PROG ACC'NTS,* ***2-****PHONE CONTROL*

The phone line monitor feature, which supervises the connection of the phone line to the panel, can be disabled for each phone line.

Choose Line 1 or Line 2. The display will scroll through the Phone Control options. Press [1] for MONITOR LINE. The following window will display:

```
MONITOR LINE #1
____: YES (1) NO (0)
```

Press [1] for YES or [2] for NO. The previous window will be displayed.

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7.6.2.2 Dialing Type

Shortcut: 0-*PROG,* ***6-****PROG ACC'NTS,* ***2-****PHONE CONTROL*

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

Choose Line 1 or Line 2. The display will scroll through the Phone Control options. Press [2] for DIALING TYPE. The following window will display:

```
PHONE CONTRO (__)
1- PULSE ONLY
2- TONE/PULSE
3- TONE ONLY
```

Press the number key that corresponds to your selection. The previous window will be displayed.

7.6.3 Report Steering

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

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

If any reports are steered to Phone Number 2 (including the default, "phone 2 backup"), a phone number and account number must be programmed for Phone Number 2. The panel will indicate a "comm fault" if it sends a report (using phone number 1 parameters) which references unprogrammed Phone Number 2 parameters.

The display will scroll through the following items:

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

Press the number key that corresponds to your selection. The following window will display (with varying headings, depending on your choice. In this example, non-supervisory alarm is selected):

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

- **PHONE 1 ONLY:** Report sent to phone #1 only.
- **PHONE 2 ONLY:** Report sent to phone #2 only.
- **PHONE 1 AND 2:** Report sent to Phone Numbers 1 and 2.
- **PHONE 2 BACKUP:** Report sent to phone #1, then to phone #2 if #1 fails.
- **NO REPORT:** No report sent.

Press the number key that corresponds with your selection. The previous window will be displayed.

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7.6.4 Ring Count

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

IMPORTANT

The number of phone rings before the panel will seize the line to attempt remote programming must be left set to "0" for UL 864 local, auxiliary or remote station installations.

The following window will display:

```
RING COUNT
(01-15, 00=DIS) ___
```

Enter the information and press "[#]". The previous window will be displayed. An entry of [0] + [0] will disable ring detection.

7.6.5 Communication Tries

Shortcut: 0-*PROG,* ***6-****PROG ACC'NTS,* ***5-****COMM. TRIES*

The system will always attempt ten times to communicate an event. The parameter determines after which attempt the system will indicate a failure condition. Do not select 1 as a failure will be indicated whenever a report is sent.

The following window will display:

```
COMM ATTMPTS (__)
(01-10): __
```

Enter the information and press [#]. The previous window will be displayed.

7.6.6 Machine Bypass

Shortcut: 0-*PROG,* ***6-****PROG ACC'NTS,* ***6-****MACH BYPASS*

The downloading computer can dial back to connect for downloading if an answering machine answered the phone before the control. When this option is selected, if the control detects the phone line ringing within one minute of when the last ringing cycle stopped, then it will answer on the first ring and seize the phone line.

The following window will display:

```
MACHINE BYPASS
____: YES (1) NO (0)
```

Enter the information and press [#]. The previous window will display.

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7.7 PROG FORMATS

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

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

- **History:** .....A
- **Test:** .....B
- **Disable:** C
- **Drill:** .....D
- **Silence:** .....E
- **Reset:** .....F

7.7.1 4/2 Zone Report

Shortcut: 0-*PROG,* ***7-****PROG FORMATS,* ***1-****4/2 POINT REPORTS*

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

The following window will display:

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

Press the number key that corresponds with your selection of event type (D1 stands for digit#1).

Pressing [9] will bring you to the second digit options (point numbers). The following window will display:

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

Pressing [9] will bring you to the second digit options (point numbers). The following window will display:

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

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Press the number key that corresponds to your selection. A window allowing entry of hex digits will display (the heading depends on the item you previously selected):

```
FIRE ALARM D1 ( )
0 THRU 9
<HISTORY>:      A
<TEST>:         B
<DISABLE>:      C
<DRILL>:        D
<SILENCE>:      E
<RESET>:        F
```

Enter the digit that should be reported for the selected condition by pressing a number key or one of the special keys if a hex character is needed. Press [#] and the previous display will be shown.

7.7.2 4/2 Report Codes

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

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

```
4/2 RPT CODS
0- SYSTM IN TST
1- SYS TEST RST
2- SILENCE
3- FIRE DRILL
4- FIRE DRL RST
5- OPEN RST RPT
6- LOW BATTERY
7- LOW BATT RST
8- AC FAILURE
9- MORE
```

Pressing [9] will allow additional reports to be programmed:

```
4/2 RPT CODS
0- AC FAIL RST
1- TEST REPORT
2- OFF NORM TEST
3- PHONE 1 TRBL
4- PN 1 TRB RST
5- PHONE 2 TRBL
6- PN 2 TRB RST
7- SYSTEM TROUB
8- SYS TRB RST
```

Pressing **9** returns you to the previous group of reporting codes.

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Press the number key that corresponds to your code selection. A window allowing entry of two hex digits will display (the heading depends on the item you previously selected):

```
SYSTM IN TST ( )
0 THRU 9
<HISTORY>:      A
<TEST>:         B
<DISABLE>:      C
<DRILL>:        D
<SILENCE>:      E
<RESET>:        F
```

Enter digits that should be reported for the selected condition by pressing a number key, or one of the special keys if a hex character is needed. Press [#] and the previous display will be shown.

7.7.3 BFSK Report Codes

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

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

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

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

7.7.4 SIA Silent Report

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

Refer to the Standard Table of ASCII Values. All data entered consists of hexadecimal values.

```
SIA SIL RPT
1- LEFT BYTE
2- RIGHT BYTE
```

Press [1] to select the left byte, enter the digits and press the [#] key.

```
LEFT BYTE (____)
0 THRU 9
<HISTORY>       A
<TEST>          B
<DISABLE>       C
<DRILL>         D
<SILENCE>       E
<RESET>         F
```

The right byte is entered in a similar fashion.

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7.8 HISTORY DEFAULTS

Shortcut: 0-*PROG,* ***8-****HSTRY DEFLTS*

The following window will display:

```
PROG DEFAULTS
1- CLEAR HSTRY
2- DEFAULT EE
3- ALT 4/2 CDES
4- (reserved)
```

7.8.1 Clear History

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

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

The following window will display:

```
HIST ITEMS=____
DEL OLDEST 000
```

Enter the number of history records you wish to delete, and press [#]. The previous menu will display.

7.8.2 Default EE

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

It is possible to set the panel back to the original factory-programming configuration with this option. You will be prompted to press [#] to complete the operation, or you can press “CLR” to not complete the default.

CAUTION

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

IMPORTANT

This option is only available from the local keypad.

The following window will display:

```
SETTING EEPROM
TO DEFAULT...
```

When the operation is complete, the previous menu will appear. This operation takes several minutes when the D7039 Multiplex Expander is installed.

7.8.3 Alternate 4/2 Codes

Shortcut: 0-*PROG,* ***8-****HSTRY DEFLTS,* ***3****- ALT 4/2 DEVICES*

It is possible to set all of the programming for 4/2 codes to an alternative set of default reports, as described in Appendix D. To cause a complete panel default, it is necessary to first use the default EE option, followed by this option if desired.

The following window will display:

```
SETTING EEPROM
TO DEFAULT...
```

When the operation is complete, the previous menu will appear.

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7.9 Program MUX

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

NOTE: This menu is accessible only when the D7039 Multiplex expander is installed.

CAUTION

Unprogrammed devices on the bus will not operate or be supervised.

CAUTION

Do not install more than one device programmed to the same address on the bus. Doing so may inhibit alarm reporting from both devices.

TROUBLESHOOTING TIP: Intermittent trouble reports from a particular MUX point address may indicate that more than one device has been programmed to that address.

The following window will display:

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

7.9.1 MUX Edit

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

NOTE: The MUX Program option is not used. Press [Clear] if this is accidentally selected.

To add MUX devices to the system, use the MUX Edit option. Each device must have a unique address programmed using the address switches.

The following window will display:

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

IMPORTANT

Device Types 2-6 are not supported at this time. The MUX Program option is not used. Press [Clear] if this is accidentally selected.

Only option 7, Octal Input, is supported at this time using model D7042. The other selections are for future use. Press **7** to select Octal Input Module, or press **0** if you are removing a device. Press the number that corresponds with the device you are adding, or press **0** if you are removing a device. When the device type has been selected, the following window will display:

```
POINT NUMBER
(009 - 255)  009
```

Enter the address of the point being added, and press [#]. The device type window will again display to allow additional devices to be added. Note that 8 points are added at once when the D7042 is edited into the panel.

7.9.2 MUX Program

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

NOTE: The MUX Program option is not used. Press [Clear] if this is accidentally selected.

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7.9.3 MUX Bus Type

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

This option configures the system for two independent Class B, Style 3.5 buses allowing addresses up to 255. Class A operation is not supported by the D7042 8 Input Module, so class A operation should not be selected.

The following window will display:

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

Press [2] to select Class B operation if the setting has been accidentally changed from the default setting. Refer to the installation guide for the D7042 for wiring details for a Class B configuration.

Refer to the *D7039 Multiplex Expansion Module's Installation Guide* (P/N: 38685) for more information regarding Class A and Class B wiring instructions.

See Figure 12 for mounting locations inside the D7024's enclosure for the D7039 and its I/O module.

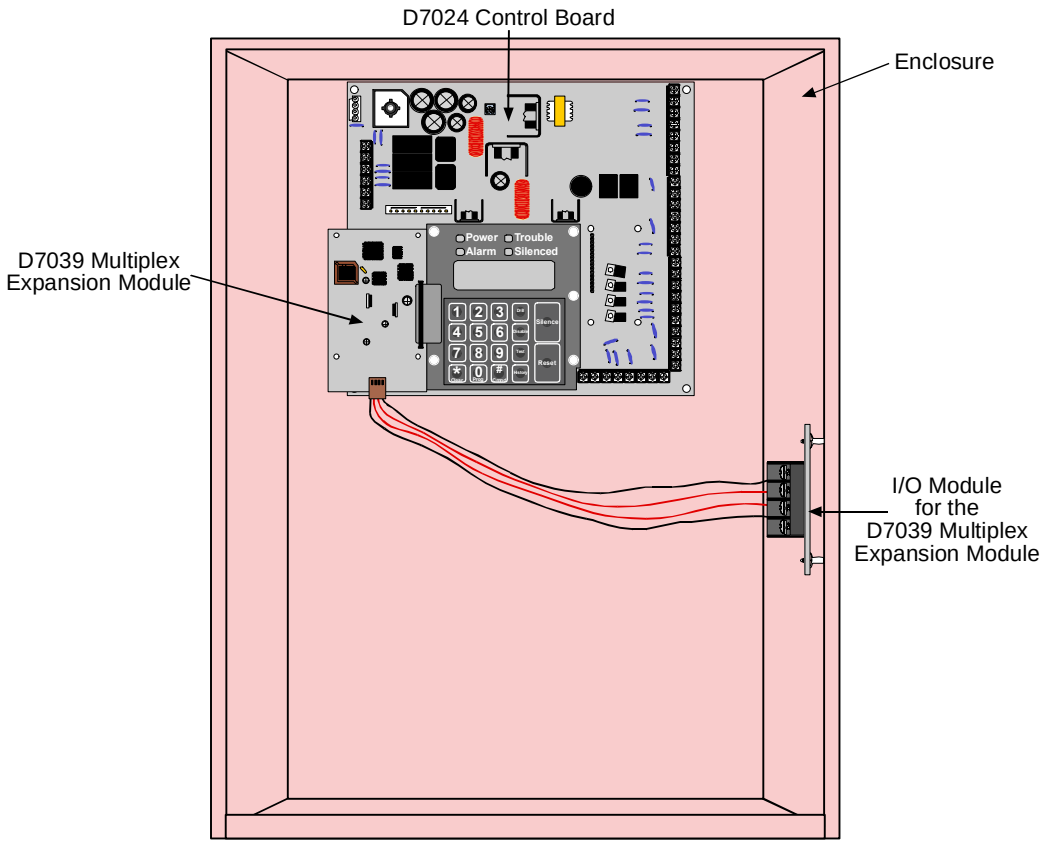

Figure 12: D7039 Mounting Location

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7.9.4 Removing MUX Devices

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

To remove a previously programmed multiplex device, use the MUX Edit feature.

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

From the Program MUX menu, press [1] to select MUX Edit.

The following window will display:

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

Press [0] for No Device. Then enter the address for the point you wish to delete.

After the device has been successfully deleted, you will be returned to the Device Type (MUX Edit) sub-menu. An unsuccessful deletion will result in an error message (see below) followed by the Device Type (MUX Edit) sub-menu.

```
ERROR –
DEVICE FAILED
```

CAUTION

If you remove one point of a dual point address (for example, a D7042 Eight Point Input Module), the second point (and subsequent points) at this address will also be removed. For example, if the first point of a D7042 is removed, the remaining seven points are also removed.

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Notes:

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8.0 Installation Guide for UL. Listed Systems

8.1 D7024 UL Listings

The D7024 is UL Listed for the following:

Commercial Fire Alarm (**Type Service:** Auxiliary, Local, Central Station, and Remote Station; **Type Initiating:** Automatic, Manual, Sprinkler Supervisory, and Waterflow), UL Standard UL864.

The control panel should be installed in accordance with NFPA 72 for Commercial Fire installations.

8.2 Installation Considerations

Failure to install and program the control in accordance with the requirements in this section voids the listing mark of Underwriters Laboratories, Inc.

The standby battery capacity is 40 Ah @ 24 VDC.

The total nominal current must not exceed 1140 mA in standby nor 4 A when in alarm.

The control must be mounted indoors and within the protected area.

Grounding must be in accordance with article 250 of the NEC (NFPA 70).

Points must be connected to UL Listed, compatible devices.

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

The ground start feature shall not be programmed.

Phone monitoring must be selected if the DACT (Digital Alarm Communicator Transmitter) feature is used.

8.3 Programming the D7024

The system must be tested after installation and after any re-programming, including programming performed by downloading.

When used in UL Listed installations, the control must conform to certain programming requirements. The following is a list of the required program entries and required accessories for specific UL Listed installations.

8.3.1 Commercial Fire Alarm (Central Station [DACT] and Local)

8.3.1.1 Required Accessories

At least one Radionics, Inc. Model D285 smoke detector with a D287, D288, D292, or D293 Series base; or another Listed compatible smoke detector.

At least one Radionics D432A horn/strobe or D443 bell (will provide 85 dB for UL985 and NFPA 72 requirements; other Listed compatible devices with a voltage range of 20 to 31 VDC may be used) is required for this application and must be installed inside the protected area.

Four-wire detectors must be used with Listed power supervision devices. A compatible Listed 4-wire detector is the Radionics, Inc. D285 in a D292 or D293 Series base. A compatible Listed EOL relay is the Radionics, Inc. D275.

All points must be used with the EOL resistor provided.

8.3.1.2 Report Programming

Non-supervisory and supervisory reports must be programmed for those points used.

Trouble reports must be programmed.

AC failure report delay must be set for 25% of estimated standby time, or set to report at 25% depletion of battery capacity.

Automatic test report frequency must be set at least every 24 hours.

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8.3.1.3 Timer Programming

Auto silence time must be programmed for not less than five minutes, or to “0” to disable auto-silence operation.

8.3.1.4 Point Programming

For fire points: open = trouble, latching.

8.3.1.5 Alarm Output Programming

Notification appliance circuits must be programmed to activate from the appropriate input points.

8.3.1.6 Communications Programming (if Used for Central Station Service)

A communication format compatible with the central station must be selected.

Monitoring of both phone lines must be enabled.

8.3.2 UL Listed Accessory Devices

8.3.2.1 D132B Multi-use Reversing Relay Module

The D132B is a multi-purpose, fully configurable, smoke power-reversing module for activating detectors with local annunciation. The D132B will operate both two-wire and four-wire circuits, and it will also work with Class A or Class B initiating circuits. An alarm latch connection is provided to allow an initiating loop to be held in alarm after the detector loop power has been reversed to activate any sounders. The D132B does not affect compatibility between the FACP and detectors, or the FACP and Notification Appliance Circuits (NACs). Refer to the *D132B Installation Guide* (P/N: 40895) for detailed installation instructions for the D132B module. One of the installation options shown in the D132B Installation Guide is also shown below for reference:

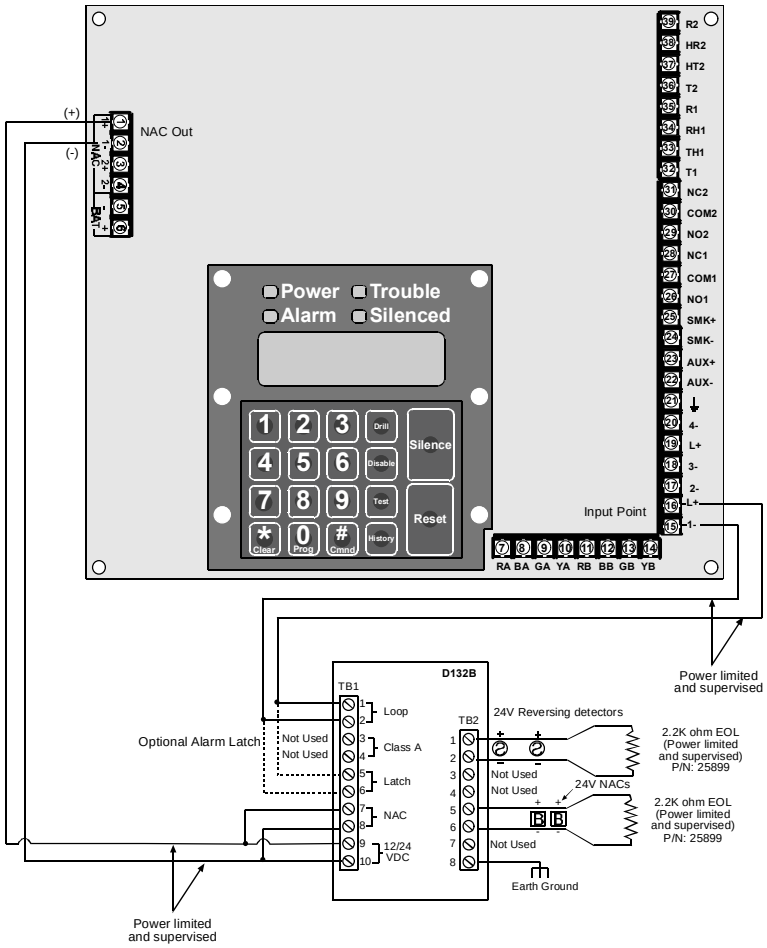

Figure 13: Wiring the D132B

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8.3.2.2 D184A Local Energy Kit

The D184A is a UL Listed module that connects local energy signaling devices to the D7024 for auxiliary service operation. Refer to the *D184A Installation Guide* (P/N: 41175) for more information.

8.3.2.3 D185 Reverse Polarity Module

The D185 Reverse Polarity Module is a UL Listed module that connects the control panel with either a single set or a pair of leased Telephone Company (Telco) lines in NFPA 72 remote station applications. It relays system alarm status information from the panel to a monitoring station. The D185 operates with either 12 or 24 VDC supply.

The module can signal alarm, trouble, and supervisory conditions (refer to *D185 Installation Manual* (32906) for details). The diagram below shows the module being used to signal alarm and trouble conditions only. With a third relay (available from the 8-relay expansion module) and an additional leased line, supervisory conditions can also be signaled.

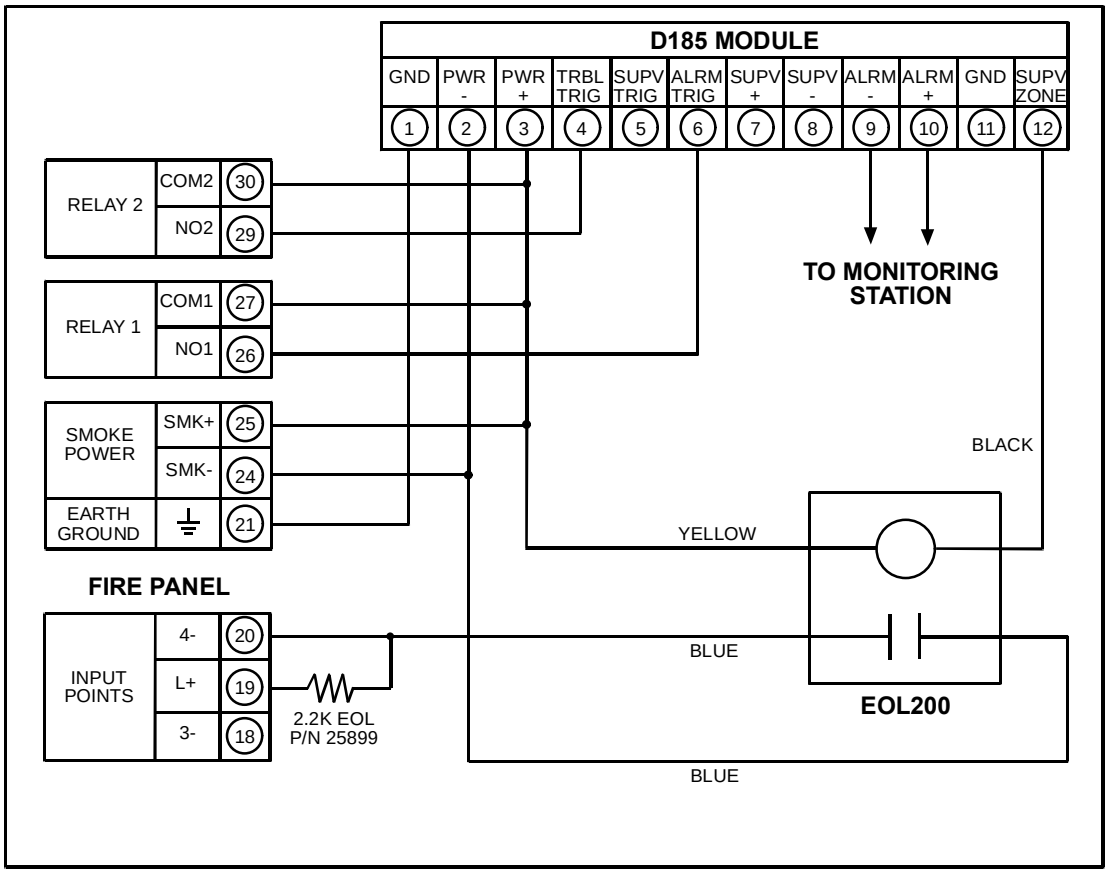

Figure 14: Wiring the D185

- In this example, Relay 1 must be programmed to operate on Alarm (Zone 63) and Relay 2 must be programmed to operate on Trouble (Zone 62). Input 4 should be programmed as a MONITOR point. Any alarm will cause the voltage to the monitoring station to be interrupted. Placing the D185 in test mode will cause a MONITOR TROUBLE 4.

Notes:

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9.0 Fire Safety

WARNING

No fire detection device or system should be considered 100% foolproof.

This fire alarm system can provide early warning of a developing fire. Such a system, however, does not ensure protection against property damage or loss of life resulting from a fire. Any fire alarm system may fail to warn for any number of reasons (e.g. smoke not reaching a detector that is behind a closed door).

IMPORTANT

This system must be regularly tested (when installed, when modified and at least annually thereafter) to ensure continued performance.

When considering detectors for residential applications, refer to NFPA Standard 72, “The National Fire Alarm Code.” This standard is available at a nominal cost from: The National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

9.1 Smoke Detector Layout

9.1.1 General Considerations

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

Smoke detectors should **not** be installed in “dead air” spaces or close to ventilating or air conditioning outlets because smoke may be circulated away from the detector. Locations near air inlets should be favored.

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

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

Areas of high humidity and dust concentrations should be avoided.

The edge of ceiling mounted detectors should be no closer than 4 inches (10 cm) from any wall.

Place the top edge of wall mounted detectors between 4 and 12 inches (10 and 30 cm) from the ceiling.

For exact mounting information, refer to the instructions provided with the smoke detectors.

9.1.2 If Installed in Family Residences

Providing a Fire Warning System: Most fire deaths occur in the home, especially during sleeping hours. The minimum level of protection requires smoke detectors to be installed outside of each separate sleeping area and on each additional story of the dwelling.

IMPORTANT

For added early warning protection, it is recommended that detectors be installed in all separated areas including the basement, bedrooms, dining room, utility room, furnace room, and hallways.

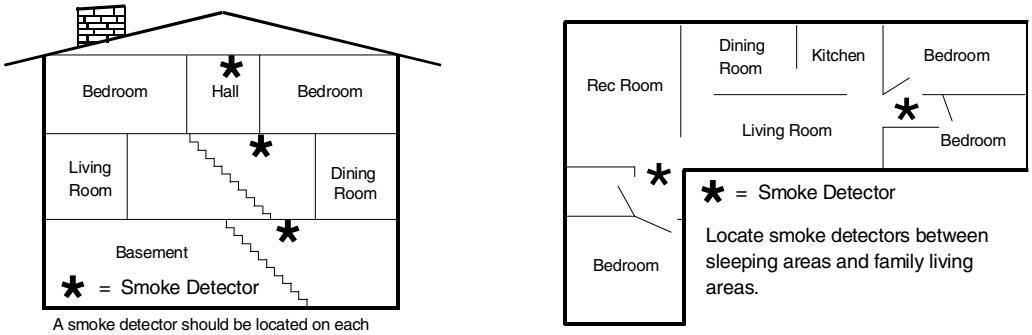

Figure 15: Smoke Detector Location in Residential Settings

9.2 Having and Practicing an Escape Plan

A fire warning may be wasted unless the personnel have planned in advance for a rapid and safe exit from the building.

Draw a floor plan of the entire building showing **two** exits from each sleeping area and **two** from the building. Since stairwells and hallways may be blocked during a fire, the plan should provide exits from sleeping area windows. Make copies of the plan and practice it with all personnel.

Pre-arrange a meeting place **outside and away from** the building. Once out of the building, all occupants should immediately go to the pre-selected location and be accounted for.

Provide a barricade between personnel and fire, smoke, and toxic gases (e.g. close all sleeping area doors before retiring).

Children should be instructed on opening their bedroom windows and exiting safely from the building. If exiting is not possible, they should be taught to stay at the open window and shout for help until it arrives.

In the event of a fire alarm after retiring, wake the children by shouting to them from behind your closed door. Tell them to keep their bedroom doors closed.

If the top of your bedroom door is uncomfortably hot, do not open it. There is most likely fire, intolerable heat, or smoke on the other side. Shout to all family members to keep their bedroom doors closed and to exit the building via alternate routes.

If the top of the door is not uncomfortably hot, brace the bottom of the door with your foot, and the top with one hand, then open the door about one inch. Be prepared to slam the door shut if there is any pressure against the door or if any hot air rushes in.

If there is no evidence of excessive heat or pressure, **leave the room and close the door behind you**. Shout appropriate instructions to all family members and immediately leave the building via the pre-planned routes. If heavy smoke is present, drop to your hands and knees, or crawl to remain below the smoke level.

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Appendix A: Abbreviations on Panel Display

Abbreviation	Definition	Abbreviation	Definition
3/1	3/1 Tone Burst (reporting format)	**KPAD, KYPAD, KYPD**	Keypad
4/2	4/2 Tone Burst (reporting format)	**LRelay**	Local Relay
@	Option Bus Address (1 - 16)	**LOC**	Local
ACTVTN	Activation	**MACH**	Answering Machine
A, ALRM	Alarm	**M, MONI, MON**	Monitor
ALT	Alternate	**NAC**	Notification Appliance Circuit
ANN, ANUN	Annunciator	**NMBR, NUM**	Number
BAT, BATT, BATTRY	Battery	**NONSUP**	Non-Supervisory
BX	Box (e.g. city box)	**NORM, NRM**	Normal
CATE	Catastrophe	**OUT**	Output
CDES, CODS, CDS	Codes	**OVRC**	Overcurrent
CMPTR	Computer	**PAS**	Positive Alarm Sequence
COMM	Communicator	**PHN, PHON**	Phone
CONFIG	Configure	**PROG, PRGMNG**	Programming
DESCRIPTION	Description	**PRGMMD**	Programmed
DIG	Digit	**PT, PNT**	Point
DLY	Delay	**PWR**	Power
DRL, DRIL	Drill	**REM, REMOT**	Remote
D, DSBL, DISABL	Disable	**RESPNS**	Response
DSPLY	Display	**RLY**	Relay
EE	EEPROM	**RPRT, RPT**	Report
ERelay	Expander Relay	**RST**	Restore
EXP	Expander	**SIL**	Silence
FAIL	Failure	**SMK**	Smoke
F, FIR, FR	Fire	**S, SUPERVISORY, SUPRVSRY, SUPV, SPV, SUPVSY**	Supervisory
FLT	Fault	**SHRT**	Short
FRQNCY, FREQ, FREQUENCY	Frequency	**SYS, SYSTM**	System
FUNC	Function	**T, TRBL, TRB, TROUB**	Trouble
GRND	Ground	**TST**	Test
HI	High	**VER**	Version
HSTRY	History	**W, WFLW, WTF**	Waterflow
INIT	Initialize	**ZN, ZON**	Zone

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Appendix B: Panel Display Descriptions

D7024 Panel Display Message	Panel Display Message Definition
FIRE DIRTY PT XX	A smoke detector with the Chamber Check® feature is indicating a dirty chamber.
FIRE DSBL PT	Fire point is disabled from the keypad.
FIRE TRBL PT XXX	Trouble condition for specific points on the system. Check panel wiring and field wiring for shorts or opens. Also check point programming to ensure the panel knows what points should be on the system.
FIRE TROUBLE	General fire zone trouble message. See second line of display for more information.
INST FLT 4Z EXP	There is a missing D7034 Four Zone Expander Board, or the expander has appeared unexpectedly since the last time the system was powered up..
INST FLT EX NAC	There is a missing D7037 ENAC Module, or the expander has appeared unexpectedly since the last time the system was powered up..
INST FLT MX EXP	There is a missing D7039 MUX Expander Module, or the expander has appeared unexpectedly since the last time the system was powered up..
MONI DSBL PT	Monitor point is disabled from the keypad.
MONI TRBL PT XXX	Trouble with a monitor point has occurred.
MUX BUS A FAILURE MUX BUS B FAILURE	A wiring problem on Bus A or Bus B in Class B mode has occurred. Check the wiring for shorts or opens.
MUX CPU FAILURE	A CPU failure on the D7039 Expander Board has occurred. Make sure the D7039 is correctly installed on the header pins. If the message persists, call for service immediately.
SUPV DSBL PT	Supervisory point is disabled from the keypad.
SUPV TRBL PT XXX	Trouble with a supervisory point has occurred.
SYSTEM TROUBLE	General trouble message. See second line of display for more information.
TRBL OPEN ENAC	A D7037 Expansion NAC circuit is open. Check the field wiring and the EOL resistor.
TRBL OPEN LNAC	A D7037 Local NAC circuit is open. Check the field wiring and the EOL resistor.
TRBL OPEN RNAC	A D7038 Remote NAC circuit is open. Check the field wiring and the EOL resistor.
TRBL OPT BUS@XX	A wiring fault on option bus terminals 7 to 14, as well as specific address problems with option bus devices, has occurred. Check the wiring for the specific device address shown.
TRBL OVRC LNAC TRBL OVRC ENAC TRBL OVRC RNAC	An overcurrent condition on one of the NAC circuits has occurred. Check the field wiring on the notification appliances for shorts.
TRBL SHRT ENAC	A short on the D7037 Expansion NAC circuit has occurred.
TRBL SHRT LNAC	A short on the D7037 Local NAC circuit has occurred.
TRBL SHRT RNAC	A short on the D7038 Remote NAC circuit has occurred.
TROUBLE AC FAIL	AC power failure to the panel. Check the circuit breaker or fuse for AC power problem.
TROUBLE ANN	Trouble with one or more annunciators connected to the panel.
TROUBLE COMM FLT	A communicator problem has occurred. Check the panel's phone lines and programming for the communicator problem.
TROUBLE EEPROM	An EEPROM failure has occurred. Call for service immediately.
TROUBLE EXP	A D7034 Four Zone Expander board problem has occurred. Make sure the D7034 is properly connected to the D7024 PCB.
TROUBLE GRND FLT	A ground fault problem has occurred. Make sure that no panel wiring is shorted to the earth ground.
TROUBLE KPAD@XX	A specific keypad address failure has occurred. Check the keypad's wiring and address settings.
TROUBLE LOW BATT	The panel's backup batteries are not charging, or they are missing.
TROUBLE MUX CLASS A	A failure on the MUX wiring in Class A mode has occurred. Check the wiring for shorts or opens.
TROUBLE PHONE	A problem with the panel's phone lines has occurred. Check the phone wiring and line monitor programming.
TROUBLE RELAY@XX	One of the panel's auxiliary relays may be shorted.
TROUBLE SMK PWR	A short on the smoke power terminals 24 and 25 has occurred.
WFLOW DSBL PT	Waterflow point is disabled from the keypad.
WFLW TRBL PT XXX	Trouble with a waterflow or sprinkler point has occurred.

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Appendix C: Reporting Summary for Fire Communicator

Report	Index	Default Values 4/2 digit 1	Default Values 4/2 digit 2	Alternate Default 4/2 digit 1	Alternate Default 4/2 digit 2	3/1	BFSK	SIA	Contact ID	Modem IIIa^{2} ™
POINT FIRE ALARM	0	0	p	0	p	0	z0	FAz	1 110 00 zzz	see next table
POINT WATERFLOW ALARM	1	0	p	0	p	0	z0	SAz	1 113 00 zzz	see next table
POINT SUPERVISORY ALARM	2	0	p	0	p	0	z0	SSz	1 200 00 zzz	see next table
POINT MONITOR ALARM	3	0	p	0	p	0	z0	UAz	1 140 00 zzz	see next table
POINT FIRE TROUBLE	4	6	p	6	p	6	Fz	FTz	1 373 00 zzz	see next table
POINT WATERFLOW TROUBLE	5	(see #4)	p	(see #4)	p	(see #4)	Fz	STz	1 373 00 zzz	see next table
POINT SUPERVISORY TROUBLE	6	(see #4)	p	(see #4)	p	(see #4)	Fz	STz	1 373 00 zzz	see next table
POINT MONITOR TROUBLE	7	(see #4)	p	(see #4)	p	(see #4)	Fz	UTz	1 373 00 zzz	see next table
POINT FIRE DIRTY	8	(see #4)	p	(see #4)	p	(see #4)	Fz	*FSz	1 385 00 zzz	see next table
POINT WATERFLOW DIRTY	9	(see #4)	p	(see #4)	p	(see #4)	Fz	*FSz	1 385 00 zzz	see next table
POINT SUPERVISORY DIRTY	10	(see #4)	p	(see #4)	p	(see #4)	Fz	*FSz	1 385 00 zzz	see next table
POINT MONITOR DIRTY	11	(see #4)	p	(see #4)	p	(see #4)	Fz	*UTz	1 373 00 zzz	see next table
POINT FIRE DISABLE	12	B	p	5	p	B	Fz	FBz	1 571 00 zzz	see next table
POINT WATERFLOW DISABLE	13	(see #12)	p	(see #12)	p	(see #12)	Fz	FBz	1 571 00 zzz	see next table
POINT SUPERVISORY DISABLE	14	(see #12)	p	(see #12)	p	(see #12)	Fz	FBz	1 571 00 zzz	see next table
POINT MONITOR DISABLE	15	(see #12)	p	(see #12)	p	(see #12)	Fz	FBz	1 571 00 zzz	see next table
POINT FIRE ALARM RESTORE	16	3	p	2	p	3	Ez	FRz	3 110 00 zzz	see next table
POINT WATERFLOW RESTORE	17	(see #16)	p	(see #16)	p	(see #16)	Ez	SHz	3 113 00 zzz	see next table
POINT SUPERVISORY RESTORE	18	(see #16)	p	(see #16)	p	(see #16)	Ez	SRz	3 200 00 zzz	see next table
POINT MONITOR RESTORE	19	(see #16)	p	(see #16)	p	(see #16)	Ez	URz	3 140 00 zzz	see next table
POINT FIRE TROUBLE RESTORE	20	3	p	7	p	3	Ez	FJz	3 373 00 zzz	see next table
POINT WATERFLOW TROUBLE RESTORE	21	(see #20)	p	(see #20)	p	(see #20)	Ez	SJz	3 373 00 zzz	see next table
POINT SUPERVISORY TROUBLE RESTORE	22	(see #20)	p	(see #20)	p	(see #20)	Ez	SJz	3 373 00 zzz	see next table
POINT MONITOR TROUBLE RESTORE	23	(see #20)	p	(see #20)	p	(see #20)	Ez	UJz	3 373 00 zzz	see next table
POINT FIRE DIRTY RESTORE	24	(see #20)	p	(see #20)	p	(see #20)	Ez	FJz	3 385 00 zzz	see next table
POINT WATERFLOW DIRTY RESTORE	25	(see #20)	p	(see #20)	p	(see #20)	Ez	FJz	3 385 00 zzz	see next table
POINT SUPERVISORY DIRTY RESTORE	26	(see #20)	p	(see #20)	p	(see #20)	Ez	FJz	3 385 00 zzz	see next table
POINT MONITOR DIRTY RESTORE	27	(see #20)	p	(see #20)	p	(see #20)	Ez	UJz	3 373 00 zzz	see next table
POINT FIRE DISABLE RESTORE	28	3	p	2	p	A	Ez	FHz	3 571 00 zzz	see next table
POINT WATERFLOW DISABLE RESTORE	29	(see #28)	p	(see #28)	p	(see #28)	Ez	FHz	3 571 00 zzz	see next table
POINT SUPERVISORY DISABLE RESTORE	30	(see #28)	p	(see #28)	p	(see #28)	Ez	FHz	3 571 00 zzz	see next table
POINT MONITOR DISABLE RESTORE	31	(see #28)	p	(see #28)	p	(see #28)	Ez	FHz	3 571 00 zzz	see next table
SYSTEM IN TEST	40	F	1	3	3	F	FD	TS0	1 607 00 000	see next table
SYSTEM IN TEST RESTORE	41	E	1	3	7	E	ED	TE0	3 607 00 000	see next table
SILENCE	42	9	F	9	F	9	FD	KBuu	1 400 00 uuu	see next table
FIRE DRILL	43	F	2	3	3	F	FD	Fl0	1 607 00 000	see next table
FIRE DRILL RESTORE	44	E	2	3	7	E	ED	FK0	3 607 00 000	see next table
OPEN RESET	45	9	F	9	F	9	FD	ORuu	1 401 00 uuu	see next table
LOW BATTERY	46	F	9	6	9	F	F9	YT0	1 302 00 000	see next table

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Appendix C

Report	Index	Default Values		Alternate Default		3/1	BFSK	SIA	Contact ID	Modem IIIa$^{2\,TM}$
		4/2 digit 1	4/2 digit 2	4/2 digit 1	4/2 digit 2					
LOW BATTERY RESTORE	47	E	9	7	9	E	E9	YR0	3 302 00 000	see next table
AC FAIL	48	F	A	6	0	F	FA	AT0	1 301 00 000	see next table
AC FAIL RESTORE	49	E	A	7	0	E	EA	AR0	3 301 00 000	see next table
AUTO TEST	50	E	E	3	0	E	EE	RP0	1 602 00 000	see next table
OFF NORMAL AT TEST	51	F	D	3	3	F	FD	YX0	6 300 00 000	see next table
PHONE 1 TROUBLE	52	F	B	3	1	F	FB	LT1	1 351 00 000	see next table
PHONE 1 RESTORE	53	E	B	3	5	E	EB	LR1	3 351 00 000	see next table
PHONE 2 TROUBLE	54	F	C	3	2	F	FC	LT2	1 352 00 000	see next table
PHONE 2 RESTORE	55	E	C	3	6	E	EC	LR2	3 352 00 000	see next table
SYSTEM TROUBLE	56	F	D	3	3	F	FD	ET	1 300 00 ccc	see next table
SYSTEM TROUBLE RESTORE	57	E	D	3	7	E	ED	ER	3 300 00 ccc	see next table
MANUAL TEST	58	(see #50)	(see #50)	(see #50)	(see #50)	(see #50)	EE	RX0	1 601 00 000	see next table
DATA LOST	59	(see #56)	(see #56)	(see #56)	(see #56)	(see #56)	FD	RT0	1 354 00 000	see next table
EEPROM FAILURE	60	(see #56)	(see #56)	(see #56)	(see #56)	(see #56)	FD	UT18	1 307 00 018	see next table
EEPROM RESTORAL	61	(see #57)	(see #57)	(see #57)	(see #57)	(see #57)	ED	UJ18	3 307 00 018	see next table
SMOKE POWER FAULT	62	(see #56)	(see #56)	(see #56)	(see #56)	(see #56)	FD	YP0	1 320 00 000	see next table
SMOKE POWER RESTORE	63	(see #57)	(see #57)	(see #57)	(see #57)	(see #57)	ED	YQ0	3 320 00 000	see next table
REMOTE PROGRAMMING FAIL	66	F**	D**	F**	D**	F**	FD	RU0	1 413 00 000	see next table
REMOTE PROGRAMMING SUCCESS	67	E**	D**	E**	D**	E**	ED	RS0	1 412 00 000	see next table

Notes: c: system trouble condition code; **p:** programmable digit for each zone; **u:** user ID digit; **z:** zone digit; * default values shown for programmable items; * shaded items are not programmable; **** these codes are not programmable**

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When the Modem IIIa^2 ™ reporting format is used with a Radionics receiver, the receiver output will be as shown here:

Report	Index	Receiver Output
POINT FIRE ALARM	0	dd/dd tt:tt ql ACCT aaaa FIRE ALARM +++ ACCT aaaa AREA=1 POINT=zzz
POINT WATERFLOW ALARM	1	dd/dd tt:tt ql ACCT aaaa FIRE ALARM +++ ACCT aaaa AREA=1 POINT=zzz
POINT SUPERVISORY ALARM	2	dd/dd tt:tt ql ACCT aaaa FIRE SUPRVISION +++ ACCT aaaa AREA=1 POINT=zzz
POINT MONITOR ALARM	3	dd/dd tt:tt ql ACCT aaaa FIRE ALARM +++ ACCT aaaa AREA=1 POINT=zzz
POINT FIRE TROUBLE	4	dd/dd tt:tt ql ACCT aaaa FIRE TROUBLE +++ ACCT aaaa AREA=1 POINT=zzz
POINT WATERFLOW TROUBLE	5	dd/dd tt:tt ql ACCT aaaa FIRE TROUBLE +++ ACCT aaaa AREA=1 POINT=zzz
POINT SUPERVISORY TROUBLE	6	dd/dd tt:tt ql ACCT aaaa FIRE TROUBLE +++ ACCT aaaa AREA=1 POINT=zzz
POINT MONITOR TROUBLE	7	dd/dd tt:tt ql ACCT aaaa FIRE TROUBLE +++ ACCT aaaa AREA=0 POINT=zzz
POINT FIRE DIRTY	8	dd/dd tt:tt ql ACCT aaaa ANALOG SERVICE +++ ACCT aaaa AREA=0 POINT=zzz
POINT WATERFLOW DIRTY	9	dd/dd tt:tt ql ACCT aaaa ANALOG SERVICE +++ ACCT aaaa AREA=1 POINT=zzz
POINT SUPERVISORY DIRTY	10	dd/dd tt:tt ql ACCT aaaa ANALOG SERVICE +++ ACCT aaaa AREA=1 POINT=zzz
POINT MONITOR DIRTY	11	dd/dd tt:tt ql ACCT aaaa FIRE TROUBLE +++ ACCT aaaa AREA=1 POINT=zzz
POINT FIRE DISABLE	12	dd/dd tt:tt ql ACCT aaaa COMMAND BYPASS +++ ACCT aaaa AREA=1 ID=uuu POINT=zzz
POINT WATERFLOW DISABLE	13	dd/dd tt:tt ql ACCT aaaa COMMAND BYPASS +++ ACCT aaaa AREA=1 ID=uuu POINT=zzz
POINT SUPERVISORY DISABLE	14	dd/dd tt:tt ql ACCT aaaa COMMAND BYPASS +++ ACCT aaaa AREA=1 ID=uuu POINT=zzz
POINT MONITOR DISABLE	15	dd/dd tt:tt ql ACCT aaaa COMMAND BYPASS +++ ACCT aaaa AREA=1 ID=uuu POINT=zzz
POINT FIRE ALARM RESTORE	16	dd/dd tt:tt ql ACCT aaaa FIRE ALM RESTOR +++ ACCT aaaa AREA=1 POINT=zzz
POINT WATERFLOW RESTORE	17	dd/dd tt:tt ql ACCT aaaa FIRE ALM RESTOR +++ ACCT aaaa AREA=1 POINT=zzz
POINT SUPERVISORY RESTORE	18	dd/dd tt:tt ql ACCT aaaa FIRE ALM RESTOR +++ ACCT aaaa AREA=1 POINT=zzz
POINT MONITOR RESTORE	19	dd/dd tt:tt ql ACCT aaaa FIRE ALM RESTOR

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Report	Index	Receiver Output
		+++ ACCT aaaa AREA=1 POINT=zzz
POINT FIRE TROUBLE RESTORE	20	dd/dd tt:tt ql ACCT aaaa FIRE TBL RESTOR +++ ACCT aaaa AREA=1 POINT=zzz
POINT WATERFLOW TROUBLE RESTORE	21	dd/dd tt:tt ql ACCT aaaa FIRE TBL RESTOR +++ ACCT aaaa AREA=1 POINT=zzz
POINT SUPERVISORY TROUBLE RESTORE	22	dd/dd tt:tt ql ACCT aaaa FIRE TBL RESTOR +++ ACCT aaaa AREA=1 POINT=zzz
POINT MONITOR TROUBLE RESTORE	23	dd/dd tt:tt ql ACCT aaaa FIRE TBL RESTOR +++ ACCT aaaa AREA=1 POINT=zzz
POINT FIRE DIRTY RESTORE	24	dd/dd tt:tt ql ACCT aaaa ANALOG RESTORE +++ ACCT aaaa AREA=1 POINT=zzz
POINT WATERFLOW DIRTY RESTORE	25	dd/dd tt:tt ql ACCT aaaa ANALOG RESTORE +++ ACCT aaaa AREA=1 POINT=zzz
POINT SUPERVISORY DIRTY RESTORE	26	dd/dd tt:tt ql ACCT aaaa ANALOG RESTORE +++ ACCT aaaa AREA=1 POINT=zzz
POINT MONITOR DIRTY RESTORE	27	dd/dd tt:tt ql ACCT aaaa FIRE TBL RESTOR +++ ACCT aaaa AREA=1 POINT=zzz
POINT FIRE DISABLE RESTORE	28	dd/dd tt:tt ql ACCT aaaa FIRE TBL RESTOR +++ ACCT aaaa AREA=1 POINT=zzz
POINT WATERFLOW DISABLE RESTORE	29	dd/dd tt:tt ql ACCT aaaa FIRE TBL RESTOR +++ ACCT aaaa AREA=1 POINT=zzz
POINT SUPERVISORY DISABLE RESTORE	30	dd/dd tt:tt ql ACCT aaaa FIRE TBL RESTOR +++ ACCT aaaa AREA=1 POINT=zzz
POINT MONITOR DISABLE RESTORE	31	dd/dd tt:tt ql ACCT aaaa FIRE TBL RESTOR +++ ACCT aaaa AREA=1 POINT=zzz
SYSTEM IN TEST	40	dd/dd tt:tt ql ACCT aaaa WALK TEST START +++ ACCT aaaa AREA=1 ID=uuu
SYSTEM IN TEST RESTORE	41	dd/dd tt:tt ql ACCT aaaa WALK TEST END +++ ACCT aaaa AREA=1 ID=uuu
SILENCE	42	dd/dd tt:tt ql ACCT aaaa SENSOR RESET +++ ACCT aaaa AREA=0 ID=uuu RELAY#=0
FIRE DRILL	43	dd/dd tt:tt ql ACCT aaaa FIRE WALK START +++ ACCT aaaa AREA=1 ID=uuu
FIRE DRILL RESTORE	44	dd/dd tt:tt ql ACCT aaaa FIRE WALK END +++ ACCT aaaa AREA=1 ID=uuu
OPEN RESET	45	dd/dd tt:tt ql ACCT aaaa SENSOR RESET +++ ACCT aaaa AREA=1 ID=uuu RELAY#=0
LOW BATTERY	46	dd/dd tt:tt ql ACCT aaaa BATTERY LOW
LOW BATTERY RESTORE	47	dd/dd tt:tt ql ACCT aaaa BATTERY RESTORE

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Report	Index	Receiver Output
AC FAIL	48	dd/dd tt:tt ql ACCT aaaa AC FAILURE
AC FAIL RESTORE	49	dd/dd tt:tt ql ACCT aaaa AC RESTORAL
AUTO TEST	50	dd/dd tt:tt ql ACCT aaaa TEST REPORT
OFF NORMAL AT TEST	51	dd/dd tt:tt ql ACCT aaaa TEST-OFF NORMAL
PHONE 1 TROUBLE	52	dd/dd tt:tt ql ACCT aaaa PHONE LINE FAIL +++ ACCT aaaa PHONE LINE=1
PHONE 1 RESTORE	53	dd/dd tt:tt ql ACCT aaaa PHONE RESTORAL +++ ACCT aaaa PHONE LINE=1
PHONE 2 TROUBLE	54	dd/dd tt:tt ql ACCT aaaa PHONE LINE FAIL +++ ACCT aaaa PHONE LINE=2
PHONE 2 RESTORE	55	dd/dd tt:tt ql ACCT aaaa PHONE RESTORAL +++ ACCT aaaa PHONE LINE=2
SYSTEM TROUBLE	56	dd/dd tt:tt ql ACCT aaaa EQUIPMENT FAIL +++ ACCT aaaa SDI=001 COND=ccc
SYSTEM TROUBLE RESTORE	57	dd/dd tt:tt ql ACCT aaaa EQUIP RESTORAL +++ ACCT aaaa SDI=001 COND=ccc
MANUAL TEST	58	dd/dd tt:tt ql ACCT aaaa TEST REPORT
DATA LOST	59	dd/dd tt:tt ql ACCT aaaa COMM FAIL +++ ACCT aaaa PHONE#=1
EEPROM FAILURE	60	dd/dd tt:tt ql ACCT aaaa EQUIPMENT FAIL +++ ACCT aaaa SDI=001 COND=18
EEPROM RESTORAL	61	dd/dd tt:tt ql ACCT aaaa EQUIP RESTORAL +++ ACCT aaaa SDI=001 COND=18
SMOKE POWER FAULT	62	dd/dd tt:tt ql ACCT aaaa EQUIPMENT FAIL +++ ACCT aaaa SDI=001 COND=3
SMOKE POWER RESTORE	63	dd/dd tt:tt ql ACCT aaaa EQUIP RESTORAL +++ ACCT aaaa SDI=001 COND=3
REMOTE PROGRAMMING FAIL	66	dd/dd tt:tt ql ACCT aaaa RAM ACCESS FAIL
REMOTE PROGRAMMING SUCCESS	67	dd/dd tt:tt ql ACCT aaaa RAM ACCESS OK

Note: dd/dd tt:tt: date and time
aaaa: account number
uuu: user ID
zzz: point
ccc: numeric identifier

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Appendix C

When the Modem IIIa^2™, SIA or Contact ID reporting formats are used, an additional numeric identifier is transmitted with system trouble messages which provides a specific indication of the particular fault. This identifier is also recorded in the history log. The table below lists the numeric identifiers.

Condition	Identifier Shown in History Log and Reported with System Trouble Report
option bus device at address 1 failed	2
option bus device at address 2 failed	3
option bus device at address 3 failed	4
option bus device at address 4 failed	5
option bus device at address 5 failed	6
option bus device at address 6 failed	7
option bus device at address 7 failed	8
option bus device at address 8 failed	9
option bus device at address 9 failed	10
option bus device at address 10 failed	11
option bus device at address 11 failed	12
option bus device at address 12 failed	13
option bus device at address 13 failed	14
option bus device at address 14 failed	15
option bus device at address 15 failed	16
communication failure (restoral report for DATA LOST)	17
EEPROM failure	18
ground fault- wiring short	20
NAC 1 open wiring	21
NAC 2 open wiring	22
NAC 3 (expansion) open wiring	23
NAC 4 (expansion) open wiring	24
remote NAC module 1 AC failure	25
remote NAC module 2 AC failure	30
NAC 1 shorted wiring	31
NAC 2 shorted wiring	
NAC 3 (expansion) shorted wiring	
NAC 4 (expansion) shorted wiring	
remote NAC module 1 ground fault-wiring short	
remote NAC module 2 ground fault-wiring short	32
NAC 1 overcurrent	33
NAC 2 overcurrent	34
NAC 3 overcurrent	35
NAC 4 overcurrent	36
remote NAC module 1 low battery	37
remote NAC module 2 low battery	38

Condition	Identifier Shown in History Log and Reported with System Trouble Report
NAC 1 – 4 overcurrent protection failure	39
multiplex bus outputs disabled by user	45
dialer disabled by user	46
relay 1 disabled by user	47
relay 2 disabled by user	48
remote relay module 1 disabled by user	49
remote relay module 2 disabled by user	50
class A, style 6 wiring failure on MUX bus	51
MUX bus A (9-128) failed	52
MUX bus B (129-255) failed	53
MUX module processor failure	54
remote NAC module 1, output 1 wiring fault	55
remote NAC module 1, output 2 wiring fault	56
remote NAC module 1, output 3 wiring fault	57
remote NAC module 1, output 4 wiring fault	58
MUX bus A (9-128) hardware failure	59
MUX bus B (129-255) hardware failure	60
NAC 1 disabled by user	61
NAC 2 disabled by user	62
NAC 3 (expansion) disabled by user	63
NAC 4 (expansion) disabled by user	64
remote NAC module 2, output 1 wiring fault	65
remote NAC module 2, output 2 wiring fault	66
remote NAC module 2, output 3 wiring fault	67
remote NAC module 2, output 4 wiring fault	68
remote NAC module 1, output 1, disabled by user	69
remote NAC module 1, output 2, disabled by user	70
remote NAC module 1, output 3, disabled by user	71
remote NAC module 1, output 4, disabled by user	72
remote NAC module 2, output 1, disabled by user	73
remote NAC module 2, output 2, disabled by user	74
remote NAC module 2, output 3, disabled by user	75
remote NAC module 2, output 4, disabled by user	76
four zone expander installation fault	77
NAC (DS9482) expander installation fault	78
MUX (DS9431) expander installation fault	79

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Appendix D: Programming Defaults List

PROG TIME

SYSTEM:	Last date in EE 0000
AUTO TEST	
TEST TIME:	0200
TEST FREQ:	24 hours
DAYLIGHT SAV:	2- enable

SECURITY

PINS

PROGRAMMER:	9876
USERS:	User 1 = 1234
	User 2 = 0000

AUTHORITY

USER 1:	2
OTHERS:	0

PROG SYSTEM

TIMERS

SMOKE RESET:	6 seconds
AC FAIL DELAY:	6 hours
AUTO SILENCE:	0 minutes
DISPLAY RATE:	4x.25 = 1 second
AC LINE SYNCH	2 (60- Hz)

OPTION BUS

UPDATE BUS:	Queries both option buses and updates list of connected devices.
SETUP KEYPAD:	0

PIN REQUIRED:

LOCAL:	No
REMOTE:	Yes
REMOTE PGM	0- disable

PROG INPUTS

POINT NUMBER	(1 - 4/ 8 /255)
FUNCTION	Point 1 = 1
	Point 2 = 2 etc.
	Point 8 = 8
	Point 9 - 255 = 10
ALARM/TROUBLE:	Trouble On Open
OUTPUT ZONE	Point 1 = 1
	Point 2 = 2 etc.
	Point 8 = 8
	Point 9 - 19 = 9
	Point 20 - 39 = 10
	Point 40 - 59 = 11 etc.
VERIFICATION:	No
LATCHING::	Yes (Point 4 = No)

POINT FUNCTION (1 - 16)

	1-3, 5-10, 13-16	4	11	12
CONFIGURE	fire	water	supv	monitor
LOCAL ONLY	no	no	no	no
SILENCEABLE	no	no	no	no
LOOP REPSONSE	fast	16s	fast	fast

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Appendix D

PROG OUTPUTS

NACs

NAC #1:

CONFIGURATION: Temporal
fix formatting

ZONE ASSIGNS:

Zone A:	53
Zone B:	0
Zone C:	0
Zone D:	0

NAC #2:

CONFIGURATION: Steady
fix formatting

ZONE ASSIGNS:

Zone A:	53
Zone B:	0
Zone C:	0
Zone D:	0

NAC #3:

CONFIGURATION: Steady
fix formatting

ZONE ASSIGNS:

Zone A:	53
Zone B:	0
Zone C:	0
Zone D:	0

NAC #4:

CONFIGURATION: Steady
fix formatting

ZONE ASSIGNS:

Zone A:	53
Zone B:	0
Zone C:	0
Zone D:	0

RNAC 1

Outputs 1, 2, 3, 4

Configuration: Steady

Zone Assignment:

Zone A:	53
Zone B:	0
Zone C:	0
Zone D:	0

RNAC 2

Outputs 1, 2, 3, 4

Configuration: Steady

Zone Assignment:

Zone A:	53
Zone B:	0
Zone C:	0
Zone D:	0

RELAYS

LOCAL RELAY #1

Zone A:	63
Zone B:	0
Zone C:	0
Zone D:	0

LOCAL RELAY #2

Zone A:	62
Zone B:	0
Zone C:	0
Zone D:	0

REMOTE 1 (D7035)

Relay 1/Zone A:	63
Relay 2/Zone A:	62
Relay 3/Zone A:	61
Relay 4/Zone A:	60
Relay 5/Zone A:	58
Relay 6/Zone A:	57
Relay 7/Zone A:	56
Relay 8/Zone A:	53

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REMOTE 2

Relay 1 / Zone A:	1
Relay 2 / Zone A:	2
Relay 3 / Zone A:	3
Relay 4 / Zone A:	4
Relay 5 / Zone A:	5
Relay 6 / Zone A:	6
Relay 7 / Zone A:	7
Relay 8 / Zone A:	8

PROG ACCOUNTS

PHONE NUMBERS

PHONE 1, 2

NUMBER:	> (wait for dialtone)
FORMAT:	6 - (SIA 300)
ACCT NUMS:	0000
TONE:	1 - 10 PPS, 1900/1400

PHONE CONTROL

LINE 1, 2

MONITOR:	Yes
DIALING TYPE:	Pulse Only

REPORT STEERING

ALL SUB-MENU ITEMS:	Phone 2 Back-up
RING COUNT:	00
COMM TRIES:	10
MACH BYPASS:	No

PROG FORMATS

4/2 ZONE REPORT

0 - FIRE ALRM D1:	0
1 - FIRE RSTR D1:	3
2 - WATERFLOW D1:	0
3 - SUPERVISE D1:	0
4 - TROUBLE D1:	6
5 - TRBL RSTR D1:	3
6 - DISABLE D1:	B
7 - DSBL RSTR D1:	3
8 - MONITOR D1:	0
9 - MORE	

1- POINT 1 D2:	1
2- POINT 2 D2:	2
3- POINT 3 D2:	3
4- POINT 4 D2:	4
5- POINT 5 D2:	5
6- POINT 6 D2:	6
7- POINT 7 D2:	7
8- POINT 8 D2:	8
1- POINT 9 D2:	9
2- POINT 10 D2:	0

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4/2 RPT CODS

SYSTM IN TST:	F1
SYS TEST RST:	E1
SILENCE:	9F
FIRE DRILL:	F2
FIRE DRL RST:	E2
OPEN RST RPT:	9F
LOW BATTERY:	F9
LOW BATT RST:	E9
AC FAILURE:	FA
AC FAIL RST:	EA
TEST REPORT:	EE
OFF NORM TST:	FD
PHONE 1 TRBL:	FB
PN 1 TRB RST:	EB
PHONE 2 TRBL:	FC
PN 2 TRB RST:	EC
SYSTEM TROUB:	FD
SYS TRB RST:	ED

BFSK RPT CDS

OFF NRM TST:	FD
OPEN/RESET:	FD
SILENCE:	FD
FIRE DRILL:	FD
FIR DRIL RSTR:	ED

SIA SIL RPT

LEFT BYTE:	0x4B “K”
RIGHT BYTE:	0x42 “B”

HISTORY DEFAULTS

ALT 4/2 CODES

4/2 POINT REPORTS

FIRE ALRM D1:	0
FIRE RSTR D1:	2
WATERFLOW D1:	0
SUPERVISE D1:	0
TROUBLE D1:	6
TRBL RSTR D1:	7
DISABLE D1:	5
DSBL RSTR D1:	2
MONITOR D1:	0
POINT 1 D2:	1
POINT 2 D2:	2
POINT 3 D2:	3
POINT 4 D2:	4
POINT 5 D2:	5
POINT 6 D2:	6
POINT 7 D2:	7
POINT 8 D2:	8
POINT 9 D2:	9
POINT 10 D2:	0

4/2 RPT CODS

SYSTM IN TST:	33
SYS TEST RST:	37
SILENCE:	9F
FIRE DRILL:	33
FIRE DRL RST:	37
OPEN RST RPT:	9F
LOW BATTERY:	69
LOW BATT RST:	79
AC FAILURE:	60
AC FAIL RST:	70
TEST REPORT:	30
OFF NORM TST:	33
PHONE 1 TRBL:	31
PN 1 TRB RST:	35
PHONE 2 TRBL	32
PN 2 TRB RST:	36
SYSTEM TROUB:	33
SYS TRB RST:	37

MULTIPLEX

MUX BUS TYPE:	2- CLASS B

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Appendix E: Phone Monitor Troubleshooting

COMM FLT/DATA LOST

A common cause of this fault condition is failing to program phone number 2 or account number 2 while some reports are steered to “phone 2 backup”. Reports will still be made to phone number 1, but this message warns the installer that phone number 2 is not available if it becomes needed. Other communications problems that may cause this condition include: events occurring faster than the dialer can send them which overflows the 32 event buffer, programming errors such as missing phone numbers or account codes, over 100 trouble type reports in 24 hours, or other problems contacting a receiver. Check dialing type, format selection, phone numbers, account codes, phone line condition and “tone” programming (if tone burst formats are used). Refer to the “Communicator Operation” section for more information.

Trouble Phone

Some troubleshooting tips for phone monitor problems are listed below:

1. Use a voltmeter to measure the voltage present across each phone line (Tip to Ring) while the phone line is idle

The voltage present during ringing for an incoming call can be over 100 VAC.

- This standby telco “battery” voltage is typically in the range of 30 VDC – 50 VDC, but any voltage above 5 VDC will be accepted by the panel.
- The polarity of the voltage does not matter.

2. Check for other devices that may use the phone line, such as fax machines, credit card verifiers or PBX systems.

- Note that NFPA 72 requirements mandate a dedicated phone line for fire reporting.
- If the devices cannot be removed, make sure they are wired so that the panel’s line seizure relay will disconnect them when needed.
- Measure the line voltage while these devices are in use. Make sure that it remains above 5 V.

3. Check for intermittent faults in the phone line.

- Make a test call and see that the line is free of distortion and noise.
- Temporarily swap lines 1 and 2 on the panel and see if the problem indication moves to the panel’s other phone line channel, in which case the phone line is causing the problem rather than the line monitor.

4. Confirm that the fault message is “phone fault” and not “com fault”.

- “Com fault” is often caused by failing to program a phone number or account number for Phone Number 2 while routing reports to “line 1, backup line 2”.
- If only one phone number is available for reporting, set report steering for all events to “phone 1 only”.
- “Com fault” may also be caused if one of the phone lines has telco battery voltage, but will not complete a call. Make test calls to the receiver(s) on both phone lines, listening for the receiver ACK tone.

5. Make sure that two phone lines are available.

In accordance with NFPA requirements, the auto-test report is sent on a different phone line each time it is sent. If only one phone line is connected to the panel, a “Com fault” will be generated on every other test call.

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Appendix E

Notes:

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