Operation and Installation Guide

radionics

Line 1

Line 2

Trouble

Heartbeat

D9068 COMMUNICATOR

radionics

A member of the
Bosch Group

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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 commercial 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:

- Reorient 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.

The FCC registration number is ESVMUL-46514-AL-E. The ringer equivalence is 0.0B.

This equipment may not be used on coin service provided by the telephone company or 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.**

The operation of this equipment 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.

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

1.4 Installation Guidelines for UL Systems

⚠️ **WARNING** *Failure to install and program the D9068 according to the requirements in this section voids the listing mark of Underwriters Laboratories, Inc.*

✓ **IMPORTANT** *Test in accordance with NFPA 72 Chapter 7-1.6.2 (1999) following any modifications, repair, upgrades or adjustments made to the system.*

1.4.1 D9068 UL Requirements

- The D9068 is UL Listed for Commercial Digital Alarm Communicator applications (Type service: Remote Station and Central Station), UL Standard UL864.
- The Digital Alarm Communicator Transmitter (DACT) should be installed according to NFPA 72 for Commercial Fire installations.
- The D9068 must be mounted indoors and within the protected area.
- Grounding must be in accordance with Article 250 of the NEC (NFPA 70).
- The ground wire provided with the enclosure must be connected as shown in Figure 4 using the supplied screw and clamp terminal.
- Both phone lines must be used, enabled and supervised.
- Input points may be unsupervised if the D9068 is mounted within 20 ft. (6.1 m) of the Fire Alarm Control Panel (FACP) with wiring in conduit.
- If the D9068 is mounted more than 20 ft. (6.1 m) from the FACP, all input points must be configured for supervisory operation whether or not conduit is used.

Note: *Radionics recommends the use of conduit for all installations.*

- FACPs using open collector outputs must be compatibility-listed for use with the D9068.

2.0   Overview

2.1   System Overview

The D9068 Fire Communicator is a complete communicator for use with compatible Fire Alarm Control Panels (FACP). Alarms and communications to the D9068 may be accomplished by using dry contacts or open collector outputs.

The D9068 also includes the following features:

• 12/24 VDC Operation
• Multiple Data Protocols: Modem IIIa[2], Contact ID, SIA and 4/2
• 100 Event History Buffer
• Five Programmable Discrete Wire Inputs (Class B)
• Dual Phone Line Interface
• Option Bus Interface for Built-in Programming using D7033 LCD Remote Keypad
• Form "C" Relay Output for Trouble
• LEDs for Heartbeat, System Trouble and Phone Line Trouble (one per line)
• Serial port for connection to other FACPs such as Radionics' D8024 and D10024 Analog FACPs
• Real Time Clock

2.2   Specifications

2.2.1   Power

IMPORTANT

Sharing power from the FACP with the D9068 and other peripheral devices is not recommended.

Power Specification	D9068 Value
Input Voltage Range (use power-limited source)	10.2 VDC to 28 VDC for filtered DC; 12 VRMS to 28 VRMS for unfiltered DC
Standby Current	150 mA max.
Alarm Current	190 mA max.

Table 1: D9068 Power Specifications

Although the D9068 can withstand short power losses (up to 5 minutes), it should be connected to an unswitched, uninterrupted power source. If the D9068 were to lose power for more than 5 minutes, the following conditions may result:

• The history buffer would be cleared (all events stored would be lost).
• The output (report) buffer would be cleared (all pending reports would be lost).
• Alarms initiated prior to the power loss would be reset. If the alarm conditions persist when power is restored, new alarms would be generated.
• The system time would be reset to its default setting.

Note: *Programmed settings such as input point configuration, phone numbers and account numbers will remain intact upon the event of a power loss.*

2.2.2   System Supervision

Watchdog: The D9068 is supervised with a hardware watchdog circuit. Failure of the control program will result in a hardware reset within two seconds. The trouble relay will be released for the duration of the reset. The relay is normally held energized.

Self-Testing: The dialer (DACT), EEPROM memory, input points and phone lines are automatically tested on a periodic basis. The EEPROM checksum is verified every ten minutes. If the EEPROM checksum fails, a trouble condition is locally annunciated and a trouble report is sent.

D9068
Overview

2.2.3 Inputs

The D9068 supports five inputs that may be triggered by dry contact relays or open collector outputs. The open collector outputs from the fire panel must be below 1.3 VDC in alarm and must be able to sink 5 mA minimum.

Input Point Specifications	
Number of Inputs	5
Type of Circuit	Class B
EOL Resistor	2.21 k Ω; UL Listed; P/N: 25899 Radionics by Detection Systems, Inc.
Alarm Operation	Short to ground or voltage less than 1.3 VDC
Minimum Alarm Voltage	Less than 1.3 VDC
Maximum Line Resistance	50 Ω
Response Time	500 mS

Table 2: D9068 Input Point Specifications

2.2.4 Input Configuration

Initiating circuits/points can be configured for seven types of conditions: Fire Alarm, Waterflow Alarm, Supervisory, Monitor Alarm, System Fault, AC Failure and Low Battery. See Sections 6.2 "Input Point Operation" and 9.3.1 "1-CONFIGURE" for more information.

2.2.5 Trouble Output

There is one Form "C" relay rated at 1 A @ 30 VDC on the D9068. This relay is normally held activated, and will deactivate for any trouble condition that the D9068 detects. See Section 6.3 "Trouble Relay Operation" for more information.

This relay may be alternatively programmed to serve as a ground start relay when the D9068 is deployed on a ground start network.

Note: *Ground start operation is not UL compliant.*

2.2.6 User Interface

A D7033 LCD Remote Keypad connects to a five-pin connector (option bus interface) and is used to program and troubleshoot the D9068. The keypad may be set to any address from 1 to 15.

Note: *The D7033 LCD Remote Keypad is only used for programming of the D9068 and should be connected to the D9068 temporarily for that purpose only.*

2.2.7 Communication

Formats: The D9068 supports four protocols: Modem IIIa[2], Contact ID, SIA and 4/2.

Report Routing: There are six different report groups that can be routed to one of the following four phone settings. These six reporting groups consist of non-supervisory alarms (NONSUP ALRM), supervisory alarms (SUPVSY ALRM), alarm restorals, resets (ALM RSTR, RST), supervisory restorals (SUPVSY RSTR), tests (TESTS) and troubles and trouble restorals (TBL, TBL RSTR).

The four phone settings are as follows:

- **PHONE 1 ONLY:** report sent to Phone #1 only.
- **PHONE 2 ONLY:** report sent to Phone #2 only.
- **PHON 1 & 2:** report sent to Phones #1 and #2.
- **PHN 2 BACKUP:** report sent to Phone #1, then to Phone #2 if Phone #1 fails.

See Sections 6.4.1 "Call Routing" and 9.5.4 "4-RPT STEERING" and Appendix E for more information regarding report steering.

Reset Report: A reset report is issued when the D9068 is reset from any off normal condition.

Phone Line Selection: The D9068 follows a predetermined sequence to select between the two phone lines. It also implements the new NFPA requirements for alternation of phone lines during test reporting: the D9068 will maintain a variable that selects either Phone Line One or Phone Line Two for automatic test reports. After each successful test report, the variable will be switched to select the other phone line. For manual test reports, the user can select the phone line.

Communication Failed Indication: The D9068 indicates a communication failure after 10 attempts to communicate have been completed without success. This causes the trouble output to activate and attempt to report the fault.

2.2.8 History Buffer

The D9068 has a history buffer that will retain up to 100 events. Each event is tagged with the date and time of occurrence. This buffer can be viewed when a D7033 LCD Remote Keypad is attached to the D9068. When the buffer is full, old events are discarded to make room for new events. A watchdog reset will be entered in the buffer, but does not reset the buffer.

The history buffer may be cleared when the system loses power for more than 5 minutes.

2.2.9 General Specifications

- **Storage and Operating Temperature Range:** +32°F to +120°F (0°C to +49°C).
- **Lightning Protection:** MOVs and spark gaps provide protection from lightning surges and static discharges for inputs and telephone interface.

2.2.10 Hardware

See the following list for the hardware shipped with the D9068 (quantities listed in parentheses).

- Enclosure (1)
- Self-tapping screw for enclosure cover (1)
- Machine screw for enclosure cover (1)
- D9068 PC board in static bag (1)
- PC board mounting screws (4)
- PC board mounting clips (4)
- Cable assemblies (4 sets)

Note: *Refer to Figure 6 for cable assembly connections.*

- Telco cable assemblies RJ45 (2 sets)
- Ground wire (1)

Note: *Refer to Figure 4 for ground wire connections.*

- 2.21 k Ω EOL resistors; UL Listed; P/N: 25899 Radionics by Detection Systems, Inc. (5)

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Overview

Mounting Holes

Phone Line 1

LINE 1

Phone Line 1 LED

Phone Line 2

LINE 2

Phone Line 2 LED

SYS TROUBLE

System Trouble LED

HEARTBEAT

Heartbeat LED

Mounting Hole
(attach ground wire here)

Mounting
Hole

+ + - - A B   1 2 3 4 5   NC C NO

Power Molex
Connector Pins

Serial
Connection Pins

Input Molex
Connector Pins

Keypad Molex
Connector Pins

Trouble Relay
Connector Pins
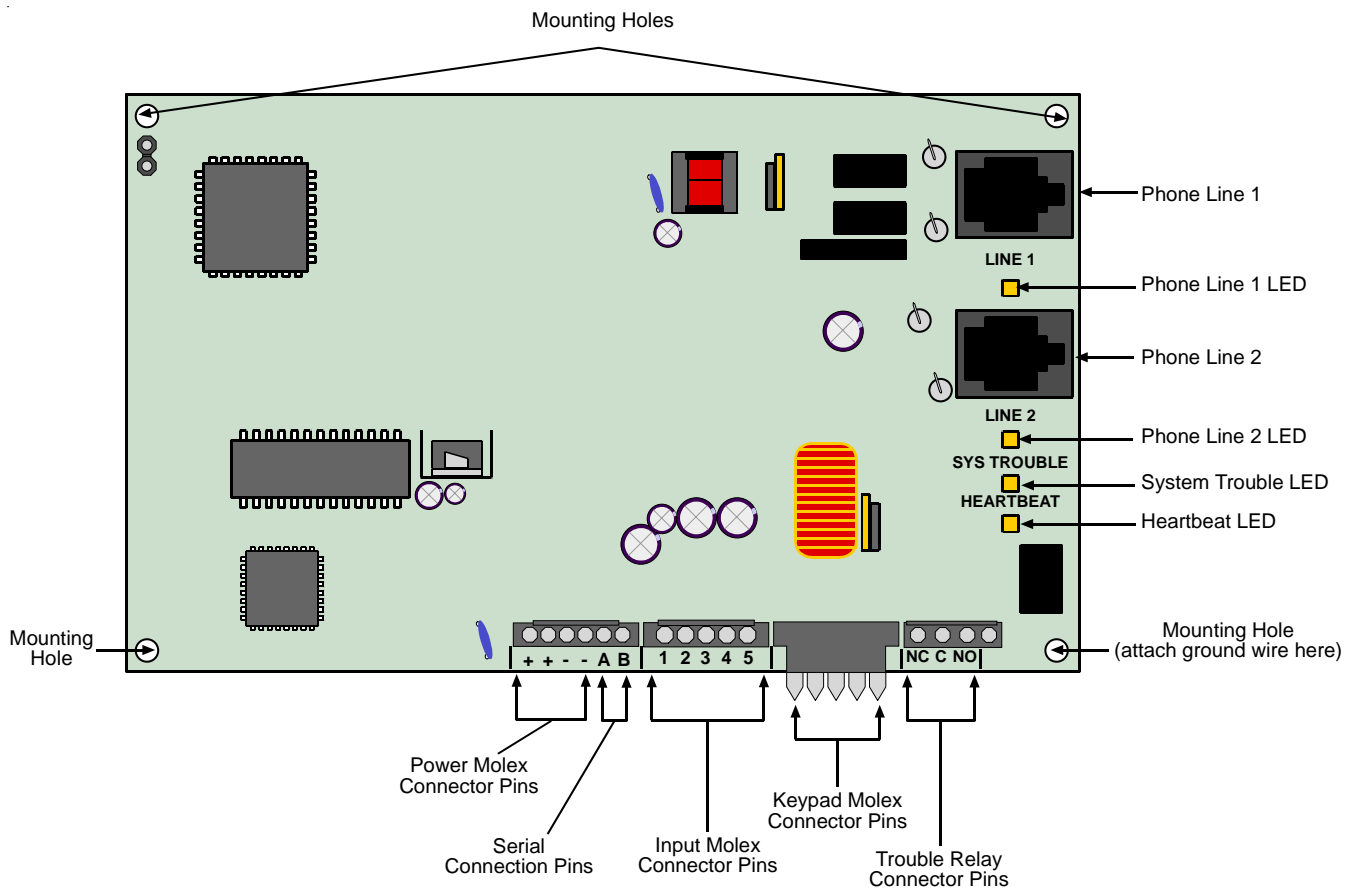
Figure 1: D9068 PCB Layout

3.0   Installing the D9068 Fire Communicator

Note: *The D9068 may be installed up to 500 ft. (152 m) from the FACP.*

3.1   Mounting the Enclosure

The D9068 and its enclosure are shipped together. The dialer must be installed inside the enclosure. Hardware for mounting the dialer to the enclosure is located in the hardware pack.

1) Remove the desired wire knockouts on the enclosure. See Figure 2.
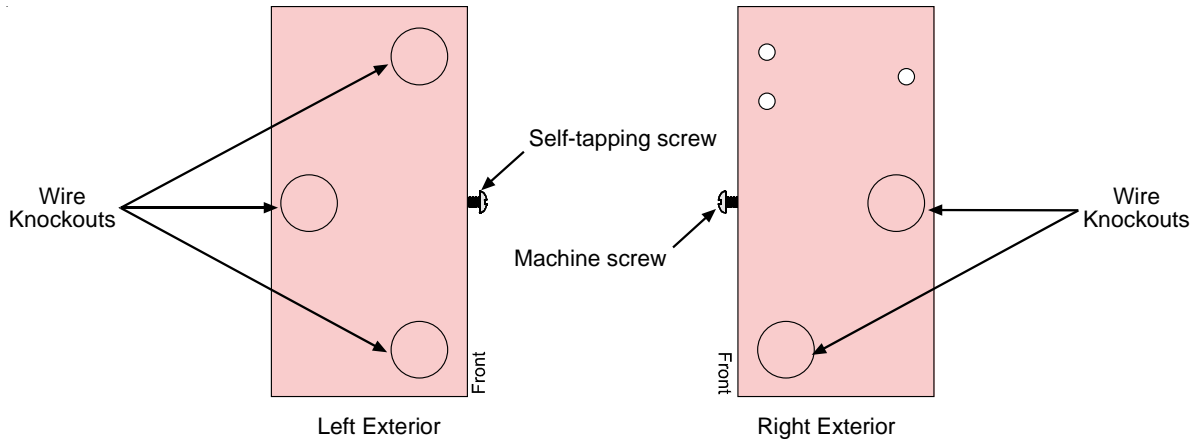
Figure 2: Wire Knockout Locations

2) Use the D9068's case as a template to mark the location of the mounting holes in desired wall. Hang case from wall with appropriate installer-supplied mounting screws. See Figure 3.
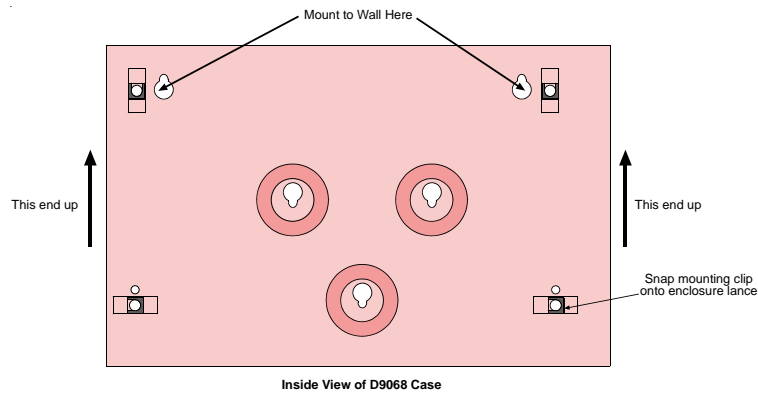
Figure 3: Mounting the D9068 Case to the Wall

3) Slide the light pipe over the end of the PCB so that they align with the LED's.

4) Mount the D9068 Board to its case using the supplied mounting screws and mounting clips, and attach the ground wire. See Figure 4.
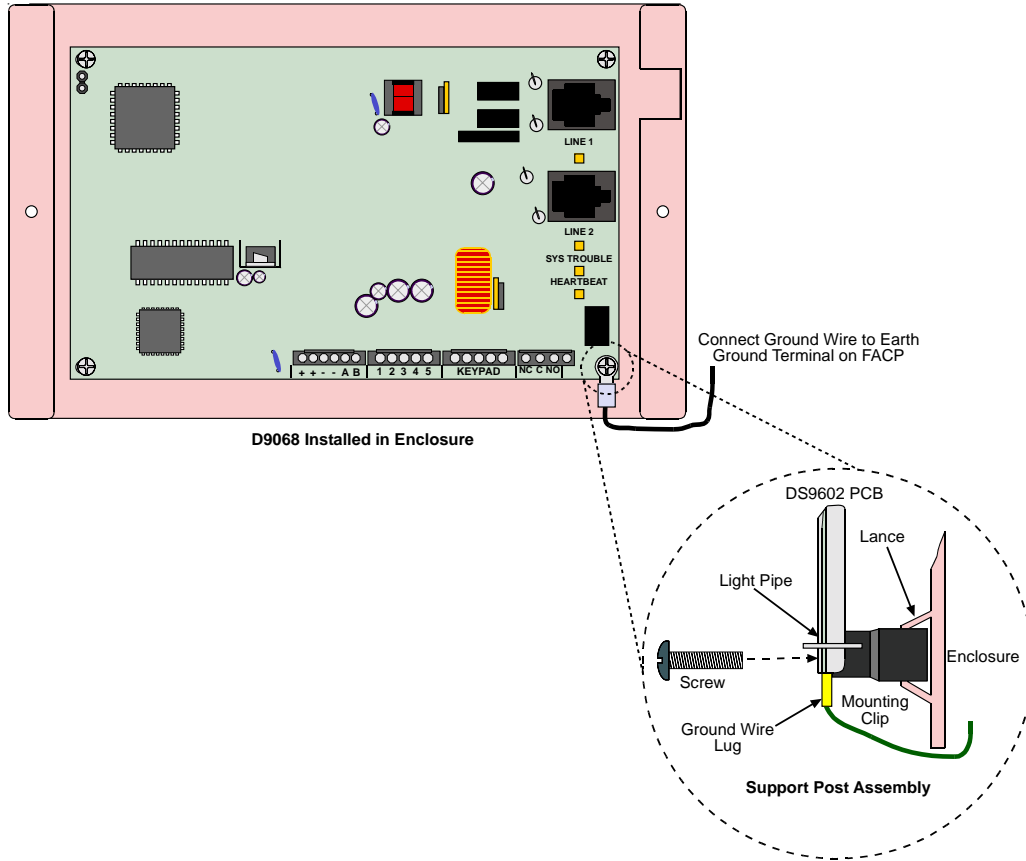
Figure 4: Mounting the D9068 Board

5) Connect D9068 to FACP using conduit.

Note: *FACPs using open collector outputs must be compatibility listed. When using conduit within 20 ft. (6.1 m), input points may be configured for non-supervised operation. The D9068 may be installed up to 500 ft. (152 m) from the FACP.*
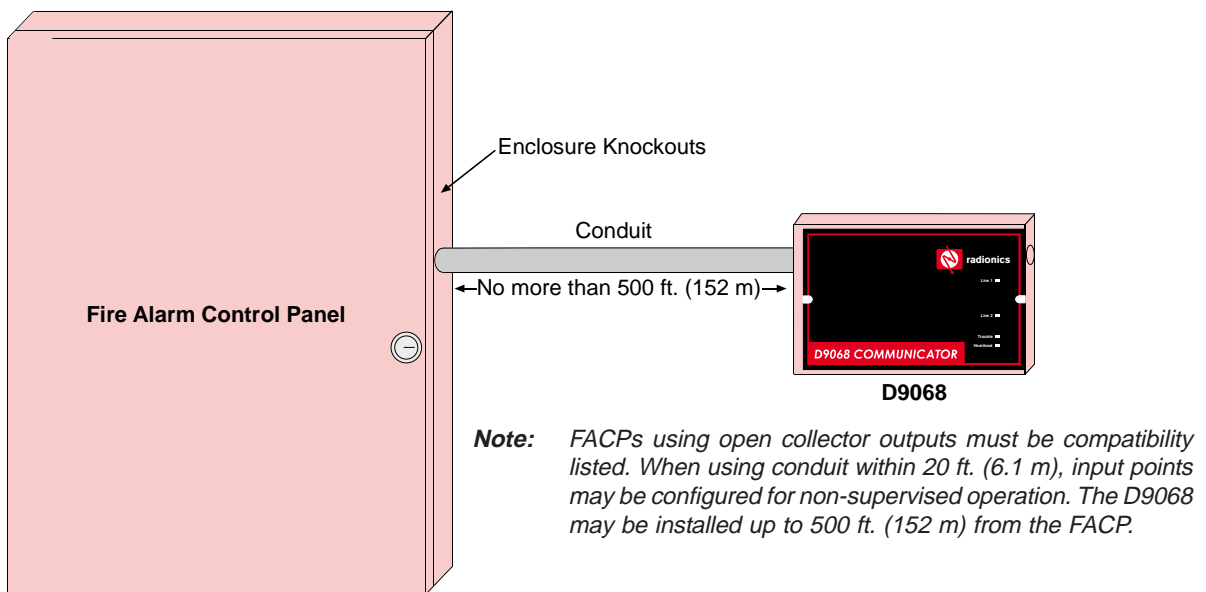
Figure 5: Conduit Connections

4.0 Connecting the D9068

4.1 Input Point Connections

⚠ **WARNING**

Remove all power before making or breaking any connections to the D9068. Failure to do so may result in personal injury and/or damage to the equipment.

See Figures 6 through 12 when making connections to the D9068.
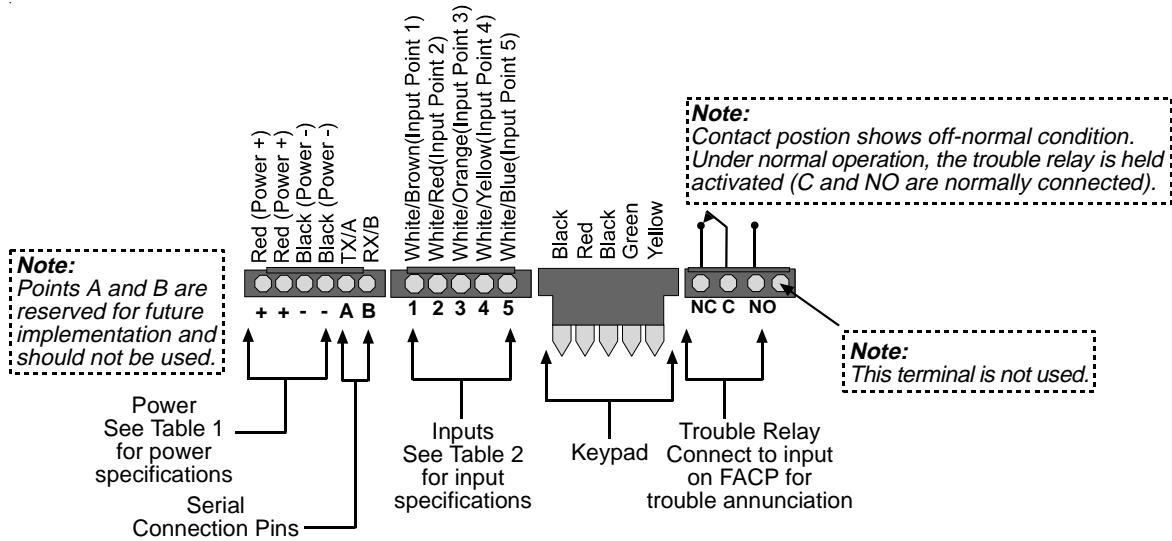
Figure 6: Molex Connector Descriptions
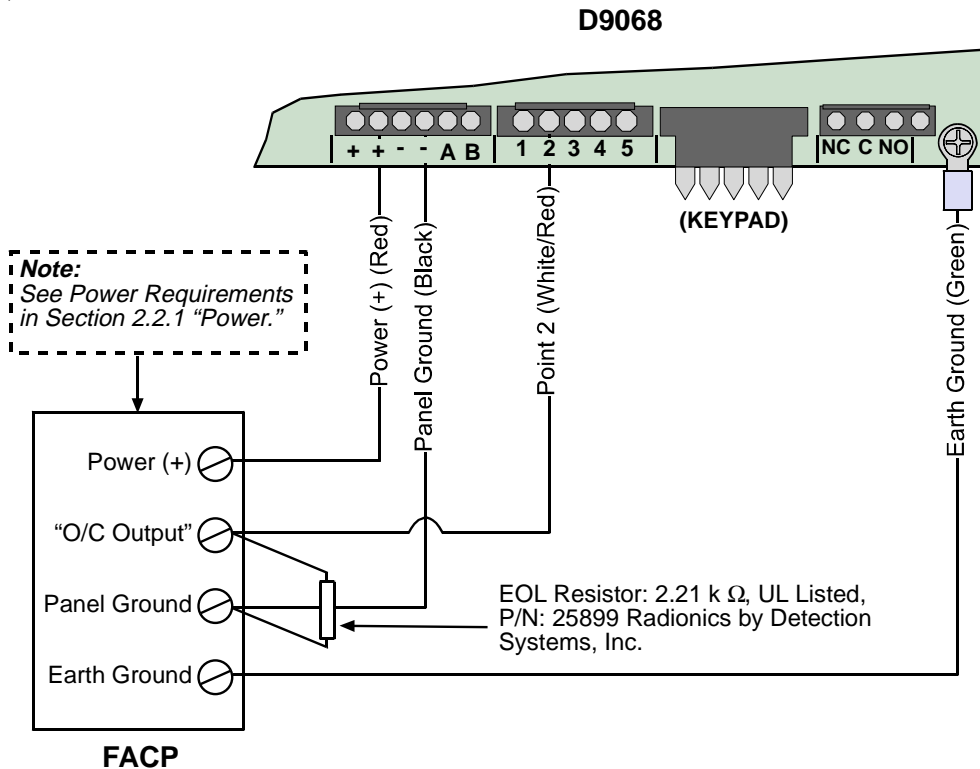
D9068

Figure 7: Open Collector Input Point Wiring (Supervised)

Note: *Open collector inputs must sink 5 mA minimum. Saturation voltage not to exceed 1.3 VDC during turn-on.*

Connecting the D9068

D9068
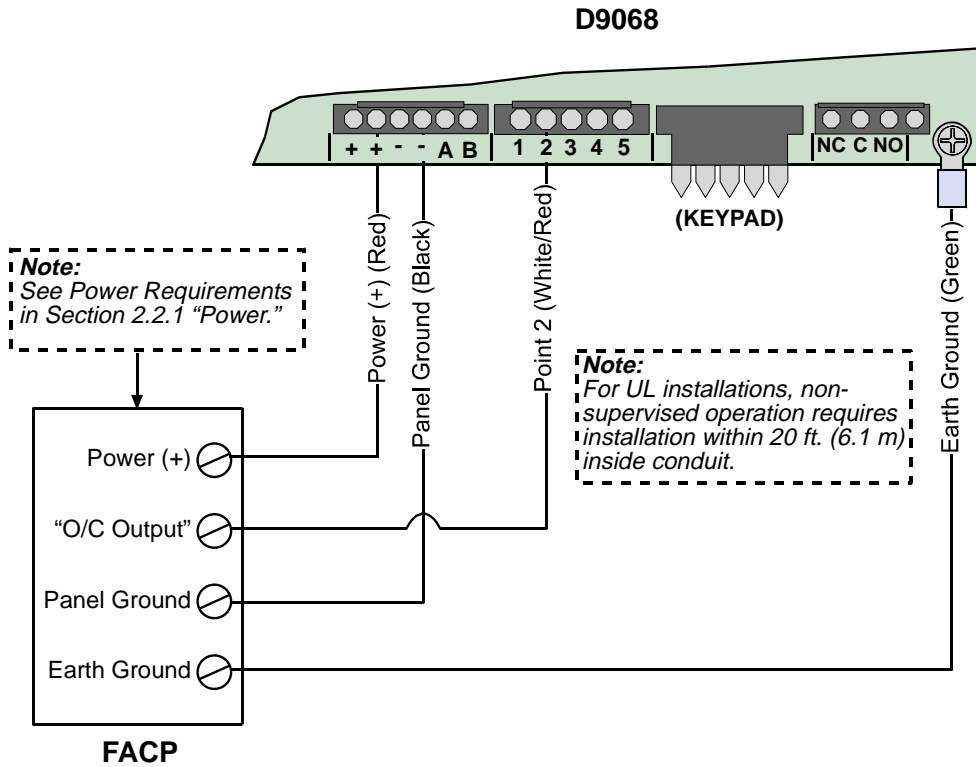
Figure 8: Open Collector Input Point Wiring (Non-supervised)

Note: Open collector inputs must sink 5 mA minimum. Alarm voltage not to exceed 1.3 VDC during turn-on.
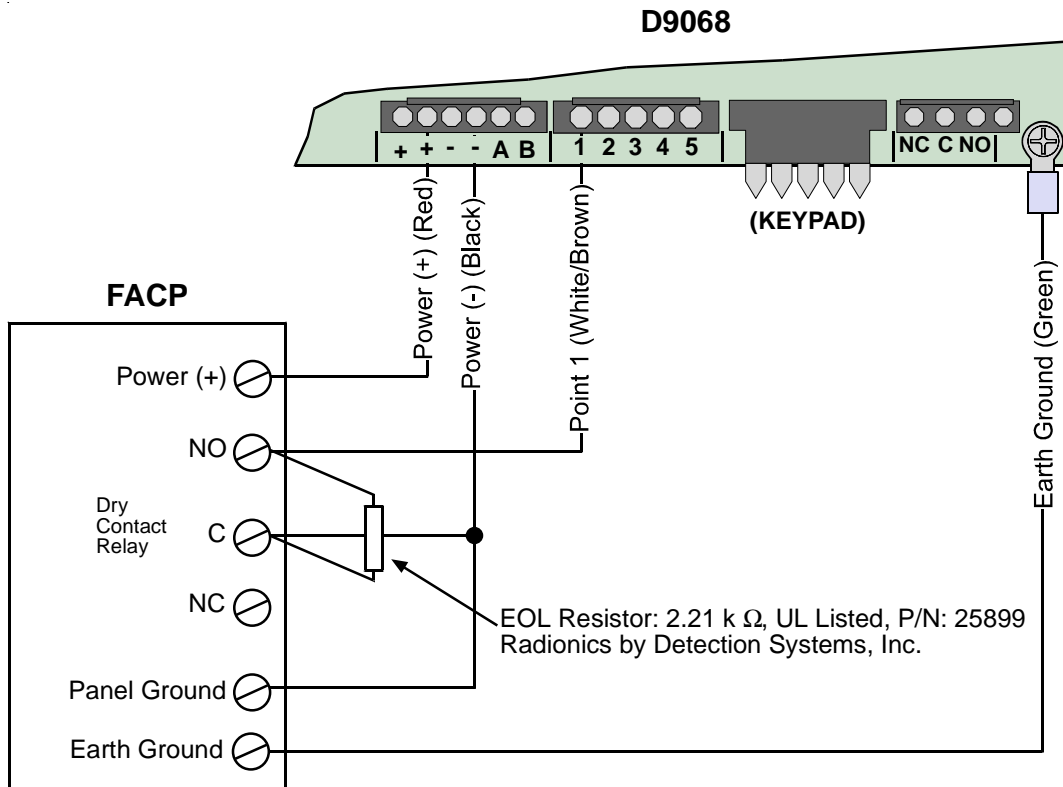
D9068

Figure 9: Dry Contact Input Point Wiring (Supervised)

D9068

(KEYPAD)

FACP

Power (+) (Red)
Power (-) (Black)
Point 1 (White/Brown)
Earth Ground (Green)

Power (+)

NO

Dry
Contact
Relay

C

NC

Panel Ground

Earth Ground

Note:
For UL installations, non-supervised operation requires installation within 20 ft. (6.1 m) inside conduit.
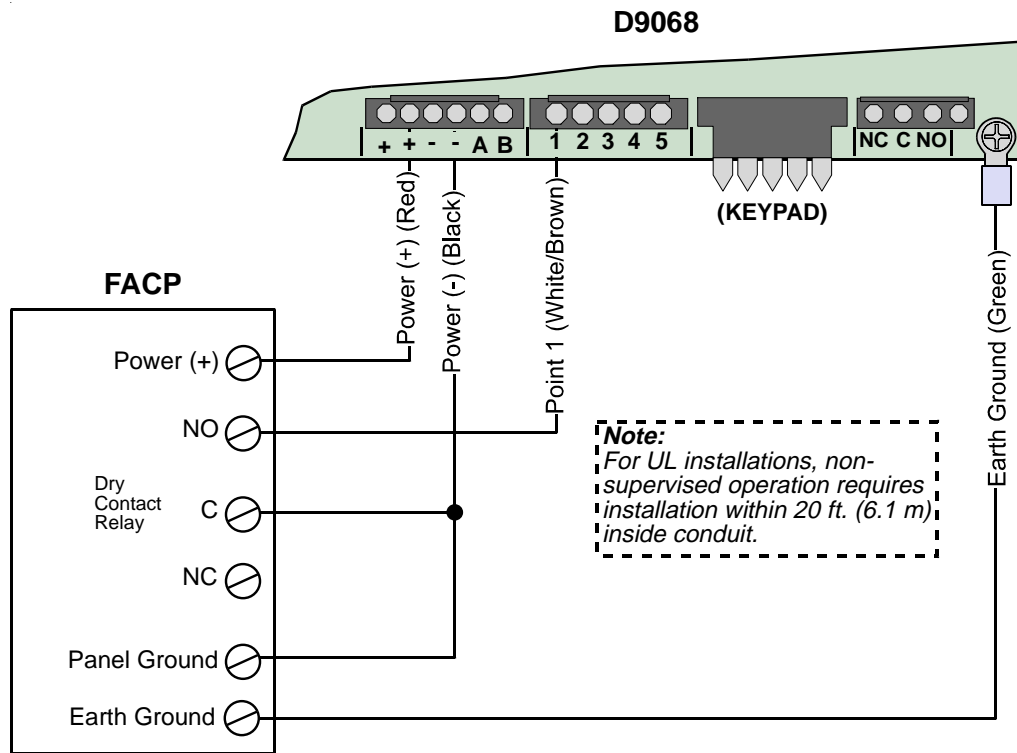
Figure 10: Dry Contact Input Point Wiring (Non-supervised)

4.2 Trouble Relay Connections

See Figure 11 when making connections to the D9068's Trouble Relay terminals.

Note:
Contact position shows energized condition (normal standby).

D9068

(KEYPAD)

EOL Resistor
(see FACP installation instructions for
UL approved EOL resistor specifications)

FACP

Zone
Input

Earth
Ground

Earth Ground (Green)
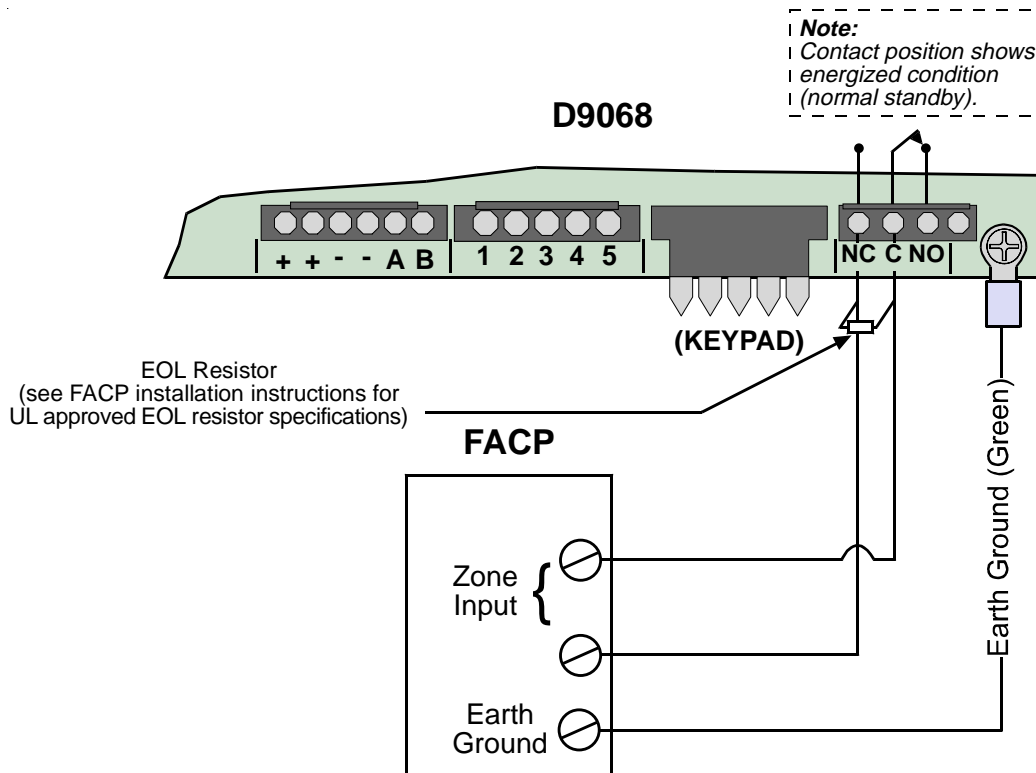
Figure 11: Typical Trouble Relay Connections (Supervised)

D9068

Connecting the D9068

D9068

Note:
Contact position shows energized condition (normal standby).

+ + - - A B   **1 2 3 4 5**   **NC C NO**

(KEYPAD)

Earth Ground (Green)

FACP

Zone Input

Earth Ground
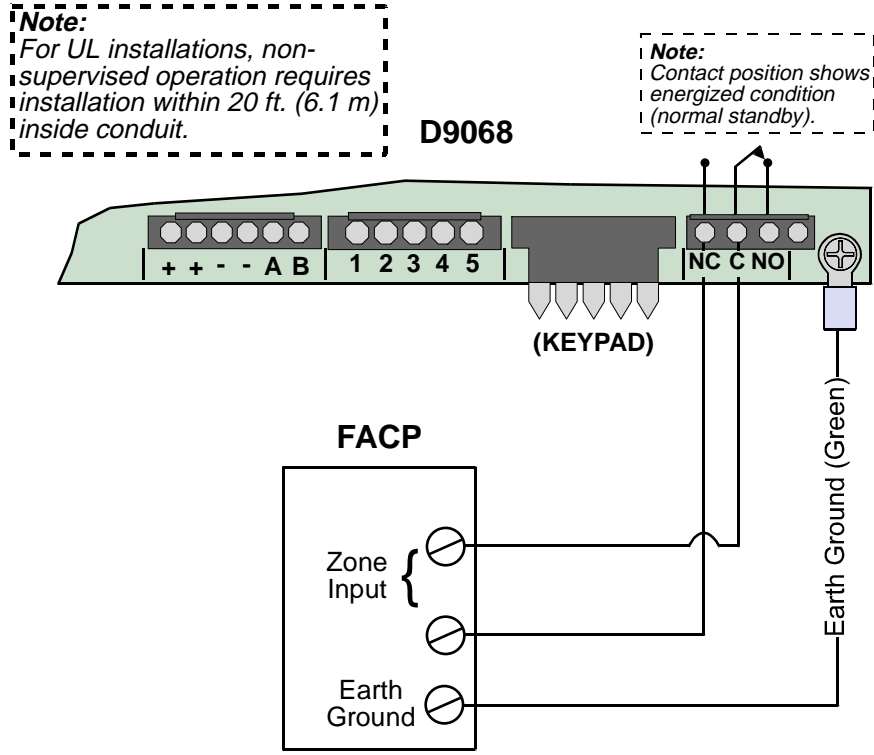
Figure 12: Typical Trouble Relay Connections (Non-supervised)

4.3   Analog FACP Connections

The D9068 may be used with Radionics' D8024 and D10024 Analog FACPs to send reports to a central station. Use of a D9052 RS-232 Bus Module between the FACP and the D9068 is required. The FACP must be assigned a network address of 1. See Appendix F for the events generated by the D8024 and D10024.

Note:
For UL installations, non-supervised operation requires installation within 20 ft. (6.1 m) inside conduit.

D9068

+ + - - A B   **1 2 3 4 5**   **NC C NO**

(KEYPAD)

D9052

RTS   Request to Send (not used)
TX   Serial Transmit
RX   Serial Receive
GND   Ground
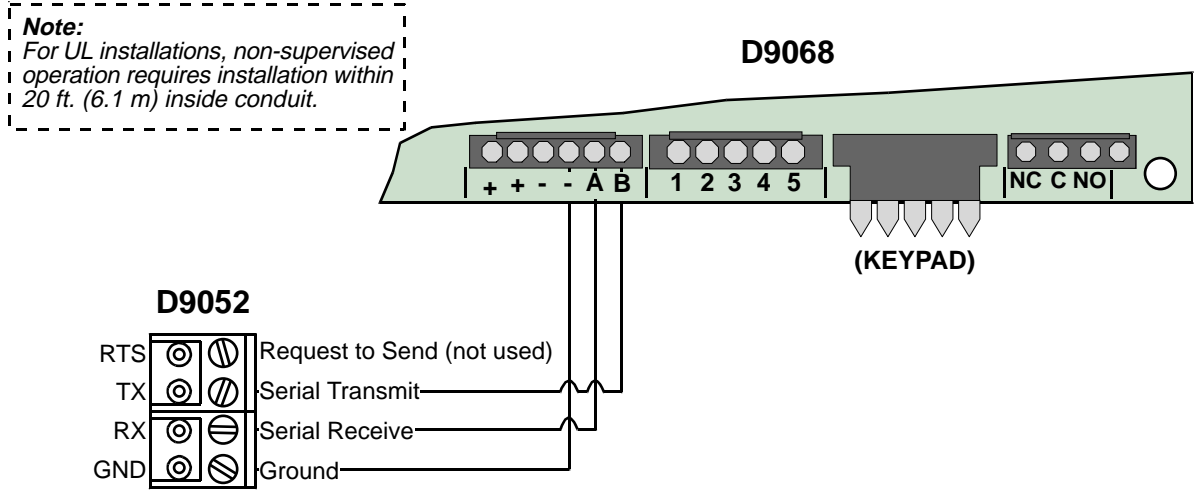
Figure 13: D9068 to Analog FACP Connections

Note: *The D9052 mounts to the D8024/D10024 PCB. See the installation instructions that accompany the analog FACP and the D9052 RS-232 Bus Module for details.*

4.4 Telephone Connections

4.4.1 Telephone Cord Installation

Connect the primary phone line to the D9068 modular jack "LINE 1" using a phone cord. Connect the secondary phone line to the D9068 modular jack "LINE 2" using another phone cord.

Note: *You must connect separate primary and secondary phone lines to the D9068 for all applications.*

4.4.2 Location

To prevent jamming of alarm and other reports, wire and locate the RJ31X or RJ38X jack so that normal phone use is temporarily interrupted while the D9068 transmits data (see Figure 14). After installation, confirm that the D9068 seizes the line, acquires dial tone and reports correctly to the receiver.
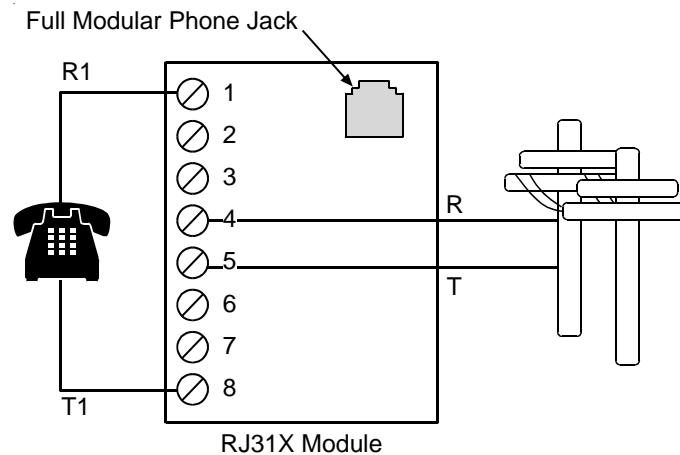
Figure 14: RJ31X Wiring

Note: *Use the supplied telco cable assemblies to connect to an RJ31 jack. Make sure the RJ31 jacks are mounted in a secure location to prevent false disconnections and/or tampering.*

4.4.3 Notification

Do not connect registered equipment to party lines or coin-operated telephones. If the local telephone company requests notification before you connect the D9068 to the telephone network, supply the following information:

- the particular line you are connecting the DACT to
- the make, model and serial number of the device
- the FCC registration number (ESVMUL-46514-AL-E) and ringer equivalence (0.0B).

If the telephone company makes changes in its communications facilities, equipment, operations or procedures that may affect the performance of the D9068, the telephone company is obligated to notify the user in writing.

The D9068 meets the requirements of UL1950.

Connecting the D9068

4.4.4   Connecting the Keypad to the D9068

Note: *The D7033 LCD Remote Keypad is used strictly for programming and debugging purposes only.*

A D7033 LCD Remote Keypad can be used to operate the D9068 Communicator. Remove the cover from the D9068 case and plug the molex connector from the D7033 onto the connector pins on the D9068 board as shown in Figure 15.

Use the following steps when programming the D9068 from the D7033:

1) Set the D7033's address between 1 and 15.

2) Use the wire connector supplied with the D9068 to connect the D7033 to the D9068. See Figure 15.

3) Program the D9068 as explained in the programming section of this manual.

Note: *If there is no keypad activity for three minutes, the keypad is disabled. The keypad's buzzer sounds and a "SYSTEM FAULT" message will appear on the keypad. Disconnect the keypad from the D9068 by removing the wire harness plug from the D9068's keypad pins, then reconnect the wire plug harness to re-enable the keypad.*

4) Replace the instruction label supplied with the D7033 with the one supplied with the D9068 (P/N: 45772).
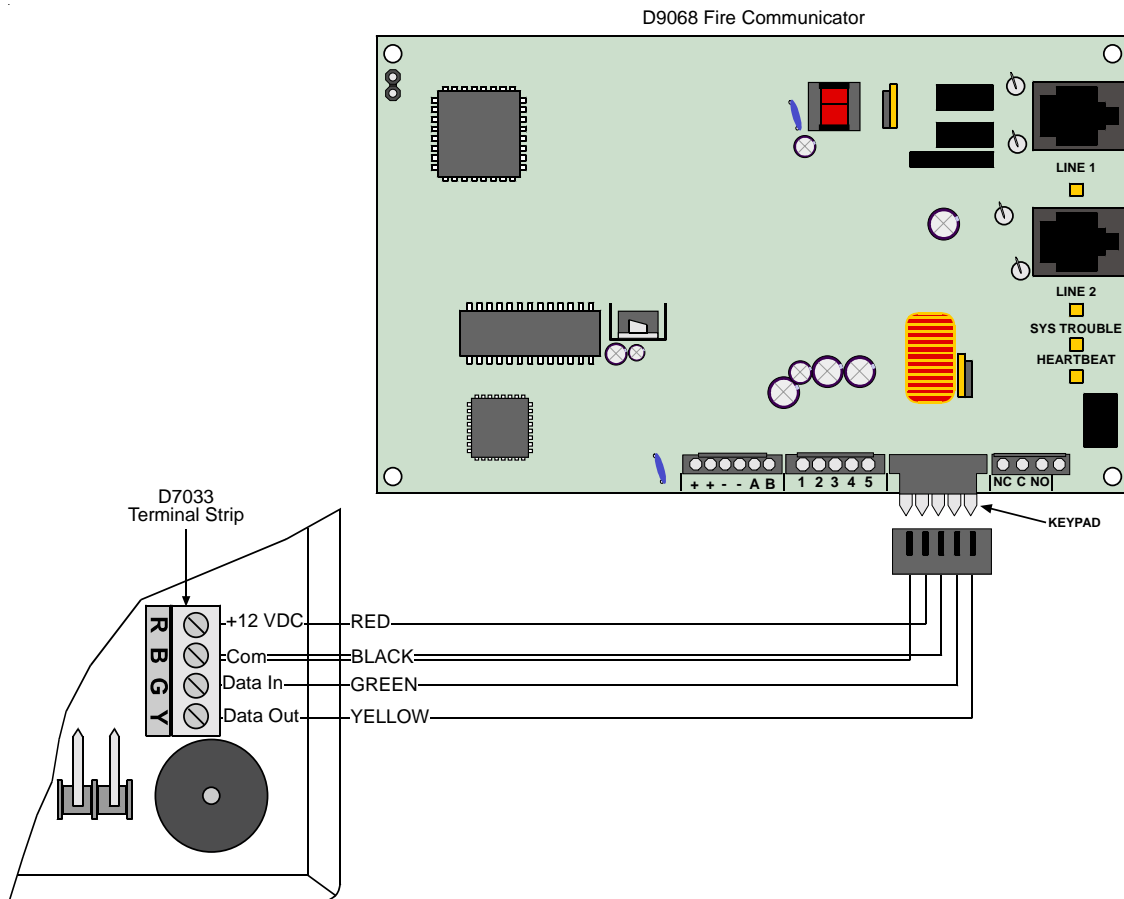
Figure 15: Connecting a Keypad to the D9068

Note: *While the D7033 Keypad is installed, the system will neither monitor the input points or the serial connection to an FACP.*

5.0   System Start-up

5.1   System Power-up

This section describes the proper sequence of events when first powering up the D9068.

5.1.1   Before Power-up

Before applying power to the D9068, make sure the following conditions have been properly met:

- All wiring connections have been made according to Section 4.0 "Connecting the D9068."
- All connectors are firmly seated onto their appropriate headers (see Section 4.0 "Connecting the D9068").
- Input power requirements comply with the power specifications in Table 1. The power supplied to the D9068 from the FACP is not shorted and meets the necessary power requirements for the D9068.
- All phone line connections have been made according to Figure 13.
- Both RJ45 male connectors are firmly seated in the RJ45 female connectors on the D9068 board.
- All input points are properly terminated with the supplied 2.2 k Ω EOL resistors for supervised operation.
- The trouble relay connections have been made according to Figures 11 and 12.

5.1.2   After Power-up

Once power has been applied to the D9068, check to see that the following conditions occur:

- All LEDs will light briefly and the trouble relay will toggle.
- The System Trouble LED will light.
- The Heartbeat LED will flash to indicate the D9068 is functional.

5.2   System Quick Start

The D9068 will start up in a trouble condition until the following steps are taken:

1) Connect the D7033 Keypad (see Section 4.3.4 "Connecting the Keypad to the D9068").

2) Understand how to program the D9068 via the D7033 (see Section 7.1 "Keypad Programming").

3) Configure the five input points (see Section 9.3.1 "1:CONFIGURE").

4) Assign the D9068's account numbers (see Section 9.5.1 "1:ACCOUNT NUMBERS").

5) Assign the D9068's telephone numbers (see Section 9.5.2 "2:PHONE NUMS").

6) When Steps 1-5 have been properly completed, see Section 9.0 "Programming the D9068" to complete the programming sequence.

Note: *If the D9068 has been correctly programmed and input wiring has been properly connected and supervised, the Heartbeat LED will be the only lit (blinking) LED thus indicating normal system operation. To validate correct programming, Radionics recommends performing a manual communications test to check for proper communication. See Section 10.1.4 "Test Mode" for manual communication testing instructions.*

IMPORTANT   ***Test in accordance with NFPA 72 Chapter 7-1.6.2 (1999) following any modifications, repair, upgrades or adjustments made to the system.***

Note: *See Appendix A: D9068 Troubleshooting for information on error messages or messages that indicate non-normal operating conditions.*

Notes:

6.0 System Operation

6.1 Communicator Operation

The D9068 contains an integrated communicator that sends reports to a monitoring station. Operation of the communicator is fully automatic.

When events occur, the communicator sends corresponding reports 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.

Note: *Priority sorting of events sent to a monitoring station may cause the message sequence to imply that a point has been restored when it actually has not. For example, the sequence "alarm", "restore", "alarm" would be transmitted as "alarm", "alarm", "restore" when priority sorting is applied.*

6.1.1 Phone Line and Phone Number Selection

Note: *To comply with UL and NFPA standards, you must program both a primary and alternate phone number. The numbers must be different.*

The dialer can report to two (2) phone numbers with full single, double and backup reporting. It communicates in Modem IIIa² , Contact ID, SIA and 4/2 formats.

To ensure the delivery of critical reports, the D9068 has two phone lines and two phone numbers that can be used for reporting. Reports can be "steered" to one or both of the two phone numbers using the report steering feature in the dialer programming. Account Number 1 is used with Phone Number 1 and Account Number 2 is used with Phone Number 2.

Note: *Except for test reports, the D9068 automatically selects the phone line to be used.*

Report routing is conducted as follows:

- Reporting starts using Phone Number 1 on Phone Line 1, unless the line monitor shows it to be bad at the start of reporting. If the report is not successful attempting to use Phone Number 1 on Phone Line 1, the D9068 will automatically switch and use Phone Number 2 on Phone Line 1.

- If the report is still unsuccessful using either phone number on Phone Line 1, then the D9068 will try to send the report on Phone Line 2 using Phone Number 1 first, then Phone Number 2 if necessary.

See Table 3 for the complete report routing pattern.

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. Automatic test will automatically alternate phone lines; manual test requires the user to determine which phone line is used for testing purposes (Phone 1, Phone 2 or alternating phone lines).

Note: *Since the D9068 automatically selects which line is to be used, both phone lines must use the same dialing sequences for reporting. For example, a phone line which requires a "9" to be dialed for an outside line cannot be paired with a line that does not require a "9". In any case, PBX lines and ground start phone lines do not comply with NFPA requirements for digital communication.*

When an automatic test report is only received by the central station every other day, and the D9068 is configured to send a test report daily, it 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 dialer is attempting to send the test signal through the inoperative phone line (once every 48 hours).

IMPORTANT

6.1.2 Telephone Line Supervision

The D9068 monitors the Primary and Alternate telephone lines while the communicator is idle by "sniffing" the line for trouble. The total time for trouble indication is 36 seconds.

Each line is "sniffed" every 12 seconds. If a trouble still exists after three samples (36 seconds), the D9068 sends a trouble report and turns on the yellow phone line LED and System Trouble Relay.

The yellow Phone Line LEDs indicate active communication and show line fault conditions. The LED(s) will **flash** once every second during active communication and will be **on steady** for a line fault condition.

6.1.3 Wait for Dial Tone

When enabled, the Wait for Dial Tone feature ensures a dial tone is present before dialing. If no dial tone is present after seven seconds, the D9068 hangs up and tries again after a 30-second wait. If no dial tone is detected on the second try, the D9068 will dial anyway.

If this feature is not enabled, then the D9068 will wait seven seconds after going off-hook, and then dial whether or not a dial tone is present.

6.1.4 Call Routing

Each type of event (non-supervisory alarms, supervisory alarms, alarm restorals, supervisory restorals, test and trouble and trouble restorals) can be programmed with a different call routing. For example, alarm messages can be set for Phone 2 Backup while supervisory restorals are sent to Phone 2 only.

Note: *Phone 2 Backup is the default setting for all event types and is the recommended setting. Changing this setting may result in messages not being communicated to the central station.*

Each event can be routed through the phone in one of four possible ways:

- **PHONE 1 Only:** events are sent to the central station using only Phone Number 1.
- **PHONE 2 Only:** events are sent to the central station using only Phone Number 2.
- **PHON 1 AND 2:** events are sent to the central station using both Phone Number 1 and Phone Number 2.
- **PHN 2 BACKUP:** events are sent to the central station primarily using Phone Number 1 with Phone Number 2 used as a backup in case communication cannot be established with Phone Number 1. This is the default setting for the dialer.

See Appendix E for more information regarding report steering.

Note: *Radionics recommends using the default setting of Phone 1 with Phone 2 as backup. If this setting is changed, the phone lines used will change and messages may not be sent to the central station. Also note that Table 3 does not apply to the "PHONE 1 ONLY" and "PHONE 2 ONLY" route settings.*

6.1.5 Call Attempts

When an event must be communicated to the central station, the dialer will make one attempt at communication. If that attempt is not successful (call is not answered/acknowledged), the dialer then goes into a series of attempts. It will attempt communication with the central station 10 times. Table 3 shows the procedure the dialer will follow for attempting to communicate with the central station when it is programmed to use Phone 2 Backup (default) or Phone 1 and 2.

Attempt	Primary Phone Line (Phone 1)	Secondary Phone Line (Phone 2)
1	1st phone number	
2	2nd phone number	
3		1st phone number
4		2nd phone number
5	2nd phone number	
6	1st phone number	
7		1st phone number
8		2nd phone number
9	2nd phone number	
10	1st phone number	

Table 3: Report Routing with Primary and Alternate Phone Number, Phone 2 Backup

6.1.6 Communication Fault

When a report must be transmitted to the central station, the D9068 will attempt communication. If the attempt is not acknowledged, the dialer will make nine more attempts (see Table 3). If, after 10 attempts, the dialer has not made a successful connection, a communication failure occurs and a COMM FAULT report is generated.

The dialer will then attempt to communicate the COMM FAULT to the central station. If it is unsuccessful on the first attempt, it will proceed to make nine more attempts for a total of 10 attempts. If the dialer is not successful after 10 attempts at communicating the COMM FAULT report, the original report and the COMM FAULT are cleared from the dialer's buffer.

The total time from the first sequence of attempts to communicate a failure is approximately 15 minutes (depending on programming of ACK WAIT time). A COMM FAULT RESTORAL report is transmitted when communication is restored after a communications failure.

6.1.7 Programming Fault

Programming faults are used to indicate if specific phone programming items have not been completed.

A programming fault is generated if:

• Both account numbers are not changed from their default values (0000).

• Neither phone number is programmed.

• A report is routed to Phone Number 1 and either Account Number 1 is "0000" or Phone Number 1 is invalid.

• A report is routed to Phone Number 2 and either Account Number 2 is "0000" or Phone Number 2 is invalid.

• A report is routed to Phone Number 1 and 2 or to Phone 1 with Phone 2 as backup and at least one of the account numbers is "0000" or one of the phone numbers is invalid.

6.1.8 Lost Data

A DATA LOST report is generated when an event cannot be transmitted to the central station. This can occur during two possible situations:

• If the reporting buffer contains the maximum 32 events and another event occurs, the lowest priority event in the report buffer is deleted and replaced by DATA LOST, unless the report is already a DATA LOST report. If the new event has a higher priority than an event already in the report buffer, then the lower priority event is discarded and replaced with the higher priority event. When the buffer is full, the lowest priority event is discarded when a new event occurs. The DATA LOST report is the last event sent, thus emptying the report buffer. If the buffer fills again, another DATA LOST report is sent.

• If the D9068 has sent 99 trouble reports in a 24-hour period and another trouble report is generated, that report will be changed to a DATA LOST report. The DATA LOST report tells the central station that the 100-event limit for trouble messages has been reached.

DATA LOST reports are entered into the history buffer.

6.1.9 Limited Reports

To reduce the number of reports that are sent to the central station, the D9068 will only transmit 100 trouble reports in a 24-hour period. If the D9068 communicates 99 trouble reports to the central station within a 24-hour period, when the next trouble report is generated, it is changed to a DATA LOST report that is sent to the central station.

The trouble report counter may be reset to allow more trouble reports to be sent to the central station. A Manual Test Report will reset the counter to zero. The counter will always be reset at 9:00 a.m. regardless of when it is manually reset.

6.1.10 Communications Tests

The D9068 can perform two types of communications tests: Auto Test and Manual Test. These tests verify the D9068's operation and its ability to transmit a report over the phone line to a receiver. The Auto Test occurs automatically at a fixed frequency set by the installer. The Manual Test occurs when initiated by the user.

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6.1.10.1 Auto Test

Auto Test is an automatic test used to verify proper operation of each phone line connected to the D9068. The programmable parameters for Auto Test are set at the D7033 Keypad (see Section 9.1.2 2: AUTO TEST).

The time (in 24-hour military format) when automatic testing begins, and the testing frequency interval, are established from the D7033 Keypad.

The frequency at which the automatic test reports are sent (or, how often the reports are sent) can be set to one of the following selections: every 6 hours, every 12 hours, every 24 hours, every 7 days or every 28 days. For example, if the test time is set to 2300 (11:00 PM), and the test frequency is set for every 24 hours, then automatic testing will begin at 2300 hours and repeat every 24 hours. There is also a "DISABLED" selection to turn off automatic testing.

Note: *If test frequency is not programmed before test time the first auto test will not be performed. Setting Auto Test to either 7 days, 28 days or DISABLED is not compliant with Underwriters Laboratories, Inc.*

⚠ **CAUTION** ***A power failure of more than 5 minutes may default the system time to "0000." The system time should be checked after a power cycle.***

The Auto Test report is sent even if the maximum number of trouble reports to be sent in a 24-hour period (100) has been exceeded. If the report queue is currently full of reports to be sent, a "DATA LOST" report is sent unless one is already in the queue. If this is the case, then the Auto Test report is **not** sent.

Every time an Auto Test report is sent, the phone line that is used alternates. For example, if the first report uses Phone Line 1, the second report will use Phone Line 2. The third report will use Phone Line 1.

Note: *Sending a Manual Test report does not affect the alternating phone line sequence of the Auto Test report.*

Unless it successfully sends the report initially, the D9068 will attempt to send the Auto Test report a maximum of 10 times which, consequently, may take up to 15 minutes to complete. The reports are re-prioritized on each phone call attempt. If a higher priority event occurs while attempting an Auto Test, the higher priority event is sent on the following phone call.

If the D9068 fails to send the Auto Test report in 10 tries, a COMM FAULT report is sent. The D9068 sends the COMM FAULT using its normal report routing. When it is time for the next Auto Test attempt, it will be conducted on the alternate phone line, not the failing phone line.

When it is time to send a report, the D9068 checks its status. If any alarms, troubles or system faults are present, the D9068 sends the Off Normal at Test report instead. If all conditions are normal, the D9068 sends the Auto Test report.

6.1.10.2 Manual Test

A Manual Communications Test is initiated by the user from the D7033 Keypad (see Section 10.1.4 "Test Mode"). When a Manual Test is initiated, the user is prompted to select a phone line (Line 1 or Line 2). After a phone line is selected, a Manual Test report is sent to the receiver using the specified phone line.

When the Manual Test report is successfully inserted in the report queue, the D7033 Keypad display will show the following message, "COMMUNICATOR INITIALIZING..." until the D9068 starts its first attempt to transmit the report.

When the Manual Test report is being sent, the D7033 Keypad's display is updated to show the phone line being used and the transmission attempt that is currently being made. The message, "COMMUNICATOR LINE 1, TRY 1" indicates that Phone Line 1 is being used on Transmission Attempt #1. After the report has been successfully transmitted, the D7033 Keypad's display is updated to show the following message, "COMMUNICATOR PASSED." The keypad then emits a brief tone, and the rotating Test Menu returns to the keypad's LCD display after displaying the message for two seconds.

Unless it successfully sends the report initially, the D9068 will attempt to send a Manual Test report twice, which may take up to three minutes. The reports are re-prioritized on each phone call attempt. If a higher priority event occurs while attempting a Manual Test, the higher priority event is sent on the following phone call.

Note: *See Appendix A: D9068 Troubleshooting for information on error messages or messages that indicate non-normal operating conditions.*

6.2   Input Point Operation

Note: *See Appendix A: D9068 Troubleshooting for information on error messages or messages that indicate non-normal operating conditions.*

The D9068 supports five inputs that may be triggered by dry contact relays or open collector outputs. Initiating circuits/ points can be configured for seven types of conditions:

• **Fire*:** When activated, the D9068 sends a fire alarm report. A restoral is sent when the input is deactivated.

• **Waterflow*:** When activated, the D9068 sends a waterflow alarm report. A restoral is sent when the input is deactivated.

• **Supervisory*:** When activated, the D9068 sends a supervisory alarm report. A restoral is sent when the input is deactivated.

• **Monitor*:** When activated, the D9068 sends a monitor report. A restoral is sent when the input is deactivated.

• **System Fault**:** When activated, the D9068 sends a trouble input report. A input configured for System Fault is automatically supervised. A restoral is sent when the input is deactivated.

• **AC Failure*:** When activated, this point displays "AC FAILURE" on the keypad. To decrease the number of reports sent to the central station (for example, during a blackout), the D9068 can be programmed with an AC fail delay between 0 and 24 hours. Alternately, the dialer can be programmed to Wait for DC where the dialer must detect an AC failure on one input and a low battery condition on a second input. If there is an AC fail input and a battery input, the D9068 will monitor both inputs. If an AC failure occurs and the delay time is initialized, the D9068 will look for a low battery condition and ignore the delay to report the condition if necessary. A restoral is sent when the input is deactivated.

Note: *The AC Fail Delay time set for the FACP is separate and independent of the AC Fail Delay time set for the D9068. If you program the FACP for an AC Fail Delay time and then program the D9068 for an AC Fail Delay time, the AC Fail Delay times will be added together. For example, if the FACP's AC Fail Delay time is set for 6 hours and the D9068's AC Fail Delay time is set for 12 hours, then the AC Fail report will be sent from the D9068 18 hours from the time of AC failure.*

Note: *All inputs are non-latching. A restoral is sent when the input is deactivated.*

Note: *For fail-safe operation, it is recommended that the system fault input be programmed to fault on open.*

Note: *To view specific active events, connect the keypad and press [1] for Status.*

Note: *The specific messages sent for each event are shown in Appendix C.*

• **Low Battery*:** When activated, the D9068 sends a low battery report. A restoral is sent when the input is deactivated.

* **Input Voltage Levels for Fire, Waterflow, Supervisory, Monitor, AC Failure and Low Battery:** Depending on the voltage level (from 0 V to 5 V) for these selected input configuration types, the input will either operate normally, activate for the event type for which it is configured, or indicate a point trouble. See Table 4 for more information.

Condition	Voltage Range
OPEN	4.0 VDC to 5.0 VDC
NORMAL	2.0 VDC to 3.0 VDC
SHORT	0.0 VDC to 1.3 VDC

Table 4: Input Point Voltage Levels

• **OPEN:** If voltage on the input exceeds 4 V, then a point trouble will be indicated. EOL supervision is required.

• **NORMAL:** If voltage on the input floats between 2 V and 3 V, the input will operate normally. EOL supervision is required.

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- **SHORT:** If voltage on the input dips below 1.3 V, the input will activate for the event type for which it has been configured (i.e.- fire, waterflow, supervisory, etc.).

Note: *Alarm operation is independent of supervision. If an input point is not supervised and there is no EOL device attached, the input point will still activate for the event type for which it is configured if the voltage drops below 1.3 V.*

** Input Voltage Levels for System Fault (Fault on Open): If an input point is configured for System Fault, and System Fault is set for **Fault on Short**, then the voltage levels shown in Table 4. If System Fault is set for **Fault on Open**, then the voltage levels shown in Table 5 apply.

Condition	Voltage Range
OPEN*	4.0 VDC to 5.0 VDC
OPEN**	2.0 VDC to 3.0 VDC
NORMAL	0.0 VDC to 1.3 VDC

Table 5: System Fault (Fault on Open) Voltage Levels

- **OPEN*:** If voltage on the input exceeds 4 V and EOL supervision is not present, the input will indicate a point trouble and will activate for System Fault/Fault on Open.

- **OPEN**:** If voltage on the input is between 2 V and 3 V and EOL supervision is present, the input will activate for System Fault/Fault on Open.

- **NORMAL:** If voltage on the input is between 0 V and 1.3 V, the input will operate normally.

Note: *Alarm operation is independent of supervision. If an input point is not supervised and there is no EOL device attached, the input point will still activate for the event type for which it is configured if the input point voltage goes above 2 V.*

See Figure 16 for System Fault/Fault on Open wiring connections.

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Figure 16: System Fault/Fault on Open Connections

Note: *In order to prevent a trouble report from being generated every time a system fault condition occurs, make sure an EOL resistor is connected to the FACP's output relay as shown in Figure 15.*

IMPORTANT

When the D9068 is configured for serial operation, it will only detect alarms and faults on the inputs when the serial link is broken. When the serial link is active, the inputs are not monitored for off-normal conditions.

6.3 Trouble Relay Operation

An input programmed to signal a trouble condition from the FACP will not affect or activate the on-board trouble relay.

The on-board trouble relay will activate on any of the following conditions:

- Any on-board dialer trouble condition
- Internal diagnostic faults
- Phone line supervision faults
- Input point supervision faults
- Communication failure/faults

Note: *See Appendix A: D9068 Troubleshooting for information on error messages or messages that indicate non-normal operating conditions.*

6.4 Keypad Operation

While the D7033 Keypad is installed, the system will neither monitor the input points or the serial connection on the FACP.

6.4.1 Understanding the D7033 LCD Remote Keypad

The D7033 LCD Remote Keypad is an alphanumeric LCD keypad used for programming and debugging purposes only when connected to the D9068. The D7033 has a two-line by 16-character display to provide information on various dialer programming functions. In most instances, the first line displays general system status information, while the second line describes the specific programming menus and prompts.

See Figure 15 to connect the D7033 to the D9068. See Figure 17 for a description of D7033 Keypad key functions.
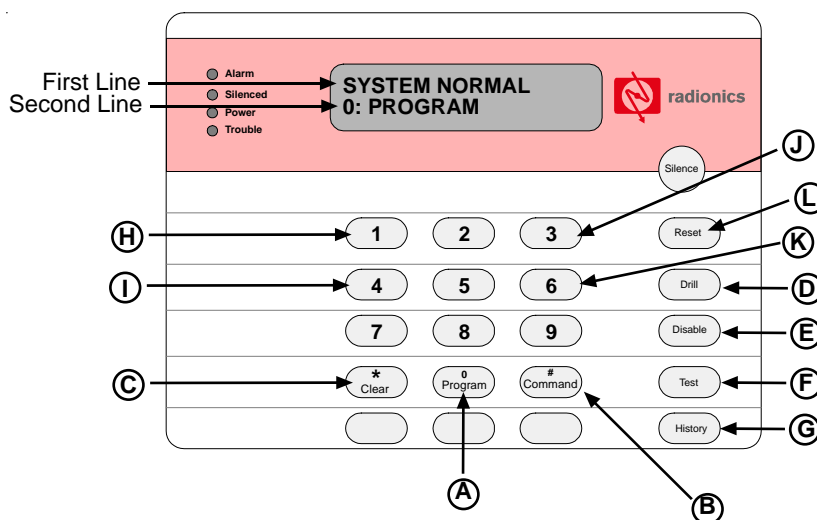
Figure 17: D7033 Keypad Key Descriptions

A) **[0/Program] Key:** Enters the Programming Mode menu when pressed. See Section 9.0 "Programming the D9068" for step-by-step programming instructions.

B) **[#/Command] Key:** Accepts programming entries into D9068. This key must be pressed after every programming entry.

C) **[*/Clear] Key:** Use this key to back out of any programming menu without making any changes. To return to the "SYSTEM NORMAL" display, press the **[*/Clear]** key until "SYSTEM NORMAL" is displayed across the first line.

D) **[Drill] Key:** Advances to the next programmable feature or character position. See Figure 17.

E) **[Disable] Key:** Moves back to the previous programmable feature or character position. See Figure 17.

F) **[Test] Key:** Pressing the **[Test]** key enters Test Mode. Pressing the **[Test]** key when entering a phone number pulls up three phone control code options. See Section 10.1.4 "Test Mode" for more information.

G) **[History] Key:** Pressing the **[History]** key enters History Mode. See Section 6.5 "History" for more information.

H) **[1] Key:** Increases the D7033's sounder volume. Press and hold the **[*/Clear]** key first, and then press the **[1]** key to adjust the volume.

I) **[4] Key:** Decreases the D7033's sounder volume. Press and hold the **[*/Clear]** key first, and then press the **[4]** key to adjust the volume.

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J) **[3] Key:** Increases the D7033's backlight intensity. Press and hold the **[*/Clear]** key first, and then press the **[3]** key to adjust the backlight intensity.

K) **[6] Key:** Decreases the D7033's backlight intensity. Press and hold the **[*/Clear]** key first, and then press the **[6]** key to adjust the backlight intensity.

L) **[Reset] Key:** Initiates a manual reset of the D9068. See Section 6.5 "Reset" for more information. Clears the character selected by the cursor when pressed. See Figure 17.

Press [Drill] to advance cursor to next position.

```
PHN NMBR 1: 5551        PHN NMBR 1: 5551
234???????????      Drill      234????????????
```

Press [Disable] to move cursor back one position.

```
PHN NMBR 1: 5551        PHN NMBR 1: 5551
234????????????    Disable     234????????????
```

Press [Reset] to clear character currently selected.

```
PHN NMBR 1: 5551        PHN NMBR 1: 5?51
234????????????     Reset      234????????????
```
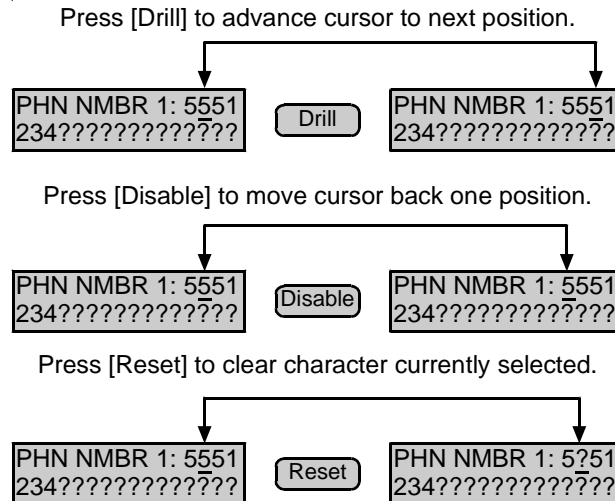
Figure 18: Additional Functions of the [Drill], [Disable] and [Reset] Keys.

6.4.2   Scrolling Menus

When properly connected to the D9068, the D7033 will display along its second line a scrolling menu of possible user actions. This scrolling menu is the D9068's Main Menu. The scrolling menu items flash one at a time at 1-second intervals through the list and then start over. When operating normally, "SYSTEM NORMAL" is displayed along the first line on the D7033 LCD.

```
SYSTEM NORMAL
0: PROGRAM
1: STATUS
2: HISTORY       scrolling items
3: TEST
4: RESET
```
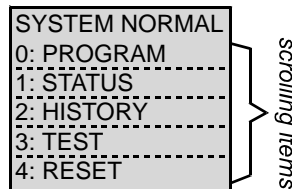
Figure 19: Scrolling Main Menu

The Programming Menu and Test Menu options also flash across the second line one at a time at 1-second intervals. The speed of the display rate can be adjusted. See Section 9.2.2 "2:DISPLAY RATE" for more information.

6.4.3   Selecting Menu Items

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

• **Exclusive Keys:** In the Main Menu, TEST and HISTORY have an exclusive key on the D7033 Keypad. To select one of these menu items, you may select the item from the Main Menu by pressing the corresponding key or by pressing the exclusive function key. For example, TEST is the third choice in the Main Menu. Pressing either the **[3]** from the Main Menu or pressing the **[Test]** key will call up the Test Mode Menu. See Figure 20.

```
SYSTEM NORMAL                              Test
3: TEST              OR
Press the [3] key              Press the [TEST] key
from the Main Menu             on the D7033 Keypad
```
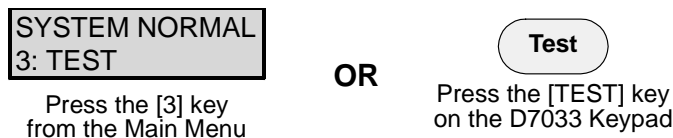
Figure 20: Exclusive Keys

- **Shared Keys:** The **[Program]** key is not exclusive, but shared with other characters. The character sharing the corresponding key is displayed on the same key. To select one of these items, press the shared key. For example, The **[Program]** key is also the **[0]** key.

```
SYSTEM NORMAL
0: PROGRAM  ──────────▶  ( 0 / Program )
```
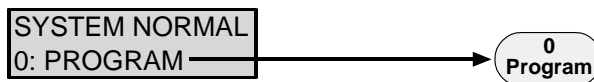
Enter the Programming Mode by pressing the [0/Program] key.

Figure 21: Shared Keys

- **Sub-menu Items:** The corresponding key to a sub-menu item may be displayed in the second line preceding a colon. Press the corresponding key to select that item. For example, press the **[1]** key to select PROG TIME from the Programming Mode menu.

```
PROG MODES
1: PROG TIME  ──────────▶  ( 1 )
               Corresponding Key
```
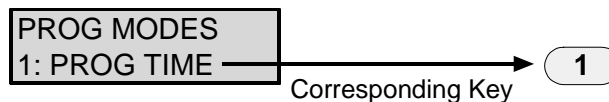
Figure 22: Sub-menu Items

Note: *When a scrolling menu is active, it is not necessary 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.*

6.4.4 History

IMPORTANT

The history buffer may be cleared when the system loses all power for more than 5 minutes.

The HISTORY option is a list of system events that have occurred. HISTORY can be selected from the Main Menu by pressing the **[2]** key, or by pressing the **[History]** key.

Up to 100 events can be stored in the history buffer.

Once you enter the History Mode, the most recent system event will be displayed on the top line of the D7033's LCD. The time and date will appear on the second line. As a reminder, the bottom line will toggle every four seconds between the time/date that the event occurred and the keys to use to navigate through the history buffer.

The following keys are used on the D7033 Keypad to navigate through the history buffer:

- **[Disable]:** moves to older events in the history buffer.
- **[Drill]:** moves to newer events in the history buffer.
- **[*/Clear]:** terminates History Mode and returns the display to the Main Menu.
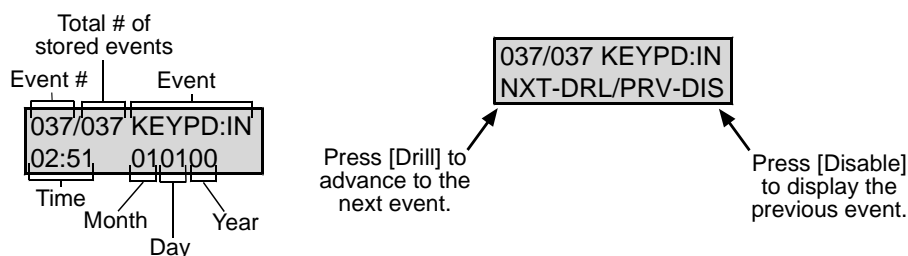
Figure 23: Event History Example

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Table 6 lists the event history abbreviations.

Abbreviation	Meaning	Abbreviation	Meaning
A, ALRM	Alarm	OFFNORM	Off Normal at Test
AUTOTST	Auto Test	PGMG:FLT	Trouble Programming
ARST	Alarm Restore	PH1	Phone Line 1
BATT:LOW	Battery Low	PH2	Phone Line 2
BAT:RSTR	Battery Restore	RS, RST, RSTR	Restore
COMM	Communication	S	Supervisory
DATALOST	Data Lost	SYSFLT:F	Trouble Input
EE2	EEPROM	SYSFLT:R	Trouble Input Restore
F	Fire	SYS:RSET	System Reset
FAIL	Failure	SYSRST	System Restore
FLT	Fault	SYSTRB	System Trouble
KEYPD: IN	Keypad Installed	WDOG:RST	Automatic CPU Reset (Watchdog)
KEYPD: RS	Keypad Removed	TRBL	Trouble
M	Monitor	TRST	Trouble Restore
MANULTST	Manual Test	W	Waterflow Alarm
SER:FL	Panel Communication Failure	SER:RS	Panel Communication Restore

Table 6: Event History Abbreviations

Note: *Events received from an analog FACP over the serial connection are not stored in the History buffer.*

6.5 Reset

There are four ways the D9068 can be manually reset:

1) On the D7033 LCD Remote Keypad, pressing the **[4]** key to select RESET from the Main Menu, or pressing the **[Reset]** key will reset the D9068 only if there are off-normal conditions present. An OPEN RESET report with a User ID parameter of 99 is sent when using this way to reset the D9068.

2) Exiting the Test Mode will reset the D9068. An OPEN RESET report with a User ID parameter of 99 is sent when using this way to reset the D9068.

3) Exiting the Programming Mode will reset the D9068. An OPEN RESET report with a User ID parameter of 01 is sent when using this way to reset the D9068.

4) Powering up the D9068 will reset it, but no OPEN RESET report is sent.

7.0 How to Program

7.1 Keypad Programming

All programming for the D9068 is done via the D7033 LCD Remote Keypad. To properly program the D9068, two keys the **[#Command]** and **[*/Clear]** keys must always be pressed in addition to the key(s) necessary for making specific programming entries.

- **[#/Command] Key:** This key must be pressed to accept an entry into the D9068.

- **[*/Clear] Key:** This key must be pressed after the **[#Command]** key is pressed to return to the sub-menu/menu selections.

See Figure 24 for the complete programming key sequence for setting the D9068's operational date.

0 Program	1	1	ENTER DATE MMDDYY: 010100	# Command	* Clear
Press to enter Programming Mode Menu	Press to enter PROG TIME submenu	Press to select SYSTEM for system date/time	Enter the current date using keypad keys 0-9	Press to accept entry into system	Press to move to next menu item or to backtrack through menu(s)
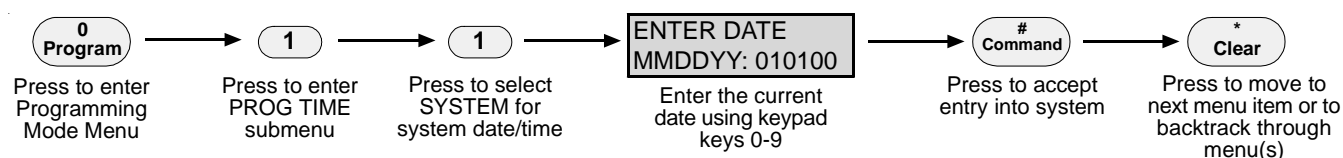
Figure 24: Programming Key Sequence for System Date

Note: *Once you have entered the Programming Menu (Level 2), it is no longer necessary to press **[0]** to re-enter the Programming Menu. If you press **[0]** while already in the Programming Menu, the keypad will emit a three-beep error tone.*

IMPORTANT

When Programming Mode is entered, all monitoring will cease. The D9068 will not process input point events, supervise the phone lines or monitor the serial link. Central Station communication is disabled.

7.2 Programming Key Sequences

7.2.1 Understanding Programming Key Sequences

A programming key sequence is a list of keys to push to get to the desired level option. Its purpose is to reduce repetition and provide quick instructions when programming the D9068.

- **Level 1:** Level 1 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 key sequence is "0". The Main Menu selections consist of four options:
  - PROGRAM
  - STATUS
  - HISTORY
  - TEST
  - RESET

- **Level 2:** Level 2 is the Programming Mode Menu. It represents the second number in the key sequence. There are eight programming options:
  - PROG TIME
  - PROG TIMERS
  - PROG INPUTS
  - PROG RELAY
  - PROG ACC'NTS
  - PROG FORMATS
  - PROG DEFLTS
  - SERIAL CONECTN

- **Level 3:** Level 3 provides the third set of options that branch from Level 2 (see Figure 25). The third number in the key sequence represents the option chosen in Level 3.

- **Level 4:** Level 4 is comprised of keypad prompts that supply instructions specific to the selected menu item.

Note: *Not all programming menus will extend to Level 4. If a menu does not reach Level 4, the instructional prompts will appear on the last (highest) menu level.*

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LEVEL 1
(MAIN MENU)

LEVEL 2

LEVEL 3

LEVEL 4

1: SYSTEM

[1]: SYSTEM

[1]: PROG TIME

[0]: PROGRAM

1st key in shortcut.

From the Main Menu (Level 1), press [0] to enter the Programming Menu (Level 2).

2nd key in shortcut.

From the Programming Menu (Level 2), press [1] to enter the PROG TIME submenu.

3rd key in shortcut.

From the PROG TIME submenu (Level 3), press [1] to select 1: SYSTEM (Level 4).

Follow the keypad prompts to make settings for this selection. Press [#] to confirm the setting.

Figure 25: Programming Key Sequence Diagram

The example above is the programming key sequence to enter system settings such as the date and time. Once you have entered the key sequence, follow the procedural description of the specific function you are programming.

Note: *Once you have entered the Programming Menu (Level 2), it is no longer necessary to press **[0]** to re-enter the Programming Menu. If you press **[0]** while already in the Programming Menu, the keypad will emit a three-beep error tone.*

8.0   Program Menu Tree

Level 2 (Programming Menu)	Level 3	Level 4	Level 5

1: PROG TIME

- 1: SYSTEM
- 2: AUTO TEST
- 3: DAYLIGHT SAV

- 1: TEST TIME
- 2: TEST FREQUENCY

TEST FREQ (__)
- 1: 6 HOURS
- 2: 12 HOURS
- 3: 24 HOURS
- 4: 7 DAYS
- 5: 28 DAYS
- 6: ~~DISABLED~~

Note: *Setting Auto Test to either 7 days, 28 days or DISABLED is not compliant with Underwriters Laboratories, Inc.*

2: PROG TIMERS

- 1: AC FAIL DLY
- 2: DISPLAY RATE

- 1: WAIT FOR DC
- 2: WAIT DLY TIME

Note: *D9068 will prompt for specific input point to be programmed.*

3: PROG INPUTS

- 1: CONFIGURE
- 2: SUPERVISED

- 1: FIRE
- 2: WATERFLOW
- 3: SUPERVISORY
- 4: MONITOR
- 5: SYS FAULT
- 6: AC FAILURE
- 7: LOW BATTERY

- 1: FAULT ON SHORT
- 2: FAULT ON OPEN

Note: *Use [Drill] to move to the next point and [Disable] to move to the previous point.*

4: PROG RELAY

- 1: RELEAS ON TRBL
- 2: ACTIV GND STRT

Note: *Ground Start operation is not compliant with Underwriters Laboratories, Inc.*

5: PROG ACC'NTS

1: ACCOUNT NUMS
- 1: NUMBER 1
- 2: NUMBER 2

2: PHONE NUMS
- 1: PHONE #1
- 2: PHONE #2
- 3: ~~PHONE #3~~

3: PHONE CONTROL
- 1: PHONE 1 FORMAT
  - 1: 4/2 REPORT
  - 2: SIA 110, RPRT
  - 3: CONTACT ID
  - 4: SIA 300, RPRT
  - 5: MODEM III
- 2-PHONE 2 FORMAT
  - Same as Phone 1

⊠   *Items crossed out are not currently supported.*

D9068

Program Menu Tree

Level 2 (Programming Menu)	Level 3	Level 4	Level 5	Level 6

5: PROG ACC'NTS → **3: PHONE CONTROL** →

3: PHONE 1 TONE →
- 1: 19D, 14A, 10PS
- 2: 18D, 23A, 10PS
- 3: 19D, 14A, 20PS
- 4: 18D, 23A, 20PS
- 5: 19D, 14A, 40PS
- 6: 18D, 23A, 40PS

For 4/2 reporting format only.

4: PHONE 2 TONE →
Same as PHONE 1 TONE

5: PHONE 1 TEXT

6: PHONE 2 TEXT

4: RPT STEERING →

1: NONSUP ALRM →
- 1: PHONE 1 ONLY
- 2: PHONE 2 ONLY
- 3: PHON 1 AND 2
- 4: PHONE 2 BACKUP

2: SUPVSY ALRM → Same as NONSUP ALRM

3: ALM RSTR, RST → Same as NONSUP ALRM

4: SUPVSY RSTR → Same as NONSUP ALRM

5: TESTS → Same as NONSUP ALRM

6: TBL, TBL RSTR → Same as NONSUP ALRM

5: LINE CONTROL →

1: LINE #1 →
- 1: DIALING TYPE →
  - 1: PULSE ONLY
  - 2: TONE/PULSE
  - 3: TONE ONLY
- 2: MONITOR LINE
- 3: WAIT DIALTONE

2: LINE #2 → Same as LINE #1

6: ACK WAIT TIME

Level 2 (Programming Menu)	Level 3	Level 4	Level 5

6: PROG FORMATS → **1: 4/2 POINT RPT** → **1: EVENTS** →

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

2: ZONES 1 TO 9 →
3: ZONE 10 D2

Level 5
1: ZONE 1 D2
2: ZONE 2 D2
3: ZONE 3 D2
4: ZONE 4 D2
5: ZONE 5 D2
6: ZONE 6 D2
7: ZONE 7 D2
8: ZONE 8 D2
9: ZONE 9 D2

2: 4/2 RPT CODES →

See Appendix B for a list of all supported 4/2 Report Codes.

Level 4
1: GROUP 1
2: GROUP 2
3: GROUP 3
4: GROUP 4
5: GROUP 5

3: SIA SILENC RPT →

Level 4
1: LEFT BYTE
2: RIGHT BYTE

7: PROG DEFLTS →

Level 3
1: CLEAR HISTRY
2: DEFAULT ALL EE
3: DEFLT 4/2 CDES

8: SERIAL CONECTN →

Level 3
1: YES
2: NO

Program Menu Tree

Notes:

9.0 Programming the D9068

The D9068 uses scrolling menus to display menu choices. The Main Menu appears as follows:

```
SYSTEM NORMAL
0: PROGRAM
1: STATUS
2: HISTORY
3: TEST
4: RESET
```

To enter the Programming Menu, press the **[0]** key. The Programming Menu appears as follows:

```
1: PROG TIME
2: PROG TIMERS
3: PROG INPUTS
4: PROG RELAY
5: PROG ACC'NTS
6: PROG FORMATS
7: PROG DEFLTS
8: SERIAL CONECTN
```

Note: *Once you have entered the Programming Menu (Level 2), it is no longer necessary to press **[0]** to re-enter the Programming Menu. If you press **[0]** while already in the Programming Menu, the keypad will emit a three-beep error tone.*

9.1 PROG TIME
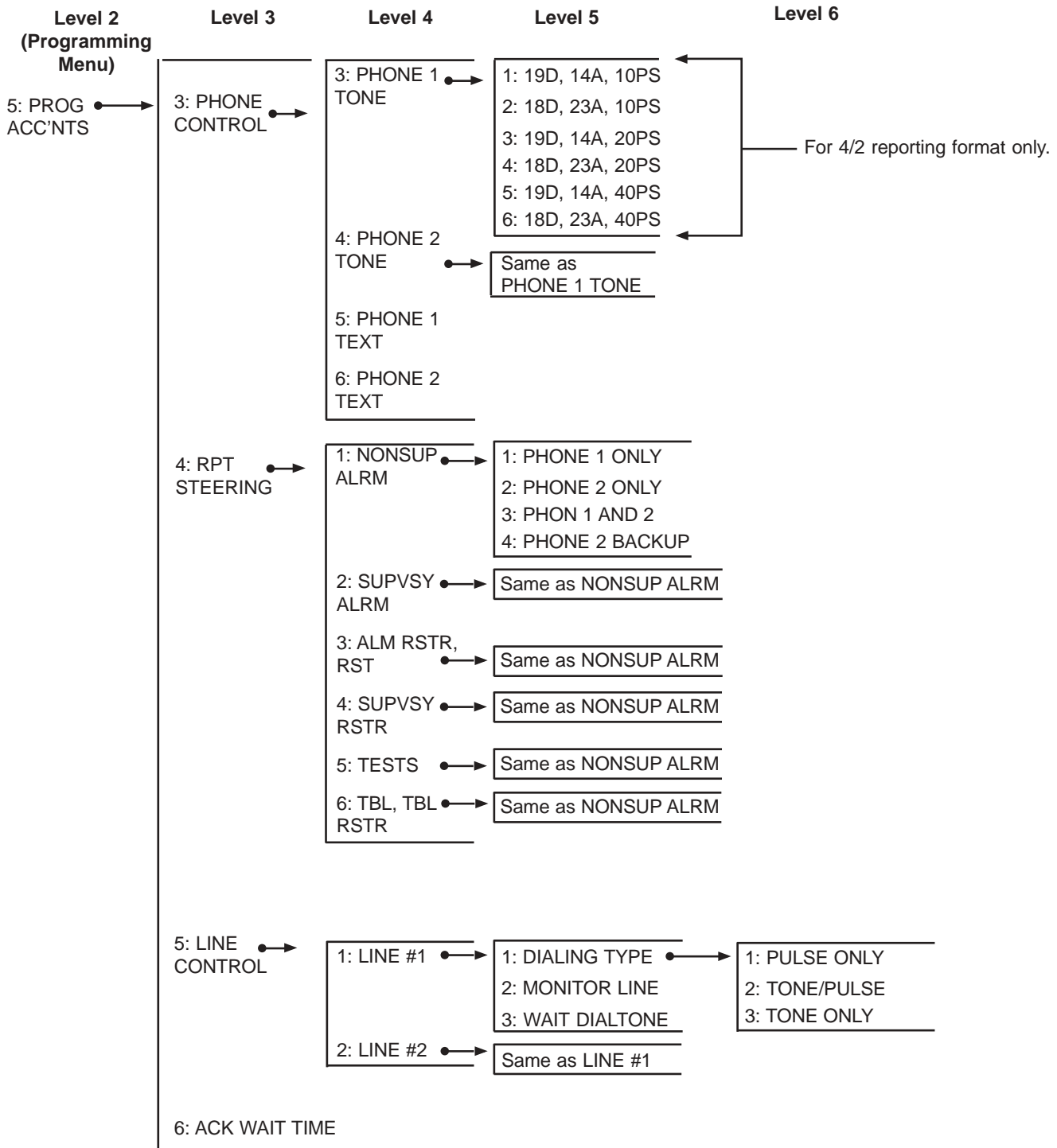
```
DATE/TIME
1: SYSTEM
2: AUTO TEST
3: DAYLIGHT SAV
```
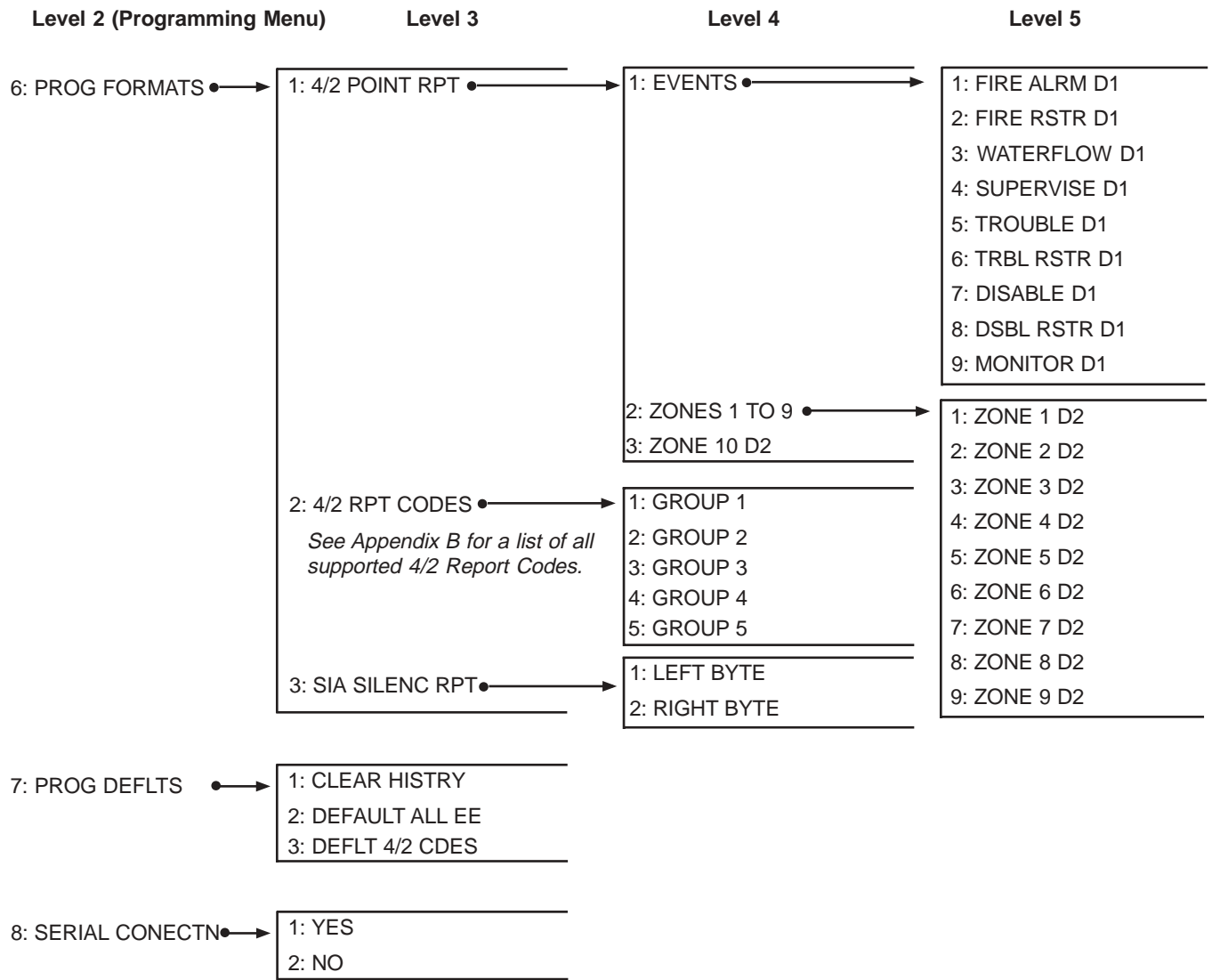
Description: The PROG TIME feature provides programming options for setting the system's date and time, establishing automatic testing times and adhering to daylight savings.

Programming Procedure:

1) From the Programming Menu, press **[1]** for PROG TIME. The above window will display. See the following sections for PROG TIME programming options.

9.1.1 1: SYSTEM

Programming Key Sequence: **[0]**-PROGRAM, **[1]**-PROG TIME, **[1]**-SYSTEM

Description: Selecting 1:SYSTEM allows you to set the current date and time for system operations.

Programming Procedure:

1) From the PROG TIME submenu, press **[1]** for SYSTEM. The following window will appear:

```
ENTER DATE
MMDDYY: _____
```

2) Enter the date followed by **[#/Command]** to accept the entry.

3) Press **[*/Clear]** to move to the next feature.

```
ENTER TIME
HHMM: _____
```

4) Enter the time in 24-hour format followed by **[#/Command]** to accept the entry.

5) Press **[*/Clear]** to return to the PROG TIME (DATE/TIME) scrolling menu. The keypad will display the entries made before returning to the PROG TIME menu.

Programming the D9068

9.1.2 2: AUTO TEST

AUTOMATIC TEST
1: TEST TIME
2: TEST FREQUENCY

Programming Key Sequence: **[0]**-PROGRAM, **[1]**-PROG TIME, **[2]**-AUTO TEST

Description: AUTO TEST allows you to set the time when the auto test is sent and how often the automatic test occurs.

Programming Procedure:

1) From the PROG TIME submenu, press **[2]** for AUTO TEST. The above window will appear. See the following sections for AUTO TEST programming options.

9.1.2.1 2: TEST FREQUENCY

Programming Key Sequence: **[0]**-PROGRAM, **[1]**-PROG TIME, **[2]**-AUTO TEST**, [2]**-TEST FREQUENCY

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

Programming Procedure:

1) From the AUTO TEST submenu, press **[2]** for TEST FREQUENCY. The following window will appear:

AUTO FREQ (_)
1: 6 HOURS
2: 12 HOURS
3: 24 HOURS
4: 7 DAYS
5: 28 DAYS
6: DISABLED ◀———————— ***This item is not currently supported.***

2) Press the number key that corresponds to your selection followed by the **[#/Command]** key. The revised setting is displayed in parentheses on the first line.

3) After you have programmed the test frequency, press the **[*/Clear]** key to return to the AUTO TEST submenu.

9.1.2.2 1: TEST TIME

Programming Key Sequence: **[0]**-PROGRAM, **[1]**-PROG TIME, **[2]**-AUTO TEST**, [1]**-TEST TIME

Description: 1: TEST TIME allows you to program the time of day at which automatic tests occur and uses a 24-hour clock (for example, enter 2300 for 11:00 PM).

Programming Procedure:

1) From the AUTO TEST submenu, press **[1]** for TEST TIME. The following window will appear:

AUTO TEST TIME
HHMM: _____

2) Enter the time in 24-hour format followed by the **[#/Command]** key.

3) Press the **[*/Clear]** key to return to the AUTO TEST submenu.

Note: *If test frequency is not programmed before test time then the first auto test will not be performed.*

9.1.3   3: DAYLIGHT SAV

Programming Key Sequence: [0]-PROGRAM, **[1]**-PROG TIME, **[3]**-DAYLIGHT SAV

Description: DAYLIGHT SAV enables automatic adjustment of system time for daylight savings. The dates for the adjustment are pre-programed into the system.

Programming Procedure:

1) From the PROG TIME submenu, press **[3]** for DAYLIGHT SAV. The following window will appear:

```
DAYLIGHT SAVING?
NO: YES (1)/NO (0)
```

2) The current setting precedes the colon (:) in the second line. Press **[1]** to set DAYLIGHT SAV to YES. Press **[0]** to set it to NO.

3) Press the **[#/Command]** key to confirm your selection.

4) After you have programmed this feature, press the **[*/Clear]** key to return to the PROG TIME submenu.

9.2   PROG TIMERS

```
PROG TIMERS
1: AC FAIL DLY
2: DISPLAY RATE
```

Description: The PROG TIMERS feature allows the user to set time-related parameters for AC Fail Delay and Display Rate.

Programming Procedure:

1) From the Programming Menu, press **[1]** for PROG TIME. The above window will display. See the following sections for PROG TIME programming options.

9.2.1   1: AC FAIL DLY

```
AC FAIL DLY  (__)
1: WAIT FOR DC
2: WAIT DLY TIME
```

Programming Key Sequence: [0]-PROGRAM, **[2]**-PROG TIMERS, **[1]**-AC FAIL DLY

Description: This feature sets the number of hours the D9068 will wait after an AC failure is signaled before sending an AC Failure report.

9.2.1.1   1: WAIT FOR DC

Programming Key Sequence: [0]-PROGRAM, **[2]**-PROG TIMERS, **[1]**-AC FAIL DLY, **[1]**-WAIT FOR DC

Description: Two input points must be programmed with one set for AC Fail and the other for Low Battery. Once an AC Fail signal is received on the AC Fail input, the D9068 will wait for a low battery signal. The "Wait for DC" function causes the dialer to wait and send the AC FAIL and LOW BATT reports simultaneously. The current setting is displayed in parentheses on the first line.

Note: *If a Low Battery input activates followed by an AC Fail input activating, the AC Fail report is sent immediately.*

Programming Procedure:

1) Press **[1]** if you want to WAIT for DC followed by **[#/Command]**. The setting in parentheses will reflect the setting.

2) After you have programmed WAIT for DC, press the **[*/Clear]** key to return to the PROG TIMERS submenu.

9.2.1.2 2: WAIT DLY TIME

Programming Key Sequence: **[0]**-PROGRAM, **[2]**-PROG TIMERS, **[1]**-AC FAIL DLY, **[2]**-WAIT DLY TIME

Description: WAIT DLY TIME allows you to select how long to wait after an AC Fail signal is received before reporting the event over the phone line.

Note: *Anytime AC Fail and Low Battery events are both present, the AC Fail event is reported regardless of any wait time.*

Note: *Programming "WAIT DLY TIME" for "00" will allow the D9068 to send and AC Fail report without any delay.*

Programming Procedure:

1) From the AC FAIL DLY submenu, press **[2]** for WAIT DLY TIME followed by **[#/Command]**. The following window will appear:

```
AC FAIL DLY (__)
(00-24 HRS): _____
```

2) The current setting is displayed in parentheses on the first line. Enter the time and press the **[#/Command]** key.

3) After you have programmed the WAIT DLY TIME option, press the **[*/Clear]** key to return to the PROG TIMERS submenu.

9.2.2 2: DISPLAY RATE

Programming Key Sequence: **[0]**-PROGRAM, **[2]**-PROG TIMERS, **[2]**-DISPLAY RATE

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

Programming Procedure:

1) From the PROG TIMERS submenu, press **[2]** for DISPLAY RATE. The following window will appear:

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

2) The current setting is displayed in parentheses on the first line. Enter the desired value and press the **[#/Command]** key.

3) After you have programmed the display rate, press the **[*/Clear]** key to return to the PROG TIMERS submenu.

9.3   Program Inputs

```
POINT NUMBER
(1-5): ___
```

Description: This feature allows you to program the five available inputs.

Programming Procedure:

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

```
PROG POINT (___)
1: CONFIGURE
2: SUPERVISED
```

Press the number key that corresponds to your selection.

Pressing the **[Drill]** button will send you to the next point. For example, if you are programming Point 2 and you press **[Drill]**, you will be sent to the setting for Point 3.

Pressing the **[Disable]** button will return you to the previous point. For example, if you are programming Point 2 and you press **[Disable]**, you will be sent to the setting for Point 1.

9.3.1   1: CONFIGURE

Programming Key Sequence: **[0]**-PROGRAM, **[3]**-PROG INPUTS, **[1]**-CONFIGURE

Description: 1: CONFIGURE allows each input to be set for one of the following options:

- **Fire:** When activated, the D9068 sends a fire alarm report. A restoral is sent when the input is deactivated.

- **Waterflow:** When activated, the D9068 sends a waterflow alarm report. A restoral is sent when the input is deactivated.

- **Supervisory:** When activated, the D9068 sends a supervisory alarm report. A restoral is sent when the input is deactivated.

- **Monitor:** When activated, the D9068 sends a monitor report. A restoral is sent when the input is deactivated.

- **System Fault:** When activated, the D9068 sends a trouble input report. If a point is configured for System Fault, a window will appear to determine what the point will fault on (see below). A restoral is sent when the input is deactivated.

- **AC Failure:** When activated, this point displays "AC FAILURE" on the keypads. To decrease the number of reports sent to the central station (for example, during a blackout), the dialer can be programmed with an AC fail delay between 0 and 24 hours. Alternately, the dialer can be programmed to Wait for DC where the dialer must detect an AC failure on one input and a low battery condition on a second input. If there is an AC fail input and a battery input, the dialer will monitor both inputs. If an AC failure occurs and the delay time is initialized, the dialer will look for a low battery condition and ignore the delay to report the condition if necessary. A restoral is sent when the input is deactivated.

- **Low Battery:** When activated, the D9068 sends a low battery report. A restoral is sent when the input is deactivated.

Note: *The AC Fail Delay time set for the FACP is separate and independent of the AC Fail Delay time set for the D9068. If you program the FACP for an AC Fail Delay time and then program the D9068 for an AC Fail Delay time, the AC Fail Delay times will be added together. For example, if the FACP's AC Fail Delay time is set for 6 hours and the D9068's AC Fail Delay time is set for 12 hours, then the AC Fail report will be sent from the D9068 18 hours from the time of AC failure.*

Note: *All inputs are non-latching. A restoral is sent when the input is deactivated.*

Note: *For fail-safe operation, it is recommended that the system fault input be programmed to fault on open.*

Note: *To view specific active events, connect the keypad and press **[1]** for Status.*

Note: *The specific messages sent for each event are shown in Appendix C.*

Programming Procedure:

1) From the PROG INPUTS submenu, enter the point number you wish to program and press the **[#/Command]** key. The display will scroll through the PROG INPUT options.

2) Press **[1]** to select CONFIGURE. The following window will appear:

```
ACTVTN TYPE (___)
1: FIRE
2: WATERFLOW
3: SUPERVISORY
4: MONITOR
5: SYS FAULT ─────────┐
6: AC FAILURE          │
7: LOW BATTERY         │
                       ▼
              FAULT ON (___)
              1: FAULT ON SHORT
              2: FAULT ON OPEN
```

Note: *This selection determines whether a system fault condition is activated upon a shorted condition or an open condition. See Section 6.2 "Input Point Operation" for more details. To confirm the selection, press the **[#/Command]** key. To return to the PROG INPUTS submenu, press the **[*/Clear]** key.*

3) Press the number key that corresponds to your selection (the current setting is displayed in parentheses on the first line).

4) Press the **[#/Command]** key to enter the selection into the D9068.

5) Press the **[*/Clear]** key to return to the PROG INPUTS submenu.

Programming the D9068

9.3.2   2: SUPERVISED

Programming Key Sequence: **[0]**-PROGRAM, **[3]**-PROG INPUTS, **[2]**-SUPERVISED

Description: This option enables supervision for the connection between the five inputs and the FACP.

Note: *A 2.2 k Ω EOL resistor is required and must be connected as shown in Figures 7 or 9.*

Programming Procedure:

1) From the PROG INPUTS submenu, press **[2]** to select SUPERVISED. The following window will appear:

```
SUPERVISED? (___)
NO: YES (1)/NO (0)
```

The parentheses on the first line indicate the point that is currently being programmed. The current setting for the SUPERVISED option is displayed at the beginning of the second line.

2) Press the number key that corresponds to your selection. To confirm your selection, press the **[#/Command]** key.

3) To return to the PROG INPUTS submenu, press the **[*/Clear]** key.

Note: *An input configured for System Fault is always supervised and cannot be changed.*

9.4   PROG RELAY

```
RELAY (_____)
1: RELEAS ON TRBL
2: ACTIV GND STRT
```

Description: The D9068 contains a general system trouble relay designed for fail-safe operation.

Programming Procedure:

1) From the Programming Menu, press **[4]** to select PROG RELAY.

2) Press the number key that corresponds to your selection. See the following sections for trouble relay programming information.

Note: *The relay can only be programmed for either RELEAS ON TRBL or ACTIV GND STRT. It cannot perform both functions simultaneously.*

9.4.1   1: RELEAS ON TRBL

Programming Key Sequence: **[0]**-PROGRAM, **[4]**-PROG RELAY, **[1]**-RELEAS ON TRBL

Description: This option holds the on-board trouble relay normally energized and releases it to indicate a trouble condition.

Programming Procedure:

1) From the PROG RELAY submenu, press **[1]** to select RELEAS ON TRBL. The current setting is displayed in parentheses.

2) Press the **[#/Command]** key to confirm your selection.

3) Press the **[*/Clear]** key to return to the Programming Menu.

9.4.2   2: ACTIV GND STRT

Programming Key Sequence: **[0]**-PROGRAM, **[4]**-PROG RELAY, **[2]**-ACTIV GND STRT

Description: This option allows the D9068 to use the on-board trouble relay for ground start operation.

Programming Procedure:

1) From the PROG RELAY submenu, press **[2]** to select ACTIV GND STRT. The current setting is displayed in parentheses.

2) Press the **[#/Command]** key to confirm your selection.

3) Press the **[*/Clear]** key to return to the Programming Menu.

9.5 PROG ACC'NTS

```
PROG ACC'NTS
1: ACCOUNT NUMS
2: PHONE NUMS
3: PHONE CONTROL
4: RPT STEERING
5: LINE CONTROL
6: ACK WAIT TIME
```

Description: This feature allows you to program parameters for event reporting.

Programming Procedure:

1) From the Programming Menu, press **[5]** to select PROG ACC'NTS.

2) Press the number key that corresponds to your selection. See the following sections for account programming information.

9.5.1 1: ACCOUNT NUMBERS

Programming Key Sequence: **[0]**-PROGRAM, **[5]**-PROG ACC'NTS, **[1]**-ACCOUNT NUMS

Description: The account numbers identify the D9068 when it reports to the central station.

Programming Procedure:

1) From the PROG ACC'NTS submenu, press **[1]** for ACCOUNT NUMS. The following window will display:

```
ACCOUNT NUMS
1: NUMBER 1
2: NUMBER 2
```

2) Press the number that corresponds with the account number you wish to set. The following window will then display:

ACCOUNT #1: 0000

```
NEW NUMBER: 0000
```

3) The existing number is shown on the top line. Hexadecimal digits A through F can be accessed for entry by pressing the **[Test]** key. Press **[1]** for A, **[2]** for B, **[3]** for C, **[4]** for D, **[5]** for E and **[6]** for F.

4) Enter the new number on the second line and press the **[#]** key to confirm your entry. Press the **[*/Clear]** key to return to the PROG ACC'NTS submenu.

5) Program Account Number 2 using the same procedure.

Note: *"0000" is not a valid account number. At least one digit must be non-zero.*

Programming the D9068

9.5.2   2: PHONE NUMS

Programming Key Sequence: **[0]**-PROGRAM, **[5]**-PROG ACC'NTS, **[2]**-PHONE NUMS

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

- **PHONE #1:** Phone Number 1
- **PHONE #2:** Phone Number 2
- **PHONE #3:** Not available at this time (reserved for future use).

For compliance with UL and NFPA standards, both phone numbers must be used.

IMPORTANT

Programming Procedure:

1) From the PROG ACC'NTS submenu, press **[2]** for PHONE NUMS. The following window will display:

```
PHONE NUMS
1- PHONE #1
2- PHONE #2
3- PHONE #3  ◄──────────── This item is not currently supported.
```

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

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

3) Enter the phone number. Press **[Drill]** and **[Disable]** to move between digits. Press the **[#/Command]** key when the entry is complete. Press **[*/Clear]** to return to the PROG ACC'NTS submenu.

Note: *Before exiting the Phone Numbers programming submenu, see the following information regarding special control characters for phone numbers.*

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

```
PHONE CONTROL CODE
1: * CODE
2: # CODE
3: /3 SEC DELAY
```

- *** CODE:** Press the **[TEST]** key, and then press the **[1]** key for Touch Tone "*" action.
- **# CODE:** Press the **[TEST]** key, and then press the **[2]** key for Touch Tone "#" action.
- **/3 SEC DELAY:** Press the **[TEST]** key, and then press the **[3]** key for a three-second delay.

9.5.3   3: PHONE CONTROL

Programming Key Sequence:[0]-PROGRAM, [5]-PROG ACC'NTS, [3]-PHONE CONTROL

Description: There are features associated with each phone number. See below for information on these features.

Programming Procedure:

1) From the PROG ACC'NTS submenu, press [3] for PHONE CONTROL. The following window will display:

```
PHONE CONTROL
1: PHONE 1 FORMAT
2: PHONE 2 FORMAT
3: PHONE 1 TONE  ◄────
4: PHONE 2 TONE  ◄────
5: PHONE 1 TEXT
6: PHONE 2 TEXT
```

4/2 Format only. See below for Tone settings.

2) Press the number key (1 or 2 for Phone Format) that corresponds with the phone you wish to configure (example is Phone #1). The following window will appear:
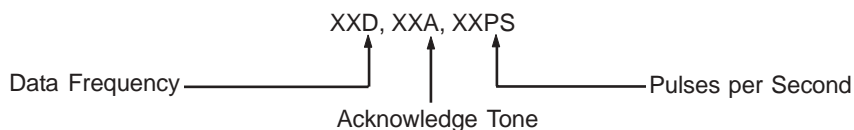
```
PHONE FORMAT (__)
1: 4/2 REPORT
2: SIA 110, RPRT
3: CONTACT ID
4: SIA 300, RPRT
5: MODEM III
```

3) Press the number key that corresponds to your selection (the current setting is displayed in parentheses on the first line). Press the [#/Command] key to confirm your selection. Press the [*/Clear] key to return to the PHONE CONTROL submenu.

4) Use the Phone 1 Format instructions when setting Phone 2 Format.

5) To configure the tone setting, press [3] from the PHONE CONTROL submenu (example is Phone #1). The following window will appear:

```
TONE  (_____)
1: 19D, 14A, 10PS
2: 18D, 23A, 10PS
3: 19D, 14A, 20PS
4: 18D, 23A, 20PS
5: 19D, 14A, 40PS
6: 18D, 23A, 40PS
```

XXD, XXA, XXPS

Data Frequency ——————↑   ↑   ↑—————— Pulses per Second

Acknowledge Tone

6) Press the number key that corresponds to your selection (the current setting is displayed in parentheses on the first line). Press the [#/Command] key to confirm your selection. Press the [*/Clear] key to return to the PHONE CONTROL submenu. Use the Phone 1 Tone instructions when setting Phone 2 Tone.

7) To enable or disable the sending of text with reports, press [5].

```
PHONE 1 SEND TEXT
NO: (1) YES (0) NO
```

8) Press the number key that corresponds to your selection (the current setting is displayed in parentheses on the first line). Press the [#/Command] key to confirm your selection. Press the [*/Clear] key to return to the PHONE CONTROL submenu.

✓ **IMPORTANT** ***Event text is only sent for Radionics' Modem IIIa[2] format, and only when the serial link to a Radionics Analog FACP is used.***

Programming the D9068

9.5.4   4: RPT STEERING

Programming Key Sequence:[0]-PROGRAM, **[5]**-PROG ACC'NTS, **[4]**-RPT STEERING

Description: 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.

Note: *See Appendix E for the appropriate routing of each report.*

Programming Procedure:

1) From the PROG ACC'NTS submenu, press **[4]** for RPT STEERING. The following window will display:

```
REPORT STEERING
1: NONSUP ALRM
2: SUPVSY ALRM
3: ALM RSTR, RST
4: SUPVSY RSTR
5: TESTS
6: TBL, TBL RSTR
```

2) 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
```

- **PHONE 1 ONLY:** Report sent to Phone #1 only.
- **PHONE 2 ONLY:** Report sent to Phone #2 only.
- **PHONE 1 AND 2:** Report sent to Phones #1 and #2.
- **PHONE 2 BACKUP:** Report sent to Phone #1, then to Phone #2 if Phone #1 fails. The D9068 tries Phone Number 1 first. If it fails, then Phone Number 2 is tried.

3) Press the number key that corresponds with your selection followed by the **[#/Command]** key. Press the **[*/Clear]** key to return to the RPT STEERING submenu.

Note: *Report Steering menu choices 2 - 6 will display the same menu options as Report Steering choice #1: NONSUP ALRM. Use the instructions for NONSUP ALRM when setting Report Steering menu choices 2 - 6.*

9.5.5   5: LINE CONTROL

*Programming Key Sequence:***[0]**-PROGRAM, **[5]**-PROG ACC'NTS**, [5]-**LINE CONTROL

Description: This allows you to set the dialing type and line supervision for each phone line.

Programming Procedure:

1) From the PROG ACC'NTS submenu, press **[5]** for LINE CONTROL. The following window will display:

```
LINE CONTROL
1: LINE #1
2: LINE #2
```

2) Press the number key that corresponds with the line you wish to configure (example is Line #1). The following window will display:

```
LINE 1 CONTROL
1: DIALING TYPE
2: MONITOR LINE
3: WAIT DIALTONE
```

Dialing Type: Determines which format the D9068 will use for dialing on each phone line. Tone/Pulse will first try tone dialing and then pulse dialing if tone dialing fails.

Monitor Line: Supervises phone line integrity.

Note: *For UL installations, both phone lines must be used, enabled and supervised.*

Wait Dialtone: If set to YES, the D9068 starts dialing when it receives a dial tone. If set to NO, the D9068 waits seven seconds before dialing.

3) Press **[1]** for DIALING TYPE. The following window will display:

```
DIAL #1 (_____)
1: PULSE ONLY
2: TONE/PULSE
3: TONE ONLY
```

4) Press the number key that corresponds with your selection followed by the **[#/Command]** key. Press the **[*/Clear]** key to return to the LINE CONTROL submenu.

5) From the LINE CONTROL submenu, press **[2]** for MONITOR LINE. The following window will display:

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

6) The current selection precedes the colon (:) on the second line. Press the number key that corresponds with your selection followed by the **[#/Command]** key. Press the **[*/Clear]** key to return to the LINE CONTROL submenu.

7) From the LINE CONTROL submenu, press **[3]** for WAIT DIALTONE. The following window will display:

```
WAIT DIALTONE #1
YES: YES (1)/NO (0)
```

8) The current selection precedes the colon (:) on the second line. Press the number key that corresponds with your selection followed by the **[#/Command]** key. Press the **[*/Clear]** key to return to the LINE CONTROL submenu. Use these steps when configuring Line #2.

9.5.6   6: ACK WAIT TIME

Programming Key Sequence: **[0]**-PROGRAM, **[5]**-PROG ACC'NTS**, [6]**-ACK WAIT TIME

Description: After the D9068 dials the phone number, it waits for the receiver to answer the phone and send the proper handshake tones. If the handshake is not detected, the D9068 hangs up. This parameter sets how long the D9068 waits before hanging up.

Programming Procedure:

1) From the PROG ACC'NTS submenu, press **[6]** for ACK WAIT TIME. The following window will display:

```
ACK WAIT TIME  (___)
(20-99 secs):        ___
```

2) Enter a value between 20 and 99 for the ACK WAIT TIME and then press the **[#/Command]** key. The default value is 45 seconds. Press the **[*/Clear]** key to return to the PROG ACC'NTS menu.

9.6   PROG FORMATS

```
PROG FORMATS
1: 4/2 POINT RPT
2: 4/2 RPT CODES
3: SIA SILENC RPT
```

Description: This feature allows you to program the reporting formats and codes used by the D9068 in reporting 4/2 formats.
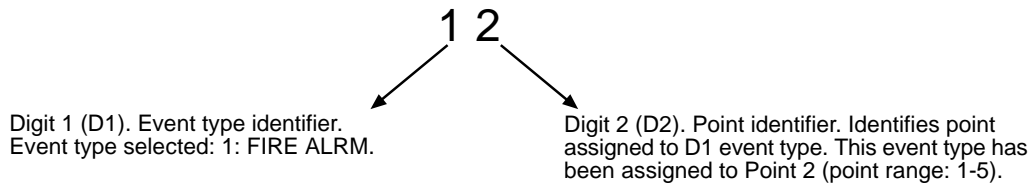
Programming Procedure:

1) From the Programming Menu, press **[6]** to enter the PROG FORMATS submenu. The window above will display. See the following sections for format programming information.

9.6.1   1: 4/2 POINT RPT

Programming Key Sequence: **[0]**-PROGRAM, **[6]**-PROG FORMATS, **[1]**-4/2 POINT RPT

Description: 4/2 reports consist of an event type (first digit) and a point number (second digit). These reports apply to points, and only when 4/2 format has been selected. See Figure 26 for more information.

$$1\ 2$$

Digit 1 (D1). Event type identifier.
Event type selected: 1: FIRE ALRM.

Digit 2 (D2). Point identifier. Identifies point assigned to D1 event type. This event type has been assigned to Point 2 (point range: 1-5).

A Fire Alarm on Point 2 will send a 4/2 Point Report of "1 2" to the Central Station.

Figure 26: 4/2 Point Report Example

Programming Procedure:

1) From the PROG FORMATS submenu, press **[1]** for 4/2 POINT RPT. The following window will display:

```
4/2 POINT RPT
1: EVENTS
2: ZONES 1 TO 9
3: ZONE 10 D2
```

2) Press **[1]** for EVENTS. The following window will display:

```
4/2 POINT RPT
1: FIRE ALRM D1
2: FIRE RSTR D1
3: WATERFLOW D1
4: SUPERVISE D1
5: TROUBLE D1
6: TRBL RSTR D1
7: DISABLE D1
8: DSBL RSTR D1
9: MONITOR D1
```

3) D1 stands for Digit #1. Press the number key that corresponds with your selection of event type (example is 1: FIRE ALRM D1). The following window will display:

```
FIRE ALRM D1  (_____)
0-9, <TEST>:
```

4) The current setting is displayed in parentheses on the first line. Press the **[#/Command]** key to confirm your selection. If you prefer to assign a hexadecimal value, press the **[TEST]** key. The following window will display:

```
SELECT HEX CODE
1: HEX A  ◄─────────── Note:    In 4/2 formats, HEX A reports as 0 (zero).
2: HEX B
3: HEX C
4: HEX D
5: HEX E
6: HEX F
```

5) Press the number key that corresponds with your selection. Press the **[#/Command]** key to confirm the selection. Press the **[*/Clear]** key to return to the 4/2 POINT RPT submenu.

6) From the 4/2 POINT RPT submenu, press [2] for ZONES 1 TO 9 to assign the event type to a point. The following window will display:

```
4/2 POINT RPT
1: ZONE 1 D2
2: ZONE 2 D2
3: ZONE 3 D2
4: ZONE 4 D2
5: ZONE 5 D2
6: ZONE 6 D2
7: ZONE 7 D2
8: ZONE 8 D2
9: ZONE 9 D2
```

7) D2 stands for Digit #2. Press the number key for the zone that corresponds with your selection of event type. The following window will display (example: Zone 2 - see Figure 17):

```
ZONE 2 D2 (__)
0-9, <TEST>:
```

8) The current setting is displayed in parentheses on the first line. Press the **[#/Command]** key to confirm your selection. If you prefer to assign a hexadecimal value, press the **[TEST]** key. The following window will display:

```
SELECT HEX CODE
1: HEX A
2: HEX B
3: HEX C
4: HEX D
5: HEX E
6: HEX F
```

9) Press the number key that corresponds with your selection. Press the **[#/Command]** key to confirm the selection. Press the **[*/Clear]** key to return to the 4/2 POINT RPT submenu.

Note: *If you wish to assign an event type to Point (Zone) 10, choose* **[3]**-*ZONE 10 D2 from the 4/2 POINT RPT submenu and follow the instructions above for Zones 1-9.*

9.6.2   2: RPT CODES

Programming Key Sequence: **[0]**-PROGRAM, **[6]**-PROG FORMATS, **[2]**-4/2 RPT CODES

Description: 4/2 Report Codes apply to system conditions only when 4/2 format has been selected. Two digits can be programmed to be sent for each condition. See Appendix B: 4/2 Report Codes for a description of each 4/2 Report Code supported by the D9068.

Programming Procedure:

1) From the PROG FORMATS submenu, press [2] for 4/2 RPT CODES. The following window will appear:

```
4/2 RPT CODES
1: GROUP 1
2: GROUP 2
3: GROUP 3
4: GROUP 4
5: GROUP 5
```

2) The 4/2 reporting codes have been split into five groups. Press the number key that corresponds with your selection (example: Group 1). The following window will display:

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

3) Press the number key that corresponds to your selection (example: 1: SYSTM IN TST). The following window will display:

```
SYSTM IN TST  (___)
0-9, <TEST>:
```

4) The current setting is displayed in parentheses on the first line. Enter a value from 1 to 9 using the keypad, or press **[TEST]** for a list of hexadecimal entries. If **[TEST]** is pressed, the following window will display:

```
SELECT HEX CODE
1: HEX A
2: HEX B
3: HEX C
4: HEX D
5: HEX E
6: HEX F
```

Note: *Use the same programming procedure as detailed above for the 4/2 reporting codes in Groups 2-5. See Appendix A for definitions of each 4/2 reporting code.*

9.6.3 3: SIA SILENC RPT

Programming Key Sequence: **[0]**-PROGRAM, **[6]**-PROG FORMATS, **[3]**-SIA SILENC RPT

Description: 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 a Standard Table of ASCII Values. All data entered consists of hexadecimal values. SIA event codes use characters in the range from A to Z.

Programming Procedure:

1) From the PROG FORMATS submenu, press **[3]** for SIA SILENC RPT. The following window will display:

```
SIA SILENC RPT
1: LEFT BYTE
2: RIGHT BYTE
```

2) Press the number key that corresponds with your selection (example: 1: LEFT BYTE). The following window will display:

```
LEFT BYTE (___)
0-9, <TEST>:
```

3) The current setting is displayed in the parentheses on the first line. Enter a hex value and press the **[#/Command]** key. If a hexadecimal value is desired, press the **[TEST]** key. The following window will display:

```
SELECT HEX CODE
1: HEX A
2: HEX B
3: HEX C
4: HEX D
5: HEX E
6: HEX F
```

Note: *Use the same programming procedure as detailed above for 2:   RIGHT BYTE.*

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9.7   PROG DEFAULTS

```
PROG DEFLTS
1: CLEAR HISTORY
2: DEFAULT ALL EE
3: DEFLT 4/2 CDES
```

Description: This feature is used to clear the history logger, reset the D9068 to its default EEPROM settings and to use default reporting codes.

9.7.1   1: CLEAR HISTORY

Programming Key Sequence: **[0]**-PROGRAM, **[7]**-PROG DEFLTS, **[1]**-CLEAR HISTORY

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

Programming Procedure:

1) From the PROG DEFAULTS submenu, press **[1]** for CLEAR HISTORY. The following window will display:

```
HIST ITEMS= _____
DEL OLDEST ###
```

2) The number on the first line indicates the total number of records stored in the history logger. Enter the number of history records you wish to delete and press the **[#/Command]** key. The number of events are erased and the D9068 returns to the PROG DEFAULTS menu.

9.7.2   2: DEFAULT ALL EE

Programming Key Sequence: **[0]**-PROGRAM, **[7]**-PROG DEFLTS, **[2]**-DEFAULT ALL EE

Description: It is possible to set the D9068 back to the original factory programming configuration with this option.

⚠ **CAUTION**   ***All programming, including point configurations and option selections, will be lost when this operation is performed.***

Note: *Date/Time settings are not affected when defaulting the D9068.*

Programming Procedure:

1) From the PROG DEFAULTS submenu, press **[2]** for DEFAULT ALL EE. The following window will display:

```
DEFAULT EE?
NO: YES (1)/NO (0)
```

2) The entry preceding the colon (:) on the second line indicates the current setting. To restore the D9068 to its factory settings, press **[1]** followed by **[#/Command]**. When the **[*/Clear]** key is pressed, the following window will display:

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

When the operation is complete, the PROG DEFAULTS submenu will reappear.

9.7.3 3: DEFLT 4/2 CODES

Programming Key Sequence: **[0]**-PROGRAM, **[7]**-PROG DEFLTS, **[3]**-DEFLT 4/2 CODES

Description: This menu selection sets all of the programming for 4/2 codes to default.

Programming Procedure:

1) From the PROG DEFAULTS submenu, press **[3]** for DEFLT 4/2 CODES. The following window will display:

```
DEFLT 4/2 CDES?
NO: YES (1)/NO (0)
```

2) The entry preceding the colon (:) on the second line indicates the current setting. To default 4/2 reports, press **[1]** followed by the **[#/Command]** key. The following window will display when the **[*/Clear]** key is pressed:

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

When the operation is complete, the PROG DEFAULTS submenu will reappear.

9.8   SERIAL CONECTN

Programming Key Sequence: **[0]**-PROGRAM, **[8]**-SERIAL CONECTN

Description: This menu selection allows the D9068 to be configured to use the serial connection to a Radionics D8024 or D10024 Analog FACP. Setting this option to YES enables the D9068 to communicate with a D8024 or D10024 using an RS-232 serial link. See Appendix F and the *D9068 Quick Start for the D8024, D10024 FACPs* (P/N: 48575) for more information.

Programming Procedure:

1) From the Programming Menu, press **[8]** for Serial Connection. The following window will display:

```
SERIAL CONECTN
NO: YES (1)/NO (0)
```

2) The number preceding the colon (:) on the second line indicates the current setting. Press **[1]** followed by the **[#/Command]** key to enable the serial connection. Press [0] followed by the **[#/Command]** key to disable the serial connection. Press the **[*/Clear]** key to return to the Programming Menu.

Notes:

10.0 Modes of Operation

The D9068 has five modes of operation: PROGRAM, STATUS, HISTORY, TEST and RESET. Each of these modes appear as selections on the D9068's Main Menu.

```
SYSTEM NORMAL
0- PROGRAM
1- STATUS
2- HISTORY
3- TEST
4- RESET
```

10.1 0-PROGRAM

When the D7033 LCD Remote Keypad is connected to the D9068, the Main Menu will appear shortly after keypad start-up. See Section 9.0 "Programming the D9068" for step-by-step programming instructions.

10.2 1-STATUS

When the Status Mode is selected, the top line shows the highest priority off-normal condition. The second line shows each off-normal condition sequentially.

Pressing the **[*/Clear]** key terminates Status Mode and returns the display to Main Menu.

10.3 2-HISTORY

Selecting the History Mode causes the most recent event to be displayed. See Section 6.4.4 "History" for a detailed description of History Mode operation.

10.4 3-TEST

Note: *Do not select 2: TEST TONES. This selection is for factory testing only.*

Selecting Test Mode brings up the following test items:

```
TEST MODES
1: TEST COMM
2: TEST TONES
```

10.4.1 1: TEST COMM

Programming Key Sequence: **[3]**-TEST, **[1]**-TEST COMM

Description: Selecting TEST COMM allows you to initiate a manual communications test.

Procedure:

1) From the Main Menu, press **[3]** for TEST. The TEST MODES window (above) will display.

2) Press **[1]** to select TEST COMM. The following window will display:

```
SEL PHONE LINE
1: LINE 1
2: LINE 2
3: ALTERNATE
```

Note: *Alternate uses the phone line not used in the previous comm test.*

3) Select the appropriate line to be tested (Line 1 or Line 2 or press [*/clear] key to terminate). Once a line is selected, a manual communications test is initiated and the following window will display:

```
COMMUNICATOR
LINE 1, TRY 1
```

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The bottom line indicates the line on which the manual communications test has been initiated and the current attempt (try). The D9068 will attempt a maximum of two tries before declaring a failure. If a failure has been declared, the following window will display:

```
COMMUNICATOR
FAILED
```

This message will display briefly, and then the LCD will return to the TEST MODES menu.

If the manual communications test passes, the following window will display:

```
COMMUNICATOR
PASSED
```

This message will display briefly, and then the LCD will return to the TEST MODES menu.

Note: *For more information regarding the types of communications tests the D9068 can perform, see Section 6.1.10 Communications Tests.*

10.5 4-RESET

The D9068 can be manually reset by either selecting 4-RESET from the Main Menu, or by pressing the **[RESET]** key on the D7033 Keypad. See Section 6.5 "Reset" for a detailed description on resetting the D9068.

Appendix A: D9068 Troubleshooting

The following troubleshooting section is **not** intended for use as an acceptance testing procedure. The following information is provided as a general guide to determine, recognize and resolve a system problem upon installation, maintenance and during normal standby.

A.1   D9068 On-board LEDs

The D9068 has four on-board LEDs that indicate various system conditions.

- **LINE 1 LED:** This LED will blink if a report is being sent out on Line 1. If a line fault condition occurs on Line 1, this LED will be steady-on in conjunction with the SYS TROUBLE LED. Check for the following if the Line 1 LED is steady-on:

    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.

   - The standby telco "battery" voltage is typically in the range of 30 VDC to 50 VDC, but any voltage over 6 VDC will be accepted by the D9068.
   - 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.
   - NFPA 72 requires a dedicated phone line for fire reporting.
   - If the devices sharing the phone line cannot be removed, make sure they are wired so that the D9068'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 6 V.

    3) Check for intermittent faults on 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 D9068 and see if the problem indication moves to the D9068's other phone line channel, in which case the phone line is causing the problem rather than the line monitor.
   - Confirm that the fault message is "PHONE FAULT" and not "COMM FAULT."
   - If only one phone number is available for reporting, set report steering for all events to "PHONE 1 ONLY."
   - "COMM 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.

    4) Make sure that two phone lines are available.
   - NFPA 72 requires that the auto test report be sent on a different phone line each time it is sent. If only one phone line is connected to the D9068, a "COMM FAULT" will be generated on every other test call.

- **LINE 2 LED:** This LED will blink if a report is being sent out on Line 2. If a line fault condition occurs on Line 2, this LED will be steady-on in conjunction with the System Trouble LED. If the LINE 2 LED is steady-on, see the four steps listed above for LINE 1 LED.

- **HEARTBEAT LED:** This LED will blink if the D9068 is functioning properly. This LED will not light at all if the D9068 is not functioning properly. If this is the case, check the following:
   - Check the D9068's main power. Refer to Table 1 of this manual.
   - Make sure there are no wire faults in the power connections.
   - See Section 2.2.1 "Power" for additional power requirements.

Appendix A

- **SYS TROUBLE LED:** This LED is off if the D9068 is operating properly. It will be steady-on for any D9068 system trouble. It also operates in conjunction with the D9068's on-board trouble relay. Depending on the number of times the SYS TROUBLE LED blinks, a different trouble condition is indicated. See Table 7.

Number of Blinks	Trouble Condition Indicated	Description of Trouble Condition
2	Internal RAM Test Failure	The internal RAM has failed. May occur at any time. When this problem occurs, the D9068 will continuously cycle through its start-up routine. Each time the start-up routine occurs, the SYS TROUBLE LED will blink two times. Contact Radionics Technical Support at (888) 723-9376 immediately.
3	External RAM Test Failure	The external RAM has failed. May occur at any time. When this problem occurs, the D9068 will continuously cycle through its start-up routine. Each time the start-up routine occurs, the SYS TROUBLE LED will blink three times. Contact Radionics Technical Support at (888) 723-9376 immediately.
4	ROM Checksum Failure	The ROM checksum has failed. May occur at any time. When this problem occurs, the D9068 will continuously cycle through its start-up routine. Each time the start-up routine occurs, the SYS TROUBLE LED will blink four times. Contact Radionics Technical Support at (888) 723-9376 immediately.
5	EEPROM Checksum Failure	An EEPROM test is performed every 10 minutes. If the checksum fails, the D9068 will automatically default. The SYS TROUBLE LED will be lit and "trouble Programming" will appear on the keypad. All configuration settings must be reprogrammed. If this reoccurs often, contact Radionics Technical Support at (888) 723-9376 immediately.

Table 7: SYS TROUBLE LED Indications

Note: *The D9068 considers the connection of the D7033 Keypad as an off-normal condition.*

Input Points

If a problem involving the D9068's input points, the SYS TROUBLE LED will be steady-on. If the input point(s) have been programmed for supervision, plug in the D7033 Remote LCD Keypad and press the **[1]** key to select STATUS from the Main Menu. If STATUS shows any point troubles, check the input point wiring and make sure that all EOL resistors (if attached) are intact. Refer to Section 6.2 "Input Operation" of this manual for additional information.

Trouble Relay

When powered up, the D9068's on-board trouble relay will be in the energized position (normal standby). See Figures 11 and 12. If the on-board trouble relay is stuck in the off-normal (de-energized) position, check the trouble relay's programming configuration.

- **RELEAS ON TRBL:** "Release on Trouble" keeps the trouble relay activated and releases it to indicate a trouble condition.

- **ACTIV GND STRT:** "Activate on Ground Start" keeps the trouble relay deactivated and activates it when the D9068 needs to place a call.

If the FACP supervises the connection to the D9068's on-board trouble relay and there is a wiring fault or the EOL resistor is missing, the FACP will indicate a system trouble condition on the appropriate D9068 input point (if used and programmed). The D9068 will send a SYS TROUBLE report, however, this will not cause the D9068's SYS TROUBLE LED or on-board trouble relay to activate.

Manual Test Report Failure

If the D9068 fails to send the Manual Test report in two attempts, or the **[*/Clear]** key is pressed, the report transmission is aborted. A COMM FAULT message, however, is not sent. The D7033 Keypad emits a three-beep tone and displays the following message, "COMMUNICATOR FAILED." After two seconds, the keypad display is updated to show the following message, "CLEARING ALL REPORTS!!" Any report, including the Manual Test report, in the report queue is deleted. After two seconds, the rotating Test Menu is displayed.

Reports in Queue

If there are any reports in the queue, the D7033 Keypad displays the following message, "REPORTS IN QUEUE PLEASE WAIT." The D9068 then waits for these reports to be sent. If the **[*/Clear]** key is pressed on the D7033 Keypad, the wait is terminated, the D7033 Keypad emits a three-beep tone and the keypad's LCD display shows the following message, "ERROR DURING COMM TEST." The rotating Test Menu will return to the keypad's LCD display after displaying the message for two seconds.

When the report queue is empty, the D9068 prompts the user to select the phone line to be used (Line 1 or Line 2) or to alternate the phone lines (see Section 10.1.4 Test Mode for more information). If the third option, Alternate, is selected, the phone line is switched from the phone line used in the last Manual Test report, regardless of whether it was specified by line number or by Alternate. Pressing the **[*/Clear]** key instead of a selection key causes the phone line to alternate. Sending an Auto Test does not affect the phone line sequence of the Manual Test report. When the line selection is complete, the Manual Test report is inserted in the report queue.

If the report queue is currently full of reports to be sent, a "DATA LOST" report is sent unless one is already in the queue. If this is the case, then the Manual Test report is **not** sent. The Manual Test report is inserted in the History Log regardless of whether or not the report was added to the report queue.

"ERROR DURING COMM TEST" Message

When a Manual Test is requested, the D9068 checks to see that at least one phone line is good. If this condition is not met, the D7033 Keypad emits a three-beep tone and displays the following message, "ERROR DURING COMM TEST." The rotating Test Menu will return to the keypad's LCD display after displaying the message for two seconds.

Appendix B

Appendix B: 4/2 Reporting Codes

The table below lists all the 4/2 codes supported by the D9068 Fire Communicator. See section 9.6.2 "4/2 RPT CODES" for programming information.

4/2 Report Code	Keypad # Key	Group #	Definition
SYSTM IN TST*	[1]	1	System in Test: Sent for walk-test operations
SYS TEST RPT*	[2]	1	System in Test Restore: Sent for walk-test operations
SILENCE*	[3]	1	Silence: Sent when the [SILENCE] key is pressed
FIRE DRILL*	[4]	1	Fire Drill: Sent for fire drill operations
FIRE DRL RST*	[5]	1	Fire Drill Restore: Sent for fire drill operations
OPEN RST RPT	[6]	1	Open Reset Report: Sent when the [RESET] key is pressed
LOW BATTERY	[7]	1	Low Battery: Sent when a low battery input is active
LOW BATT RST	[8]	1	Low Battery Restore: Restoral for when a low battery input is active
AC FAILURE	[9]	1	AC Failure: Sent when an AC Fail input is active
AC FAIL RST	[1]	2	AC Failure Restore: Restoral for AC Failure
AUTO TST RPT	[2]	2	Automatic Test Report: Sent for automatic communicator tests
OFF NORM TST	[3]	2	Off Normal at Test: Sent if the panel is off-normal at the automatic test time
PHONE 1 TRBL	[4]	2	Phone Line 1 Trouble: Sent for Phone Line 1 problems
PN 1 TRB RST	[5]	2	Phone Line 1 Trouble Restore:Sent for Phone Line 1 problems
PHONE 2 TRBL	[6]	2	Phone Line 2 Trouble: Sent for Phone Line 2 problems
PN 2 TRB RST	[7]	2	Phone Line 2 Trouble Restore:Sent for Phone Line 2 problems
SYSTEM TROUB*	[8]	2	System Trouble: Sent for general system problems
SYS TRB RST*	[9]	2	System Trouble Restore: Sent for general system problems
MAN TST RPT	[1]	3	Manual Test Report: Sent for manual communicator tests
DATA LOST RP	[2]	3	Data Lost Report: Sent if events occur too rapidly
EEPROM FAIL	[3]	3	EEPROM Failure: Sent for EEPROM problems
RESET REBOOT*	[4]	3	System Power up; Reboot
SMK PWR TBL	[5]	3	Smoke Power Trouble: Sent for problems with smoke detector power supply
SMK PWR RSTR	[6]	3	Smoke Power Trouble Restore: Sent for problems with smoke detector power supply
GND FLT TRBL	[7]	3	Ground Fault Trouble: Sent for ground fault trouble problems
GND FLT RSTR	[8]	3	Ground Fault Trouble Restore: Sent for ground fault trouble problems
TRBL INP RPT	[9]	3	Trouble Input Report: Sent when system fault input is active

Table 8: 4/2 Reporting Codes

* These items are only sent when the D9068 is configured to communicate with a Radionics D8024 or D10024 Analog FACP.

4/2 Report Code	Keypad # Key	Group #	Definition
TRBL INP RST	[1]	4	Trouble Input Report Restore: Sent when system fault input restores
ANALOG SERVC	[2]	4	Analog Service:
ANALOG RESTR	[3]	4	Analog Restore:
EQUIP FAILR*	[4]	4	Equipment Failure: Sent for equipment failure problems
EQUIP RESTOR*	[5]	4	Equipment Restore: Sent for equipment failure problems
NETWORK FAIL*	[6]	4	Network Failure: Sent for network failure problems
NETWORK RSTR	[7]	4	Network Restore: Sent for network failure problems
SENS BUS RPT*	[8]	4	Sensor Bus Report:
SENS BUS RST	[9]	4	Sensor Bus Restore:
RMT PGM FAIL**	[1]	5	Remote Programming Failure: Sent when problems with remote programming
RMT PGM SUCC**	[2]	5	Remote Programming Success: Sent when remote programming is successful
UNKNOWN FALT	[3]	5	Unknown Fault: Sent for problems of an unknown nature

Table 8 (cont.): 4/2 Reporting Codes

* These items are only sent when the D9068 is configured to communicate with a Radionics D8024 or D10024 Analog FACP.

** Shaded areas are for future use.

Appendix C

Appendix C: Reporting Summary for Fire Communicator

POINT-RELEATED EVENTS						
Report Description	SIA Code	SIA Description	Contact ID Code	Contact ID Description	4/2 Code Default Values	Modem III a2 Description
Point Fire Alarm	FA pppp	Fire Alarm	1 110 aa ppp	Fire Alarm	0P	Fire Alarm POINT = ppp
Point Waterflow Alarm	SA pppp	Sprinkler Alarm	1 113 aa ppp	Waterflow	0P	Fire Alarm POINT = ppp
Point Supervisory Alarm	SS pppp	Sprinkler Supervisory	1 200 aa ppp	Fire Supervisory	0P	Fire Supervision POINT = ppp
Point Monitor Alarm	UA pppp	Untyped Zone Alarm	1 140 aa ppp	General Alarm	0P	Alarm POINT = ppp
Point Fire Trouble	FT pppp	Fire Trouble	1 373 aa ppp	Fire Trouble	6P	Fire Trouble POINT = ppp
Point Waterflow Trouble	ST pppp	Sprinkler Trouble	1 373 aa ppp	Fire Trouble	6P	Fire Trouble POINT = ppp
Point Supervisory Trouble	ST pppp	Sprinkler Trouble	1 373 aa ppp	Fire Trouble	6P	Fire Trouble POINT = ppp
Point Monitor Trouble	UT pppp	Untyped Zone Trouble	1 373 aa ppp	Fire Trouble	6P	Trouble POINT = ppp
Point Fire Alarm Restore	FR pppp	Fire Restoral	3 110 aa ppp	Fire Alarm	3P	Fire Restoral POINT = ppp
Point Waterflow Restore	SH pppp	Sprinkler Alarm Restore	3 113 aa ppp	Waterflow	3P	Fire Restoral POINT = ppp
Point Supervisory Restore	SR pppp	Sprinkler Restoral	3 200 aa ppp	Fire Supervisory	3P	Fire Restoral POINT = ppp
Point Monitor Restore	UR pppp	Untyped Zone Restoral	3 140 aa ppp	General Alarm	3P	Restoral From Alarm POINT = ppp
Point Fire Trouble Restore	FJ pppp	Fire Trouble Restore	3 373 aa ppp	Fire Trouble	3P	Fire Trouble Restoral POINT = ppp
Point Waterflow Trouble Restore	SJ pppp	Sprinkler Trouble Restore	3 373 aa ppp	Fire Trouble	3P	Fire Trouble Restoral POINT = ppp
Point Supervisory Trouble Restore	SJ pppp	Sprinkler Trouble Restore	3 373 aa ppp	Fire Trouble	3P	Fire Trouble Restoral POINT = ppp
Point Monitor Trouble Restore	UJ pppp	Untyped Trouble Restore	3 373 aa ppp	Fire Trouble	3P	Restoral POINT = ppp

Table 9: Reporting Summaries

NON-POINT-RELATED EVENTS						
Report Description	SIA Code	SIA Description	Contact ID Code	Contact ID Description	4/2 Code Default Values	Modem III a2 Description
Open Reset	OR iii	Disarm From Alarm	1 401 aa iii	O/C By User	9F	Sensor Reset ID = iii
Low Battery	YT	System Battery Trouble	1 302 aa 000	Low System Battery	F9	Battery Low
Low Battery Restore	YR	System Battery Restoral	3 302 aa 000	Low System Battery	E9	Battery Restoral
AC Fail	AT	AC Trouble	1 301 aa 000	AC Loss	F8	AC Fail
AC Fail Restore	AR	AC Restoral	3 301 aa 000	AC Loss	E8	AC Restoral
Auto Test	RP	Automatic Test	1 602 aa 000	Periodic Test Report	EE	Test Report Non Expanded
Off Normal At Test	YX	Service Required	6 300 aa 000	System Trouble	FD	Test-Off Normal Non Expanded
Phone 1 Trouble	LT 1	Phone Line Trouble	1 351 aa 000	Telco 1 Fault	FB	Phone Line Fail PHONE LINE = 1
Phone 1 Restore	LR 1	Phone Line Restoral	3 351 aa 000	Telco 1 Fault	EB	Phone Line Restoral PHONE LINE = 1
Phone 2 Trouble	LT 2	Phone Line Trouble	1 352 aa 000	Telco 2 Fault	FC	Phone Line Fail PHONE LINE = 2
Phone 2 Restore	LR 2	Phone Line Restoral	3 352 aa 000	Telco 2 Fault	EC	Phone Line Restoral PHONE LINE = 2
System Trouble	IA	Equipment Failure Condition	1 300 aa 000	System Trouble	FD	Equipment Fail
System Trouble Restore	IR	Equipment Fail Restoral	3 300 aa 000	System Trouble	ED	Equipment Restoral
Fire Drill Start	FI	Fire Test Begin	1 607 00 000	Walk Test Mode	F2	Fire Walk Start ID: 0000
Fire Drill End	FK	Fire Test End	3 607 00 000	Walk Test Mode Restore	E2	Fire Walk End ID: 0000
System Test	TS	Test Start	1 607 aa 000	Walk Test Mode	26	Walk Test Start
System Test Restore	TE	Test End	3 607 aa 000	Walk Test Mode Restore	27	Walk Test End
Silence	KB	Heat/Bypass	1 607 aa 000	Open/Close	1F	Alarm Silence

Table 9 (cont.): Reporting Summaries

‡: In Modem IIIa2, the D9068 uses "Communications Fail" to report a "DATA LOST" event. The D9068 reports an "Equipment Fail" and "Equipment Fail Restore" with Condition 006 to report an actual Communications Fault.

Notes:

- Some codes are used for more than one event type.
- For SIA and Modem III[a2], no area is reported.
- For Contact ID, the area is 0.
- The point is reported as Points 1-5 corresponding to the five inputs.
- ppp, pppp: point number (SIA can be 1-4 digits)
- a, aa, aaaa: area number (SIA can be 1-4 digits)
- iii, iiii: user ID (SIA can be 1-4 digits)
- nn, nnn, nnnn: condition parameter (SIA can be 1-4 digits)
- For 4/2 code, **P** is a programmable digit for each input point.

NON-POINT-RELATED EVENTS						
Report Description	SIA Code	SIA Description	Contact ID Code	Contact ID Description	4/2 Code Default Values	Modem III a2 Description
Manual Test	RX	Manual Test	1 601 aa 000	Manual Trigger Test	FE	Test Report Non Expanded
Data Lost	RT	Data Lost	1 354 aa 000	Fail to Communicate	FF	Communications Fail ‡
EEPROM Failure	IA 4	Equipment Failure Condition	1 307 aa 000	Self-test Failure	FD	Parameter Checksum Fail
Trouble Input	IA 2	Equipment Failure Condition	1 300 aa 002	System Trouble	FD	Equipment Fail COND = 002
Trouble Input Restore	IR 2	Equipment Fail - Restoral	3 300 aa 002	System Trouble	ED	Equipment Restoral COND = 002
System Trouble Keypad	IA 5	Equipment Failure Condition	1 300 aa 005	System Trouble	FD	Equipment Fail COND = 005
System Restore Keypad	IR 5	Equipment Fail - Restoral	3 300 aa 005	System Trouble	ED	Equipment Restoral COND = 005
System Trouble Comm Fault	IA 6	Equipment Failure Condition	1 300 aa 006	System Trouble	FD	Equipment Fail COND = 006
System Restore Comm Fault	IR 6	Equipment Fail - Restoral	3 300 aa 006	System Trouble	ED	Equipment Restoral COND = 006
System Trouble Programming	IA 11	Equipment Failure Condition	1 300 aa 011	System Trouble	FD	Equipment Fail COND = 011
System Restore Programming	IR 11	Equipment Fail - Restoral	3 300 aa 011	System Trouble	ED	Equipment Restoral COND = 011
Serial Communication Fault	YC	Communications Fail	1 350 aa 000	Communication Trouble	FD	Comm Fail, RG=1
Serial Communication Restore	YK	Communications Restoral	6 350 aa 000	Communication Trouble Restoral	ED	Comm Fail Restr=RG1

Table 9 (cont.): Reporting Summaries

‡: In Modem IIIa2, the D9068 uses "Communications Fail" to report a "DATA LOST" event. The D9068 reports an "Equipment Fail" and "Equipment Fail Restore" with Condition 006 to report an actual Communications Fault.

Notes:
- Some codes are used for more than one event type.
- For SIA and Modem III[a2], no area is reported.
- For Contact ID, the area is 0.
- The point is reported as Points 1-5 corresponding to the five inputs.
- ppp, pppp: point number (SIA can be 1-4 digits)
- a, aa, aaaa: area number (SIA can be 1-4 digits)
- iii, iiii: user ID (SIA can be 1-4 digits)
- nn, nnn, nnnn: condition parameter (SIA can be 1-4 digits)
- For 4/2 code, **P** is a programmable digit for each input point.

Table 10 shows the Equipment Fail Conditions along with their respective meanings. The Equipment Fail will be displayed as a System Trouble in Contact ID.

On a D9068 that is serially connected to a Radionics Analog FACP, this table only applies if the reported address (C for Contact ID, SDI for Modem IIIa²) is less then 100. If the address reported is greater then 100, then the reported event is a Peripheral Fault (please see Appendix F for of this Installation Guide more information).

Code	Event	Data in Address Field	Generated By	Description
2	Dialer Trouble Input	Point	Dialer	A point configured for Fault on Open or Fault on Short has been tripped.
5	System Trouble Keypad	N/A	Dialer	The programming keypad has been connected to the D9068.
6	Comm Fault	N/A	Dialer	A Comm Fault has occurred.
11	System Trouble Programming	N/A	Dialer	Programming has been entered on the D9068.
12	Network Failure	Panel Address	Panel	Panel Fail / Restore
13	FACP Programming	Panel Address	Panel	Panel left in Programming Mode.
14	FACP Config. RAM Fail	Panel Address	Panel	RAM Config. Failed
15	FACP Processor Reset	Panel Address	Panel	Processor Reset
16	FACP Unresolved IRQ	Panel Address	Panel	Unresolved IRQ
17	FACP Grounf Fault	Panel Address	Panel	Ground Fault
18	FACP Loop Wiring Fault	Panel Address	Panel	Fault in Wiring Loop
19	FACP NAC A Open	Panel Address	Panel	NAC A Open
20	FACP NAC A Short	Panel Address	Panel	NAC A Short
21	FACP NAC B Open	Panel Address	Panel	NAC B Open
22	FACP NAC B Short	Panel Address	Panel	NAC B Short
23	FACP NAC C Open	Panel Address	Panel	NAC C Open
24	FACP NAC C Short	Panel Address	Panel	NAC C Short
25	FACP NAC D Open	Panel Address	Panel	NAC D Open
26	FACP NAC D Short	Panel Address	Panel	NAC D Short
27	FACP NAC Other Open	Panel Address	Panel	Other NAC Open
28	FACP NAC Other Short	Panel Address	Panel	Other NAC Short
29	FACP Unknown Event	Panel Address	Panel	An unprocessed/decoded event.
30	FACP Non Point Disable	Panel Address	Panel	A Disable that is not a Point.
32	FACP General Disable	Panel Address	Panel	Any Disables (Sets & Restored).
33	FACP Trouble Input Tripped	Panel Address	Panel	Set when a Trouble Input is tripped on an analog FACP.

Table 10: Equipment Fail Conditions

Appendix D

Appendix D: Programming Defaults List

The following is a list of all the programming defaults for the D9068. Use the *D9068 Program Record Sheet* (P/N: 46086) to record programming entries.

Program Time

- **System Date*:**   01 01 00
- **System Time*:**   0000

* Once the user has entered the system date and time, defaulting the D9068 will not reset the system date and time. The system time may be corrupted if the power fails for more than 5 minutes.

Auto Test

- **Auto Test Time:**   0400
- **Auto Test Frequency:**   24 hrs

Daylight Savings: NO

Timers

- **AC Fail Delay:**   6 hrs
- **Display Rate:**   1 second

Program Inputs (Configure)

- **Point 1:**   Waterflow
- **Point 2:**   Fire
- **Point 3:**   Supervisory
- **Point 4:**   Fire
- **Point 5:**   Fire

Program Inputs (Supervised)

- **Point 1:**   NO
- **Point 2:**   NO
- **Point 3:**   NO
- **Point 4:**   NO
- **Point 5:**   NO

Configure Relay: Release on Trouble

Program Accounts

- **Account #1:**   0000
- **Account #2:**   0000

Phone Numbers

- **Phone #1:**   ?????????
- **Phone #2:**   ?????????
- **Phone #3:**   ?????????

Phone Control

- **Phone #1 Format:**   SIA 300
- **Phone #2 Format:**   SIA 300
- **Phone #1 Tone:**   19D, 14A, 10PS
- **Phone #2 Tone:**   19D, 14A, 10PS
- **Phone #1 Text:**   NO
- **Phone #2 Text:**   NO

Report Steering

- **Non-SUP Alarm:**   Phone 2 Backup
- **Supervisory Alarm:**   Phone 2 Backup
- **Alarm Restor, Reset:**   Phone 2 Backup
- **Supervisory Restore:**   Phone 2 Backup
- **Tests:**   Phone 2 Backup
- **Trbl, Trbl Restore:**   Phone 2 Backup

Line Control

- **Line 1 Dialing Type:**   Tone/Pulse
- **Line 2 Dialing Type:**   Tone/Pulse
- **Line 1 Monitor Line:**   YES
- **Line 2 Monitor Line:**   YES
- **Line 1 Wait Dial Tone:**   YES
- **Line 2 Wait Dial Tone:**   YES

ACK WAIT TIME: 45 seconds

Program Formats (4/2 Point Rpt)

- **Fire Alarm Digit 1:**   0
- **Fire Rstrl Digit 1:**   3
- **Waterflow Digit 1:**   0
- **Supervise Digit 1:**   0
- **Trouble Digit 1:**   6
- **Trbl Rstrl Digit 1:**   3
- **Disable Digit 1:**   B
- **Disable Rtrl Digit 1:**   3
- **Monitor Digit 1:**   0
- **Zone 1 Digit 1:**   1
- **Zone 2 Digit 1:**   2
- **Zone 3 Digit 1:**   3
- **Zone 4 Digit 1:**   4
- **Zone 5 Digit 1:**   5

Program Formats (4/2 Rpt Codes Group 1)

- **System in Tst:**   F1
- **Sys Tst Rstrl:**   E1
- **Silence:**   9F
- **Fire Drill:**   F2
- **Fire Drill Rstl:**   E2
- **Open Reset:**   9F
- **Low Batt:**   F9
- **Low Batt Rstrl:**   E9
- **AC Fail:**   F8

Items crossed out are not currently supported.

Program Formats (4/2 Rpt Codes Group 2)
- **AC Fail Rst:** E8
- **Auto Tst Rpt:** EE
- **Off Norm Tst:** FD
- **Phone 1 Trbl:** FB
- **Phone 1 Trbl Rstrl:** EB
- **Phone 2 Trbl:** FC
- **Phone 2 Trbl Rstrl:** EC
- **System Trbl:** FD
- **System Trbl Rstrl:** ED

Program Formats (4/2 Rpt Codes Group 3)
- **Man Tst Rpt:** FE
- **Data Lost:** FF
- **EEPROM Fail:** FD
- **Reset Reboot:** ED
- ~~**Smk Pwr Trbl:** FD~~
- ~~**Smk Pwr Trbl Rstr:** ED~~
- ~~**Gnd Flt Trbl:** FD~~
- ~~**Gnd Flt Rstrl:** ED~~
- **Trbl Input Rpt:** FD

Program Formats (4/2 Rpt Codes Group 4)
- **Trbl Input Rtrl:** ED
- **Analog Servc:** FD
- ~~**Analog Rstrl:** ED~~
- **Equip Fail:** FD
- **Equip Restore:** ED
- **Network Fail:** FD
- **Network Restor:** ED
- **Sens Bus Rpt:** FD
- **Sens Bus Rstrl:** ED

Program Formats (4/2 Rpt Codes Group 5)
- **Rmt Prg Fail:** FD
- ~~**Rmt Prg Succ:** ED~~
- ~~**Unknown Flt:** FF~~

SIA Silence Report
- **Left Byte:** 4B
- **Right Byte:** 42

SERIAL CONECTN NO

 Items crossed out are not currently supported.

Appendix E: Report Routing

The information in Appendix E shows the mapping of point-related and non-point-related events to their respective report routing group, lists the priority level of each event and identifies the reporting limit for specific types of events.

POINT-RELATED EVENTS		
Report Description	**Report Routing**	**Report Priority**
Point Fire Alarm	NONSUP ALRM	0
Point Waterflow Alarm	NONSUP ALRM	0
Point Supervisory Alarm	SUPVSY ALRM	3
Point Monitor Alarm	NONSUP ALRM	3
Point Fire Trouble*	TBL, TBL RSTR	3
Point Waterflow Trouble*	TBL, TBL RSTR	3
Point Supervisory Trouble*	TBL, TBL RSTR	3
Point Monitor Trouble*	TBL, TBL RSTR	3
Point Fire Dirty Report*	TBL, TBL RSTR	3
Point Fire Disable*	TBL, TBL RSTR	3
Point Fire Alarm Restore	ALM RSTR, RST	4
Point Waterflow Restore	ALM RSTR, RST	4
Point Supervisory Restore	SUPVSY RSTR	4
Point Monitor Restore	ALM RSTR, RST	4
Point Fire Trouble Restore*	TBL, TBL RSTR	4
Point Waterflow Trouble Restore*	TBL, TBL RSTR	4
Point Supervisory Trouble Restore*	TBL, TBL RSTR	4
Point Monitor Trouble Restore*	TBL, TBL RSTR	4

Table 11: Point-Related Report Routing

* These events will be limited to a total of 100 reports sent out in a 24-hour period. If this limit is exceeded, the 100th event will be replaced with a DATA LOST report.

NON-POINT RELATED EVENTS				NON-POINT RELATED EVENTS		
Report Description	Report Routing	Report Priority		Report Description	Report Routing	Report Priority
System Test	TESTS	4		Data Lost	TBL, TBL RSTR	6
System Test Restore	TESTS	4		EEPROM Failure*	TBL, TBL RSTR	3
Silence	TESTS	4		System Reset, Re-Boot	TBL, TBL RSTR	3
Fire Drill	TESTS	4		Equipment Fail*	TBL, TBL RSTR	3
Open Reset	ALM RSTR, RST	4		Equipment Restore*	TBL, TBL RSTR	3
Low Battery*	TBL, TBL RSTR	3		Network Failure*	TBL, TBL RSTR	3
Low Battery Restore*	TBL, TBL RSTR	3		Sensor Bus Failure*	TBL, TBL RSTR	3
AC Fail*	TBL, TBL RSTR	3		Trouble Input*	TBL, TBL RSTR	3
AC Fail Restore*	TBL, TBL RSTR	3		Trouble Input Restore*	TBL, TBL RSTR	3
Auto Test	TESTS	4		System Trouble Keypad*	TBL, TBL RSTR	3
Off Normal at Test	TESTS	4		System Restore Keypad*	TBL, TBL RSTR	3
Phone 1 Trouble*	TBL, TBL RSTR	3		System Trouble Comm Fault*	TBL, TBL RSTR	3
Phone 2 Trouble*	TBL, TBL RSTR	3		System Restore Comm Fault*	TBL, TBL RSTR	3
Phone 1 Restore*	TBL, TBL RSTR	3		System Trouble Programming*	TBL, TBL RSTR	3
Phone 2 Restore*	TBL, TBL RSTR	3		System Restore Programming*	TBL, TBL RSTR	3
Manual Test‡	TESTS	4				

Table 12: Non-Point Related Report Routing

* These events will be limited to a total of 100 reports sent out in a 24-hour period. If this limit is exceeded, the 100th event will be replaced with a DATA LOST report.

‡ Resets count of limited reports and 100 additional reports can be sent.

Appendix F: Operation with Radionics' D8024, D10024 Analog FACPs

The D9068 is capable of intelligently interfacing to either the Radionics D8024 or D10024 Analog FACP through an RS-232 connection. The D9068 can receive events both from the panel it is directly connected to and from other networked FACPs.

The digital inputs on the D9068 may be used as backup inputs. If the serial connection between the D9068 and the Analog FACP should break, the inputs will be monitored for alarm and trouble conditions. Should these occur, the D9068 will send a report. Please see the section on FACP Relay Connections to D9068 for more information.

For installations that require the FACP to detect trouble conditions on the dialer, the D9068 trouble relay may be used.

F.1   Limitations

This section discusses the limitations of the connection between the D9068 and a Radionics D8024 or D10024 Analog FACP.

F.1.1   FACP Limitations

Although designed to be as flexible as possible, there are a few limitations when using the D9068 with the D8024 and D10024 Analog FACPs.

F.1.1.1   FACP Serial Connections and Networked Panels

The D9068 interfaces to an Analog FACP primarily through an RS-232 interface. This requires installation of a D9052 RS-232 Bus Module on the Analog FACP that the D9068 will be connected to. On the D8024, the D9052 must be installed on Port C. On a D10024, the D9052 may be installed either in Port B or Port C.

Because of the installation limitations on the D8024, the D9068 cannot be directly connected to a D8024 used in a network installation. The D9068 will work properly if connected to a D10024 that is used in a network and events from slave D8024 panels will correctly report through the D10024 to the D9068.

For networked panel installations, the D9068 must be connected to a D10024 functioning as a network master.

F.1.1.2   D9061 PC Graphics

Since the D9061 PC Graphics software application and the D9068 Fire Dialer both use the RS-232 interface, and only one device may be connected to the D9052 RS-232 Bus Module, the D9061 PC Graphics application and the D9068 can only be used on a FACP with two D9052 RS-232 Interface Modules installed. In this configuration, connect the D9068 to the second D9052 Module.

F.1.1.3   Network Addresses

The D9068 firmware only supports communications with an analog FACP with a network address of 1. The D9068 has a fixed network address of 0.

F.1.2   Restorals

No individual restorals are sent. A System Reboot/Reset report is sent when the system is all clear.

F.2   Setup

This section briefly discuss the setup procedures required for operation of the D9068 with a Radionics Analog FACP such as the D8024 and the D10024. Please also refer to the appropriate sections of this Installation Guide along with the *D9068 Analog FACP Quick Start* (P/N: 48575).

F.2.1   D9068 to FACP Connections

Note: *For UL installations, the D9068 must be installed in the same room as , and within, 20 ft. (6.1 m) of the analog FACP. All wiring between the D9068 and analog FACP must be enclosed in conduit.*

F.2.1.1   Power Connections

The D9068 may be connected to the 24 V auxiliary power provided by an analog FACP, provided that the total current draw of all devices connected to the FACP's auxiliary power does not exceed the maximum rating of the panel. Figure 27 shows how to wire the D9068's power the 24 V auxiliary power from both the D8024 and the D10024.

Note: *Disconnect all power (AC and standby battery) from the system before making or breaking any connections.*

Use the following steps to properly connect the D9068 to the D8024 or D10024:

1) Connect the D9068's Power (+) terminal to the FACP's +24 V Auxiliary power terminal. See Figure 27.

2) Connect the D9068's Power (-) terminal to the FACP's 0 V Auxiliary power terminal. See Figure 27.

3) Connect the D9068's Earth Ground line (green) to the FACP terminal marked EARTH (EAR).
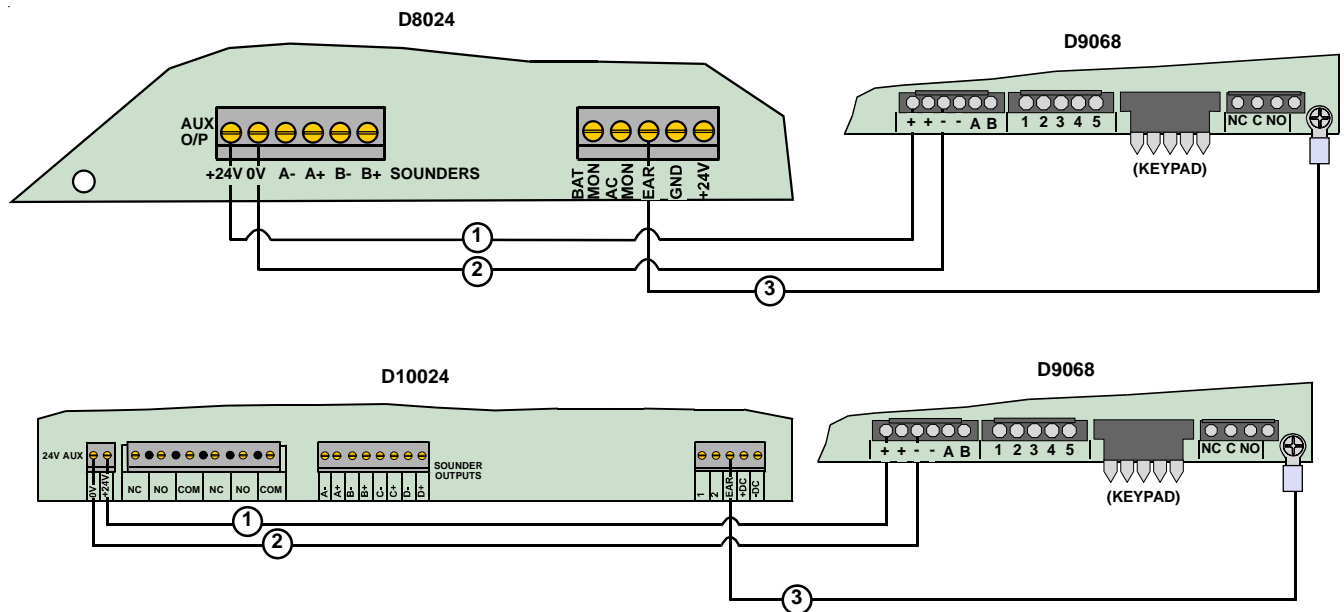
Figure 27: D9068 to D8024/D10024 Power Connections

The D9068 draws a maximum of 192 mA. The analog FACP can provide up to 320 mA. Verify the total draw on the analog FACP's 24 V auxiliary power is less than 320 mA.

F.2.1.2 D9068 to D9052 Serial Connections

The D9068 may be used with Radionics' D8024 and D10024 Analog FACPs to send reports to a central station. Use of a D9052 RS-232 Bus Module between the FACP and the D9068 is required. The FACP must be assigned a network address of 1. See below for instructions on setting the FACP's network address.

Note: *Install the D9052 onto Port C on the D8024. The D8024 cannot support the D9068 and a network connection simultaneously through Port C. Connect the D9052 to Port B on the D10024.*

For complete installation, addressing and operating instructions for the D9052, see the *D9052 Installation Guide* (P/N: 34096).

See Figure 27 for D9068 to Analog FACP Serial Connection.

Note:
For UL installations, non-supervised operation requires installation within 20 ft. (6.1 m) inside conduit.

D9068

`+ + - - A B   1 2 3 4 5   (KEYPAD)   NC C NO`

D9052

RTS		Request to Send (not used)
TX		Serial Transmit
RX		Serial Receive
GND		Ground
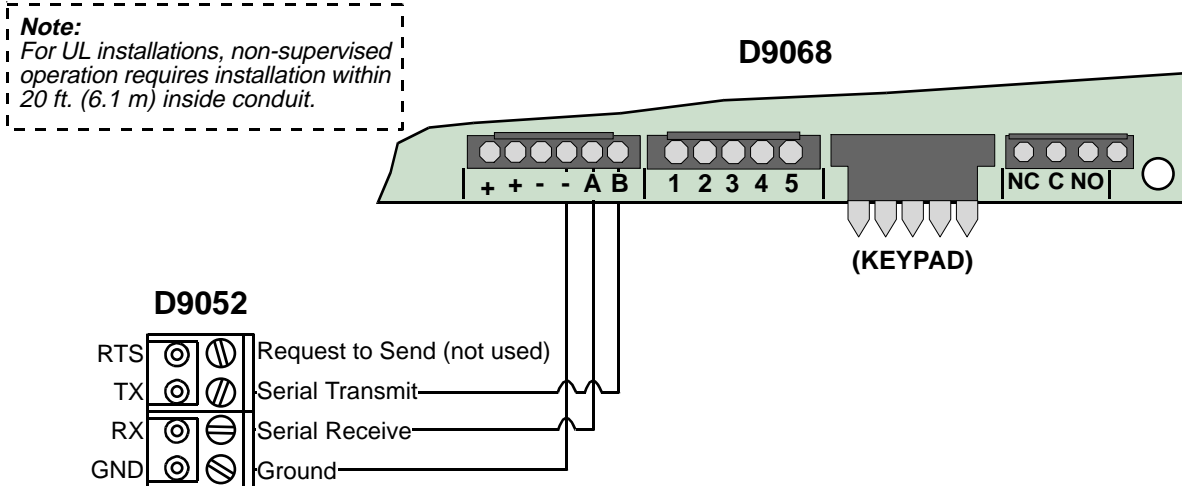
Figure 27: D9068 to Analog FACP Connections

Note: *The D9052 mounts to the D8024/D10024 PCB. See the installation instructions that accompany the analog FACP and the D9052 RS-232 Bus Module for details.*

F.2.1.3 FACP Relay Connections to D9068 (Optional)

The D9068's five inputs can be used as backup connections to a FACP. The D8024 and D10024 each provide two on-board relays. Additional relay outputs can be added to the FACP using D328A Addressable Analog Relay Modules.

The relays should be installed and configured so that they activate only for the specified FACP events. For FACP relay programming instructions, see the *Analog Fire Alarm Control Panel Programming Guide* (P/N: 38789). For D9068 detailed relay wiring instructions, see Section 4.2 "Trouble Relay Connections" in this Installation Guide. For D328A wiring, addressing and operating instructions, see the *D328A Installation Guide* (P/N: 37095).

When using the D9068's inputs as backup connections, the mappings shown in Table 13 should be used from FACP event to D9068 input activation type.

FACP General System Event	D9068 Input Activation Type
Fault Event	Fault on Short
AC Fail	AC Fail
Common Fire	Alarm

Table 13: D9068 Input to FACP Event Mappings

To access the D9068's input point configuration from the D7033 Keypad, press the following keys: **[0]** (Program) - **[3]** (Program Inputs) - select point number by pressing the corresponding number key followed by **[#]** - **[1]** (Configure).

The D9068's inputs can only detect alarm (shorted) conditions when the RS-232 link is broken. When the RS-232 link to the FACP is active, the inputs are not monitored.

IMPORTANT

F.3   Programming

Note: *This section only provides the essential programming steps required to set up the D8024 or D10024 for use with the D9068.*

F.3.1   FACP Programming

The D9068 must be connected to an analog FACP with a network address of 1. Communication with the D9068 will not be possible if the FACP's network address is set to any other number. The D9068 uses a network address of 0.

Use the following steps to set the network address on the D8024 or D10024:

1) Press the **[>]** key to display the Main Menu.

2) Press the **[1]** key for 1) Commission.

3) When the display prompts, "Please key in your passcode," enter the Control Level 3 passcode. The display then shows Commission Menu 1.

4) Press the **[Yes]** key twice to page to Commission Menu 3.

5) Press the **[3]** key to enter Network options.

6) If the display prompts "Memory Locked!", unlock the memory by moving the Memory Lock switch into the OPEN position. See the *Analog Fire Alarm Control Panel Programming Guide* (P/N: 38789) for Memory Lock Switch locations.

Note: *The memory must be locked at the end of the programming session. The FACP will not exit Commissioning Mode unless the memory is locked.*

7) Press the **[3]** key to display Network Menu 1.

8) When the display prompts "Panel Network - address number?", press the **[1]** key to enter a network address of one.

9) If you are finished with panel programming, return the FACP to normal operating mode by pressing the **[No]** key twice. Then press the **[3]** key to select 3) Normal Operation from Commission Menu 1. Move the Memory Lock Switch to the CLOSED position.

F.3.2   D9068 Programming

For operation with a Radionics analog FACP, the following items must be programmed on the D9068:

- **D9068 Account Numbers:** program the account numbers as described elsewhere in this Installation Guide.
- **D9068 Phone Numbers:** program the phone numbers as described elsewhere in this Installation Guide.
- **Serial Connection:** enable the serial connection as described elsewhere in this Installation Guide.

Appendix F

F.4   Reporting Information

F.4.1   General Report Information

The D9068 can be connected both to stand-alone and networked Radionics Analog FACPs, and the FACPs may have multiple loops of detectors. The D9068 accounts for this by encoding the panel, loop, and detector addresses as described below.

Please also refer to Appendix C of this Installation Guide for more detail on message report formats.

F.4.1.1   Restorals

The D8024 and D10024 do not provide individual event restoral information. Because of this, the D9068 will not send individual restoral messages for events. Instead, when the D9068 determines that there are no active events on the panel (or networked panel), it will send a System Reset/Reboot message. A system Reset/Reboot message is also reported when terminating a walk test or fire walk test.

F.4.1.2   Point Events

For point events (Fire Alarm, Point Trouble, etc.), the panel address is reported as the "area" parameter. The point and loop address are encoded using the formula below and sent as the point address.

*reported_point_address = (loop_number – 1) * 200 + point_on_loop*

If point number 20 on loop 3 goes into alarm, then it will be reported as 420. If point 122 on loop 1 goes into alarm, it will be reported as point 122. See Table 14 for clarification.

Reported Point Address	Loop and Points
1-126	Loop 1, Points 1-126
201-326	Loop 2, Points 1-126
401-526	Loop 3, Points 1-126
601-726	Loop 4, Points 1-126
801-926	Loop 5, Points 1-126

Table 14: Point Event Coding

See the following sample reports.

- **Point Type Mapping:** Since the D8024/D10024 Analog FACP and the D9068 handle point function reporting differently, the following mappings were made for reporting of alarms. (Also refer to Table 9 page 64).

Point Type Configured at FACP	D9068 Reported Event
Zone Alarm	Point Fire Alarm
Sprinkler Supervisory	Point Supervisory Alarm
Fault Warning	Trouble Input or FACP Trouble Input Tripped

Table 15: Point Event Coding

- **Reporting a Point Trouble or Dirty:** Because of limitation on the communications between the D9068 and the Analog FACPs, Point Troubles are not reported on a point type basis. If a point is in trouble, a Point Fire Trouble is sent regardless of what type of point it is (i.e. fire, sprinkler supervisory, fault warning). The same applies for Dirty Reports. All dirty points are reported with a Point Fire Dirty regardless of the configured type of point.

F.4.2   Peripheral Events

If a problem should arise with a peripheral attached to an Analog FACP, the report will be sent as an Equipment Fail Report. The address of the panel will be sent as the **Condition**, and the address of the peripheral plus 100 will be sent as the **Device**.

For Example, if the remote Notification Appliance Circuit (NAC) at Peripheral Address 10 on Panel 5 were to have a fault, the following message would be sent: *Equipment Fail, Device = 105, Condition = 10*

Please see the examples below for sample events and how they are reported.

F.4.3   Other Non-Point Events

Most non-point events are reported using Equipment Fail Messages. Table 10 in Appendix C shows the Condition Codes reported with the Equipment Fail Messages and their causes. The panel address will be reported as the Device Number.

Note: *The format of the data for the Equipment Fail Report is different between Peripheral Events and Other Non-point Events. This was done to allow the Peripheral Address to be sent in Contact ID format. The two types of events can be distinguished by looking at the Device parameter. If it is greater then 100, then it is a peripheral event, otherwise it is a Non-point Event.*

Please see the sample reports in Section F.4.5 "Sample Reports."

F.4.4   Event Text

If Event Text reporting is enabled (see Section 9.5.3 "Phone Control"), the alarm text provided by the FACP is sent for some events. For point events, the zone and point text are sent. For non point disables and unknown events, the text of the event message (usually displayed on the second line on the panel's display) is sent.

F.4.5 Sample Reports

Table 16 shows some sample reports and the data sent to the Central Station. See Appendix C for information on Equipment Fail Codes.

Note: *Table 16 does not show the event text that may be sent in Modem IIIa[2] format.*

Report Description	SIA		Contact ID		Modem IIIa[2] Printer Text
	Code	Description	Code	Description	
Point Fire Alarm Point 21, Loop 3, Panel 5	FA421	Fire Alarm	1 110 05 421	Fire Alarm	Fire Alarm Area=5 Point=421
Fire Point Trouble Point 10, Loop 1, Panel 2	FT10	Fire Trouble	1 373 02 010	Fire Trouble	Fire Trouble Area=2 Point=010
Low Battery on Panel 1	YT	System Battery Trouble	1 302 00 000	Low System Battery	Battery Low
All Events Cleared	RR		1 305 00 000		Re-Boot
Peripheral 10 failed on Panel 3	ET110	Equipment Failure Condition	1 333 03 110	System Trouble	Equip Fail SDI=110 Cond=003
FACP Ground Fault, Panel 2 (Equipment Fail #17)	ET17	Equipment Failure Condition	1 333 17 002	System Trouble	Equip Fail SDI=002 Cond=017
General Disable (any device on Panel 4 disabled - Equipment Fail #32)	ET32	Equipment Failure Condition	1 333 32 004	System Trouble	Equip Fail SDI=004 Cond=032
General Disable Restoral (Panel 4 no longer shows disables - Equipment Restoral #32)	ER32	Equipment Fail-Restoral	3 333 32 004	System Trouble	Equip Restoral SDI=004 Cond=032
Fire Drill Start Panel 2	FI	Fire Test Begin	1 607 00 002	Walk Test Mode	Fire Walk Start ID=002
Fire Drill End Panel 2	FK	Fire Test End	3 607 00 002	Walk Test Mode Restore	Fire Walk End ID=002
Silence from Panel 1	KB1	Heat/Bypass	1 400 00 000	Open/Close	Alarm Silence ID=001 Relay=001

Table 16: Sample Reports

Shaded area: Note supported at this time.

F.4.6 Analog FACP Event Code to D9068 Report Mapping

Table 17 lists the event codes generated by a Radionics D8024 and D10024 Analog FACP and the respective D9068 dialer report code.

Analog FACP Event Code	Dialer Report Code	Comments
Low signal output from detector	Equipment Fail - 18	Loop Wire Fault
High signal from detector	Point Trouble*	Sensor out of calibration
Pre-alarm signal	N/A	Pre-alarm
Fire alarm signal	Point Alarm*	Alarm
CPU reset	Equipment Fail - 15	CPU Reset
Commissioning mode entered	Equipment Fail - 13	Left in Programming mode
Panel reset	Reset Reboot	Panel Reset
Evacuation from panel keypad	Fire Drill	Fire Drill
Silence alarms	Silence	Interpolated by Panel Status
Unconfirmed interrupt from call point	Equipment Fail - 16	Sensor Failed
Confirmed interrupt from call point	Point Alarm*	Sensor Failed
Detector contaminated	Point Dirty*	Dirty Detector
No reply from detector	Point Trouble*	Detector not responding
Digital input signal set from input unit	Panel Event***	Peripheral Fault
Detector failed loop overcurrent test	Point Trouble*	Loop drawing to much current
External link master failed to poll	Equipment Fail - 29	Network panel failure
Detector data corrupted	Point Trouble*	Data error
Keypad enabled	N/A	Keypad enabled
Problem with loop wiring	Equipment Fail - 18	Problem with Loop wiring
Problem with sounder circuit	Equipment Fail**	Problem with sounder circuit
Problem with power supply	Equipment Fail**	Problem with power supply
Problem with internal memory	Equipment Fail - 14	Problem with internal memory
Earth fault on external wiring	Equipment Fail - 17	Earth fault on external wiring
Zone totally disabled	Equipment Fail - 30	Zone totally disabled
No reply from slave panel data link	Network Fail	No reply from slave panel
Corrupt reply from slave panel data link	Network Fail	Data error from slave panel
Panel left in commissioning mode	N/A	Program switch
Walk test commenced	System Test	Walk or Output Test - set from Panel Status
Zone partially disabled	Equipment Fail - 30	Zone partially disabled

Table 17: Analog FACP Event Codes

Appendix F

F.4.7   Reported Event to FACP Cause Mapping

Table 18 lists the events generated by a Radionics D8024 and D10024 Analog FACP and their respective causes.

Analog FACP Event	Comments	Cause
Point Fire Alarm	Panel Generated	Point Zone Alarm
Point Supervisory Alarm	Panel Generated	Sprinkler Supervisory Input
Point Monitor Alarm	Panel Generated	Alarm from point programmed as type = monitor
Point Fire Trouble	Panel Generated	Any Point Trouble
Point Fire Dirty Report	Panel Generated	Any Point Dirty
Point Fire Disable	Panel Generated	Any Point Disable
System Test	Panel Generated	Walk or Output Test Entered
System Test Restore	Panel Generated	Walk or Output Test Exited
Silence	Panel Generated	Only Silence reported; resound not reported
Fire Drill	Panel Generated	Fire drill initiated (local & remote)
Open Reset	Dialer Generated	Panel Reset
Low Battery	Panel Generated	Low battery detected
AC Fail	Panel Generated	AC Fail (after both panel & dialer time-outs)
Auto Test	Dialer Generated	Auto test in progress
Off Normal At Test	Dialer Generated	Panel trouble when test report sent
Phone 1 Trouble	Dialer Generated	Trouble phone line 1
Phone 1 Restore	Dialer Generated	Line restored
Phone 2 Trouble	Dialer Generated	Trouble phone line 2
Phone 2 Restore	Dialer Generated	Line restored
Manual Comm Test	Dialer Generated	Comm. test in progress
Data Lost	Dialer Generated	communication error
EEPROM Failure	Dialer Generated	EEPROM failure
System Reboot Reset	Panel Generated	All Troubles and Alarms cleared (see Note 1)
Trouble Input		Trouble
Trouble Input Restore		Trouble stored

Table 18: Analog Reports/Causes

Analog FACP Event	Comments	Cause
Equipment Fail	Panel Generated	See Note 2
Equipment Restore	Panel Generated	See Note 2
Network Failure	Panel Generated	Network failure detected
Remote Programming Failed	Future	Problem with programming
Remote Programming Successful	Future	Remote programming successful
Panel Communication Failure	Dialer Generated	Panel lost communication
Panel Communication Restore	Dialer Generated	See Note 3
System Trouble - Keypad Installed	Dialer Generated	Keypad has been installed to long
System Trouble Restoral - Keypad Installed	Dialer Generated	Keypad trouble has been restored
System Trouble - Communications Fault	Dialer Generated	Communication error
System Trouble Restoral - Communications Fault	Dialer Generated	Communication restored
System Trouble - Programming Error	Dialer Generated	Programming error
System Trouble Restoral - Programming	Dialer Generated	Programming error restored
Invalid Events 32-39, 94-255		Not valid

Table 18 (cont.): Analog Reports/Causes

Notes:

1) This message is sent whenever the D9068 receives an "all clear" message from the panel after the panel is reset.

2) This message is used for several "trouble type" events. To identify the specific type of trouble the condition parameter will use, refer to Table 10 and look for the Equipment Fail (Restore) reports. Not all events have an equivalent Equipment Restore message.

3) This message is sent if panel communications are restored. If there were any off-normal panel conditions prior to losing communications, and the panel is now normal, a "System Reboot Reset" is also sent when communications are restored.

Appendix F

F.5   Important Notes

IMPORTANT

Although the D9068 supervises its connection to the D8024 and D10024, the analog FACPs do not supervise the connection of the D9068. If the RS-232 link between the D9068 and FACP is broken, the D9068 will recognize the problem but the FACP will not. For installations that require the FACP to recognize faults on the D9068, the D9068's relay output should be connected to an analog input module such as a D326A or D339A Point Contact Module. On the FACP, the points should be configured for action "Fault." On the D9068, the relay should be configured for "Release on Trouble."

IMPORTANT

No individual restorals are sent, only system reboot/reset reports are sent when the system is all clear.

IMPORTANT

No FACP trouble reports are sent when the FACP is in alarm. However, D9068 trouble reports are still sent.

IMPORTANT

If serial connection is set to yes and it is interrupted by connecting a keypad or for someother unknown reason a event serial fail will be generated. When communication restores a serial restore will be generated.

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130 Perinton Parkway, Fairport, New York 14450
Customer Service: (800) 289-0096; Technical Support: (888) 886-6189

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