SIEMENS

Fire Safety

DCT-1 and DCT-1E

Digital Alarm Communicator/Transmitter

Operation, Installation and Maintenance Manual

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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.

1.3 Industry Canada Notice

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

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

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

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

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

1.4 Installation Guidelines for UL Systems

Failure to install and program the DCT-1/1E according to the requirements in this section voids the listing mark of Underwriters Laboratories, Inc.

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

1.4.1 DCT-1/1E UL Requirements

- The DCT-1/1E 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 DCT-1/1E 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 DCT-1/1E is mounted within 20 ft. (6.1 m) of the Fire Alarm Control Panel (FACP) with wiring in conduit.
- If the DCT-1/1E 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: *SIEMENS Fire Safety recommends the use of conduit for all installations.*

- FACPs using open collector outputs must be compatibility-listed for use with the DCT-1/1E.

2.0 Overview

2.1 System Overview

The DCT-1/1E Fire Communicator is a complete communicator for use with SIEMENS Fire Safety Fire Alarm Control Panels (FACP). Alarms and communications to the DCT-1/1E may be accomplished by using dry contacts or open collector outputs.

The DCT-1/1E also includes the following features:

- 12/24 VDC Operation
- Multiple Data Protocols: 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 DCT-P LCD Remote Keypad
- Form “C” Relay Output for Trouble
- LEDs for Heartbeat, System Trouble and Phone Line Trouble (one per line)
- Real Time Clock

2.2 Specifications

2.2.1 Power

Sharing power from the FACP with the DCT-1/1E and other peripheral devices is not recommended.

Power Specification	DCT-1/1E Value
Input Voltage Range (use power-limited source)	10.2 VDC to 28 VDC for filtered DC;
Standby Current	150 mA max.
Alarm Current	190 mA max.

Table 1: DCT-1/1E Power Specifications

The DCT-1/1E must be connected to an unswitched, uninterruptable power source. If the DCT-1/1E were to lose power, the following conditions would 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.

Some FACP’s may momentarily drop DC power that the DCT-1/1E is connected to at the start of an AC power failure. If the FACP used with the DCT-1/1E exhibits this behavior, any immediate AC Fail report can be used as impetus for reprogramming the DCT-1/1E’s date/time.

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 DCT-1/1E 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.

2.2.3 Inputs

The DCT-1/1E 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 1.0 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
Alarm Operation	Short to ground or voltage less than 1.0 VDC
Minimum Alarm Voltage	Less than 1.0 VDC
Maximum Line Resistance	50 Ω
Response Time	500 mS

Table 2: DCT-1/1E 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 DCT-1/1E. This relay is normally held activated, and will deactivate for any trouble condition that the DCT-1/1E 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 DCT-1/1E is deployed on a ground start network.

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

2.2.6 User Interface

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

Note: *The DCT-P LCD Remote Keypad is only used for programming of the DCT-1/1E and should be connected to the DCT-1/1E temporarily for that purpose only.*

2.2.7 Communication

Formats: The DCT-1/1E supports three protocols: 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 DCT-1/1E is reset from any off normal condition.

Phone Line Selection: The DCT-1/1E 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 DCT-1/1E 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 DCT-1/1E 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 DCT-1/1E 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 DCT-P LCD Remote Keypad is attached to the DCT-1/1E. 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 is cleared when the system loses all power.

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 DCT-1/1E (quantities listed in parentheses).

- Enclosure (1)
- Self-tapping screw for enclosure cover (1)
- Machine screw for enclosure cover (1)
- DCT-1/1E 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 (5)

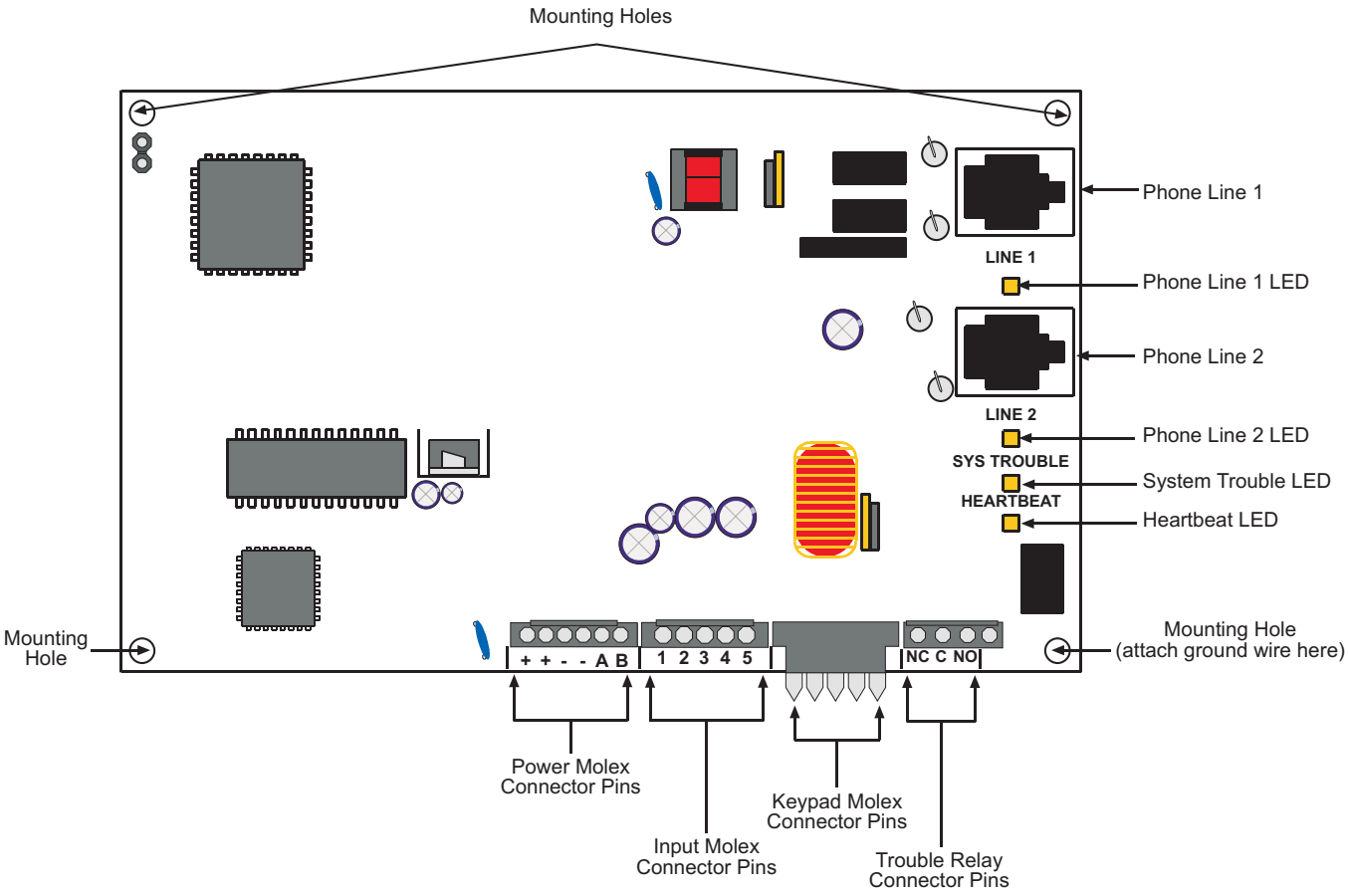


Figure 1: DCT-1/1E PCB Layout

3.0 Installation

Note: *The DCT-1E may be installed up to 500 ft. (152 m) from the FACP.*

3.1 Mounting the Enclosure

The DCT-1E 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.

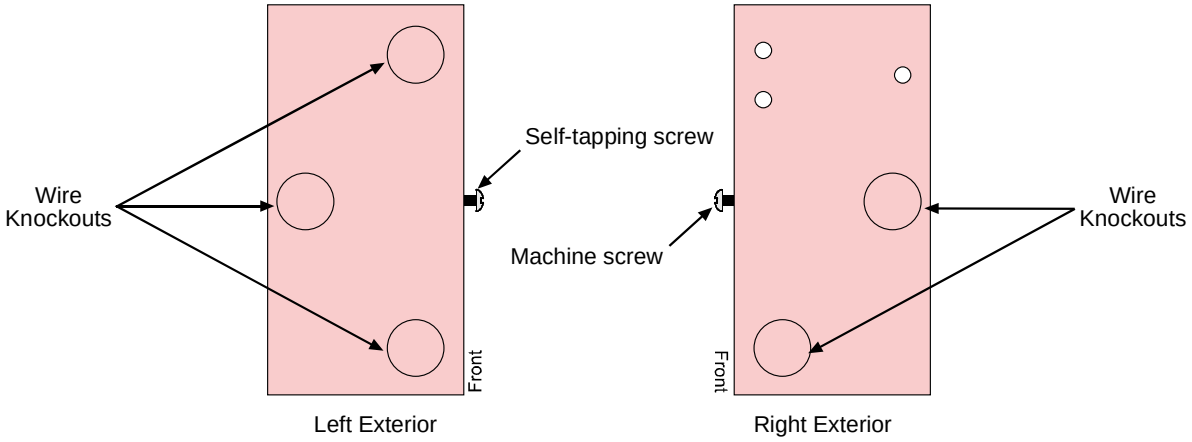


Figure 2: Wire Knockout Locations

2) Use the DCT-1E's enclosure as a template to mark the location of the mounting holes in desired wall. Hang enclosure from wall with appropriate installer-supplied mounting screws. See Figure 3.

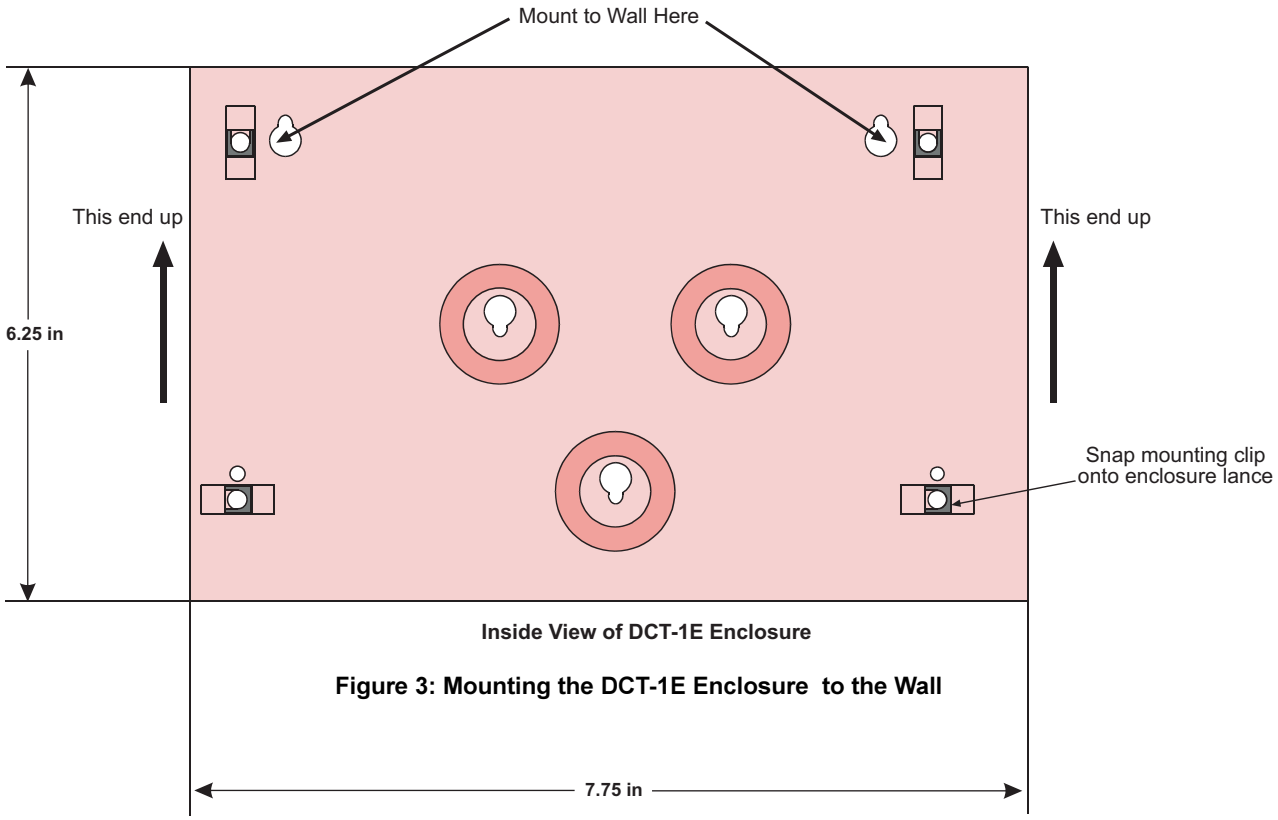


Figure 3: Mounting the DCT-1E Enclosure to the Wall

Inside View of DCT-1E Enclosure

3) Mount the DCT-1E Board to its case using the supplied mounting screws and mounting clips, and attach the ground wire. See Figure 4.

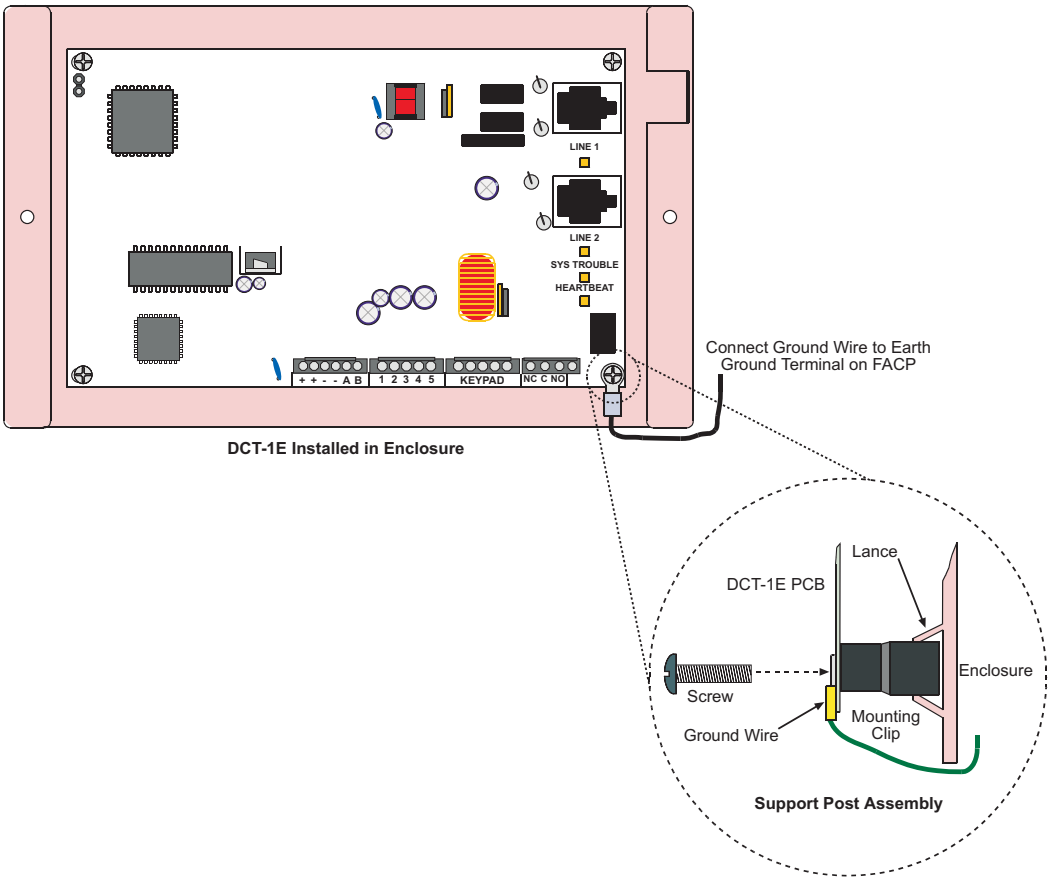
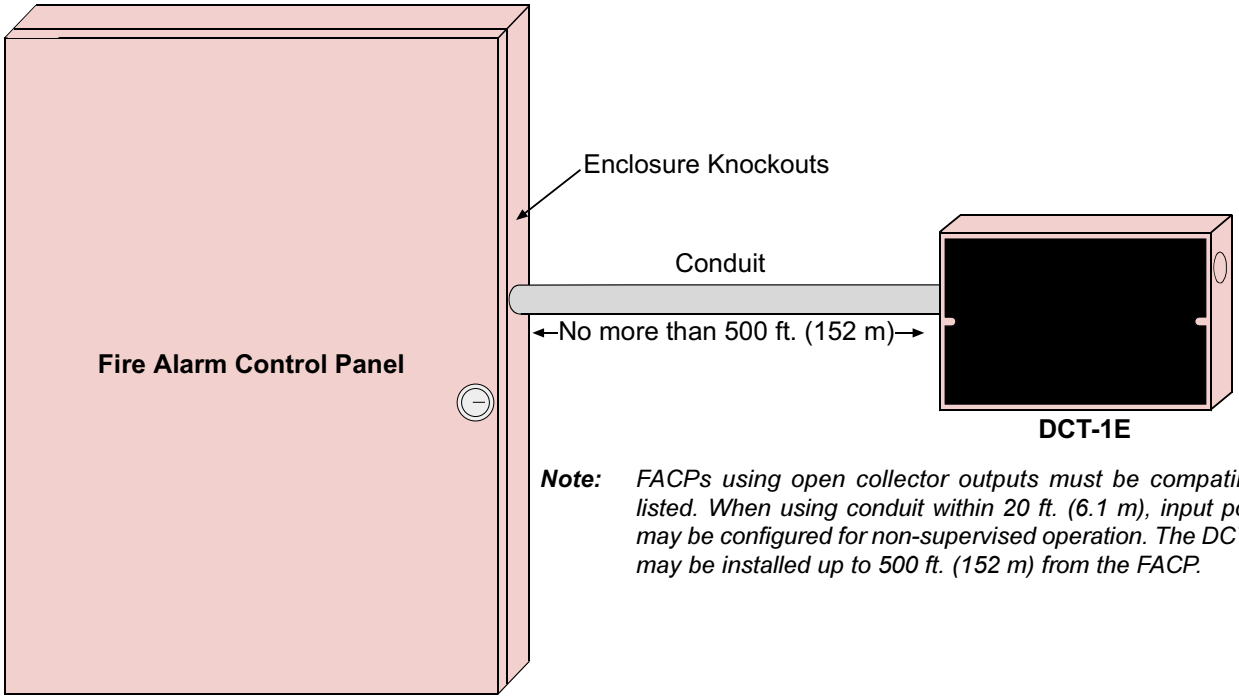


Figure 4: Mounting the DCT-1E Board

4) Connect DCT-1E 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 DCT-1E may be installed up to 500 ft. (152 m) from the FACP.*

Figure 5: Conduit Connections

4.0 Wiring Connections

4.1 Input Point Connections

Remove all power before making or breaking any connections to the DCT-1/1E. 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 DCT-1/1E.

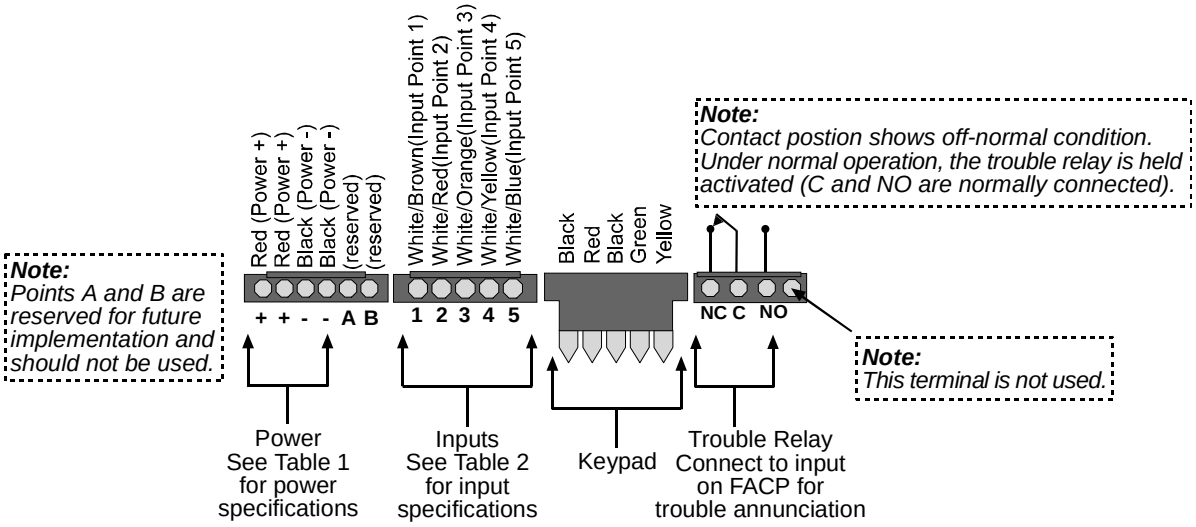


Figure 6: Molex Connector Descriptions

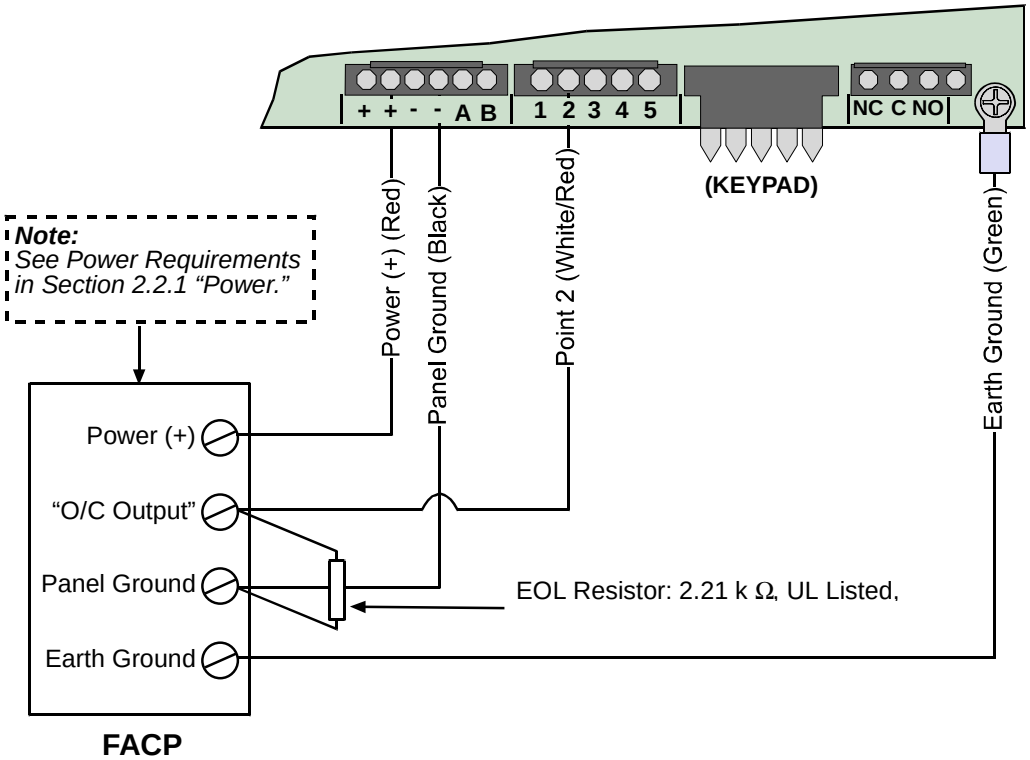


Figure 7: Open Collector Input Point Wiring (Supervised)

Note: *Open collector inputs must sink 5 mA minimum. Saturation voltage not to exceed 1.0 VDC during tum-on.*

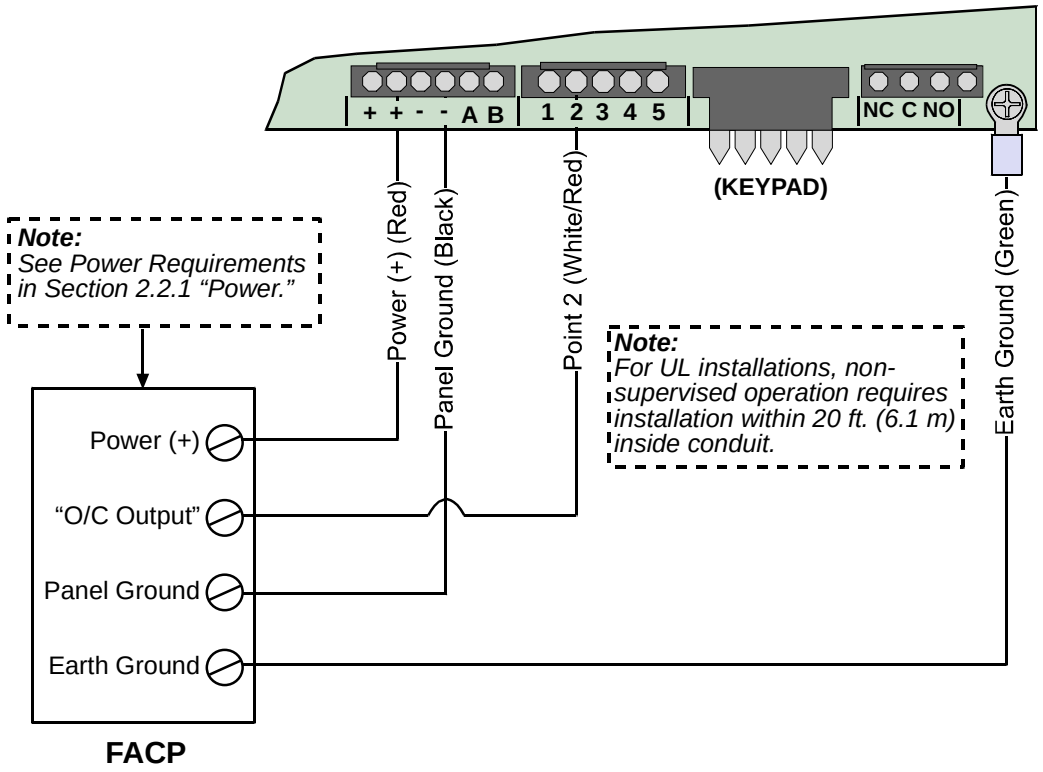


Figure 8: Open Collector Input Point Wiring (Non-supervised)

Note: *Open collector inputs must sink 5 mA minimum. Alarm voltage not to exceed 1.0 VDC during turn-on.*

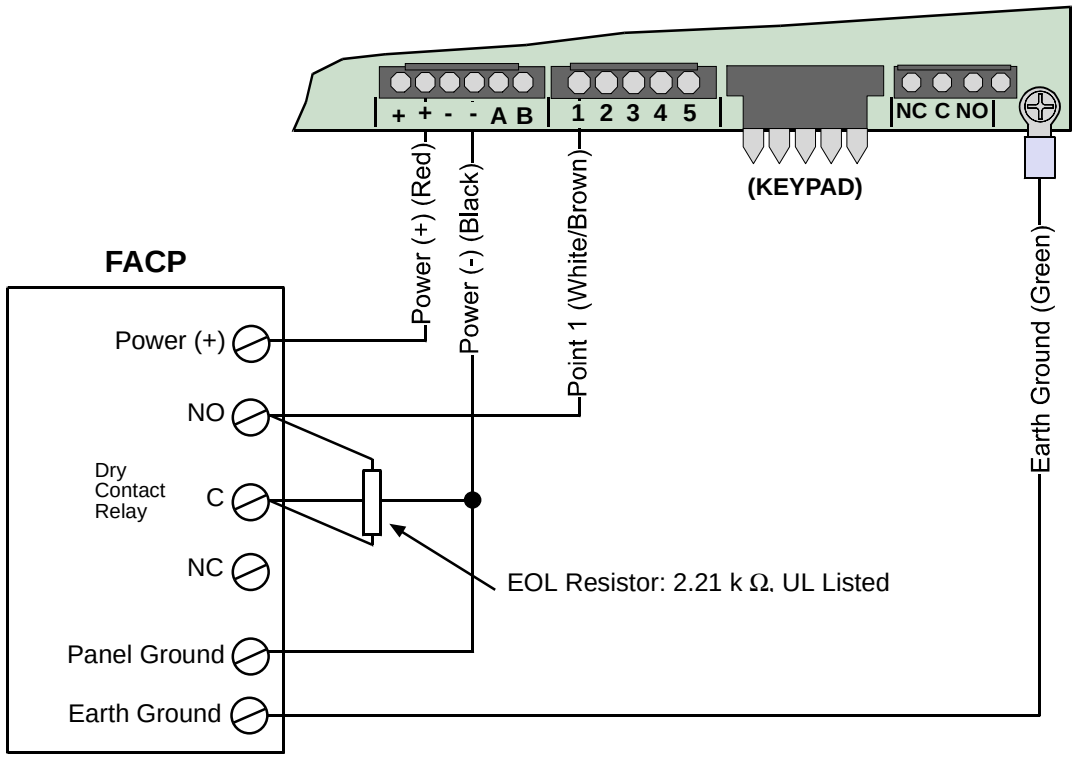


Figure 9: Dry Contact Input Point Wiring (Supervised)

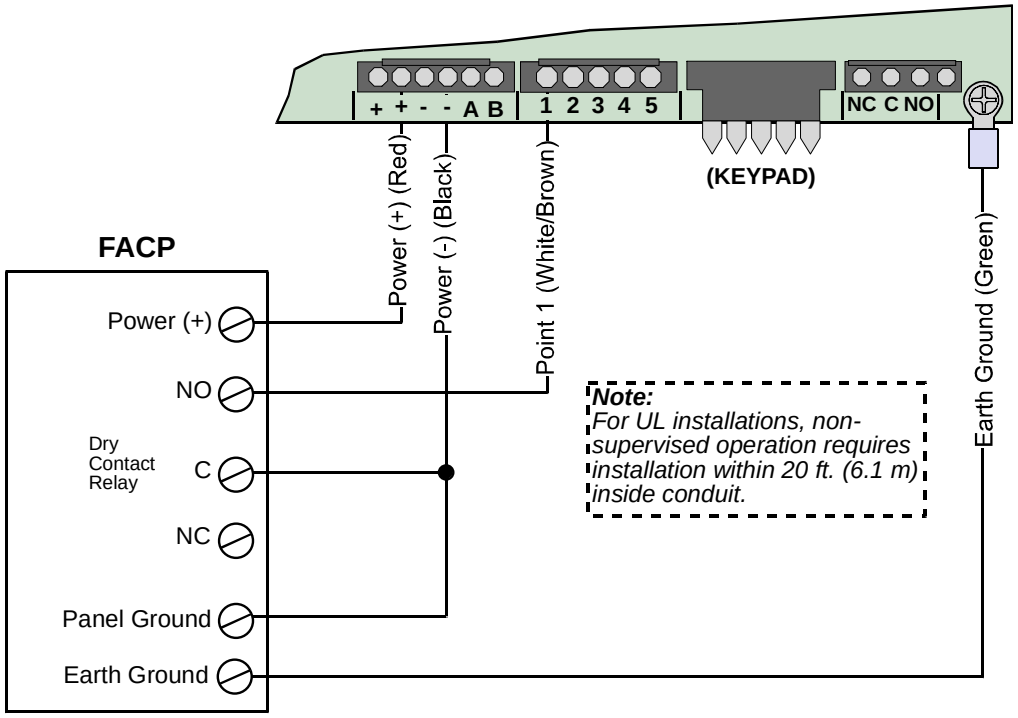


Figure 10: Dry Contact Input Point Wiring (Non-supervised)

4.2 Trouble Relay Connections

See Figure 11 when making connections to the DCT-1/1E's Trouble Relay terminals.

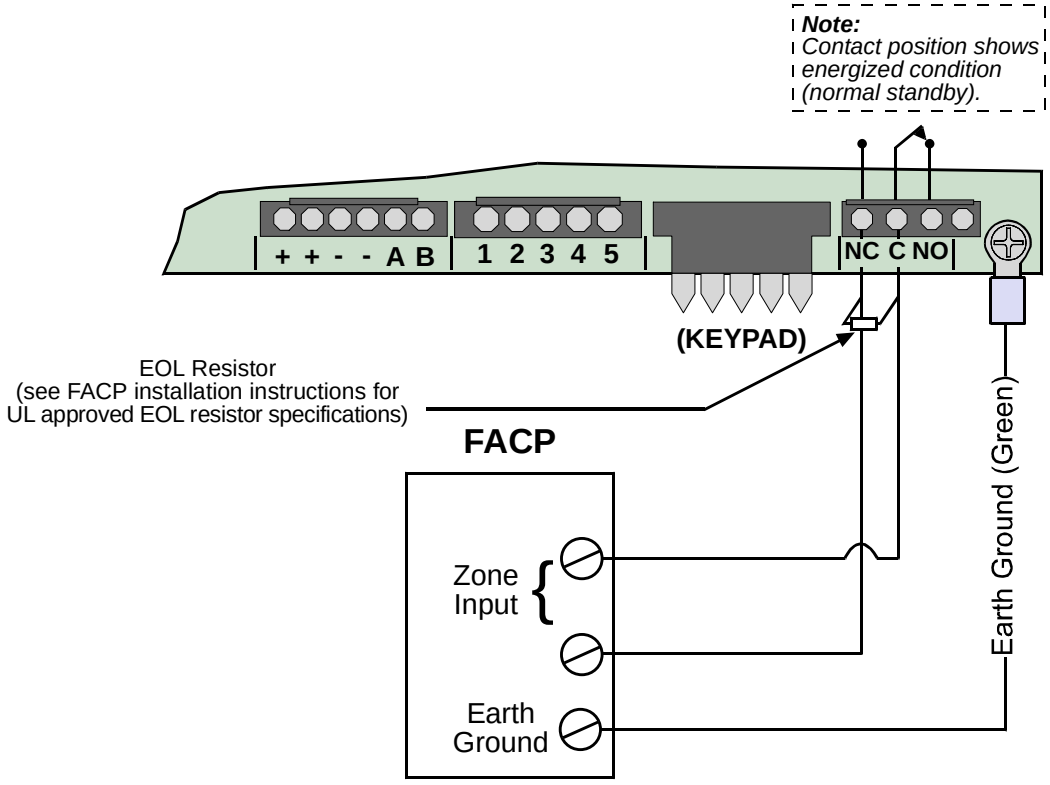


Figure 11: Typical Trouble Relay Connections (Supervised)

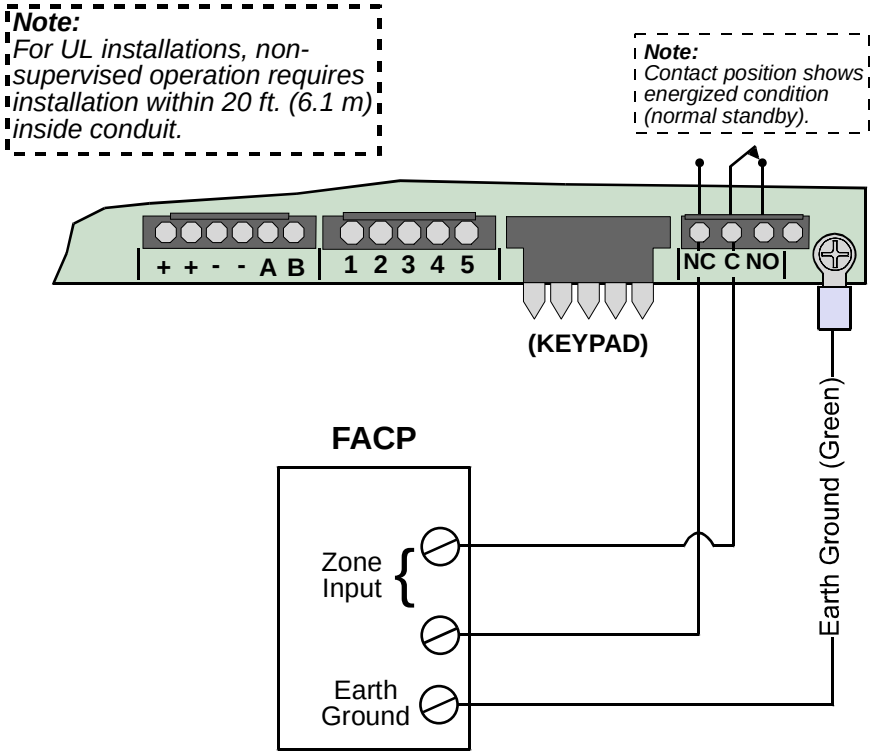


Figure 12: Typical Trouble Relay Connections (Non-supervised)

4.3 Telephone Connections

4.3.1 Telephone Cord Installation

Connect the primary phone line to the DCT-1/1E modular jack “LINE 1” using a phone cord. Connect the secondary phone line to the DCT-1/1E modular jack “LINE 2” using another phone cord.

Note: *You must connect separate primary and secondary phone lines to the DCT-1/1E for all applications.*

4.3.2 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 DCT-1/1E transmits data (see Figure 13). After installation, confirm that the DCT-1/1E seizes the line, acquires dial tone and reports correctly to the receiver.

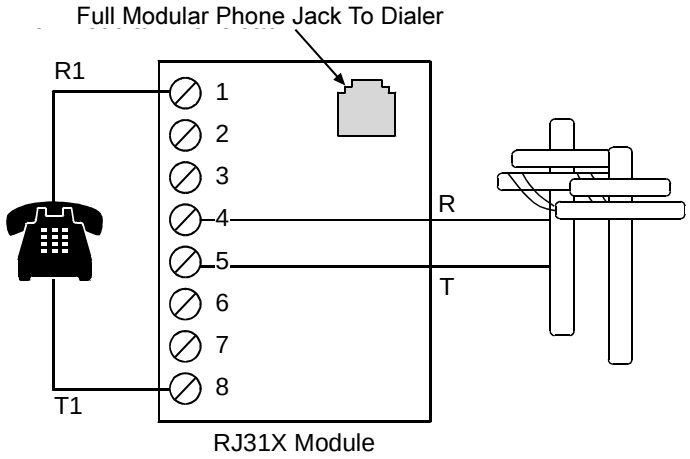


Figure 13: RJ31X Wiring

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.*

4.3.3 Notification

Do not connect registered equipment to party lines or coin-operated telephones. If the local telephone company requests notification before you connect the DCT-1/1E 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 DCT-1/1E, the telephone company is obligated to notify the user in writing.

The DCT-1/1E meets the requirements of UL1950.

4.3.4 Connecting the Keypad to the DCT-1/1E

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

A DCT-P LCD Remote Keypad can be used to operate the DCT-1/1E Communicator. Remove the cover from the DCT-1/1E case and plug the molex connector from the DCT-P onto the connector pins on the DCT-1/1E board as shown in Figure 14.

Use the following steps when programming the DCT-1/1E from the DCT-P:

1) Set the DCT-P's address between 1 and 15.
2) Use the wire connector supplied with the DCT-1/1E to connect the DCT-P to the DCT-1/1E. See Figure 14.
3) Program the DCT-1/1E 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 DCT-1/1E by removing the wire harness plug from the DCT-1/1E's keypad pins, then reconnect the wire plug harness to re-enable the keypad.*

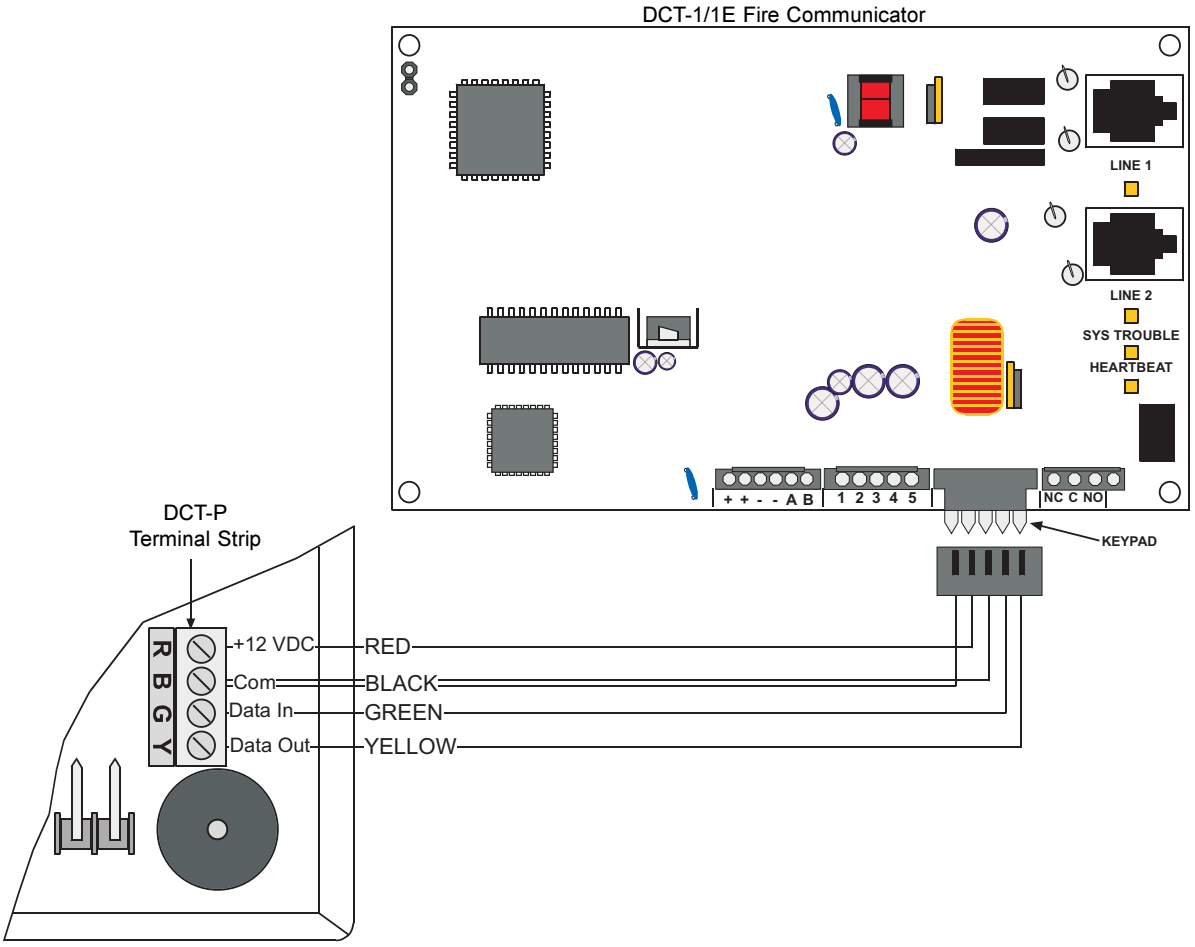


Figure 14: Connecting a Keypad to the DCT-1/1E

Notes:

5.0 System Start-up

5.1 System Power-up

This section describes the proper sequence of events when first powering up the DCT-1/1E.

5.1.1 Before Power-up

Before applying power to the DCT-1/1E, make sure the following conditions have been properly met:

- All wiring connections have been made according to Section 4.0 “Wiring Connections.”
- All connectors are firmly seated onto their appropriate headers (see Section 4.0 “Wiring Connections”).
- Input power requirements comply with the power specifications in Table 1. The power supplied to the DCT-1/1E from the FACP is not shorted and meets the necessary power requirements for the DCT-1/1E.
- 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 DCT-1/1E 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 DCT-1/1E, 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 DCT-1/1E is functional.

5.2 System Quick Start

The DCT-1/1E will start up in a trouble condition until the following steps are taken:

1) Connect the DCT-P Keypad (see Section 4.3.4 “Connecting the Keypad to the DCT-1/1E”).
2) Understand how to program the DCT-1/1E via the DCT-P (see Section 7.1 “Keypad Programming”).
3) Configure the five input points (see Section 9.3.1 “1:CONFIGURE”).
4) Assign the DCT-1/1E’s account numbers (see Section 9.5.1 “1:ACCOUNT NUMBERS”).
5) Assign the DCT-1/1E’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” to complete the programming sequence.

Note: *If the DCT-1/1E 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, SIEMENS Fire Safety 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 modifcations, repair, upgrades or adjustments made to the system.

Note: *See Appendix A: DCT-1/1E Troubleshooting for information on error messages or messages that indicate non-normal operating conditions.*

Notes:

6.0 Overview Of Features And Operation

6.1 Communicator Operation

The DCT-1/1E 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 DCT-1/1E can report to two (2) phone numbers with full single, double and back-up reporting. It communicates in Contact ID, SIA and 4/2 formats.

To ensure the delivery of critical reports, the DCT-1/1E 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 DCT-1/1E 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 DCT-1/1E 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 DCT-1/1E 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 DCT-1/1E 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.*

6.1.2 Telephone Line Supervision

The DCT-1/1E 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 DCT-1/1E 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 DCT-1/1E hangs up and tries again after a 30-second wait. If no dial tone is detected on the second try, the DCT-1/1E will dial anyway.

If this feature is not enabled, then the DCT-1/1E 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: *SIEMENS Fire Safety 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 DCT-1/1E 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 DCT-1/1E 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 DCT-1/1E will only transmit 100 trouble reports in a 24-hour period. If the DCT-1/1E 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 DCT-1/1E can perform two types of communications tests: Auto Test and Manual Test. These tests verify the DCT-1/1E'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.

6.1.10.1 Auto Test

Auto Test is an automatic test used to verify proper operation of each phone line connected to the DCT-1/1E. The programmable parameters for Auto Test are set at the DCT-P 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 DCT-P 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: *Setting Auto Test to either 7 days, 28 days or DISABLED is not compliant with Underwriters Laboratories, Inc.*

A power cycle will default the system time to “0000.” The system time should be set up again 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 DCT-1/1E 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 DCT-1/1E fails to send the Auto Test report in 10 tries, a COMM FAULT report is sent. The DCT-1/1E 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 DCT-1/1E checks its status. If any alarms, troubles or system faults are present, the DCT-1/1E sends the Off Normal at Test report instead. If all conditions are normal, the DCT-1/1E sends the Auto Test report.

6.1.10.2 Manual Test

A Manual Communications Test is initiated by the user from the DCT-P 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 DCT-P Keypad display will show the following message, “COMMUNICATOR INITIALIZING...” until the DCT-1/1E starts its first attempt to transmit the report.

When the Manual Test report is being sent, the DCT-P 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 DCT-P 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 DCT-1/1E 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: DCT-1/1E Troubleshooting for information on error messages or messages that indicate non-normal operating conditions.*

6.2 Input Point Operation

Note: *See Appendix A: DCT-1/1E Troubleshooting for information on error messages or messages that indicate non-normal operating conditions.*

The DCT-1/1E 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 DCT-1/1E sends a fire alarm report. A restoral is sent when the input is deactivated.
- **Waterflow*:** When activated, the DCT-1/1E sends a waterflow alarm report. A restoral is sent when the input is deactivated.
- **Supervisory*:** When activated, the DCT-1/1E sends a supervisory alarm report. A restoral is sent when the input is deactivated.
- **Monitor*:** When activated, the DCT-1/1E sends a monitor report. A restoral is sent when the input is deactivated.
- **System Fault**:** When activated, the DCT-1/1E 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 DCT-1/1E 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 DCT-1/1E will monitor both inputs. If an AC failure occurs and the delay time is initialized, the DCT-1/1E 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 DCT-1/1E. If you program the FACP for an AC Fail Delay time and then program the DCT-1/1E 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 DCT-1/1E’s AC Fail Delay time is set for 12 hours, then the AC Fail report will be sent from the DCT-1/1E 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 DCT-1/1E 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 1.0 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.
- **SHORT:** If voltage on the input dips below 1 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 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 1.0 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 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 15 for System Fault/Fault on Open wiring connections.

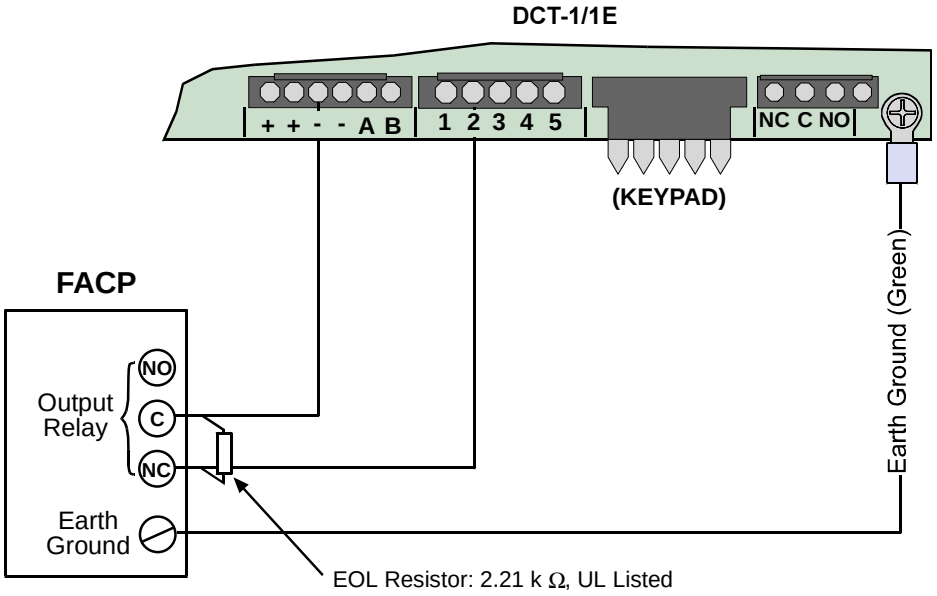


Figure 15: System Fault/Fault on Open Connections

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.*

6.3 Trouble Relay Operation

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

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

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

Note: *See Appendix A: DCT-1/1E Troubleshooting for information on error messages or messages that indicate non-normal operating conditions.*

6.4 Keypad Operation

6.4.1 Understanding the DCT-P LCD Remote Keypad

The DCT-P LCD Remote Keypad is an alphanumeric LCD keypad used for programming and debugging purposes only when connected to the DCT-1/1E. The DCT-P 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 14 to connect the DCT-P to the DCT-1/1E. See Figure 16 for a description of DCT-P Keypad key functions.

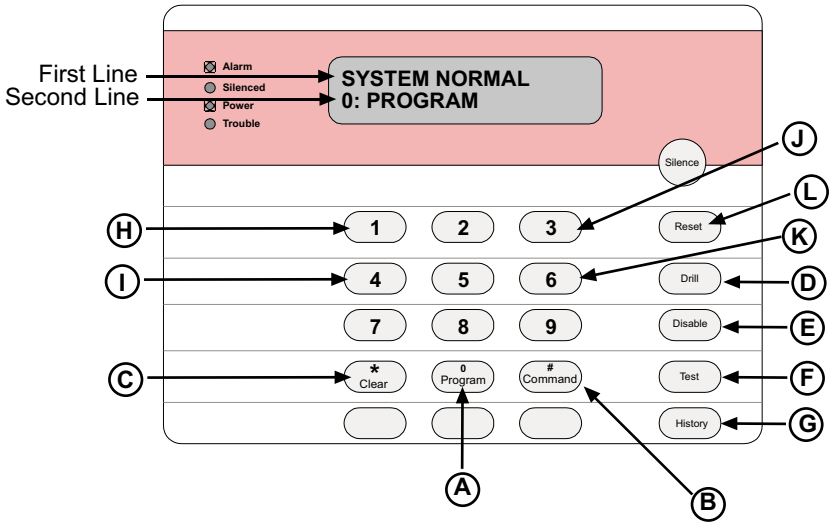


Figure 16: DCT-P Keypad Key Descriptions

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

B) **[#/Command] Key:** Accepts programming entries into DCT-1/1E. 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 6.4.4 “History” for more information.

H) **[1] Key:** Increases the DCT-P’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 DCT-P’s sounder volume. Press and hold the **[*/Clear]** key first, and then press the **[4]** key to adjust the volume.

J) **[3] Key:** Increases the DCT-P’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 DCT-P’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 DCT-1/1E. See Section 6.5 “Reset” for more information. Clears the character selected by the cursor when pressed. See Figure 17.

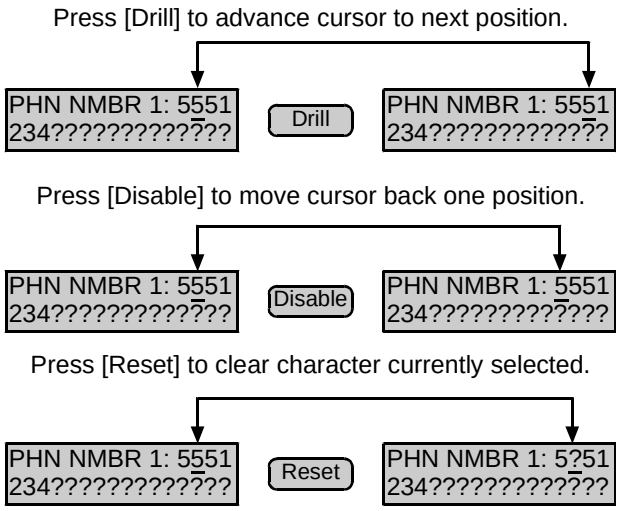


Figure 17: Additional Functions of the [Drill], [Disable] and [Reset] Keys.

6.4.2 Scrolling Menus

When properly connected to the DCT-1/1E, the DCT-P will display along its second line a scrolling menu of possible user actions. This scrolling menu is the DCT-1/1E'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 DCT-P LCD.

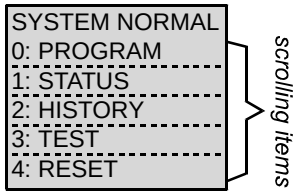


Figure 18: Scrolling Main Menu

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 DCT-P 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 19.

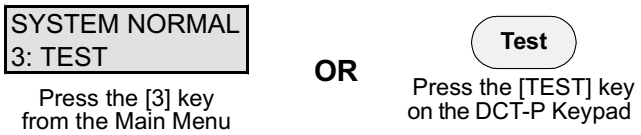


Figure 19: Exclusive Keys

- **Shared Keys:** The **[Program]**, **[Clear]** and **[Command]** keys are not exclusive, but shared with other characters. The character sharing the corresponding key is displayed on the same key. These keys are the **[*/Clear]**, **[0/Program]** and **[#/Command]** keys. To select one of these items, press the shared key. For example, The **[Program]** key is also the **[0]** key. If an asterisk (*) is required, press the **[*/Clear]** key to enter this character.

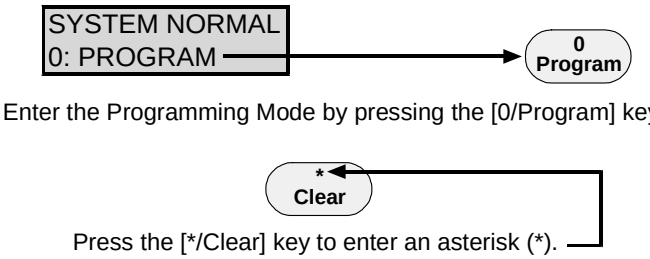


Figure 20: Shared Keys

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

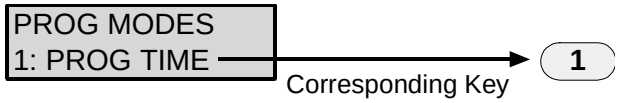


Figure 21: Sub-menu Items

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 is cleared when the system loses all power.

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 DCT-P'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 DCT-P 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.

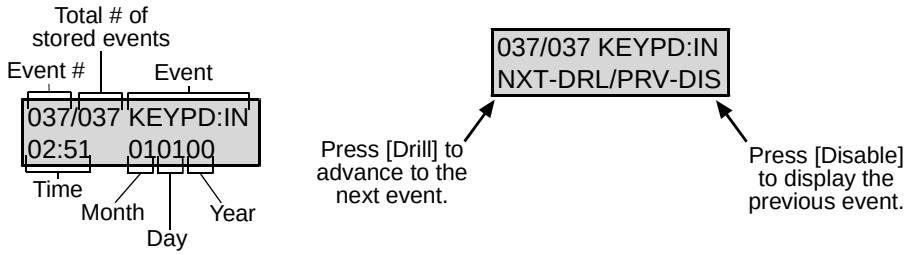


Figure 22: Event History Example

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

Table 6: Event History Abbreviations

6.5 Reset

There are four ways the DCT-1/1E can be manually reset:

1) On the DCT-P LCD Remote Keypad, pressing the **[4]** key to select RESET from the Main Menu, or pressing the **[Reset]** key will reset the DCT-1/1E 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 DCT-1/1E.
2) Exiting the Test Mode will reset the DCT-1/1E. An OPEN RESET report with a User ID parameter of 99 is sent when using this way to reset the DCT-1/1E.
3) Exiting the Programming Mode will reset the DCT-1/1E. An OPEN RESET report with a User ID parameter of 01 is sent when using this way to reset the DCT-1/1E.
4) Powering up the DCT-1/1E will reset it, but no OPEN RESET report is sent.

7.0 How to Program

7.1 Keypad Programming

All programming for the DCT-1/1E is done via the DCT-P LCD Remote Keypad. To properly program the DCT-1/1E, 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 DCT-1/1E.
- **[*/Clear] Key:** This key must be pressed after the the **[#Command]** key is pressed to return to the sub-menu/menu selections.

See Figure 23 for the complete programming key sequence for setting the DCT-1/1E's operational date.

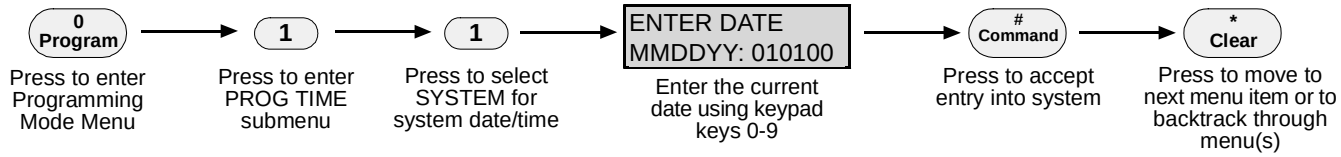


Figure 23: Programming Key Sequence for System Date

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 DCT-1/1E will not process input point events or supervise the phone lines. 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 DCT-1/1E.

- **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 seven programming options:
  - PROG TIME
  - PROG TIMERS
  - PROG INPUTS
  - PROG RELAY
  - PROG ACC'NTS
  - PROG FORMATS
  - PROG DEFLTS
- **Level 3:** Level 3 provides the third set of options that branch from Level 2 (see Figure 24). 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.*

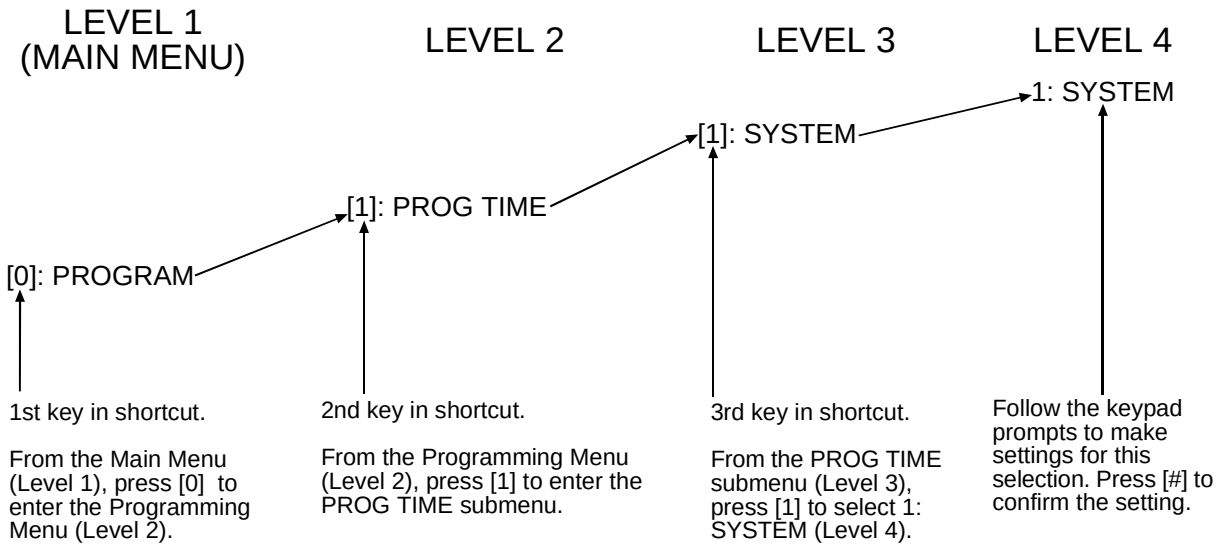
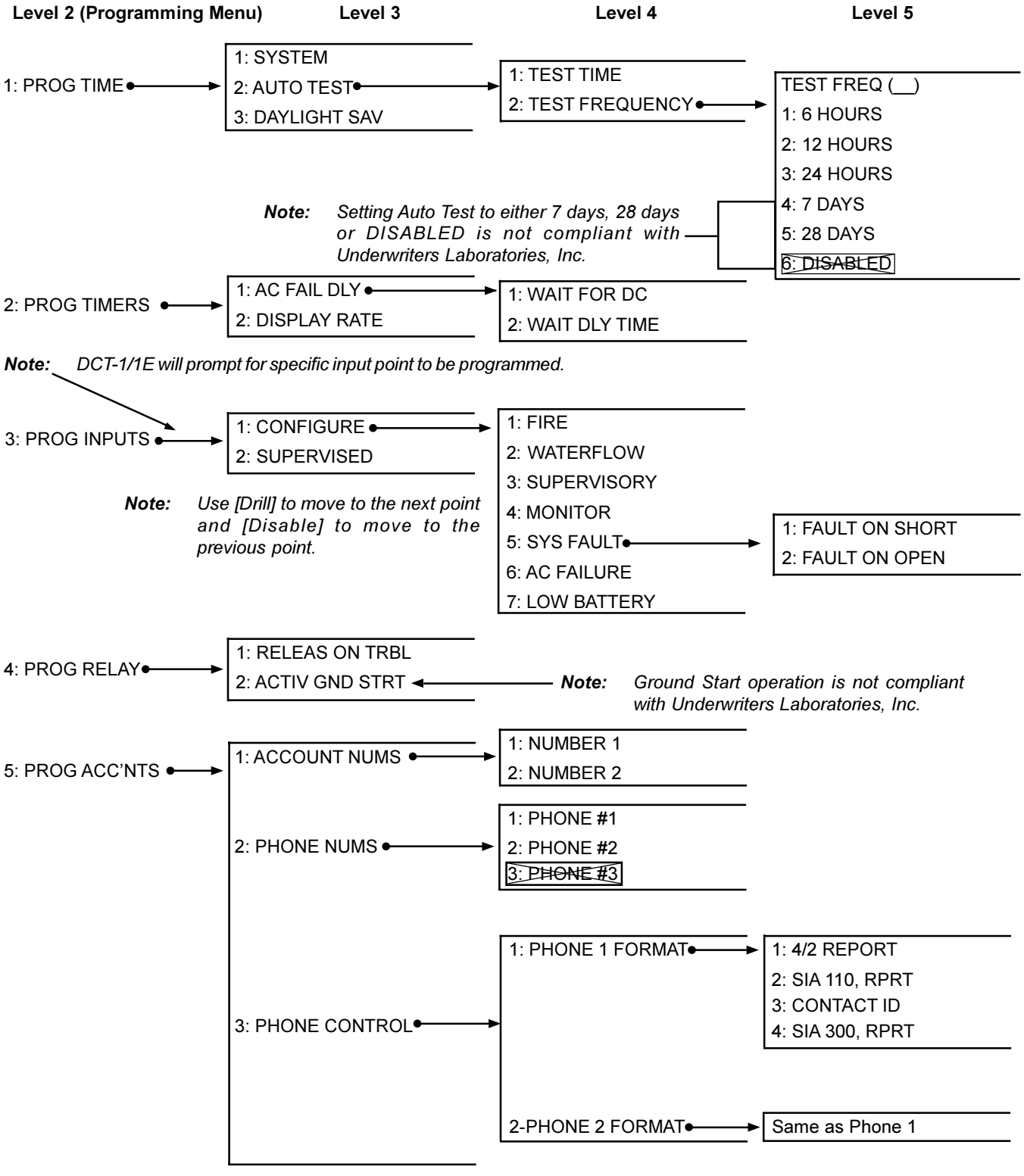


Figure 24: Programming Key Sequence Diagram

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.

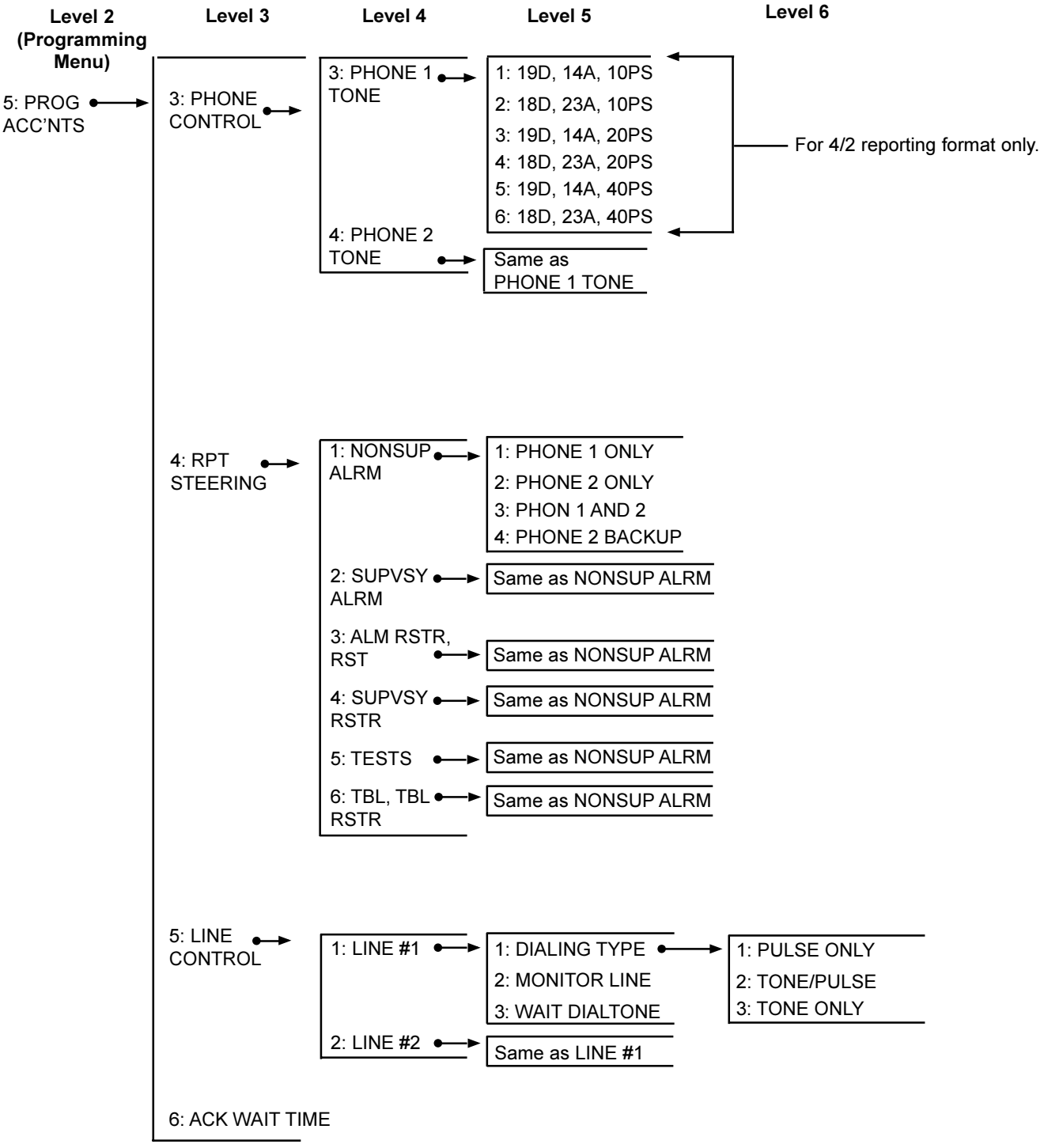
Note: *Once you have entered the Programming Menu (Level 2), it is no longer necessary to press **[0]** to re-enter the Programming Menu. If you press **[0]** while already in the Programming Menu, the keypad will emit a three-beep error tone.*

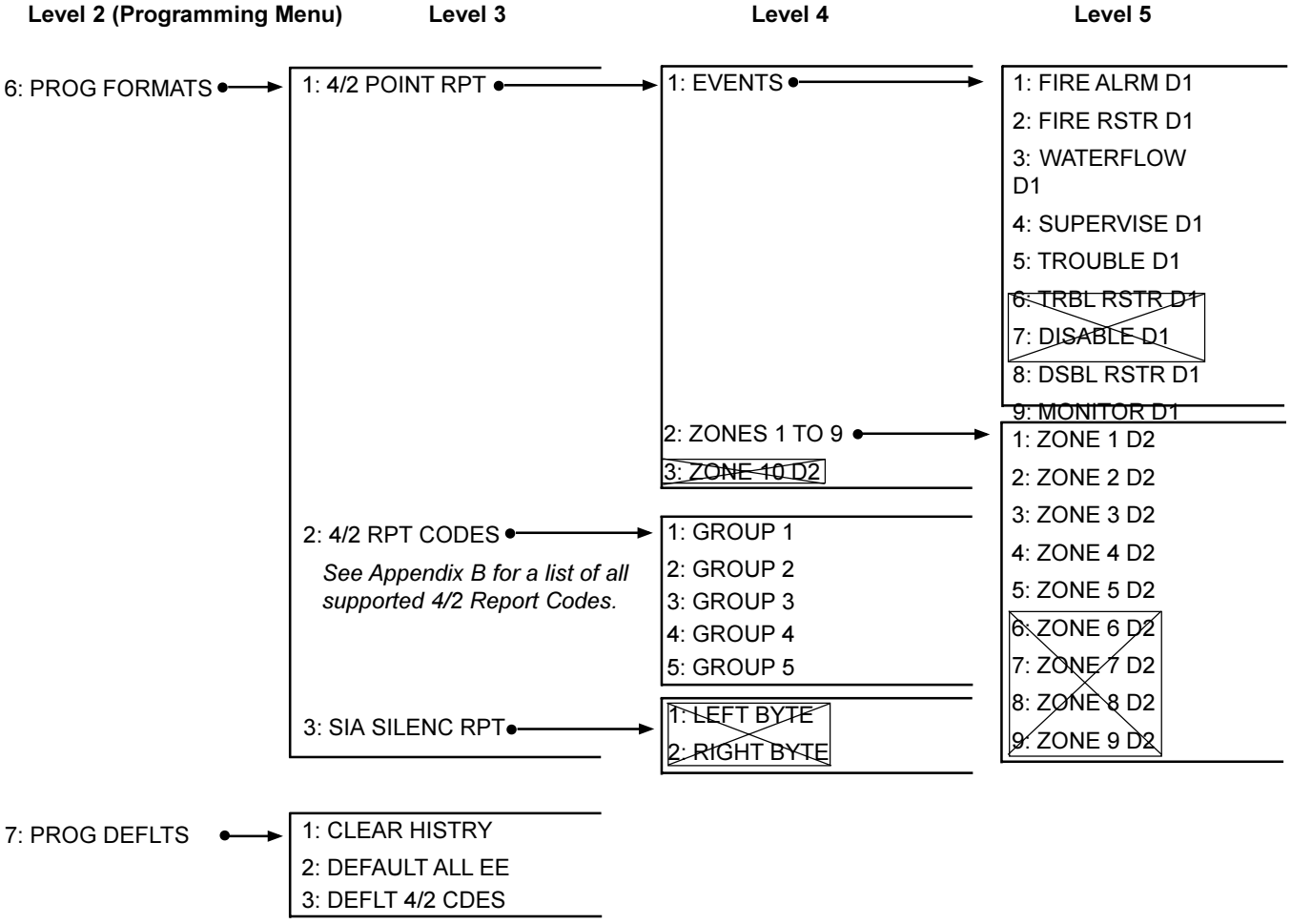
8.0 Program Menu Tree



5: PROG ACCTS continued on next page.

Items crossed out are not currently supported.


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
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



Items crossed out are not currently supported.

Notes:

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9.0 Programming

The DCT-1/1E 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
```

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.

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 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.

9.1.2.2 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.

9.1.3 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 DCT-1/1E 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 DCT-1/1E 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.

Refer to NFPA 72 Section 1-5.8.6.3 *"The primary power failure trouble signal for the DACT shall not be transmitted until the actual battery capacity is depleted by at least 25 percent, but by not more than 50 percent"* when determining the WAIT DLY TIME.

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 DCT-1/1E to send and AC Fail report without any delay.*

Note: *If the FACP is capable of being programmed for AC Fail Delay, and the DCT-1 is also programmed for AC Fail Delay, the total time delay for reporting to the central station will be the combined times of the two.*

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 DCT-1/1E sends a fire alarm report. A restoral is sent when the input is deactivated.
- **Waterflow:** When activated, the DCT-1/1E sends a waterflow alarm report. A restoral is sent when the input is deactivated.
- **Supervisory:** When activated, the DCT-1/1E sends a supervisory alarm report. A restoral is sent when the input is deactivated.
- **Monitor:** When activated, the DCT-1/1E sends a monitor report. A restoral is sent when the input is deactivated.
- **System Fault:** When activated, the DCT-1/1E 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 bewteen 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 DCT-1/1E 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 DCT-1/1E. If you program the FACP for an AC Fail Delay time and then program the DCT-1/1E 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 DCT-1/1E’s AC Fail Delay time is set for 12 hours, then the AC Fail report will be sent from the DCT-1/1E 18 hours from the time of AC failure.*

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

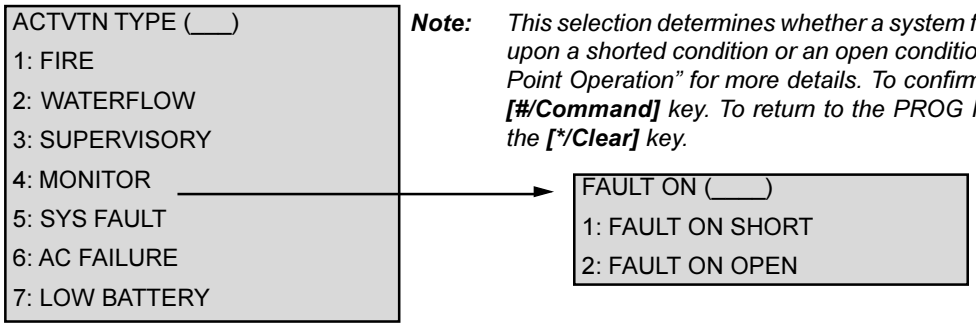
Note: *For fail-safe operation, it is recommended that the system fault input be programmed to fault on open.*

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:



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 DCT-1/1E.
5) Press the **[*/Clear]** key to return to the PROG INPUTS submenu.

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 submneu, 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 DCT-1/1E 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 onboard 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 DCT-1/1E to use the onboard 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 DCT-1/1E 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.*

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.

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  <----
```

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:

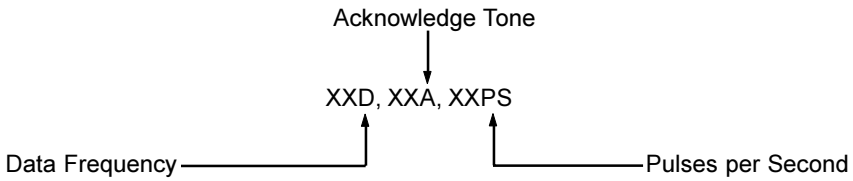
```
PHONE FORMAT (__)
1: 4/2 REPORT
2: SIA 110, RPRT
3: CONTACT ID
4: SIA 300, RPRT
```

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
```



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.

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 DCT-1/1E 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 DCT-1/1E 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 DCT-1/1E starts dialing when it receives a dial tone. If set to NO, the DCT-1/1E 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 DCT-1/1E 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 DCT-1/1E hangs up. This parameter sets how long the DCT-1/1E 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  (___)
(20-90 secs):     ___
```

2) Enter a value between 20 and 90 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
```

This item is not currently supported.

Description: This feature allows you to program the reporting formats and codes used by the DCT-1/1E in reporting 4/2 formats.

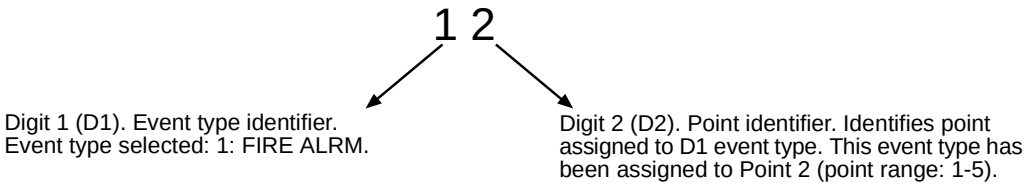
Programming Procedure:

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 25 for more information.



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

Figure 25: 4/2 Point Report Example

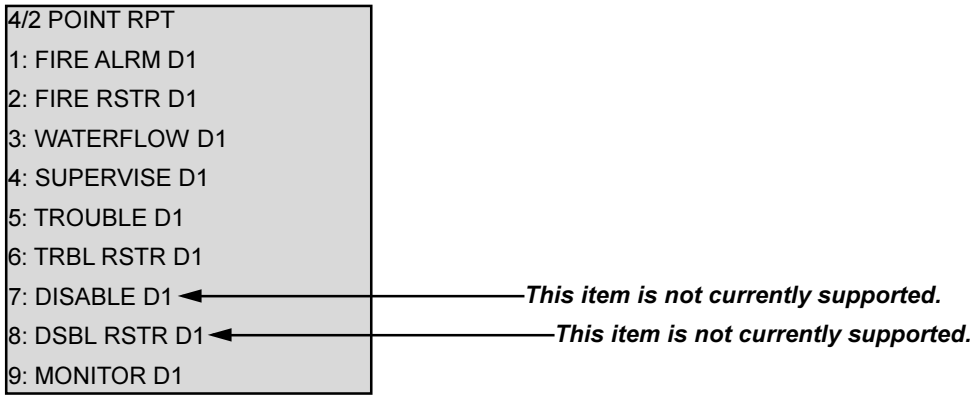
Programming Procedure:

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

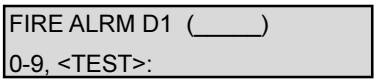
```
4/2 POINT RPT
1: EVENTS
2: ZONES 1 TO 9
3: ZONE 10 D2
```

This item is not currently supported.

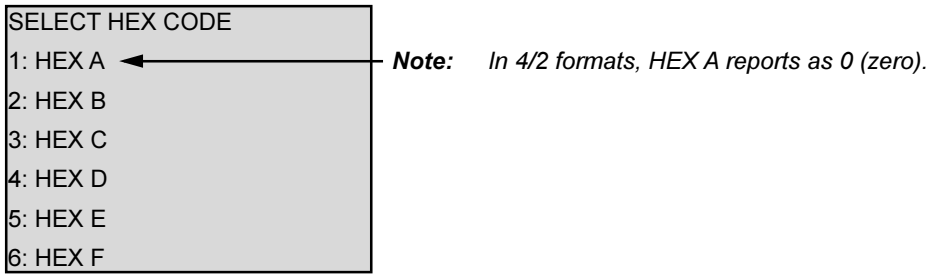
2) Press **[1]** for EVENTS. The following window will display:



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:

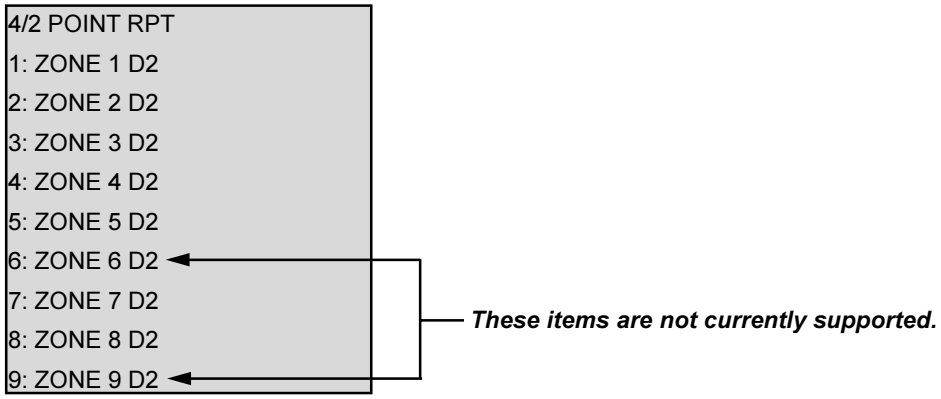


4) The current setting is displayed in parentheses on the first line. Press the **[#/Command]** key to confirm your selection. If you prefer to assign a hexadecimal value, press the **[TEST]** key. The following window will display:

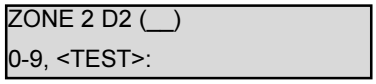


5) Press the number key that corresponds with your selection. Press the **[#/Command]** key to confirm the selection. Press the **[*/Clear]** key to return to the 4/2 POINT RPT submenu.

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:



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):



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

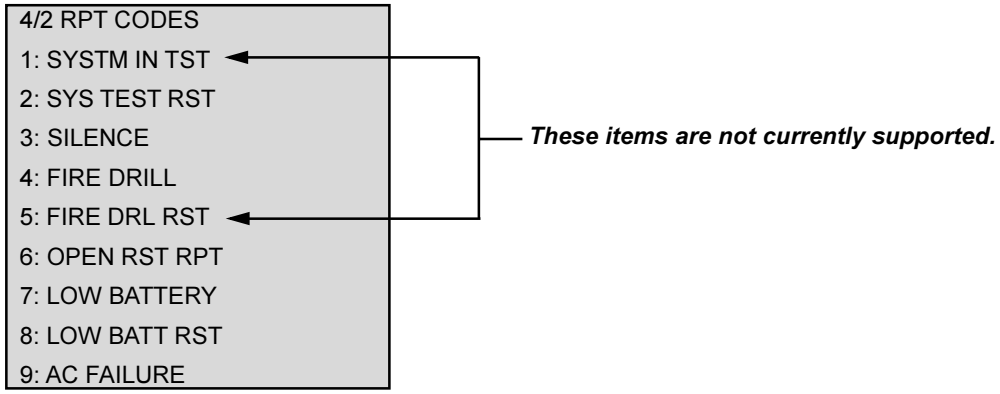
Description: 4/2 Report Codes apply to system conditions only when 4/2 format has been selected. Two digits can be programmed to be sent for each condition. See Appendix B: 4/2 Report Codes for a description of each 4/2 Report Code supported by the DCT-1/1E.

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:



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 ◄——— *This item is not currently supported.*

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.*

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 DCT-1/1E 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 000
```

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 DCT-1/1E 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 DCT-1/1E back to the original factory programming configuration with this option.

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 DCT-1/1E.*

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 DCT-1/1E 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.

10.0 Modes of Operation

The DCT-1/1E has five modes of operation: PROGRAM, STATUS, HISTORY, TEST and RESET. Each of these modes appear as selections on the DCT-1/1E's Main Menu.

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

10.1 0-PROGRAM

When the DCT-P LCD Remote Keypad is connected to the DCT-1/1E, the Main Menu will appear shortly after keypad start-up. See Section 9.0 "Programming" 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). Once a line is selected, a manual communications test is initiated and the following window will display:

COMMUNICATOR
LINE 1, TRY 1

The bottom line indicates the line on which the manual communications test has been initiated and the current attempt (try). The DCT-1/1E 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 DCT-1/1E can perform, see Section 6.1.10 Communications Tests.*

10.5 4-RESET

The DCT-1/1E can be manually reset by either selecting 4-RESET from the Main Menu, or by pressing the **[RESET]** key on the DCT-P Keypad. See Section 6.5 “Reset” for a detailed description on resetting the DCT-1/1E.

Appendix A: DCT-1/1E 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.

DCT-1/1E Onboard LEDs

The DCT-1/1E has four onboard 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 DCT-1/1E.
  - 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 DCT-1/1E'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 DCT-1/1E and see if the problem indication moves to the DCT-1/1E'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 DCT-1/1E, 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 DCT-1/1E is functioning properly. This LED will not light at all if the DCT-1/1E is not functioning properly. If this is the case, check the following:
  - Check the DCT-1/1E'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.

- **SYS TROUBLE LED:** This LED is off if the DCT-1/1E is operating properly. It will be steady-on for any DCT-1/1E system trouble. It also operates in conjunction with the DCT-1/1E's onboard 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 DCT-1/1E will continuously cycle through its start-up routine. Each time the start-up routine occurs, the SYS TROUBLE LED will blink two times. Contact Siemens Building Technologies Technical Support at (800) 248-7976 immediately.
3	External RAM Test Failure	The external RAM has failed. May occur at any time. When this problem occurs, the DCT-1/1E will continuously cycle through its start-up routine. Each time the start-up routine occurs, the SYS TROUBLE LED will blink three times. Contact Siemens Building Technologies Technical Support at (800) 248-7976 immediately.
4	ROM Checksum Failure	The ROM checksum has failed. May occur at any time. When this problem occurs, the DCT-1/1E will continuously cycle through its start-up routine. Each time the start-up routine occurs, the SYS TROUBLE LED will blink four times. Contact Siemens Building Technologies Technical Support at (800) 248-7976 immediately.
5	EEPROM Checksum Failure	An EEPROM test is performed every 10 minutes. If the checksum fails, the DCT-1/1E 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 Siemens Building Technologies Technical Support at (800) 248-7976 immediately.

Table 7: SYS TROUBLE LED Indications

Note: *The DCT-1/1E considers the connection of the DCT-P Keypad as an off-normal condition.*

Input Points

If a problem involving the DCT-1/1E's input points, the SYS TROUBLE LED will be steady-on. If the input point(s) have been programmed for supervision, plug in the DCT-P 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 DCT-1/1E's onboard trouble relay will be in the energized position (normal standby). See Figures 11 and 12. If the onboard 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 DCT-1/1E needs to place a call.

If the FACP supervises the connection to the DCT-1/1E's onboard 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 DCT-1/1E input point (if used and programmed). The DCT-1/1E will send a SYS TROUBLE report, however, this will not cause the DCT-1/1E's SYS TROUBLE LED or onboard trouble relay to activate.

Manual Test Report Failure

If the DCT-1/1E 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 DCT-P 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 DCT-P Keypad displays the following message, “REPORTS IN QUEUE PLEASE WAIT.” The DCT-1/1E then waits for these reports to be sent. If the **[*/Clear]** key is pressed on the DCT-P Keypad, the wait is terminated, the DCT-P 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 DCT-1/1E 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 DCT-1/1E checks to see that at least one phone line is good. If this condition is not met, the DCT-P 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.

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Appendix B: 4/2 Reporting Codes

The table below lists all the 4/2 codes supported by the DCT-1/1E 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 forAC 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

Items crossed out are not currently supported.

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 for 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

Items crossed out are not currently supported.

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**
Point Fire Alarm	FA pppp	Fire Alarm	1 110 aa ppp	Fire Alarm	0**P**
Point Waterflow Alarm	SA pppp	Sprinkler Alarm	1 113 aa ppp	Waterflow	0**P**
Point Supervisory Alarm	SS pppp	Sprinkler Supervisory	1 200 aa ppp	Fire Supervisory	0**P**
Point Monitor Alarm	UA pppp	Untyped Zone Alarm	1 140 aa ppp	General Alarm	0**P**
Point Fire Trouble	FT pppp	Fire Trouble	1 373 aa ppp	Fire Trouble	6**P**
Point Waterflow Trouble	ST pppp	Sprinkler Trouble	1 373 aa ppp	Fire Trouble	6**P**
Point Supervisory Trouble	ST pppp	Sprinkler Trouble	1 373 aa ppp	Fire Trouble	6**P**
Point Monitor Trouble	UT pppp	Untyped Zone Trouble	1 373 aa ppp	Fire Trouble	6**P**
Point Fire Alarm Restore	FR pppp	Fire Restoral	3 110 aa ppp	Fire Alarm	3**P**
Point Waterflow Restore	SH pppp	Sprinkler Alarm Restore	3 113 aa ppp	Waterflow	3**P**
Point Supervisory Restore	SR pppp	Sprinkler Restoral	3 200 aa ppp	Fire Supervisory	3**P**
Point Monitor Restore	UR pppp	Untyped Zone Restoral	3 140 aa ppp	General Alarm	3**P**
Point Fire Trouble Restore	FJ pppp	Fire Trouble Restore	3 373 aa ppp	Fire Trouble	3**P**
Point Waterflow Trouble Restore	SJ pppp	Sprinkler Trouble Restore	3 373 aa ppp	Fire Trouble	3**P**
Point Supervisory Trouble Restore	SJ pppp	Sprinkler Trouble Restore	3 373 aa ppp	Fire Trouble	3**P**
Point Monitor Trouble Restore	UJ pppp	Untyped Trouble Restore	3 373 aa ppp	Fire Trouble	3**P**

Notes:

- Some codes are used for more than one event type.
- For SIA, 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-RELEATED EVENTS					
Report Description	**SIA Code**	**SIA Description**	**Contact ID Code**	**Contact ID Description**	**4/2 Code Default Values**
Open Reset	OR iii	Disarm From Alarm	1 401 aa iii	O/C By User	9F
Low Battery	YT	System Battery Trouble	1 302 aa 000	Low System Battery	F9
Low Battery Restore	YR	System Battery Restoral	3 302 aa 000	Low System Battery	E9
AC Fail	AT	AC Trouble	1 301 aa 000	AC Loss	F8
AC Fail Restore	AR	AC Restoral	3 301 aa 000	AC Loss	E8
Auto Test	RP	Automatic Test	1 602 aa 000	Periodic Test Report	EE
Off Normal At Test	YX	Service Required	6 300 aa 000	System Trouble	FD
Phone 1 Trouble	LT 1	Phone Line Trouble	1 351 aa 000	Telco 1 Fault	FB
Phone 1 Restore	LR 1	Phone Line Restoral	3 351 aa 000	Telco 1 Fault	EB
Phone 2 Trouble	LT 2	Phone Line Trouble	1 352 aa 000	Telco 2 Fault	FC
Phone 2 Restore	LR 2	Phone Line Restoral	3 352 aa 000	Telco 2 Fault	EC
Manual Test	RX	Manual Test	1 601 aa 000	Manual Trigger Test	FE
Data Lost	RT	Data Lost	1 354 aa 000	Fail to Communicate	FF
EEPROM Failure	IA 4	Equipment Failure Condition	1 307 aa 000	Self-test Failure	FD
Trouble Input	IA 2	Equipment Failure Condition	1 300 aa 002	System Trouble	FD
Trouble Input Restore	IR 2	Equipment Fail - Restoral	3 300 aa 002	System Trouble	ED
System Trouble Keypad	IA 5	Equipment Failure Condition	1 300 aa 005	System Trouble	FD
System Restore Keypad	IR 5	Equipment Fail - Restoral	3 300 aa 005	System Trouble	ED
System Trouble Comm Fault	IA 6	Equipment Failure Condition	1 300 aa 006	System Trouble	FD
System Restore Comm Fault	IR 6	Equipment Fail - Restoral	3 300 aa 006	System Trouble	ED
System Trouble Programming	IA 11	Equipment Failure Condition	1 300 aa 011	System Trouble	FD
System Restore Programming	IR 11	Equipment Fail - Restoral	3 300 aa 011	System Trouble	ED

Notes:

- Some codes are used for more than one event type.
- For SIA, 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)

Appendix D: Programming Defaults List

The following is a list of all the programming defaults for the DCT-1/1E. Use the *DCT-1/1E Program Record Sheet* (P/N 315-099365) 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 DCT-1/1E will not reset the system date and time. Time is not stored and will be lost on power failure.

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

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)

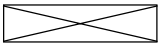
- **Trbl Input Rtrl:** ED
- **Analog Servc:** FD
- ~~**Analog Rstrl:** ED~~
- ~~**Equip Fail:** FD~~
- ~~**Equip Restore:** ED~~
- ~~**Network Fail:** FD~~
- ~~**Network Restor:** ED~~
- ~~**Sens Bus Rpt:** FD~~
- ~~**Sens Bus Rstrl:** ED~~

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~~



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 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

* 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		
Report Description	**Report Routing**	**Report Priority**
Open Reset	ALM RSTR, RST	4
Low Battery*	TBL, TBL RSTR	3
Low Battery Restore*	TBL, TBL RSTR	3
AC Fail*	TBL, TBL RSTR	3
AC Fail Restore*	TBL, TBL RSTR	3
Auto Test	TESTS	4
Off Normal At Test	TESTS	4
Phone 1 Trouble*	TBL, TBL RSTR	3
Phone 2 Trouble*	TBL, TBL RSTR	3
Phone 2 Trouble*	TBL, TBL RSTR	3
Phone 2 Restore*	TBL, TBL RSTR	3
Manual Test‡	TESTS	4
Data Lost	TBL, TBL RSTR	6
EEPROM Failure*	TBL, TBL RSTR	3
Trouble Input*	TBL, TBL RSTR	3
Trouble Input Restore*	TBL, TBL RSTR	3
SystemTrouble Keypad*	TBL, TBL RSTR	3
System Restore Keypad*	TBL, TBL RSTR	3
System Trouble Comm Fault*	TBL, TBL RSTR	3
System Restore Comm Fault*	TBL, TBL RSTR	3
System Trouble Programming*	TBL, TBL RSTR	3
System Restore Programming*	TBL, TBL RSTR	3

* 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: Compatibilities

The following receivers and panels have been proven to be compatible with the DCT-1/-1E DACT under the method required by Underwriters Laboratories. Receivers that are not listed as compatible should not be used with the DCT-1/-1E.

Available Reporting Formats

- **Contact ID (CID):** Is the preferred reporting format. It provides a four digit account code followed by a three digit event code, a two digit group number, and a three digit contact number, all of which are used to provide specific point identification.
- **SIA:** Security Industry Association (SIA) Digital Communication Standard. The DACT provides level 1 compatibility which includes tonal acknowledge, basic reports only, and fixed reporting codes.
- **4/2 Pulse:** Similar to 3/1 except for a four digit account code and a two digit reporting code. Transmission speed and report codes are programmable.

	Compatible Receivers (✓ = Available)					
Report Format	**Radionics D6500**	**Radionics D6600**	**Sur-gard SG-SLR**	**Osborne/Hoffman Quick Alert Model II**	**Ademco 685**	**Silent Knight SK9000**
Contact ID	✓	✓	✓	✓	✓	
SIA 300		✓	✓	✓		
SIA 110		✓	✓	✓		
4/2	✓	✓	✓	✓	✓	✓

Table 8: DCT-1/-1E UL Listed Compatibility

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