# FireNET FN-DAC

## Digital Alarm Communicator

Installation and Operation Manual



**HOCHIKI**
america corporation
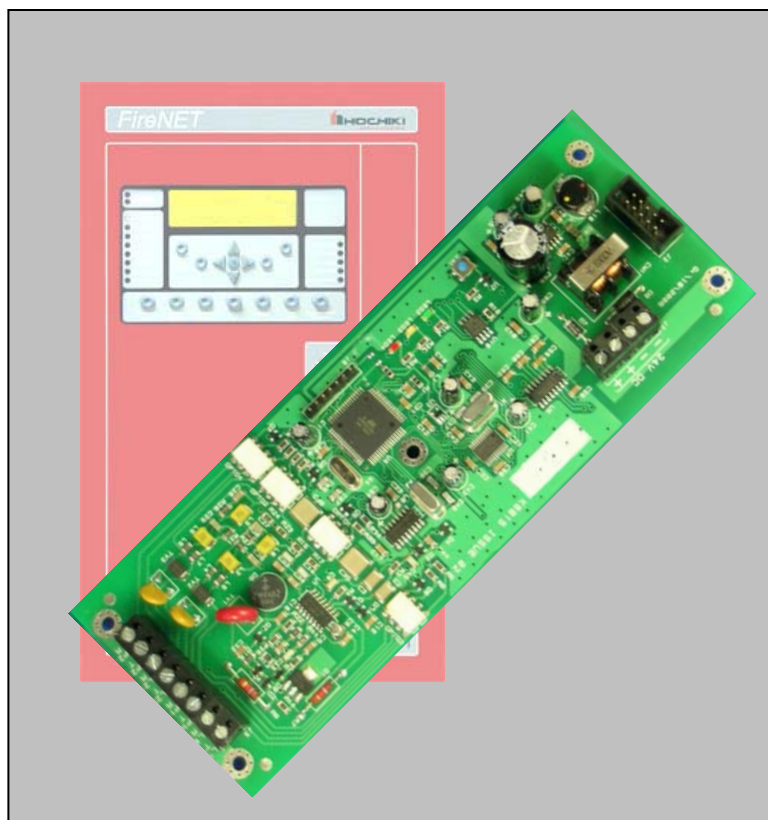
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# Section 1 – Introduction

The FireNET FN-DAC is a digital alarm communicator / dialer that reports control panel and network events to a central monitoring station. The FN-DAC meets the requirements of UL 864 9th Edition.

## 1.1 Features and Specifications

- ❑ Contact ID and SIA Communication Formats

- ❑ Backup and Duplicate Reporting

- ❑ Programmable using FireNET Front Panel Interface or with Loop Explorer

- ❑ Remote Diagnostics and Upload / Download Capability

- ❑ Full Phone Line Supervision

- ❑ Programmable Dialing Format – Tone, Pulse or Both

- ❑ Programmable Daily Test Report Interval

- ❑ Quick Installation in FireNET Enclosure

- ❑ Supply Voltage = 24 VDC

- ❑ Standby Current = .020 Amps

- ❑ Active Current = .020 Amps

- ❑ Phone Line Connection = Terminal Strip

- ❑ Minimum Phone Line Voltage = 4 VDC

- ❑ Storage & Operating Temperature = 0 – 49C @ 93% Relative Humidity. For Dry Indoor Use only.

- ❑ Size = 2.48" x 7.48"

- ❑ FireNET Firmware Revision Required = 3.8

- ❑ Earth ground fault detection impedance is approximately 500K ohms between Earth ground and the FireNET internal floating DC supply.

## *1.2 Limitations of Fire Alarm Systems*

Follow Recommended Installation Guidelines: To achieve early fire detection, fire detection sensors should be installed in all rooms and areas of a house, apartment, or building in accordance with the recommendations of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, state and local codes, and the recommendations contained in Guide for the Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. Generally, the standards and recommendations include the following (but installers should refer to the specific guidelines above before installing):

- Sleeping Rooms:  Smoke detectors should be installed in every sleeping room.
- Hallways:  More than one smoke detector should be installed in a hallway if it is more than 30 feet long.
- At least Two Smoke Detectors:  There should never be less then two smoke detectors per apartment or residence.
- Smoke Detectors in Alarm, Electrical, or Phone Locations:  Smoke detectors should be located in any room where an alarm control is located or an alarm control connects to an electrical source or phone line. If detectors are not so located, a fire within the room could prevent the alarm control from reporting a fire.
- Notification Systems:  All fire alarm systems require notification devices, including sirens, bells, horns, and/or strobes. In residential applications, each automatic alarm initiating device when activated should cause the operation of alarm notification device that should be clearly audible in all bedrooms over ambient or background noise levels (at least 15dB above noise) with all intervening doors closed.
- Alarm in Every Bedroom and Level of Residence:  A smoke detector with an integral sounder (smoke alarm) should be located in every bedroom and an additional notification device should be located on each level of a residence.
- Maintenance:  A maintenance agreement should be arranged through the local manufacturer's representative and maintenance should be performed annually by authorized personnel only. To keep a fire alarm system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations and UL and NFPA standards. At a minimum the requirements of Chapter 7 of NFPA 72 (1999) shall be followed.
- Test Weekly:  The alarm system should be tested weekly to make sure all sensors and transmitters are working properly. The most common cause of an alarm system not functioning when a fire occurs is inadequate maintenance.

Alarms Cannot Guarantee Warning or Protection:  A fire alarm system cannot guarantee warning or protection against fire in every potential situation. A study by

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the Federal Emergency Management Agency (an agency of the United States government) indicated that <u>smoke detectors may not go off or give early warning in as many as 35% of all fires.</u>

<u>Limitation on Fire Alarm Effectiveness:</u>  A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons. For example:

1. <u>No Detection:</u>  Particles of combustion or smoke from a developing fire may not reach the sensing chambers of smoke detectors because:
   1. **Barriers** (such as closed or partially closed doors, walls, or chimneys) may inhibit particle or smoke flow.
   2. Smoke particles may become **cold, stratify, or not reach** the ceiling or upper walls where detectors are located.
   3. Smoke particles may be **blown away** from detectors by air outlets.
   4. Smoke particles may be **drawn into air returns** before reaching the detector.
2. <u>No Multi-Floor Detection:</u>  In general, smoke detectors on one level of a structure cannot be expected to sense fires developing on another level.
3. <u>Insufficient Smoke:</u>  The amount of smoke present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm, at various levels of smoke density. If such density levels are not created by a developing fire at the location of the detector, the detector will not go into alarm.
4. <u>Smoldering vs. Flaming Fires:</u>  Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectric sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.
5. <u>False Alarms and Pre-Fire Disconnection:</u>  Smoke detectors are subject to false alarms and nuisance alarms and may have been disconnected by users. For example, a smoke detector located in or near a kitchen may go into nuisance alarm during normal operation of kitchen appliances. In addition, dusty or steamy environments may cause a smoke detector to falsely alarm. If the location of a smoke detector causes an abundance of false alarms or nuisance alarms, do not disconnect the smoke detector.  Call a professional to analyze the situation and recommend a solution.
6. <u>Fast Fires and Explosions:</u>  Smoke detectors cannot be expected to provide adequate warning of fires caused by arson and children

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playing with matches (especially within bedrooms), smoking in bed, violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

7. Heat Detectors:  Heat detectors do not sense particles of combustion and are designed to alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Heat detectors are designed to protect property, not life.

8. Unheeded Warning:  Warning devices (including horns, sirens, and bells) may not alert people or wake up sleepers who are located on the other side of closed or partially open doors. A warning device that activates on a different floor or level of a dwelling or structure is less likely to awaken or alert people. Even persons who are aware may not notice the warning if the alarm is muffled by noise from a stereo, radio, air conditioner or other appliance, or by passing traffic. Audible warning devices may not alert the hearing impaired (strobes or other devices should be provided to warn these people). Any warning device may fail to alert people with a disability, deep sleepers, people who have recently used alcohol or drugs, or people on medication or sleeping pills.

   - Strobes:  Strobes can under certain circumstances, cause seizures in people with conditions such as epilepsy.
   - Drills:  Studies have shown that certain people, even when they hear a fire alarm signal, do not respond or comprehend the meaning of the signal. It is the property owner's responsibility to conduct fire drills and other training exercises to make people aware of fire alarm signals and instruct on the proper reaction to alarm signals.
   - Hearing Loss:  In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

9. Telephone Transmissions Problems:  Telephone lines needed to transmit alarm signals from the premises to a central station may be out of service or temporarily out of service. For added protection against telephone line failure, backup radio transmission systems are recommended.

10. System Failure with Age or Lack of Maintenance:  System components, though designed to last many years, can fail at any time. As a precautionary measure, it is recommended that smoke detectors be checked, maintained, and replaced per manufacturer's recommendations.

11. Electrical Power Problems:  System components will not work without electrical power. If system batteries are not serviced or replaced regularly, they may not provide battery backup when AC power fails.

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12. <u>High Air Velocity or Dusty or Dirty Environments:</u>  Environments with high air velocity or that are dusty or dirty require more frequent maintenance.

<u>Importance of Maintenance:</u>  In general, fire alarm systems and devices will not work without power and <u>will not function property unless they are maintained and tested regularly</u>.

<u>Alarm is Not Substitute for Insurance:</u>  While installing a fire alarm system may make the owner eligible for a lower insurance rate, <u>an alarm system is not a substitute for insurance</u>. Property owners should continue to act prudently in protecting the premises and the people in their premises and should properly insure life and property and buy sufficient amounts of liability insurance to meet their needs.

## *1.3 Notices*

### 1.3.1 FCC Compliance Notice

Note: This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### 1.3.2 Telephone Requirements

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the interior of the cabinet of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX**.** If requested, this number must be provided to the telephone company.

- ACTA Registration Number:         US:HBPAL01BFN-DAC
- Ringer Equivalence Number (REN):  0.1B
- Facility Interface Code (FIC):        02LS2
- USOC Jack Type:                        RJ31X

This equipment is designed to be connected to the telephone network or premises wiring using compatible modular jacks that are Part 68 compliant. See Installation Instructions for details.

The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. Typically, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line (as determined by the total RENs) contact the local telephone company.

If this equipment, the FN-DAC, causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes to it's facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice so you can make the necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment FN-DAC, please contact Hochiki America Corporation in the U.S.A. at (714) 522-2246 for repair or warranty information. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

The FN-DAC must not be used on party lines.

Caution – To ensure proper operation, this equipment must be installed according to the installation instructions. To verify that the equipment is operating properly and can successfully report an alarm, this equipment must be tested immediately after installation, and periodically thereafter, according to the testing instruction found in the installation manual.

Caution – In order for "alarm dialing equipment" to be able to seize the phone line to report an alarm or other event when other customer equipment (telephone, answering machine, computer modem etc.) connected to the same phone line is in use, "alarm dialing equipment" must be connected to a properly installed RJ31X jack. The RJ31X jack must be connected in series with, and ahead of, all other equipment attached to the same phone line. Series installation of an RJ31X jack is depicted in the figure below. If you have any questions concerning these instructions, you should consult your telephone company or a qualified installer about installing the necessary jack and alarm dialing equipment for you.
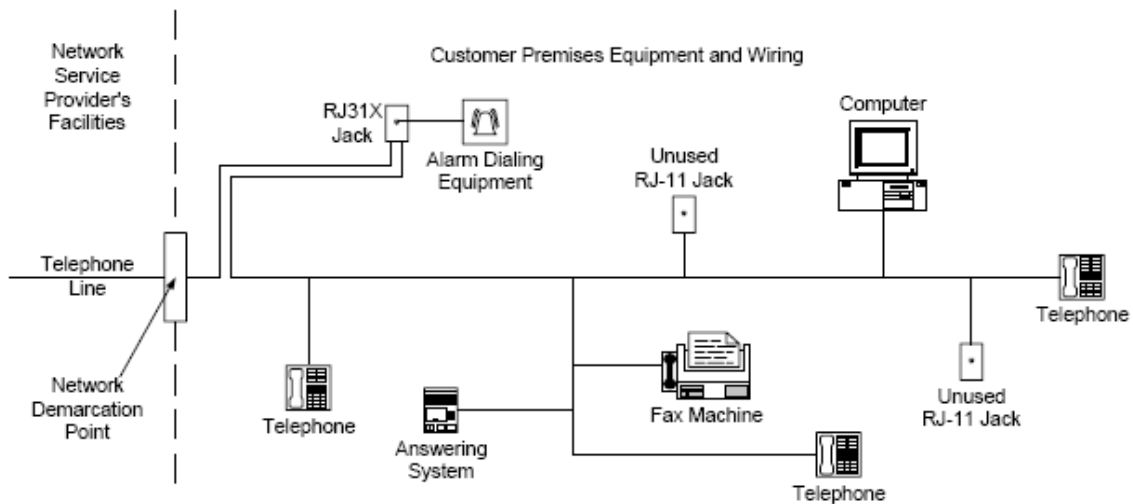
## 1.4 Agency Listings, Approvals and Requirements

### 1.4.1 Compatible Receivers

The Hochiki America FN-DAC communicator is compatible with the following Digital Alarm Communicator Receivers (DACR):

Silent Knight 9500             Contact ID and SIA formats

DSC System 3                  Contact ID and SIA formats

Bosch D6600                   Contact ID and SIA formats

Sur-Gard MLR-2E              Contact ID and SIA formats

Please see appendix A for a complete reporting summary.

### 1.4.2 Underwriters Laboratories (UL)

The FireNET 2127/4127 with FN-DAC is UL864 9$^{th}$ Edition listed and is suitable for use as a commercial protected premises control unit as follows:

-Central Station Service – DACT type (protected premise)

-Remote Station Service – DACT type (protected premise)

-Proprietary Service – DACT type (protected premise)*

*When used with the Bosch D6600 Digital Alarm Communicator Receiver.

Please see the *FireNET 2127/4127 Installation and Operation Manual* for additional listings and approvals information. (P/N 1700-09948)

## Section 2 – Installation

The FireNET FN-DAC is designed to be installed in the control panel enclosure with the FireNET 4127 panel.  The FN-DAC may also be installed in the FN-LCD-N Network Annunciator.  Operating power is provided by the FireNET auxiliary power.

## 2.1 Parts List

The FireNET FN-DAC communicator includes the following components:

- ❑ FN-DAC Circuit Board

- ❑ Ribbon Cable

- ❑ Ribbon Cable Mounting Clips (4)

- ❑ 10 mm Standoffs (4) – for use when installing the FN-DAC in the FN-LCD-N Network Annunciator

## 2.2 Installing the FN-DAC in the FireNET Panel

The FN-DAC communicator must be installed in the auxiliary module mounting location in the FireNET enclosure.  Note that the circuit board must be installed with the telephone line connections toward the top of the FireNET enclosure.
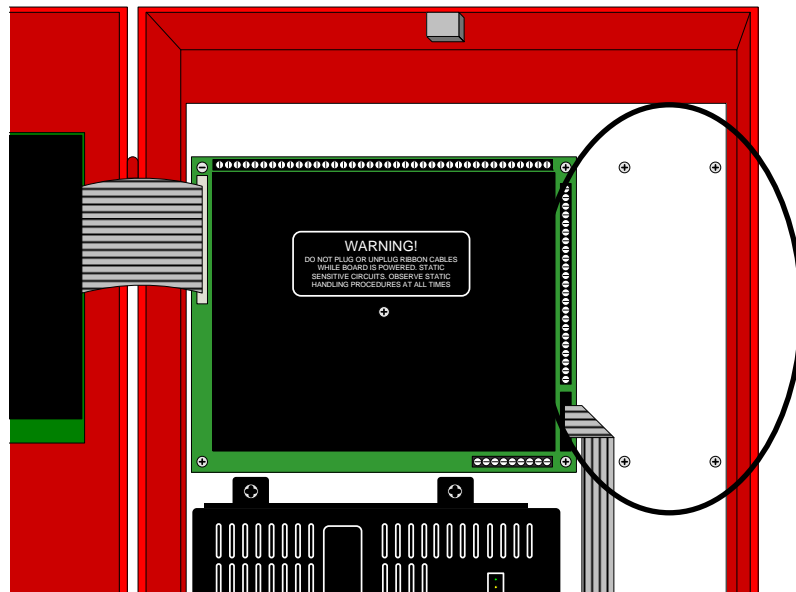


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***NOTE****: All connections must be made with AC power and batteries disconnected to avoid damage to the equipment!*

1) Carefully install the communicator circuit board in the FireNET enclosure using the mounting screws.

***NOTE****: As with all electronic components, the circuit board is very sensitive and can be damaged by electrostatic discharge.*

2) Connect 24 VDC operating power to the J7 connector on the communicator. The AUX 24 terminals on the FireNET control panel (terminals 18 and 19) should be used to supply power. Be sure to observe proper polarity.
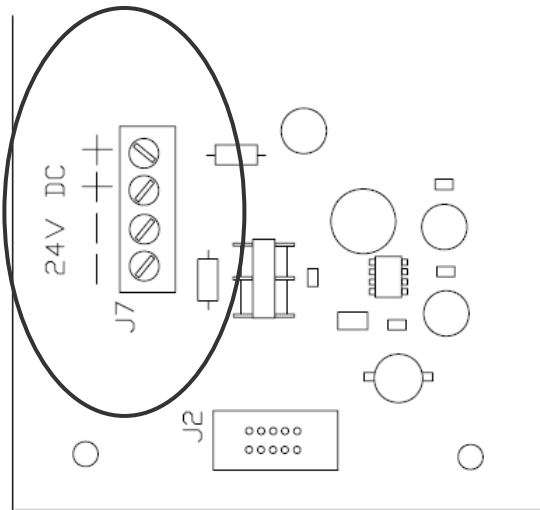


Figure 2.2.2 – Power Terminals on FN-DAC Communicator

3) Connect the ribbon cable to the J2 plug on the FN-DAC communicator. Connect the other end of the ribbon cable to the PC port (J5) on the FireNET front display board. See Figure 2.2.3. Use the ribbon cable mounting clips to secure the ribbon cable in the enclosure away from high voltage sources.

***NOTE****: Be sure that the communicator data and power wiring are kept separate from the non-power limited high voltage AC and telephone line wiring! A minimum of .25"*

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*separation is required between high and low voltage wiring in the FireNET enclosure. See Figure 2.2.4.*
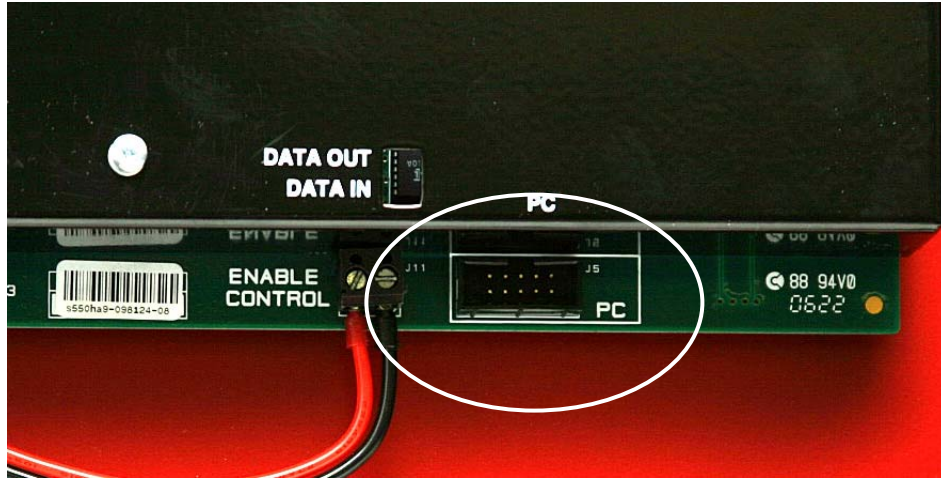


Figure 2.2.3 – J5 PC port on FireNET front display board



**Non-Power Limited Wiring –**
**1) Telephone Lines**

**Non-Power Limited Wiring –**
**2) AC Power**

**Power Limited Wiring –**
**- Ribbon Cables**
**- Power to FN-DAC**
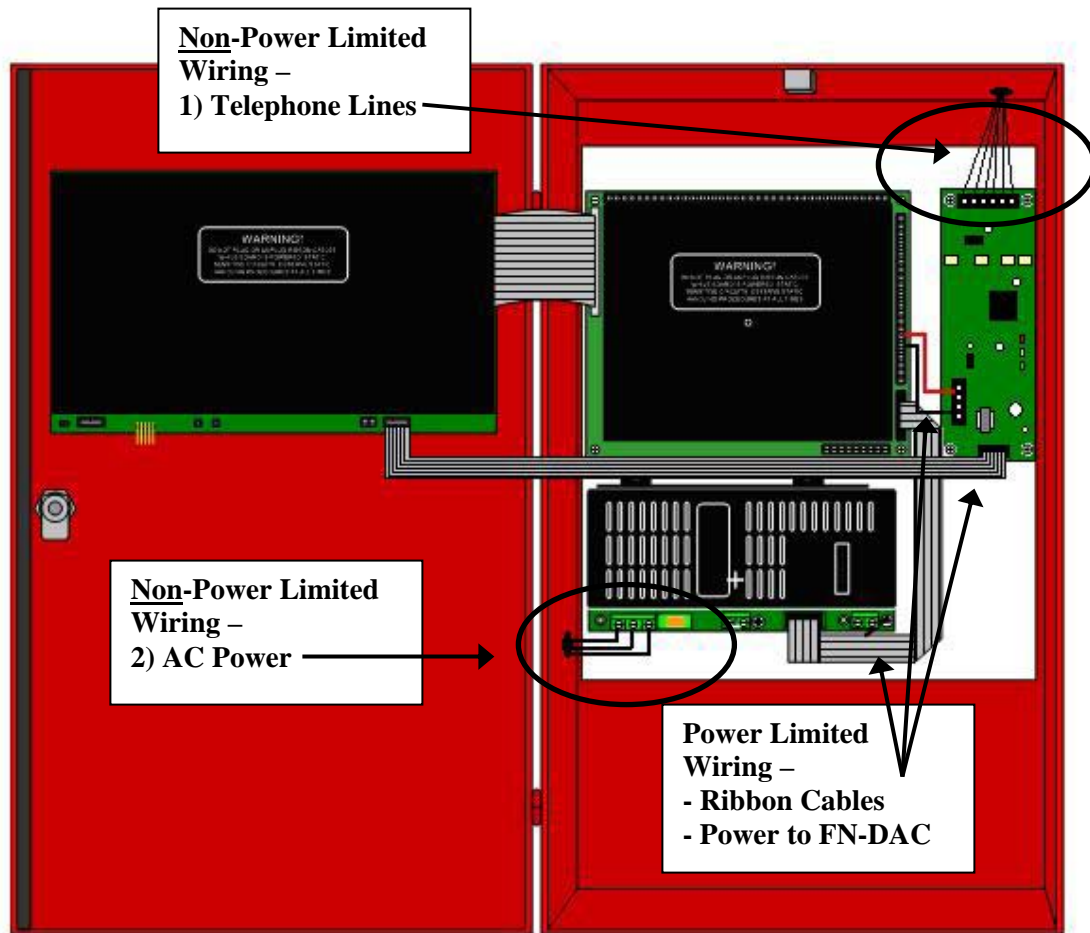
Figure 2.2.4 – Maintain a minimum.25" separation between low voltage wiring (Power Limited) and high voltage wiring (Non-Power Limited) in the FireNET enclosure!  High voltage wiring

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locations are circled above (telephone lines and AC power input).  The telephone line connections must be toward the top of the enclosure.

4) Connect the telephone lines to the communicator.  The communicator must be connected upstream of any private telephone system at the protected premise. See Figure 2.2.5.
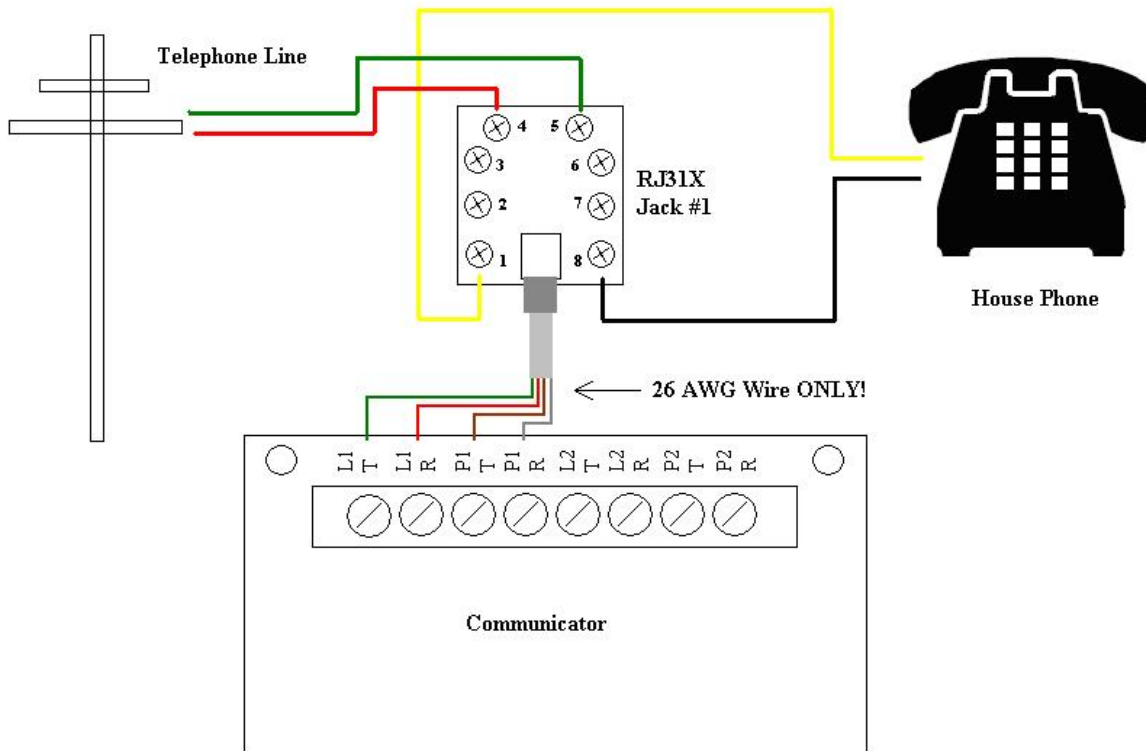


Figure 2.2.5 – Telephone Connections

**NOTE**: *26 AWG wire must be used between the RJ31X jacks and the FN-DAC terminal block.  DO NOT USE WIRE OTHER THAN 26 AWG.*

**NOTE**:  *To ensure proper connection to the Public Switched Telephone Network, RJ31X jacks must be installed.  UL Listed RJ31X jacks and cords must be used.*

**NOTE**: *The maximum distance between the FN-DAC and RJ31X jacks must not exceed 6 feet.  Do not use a phone cord that is longer than 6 feet.*

*NOTE: Two separate phone lines are required.  Do not connect both telephone interfaces on the FN-DAC to the same telephone line.*

*NOTE: To comply with NFPA standards, Ground Start phone lines must not be used. Ensure that the FN-DAC is connected only to Loop Start telephone lines.*

*NOTE: Wiring is to be routed away from sharp projections, corners and internal components.*

5) This completes the installation of the communicator.  Reconnect main AC and battery power to the control panel.  See section 3 of this manual for programming instructions.

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## 2.3 Installing the FN-DAC in the FN-LCD-N Network Annunciator

The FN-DAC communicator may also be installed in the FN-LCD-N Network Annunciator.

*NOTE: All connections must be made while power is disconnected to the FN-LCD-N to avoid damage to the equipment!*

1) Before installing the FN-DAC circuit board, screw the supplied 10 mm standoffs into the mounting holes in the back of the FN-LCD-N annunciator enclosure. Next, carefully install the communicator circuit board in the enclosure using the mounting screws. The circuit board must be mounted in the accessory module location using the standoffs provided with the FN-DAC. Note that the circuit board must be installed with the telephone line connections toward the top of the annunciator enclosure.

*NOTE: As with all electronic components, the circuit board is very sensitive and can be damaged by electrostatic discharge.*

2) Connect 24 VDC operating power to the J7 connector on the communicator. The AUX 24 VDC terminals on the FN-LCD-N Network Annunciator should be used to supply power. Be sure to observe proper polarity.

*NOTE: When powering the FN-LCD-N from the FireNET Aux 24 VDC power (limited to 500 mA), the following maximum wiring distances apply at the gauges noted below:*

| Wire | Distance |
|------|----------|
| 18 AWG | 925 feet |
| 16 AWG | 1500 feet |
| 14 AWG | 2400 feet |
| 12 AWG | 3900 feet |

*If using a UL 864/1481 regulated power supply to power the FN-LCD-N, please see step 5 below.*

3) Connect the ribbon cable to the J2 plug on the FN-DAC communicator. Connect the other end of the ribbon cable to the PC port (J5) on the annunciator

front display board.  See Figure 2.2.3.  Use the ribbon cable mounting clips to secure the ribbon cable in the enclosure away from high voltage sources.

*NOTE*:  *Be sure that the communicator data and power wiring are kept separate from high voltage AC and telephone line wiring!  A minimum of .25" separation is required between high and low voltage wiring in the annunciator enclosure.  See Figure 2.3.1*
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**Non-Power Limited Wiring –**
**- Telephone Lines**

**Power Limited Wiring –**
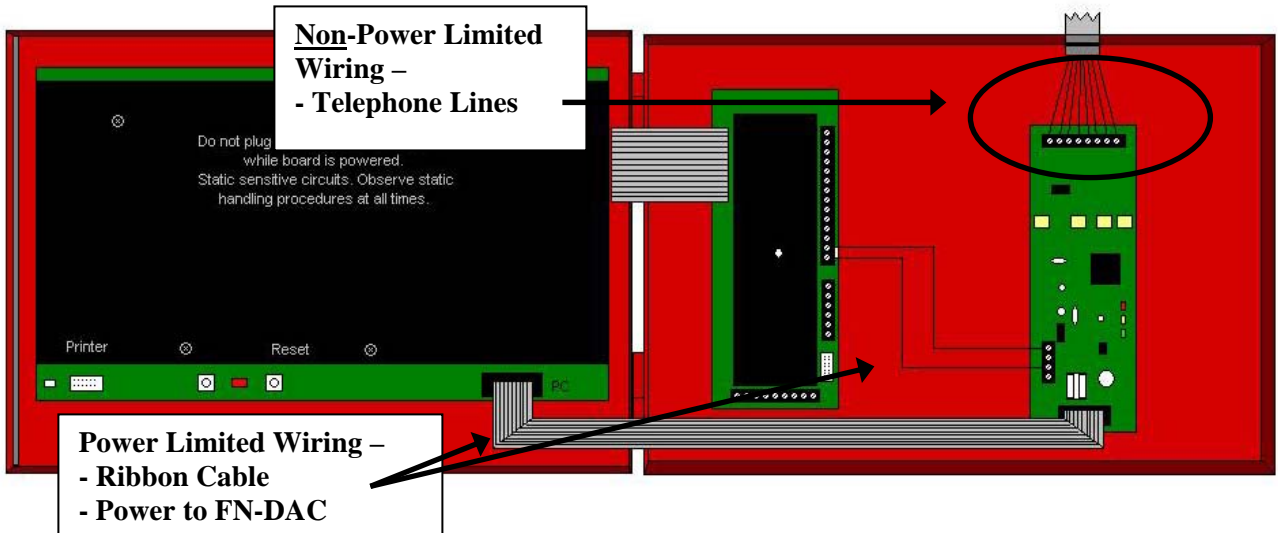**- Ribbon Cable**
**- Power to FN-DAC**

Figure 2.3.1 - Maintain a minimum .25" separation between low voltage wiring (Power Limited) and high voltage telephone line wiring (Non-Power Limited) in FireNET FN-LCD-N annunciator enclosure!  The telephone line connections must be toward the top of the enclosure.

4)  Connect the telephone lines to the communicator.  The communicator must be connected upstream of any private telephone system at the protected premise.  See Figure 2.2.5.

*NOTE*: *26 AWG wire must be used between the RJ31X jacks and the FN-DAC terminal block.  DO NOT USE WIRE OTHER THAN 26 AWG.*

*NOTE*:  *To ensure proper connection to the Public Switched Telephone Network, RJ31X jacks must be installed.  UL Listed RJ31X jacks and cords must be used*

*NOTE*: *The maximum distance between the FN-DAC and RJ31X jacks must not exceed 6 feet.  Do not use a phone cord that is longer than 6 feet.*

*NOTE*: *Two separate phone lines are required.  Do not connect both telephone interfaces on the FN-DAC to the same telephone line.*

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Figure 2.3.2 – <u>Do not use</u> the knockouts on the back of the annunciator enclosure when installing the FN-DAC communicator in the annunciator.

5)  If the FN-LCD-N is being powered by the FireNET panel auxiliary power, the power wiring MUST be enclosed within conduit or equivalently protected against mechanical injury!

6)  If the FN-LCD-N is being powered by a remote power supply, be sure to observe the following:

   a.  Use only a UL Listed 1481 24 VDC regulated power supply.

   b.  The power supply must be monitored for AC Fail and Battery trouble conditions.  This may be accomplished by using only one of the following two methods:

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1) Analog input modules such as the FRCME or DIMM may be used to monitor the trouble relay outputs on the power supply. Ensure that these modules are configured to indicate a trouble at all FireNET panels and annunciators in the event of a power supply trouble. Power supply trouble events must also be reported to the monitoring station so that appropriate action can be taken. See figure 2.3.3 for typical connections.

2) The Remote PSU digital inputs on the network annunciator may be used to monitor the power supply trouble relay outputs. Each input will generate a specific message on the annunciator and FireNET network that corresponds with the particular trouble condition. These inputs are assigned as follows:

> BD = Battery Disconnected
> BL = Battery Low
> AC / PF = AC Failure
> GF = Ground Fault
> CT = Power Supply Trouble

Note that the digital inputs must be used with normally-open dry contacts. The inputs are activated by connecting the negative (-) terminal on the Remote PSU connector to the input. See figure 2.3.4 for typical connections.

*NOTE: The digital inputs on the network annunciator are NOT supervised. Therefore, when using the digital inputs for supervision of the power supply, the remote power supply must be installed in the same room as the network annunciator and within 20 feet of the annunciator enclosure. The interconnecting wiring must be enclosed within conduit or equivalently protected against mechanical injury!*

*NOTE: Wiring is to be routed away from sharp projections, corners and internal components.*

TO DISPLAY PCB

TROUBLE
- C
- NC
- NO

FIRE
- C
- NC
- NO

SUPERVISORY
- C
- NC
- NO

AUXILIARY
- C
- NC
- NO

AUX. 24V DC
- +
- –

To J7 Connector on FN-DAC

ADDITIONAL I/O BOARDS

COMMS
- +
- –

NETWORK IN
- +
- –

NETWORK OUT
- +
- –

WARNING!
DO NOT PLUG OR UNPLUG RIBBON CABLES WHILE BOARD IS POWERED. STATIC SENSITIVE CIRCUITS. OBSERVE STATIC HANDLING PROCEDURES AT ALL TIMES

TO PSU

REMOTE PSU

–  –  +  +  BD  BL  AC PF  GF  CT

Network LCD annunciator example

No Connection. Do Not Use

-  +

AC Fail Relay
Battery Fail Relay

Use FRCME or DIMM module(s) to monitor power supply status

UL Listed 1481 24VDC Regulated Power Supply

Figure 2.3.3 – Typical Power Supply Connections

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TROUBLE
C
NC
NO

FIRE
C
NC
NO

SUPERVISORY
C
NC
NO

AUXILIARY
C
NC
NO

TO DISPLAY PCB

ADDITIONAL
I/O BOARDS

AUX.
24V DC
+
−

To J7 Connector on FN-DAC

COMMS
+
−

NETWORK
IN
+
−

NETWORK
OUT
+
−

WARNING!

DO NOT PLUG OR UNPLUG RIBBON CABLES
WHILE BOARD IS POWERED.
STATIC SENSITIVE CIRCUITS. OBSERVE STATIC
HANDLING PROCEDURES AT ALL TIMES

TO PSU

REMOTE PSU

−  −  +  +  BD  BL  AC PF  GF  CT

Network LCD
annunciator
example

BD = Battery Disconnected
BL = Battery Low
AC / PF = AC Failure
GF = Ground Fault
CT = Power Supply Trouble

−  +

Batt Missing Relay
COM
N/O

Battery Low Relay
COM
N/O

AC Fail Relay
COM
N/O

UL Listed 1481
24VDC Regulated
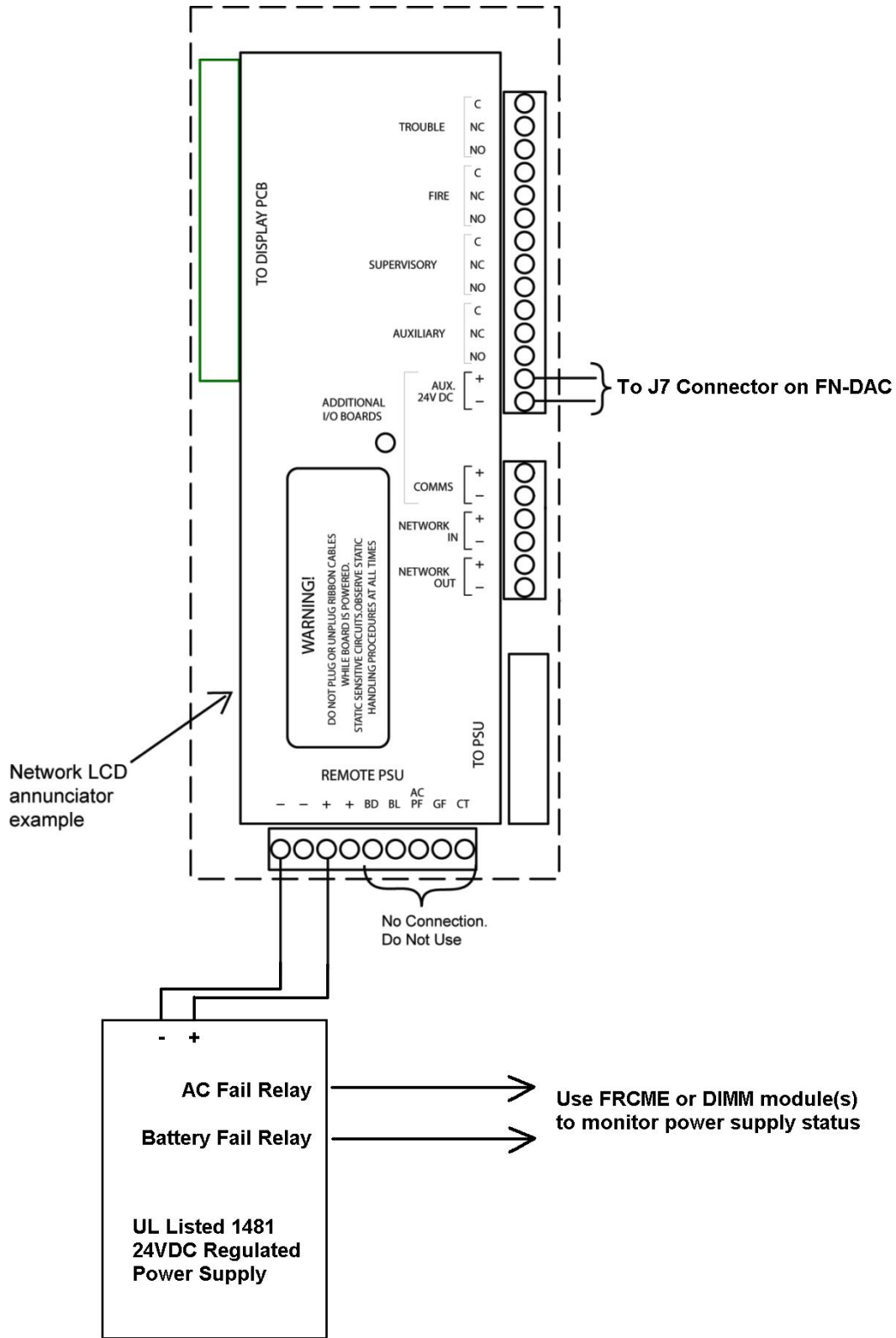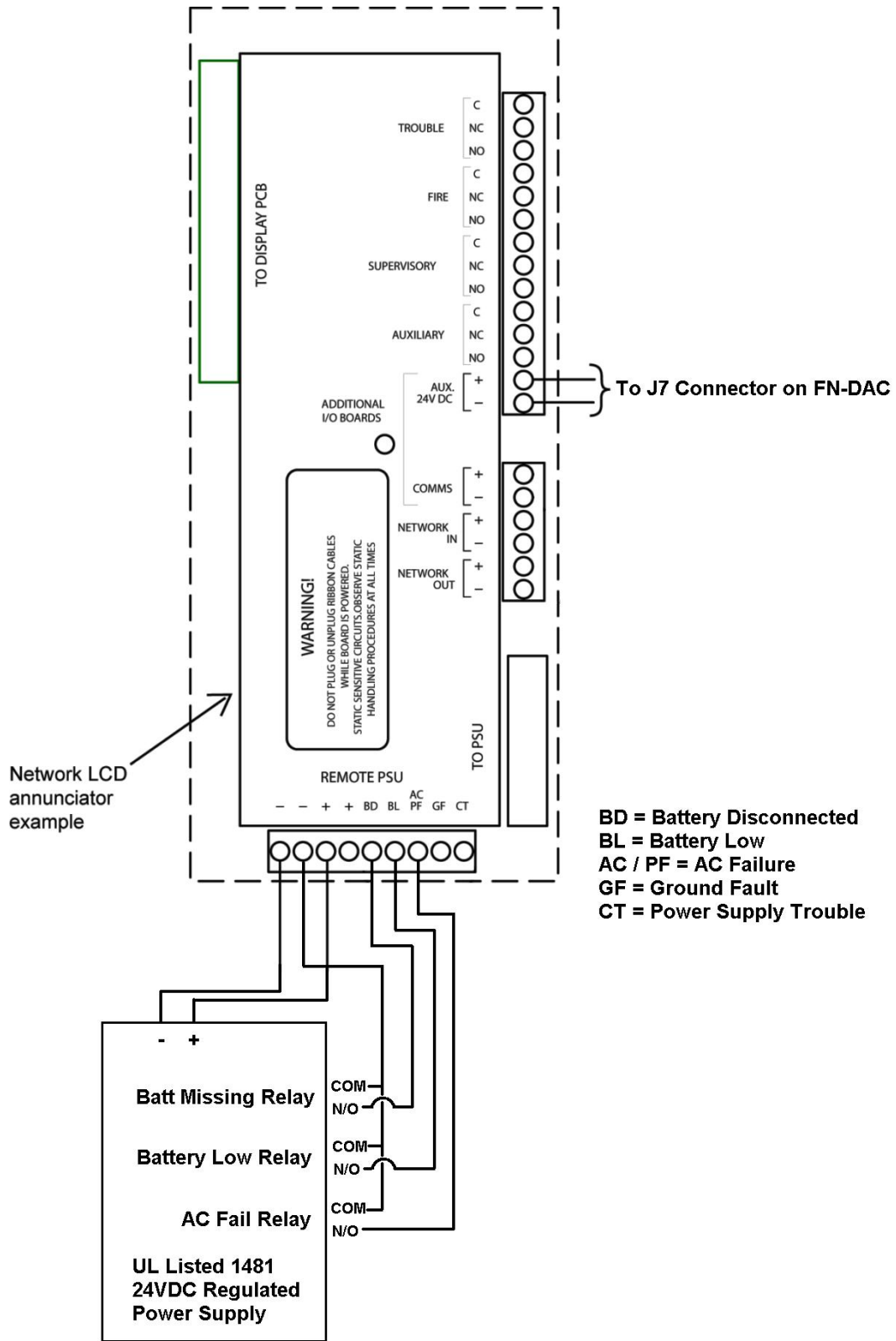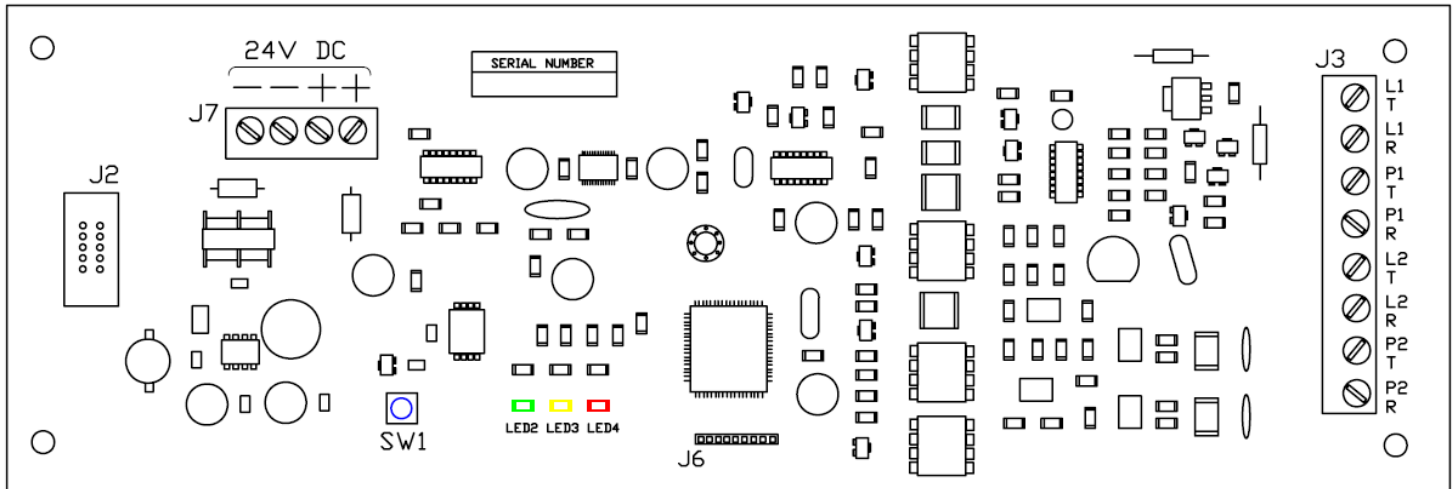Power Supply

Figure 2.3.4 – Typical Power Supply Connections

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7) This completes the installation of the communicator. Reconnect power to the annunciator. See section 3 of this manual for programming instructions.

## *2.4 Circuit Board Layout*



**J2** – Ribbon Cable connector plug.  Connect to the PC port on the FireNET front display board.

**J7** – 24 VDC Power.  Connect to Aux Power on the FireNET panel or network annunciator.  ***Observe correct polarity!!***

**J3** – Telephone Line Connections

> L1T – Phone Line 1 (Tip, Supervised)
> L1R – Phone Line 1 (Ring, Supervised)
> P1T – House Telephone Line 1 (Tip)
> P1R – House Telephone Line 1 (Ring)
>
> L2T – Phone Line 2 (Tip, Supervised)
> L2R – Phone Line 2 (Ring, Supervised)
> P2T – House Telephone Line 2 (Tip)
> P2R – House Telephone Line 2 (Ring)

**SW1** – Processor Reset Button

**LED 2** – Power / Data (Green)

**LED 3** – Telephone Line Active (Yellow)

**LED 4** – Remote Connection Active (Red – connection active only when flashing)

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## *2.5 Communicator Operation*

This section describes some of the basic operational features of the FN-DAC communicator / dialer.

### 2.5.1 Phone Line and Phone Number Selection

The FN-DAC can be configured with up to four account numbers and four phone numbers.  Each phone number corresponds to an account (phone number 1 is used with Account 1; phone number 2 is used with Account 2, etc).  This allows for programming of backup and duplicate reporting configurations.

Events are communicated to each account in order and by priority, beginning with Account 1.  The communicator will begin the dialing sequence using phone line 1, unless phone line 1 has failed.  If the communicator cannot report events successfully using phone line 1, it automatically switches to phone line 2.

Account 1 and account 2 are used together for primary and backup reporting.  If duplicate reporting is needed, account 3 may be used, with account 4 serving as its backup.  Table 2.5.1.1 shows how the accounts and phone lines are selected when reporting an event (both phone lines in normal working condition).

| Attempt # | Account* | Phone Line |
|:---:|:---:|:---:|
| 1 | 1 | 1 |
| 2 | 1 | 1 |
| 3 | 1 | 1 |
| 4 | 1 | 2 |
| 5 | 1 | 2 |
| Communication Fail Acct 1 | | |
| 6 | 2 | 2 |
| 7 | 2 | 1 |
| 8 | 2 | 1 |
| 9 | 2 | 2 |
| 10 | 2 | 2 |
| Communication Fail Acct 2 | | |

Table 2.5.1.1 – Communicator Account and Phone Line Selection

*Note that the same sequence applies when accounts 3 and 4 are used.

Since the communicator selects the phone line to be used, both lines must use the same dialing sequence.  If one phone line requires that a "9" be dialed, it cannot be used with a second line that does not require a "9".

*NOTE: Ground Start phone lines must not be used.*

*NOTE: Call Forwarding must not be used.*

Test Report:  The test report is sent using alternating phone lines once every 24 hours.  All attempts to communicate the test report will be made on one phone line, even if that line is not working.  The next test report is sent using the other phone line.  This complies with UL and NFPA requirements for digital alarm communicators.

*NOTE: If the central station only receives every other test report (i.e. every other day), this is an indication that the communicator is unable to report using one of the phone lines.  Investigate and correct the cause of this condition immediately.*

## 2.5.2 Phone Line Supervision

The FN-DAC supervises both telephone lines for the presence of normal line voltage.  Each line is checked every 10 seconds.  If trouble with a phone line is detected, the FireNET display will indicate the trouble condition.  The phone line failure can be communicated to the monitoring station using the other phone line, unless it has also failed.

Normal phone line voltage is approximately 48 VDC.  The FN-DAC will detect a trouble condition when the phone line voltage falls below 4 VDC.

*NOTE: Since the FN-DAC samples voltage to test the telephone lines, it cannot recognize a non-working phone line that has normal voltage present.*

*NOTE: The FN-DAC does not supervise the telephone lines while it is communicating.*

## 2.5.3 Report Groups

The FN-DAC has five report groups that can be selected to maximize the reporting options.  Each group includes specific types of events that will be reported.  The report groups are selected by account, with account 2 and 4 also having a selection for backup reporting.  The report groups and events associated with them are shown below:

**Alarms –**
- Fire Alarm
- Waterflow Alarm
- Fire Drill

**Alarm Restore –**
- Fire Alarm Restore
- Waterflow Alarm Restore
- Fire Drill Restore

**Supervisory, Trouble, Enable/Disable –**
- Supervisory (Activation and Restore)
- All Trouble Conditions (Activation and Restore)
- Pre-Alarm (Activation and Restore)
- Auxiliary (Activation and Restore)
- Smoke Detector Maintenance Trouble (Activation and Restore)
- Disable and Enable Events
- Loop Explorer Programming Event (local and remote)

**Service / Test –**
- "Test Zones"
- Device Tested
- Test Report

**System Reset –**
- Alarm Silence Event
- Reset Event

**Backup Report** (Account 2 and 4 Only)
- Account 2 and 4 can be selected to report to the associated phone number as a *backup* of the primary account. For this feature, account 1 is considered the primary account, with account 2 being its backup. Account 3 serves as a second primary, or duplicate account, with account 4 being its backup.

If communication is not established to the primary account after the first five attempts, the backup account will be used. Please see section 2.5.1 for additional details.

By default, all report groups are selected for each account. If it is necessary to change the groups selected for a particular account you must use Loop Explorer. Please see section 3.2 of this manual for details on programming with Loop Explorer.

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## 2.5.4 Communication Failure

If all attempts to communicate to an account fail, the FireNET panel will display a "Comms Fail" trouble condition, along with the number of the account that failed (1 – 4). The original event will be removed from the report queue. If there are additional events to be reported the FN-DAC will attempt to report them, along with a communication failure event. The panel will remain in a "Comms Fail" trouble condition, but the FN-DAC will attempt to report any new events while in this state.

To clear the "Comms Fail" trouble from the panel display, press the panel Reset button. This action will also generate a communication restore event that will be reported to the monitoring station.

## 2.5.5 AC Fail Reporting

Per UL and NFPA requirements, an AC Fail trouble signal shall be transmitted after a delay of between 60 and 180 minutes. The FN-DAC AC Fail delay time is programmable up to 180 minutes, with a default setting of 60 minutes.

The AC Fail Report Delay is programmable from the front panel keypad or by using Loop Explorer. For details on this setting, please see the *FireNET 4127 Installation and Operation Manual* (part number 1700-09948).

*NOTE: The AC Fail Report Delay must be set to 60 – 180 minutes to be compliant with UL 864 9th edition requirements.*

# Section 3 – Programming

The FN-DAC communicator can be easily configured from the front keypad on the FireNET panel, or by using Loop Explorer software.

## *3.1 FireNET Front Panel Programming*

Basic communicator programming can be done from the FireNET keypad.  For information on accessing the programming menus in the FireNET control panel, please see the *FireNET 4127 Installation and Operation Manual* (part number 1700-09948).

1) Install the communicator as described in Section 2.2 of this manual.

2) From the Access Level 3 Menu select *Edit Configuration*, and then select *Edit I/O*.  On the menu you will see *Add Dialer.*  Select this option.

```
        EDIT CONFIGURATION MENU

 EDIT PANEL I/O
 EDIT REMOTE I/O
>ADD DIALER
```
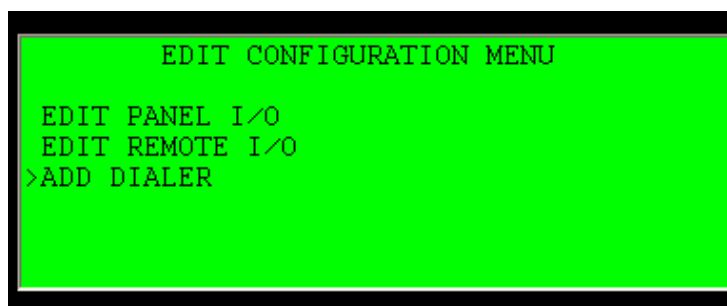
**NOTE:** *If you do not see the Add Dialer option, please confirm the firmware revision in the FireNET panel.  The firmware must be revision 3.8 or higher to use the dialer.*

3)  You will see the following display.  To add the dialer, press the Enter button. The dialer will be added to the panel and you will be returned to the Edit I/O menu.

```
            EDIT DIALER MENU

>

 Press ENTER to add dialer
 Press EXIT to quit
```
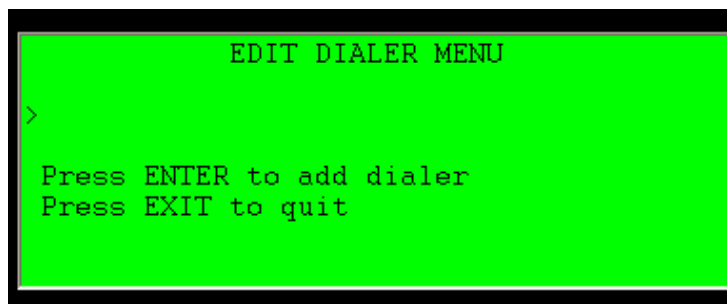
4) From the Edit I/O menu select *Edit Dialer*. You will see the following display. Select *Edit Accounts Attributes* to begin the programming. See step 8 in this section to program the Test Report Time

```
              EDIT DIALER MENU

>EDIT ACCOUNTS ATTRIBUTES
 EDIT TEST REPORT TIME
 SET REMOTE CONFIGURATION
```

5) Select the account you wish to configure from the list.

```
              EDIT ACCOUNTS MENU

>ACCOUNT 1
 ACCOUNT 2
 ACCOUNT 3
 ACCOUNT 4
```
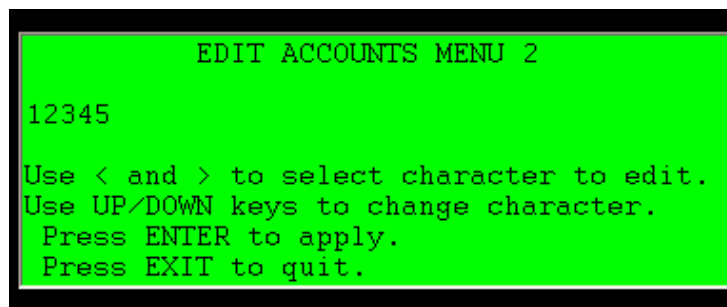
6) Select the option you wish to program. Available options are the Account Number, Dialer Protocol (reporting format), and Phone Number.

```
              EDIT ACCOUNTS MENU 1

>EDIT ACCOUNT NUMBER
 EDIT DIALER PROTOCOL
 EDIT PHONE NUMBERS
```
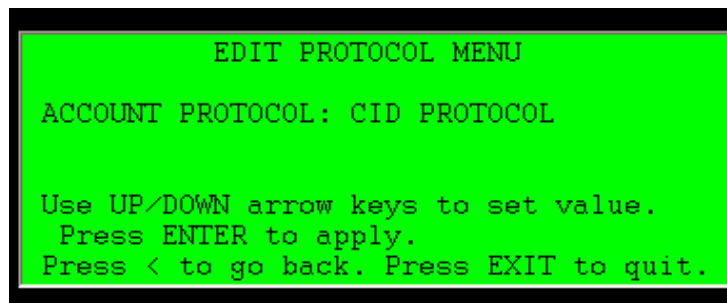
- **Edit Account Number –** Using the up and down arrow keys on the panel keypad, enter the account number for the selected account. Use the right arrow key to advance to the next digit location. Press the Enter button when finished to save the data.

  Valid characters are 0 – 9, B - F. Note that only the first four digits are reported in Contact ID format. Up to 6 digits may be used with SIA format.

*NOTE: For correct communicator operation, always enter at least **4 digits**. If you are using a 3 digit account number, be sure to enter a leading 0 (account # **123** should be entered as **0123**).*

```
              EDIT ACCOUNTS MENU 2

12345

Use < and > to select character to edit.
Use UP/DOWN keys to change character.
 Press ENTER to apply.
 Press EXIT to quit.
```
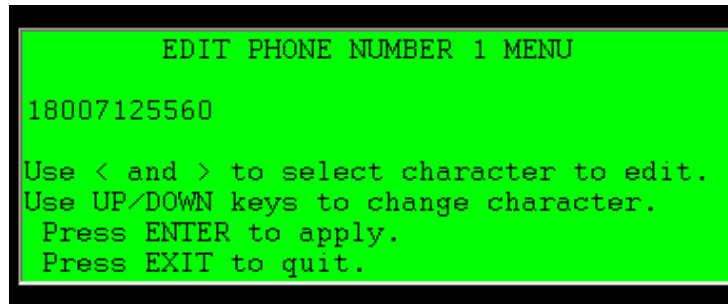
- **Edit Dialer Protocol** – Use the up or down arrow key to select the reporting format for the account. Press the Enter button after making your selection.

```
              EDIT PROTOCOL MENU

 ACCOUNT PROTOCOL: CID PROTOCOL


 Use UP/DOWN arrow keys to set value.
  Press ENTER to apply.
 Press < to go back. Press EXIT to quit.
```

- **Edit Phone Number** - Using the up and down arrow keys on the panel keypad, enter the monitoring station receiver phone number for the selected account.  Use the right arrow key to advance to the next digit location.  Press the Enter button when finished to save the data.

    Valid characters are 0 – 9.  A comma (,) may be used to generate a 3 second dialing pause.

```
        EDIT PHONE NUMBER 1 MENU

18007125560

Use < and > to select character to edit.
Use UP/DOWN keys to change character.
 Press ENTER to apply.
 Press EXIT to quit.
```

7) When programming has been completed for the first account, other accounts may be programmed in the same manner.  When all programming is complete, press the Exit button.

*NOTE: By default, all report groups are selected for all four accounts.  Therefore, account 2 is the Backup account for account 1, and account 4 is the backup for account 3.  If the phone number field is left empty for an account (no phone number programmed), the dialer will not use that account.*

*NOTE: To comply with UL and NFPA standards, the FN-DAC dialer must be programmed for backup reporting.  To accomplish this, program an account number and phone number for account 1 and account 2.  Both phone numbers must be different.*

*NOTE:  To comply with UL and NFPA standards, the FN-DAC dialer may not be programmed to call a telephone number that is call-forwarded to the DACR.*

8) To program the Test Report, select *Edit Test Report Time* from the Edit Dialer Menu.

```
            EDIT DIALER MENU

 EDIT ACCOUNTS ATTRIBUTES
>EDIT TEST REPORT TIME
 SET REMOTE CONFIGURATION
```

9) Use the up or down arrow key to select the test report time.  The test report will be sent every 24 hours at the time selected.  Press the Enter button when the desired time is displayed.

```
           Set test report time

>Set test report time 07:00


 Use UP/DOWN arrow keys to set value.
  Press ENTER to apply.
 Press < to go back. Press EXIT to quit.
```

10) This completes the programming of the dialer.  Please note that the dialer requires approximately **60 seconds** to initialize after any programming changes are made.  Any events generated during this time will be reported when the initialization is complete.

## 3.2 Loop Explorer Programming

Loop Explorer may be used to program the FN-DAC communicator.  For detailed information on using Loop Explorer, please see the *FireNET 4127 Installation and Operation Manual* (part number 1700-09948).

The FN-DAC communicator can be added to any panel (or network annunciator) on the network.  Double-click on the Dialer icon to add the dialer to the selected panel.  After it has been added, you may double-click on the dialer to open the Dialer Settings window.
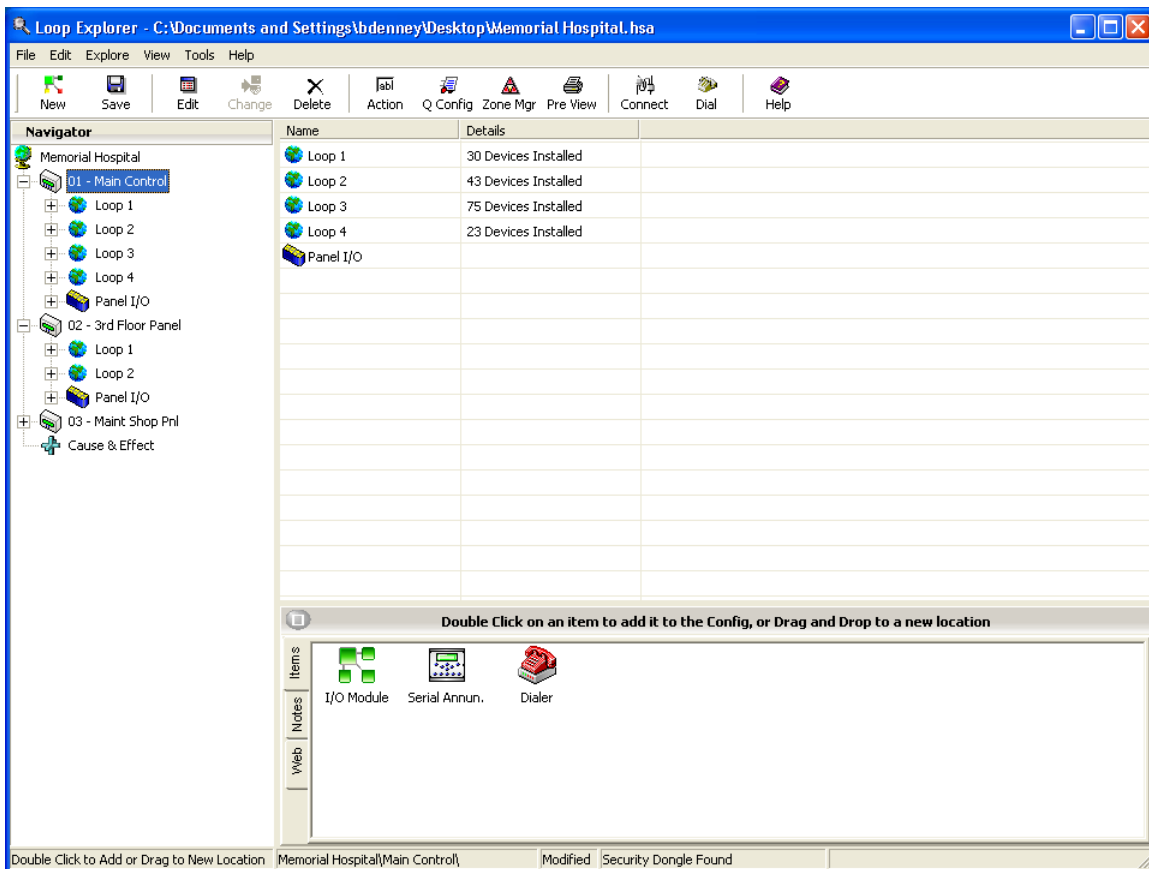


NOTE: *If you do not see the dialer icon, please check the version of Loop Explorer that you are using.  The software must be version 6.0 or higher to program the dialer.*
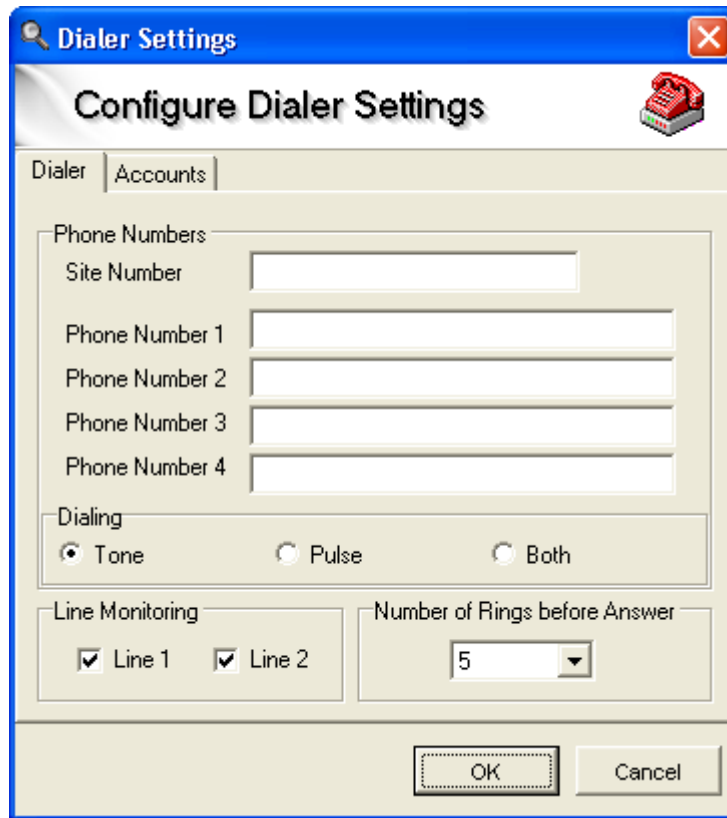
**Site Number** – This is the phone number used to contact the FireNET panel for remote access.  See Section 4 of this manual for details.

**Phone Number 1 – 4** – These are the phone numbers that the communicator will use to report to the monitoring station(s).  Phone Number 1 is used with Account 1, Phone Number 2 with Account 2 and so on.  Use a comma (,) for a three-second dialing pause.  Program phone numbers only for the accounts you plan to use.

*NOTE:  To comply with UL and NFPA standards, the FN-DAC dialer may not be programmed to call a telephone number that is call-forwarded to the DACR.*

**Dialing** – You may select Tone, Pulse or Both.  If Both is selected, the FN-DAC communicator will use DTMF (Touch Tone) dialing and Pulse dialing when making multiple attempts to report an event.

**Line Monitoring** – These options allow you to turn off the phone line monitoring on one or both phone lines.  Check the boxes to enable line monitoring.

*NOTE: UL and NFPA require that Line Monitoring be enabled for both phone lines.*

**Number of Rings before Answer** – Programmable ring counter for remote access to the FireNET network.  See Section 4 of this manual for more details.
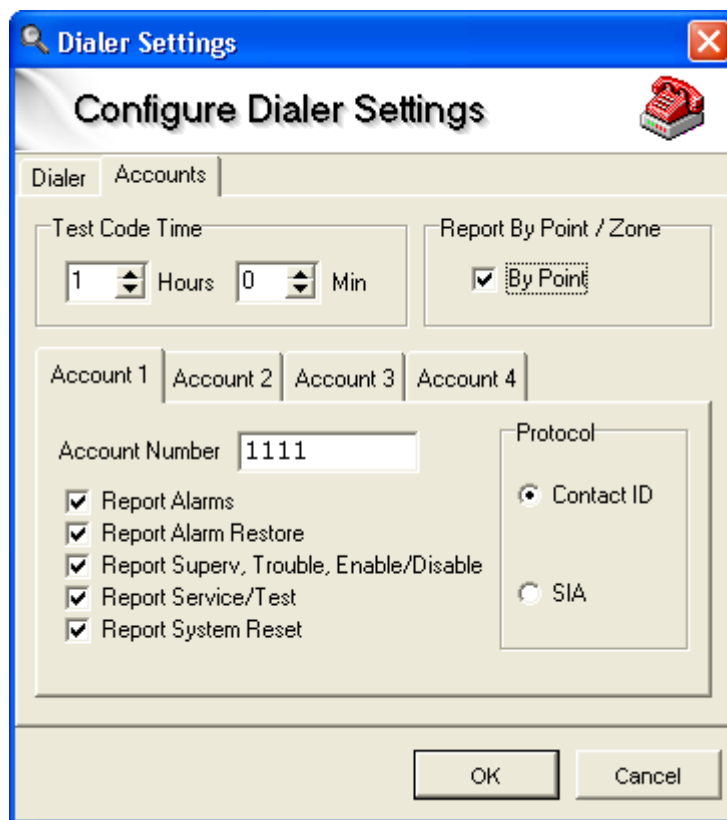
**Test Code Time** – This is the time that the test report will be transmitted to the monitoring station.  The test report is sent every 24 hours at the time programmed.

**Report By Point / Zone** – Check the box to configure the FN-DAC to report events using the address of each analog device.  Uncheck the box to report by zone.  Please see Appendix C for more details on zone and address reporting.

**Account 1 – 4 tabs** – Select the account you wish to program.

**Account Number** – Enter the account number for this location.  Valid characters are 0 – 9, B - F.

*NOTE: For correct communicator operation, always enter at least **4 digits**.  If you are using a 3 digit account number, be sure to enter a leading 0 (account # **123** should be entered as **0123**).*

*NOTE: While Loop Explorer will allow you to enter up to six digits for the account number, only the first four digits will be reported when using Contact ID format.*
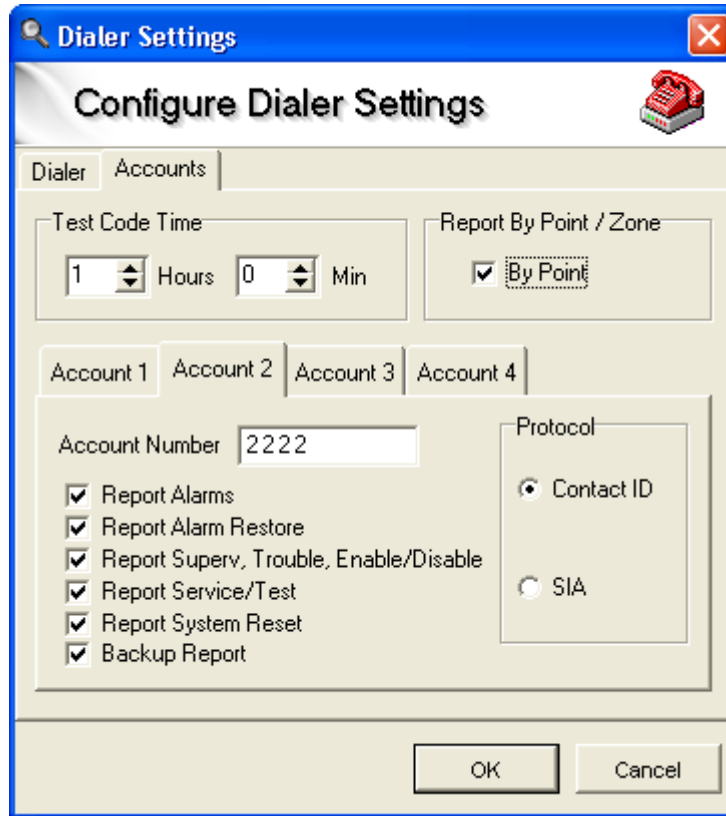
Check the boxes for the report groups you wish to send using the selected account.  It is possible to send alarm events to one monitoring station, while all other events are reported to a different monitoring station.  See Section 2.5.3 for additional information on report groups.

**Protocol** – Select the desired central station reporting format, Contact ID or SIA.  For a detailed reporting summary, please see Appendix A.

**Backup Report** – Check this box to enable backup reporting.  You must also select the events that you want to be reported to the backup destination, as shown above. Backup Report is only available on Account 2 (backup to Account 1) and 4 (backup to Account 3).

*NOTE: To comply with UL and NFPA standards, the dialer must be programmed for backup reporting.  To accomplish this, program a phone number for Phone Number 1 and Phone Number 2, and an account number for Account Number 1 and Account Number 2.  Both phone numbers must be different.*

**Programming the Panel** – After all programming is complete, save the project file and then download it to the panel or network.

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*NOTE*:  *If you are using Loop Explorer at the panel where the dialer is installed, you must disconnect the ribbon cable between the FireNET display board (PC port) and the dialer (J2) in order to load the Loop Explorer program into the panel*. ***Be sure that you reconnect the dialer to the PC port as soon as the programming download in Loop Explorer is finished!***

After the panel initialization is complete, the dialer will be ready for testing.  Please see Section 5 in this manual for some testing and troubleshooting tips.

# Section 4 – Remote Access

The FN-DAC communicator allows you to access the FireNET network remotely for programming, diagnostics and to retrieve the history log.  For detailed information on using Loop Explorer, please see the *FireNET 4127 Installation and Operation Manual* (part number 1700-09948).

## *4.1 Getting Connected*

### 4.1.1 Setting the modem COM Port

In order to dial-in to the FN-DAC, you must select the correct modem COM port in Loop Explorer.

    1)  From the File menu, select Options.

    2)  Select the correct com port for your computer modem.  Click OK when finished.
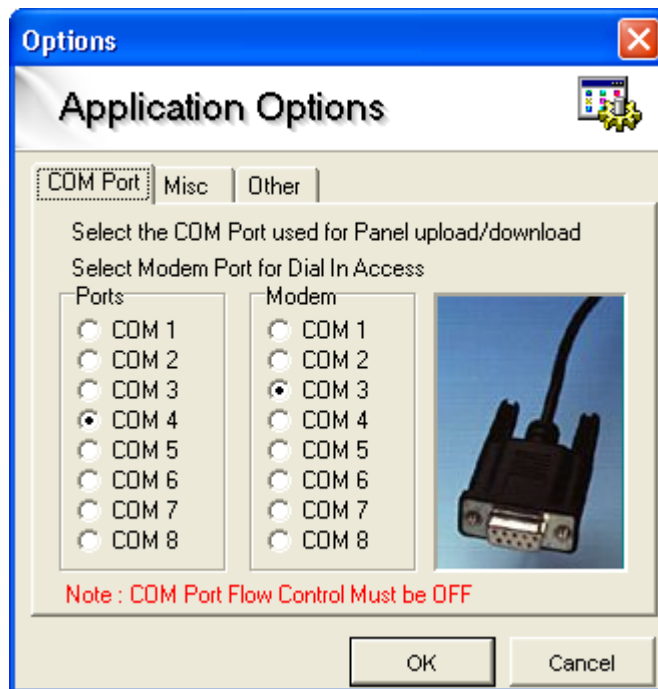


*NOTE:  Before attempting to connect to the FN-DAC, ensure that it has been added to the panel using the dialer menu option.  See Section 3.1 for details on adding the dialer to the panel.*

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## 4.1.2 Connecting to the FN-DAC

You may connect to the FN-DAC in one of the following ways –
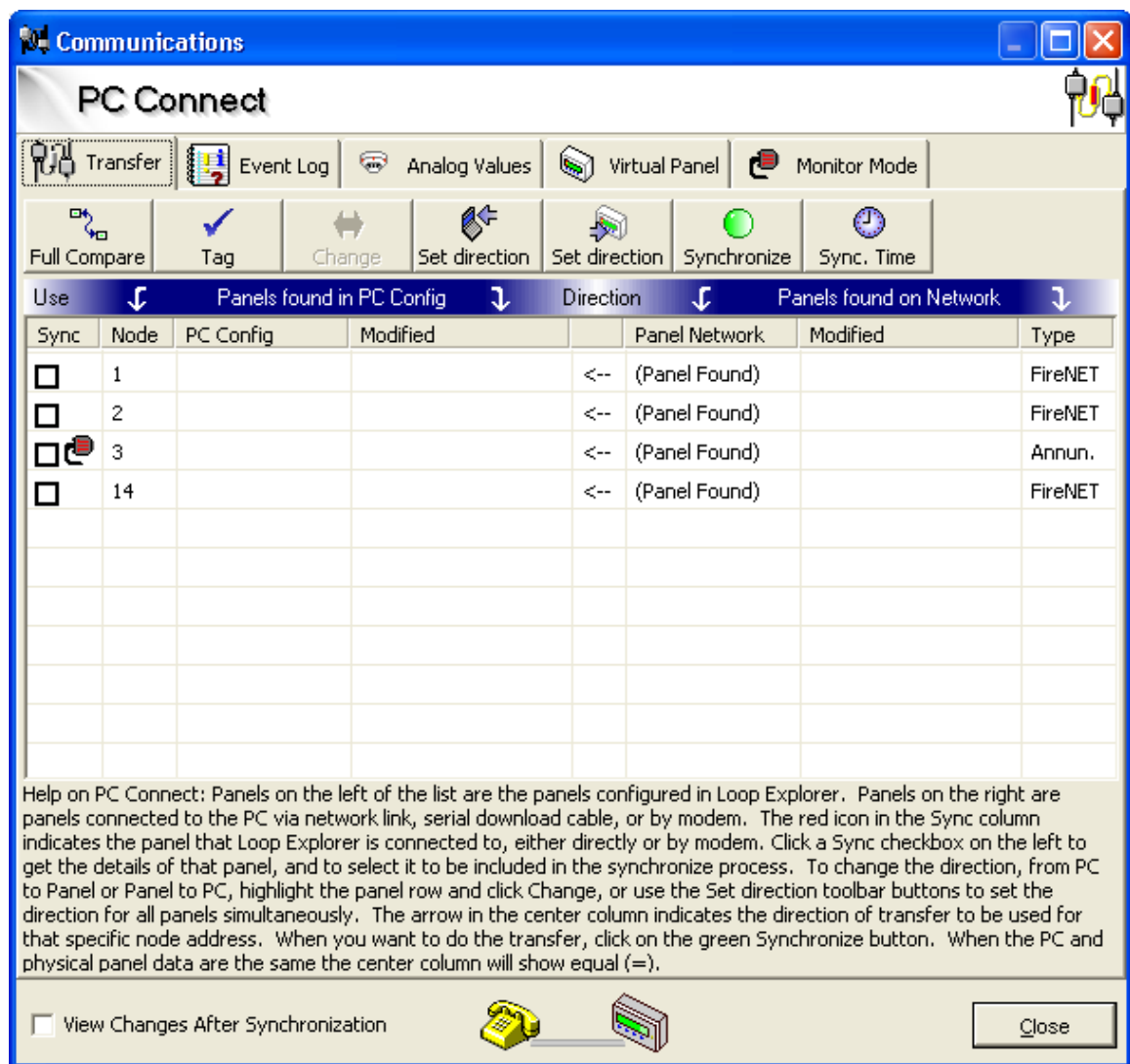
### 4.1.2.1 Connection Method 1

1) For the first-time connection to a site, create a new project in Loop Explorer.

2) Click on the Dial icon on the Toolbar.  You will see the following –



3) Enter the number of the phone line that is connected to the phone line 1 terminals on the FN-DAC dialer.  Note that only phone line 1 on the FN-DAC is configured to answer an incoming call and establish the remote access connection.  When the correct number has been entered click on the Dial button.

4) If your modem speaker is on, you will hear the modem dial the phone number you entered.  After the FN-DAC answers and verifies the call, you will be presented with the Password box just as you would with a direct connection.

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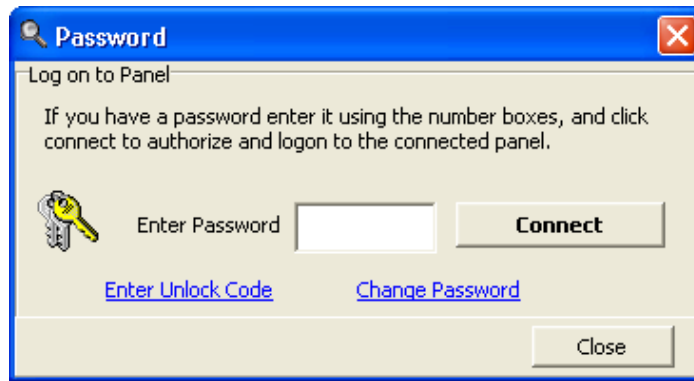
Enter the correct password and click on the Connect button. Loop Explorer will search the network for all panels and network annunciators. After the search is complete, you will see the Communications window. You are now connected to the network and may copy the configuration to Loop Explorer.

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**4.1.2.2 Connection Method 2**

1) Connection method 2 may be used as an alternative to method 1 at any time. To begin, create a new project in Loop Explorer.

2) Add a panel to the site. It is important that the panel added be the <u>same type</u> and <u>same address</u> as the panel that the FN-DAC is installed in at the jobsite (2-loop panel, 4-loop panel or network annunciator).

3) Select the panel in the Navigator tree and add a Dialer to the panel. Do this by double-clicking on the dialer icon in the Items pane.

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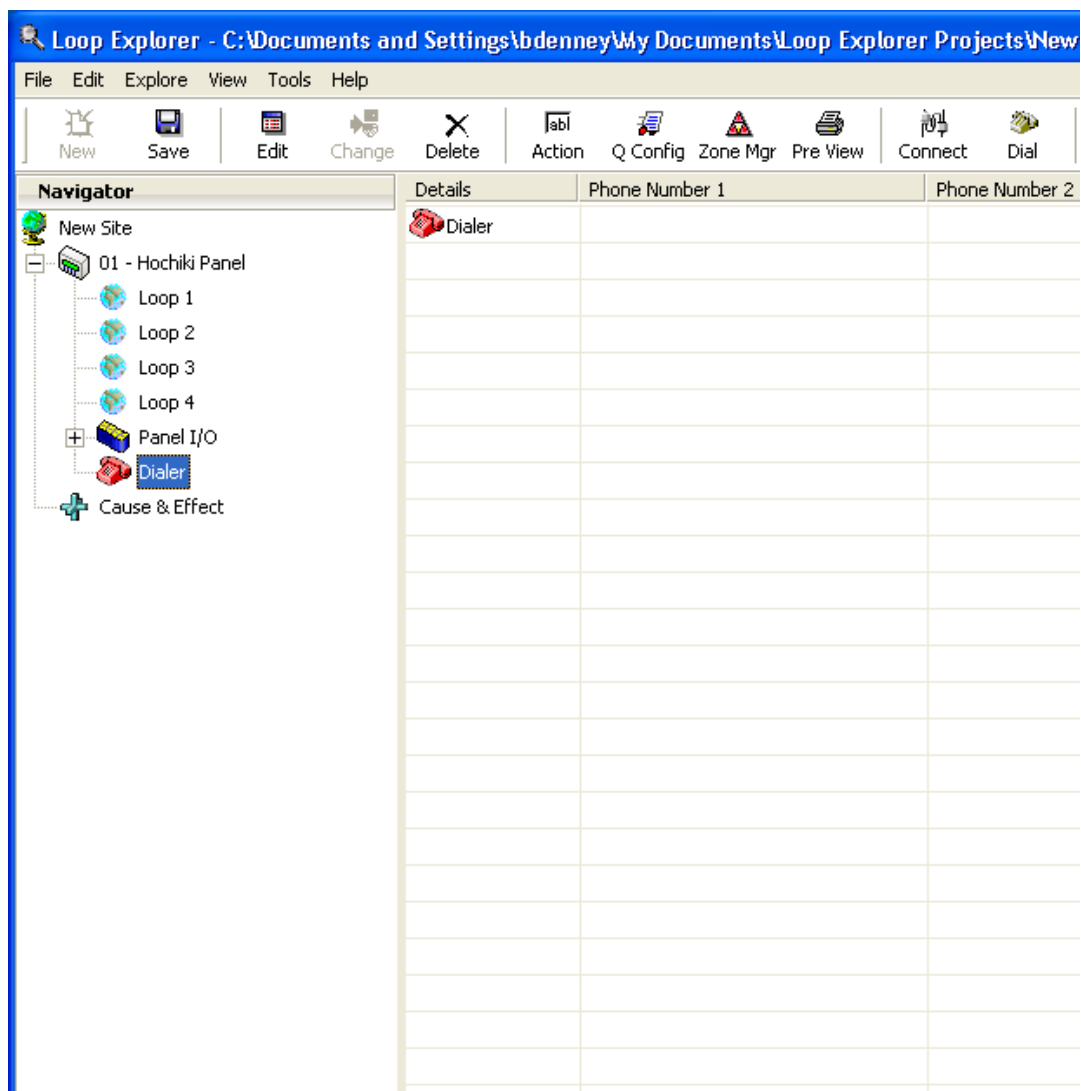
4) Select the Dialer and click on the Edit button on the toolbar.  In the Site Number box, enter the number of the phone line that is connected to the phone line 1 terminals on the FN-DAC dialer.  When the correct number has been entered click on the OK button.  Save the project by clicking on the Save button on the toolbar.
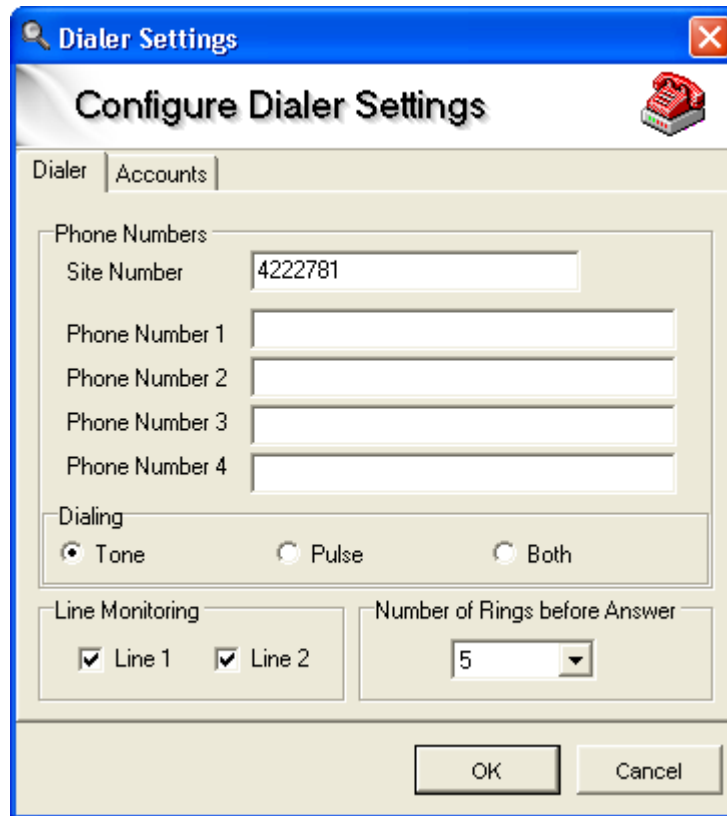


5) Click on the Dial icon on the toolbar.  You will see the panel and phone number in the dialog box.  Click on the Dial button to call the FN-DAC.

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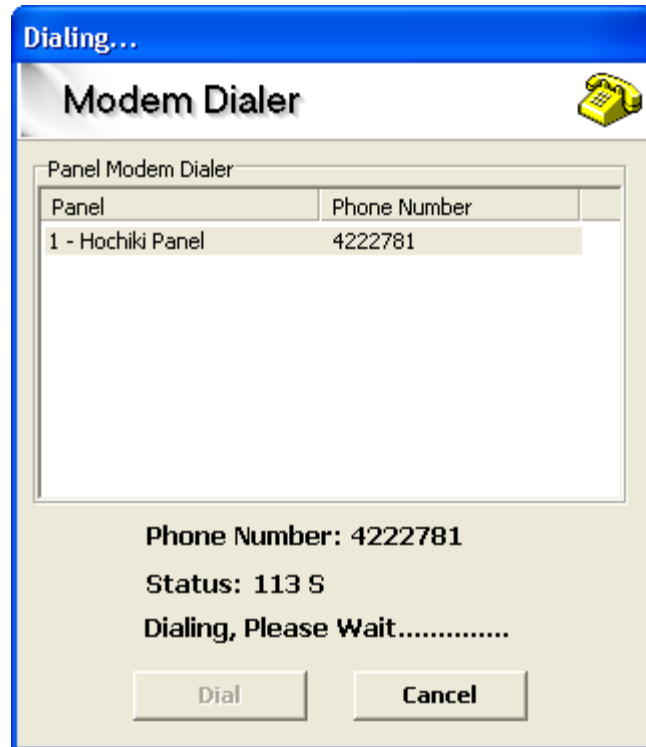
6) If your modem speaker is on, you will hear the modem dial the phone number you entered. After the FN-DAC answers and verifies the call, you will be presented with the Password box just as you would with a direct connection. Enter the correct password to complete the connection to the network.

Note that after you have copied and saved the network configuration you can use the Dial icon on the toolbar to reconnect. It is not necessary to start from a new Loop Explorer project every time.

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## 4.2 Remote Access Features

### 4.2.1 Uploading (copying) the Network Configuration

After you have established a connection with the network, you will find that Loop Explorer functions much as it does when using a direct serial connection. To copy the configuration from the network, put a check in the Sync box for each panel you wish to copy. Note that the arrows in the direction column are pointed toward the 'Panels found in PC Config' section. This indicates that the data will be copied from the panels on the network to the computer. Click on the Green Synchronize button to copy the network configuration.
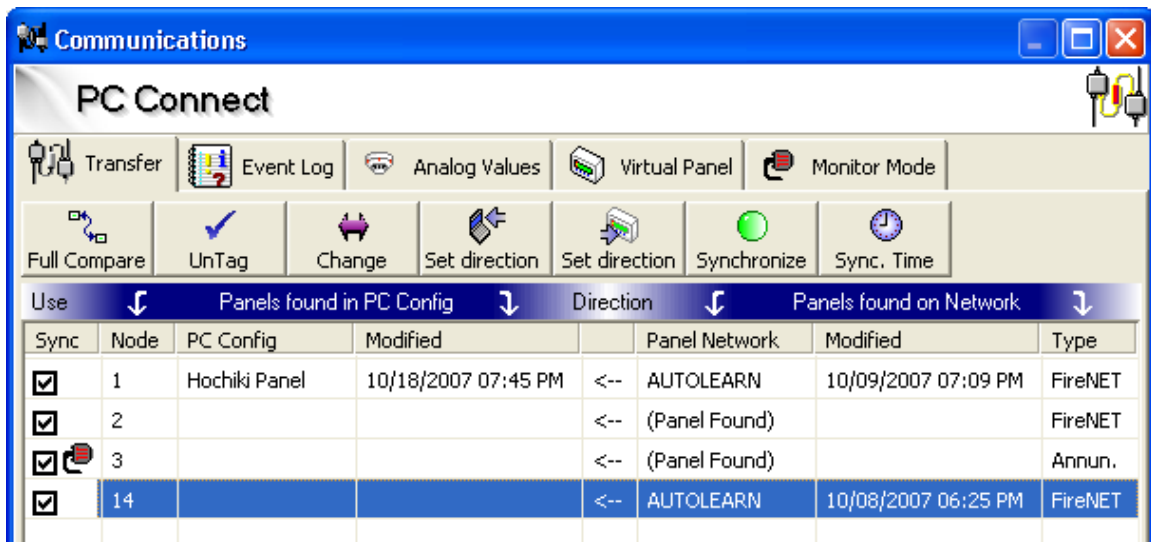


The transfer progress will be displayed on the screen.

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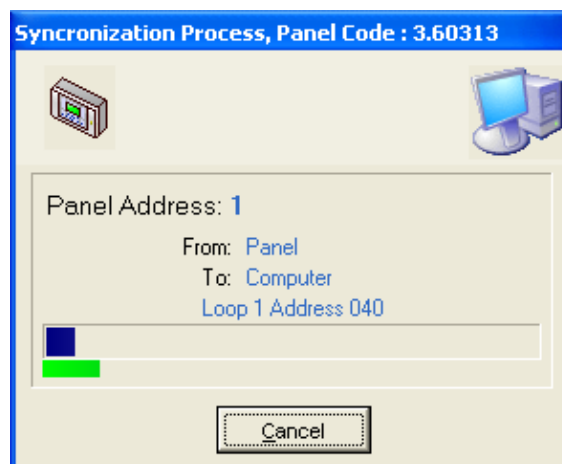
When the transfer is complete, you will be returned to the main PC Connect window. You may utilize some of the other Loop Explorer functions while connected, or click on the Close button to terminate the connection to the network.
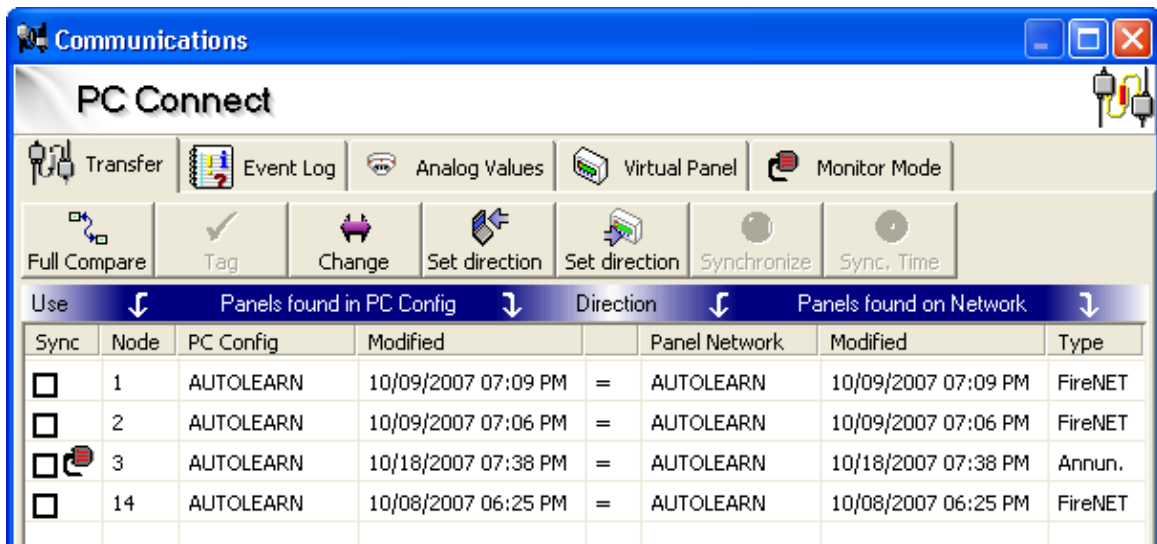


## 4.2.2 Copying the Event Log and Analog Values

You may copy, view and save the event log and analog values from the panels on the network. Establish a connection to the network and then click on the appropriate tab.
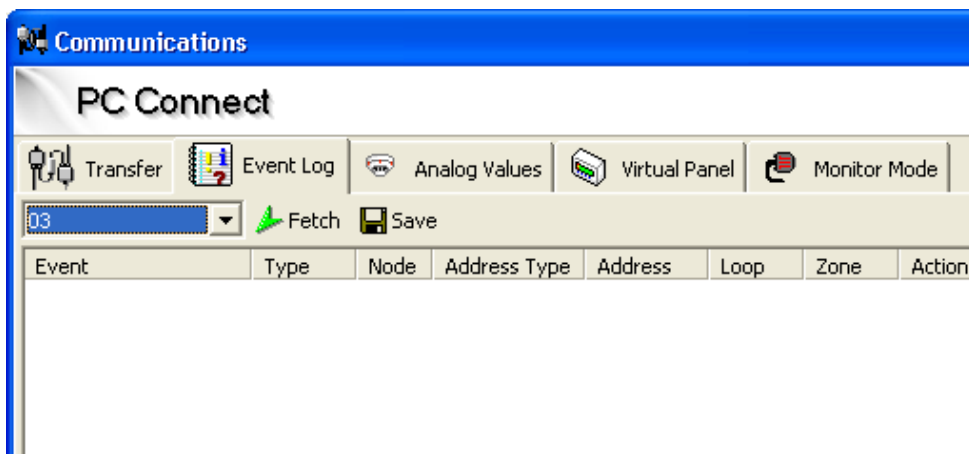


Select the panel you wish from the pull-down list, and then click on the Fetch button. The data will be copied into the Loop Explorer window. You may save the data to a .csv file by clicking on the Save icon. Note that each panel event log must be copied and saved individually.

When copying the analog values you must also select the loop.

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## Communications

### PC Connect

Transfer | Event Log | Analog Values | Virtual Panel | Monitor Mode

01 ▼ | Fetch | Save | ⦿ Loop 1 ○ Loop 2 ○ Loop 3 ○ Loop 4

| Type | Node | Loop | Address | Zone | Value | Zero Point | Fire Point |
|------|------|------|---------|------|-------|-----------|-----------|
| ALG-V Photo Sensor | 1 | 1 | 1 | 1 | 61 | 61 | 190 |
| ALG-V Photo Sensor | 1 | 1 | 2 | 1 | 61 | 61 | 190 |
| ALG-V Photo Sensor | 1 | 1 | 3 | 1 | 61 | 61 | 190 |
| ALG-V Photo Sensor | 1 | 1 | 4 | 1 | 64 | 61 | 190 |
| ALG-V Photo Sensor | 1 | 1 | 5 | 1 | 61 | 61 | 190 |
| ATG-EA Heat Sensor | 1 | 1 | 32 | 1 | 80 | 80 | 240 |
| ATG-EA Heat Sensor | 1 | 1 | 33 | 1 | 80 | 80 | 240 |
| ATG-EA Heat Sensor | 1 | 1 | 34 | 1 | 81 | 80 | 240 |
| ATG-EA Heat Sensor | 1 | 1 | 35 | 1 | 80 | 80 | 240 |
| Duct Sensor | 1 | 1 | 58 | 1 | 61 | 61 | 190 |
| Duct Sensor | 1 | 1 | 61 | 1 | 61 | 61 | 190 |
| AIE-EA Ion Sensor | 1 | 1 | 64 | 1 | 61 | 61 | 190 |

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## 4.2.3 Virtual Panel

You may view the display of any panel or network annunciator by using the Virtual Panel tool. Connect to the network and select the Virtual panel tab. Choose the panel you wish to view from the pull-down menu and then click on the Start button.
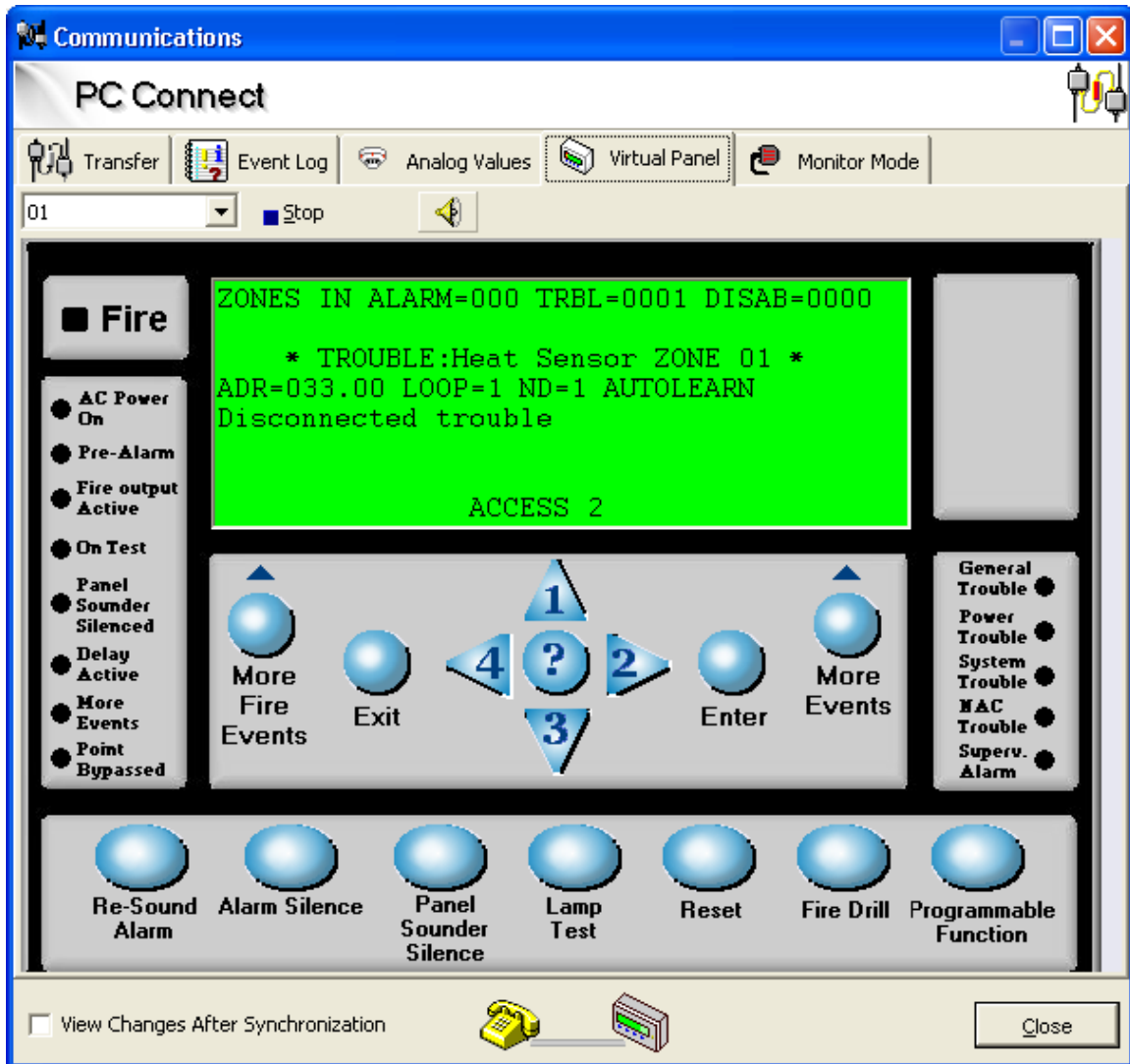


You will see the information displayed on the panel. To view a different panel, click on the Stop button, select another panel from the list and click on Start. Note that the LEDs and buttons represented on the Virtual Panel screen do not function when using a dial-in connection.

When you are finished using Virtual Panel, click on the Stop button.

## 4.2.4 Sync Time

The Sync Time tool allows you to set the time and date in all panels on the network. Connect to the network and click on the Sync Time icon.  This will set the time and date in all panels to the same time and date as your computer.

## 4.2.5 Downloading (sending) the Network Configuration

You may use the modem connection to download one or more panel configurations. This feature may be used to program a complete new installation, or to assist service personnel with minor programming changes as necessary.

*NOTE:  If you are sending a configuration to a newly installed system, ensure that the dialer has been added to the panel using the dialer menu option!  See Section 3.1 for details on adding the dialer to the panel.*

1) Connect to the network as described above.  To download the current configuration in Loop Explorer to the network, check the Sync box for each panel you wish to download.  Be sure to note the direction of the arrows in the Direction column.  In order to send to the network, the arrows must point toward the panels.

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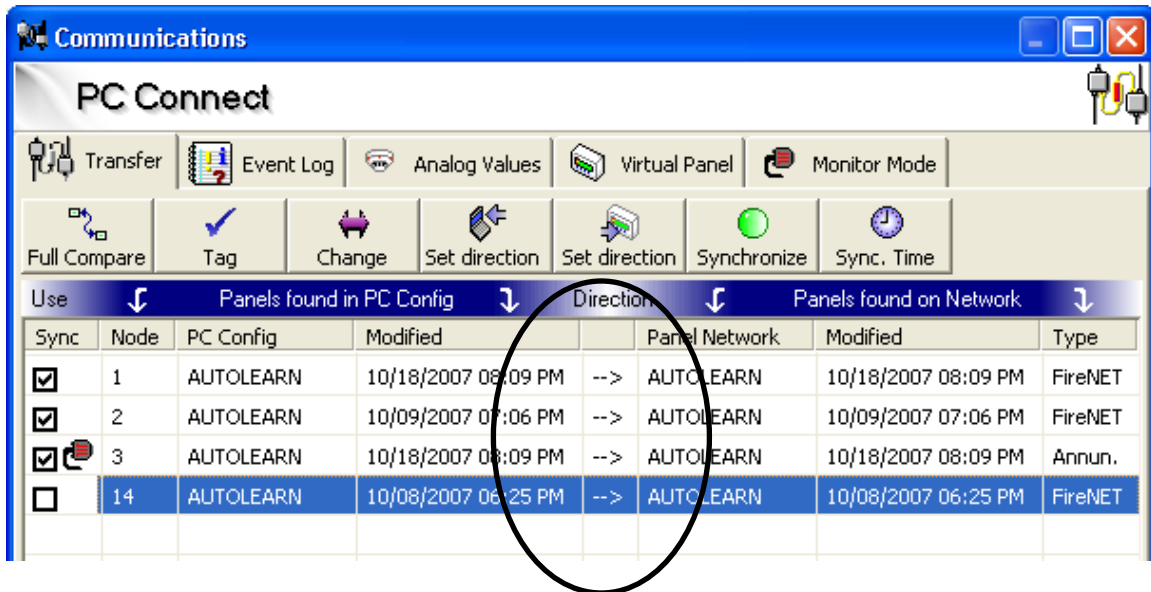
2) Before the network will accept a download, the remote configuration option must be enabled at the panel where the FN-DAC is installed. Your technician must be present at the panel to enable this option! The option to download to the FireNET panel(s) is enabled by choosing *Edit Configuration* from the Access Level 3 Menu. Select *Edit I/O* and then select *Edit Dialer*. Choose *Set Remote Configuration* from the Edit Dialer menu. Use the up or down arrow keys to enable the option and then press the Enter button. After the remote configuration option has been enabled, you may download the configuration to the network.

```
          EDIT DIALER MENU

  EDIT ACCOUNTS ATTRIBUTES
 >EDIT TEST REPORT TIME
  SET REMOTE CONFIGURATION
```

```
        SET REMOTE CONFIGURATION

 REMOTE CONFIGURATION IS:  DISABLED


 Use UP/DOWN arrow keys to ENABLE
 Press < to go back. Press EXIT to quit.
```

**NOTE**: *The Set Remote Configuration option complies with UL 864 9th edition requirements for user access and programming.*

3) After the download is complete click on the Close button to terminate the connection. Note that the *Set Remote Configuration* option will return to a disabled state after the download is complete.

# Section 5 – Testing, Troubleshooting and Maintenance

After the FN-DAC installation and programming are complete, the system must be tested for proper operation.

*NOTE:  Follow NFPA testing methods and frequencies as outlined in the National Fire Alarm Code (NFPA 72).*

The FN-DAC communicator will report all panel and network events to the monitoring station, based on network interface configuration and programming of the report groups.  When there is an event to be reported, the FN-DAC will seize the phone line, dial the programmed number, report the event(s), and then disconnect.  Events are reported by priority, with Fire and Waterflow events being reported first.  Note that at times, more than one call may be generated to report an event or series of events.

To test the system, generate an event on the FireNET panel or network.  Each event will be reported, based on programming of the FN-DAC.  Confirm receipt of all reports with your monitoring station.


**Troubleshooting –**

*Comms Phone Line 1 (or 2) Trouble* – The indicated phone line is not being detected by the communicator.

- Use a voltmeter to check the voltage on the phone line.  A normal phone line will measure approximately 48 VDC.

*Caution: The voltage present during ringing for an incoming call can be over 100 volts AC.  Use caution when measuring phone line voltages.*

- Check to be sure that the incoming phone line is correctly connected to the L1T and L1R (or L2T and L2R) line connections.  See Figure 2.2.4.

- Check wiring of the RJ31X jack(s).  Be sure that the FN-DAC is connected for proper line seizure.

*Comms Fail #* - The communicator is unable to report to the monitoring station receiver.  The number indicates the account that failed.

- Confirm that the monitoring station telephone number is correct in the program.

- Verify that the correct communication format is selected (Contact ID or SIA).

- Check wiring of the RJ31X jack(s).  Be sure that the FN-DAC is connected for proper line seizure.

- Using the communicator phone line, make a test phone call to the receiver.  Listen for noise or distortion on the line.  This can prevent proper communication between communicator and receiver.

- You may also wish to monitor the communication session using a telephone test set in parallel with the phone line.  This may help to determine why the FN-DAC is having trouble communicating the information.  Use caution when working with phone lines, as ringing voltage may be 100 VAC!

***Some Network Events are not being Reported*** – The communicator will only report events that are displayed on the panel where it is installed.  If some network events are not being reported, check the Network Interface programming to be sure that all events are properly selected.  See the *FireNET 4127 Installation and Operation Manual* for more details on Network Interface configuration.

## LEDs –

The Green LED (LED 2) flashes to indicate that the communicator is receiving power and data.  During normal operation this LED will flicker.  At times it will not be lit, but it should begin flickering again within 5 – 10 seconds.

If the Green LED is OFF –

- Check for the presence of 24 VDC power at J7 (observe polarity)

- Be sure the ribbon cable is securely plugged into J2 on the communicator, and the PC port on the FireNET display board.

The Yellow LED (LED 3) lights when the communicator has seized a phone line to report an event.  When the communication session is finished, the yellow LED will turn off.  This is a visual indication that the communicator is attempting to report to the monitoring station.

If the Yellow LED turns on and off repeatedly, it may be a sign that the communicator is having trouble reporting to the monitoring station.  Check to see that the monitoring station is receiving all signals properly.  If they are not, follow the steps above to determine the problem.

The Red LED flashes on and off when there is an active modem connection to the dialer.  During normal mode, this LED may be on or off, but it will not be flashing.

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**Troubleshooting Remote Access Issues –**

- **"*Failed to open COM port – please set up in the Option menu*".** Be sure that Loop Explorer is configured correctly for your modem COM port. Please see Section 4.1.1 for instructions on setting the modem COM port. If you are copying a configuration for the first time and are getting this error, you may find that using connection method 2 also corrects the issue (see Section 4.1.2.2).

- **"*Failed to Open COM Port, Make sure no other Applications are using it*".** Another program may be using the modem. Determine what application is using the modem and shut it down to correct this issue.

- ***The FN-DAC will not answer the call from the computer modem.***
  - Be sure that the FN-DAC has been added to the panel where it is installed. See Section 3.1 for instructions on adding the dialer to the panel.
  - Confirm that the phone number is correct. The FN-DAC will only answer incoming calls on the telephone number (line) that is connected to the L1T and L1R connections.
  - The FN-DAC may have an event to report. If the dialer has an event queued to report, it will not answer the call until the report has been sent. If you are unsure, wait for approximately one minute and try to call again. This will allow time for the FN-DAC to report the pending event(s).
  - If you have just disconnected from the FN-DAC, wait for approximately 30 seconds before calling again. After the modem and FN-DAC disconnect, the dialer may be processing data, which can prevent it from answering the call.

- ***Trouble copying data from the panel***
  - After a configuration is sent to the network, the panel(s) will need time to initialize. The amount of time required depends on the size of the installation, number of loops, analog devices, etc. While a panel is initializing you will <u>not</u> be unable to copy the event log or get the analog values from that panel. If you want to monitor the panel to see when the initialization is complete, use Virtual Panel to see the status.
  - If you use Virtual Panel, be sure to click on the Stop button before you attempt to perform other on-line functions. If Virtual Panel is not closed properly the other functions may not operate. When you click on the Stop button the virtual panel screen should go blank. If this does not happen, start and stop the virtual panel operation again to clear the screen.
  - If it looks like the data transfer is not progressing, the connection may be poor, or it may have been terminated. When a configuration is being transferred to or from a network, the Syncronization Process box indicates the progress of the transfer between the computer and the

panel(s). The green progress bar that moves from left to right represents data being sent from the computer to the panel.
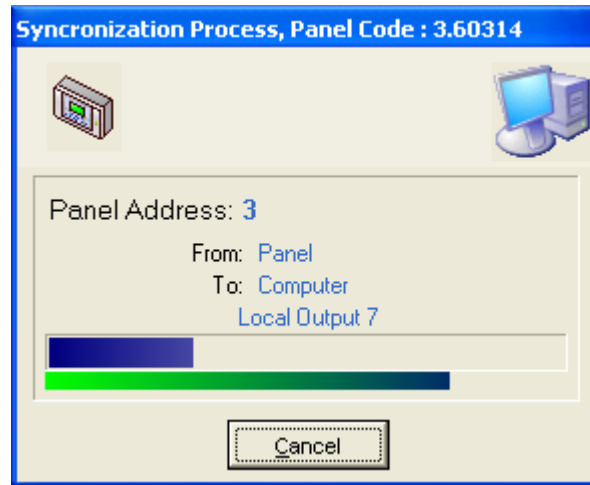


When the panel replies or acknowledges the data, there is a small green bar seen to the right of the progress bar.
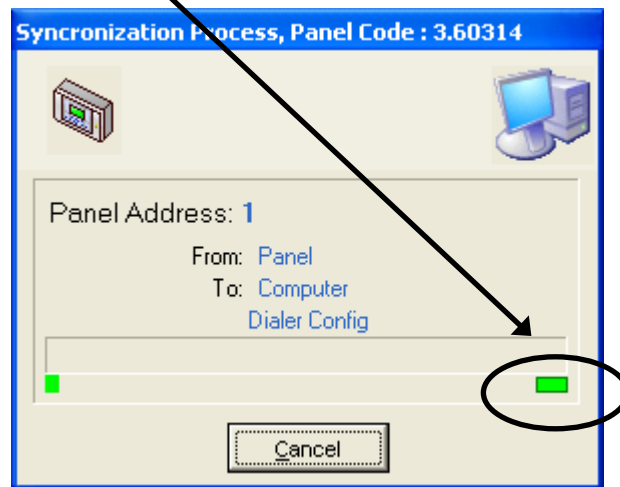


If you see the progress bar moving from left to right but there is no reply from the panel (indicated by the small green bar seen above), the connection may have ended. Click on the Cancel button to close the process box and try connecting again to complete the transfer.

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- ***Loop Explorer Messages***
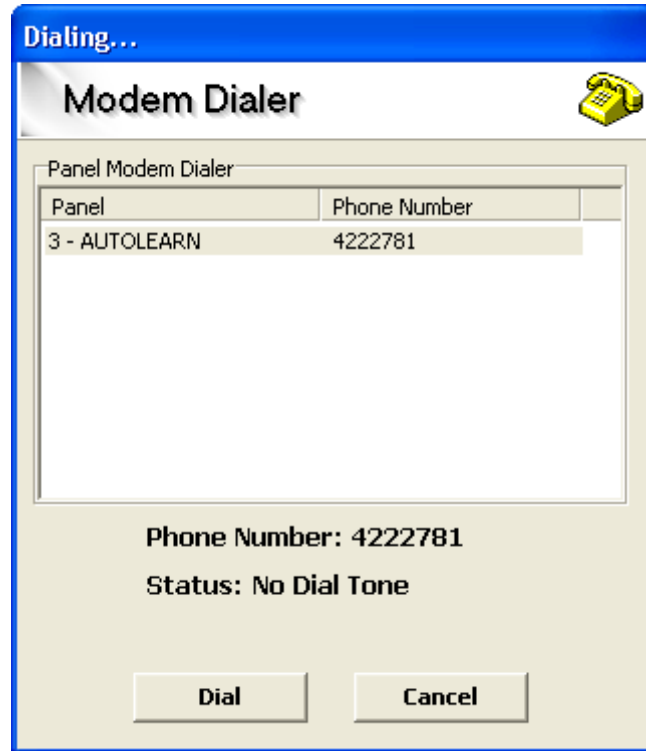


1) "Status: No Dial Tone" – this indicates that there is no dial tone at the computer modem.  Check the phone line connection to the modem, and ensure that the line is working properly.

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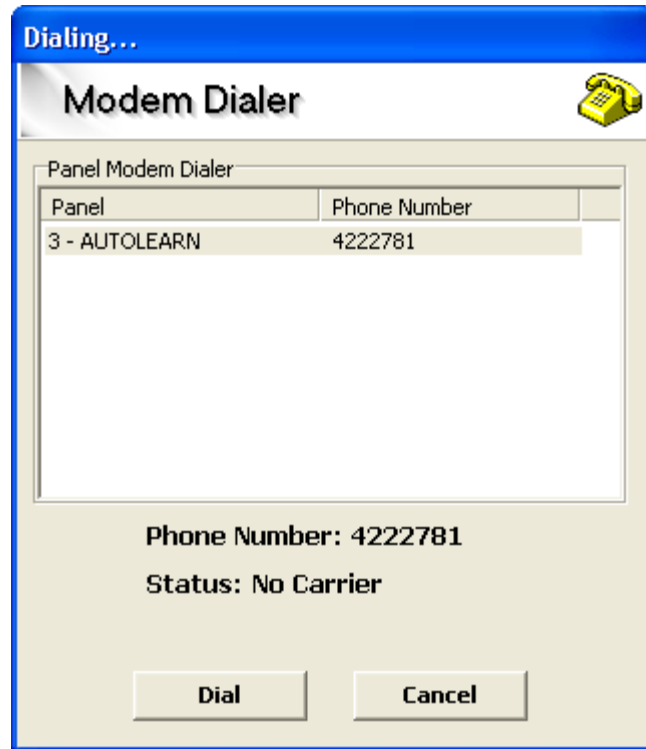
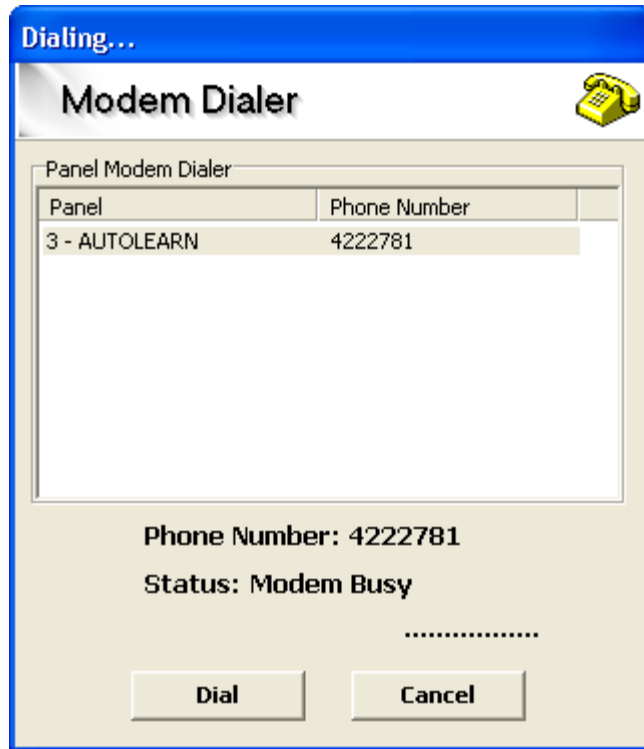2) "Status: No Carrier" - this indicates that the FN-DAC did not answer the call, or the session timed out before a connection was established.  If the FN-DAC is answering the call and you get this error repeatedly, it may be helpful to decrease the number of rings before the FN-DAC answers.  You should also confirm that there is no other equipment sharing the phone line with the FN-DAC.  The other equipment may be answering the call before the FN-DAC (fax or answering machine, computer modem, etc).

3) "Status: Modem Busy" - this indicates that the phone line at the FN-DAC is busy. The dialer may be reporting an event to the monitoring station. Try to connect again when the line is not in use.
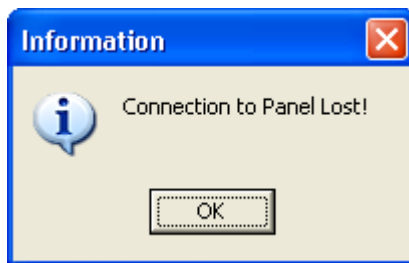


4) The connection to the panel was lost, perhaps due to noise on the phone line or the call being interrupted. Try to make the call again. If you continue to have this trouble at a particular site, check the phone line at the site for noise or distortion. If you have this problem with all sites, check the phone line being used with the computer modem for noise or distortion. If possible, try using a different phone line to see if the connection improves.

FireNET FN-DAC Digital Alarm Communicator I & O Manual - v 1.1
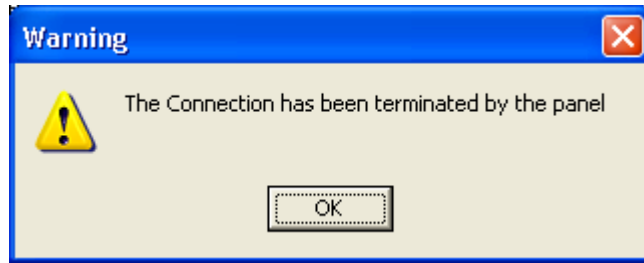
5) The FN-DAC will terminate the remote connection if there is a Fire or Supervisory alarm while the session is in progress.  After the event has been reported to the monitoring station and the panel has been reset (no active alarms in progress), you may connect again.
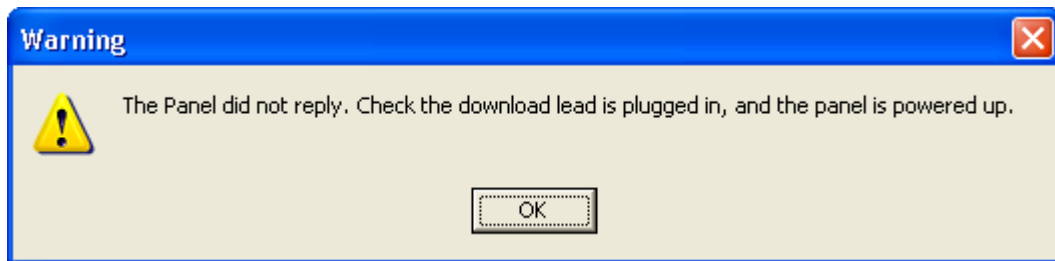


6) This message indicates that the call was disconnected before entering the password.  This may be due to noise on the phone line.  Try to connect again.  If the problem continues, verify that the phone lines are working normally at the site.
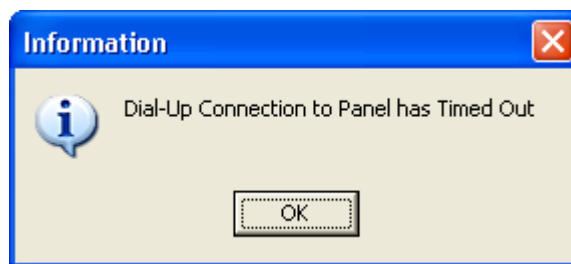


7) Loop Explorer will terminate the connection to the FN-DAC if there is no activity for approximately 6 minutes.  This is the message that will be displayed in that event.
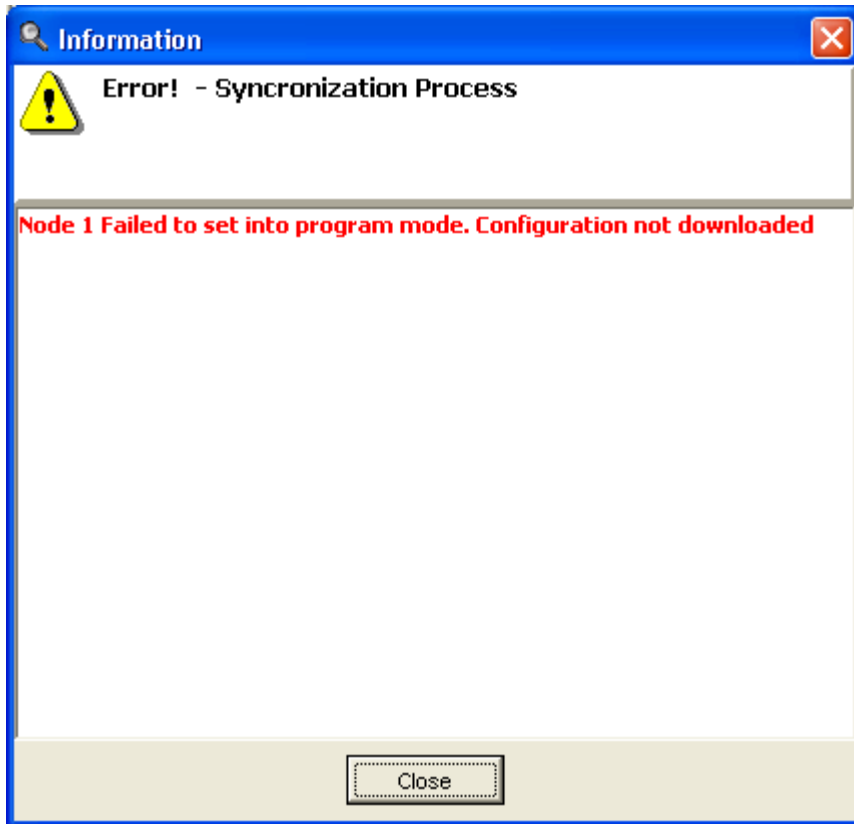
8) The error shown above will display when trying to send a program if the *Set Remote Configuration* option has not been enabled at the panel.  Please see Section 4.2.5 for details on this option.

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**Maintenance –**

The FN-DAC requires no periodic maintenance and contains no user serviceable parts. Follow testing methods and frequencies as outlined in the National Fire Alarm Code (NFPA 72) for Digital Alarm Communicator / Transmitters (DACT).

If service is required, contact Hochiki America Corporation at the address shown on the last page of this manual.

# Appendix A – Reporting Summary

**Contact ID**

Contact ID reporting on the FN-DAC uses the following format –

> Account Number – Event Code – Panel Address – Zone or Device Address

The event code describes the event that is taking place; Alarm, Trouble, Supervisory, etc. The Panel Address is the same as the network address of the FireNET panel. The Zone or Device address indicates the zone or actual device address. Zone or Address reporting is selectable in the program (please see Section 3.2 and Appendix C for details).

Note that Contact ID format uses a "1" (or E) for the event activation, and a "3" (or R) for the restoral. This is not included in the reporting summary list below. The activation and restore use the same event code, but with the appropriate modifier. For example, a Low Battery report is "1 302" (or E302) and the restore to normal is "3 302" (or R302).

**SIA**

SIA format reporting on the FN-DAC uses the following format –

> Account Number – Event Code – Zone or Device Address

SIA format uses unique event codes for the activation and restoral, rather than the event modifier as is done with Contact ID. Therefore, the list below will indicate two codes in the SIA column; the first code is for the activation, and the second one is for the restore (Low Battery = YT; the restore to normal = YR)

As with Contact ID, the Zone or Address option is programmable. Panel address information is not reported in SIA format.

The following Table shows the event codes for the FN-DAC communicator, with a brief explanation of what may cause each event.

| Panel and Network Events | SIA Event Code | Contact ID Event Code | |
|---|---|---|---|
| AC Fail | AT / AR | 301 | No AC to Panel |
| Alarm Silence | FL / FL | 406 | Alarm Silence Button Pressed |
| Aux Power Trouble | YP / YQ | 312 | Short or other Trouble on Aux Power |
| Battery Low | YT / YR | 302 | Low Battery |
| Battery Missing | YM / YR | 311 | Missing/Disconnected Battery |
| Comm Fail | YC / YK | 354 | Dialer Communication Failure |
| Dialer Missing | IA / IR | 350 | Dialer Ribbon Cable Unplugged |
| Disable Address | FB / FU | 571 | Address Disabled at Panel |
| Disable Audibles | FT / FJ | 520 | Notification Appliances Disabled |
| Disable Loop | FB / FU | 571 | Loop Disabled |
| Disable Zone | FB / FU | 570 | Zone Disabled |
| Disable Panel Output | FT / FJ | 520 | Panel Output Disabled |
| Disable Panel Input | UB / UU | 520 | Panel Input Disabled |
| Disable Printer | VZ / VY | 336 | Panel Printer Disabled |
| Disable Buzzer | FT / FJ | 520 | Panel Buzzer Disabled |
| Disable Ground Trouble | FT / FJ | 520 | Ground Fault Detection Disabled |
| Fire Drill | FI / FK | 604 | Fire Drill Button Pressed on Panel |
| Fire Routing Trouble | FT / FJ | 320 | Trouble on Fire Routing Circuit on Panel |
| Ground Fault | YP / YQ | 310 | Ground on External Panel Wiring |
| Loop Explorer Prog | LB | 628 | Local Programming with Loop Explorer |
| Loop Explorer Reset | FT / FJ | 305 | Panel Reset after Programming |
| Missing Network Node | ET / ER | 330 | Missing FireNET Panel on Network |
| Missing Peripheral | ET / ER | 330 | Missing Serial Device |
| NAC Trouble | FT / FJ | 320 | Trouble on Notification Appliance Circuit |
| Network Open/Short | NT / NR | 330 | Open or Short on Network Connection |
| Panel Reset (SW2) | FT / FJ | 305 | SW2 Button on Display Board Pressed |
| Panel Reset Button | OR / OR | 313 | Reset Button on Panel Pressed |
| Phone Line 1 Trouble | LT / LR | 351 | Trouble on Dialer Phone Line # 1 |
| Phone Line 2 Trouble | LT / LR | 352 | Trouble on Dialer Phone Line #2 |
| Prog Output Trouble | FT / FJ | 320 | Trouble on Prog Output on Panel |
| SLC Open Circuit | ET / ER | 331 | Open Circuit on Device Polling Loop |
| SLC Short Circuit | ET / ER | 332 | Short Circuit on Device Polling Loop |
| Test Report - Normal | RP | 602 | Normal Test Report |
| Test Report - Off Normal | RY | 608 | Off-Normal Test Report |

| Panel and Network Events | SIA Event Code | Contact ID Event Code | |
|---|---|---|---|
| Test Zones | FI / FK | 607 | Test Zone Feature Activated |
| Tested Zone | TS / TE | 604 | Device Tested while 'Test Zones' Active |
| Trouble Routing Trouble | FT / FJ | 320 | Trouble on Trouble Routing Output |
| Unexpected Network Node | ET | 330 | Unexpected Panel Added to Network |
| Unexpected Peripheral | ET / ER | 330 | Unexpected Serial Device Added to Panel |

| Loop Device Events | | | Event Generated By |
|---|---|---|---|
| Fire | FA / FH | 110 | FRCME, ATG, ALG, ALG-DH, AIE, DIMM, CZM, AMS[1] |
| Waterflow (Fire) | SA / SH | 113 | FRCME, DIMM |
| Waterflow (Supervisory) | FS / FV | 200 | FRCME, DIMM |
| Action = Trouble | FT / FJ | 373 | FRCME, DIMM, CZM[1] |
| Action = Pre-Alarm | UA / UR | 118 | FRCME, DIMM, CZM, ATG, ALG, AIE, ALG-DH[1] |
| Action = Supervisory | SS / SR | 203 | FRCME, DIMM, CZM[1] |
| Action = Supervisory | SS / SR | 200 | ATG, ALG, AIE, ALG-DH, AMS |
| Action = Auxiliary | UA / UH | 140 | FRCME, DIMM, CZM[1] |
| Action = Silence | FL / FL | 406 | FRCME, DIMM, CZM[1] |
| Action = Reset | OR / OR | 313 | FRCME, DIMM, CZM[1] |
| Supervised Loop Trouble | FT / FJ | 373 | FRCME, DIMM, CZM, SOM |
| Input Trouble (Waterflow and General Supervision) | ST / SJ | 373 | FRCME |
| Missing Device | FY / FJ | 373 | FRCME, SOM, R2M, DIMM, CZM, ASB, AMS |
| Missing Sensor | FY / FJ | 380 | ALG, AIE, ATG, ALG-DH |
| Wrong Device Type / Bad Data Trouble | FT / FJ | 380 | All Modules and Sensors |
| Double Address | FT / FJ | 373 | All Modules and Sensors[2] |
| Unexpected Device | XE / FJ | 373 | All Modules and Sensors[2] |
| Maintenance Trouble | FT / FJ | 393 | ALG, ALG-DH, AIE |
| Internal Trouble | FT / FJ | 380 | ALG, ALG-DH, AIE |
| No Auxiliary Power | FT / FJ | 373 | CZM, ASB |
| Ground Fault | YP / YQ | 310 | CZM |

Note #1 – This event can also be generated by Panel and I/O Module Inputs.
Note #2 – Zone information is not reported for this event.
Note #3 – In SIA format, the following events use the same code for the activation and restore: Alarm Silence (FL / FL) and Panel Reset (OR / OR).

# Appendix B – Programming Record

Site Name - _____

Address - _____

City, ST, ZIP - _____

Premise Phone Number - _____

FireNET Phone Number - _____

Format - Contact ID _____     SIA _____

Test Report Time _____


Account Number 1 - _____     Phone Number 1 - _____
Report – _____ Alarms
_____ Alarm Restore
_____ Supervisory, Trouble, Enable/Disable
_____ Service Test
_____ System Reset


Account Number 2 - _____     Phone Number 2 - _____
Report – _____ Alarms
_____ Alarm Restore
_____ Supervisory, Trouble, Enable/Disable
_____ Service Test
_____ System Reset
_____ Backup Reporting


Account Number 3 - _____     Phone Number 3 - _____
Report – _____ Alarms
_____ Alarm Restore
_____ Supervisory, Trouble, Enable/Disable
_____ Service Test
_____ System Reset


Account Number 4 - _____     Phone Number 4 - _____
Report – _____ Alarms
_____ Alarm Restore
_____ Supervisory, Trouble, Enable/Disable
_____ Service Test
_____ System Reset
_____ Backup Reporting

# Appendix C – Application Note: Zone and Address Programming

The FN-DAC communicator can be configured to report events by Zone or by Address. Each option has particular features that you should be aware of when planning your FireNET system installation.

**Reporting by Zone –**

When using zone reporting, loop devices, panel inputs, outputs and serial I/O modules are assigned to different zones for identification purposes.  The FireNET system supports up to 500 zones.

To utilize zone reporting, you must assign devices (inputs and outputs) to zones.  This may be done on an individual basis for smaller systems (1 to 1), or you may want to group devices in an area into a single zone for reporting (for example one floor of a building).  The communicator will report the zone number with the event.

Some advantages of zone reporting are:
- Multiple input modules (for example DIMM) can report individual inputs by zone
- Inputs and outputs can be assigned or grouped into zones as determined and defined by the system designer.  This may be preferred in some installations.

Things to be aware of when using zone reporting:
- By default, all loop devices will be assigned to the same zone, and panel I/O are assigned to zone 0.  For effective reporting, assign devices and I/O to zones as necessary.


**Reporting by Address –**

Address reporting configures the FN-DAC communicator to report the address of the loop device, rather than the zone that it is assigned to.  This option allows for the reporting of up to 999 unique addresses.  In addition, when using Contact ID format, the address of the panel is reported.  This makes it possible to get a unique "Point ID" from nearly every address on a 64 panel FireNET system.

Reporting of loop device addresses is as follows:

Loop 1 = Addresses  1 – 254[1]
Loop 2 = Addresses  255 – 508
Loop 3 = Addresses  509 – 762
Loop 4 = Addresses  763 – 999[2]

Note #1 – Addresses are reported to 254 per loop because Analog Sounder Bases may be used, which occupy the higher loop addresses of 128 - 254.

Note #2 – Address 999 is the highest available due to reporting format limitations.  Analog Sounder Bases addressed higher than 999 (Loop 4, addresses 237) will not report correctly.  These addresses must not be used.

*NOTE - The combination of analog addressable points derived from sensors, modules and sounder bases cannot exceed 800 addresses and sub-addresses maximum per FireNET control panel.*

Some advantages of address reporting are:
- May be more suitable for large, multi-panel reporting when using Contact ID
- Less programming time may be required, as devices do not need to be assigned to zones for reporting purposes

Things to be aware of when using address reporting:
- Modules with sub-addresses will report as the master address (for example, a DIMM at address 32 will report both inputs as address 32)
- Panel and serial I/O will report according to zone assignment.
- If using SIA format, the panel address is not reported.  On a multi-panel network, each panel will use the same address reporting scheme, which may make it difficult for the monitoring station to determine at which panel the event originated.
- Analog Sounder Bases must not be used above address 237 on loop 4.

# Appendix D – Warranty

Hochiki America Corporation manufactured equipment is guaranteed to be free from defects in materials and workmanship for a period of one (1) year from date of original shipment. HOCHIKI will repair or replace, at its option, any equipment which it determines to contain defective material or workmanship. Said equipment must be shipped to HOCHIKI prepaid. Return equipment will be prepaid by HOCHIKI. We shall not be responsible to repair or replace equipment which has been repaired by others, abused, improperly installed, altered or otherwise misused or damaged or exposed to conditions outside the products specifications in any way. Unless previously contracted by HOCHIKI, HOCHIKI will assume no responsibility for determining the defective or operative status at the point of installation, and will accept no liability beyond the repair or replacement of the product at our factory service department. Please contact HOCHIKI's Sales department for proper procedure for claims and return of merchandise.

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**Buena Park, CA 90621-2268**
**1-800-845-6692**
**technicalsupport@hochiki.com**

End of Manual