



**Networked Digital Communicator
(ZNDC)
Installation and
Operation Manual**

Please Keep Manual with the Device!

Part # MAN-ZNDC-01
Revision 1.0
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1. Introduction To The Networked Digital Communicator

The Networked Digital Communicator (ZNDC) is a UL listed dual-line dialer, that allows a Zeta Alarm Systems Sigma Mk II or Classic 2000 Mk II fire alarm control panel to report events to a central monitoring station, over the public phone system. The ZNDC supports the Contact ID reporting protocol for reporting the type and location of events. The ZNDC requires the use of two phone lines.

1.1 Features

- ◆ Compatible with the industry-standard Ademco Contact ID reporting protocol.
- ◆ Built-in dual phone line-seizure circuit.
- ◆ Programmable for Tone or Pulse dialing.
- ◆ Dual phone line monitor circuits.
- ◆ Transient voltage protection of phone lines.
- ◆ Light-emitting diodes (LEDs), visible from front of enclosure, indicating: Alive (Green); ZNDC Trouble (Yellow); Line 1 Fault (Yellow); Line 2 Fault (Yellow); Line 1 In Use (Green); Line 2 In Use (Green).
- ◆ Easy programming using PC Programming Software
- ◆ Fuseless design, 24 VDC.
- ◆ Electrically erasable read-only memory (EEPROM) for nonvolatile storage of all programmable option data. Eliminates the need to reprogram the communicator if power is lost.
- ◆ Built-in watchdog circuit that monitors the operation of the ZNDC.
- ◆ Compatibility with many Underwriters Laboratories (UL) Fire Listed receivers (see Section 1.4 for list).
- ◆ Model 2996 provided as a bare board for mounting inside Zeta Alarm Systems' Sigma Mk II or Classic 2000 Mk II enclosures.
- ◆ Model 2997 housed in a 9.25" x 7.18" x 2" metal enclosure.
- ◆ Compatible with Zeta Alarm Systems Sigma Mk II or Classic 2000 Mk II FACPs.
- ◆ When used with Classic 2000 Mk II, reports event address for point alarms and troubles.
- ◆ Optional diagnostic speaker.
- ◆ May be mounted up to 8000 feet from the FACP. **Note: See Section 2.2 for further details.**
- ◆ Comm Test button for generating a manual test report.
- ◆ Selective reporting.

1.2 How To Contact Zeta Alarm Systems™

World Wide Web: <http://www.zeta-alarms.co.uk>
Internet E-Mail: nrpj@zeta-alarms.fsworld.co.uk
Phone: +44 1792 455175 or +44 1792 470394
FAX: +44 1792 455176
Snail Mail: Zeta Alarm Systems
72-78 Morfa Rd
Swansea, U.K. SA1 2EN

1.3 **What You Get:**

- ◆ Networked Digital Communicator
- ◆ Hardware Kit
 - Manual
 - 2 Ground Nuts
 - Cabinet (standard only with model 2997)
 - 4 plastic stand-offs (standard only with model 2996)
 - 2 Keys

Optional Items:

- ◆ Programming Kit
 - Manual
 - ZNDC Programmer Software
 - PCI cable
 - Diagnostic Speaker
- ◆ RJ45 Kit
 - 10 8-pin RJ45 connectors
 - RJ45 crimp tool

Note: Older revisions of panel software do not support the ZNDC. The Classic 2000 Mk II panel must have at least v1.4 to support the ZNDC, and the Sigma Mk II must have at least v3.1. Verify the version at the panel; then check with Zeta Alarm Systems for the latest revision.

1.4 **Compatible UL Fire Listed Receivers**

RECEIVER	MODEL
Sur-Gard	MLR2-DG
FBI	CP220
Radionics	6600
Osborne Hoffman	OH-2000
Ademco	685
Silent Knight	9800

2. Specifications

2.1 Electrical Specifications

All circuits are supervised and Power Limited.* Zeta Alarm Systems requires that the ZNDC be mounted inside one of our UL listed enclosures, and be powered from an IPB-3 (Inline Power Booster), Sigma Mk II or Classic 2000 Mk II continuous 24VDC output.

Power Requirements: Voltage: 24VDC (22-28VDC)
Current: Nominal Max
56mA 76mA

Network: RS-485, 9600 baud (Sigma Mk II) or 19200 baud (Classic 2000 Mk II)

*Note: Phone lines are supervised but not power limited.

2.2 Wiring Specifications

2.2.1 Electrical Wiring

Please adhere to the following guidelines for wiring the ZNDC:

- ◆ Recommended Wire Type: 14 – 22 AWG shielded, twisted-pair
- ◆ Maximum Cable Length: 8000 ft. (@16 AWG) *** See Note ***
- ◆ Maximum Total Cable Resistance: 50Ω. ***See Note***
- ◆ Maximum Cable Capacitance: 0.3μF. ***See Note***
- ◆ Wiring should not cross or rest on the circuit board.

Note: The above cable length is actually the maximum length for the RS485 Network coming off the Classic 2000 Mk II or Sigma Mk II Control Panels, and thus would apply to the ZNDC only if it is the last device on the network, and no other devices were attached.

The most important thing to remember when wiring a device is to make sure that the cable does not exceed maximum capacitance and resistance. The levels of capacitance and resistance can be affected by the gauge and the quality of the cable being used. Cable will be specified by the manufacturer according to capacitance and resistance per foot. To accurately figure cable length, divide the Maximum Capacitance by the cable's Capacitance-Per-Foot. This will give you the maximum length of cable you can use before you exceed the Maximum Capacitance. (Likewise with resistance.)

2.2.2 Telephone Wiring

Use 4-pair, straight through, standard telephone cabling. RJ45 connectors are supplied in the installation kit. See section 3.5 for wiring diagram.

2.3 Environmental Specifications

To prevent water damage, please observe the following restrictions when mounting the ZNDC:

- ◆ Do not mount directly on exterior walls, especially masonry walls, due to condensation.
- ◆ Do not mount directly on exterior walls below grade due to condensation.
- ◆ Indoor use only.
- ◆ Protect from plumbing leaks.

- ◆ Protect from splash caused by sprinkler system inspection ports.
- ◆ Do not mount in areas with humidity-generating equipment (ex. dryers, production machinery, etc.).
- ◆ Operating temperature range is: 32° to 120° F (0° to 49° C)
- ◆ 10% to 85% non-condensing humidity at 86° F (30° C)
- ◆ Non-corrosive environment.

2.4 Indicator Lights (LEDs)

The ZNDC provides the following LEDs:

LED	Function	Description
LED1	ALIVE	Blinks once a second while the ZNDC is running (think of it as a heartbeat)
LED2	TROUBLE	On if any trouble conditions are present on the ZNDC
LED3	LINE 1 FAULT	On when a fault on phone line #1 has been detected
LED4	LINE 2 FAULT	On when a fault on phone line #2 has been detected
LED5	LINE 1 IN USE	On when phone line #1 is in use
LED6	LINE 2 IN USE	On when phone line #2 is in use

2.5 Telephone Requirements

1. If requested by the telephone company, the following information must be provided before connecting this device to the phone lines
 - A. Distributer: Zeta Alarm Systems.
 - B. Model Number: 2996/2997
 - C. FCC Registration Number: 4T2USA-34005-AL-T
Ringer equivalence: 0.1B
2. This device may not be directly connected to coin telephone, ground start, or party line services.
3. This device may not be adjusted or repaired in the field. In case of trouble with the device, notify the installing company or return to:

Zeta Alarm Systems.
72-78 Morfa Rd
Swansea
U.K.
+44 1792 455175
4. If the ZNDC causes harm to the telephone network, the telephone company will notify the user in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the user as soon as possible. The user has the right to file a complaint with the Federal Communications Commission (FCC) if he or she believes it is necessary.
5. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice so that you can make the necessary modifications to maintain uninterrupted service.

2.6 Mechanical

Board Dimensions: 6" x 4" x 0.875"

Board Weight: 0.3125 lbs. (5 oz.)

Box Dimensions: 9.25" x 7.18" x 2"

Box Color: Red

2.7 Handy Accessories

The Installation kit includes a small diagnostic speaker. The speaker plugs into J6 on the ZNDC board. It will be used for audio verification of line seizure, dialing, and communications with central station receivers. See Illustration 3.0A.

2.8 Listings

2.8.1 UL

The ZNDC is listed with Underwriters Laboratories and complies with UL 864 / NFPA 72. All UL installations must comply with the requirements described below:

2.8.2 FCC

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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING:

This equipment generates and uses radio frequency energy. If it is not installed and used as dictated in this manual, it may interfere with radio communications. Also, if the user makes any changes or modifications to the equipment not expressly approved by Zeta Alarm Systems., he or she could void the user's authority to operate the equipment.

3. Installation

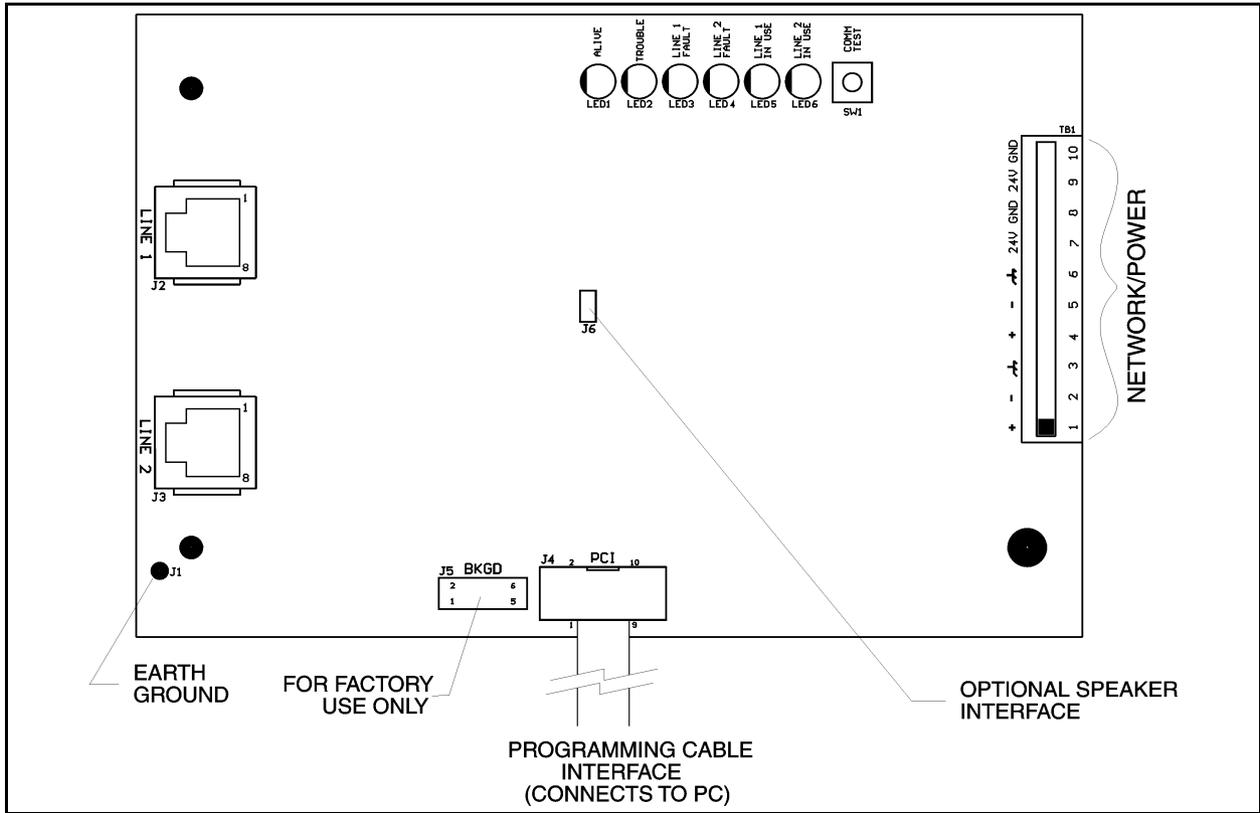


Figure No. 3.0A

3.1 Mounting Requirements

Zeta Alarm Systems requires that the ZNDC be mounted inside one of our UL listed enclosures, and be powered from an IPB-3 (Inline Power Booster), Sigma Mk II or Classic 2000 Mk II continuous 24VDC output. The ZNDC should be mounted using the supplied components. The four plastic standoffs snap into the ZNDC board, and the four screws are used to secure the standoffs to a flat surface. The ZNDC board requires four mounting holes (0.3125" diameter) placed in a rectangle, with 5.30" horizontal spacing, and 2.95" vertical spacing.

3.1.1 Bare Board Installation

- ◆ All mounting accessories are included in Installation Kit.
- ◆ If you wish to mount the ZNDC inside the panel cabinet, Zeta Alarm Systems requires that you place the panel batteries in a companion battery cabinet next to the panel cabinet, freeing the back wall of the cabinet to mount the ZNDC. Use the template in Appendix A of this manual to accurately drill the holes for the board.
- ◆ After drilling the holes, attach the stand-offs to the cabinet. Position the board over the stand-offs so that the four holes in the board match up with the standoffs. Snap board onto standoffs.

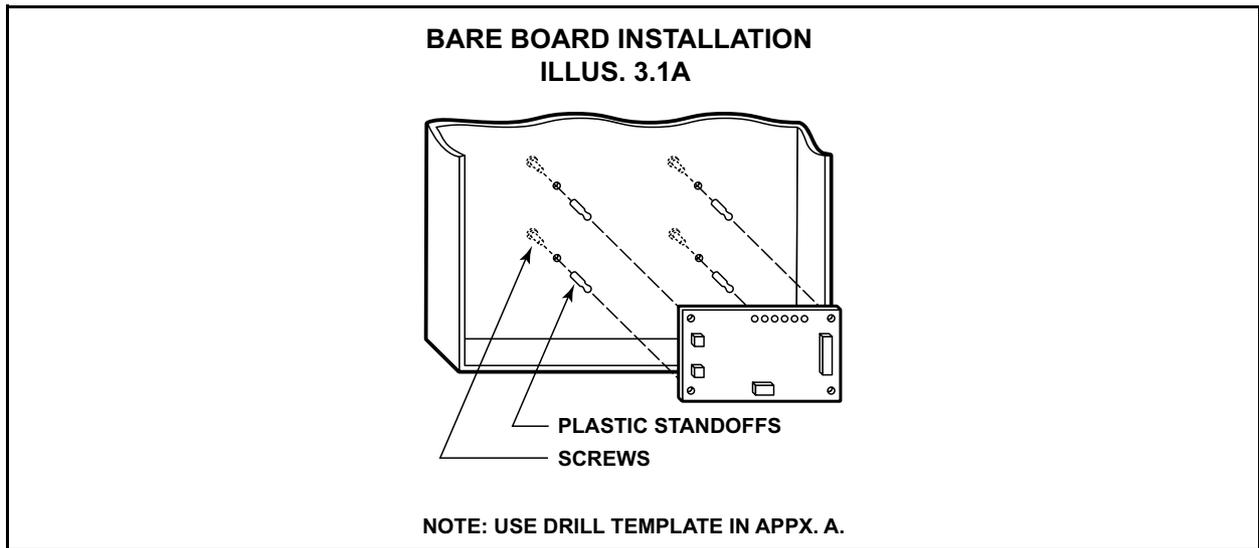


Figure No. 3.1A

3.1.2 ZNDC Enclosure Installation

- ◆ All mounting accessories included in the Installation Kit.
- ◆ Mount ZNDC enclosure to the wall so that the lock is on the right side. Open cabinet and position board over standoffs so that the LEDs are at the top. Snap board into place.

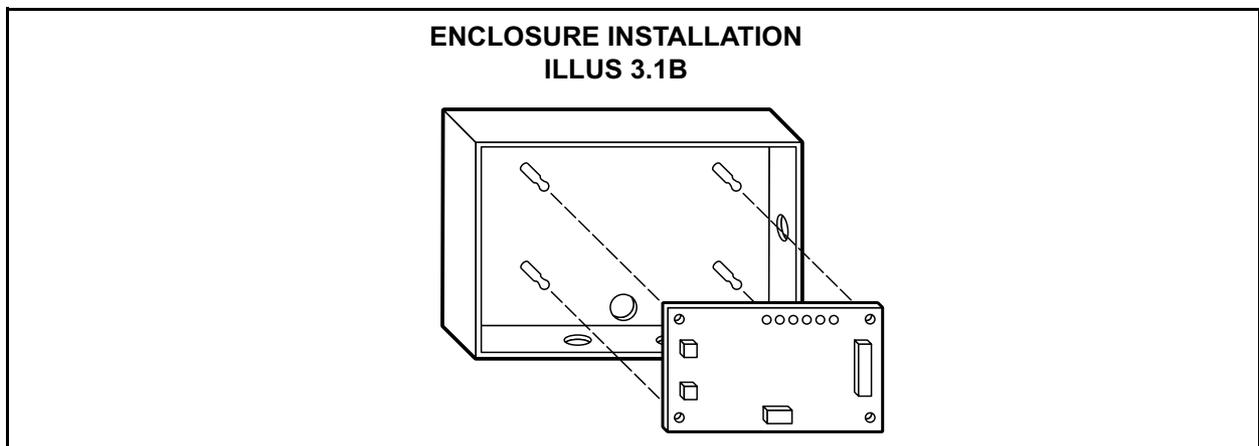


Figure 3.1B

3.2 Grounding Instructions

- ◆ For bare board installation, ground board by attaching green grounding wire from J1 on board to earth ground.
- ◆ For ZNDC enclosure installation, ground board by attaching green grounding wire from J1 on board to threaded stud in lower left-hand corner of enclosure. Secure with nut. Connect enclosure to earth ground. See Illustration 3.3A.

3.3 Wiring

3.3.1 Wiring Precautions

- ◆ Maintain ¼" spacing between high and low voltage circuits and power limited and non-power limited circuits as per the National Electrical Code Article 780.

Induced noise (transfer of electrical energy from one wire to another) can interfere with telephone communication or even cause false alarms. To avoid induced noise, follow these guidelines:

- ◆ Do not pull wires from different groups through the same conduit. If you must run them together, do so for as short a distance as possible or use shielded cable. Connect the shield to earth ground at the panel only.
- ◆ High frequency noise, such as that produced by the inductive reactance of a speaker or bell, can also be reduced by running the wire through ferrite shield beads or by wrapping it around a ferrite torroid.
- ◆ Route the wiring around the inside parameter of the enclosure. It should not cross the circuit board where it could induce noise into the sensitive microelectronics or pick up unwanted RF noise from the high speed circuits.

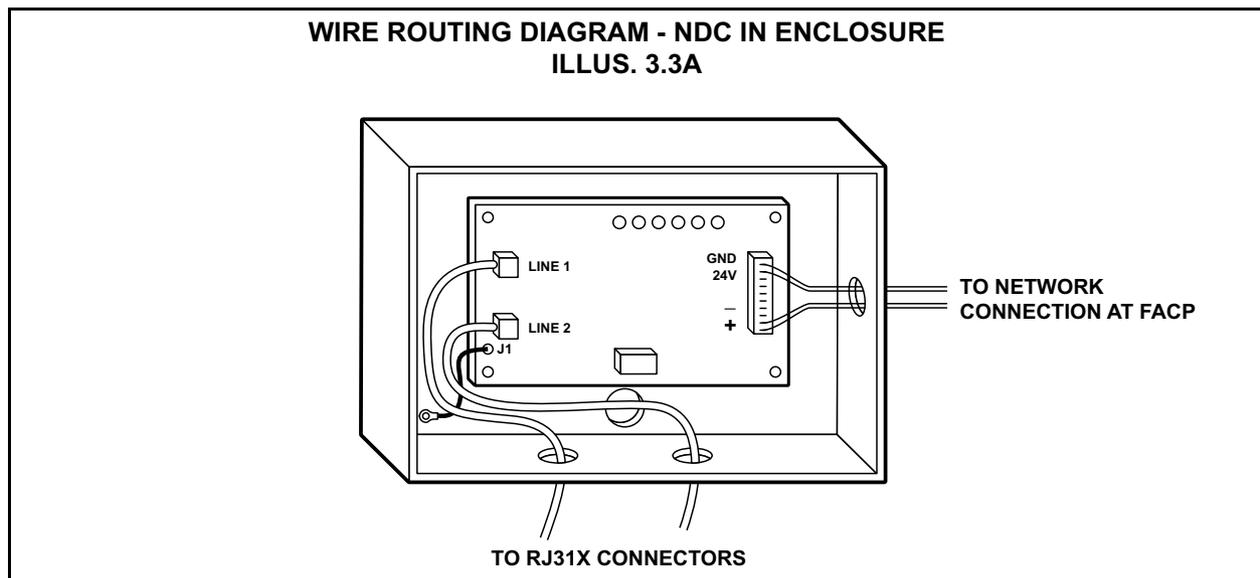


Figure 3.3A

Figure No. 3.4A

3.4.2 Sigma Mk II

To install the ZNDC with a Sigma Mk II FACP, connect a cable between the RS485+ and RS485- terminals on the ZNDC to the RS485+ and RS485- terminals on the panel (using either a NIM or SCP1). Power the ZNDC from a 24VDC source, either one of the AUX24 outputs on the panel, or an IPB-3 power booster. Once the ZNDC is connected, power up the panel, then scan the network. The ZNDC should appear at address 10. If it does not, then check your connections and verify that the ZNDC is configured for Sigma Mk II operation.

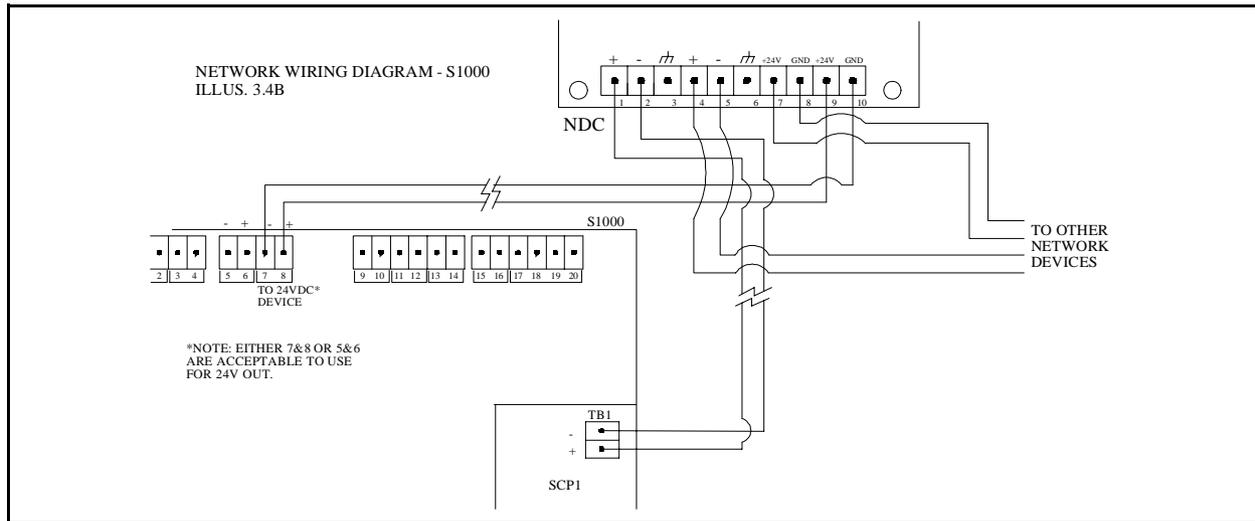


Figure No. 3.4B

3.5 Connecting Phone Lines

Connect ZNDC to phone lines using two RJ45 cables. The RJ45 cables should be standard 8-wire cables. Connectors and crimps are included in the RJ45 Kit, or may be obtained independently. See Illustration 4.5B for connector wiring diagram. The RJ45 cables will plug into the wall via RJ31X jacks, which are installed by the phone company. There will need to be one RJ31X jack for each phone line.

Pins 1 and 8 (“R1” and “T1”) of the RJ31X jack connect to Network (or, House) phone lines. Pins 4 and 5 (“R” and “T”) connect to the Telco (or, external) phone lines. When nothing is plugged into the jack, shorting bars inside the jack will connect the incoming Telco lines to the Network Lines.

When the ZNDC is connected, the RJ45 plug will open the shorting bars inside the jack, allowing the phone lines to run from the Telco lines, through the ZNDC, and out to the Network. When the ZNDC needs to send an event, it will “seize” the phone line by disconnecting the Telco signals from the Network. It will restore the connection when the event reporting is complete.

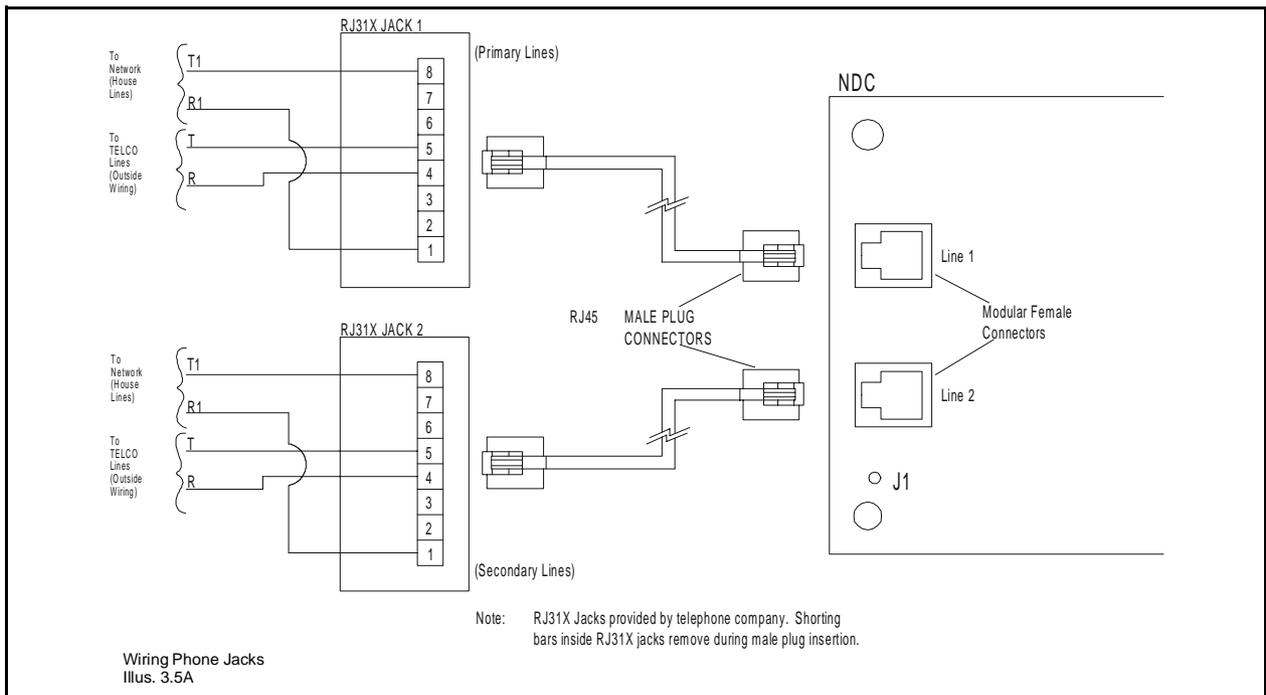


Figure No. 3.5A

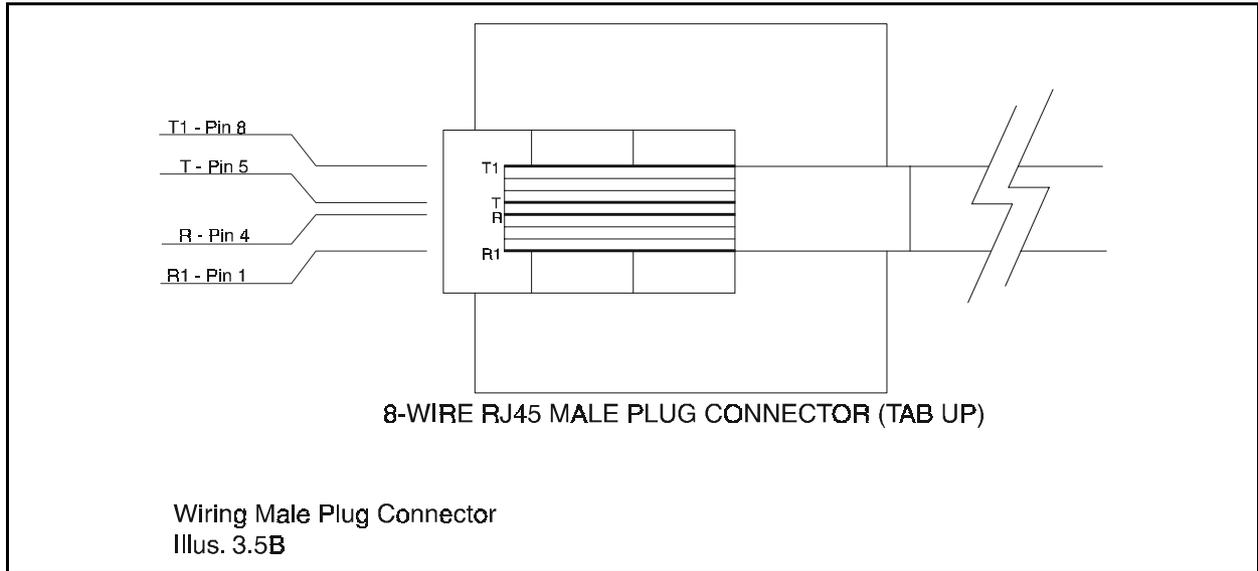


Figure No. 3.5B

3.6 Connecting to the PC

A PCI cable is included with the Installation kit. At one end of the rainbow ribbon cable is a 10-pin, female connector that hooks into the PCI port on the ZNDC. The other end is a female DB9 connector that connects to one of the COM ports on the back of the PC.

Most PCs will have two COM ports on the back, marked 1 and 2. Some PCs have more, but the ZNDC has been configured to use only COM 1 or 2.

If you have to use an extension cable between the PCI cable and the PC, use a straight-through, male to female DB9 connector. Do not use a Null Modem cable.

4. Programming

4.1 At the Panel

4.1.1 Classic 2000 Mk II

Scan ZNDC into the panel.

- ◆ First, go to the Programming menu by hitting the PROG key.
- ◆ Choose option 3, NETWORK.
- ◆ Choose option 1, SCAN. Once the ZNDC is scanned in, you're ready to go!

4.1.2 Sigma Mk II

Scan ZNDC into the panel.

- ◆ Start by holding the "Select" key and the "Enter" key down at the same time.
- ◆ Hit the "Select" key until the screen reads "nEt."
- ◆ Hit "Enter" to scan the network. Once the ZNDC is scanned in, you're ready to go!

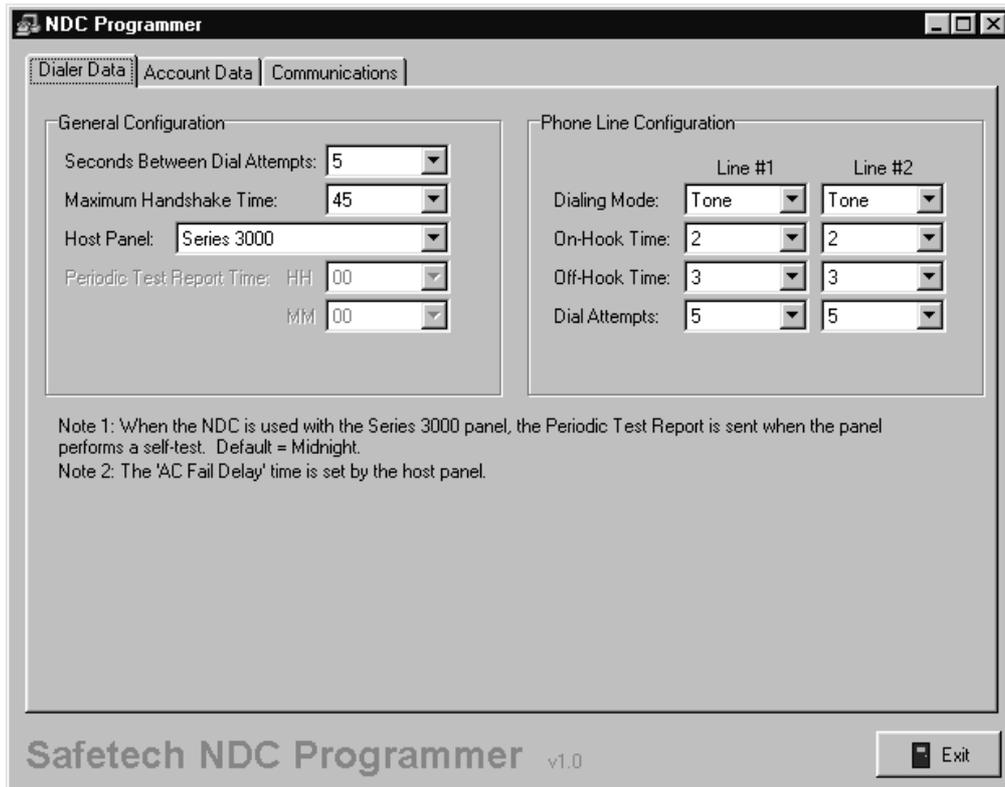
4.2 At the PC

The ZNDC is programmed using the PC-based configuration program, **ZNDC Programmer**.

4.2.1 ZNDC Data

The “General Configuration” panel allows you to select:

- ◆ Seconds Between Dial Attempts: If the ZNDC must make more than one attempt to reach the central station, this parameter controls how long the ZNDC waits before trying again. Default: 5 seconds.
- ◆ Maximum Handshake Time: This is the maximum amount of time the ZNDC will wait for a handshake to be acknowledged by the Central Station. Note: generally, there is no need to change this setting from the default. However, you might shorten it for test purposes only. Default: 45 seconds.
- ◆ Host Panel: Select either Classic 2000 Mk II or Sigma Mk II. Default: Classic 2000 Mk II.
- ◆ Periodic Test Report Time: This section is used in a Sigma Mk II application.* The Sigma Mk II panel will send out a periodic test report first at startup, and then at an appointed time later in the day, and each following day at the same time. With this feature, the time that the periodic test report is sent out is set at the ZNDC. Note: the time is in 24-hour mode, so 11:00 p.m. would be 23:00.



* When the ZNDC is used with the Classic 2000 Mk II panel, the Periodic Test Report is sent when the panel performs a self-test. The default time for the self-test is midnight; refer to the Classic 2000 Mk II User Manual for further details.

4.2.2 Account Data

The ZNDC offers selective reporting. In other words, you may set the ZNDC to report events to more than one central station. In addition, you may choose which events are reported to which station. In order to communicate with a central station, you must program the ZNDC with the:

- ◆ Account Number: This must be a four-digit number (0000-9999), and will be provided by the central station.
- ◆ Primary Phone Number: This is the number of the central station. You may use up to 32 characters. The number may include a “,” (comma) to delay for two seconds. This is useful if, for example, you need to route the call through a PBX system. If your phone line supports the “call waiting” feature, you should disable it by prepending a “*70” for tone dialing, or a “1170” for pulse dialing.
- ◆ Secondary Phone Number: This is a secondary number at the same central station, and will be used as back up in case the primary phone number is somehow disabled.
- ◆ Reporting Format: Only “Contact ID” is offered.

The screenshot shows the 'Safetech NDC Programmer v1.0' window with the 'Account Data' tab selected. The window is divided into two main sections for 'Account 1' and 'Account 2'. Each section has the following fields and options:

- Account 1:**
 - Account Number: 1111
 - Primary Phone Number: 9,8940441
 - Secondary Phone Number: (empty)
 - Reporting Format: Contact ID
 - What To Report: Alarms, Troubles, Supervisories, Resets, Tests
- Account 2:**
 - Account Number: 2222
 - Phone Number: 9,8940441
 - Secondary Phone Number: (empty)
 - Reporting Format: Contact ID
 - What To Report: Alarms, Troubles, Supervisories, Resets, Tests

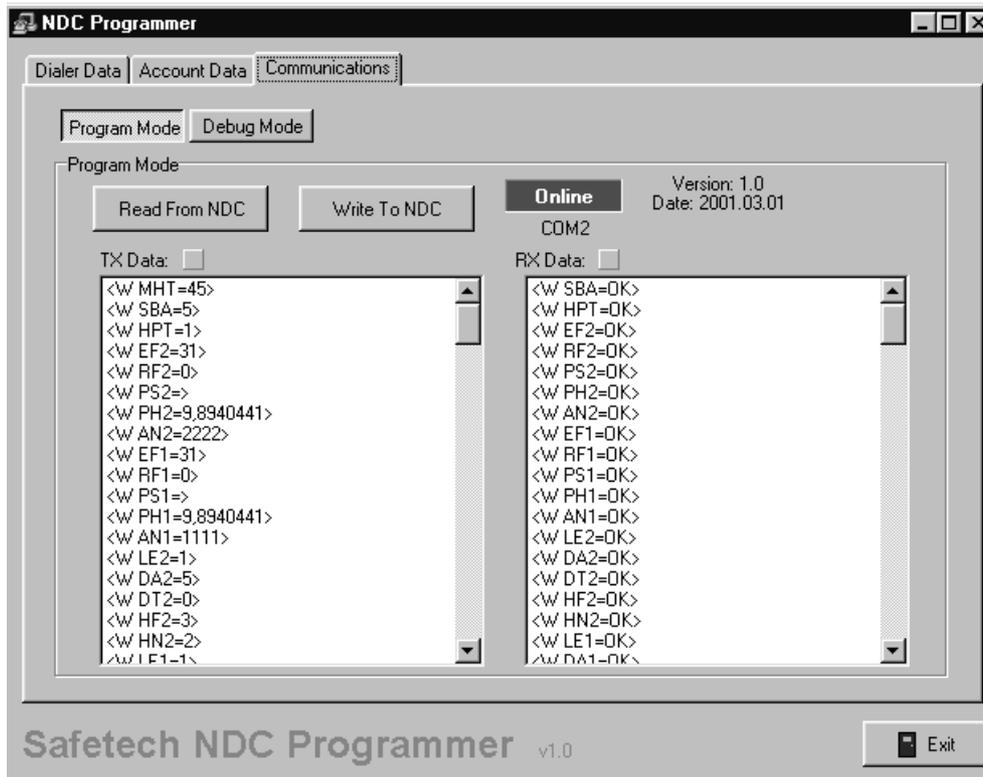
At the bottom of the window, there is an 'Exit' button and the text 'Safetech NDC Programmer v1.0'.

4.2.3 Communications

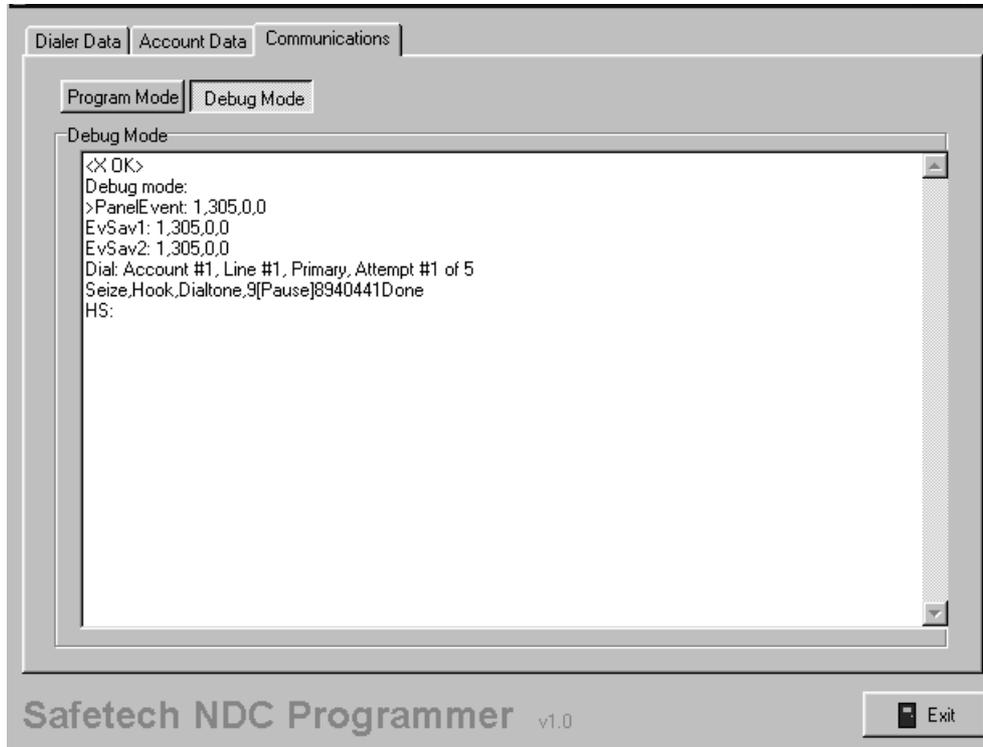
The Communications tab provides the communication forum between the ZNDC and ZNDC Programmer. Communications may be viewed in one of two modes: Program or Debug.

Program Mode has the following features:

- ◆ Read From ZNDC: allows you to import previously programmed configuration and account data from the ZNDC to the ZNDC Programmer. This is especially useful if ZNDC Programmer is closed and re-opened, resetting configuration data to defaults and clearing all account data.
- ◆ Write To ZNDC: allows you to transfer configuration and account data from ZNDC Programmer to the ZNDC.
- ◆ Online: shows whether or not you are "online," or connected, to the ZNDC. Once you have gone online, it will also display the ZNDC's firmware version and release date next to this box.
- ◆ COMX: indicates the communication port on the PC to which the ZNDC is connected. The ZNDC may be hooked to either COM1 or COM2. This option may be changed at the Programmer by clicking just below "Online," directly on top of the "COMX." The communications between the PC and ZNDC requires a PCI cable, connected between the COM port on the computer and the "PCI" port on the ZNDC (installed with the cable flowing toward the outside edge of the PCB).
- ◆ "TX Data" and "RX Data": show the messages as sent to and received from the ZNDC.



Debug mode is basically a running commentary on what is happening at the ZNDC. It reports dialing attempts, as well as panel events. To interpret the event codes, see Section 6.2.



5. Operation

5.1 "Comm Test" Switch

The "Comm Test" switch provides a way to manually test the operation of the ZNDC. When the switch is pressed, the unit will attempt to send a "Manual Test Report" event to the central station (event code 601). Test reports (whether manual or periodic) are sent on alternating phone lines. That is, if one test report is sent via line #1, the next will be sent via line #2.

5.2 Ademco Contact ID Protocol Notes

5.2.1. Handshake

The Contact ID protocol expects a dual-tone handshake (1400Hz for 100ms, 0Hz for 100ms, and 2300Hz for 100ms). If the ZNDC does not receive a handshake within 8 seconds after the last digit of the phone number has been dialed, it will hang up and swap lines.

5.2.2 Event Format

An event is sent using DTMF tones (100ms per digit: 50ms on, 50ms off) in the following format:

ACCT MT QXYZ GG CCC S

ACCT = 4 digit account number

MT = message type (always "18")

Q = event qualifier ("1" = new event, "3" = restoral, "6" = previous event)

XYZ = event code

GG = group number (Classic 2000 Mk II uses this for the "loop number")

CCC = zone or sensor number (Classic 2000 Mk II uses this as the device address within the loop specified in the "group" field)

S = checksum ((sum of all message digits + S) MOD 15 = 0)

5.2.3 Kissoff Tone

The ZNDC expects a kissoff tone of 1400Hz, lasting at least 400ms, followed by 250ms of silence. If the ZNDC doesn't detect the kissoff tone, it will resend the event. Events will continue to be sent (event message plus kissoff) until the ZNDC has sent all the events in its queue.

5.3 Phone Line Usage

The ZNDC always attempts to call out on line #1 first. If line #1 has a fault or is disabled, line #2 will be selected. If both lines contain a fault, the ZNDC will alternate between lines. If the ZNDC dials out on a line and does not detect a handshake, it will try again. If the ZNDC sends an event message and is unable to detect a kissoff tone in four attempts, it will try again. When a certain number of consecutive failures occur, the ZNDC will switch lines. It will continue attempting to report the event(s) until it is successful.

5.4 Phone Line Supervision

When not reporting a message, the ZNDC continuously supervises the phone lines. It toggles between lines approximately every 30 seconds. Thus, a phone line fault (or fault restoral) may take up to a minute or so before it is recognized.

5.5 PC Programming Software Notes

Some notes regarding the PC Programming software (described in Section 4):

- ◆ Requires Windows 95 or later; Zeta Alarm Systems recommends using Windows 95C or 98SE.
- ◆ Switch between communications ports by clicking the “COMx” text beneath the “Online/Offline” box.
- ◆ Currently does not save data to disk; later versions may add this capability. If you need to modify the existing info in a ZNDC, read the data from the ZNDC, modify it, and write it back to the ZNDC.
- ◆ The “Debug Info” panel in the “Communications” tab may not be present in later versions; it is intended only as a debugging aid.

6. Troubleshooting

Note: Troubleshooting is easier when you have the diagnostic speaker installed.

6.1 Diagnostic Table

	Symptoms	Problem	Solution
1	Classic 2000 Mk II panel reports this message: "NDC EEPROM CORRUPT."	ZNDC has not yet been programmed.	This message will come up only the first time the ZNDC is hooked up, or after it has been reset to factory defaults. It basically means that the ZNDC has not been programmed to communicate with a PC or a receiver. This message will remain on the panel until you have written to the ZNDC, and the panel has been reset.
2	ZNDC attempts to dial, but no connection is made. Or, ZNDC sounds a series of clicks, but does not dial. The Trouble and Line Fault LEDs activate on the board, and a trouble is reported at the panel.	Wrong phone number or No phone number has been programmed in at all.	Go to your ZNDC_Prog programming software, to your Account Data tab. Enter in the correct phone number. Note: Some phone systems require the user to dial a '9' to pick up an outside line. If this is the case in your building, simply put a '9' followed by a ',' (comma) before the phone number. After entering the correct information into ZNDC_Prog, write to the ZNDC.
3	ZNDC is connected, but will not go Online with ZNDC_Prog. PC reports this message: "Trouble writing to ZNDC." ZNDC may also exhibit the same symptoms as mentioned above.	Wrong COM port. COM port disconnected. Wrong or damaged PCI cable.	Make sure the PCI cable that came with the ZNDC is connected to the PC at either COM 1 or COM 2. (Some computers come with more COM ports, but the ZNDC can be programmed only for ports 1 and 2.) At the PC, make sure that the COM port set in ZNDC_Prog is the same as the port actually being used. To change the port in ZNDC_Prog, go to the Communications tab, and click once on the COM port listed just below the Offline / Online sign. If you have to use an extension cable between the PCI cable and the PC, do not use Null Modem cable. Instead, use a straight-through, M-to-F DB9 cable.
4	Everything seems to be working, but ZNDC won't go online with the Programmer.	COM port is occupied.	Check to see if any other programs (such as PC3K or PC1K) are open and using the COM port themselves. Note: the computer cannot share one COM port with two programs.

	Symptoms	Problem	Solution
5	Panel reports a Line Fault. The Trouble and Line Fault LEDs on the ZNDC light up. Cannot communicate to the Central Station.	Line disconnected, or has bad connection.	<p>There could be several causes to this problem. First of all, check your panel-related events with the two following charts.</p> <p>Second, check your lines to see that they haven't been disconnected either at the ZNDC, or at the wall jack. Examine the lines to see that they have not been cut or damaged.</p> <p>Examine the wall jacks to see that they have been wired properly. Security devices such as the ZNDC use an RJ31X wall jack.</p> <p>If just one line is having problems, swap the lines, and see if the problem follows the line. Note: you can disable a line in the Phone Line Configuration section in the ZNDC_Prog program, but the line will no longer be supervised.</p> <p>Also try your COMM TEST button on the ZNDC. See Section 5.1.</p> <p>The problem could also be at your Central Station, if the CS is not also reporting a Line Fault.</p> <p>If none of the above suggestions work, the problem may be the ZNDC. In this case, please call Zeta Alarm Systems for Tech Support.</p>
6	ZNDC won't scan into panel.	Panel software is not current. Network wiring is damaged, disconnected, or not configured correctly.	<p>Older revisions of panel software do not support the ZNDC. The Classic 2000 Mk II panel must have at least v1.4 to support the ZNDC, and the Sigma Mk II must have at least v3.1. Verify the version at the panel; then check with Zeta Alarm Systems for the latest revision.</p> <p>If your software is current, check the network wiring. Make sure the "+" and "-" lines are not crossed. Make sure the ZNDC is powered. Verify network connection at panel.</p>

	Symptoms	Problem	Solution
7	This message shows up at the panel: "Report Failure."	ZNDC cannot communicate with the Central Station.	<p>Verify the configuration at the Central Station. Make sure it is using Contact ID as the reporting format. Also make sure that it is using the proper Handshaking and Kissoff configurations. See section 5.2.</p> <p>At the PC, make sure the phone number to the Central Station is correct.</p> <p>At the ZNDC, listen with the speaker to verify that the ZNDC is dialing and making a connection.</p>

6.2 ZNDC-Related Panel Events

6.2.1 Classic 2000 Mk II

Type	Event Text	Description
Trouble	ZNDC Trouble	General ZNDC trouble (Network Comm Trouble, 24V Trouble, 12V Trouble, or VREF1 Trouble)
Trouble	ZNDC Phone Line #1 Fault	A fault was detected on line ZNDC phone line #1
Trouble	ZNDC Phone Line #2 Fault	A fault was detected on line ZNDC phone line #2
Trouble	ZNDC Phone Line #1 Report Failure	The ZNDC was unable to report an event on line #1 within the programmed number of attempts
Trouble	ZNDC Phone Line #2 Report Failure	The ZNDC was unable to report an event on line #2 within the programmed number of attempts
Trouble	ZNDC EEPROM Corrupt Data Set To Defaults	The ZNDC's programming has been lost, and reset to factory defaults. The user needs to re-program the ZNDC.
Status	ZNDC Trouble Restored	General ZNDC trouble restored
Status	ZNDC Phone Line #1 Fault Restored	The fault on line ZNDC phone line #1 was restored
Status	ZNDC Phone Line #2 Fault Restored	The fault on line ZNDC phone line #2 was restored

6.2.2 Sigma Mk II

Code	Event Text	Description
75	ZNDC Line #1 FailureTo Report	The ZNDC was unable to report an event on line #1 within the programmed number of attempts
76	ZNDC Line #2 FailureTo Report	The ZNDC was unable to report an event on line #2 within the programmed number of attempts
77	ZNDC Line #1 Fault	A fault was detected on line ZNDC phone line #1
78	ZNDC Line #2 Fault	A fault was detected on line ZNDC phone line #2
79	ZNDC Trouble	General ZNDC trouble (Network Comm Trouble, 24V Trouble, 12V Trouble, VREF1 Trouble, or EEPROM Corrupted)

7. Reporting

The ZNDC is capable of reporting the following events:

Event Code (1)	Qualifier	Group #	Contact #	Event Description	Sigma Mk II	Classic Mk II
110	1	Loop	Address	Fire Alarm (all types)	X	X
113	1	Loop	Address	Waterflow Alarm	X	X
200	1	Loop	Address	Supervisory Event	X	X
300	1 / 3	0	0	System Trouble / Restoral	X	X
301	1 / 3	0	0	AC Fail Trouble / Restoral	X	X
305	1	0	0	System Reset	X	X
306	1	0	0	Panel Programming Changed	X	
310	1 / 3	0	0	Ground Fault Trouble / Restoral	X	X
311	1 / 3	0	0	Battery Trouble / Restoral	X	X
321	1 / 3	0	0	NAC1 Trouble / Restoral	X	X
322	1 / 3	0	0	NAC2 Trouble / Restoral	X	X
326	1 / 3	0	0	NAC3 Trouble / Restoral		X
327	1 / 3	0	0	NAC4 Trouble / Restoral		X
331	1 / 3	Loop	0	SLC Loop Trouble / Restoral		X
333	1 / 3	0	Address	Network Trouble / Restoral	X	X
351	1 / 3	0	0	Phone Line #1 Trouble / Restoral	X	X
352	1 / 3	0	0	Phone Line #2 Trouble / Restoral	X	X
354	1	0	Line	Failure To Communicate	X	X
370	1	0	Zone	Loop Trouble	X	
373	1 / 3	Loop	Address	Device Trouble / Restoral		X
401	1	0	0	Panel Reset	X	X
601	1	0	0	Manual Test Report	X	X
602	1	0	0	Periodic Test Report (1)	X	X
604	1 / 3	0	0	Drill Test Start / Stop	X	X
607	1 / 3	0	0	Walk Test Start / Stop	X	X
627	1 / 3	0	0	Panel Off-line		X

Where:

Qualifier "1" = New Event

Qualifier "3" = Restoral (Classic 2000 Mk II only)

Loop = Loop Number (0 = System Devices, 1-13 = SLC Devices) (Classic 2000 Mk II only)

Address = Address Of Device Within Loop (000-127) (Classic 2000 Mk II only)

Zone = Input Zone (01-20) (Sigma Mk II only)

Line = Phone Line Number (1 or 2)

Notes:

1. An Event Code is what should show up at the Central Station.
2. An ZNDC Connected to an Sigma Mk II sends a PeriodicTest Report every 24 hours; an ZNDC connected to an Classic 2000 Mk II sends a Periodic Test Report when the host panel performs it's "AutoTest."

Appendix A: Mounting Template

