R A D I O N I C S

Omegalarm Zone Expansion

D8128 OctoPOPIT Module
Operation and Installation Manual

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1. Introduction

The D8128 OctoPOPIT Module is an accessory for the Radionics Zone Expansion (ZONEX) concept. The OctoPOPIT Module combines the features of the POPEX and POPIT Modules, and provides eight supervised loops for a D8112G Control/Communicator zone. Sixteen OctoPOPITs can be connected to the D8112G (eight to each Zone Expander terminal), providing as many as 126 additional points of protection to the security system. An unlimited number of detection devices can be connected to each OctoPOPIT sensor loop, however only *point* annunciation is available for each loop.

OctoPOPIT application programs are developed using the Radionics D5100 Bar Code Programmer containing the 8112:AUX product handler (see 8112:AUX Program Entry Guide). The Control/Communicator used for the ZONEX system must be of the D8112"G" series. *The OctoPOPIT only functions with D8112"G" series Control/Communicators.* The D8112G series control/communicators contain the ZONEX firmware, and expanded memory for custom ZONEX text displays on the Radionics Alpha Command Center. (Custom Alpha text for each expansion point can be programmed with the 8112:PTEXT product handler.) Each OctoPOPIT Module is supplied with an 8112 ZONEX System Program/Account Record Sheet, used to record both the ZONEX subhandler program file and the physical location of each OctoPOPIT Module.

The OctoPOPIT Module is U.L. listed for Local or Police Connected Burglary Alarm, Central Station Burglary Alarm, and Household Burglary Alarm applications. The D8128 is also suitable for fire *supervisory* applications, such as D192 Bell Module trouble supervision, sprinkler supervision, and valve tamper protection. (The OctoPOPIT Module is *not* suitable for fire initiation applications, such as smoke and heat detector loops.) Several enclosures are available to house the OctoPOPIT: the D8103, the D8108A, and the D8109. See the UL Applications in the Specifications section of this manual to determine the appropriate enclosure for the application.

2. Operation

Each OctoPOPIT Module is assigned to report to a D8112G Control/Communicator "master zone." The OctoPOPIT can transmit several sensor circuit conditions to the D8112G, such as sensor loop alarm, sensor loop trouble, sensor loop open, sensor loop shorted, sensor loop normal, missing OctoPOPIT, and extra OctoPOPIT. The D8112G "master zone" code program (see the *8112:MAIN Program Entry Guide*) determines the system response to each of these OctoPOPIT sensor circuit conditions. When an event occurs on an OctoPOPIT, the Alpha sequences through displays which indicate the type of event.

OctoPOPIT Configurations
Two configurations: *horizontal* (Figure1) and *vertical* (Figure 3) are used to *organize* OctoPOPIT points of protection. Both modes provide the ZONEX system maximum of 126 points of protection. The only difference between the horizontal and vertical modes is the location of the two *DO NOT ENABLE* areas. For ease of installation, Radionics recommends the use of the **horizontal** mode for OctoPOPIT applications.

The I.D. codes which appear in Figures 1 and 3 indicate the master zone assignment and expansion point of each OctoPOPIT, and are used to cross-reference the OctoPOPIT Module to an event displayed on the Alpha Command Module. For example, in the I.D. code *ZN105*, "ZN1" indicates that the OctoPOPIT is assigned to master zone 1 of the D8112G Control/Communicator, and "05" indicates that the OctoPOPIT reports as expansion point #5.

ZN105

Master Zone ————⌐ ⌐———— Point of Protection (assigned to Master Zone)

HORIZONTAL MODE - OCTOPOPIT									
	D8112 MASTER ZONE 1	D8112 MASTER ZONE 2	D8112 MASTER ZONE 3	D8112 MASTER ZONE 4	D8112 MASTER ZONE 5	D8112 MASTER ZONE 6	D8112 MASTER ZONE 7	D8112 MASTER ZONE 8	
Master Zone Assignment	9 10 11	9 10 ·	9 · 11	9 · ·	· 10 11	· 10 ·	· · 11	· · ·	POINT OF PROTECTION (SENSOR LOOP) ENABLES
ZONEX 1 (D8112G TERMINAL 28)	ZN 101	ZN 201	ZN 301	ZN 401	ZN 501	ZN 601	ZN 701	ZN 801	1
	ZN 102	ZN 202	ZN 302	ZN 402	ZN 502	ZN 602	ZN 702	ZN 802	2
	ZN 103	ZN 203	ZN 303	ZN 403	ZN 503	ZN 603	ZN 703	ZN 803	3
	ZN 104	ZN 204	ZN 304	ZN 404	ZN 504	ZN 604	ZN 704	ZN 804	4
	ZN 105	ZN 205	ZN 305	ZN 405	ZN 505	ZN 605	ZN 705	ZN 805	5
	ZN 106	ZN 206	ZN 306	ZN 406	ZN 506	ZN 606	ZN 706	ZN 806	6
	ZN 107	ZN 207	ZN 307	ZN 407	ZN 507	ZN 607	ZN 707	ZN 807	7
	ZN 108	ZN 208	ZN 308	ZN 408	ZN 508	ZN 608	ZN 708	DO NOT ENABLE	8
ZONEX 2 (D8112G TERMINAL 27)	ZN 109	ZN 209	ZN 309	ZN 409	ZN 509	ZN 609	ZN 709	ZN 809	1
	ZN 110	ZN 210	ZN 310	ZN 410	ZN 510	ZN 610	ZN 710	ZN 810	2
	ZN 111	ZN 211	ZN 311	ZN 411	ZN 511	ZN 611	ZN 711	ZN 811	3
	ZN 112	ZN 212	ZN 312	ZN 412	ZN 512	ZN 612	ZN 712	ZN 812	4
	ZN 113	ZN 213	ZN 313	ZN 413	ZN 513	ZN 613	ZN 713	ZN 813	5
	ZN 114	ZN 214	ZN 314	ZN 414	ZN 514	ZN 614	ZN 714	ZN 814	6
	ZN 115	ZN 215	ZN 315	ZN 415	ZN 515	ZN 615	ZN 715	ZN 815	7
	ZN 116	ZN 216	ZN 316	ZN 416	ZN 516	ZN 616	ZN 716	DO NOT ENABLE	8

NOTE: Numbers in shaded areas indicate OctoPOPIT switches which are ON.
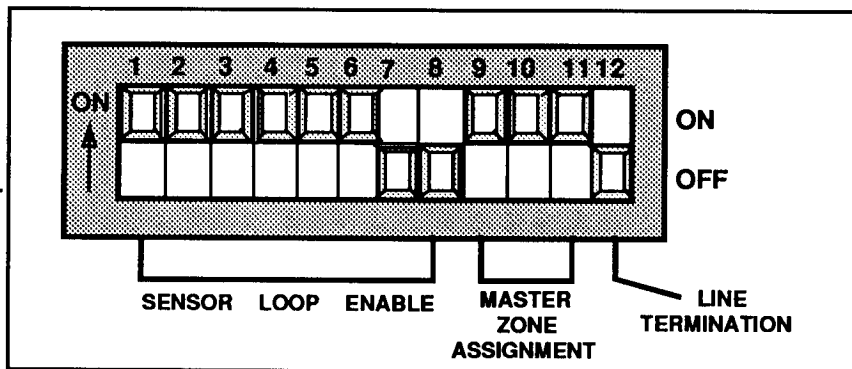
Figure 1: HORIZONTAL MODE - OCTOPOPIT MODULE

Figure 2: OCTOPOPIT SWITCH BLOCK

VERTICAL MODE - OCTOPOPIT									
ZONEX 1 (D8112G TERMINAL 28)				ZONEX 2 (D8112G TERMINAL 27)					
D8112 MASTER ZONE 1	D8112 MASTER ZONE 2	D8112 MASTER ZONE 3	D8112 MASTER ZONE 4	D8112 MASTER ZONE 5	D8112 MASTER ZONE 6	D8112 MASTER ZONE 7	D8112 MASTER ZONE 8		
Master Zone Assignment 9 10 11	9 - 11	- 10 11	- - 11	9 10 11	9 - 11	- 10 11	- - 11		
ZN 101	ZN 201	ZN 301	ZN 401	ZN 501	ZN 601	ZN 701	ZN 801	1	
ZN 102	ZN 202	ZN 302	ZN 402	ZN 502	ZN 602	ZN 702	ZN 802	2	
ZN 103	ZN 203	ZN 303	ZN 403	ZN 503	ZN 603	ZN 703	ZN 803	3	
ZN 104	ZN 204	ZN 304	ZN 404	ZN 504	ZN 604	ZN 704	ZN 804	4	
ZN 105	ZN 205	ZN 305	ZN 405	ZN 505	ZN 605	ZN 705	ZN 805	5	
ZN 106	ZN 206	ZN 306	ZN 406	ZN 506	ZN 606	ZN 706	ZN 806	6	
ZN 107	ZN 207	ZN 307	ZN 407	ZN 507	ZN 607	ZN 707	ZN 807	7	
ZN 108	ZN 208	ZN 308	ZN 408	ZN 508	ZN 608	ZN 708	ZN 808	8	POINT OF PROTECTION (SENSOR LOOP) ENABLES
Master Zone Assignment 9 10 -	9 - -	- 10 -	- - -	9 10 -	9 - -	- 10 -	- - -		
ZN 109	ZN 209	ZN 309	ZN 409	ZN 509	ZN 609	ZN 709	ZN 809	1	
ZN 110	ZN 210	ZN 310	ZN 410	ZN 510	ZN 610	ZN 710	ZN 810	2	
ZN 111	ZN 211	ZN 311	ZN 411	ZN 511	ZN 611	ZN 711	ZN 811	3	
ZN 112	ZN 212	ZN 312	ZN 412	ZN 512	ZN 612	ZN 712	ZN 812	4	
ZN 113	ZN 213	ZN 313	ZN 413	ZN 513	ZN 613	ZN 713	ZN 813	5	
ZN 114	ZN 214	ZN 314	ZN 414	ZN 514	ZN 614	ZN 714	ZN 814	6	
ZN 115	ZN 215	ZN 315	ZN 415	ZN 515	ZN 615	ZN 715	ZN 815	7	
ZN 116	ZN 216	ZN 316	DO NOT ENABLE	ZN 516	ZN 616	ZN 716	DO NOT ENABLE	8	

NOTE: Numbers in shaded areas indicate OctoPOPIT switches which are ON.

Figure 3: VERTICAL MODE - OCTOPOPIT MODULE

3. Installation

Mounting and Wiring the OctoPOPIT

The D8128 OctoPOPIT module can be installed in the D8112G enclosure, or located up to 200 feet from the Control/Communicator with the use of a D8114 Quad Serial Output Module. (NOTE: For U.L. certificated systems, the OctoPOPIT Module must be mounted inside a tampered enclosure.) Since the OctoPOPIT contains the features of the POPEX Module, *no POPEX Module is required.* For proper OctoPOPIT module installation, follow the steps below, checking off each section as it is completed.

1) Align the D8128 Module with any of the four mounting locations (see Figure 4). Fasten the module in place with the three mounting screws provided.
2) Disable the D8112G Control/Communicator by connecting terminals 29 and 32 with a wire.
3) Connect D8112G terminal 4 to the OctoPOPIT "GND" terminal (see Figure 5).
4) Connect D8112G terminal 3 to the OctoPOPIT "AUX" terminal.
5) Connect D8112G terminal 31 to the OctoPOPIT "IN" terminal.
6) Connect the OctoPOPIT "ZONEX" terminal to D8112G terminal 27 or 28 (up to eight OctoPOPIT Modules can be connected to each D8112 zone expander terminal).
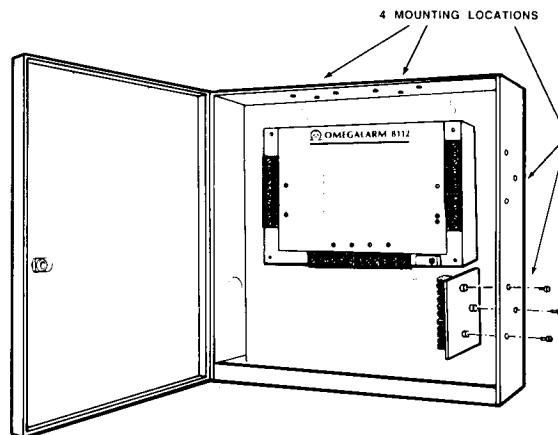7) Remove the wire between D8112G terminals 29 and 32.

√1 ☐

Figure 4: OCTOPOPIT INSTALLATION

Line Termination

√2 ☐ If no POPEX Modules are wired to the D8112G Zone Expander terminal, switch 12 on one OctoPOPIT must be switched ON for line termination. Only *one* OctoPOPIT connected to each D8112G Zone Expander terminal should have switch 12 ON. If the OctoPOPIT is mounted outside of the D8112G or adjacent enclosure, the cable connecting the OctoPOPIT and the D8112G must be shielded against AC induction.

Master Zone Assignments

√3 ☐ OctoPOPIT switches 9, 10, and 11 are used to select a D8112G master zone, as shown in Figures 1 (horizontal mode) and 3 (vertical mode). Numbers indicate the switches which must be placed in the ON position. Switches indicated with a dash (-) must be placed in the OFF position. Each Module connected to a ZONEX terminal should have a unique master zone switch setting.

Sensor Loops

√4 ☐ Switches 1 through 8 are used to activate each of the eight OctoPOPIT sensor loops (see the right-hand column of Figures 1 and 3). Setting a switch ON enables status reports for that sensor loop, and setting a switch OFF disables the sensor loop. Switch 1 corresponds to sensor loop 1, switch 2 corresponds to sensor loop 2, etc. Figure 2 displays the switch settings for an OctoPOPIT module in the horizontal mode assigned to master zone 1, with sensor loops 1 through 6 enabled. If more than one OctoPOPIT Module is assigned to the same master zone, the sensor loops must be enabled *sequentially. Sensor loops within an enabled block must be programmed and terminated with an end-of-line resistor even if they are not used.* Switch 8 must be OFF for those locations marked *DO NOT ENABLE* in Figures 1 and 3.

Programming Note: If all 126 points of protection are used in the horizontal mode, *2.12 Z8POINTS* in the ZONEX sub-handler program file should be programmed with a **15**, since the highest numbered point of protection is ZN815.

The OctoPOPIT can supervise an unlimited number of detection devices on each two-wire sensor loop, including normally-open devices wired in parallel, normally-closed devices wired in series, or a combination of devices wired in parallel and series. Open, closed, and normal circuit conditions can be detected and transmitted to the D8112G. A system cannot be normally armed if any of the sensor loops are faulted. (A system with loop faults can be *force-armed,* however.) Each OctoPOPIT sensor loop shares a common terminal with one other sensor loop on the Module, and must be terminated with a **1000 ohm** end-of-line resistor: Radionics Model #D105BL, or #D105FL (for fire supervisory applications).

IMPORTANT: Radionics recommends the use of twisted-pair wire for the sensor loops in all OctoPOPIT installations. When using long sensor loop wire runs, the cable must be shielded against AC induction. If a noisy or unstable environment is suspected, shielded cable is recommended.
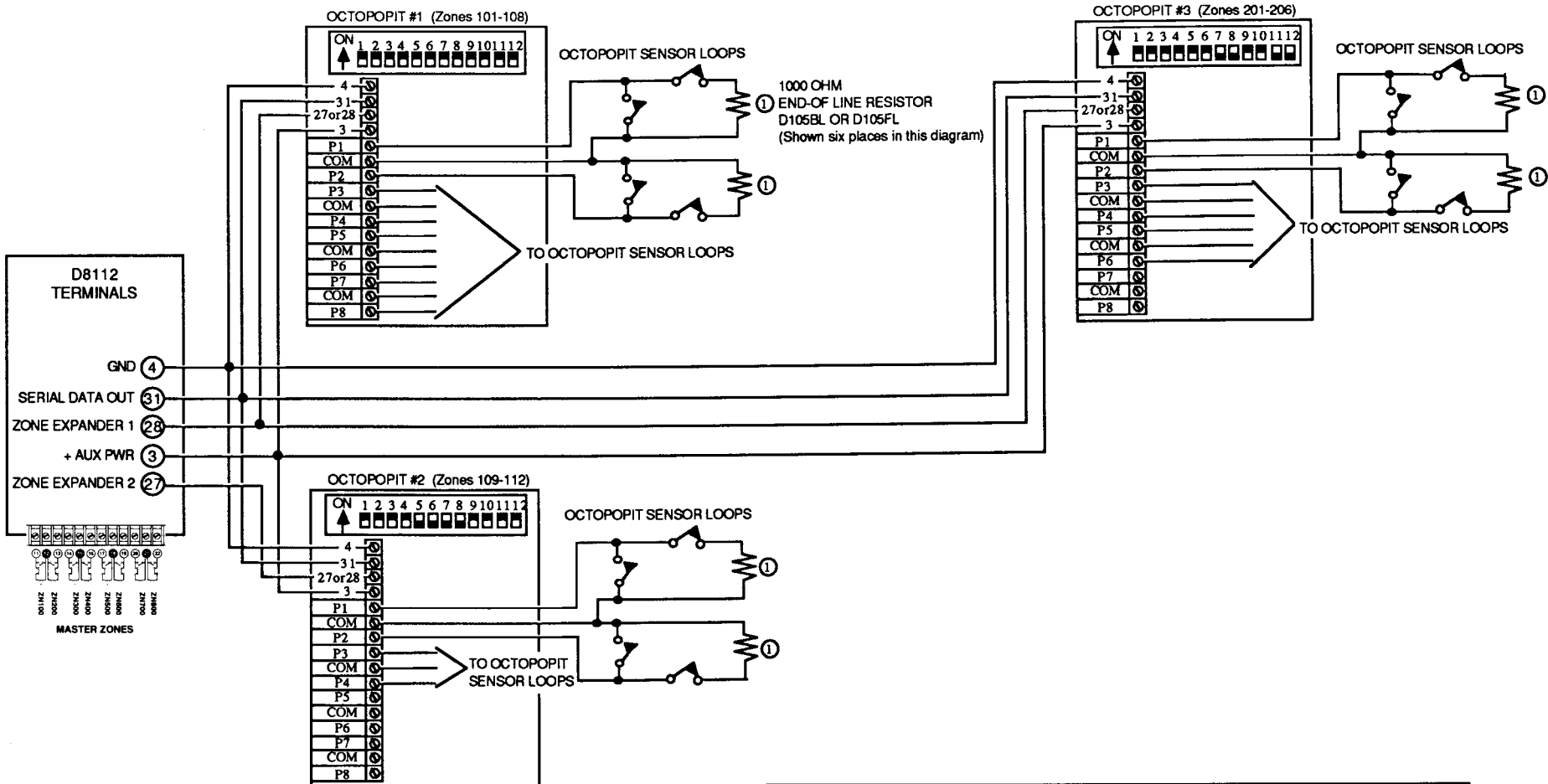
Figure 5 shows a ZONEX system configured in the horizontal mode, with zones 101 through 112 and zones 201 through 206 enabled. Zones 101 through 108 are assigned to OctoPOPIT #1, zones 109 through 112 are assigned to OctoPOPIT #2, and zones 201 through 206 are assigned to OctoPOPIT #3.

Figure 5: HORIZONTAL MODE INSTALLATION EXAMPLE

4. OctoPOPIT Displays

The current status of each OctoPOPIT Module is transmitted to the D8112G Control/Communicator, and is recorded in memory for future reference. The Alpha Command Center displays both the current status and the event memory with a special code.

Here is an example of an OctoPOPIT display:

ZN101S2

Memory of Previous Events: The Alpha displays a memory code to annunciate events which have taken place since the system was last armed.

1 = Alarm Memory	5 = Alarm Memory and Missing
2 = Trouble Memory	6 = Trouble Memory and Missing
3 = Alarm and Trouble Memory	7 = Alarm & Trouble Memory and Missing
4 = Missing Memory	

Current State of Sensor Loop:
O = Sensor circuit electrically open
S = Sensor circuit electrically closed (shorted)
(blank) = Sensor circuit electrically normal
M = Missing OctoPOPIT (Module programmed to be in system, but not responding to polling)
X = Extra OctoPOPIT (Module responding to polling, but not programmed to be in the system)

OctoPOPIT Expansion Point: This is the identification number of the OctoPOPIT transmitting the event.

Master Zone Number: The D8112G master zone number assigned to the OctoPOPIT.

Zone: This identifies the display as an OctoPOPIT status display.

When an event occurs, the OctoPOPIT sends a signal to the Control/Communicator. The D8112G decodes the event signal, displays an event status code, and initiates the appropriate system response. The Alpha display contains two types of information: programmable and standard (non-programmable). Instructions for programming Alpha Command Center displays are found in the *8112:MAIN Program Entry Guide* (Program Items 105 through 120) and the *8112:PTEXT Program Entry Guide.*

Alarm Conditions
When an event occurs in the system (an open or shorted loop) that the D8112G interprets as an alarm, the system initiates an alarm response, and the Alpha sequences through the following displays:

ALARM WAREHSE

Display programmed in 8112:MAIN.

Standard D8112G alarm display.

ZN102S1 MOTION#2

Display programmed in 8112:PTEXT.

Standard status code for OctoPOPIT point of protection #102.

Trouble and Fault Conditions
When a loop fault occurs, the system initiates a response to the condition. Depending upon zone programming, the system may show the following on the Alpha display (rows of stars separate displays pertaining to individual points of protection):

FAULTED INTRMOTN

Display programmed in 8112:MAIN.

Standard display indicating a faulted condition exists on this zone.

ZN102S1 MSTRBDRM

Display programmed in 8112:PTEXT

Standard status code for OctoPOPIT point of protection #102.

★★★★★★★★★★★★★ (Row of stars.)

When a loop trouble occurs, the following displays can appear on the Alpha (rows of stars separate displays pertaining to individual points of protection):

SERVICE GLASSBRK

Display programmed in 8112:MAIN

Standard display indicating a trouble condition exists on this zone.

ZN301S1 PATIODR

Display programmed in 8112:PTEXT

Standard status code for OctoPOPIT point of protection #301.

★★★★★★★★★★★★★ (Row of stars.)

NOT READY TO ARM   Standard display indicating an abnormal loop condition.

5. Central Station Reports

The OctoPOPIT does not affect D8112G Control/Communicator standard central station reports. When an OctoPOPIT Module initiates an alarm or trouble report, the D8112G transmits the message indicating the D8112 master zone tripped (if Program Item *25 ExT/R* is Yes in the 8112:MAIN program). Two OctoPOPIT reports to the central station (in addition to alarm, trouble, and restoral reports for each master zone) are supported.

• TROUBLE ZONE D indicates a "missing" OctoPOPIT condition.

• RESTORAL ZONE D indicates that a "missing" OctoPOPIT condition has been resolved.

These reports are followed by a "TROUBLE ZONE #" or "RESTORAL ZONE #" report, which indicates the master zone assignment of the missing OctoPOPIT.

With Modem II format communications, the D6500 can receive reports from specific points. With BFSK and Pulse formats, point activity is only reported by Master Zone.

6. Local Status Test

While disarmed, the security system can be checked by entering "COMMAND 4 4" at the Alpha Command Center. This command also initiates a system walk test (described in the Alpha Command Center User's Guide) as part of the status test. Each point of protection is polled as the D8112G interrogates its eight master zones. The Alpha Command Center displays two small "bird feet" that "hop" across the screen to indicate that a master zone is under interrogation.

If the D8112G contains an event (either a current event or an event in memory), the "bird feet" display is cancelled, and the Alpha display shows the event held in memory (see the OctoPOPIT Displays section). Events begin to accumulate each time the system is armed. System events can be cleared from the D8112G memory by master arming and then disarming the system.

If a programmed point of protection does not respond to the polling interrogation, a "missing" OctoPOPIT condition is displayed (as shown in the OctoPOPIT Displays section). An "extra" OctoPOPIT display indicates that the ZONEX subhandler program file does not recognize an OctoPOPIT Module transmission. Press any key on the Alpha Command Center to end the test.

Missing and Extra OctoPOPIT Modules

"Missing" and "extra" OctoPOPIT conditions are typically caused by installation or programming errors. In a properly functioning system, all OctoPOPIT Modules which are installed in the system are assigned to the appropriate master zone in the ZONEX subhandler program file. Figure 6 illlustrates a system with eight points of protection (one OctoPOPIT) assigned to each of the first five master zones.

Figure 7 illustrates a system with OctoPOPIT points of protection assigned to five master zones in the ZONEX subhandler program file, and only *four* OctoPOPITs installed. A "missing" OctoPOPIT condition will be displayed when COMMAND 4 4 is entered in the Alpha. If the OctoPOPIT is assigned to a D8112G protective zone programmed for *controlled zone* response (burglary) and the D8112G is armed, the "missing" OctoPOPIT points of protection condition causes a system alarm. If the D8112G is disarmed, the system goes into a trouble condition. If the OctoPOPIT is assigned to a D8112G protective zone programmed for *24 hour* zone response (fire, panic, hold-up, etc.) the "missing" OctoPOPIT indicates a trouble condition.

PROGRAMMED		INSTALLED
2.5 Z1POINTS	8	MASTER ZONE 1
2.6 Z2POINTS	8	MASTER ZONE 2
2.7 Z3POINTS	8	MASTER ZONE 3
2.8 Z4POINTS	8	MASTER ZONE 4
2.9 Z5POINTS	8	MASTER ZONE 5
2.10 Z6POINTS	00	
2.11 Z7POINTS	00	
2.12 Z8POINTS	00	

Figure 6: OPERATIVE ZONEX SYSTEM

PROGRAMMED		INSTALLED	
2.5 Z1POINTS	8	MASTER ZONE 1	
2.6 Z2POINTS	8	MASTER ZONE 2	
2.7 Z3POINTS	8	MASTER ZONE 3	
2.8 Z4POINTS	8	MASTER ZONE 4	
2.9 Z5POINTS	8		← MISSING OCTOPOPI
2.10 Z6POINTS	00		
2.11 Z7POINTS	00		
2.12 Z8POINTS	00		

Figure 7: MISSING OCTOPOPIT

Figure 8 illustrates a system with OctoPOPIT points of protection assigned to four master zones, and *five* OctoPOPITs installed. An "extra" OctoPOPIT condition will be displayed when COMMAND 4 4 is entered at the Alpha. The "extra" OctoPOPIT condition is annunciated only through the Alpha Command Center, and does not initiate a report to the central station.

PROGRAMMED		INSTALLED	
2.5 Z1POINTS	8	MASTER ZONE 1	
2.6 Z2POINTS	8	MASTER ZONE 2	
2.7 Z3POINTS	8	MASTER ZONE 3	
2.8 Z4POINTS	8	MASTER ZONE 4	
2.9 Z5POINTS	00	MASTER ZONE 5	← EXTRA OCTOPOPIT
2.10 Z6POINTS	00		
2.11 Z7POINTS	00		
2.12 Z8POINTS	00		

Figure 8: EXTRA OCTOPOPIT

If OctoPOPIT points of protection are assigned to five master zones and five OctoPOPIT Modules are installed, but one OctoPOPIT has erroneous switch settings (Figure 9), both "missing" and "extra" OctoPOPIT conditions are displayed.

PROGRAMMED	INSTALLED	
2.5 Z1POINTS 8	MASTER ZONE 1	
2.6 Z2POINTS 8	MASTER ZONE 2	
2.7 Z3POINTS 8	MASTER ZONE 3	
2.8 Z4POINTS 8	MASTER ZONE 4	
2.9 Z5POINTS 8		← MISSING OCTOPOPIT
2.10 Z6POINTS 00		
2.11 Z7POINTS 00	MASTER ZONE 7	← EXTRA OCTOPOPIT
2.12 Z8POINTS 00		

Figure 9: ERRONEOUS SWITCH SETTING

If switch settings on two OctoPOPITs connected to the same ZONEX terminals erroneously assign both Modules to the *same* master zone (Figure 10), a "missing" OctoPOPIT condition is displayed (in this case for the missing OctoPOPIT that should be assigned to master zone 5).

PROGRAMMED	INSTALLED	
2.5 Z1POINTS 8	MASTER ZONE 1	
2.6 Z2POINTS 8	MASTER ZONE 2	
2.7 Z3POINTS 8	MASTER ZONE 3	
2.8 Z4POINTS 8	MASTER ZONE 4	
2.9 Z5POINTS 8		← MISSING OCTOPOPIT
2.10 Z6POINTS 8	MASTER ZONE 6	← TWO OCTOPOPITS
2.11 Z7POINTS 00		
2.12 Z8POINTS 00		

Figure 10: IDENTICAL SWITCH SETTINGS

If two OctoPOPITs are installed with the same switch settings, and there are no "missing" Modules (see Figure 11), the "extra" OctoPOPIT message will *not* be displayed when COMMAND 4 4 is entered, and the system will indicate that it is "ready to arm." If both OctoPOPITs are normal, however, a normal condition will be correctly reported.

PROGRAMMED	INSTALLED	
2.5 Z1POINTS 8	MASTER ZONE 1	
2.6 Z2POINTS 8	MASTER ZONE 2	
2.7 Z3POINTS 8	MASTER ZONE 3	
2.8 Z4POINTS 8	MASTER ZONE 4	
2.9 Z5POINTS 8	MASTER ZONE 5	
2.10 Z6POINTS 8	MASTER ZONE 6	← TWO OCTOPOPITS
2.11 Z7POINTS 00		
2.12 Z8POINTS 00		

Figure 11: EXTRA OCTOPOPIT INSTALLED

7. Troubleshooting Guide

This guide is provided to aid in correcting problems with installed OctoPOPIT Modules. To prevent problems from occuring, read all of the pertinent documentation (8112:MAIN and 8112:AUX Program Entry Guides, 8112:PTEXT Program Entry Guide if an Alpha display is used, and the previous sections of this manual), and verify that the product handlers are at the following revision levels (or higher):8112:MAIN **A7**, 8112:AUX **A8**, 8112:PTEXT **A5**.

If the Alpha Command Center *does not* display OctoPOPIT activity:

1) Verify 8112:MAIN product handler program item   *122 ExRAM* **YES**

2) Verify 8112:AUX product handler program item *2.1 ZONEX* **YES**

3) Verify that the revision level of the 8112:AUX product handler is **A8** or higher. If you are not sure what revision level of the 8112:AUX product handler was loaded into the panel:
   • Verify that your D5100 Programmer contains the 8112:AUX.A8 or higher product handler.
   • Copy the 8112:AUX file out of the D8112.
   • Re-Load the same 8112:AUX file into the D8112.
   • Be sure to perform a disable/restart on the D8112 (momentarily connect terminal 32 to terminal 29).
   Firmware revision17.07 of the D8112G Control/Communicator does not detect loop faults when programmed with 8112:AUX.A6. To determine the system firmware revision level, enter COMMAND 5 9 at the Alpha Command Center.

4) Verify the assignments of OctoPOPIT Modules to master zones in the 8112:AUX product handler program items *2.5 Z1Points* through *2.12 Z8Points.*

Missing and Extra OctoPOPIT Modules
If the Alpha Command Center displays a "missing OctoPOPIT" status code (Example: ZN101M6), or an "extra OctoPOPIT" status code (Example: ZN101X6):

1) Check the programming of horizontal or vertical mode in the 8112:AUX product handler program item *2.2 Hrzntl   (Yes/No)*

2) Verify that the appropriate vertical or horizontal switch setting chart was used (see Figures 1 and 3), and that both the OctoPOPIT master zone switches 9,10, and 11 (√3), and individual point of protection switches 1 through 8 (√4) are set correctly. If a switch is OFF and the D8112G is programmed for an *active* point of protection on that sensor loop, that loop is reported as "missing."

3) Verify that each OctoPOPIT connected to the same D8112 ZONEX terminal has a *unique* master zone switch setting (switches 9, 10, and 11).

4) Verify the assignments of OctoPOPIT Modules to master zones in the 8112:AUX product handler program items   *2.5 Z1Points*   through *2.12 Z8Points.* (NOTE: If all 126 points of protection are used in the horizontal mode, *2.12 Z8Points* must be programmed with a **15**.)

5) Verify that OctoPOPIT switch 12 is ON for only *one* Module connected to each ZONEX terminal (√2). If a D8125 POPEX Module is connected to the ZONEX terminal, *none* of the OctoPOPITs should have switch 12 ON.

6) Check the wiring of the OctoPOPIT Module to the D8112G Control/Communicator (√1, see Figure 5).

7) If *all* points on the ZONEX system are missing, verify that the points of protection labeled *DO NOT ENABLE* in Figures 1 and 3 are *OFF* (√4).

8) If further difficulties are encountered in a "missing" OctoPOPIT condition, replace the appropriate OctoPOPIT Module.

Additional Troubleshooting Tips
If you have determined that there are no missing or extra OctoPOPIT Modules, the system may be encountering one of the circumstances listed below:

1) If the system intermittently displays a trouble condition, and transmits Trouble Zone D and Restoral Zone D reports with the master zone number to the central station, check the wiring between the D8112G and the OctoPOPIT for high level AC inductance or spikes. Inspect the wiring for intermittent grounds and shorts, and determine if there is a strong R.F. source located nearby.

2) If problems are encountered while loading a file into the Control/Communicator, disconnect the wiring from D8112G Serial Data In and Serial Data Out terminals (30 and 31), and reload the file.

3) If the Alpha displays non-programmed information when a master zone is faulted, copy the 8112:PTEXT file for the non-expanded zone displaying the information, delete the information, and reload the file.

4) Certain revision 17.07 D8112G Control/Communicators may not detect OctoPOPIT faults even when all programming and wiring has been properly completed. Radionics has developed two solutions to this problem:

   • Restore all OctoPOPITs to a normal condition (close all doors and windows), and then disable and restart the system.

   • Fault an OctoPOPIT into a trouble condition (as determined by the master zone code). The Alpha Command Center will display the faulted condition, and the system will respond to the OctoPOPITs.

8. Specifications

Operating Voltage:
10.5 to 14 VDC supplied by the
D8112G Control/Communicator

Current: 50 mA

Sensor Loop Response Time: Approximately 1 second.
OctoPOPIT sensor loops are supervised with a 1000 Ω end-of-line resistor: Radionics model # D105BL, or #D105FL (for fire supervisory applications).

UL Applications
The enclosures required for specific UL or NFPA ZONEX system applications are listed below. The D8108A Attack-Resistant Enclosure meets or surpasses the requirements for all of these applications. Some applications (marked with an *) require the OctoPOPIT enclosure to be tampered. Refer to U.L. 681 "Installation and Classification of Mercantile and Bank Burglary Alarm Systems" for further details on installation requirements.

Application	Required Enclosure
†UL Household Fire Alarm /NFPA 74	D8103
UL Household Burglary Alarm	D8103
UL Local Burglary Alarm/Police Connected Burglary Alarm	D8108A*
UL Central Station Burglary Alarm Grade C	D8103*
UL Central Station Burglary Alarm Grades B & A	D8108A*
†UL Local Fire Alarm/NFPA 72A	D8109
†UL Central Station Fire Alarm/NFPA 71	D8109
†UL Electrically Activated Transmitter	D8109

†The D8128 is suitable for fire *supervisory* applications, such as D192 Bell Module trouble supervision, sprinkler supervision, and valve tamper protection. (The OctoPOPIT is *not* suitable for fire *initiation* applications, such as smoke and heat detector loops.)

R A D I O N I C S

D8112 Zonex System Program/Account Record Sheet

Account Name_____ **Account Number**_____

8112:AUX	File Name: 8112A:_____		Zonex Subhandler Program	
2.1 Zonex Yes or No	2.5 Z1 Points ____	2.8 Z4 Points ____	2.11 Z7 Points ____
2.2 Hrzntl Yes or No	2.6 Z2 Points ____	2.9 Z5 Points ____	2.12 Z8 Points ____
2.3 PText Yes or No	2.7 Z3 Points ____	2.10 Z6 Points ____	

NOTE: The "8126 Switches" column for each zone indicates settings for D8126 POPITs only.
In Horizontal Mode: POPITs 1–8 for each zone must be connected to POPEX #1 (terminal 28).
POPITs 9–16 for each zone must be connected to POPEX #2 (terminal 27).
In Vertical Mode: All POPITs for zones 1–4 must be connected to POPEX #1 (terminal 28).
All POPITs for zones 5–8 must be connected to POPEX #2 (terminal 27).

Switch Setting Code
– (dash) Switch OFF
(number) Switch ON

8112:PText Files

MASTER ZONE 1   File Name: 8112P:_____
Protection:_____
Notes:_____

D5100 Display	D1252 Display	PTEXT	8126 Switches Hrzntl	8126 Switches Vert	LOCATION
MSTR 1	ZN 100				
1 Z1	ZN 101		654321	654321	
2 Z1	ZN 102		-54321	-54321	
3 Z1	ZN 103		6-4321	6-4321	
4 Z1	ZN 104		--4321	--4321	
5 Z1	ZN 105		65-321	65-321	
6 Z1	ZN 106		-5-321	-5-321	
7 Z1	ZN 107		6--321	6--321	
8 Z1	ZN 108		---321	---321	
9 Z1	ZN 109		654321	654-21	
10 Z1	ZN 110		-54321	-54-21	
11 Z1	ZN 111		6-4321	6-4-21	
12 Z1	ZN 112		--4321	--4-21	
13 Z1	ZN 113		65-321	65--21	
14 Z1	ZN 114		-5-321	-5--21	
15 Z1	ZN 115		6--321	6---21	
16 Z1	ZN 116		---321	----21	

MASTER ZONE 2   File Name: 8112P:_____
Protection:_____
Notes:_____

D5100 Display	D1252 Display	PTEXT	8126 Switches Hrzntl	8126 Switches Vert	LOCATION
MSTR 2	ZN 200				
1 Z2	ZN 201		654-21	6543-1	
2 Z2	ZN 202		-54-21	-543-1	
3 Z2	ZN 203		6-4-21	6-43-1	
4 Z2	ZN 204		--4-21	--43-1	
5 Z2	ZN 205		65--21	65-3-1	
6 Z2	ZN 206		-5--21	-5-3-1	
7 Z2	ZN 207		6---21	6--3-1	
8 Z2	ZN 208		----21	--3-1	
9 Z2	ZN 209		654-21	654--1	
10 Z2	ZN 210		-54-21	-54--1	
11 Z2	ZN 211		6-4-21	6-4--1	
12 Z2	ZN 212		--4-21	--4--1	
13 Z2	ZN 213		65--21	65---1	
14 Z2	ZN 214		-5--21	-5---1	
15 Z2	ZN 215		6---21	6----1	
16 Z2	ZN 216		----21	-----1	

MASTER ZONE 3   File Name: 8112P:_____
Protection:_____
Notes:_____

D5100 Display	D1252 Display	PTEXT	8126 Switches Hrzntl	8126 Switches Vert	LOCATION
MSTR 3	ZN 300				
1 Z3	ZN 301		6543-1	65432-	
2 Z3	ZN 302		-543-1	-5432-	
3 Z3	ZN 303		6-43-1	6-432-	
4 Z3	ZN 304		--43-1	--432-	
5 Z3	ZN 305		65-3-1	65-32-	
6 Z3	ZN 306		-5-3-1	-5-32-	
7 Z3	ZN 307		6--3-1	6--32-	
8 Z3	ZN 308		---3-1	---32-	
9 Z3	ZN 309		6543-1	654-2-	
10 Z3	ZN 310		-543-1	-54-2-	
11 Z3	ZN 311		6-43-1	6-4-2-	
12 Z3	ZN 312		--43-1	--4-2-	
13 Z3	ZN 313		65-3-1	65--2-	
14 Z3	ZN 314		-5-3-1	-5--2-	
15 Z3	ZN 315		6--3-1	6---2-	
16 Z3	ZN 316		---3-1	----2-	

MASTER ZONE 4   File Name: 8112P:_____
Protection:_____
Notes:_____

D5100 Display	D1252 Display	PTEXT	8126 Switches Hrzntl	8126 Switches Vert	LOCATION
MSTR 4	ZN 400				
1 Z4	ZN 401		654--1	6543--	
2 Z4	ZN 402		-54--1	-543--	
3 Z4	ZN 403		6-4--1	6-43--	
4 Z4	ZN 404		--4--1	--43--	
5 Z4	ZN 405		65---1	65-3--	
6 Z4	ZN 406		-5---1	-5-3--	
7 Z4	ZN 407		6----1	6--3--	
8 Z4	ZN 408		-----1	---3--	
9 Z4	ZN 409		654--1	654---	
10 Z4	ZN 410		-54--1	-54---	
11 Z4	ZN 411		6-4--1	6-4---	
12 Z4	ZN 412		--4--1	--4---	
13 Z4	ZN 413		65---1	65----	
14 Z4	ZN 414		-5---1	-5----	
15 Z4	ZN 415		6----1	6-----	
16 Z4	ZN 416		-----1		

MASTER ZONE 5   File Name: 8112P:_____
Protection: _____
Notes:_____

D5100 Display	D1252 Display	PTEXT	8126 Switches Hrzntl	Vert	LOCATION
MSTR 5	ZN 500				
1 Z5	ZN 501		65432-	654321	
2 Z5	ZN 502		-5432-	-54321	
3 Z5	ZN 503		6-432-	6-4321	
4 Z5	ZN 504		--432-	--4321	
5 Z5	ZN 505		65-32-	65-321	
6 Z5	ZN 506		-5-32-	-5-321	
7 Z5	ZN 507		6--32-	6--321	
8 Z5	ZN 508		---32-	---321	
9 Z5	ZN 509		65432-	654-21	
10 Z5	ZN 510		-5432-	-54-21	
11 Z5	ZN 511		6-432-	6-4-21	
12 Z5	ZN 512		--432-	--4-21	
13 Z5	ZN 513		65-32-	65--21	
14 Z5	ZN 514		-5-32-	-5--21	
15 Z5	ZN 515		6--32-	6---21	
16 Z5	ZN 516		---32-	----21	

MASTER ZONE 6   File Name: 8112P:_____
Protection: _____
Notes:_____

D5100 Display	D1252 Display	PTEXT	8126 Switches Hrzntl	Vert	LOCATION
MSTR 6	ZN 600				
1 Z6	ZN 601		654-2-	6543-1	
2 Z6	ZN 602		-54-2-	-543-1	
3 Z6	ZN 603		6-4-2-	6-43-1	
4 Z6	ZN 604		--4-2-	--43-1	
5 Z6	ZN 605		65--2-	65-3-1	
6 Z6	ZN 606		-5--2-	-5-3-1	
7 Z6	ZN 607		6---2-	6--3-1	
8 Z6	ZN 608		----2-	---3-1	
9 Z6	ZN 609		654-2-	654--1	
10 Z6	ZN 610		-54-2-	-54--1	
11 Z6	ZN 611		6-4-2-	6-4--1	
12 Z6	ZN 612		--4-2-	--4--1	
13 Z6	ZN 613		65--2-	65---1	
14 Z6	ZN 614		-5--2-	-5---1	
15 Z6	ZN 615		6---2-	6----1	
16 Z6	ZN 616		----2-	-----1	

MASTER ZONE 7   File Name: 8112P:_____
Protection: _____
Notes:_____

D5100 Display	D1252 Display	PTEXT	8126 Switches Hrzntl	Vert	LOCATION
MSTR 7	ZN 700				
1 Z7	ZN 701		6543--	65432-	
2 Z7	ZN 702		-543--	-5432-	
3 Z7	ZN 703		6-43--	6-432-	
4 Z7	ZN 704		--43--	--432-	
5 Z7	ZN 705		65-3--	65-32-	
6 Z7	ZN 706		-5-3--	-5-32-	
7 Z7	ZN 707		6--3--	6--32-	
8 Z7	ZN 708		---3--	---32-	
9 Z7	ZN 709		6543--	654-2-	
10 Z7	ZN 710		-543--	-54-2-	
11 Z7	ZN 711		6-43--	6-4-2-	
12 Z7	ZN 712		--43--	--4-2-	
13 Z7	ZN 713		65-3--	65--2-	
14 Z7	ZN 714		-5-3--	-5--2-	
15 Z7	ZN 715		6--3--	6---2-	
16 Z7	ZN 716		---3--	----2-	

MASTER ZONE 8   File Name: 8112P: _____
Protection: _____
Notes:_____

D5100 Display	D1252 Display	PTEXT	8126 Switches Hrzntl	Vert	LOCATION
MSTR 8	ZN 800				
1 Z8	ZN 801		654---	6543--	
2 Z8	ZN 802		-54---	-543--	
3 Z8	ZN 803		6-4---	6-43--	
4 Z8	ZN 804		--4---	--43--	
5 Z8	ZN 805		65----	65-3--	
6 Z8	ZN 806		-5----	-5-3--	
7 Z8	ZN 807		6-----	6--3--	
8 Z8	ZN 808		■	---3--	
9 Z8	ZN 809		654---	654---	
10 Z8	ZN 810		-54---	-54---	
11 Z8	ZN 811		6-4---	6-4---	
12 Z8	ZN 812		--4---	--4---	
13 Z8	ZN 813		65----	65----	
14 Z8	ZN 814		-5----	-5----	
15 Z8	ZN 815		6-----	6-----	
16 Z8	ZN 816	*Not Used*	■		

SYSTEM NOTES: _____

_____

_____

_____

8112 ZONEX Worksheet

The following instructions are provided to define and record individual ZONEX points. The worksheet will help you determine if programming will be Horizontal or Vertical, how many POPEX modules are required (none are required if using a D8128 OctoPOPIT) and how many POPITs will be assigned to each zone, etc. On the reverse of this page is a blank worksheet.

PROTECTION	NUMBER OF POINTS	HORIZONTAL		VERTICAL		ZONES NEEDING POPITS
		ZONES NEEDED	ZONE ASGNMT	ZONES NEEDED	ZONE ASGNMT	
① FIRE	② 1	③ 1		④ 1	⑥ (100)	⑦ 0
PANIC	1	1		1	(200)	0
DELAY	1	1		1	(300)	0
IND. ZONE CONTROL	1	1		1	(400)	0
INSTANT PERIM.	23	3		2	(500, 600)	2
INTERIOR	11	2		1	(700)	1
TOTAL	38	⑤ 9 *		⑤ 7		3 **

Figure 1: WORK SHEET EXAMPLE

Define Your Points Of Protection

1. List the types of protection you are going to be installing (ie.; fire, panic, delay, etc.). See Figure 1 for an example.

2. Insert the **Number of Points** to be installed for each type of protection (for Instant Perimeter, count all doors and windows etc.).

3. Insert the number of **Horizontal Zones Needed** for the Number of Points listed. To do this, divide the number of Points by 8. Add an additional zone for any remainders.

4. Insert the number of **Vertical Zones Needed** for the Number of Points listed. To do this, divide the number of Points by 16.

5. Add the Total number of zones required for the Horizontal Mode then for the Vertical Mode.

   * If the is more than 8 (Horizontal Mode), an additional POPEX module will be needed.

6. Determine which mode will be used and assign Master Zones. In this example the Horizontal Mode is not used because an addional POPEX module would be needed. So the Vertical Mode will be used with a total of 7 Master Zones (100-700).

7. First, determine if POPIT modules are needed (If only one point is being used there is no need for any POPIT modules).

   Second, determine the number of POPIT modlues required for each type of protection (**one** OctoPOPIT can can take the place of **up to eight** POPIT modules). The total at the bottom reflects the number of POPITs needed for the Vertical mode.

   ** In the Vertical Mode, if the number of zones with POPIT modules is more than 4, an additional POPEX module will be needed (unless using OctoPOPITs).

Address POPITS

1. Using Label Sheet 79-04252-000 through 003, set the switches on each POPIT module (ie.: ZN 101 will have switches 654321 all ON).

2. Attach the appropriate label to each POPIT module.

Draw a Floorplan

1. Illustrate every point of protection onthe map with its appropriate three digit address (ie.; 501, 502 604, etc.). See Figure 2 for a sample drawing. In the sample, the points were assigned in a clock-wise manner starting at the D8112 panel.

2. Illustrate the approximate path of the Backbone(s). Backbones are used to connect all of the points of protection included in one master zone. In Figure 2 the Backbone connects all of the points belonging to Master Zone 700.

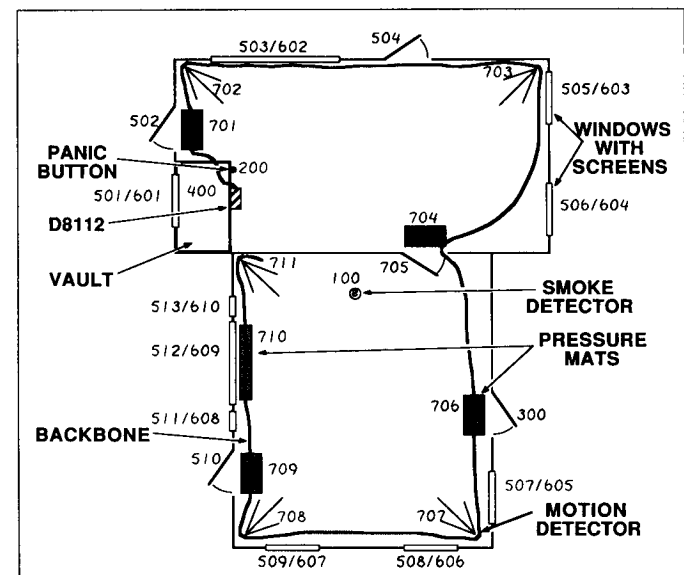## Fill In the 8112 ZONEX System Program/ Account Record Sheet

Figure 2: FLOOR PLAN EXAMPLE

PROTECTION	NUMBER OF POINTS	HORIZONTAL		VERTICAL		ZONES NEEDING POPITS
		ZONES NEEDED	ZONE ASGNMT	ZONES NEEDED	ZONE ASGNMT	
TOTAL						

Figure 3: WORK SHEET

Figure 4: FLOOR PLAN