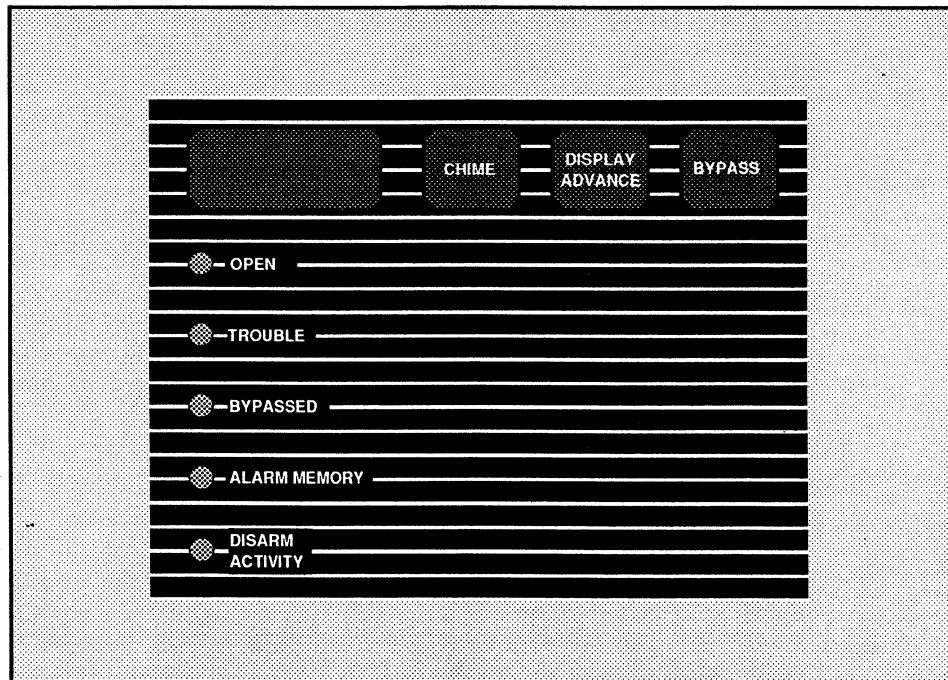


PinPoint System 128



Installation Manual



PinPoint System 128 Installation Manual

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INTRODUCTION

This Installation Manual is designed to give you the information necessary to install and test an Interactive Technologies PinPoint 128 System.

If you are not yet familiar with how to use the PinPoint System 128, do the following before proceeding:

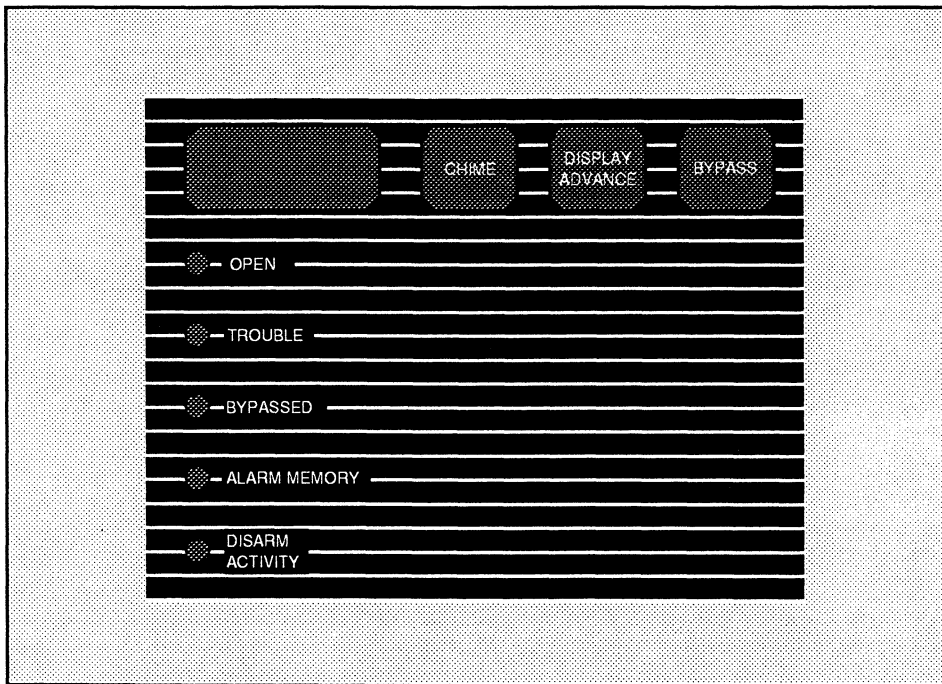
- A. Read and understand the PinPoint 128 User's Manual.
- B. Set up the components and practice all PinPoint operations, including:
 - 1. Program the Point Annunciators with one point for entry/exit delay.
 - 2. Program the PinPoint Interface.
 - 3. Arm and disarm the system. Observe entry/exit delays.
 - 4. Cause an alarm with both instant and delayed points.
 - 5. Perform a system reset.
 - 6. Activate a tamper condition in a Point Annunciator. Observe the LEDs on the Remote Control/Display.
 - 7. Bypass a point. Bypass a zone.
 - 8. Turn the chime feature on and off.

SYSTEM COMPONENTS

The PinPoint 128 makes it possible to convert any standard alarm control panel into an expanded system capable of annunciating or bypassing any protected point or zone. A conventional panel will typically not annunciate any more than the five to twelve protection loops and cannot identify individual sensors on a loop. When the PinPoint 128 System is added all individual sensors can be identified.

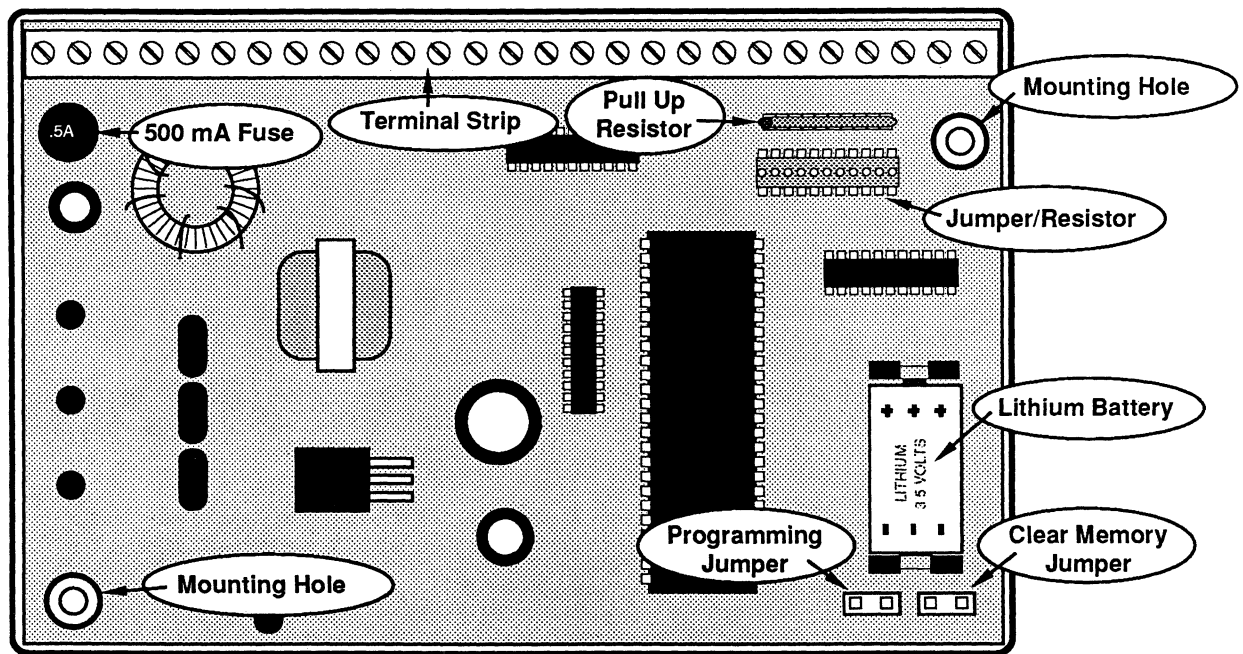
The PinPoint 128 system consists of the following items: One to four Remote Control/Displays (RC/D), PinPoint Interface Module (PPI), and any grouping of one to sixty-four Dual Point Annunciators (DPA).

REMOTE CONTROL/DISPLAY (RC/D)



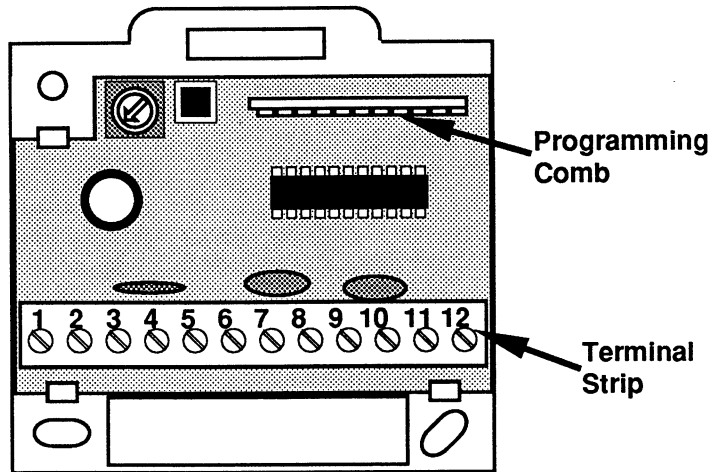
The PinPoint System 128 is operated by one or more (4 maximum) Remote Control/ Displays (RC/Ds) mounted next to the arming stations for the host alarm control panel. It is also used to display points which caused an alarm, are currently open, are bypassed, or indicate trouble.

PINPOINT INTERFACE (PPI)



The PPI is programmed to recognize what the PA is monitoring: fire detection, entry/exit door (delay), or a standard burglary opening. The PA's, with their own point identity numbers, constantly report to the PPI, which is usually mounted inside the host alarm control cabinet. The PPI does not control arming/disarming of the alarm system. That remains the job of the host alarm control panel, which receives information about the PA's from the PPI.

DUAL POINT ANNUNCIATOR (PA)

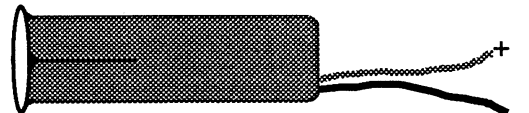


PinPoint is designed to operate with two types of PA's. One is a dual channel PA (shown above) which can monitor two points. The other is a self-contained magnetic switch with built-in PA electronics known as the Identipoint® (shown below).

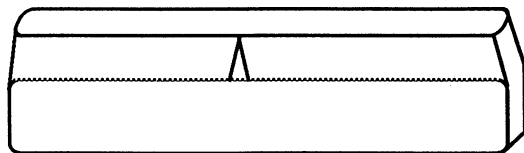
IDENTIPOINT® ANNUNCIATOR



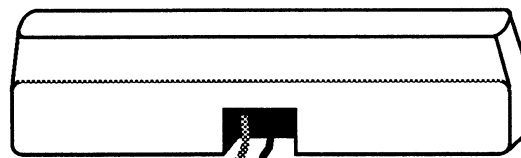
Magnet



Recessed press/fit

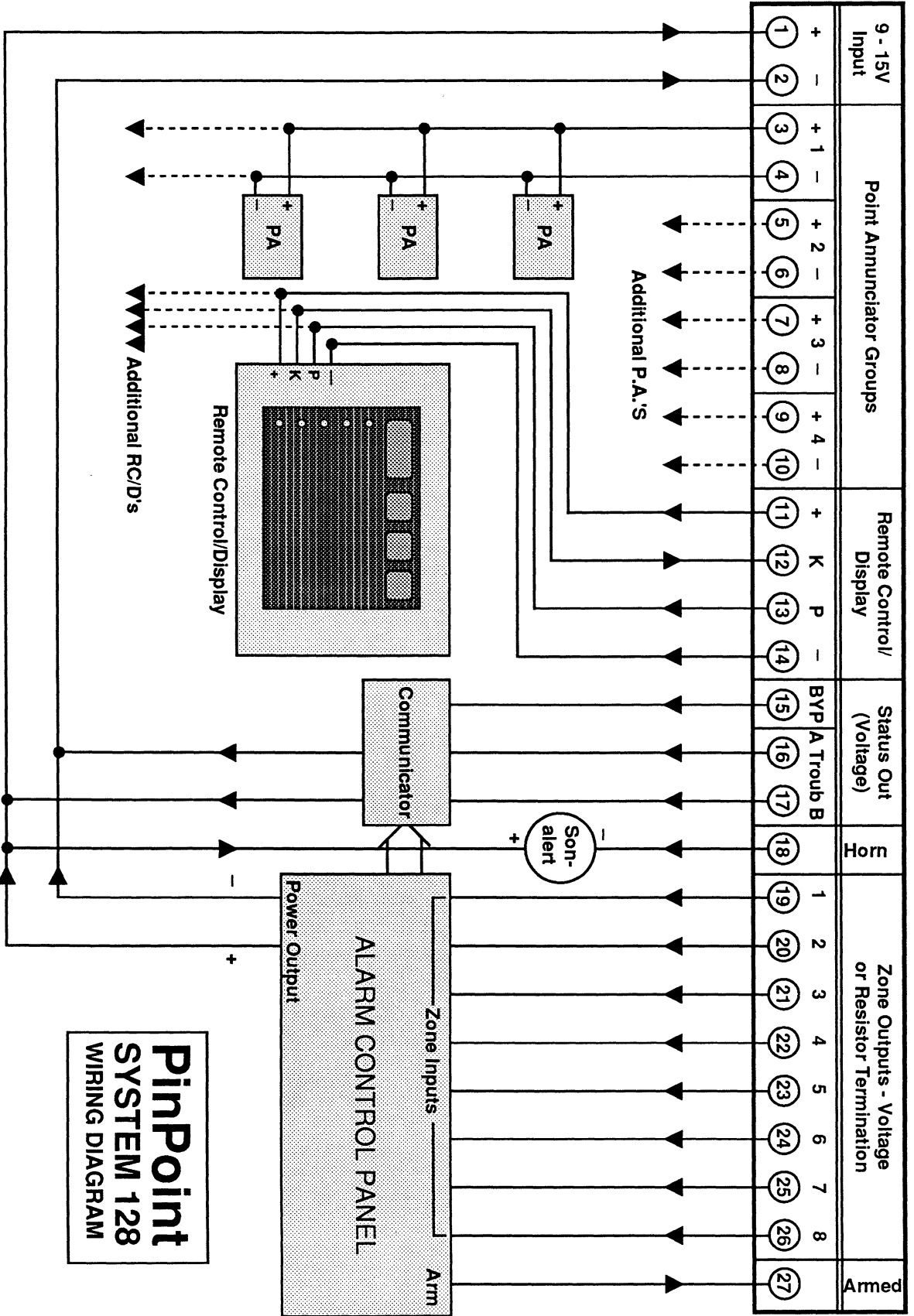


Magnet



Surface Mount

PINPOINT INTERFACE TERMINAL STRIP



Pinpoint
SYSTEM 128
WIRING DIAGRAM

HOW THE SYSTEM OPERATES

There are two modes of operation used to arm and disarm the PinPoint.

- 1 If the Host alarm panel can provide a voltage signal output, either HIGH to LOW, or LOW to HIGH, when it is armed, the PinPoint can be *AUTOMATICALLY* armed and disarmed.
- 2 If this voltage output is not present, the PinPoint can be *MANUALLY* armed and disarmed. Both methods are explained below.

RESETTING THE SYSTEM:

If there was an alarm and/or bypassing during the previous arming period, the PinPoint must be reset before the system can be armed. The system must also be reset if there had been a trouble condition, and the trouble has been corrected. To reset the PPI the DISPLAY ADVANCE button is held down for 6 seconds. All LEDs illuminate and "188" is displayed briefly to verify that all indicators are functioning. All LEDs should now be off.

AUTOMATIC ARMING

A. When All Points Are Secure (Doors & Windows Closed):

- 1 The host system keypad ready light will be on. The PinPoint RC/D OPEN LED will be off and the DISARM ACTIVITY LED will flash if any points were opened during the disarm period.
- 2 Arm the host system. The DISARM ACTIVITY LED will turn off, indicating that the PinPoint 128 is armed also.

B. When One or More Points Are Open (Not Secure):

- 1 If one or more points report an open condition, the OPEN LED will flash. The zones for these points will also report open conditions to the host alarm control panel, and the remote arming station will indicate an open zone condition. The system cannot be armed. In addition, the DISARM ACTIVITY LED will flash, indicating that the open zones have been put into the disarm activity memory.
- 2 Press the DISPLAY ADVANCE button once. The OPEN LED will illuminate steadily and the identities of the open points will be displayed in numerical sequence. After the display ends and goes blank, the OPEN LED will flash again.
- 3 Secure the indicated openings and the OPEN LED will turn off. That done the SYSTEM no longer supplies an open signal to the host alarm control panel and the system is ready to be armed (if the host panel has a READY LED, it will now be lit).

- 4 The DISARM ACTIVITY LED will still flash because the system has stored the open points in memory. When the host alarm control panel is armed, the DISARM ACTIVITY LED turns off and the point numbers, which were activated while the system was disarmed, are removed from memory.

AUTOMATIC DISARMING

A. When No Alarm Has Occurred and No Points Were Bypassed:

- 1 When the user enters through an entry/exit door, the entry timers are activated in both the alarm control panel and the system. If the system is disarmed before the entry time expires no alarm occurs and the point number for the entry door is not entered into the system memory.
- 2 Only the OPEN LED may be flashing on the PinPoint RC/D during the duration of the entry timer.
- 3 Disarm the host alarm control panel.

B. When an Alarm Has Occurred and/or a Point or Zone Has Been Bypassed

- 1 "AL" will flash in the display and the ALARM MEMORY LED will also flash. If a point or zone had been bypassed the BYPASSED LED would also be flashing.
- 2 Disarm the host system.
- 3 To view the points that caused the alarm, press the DISPLAY ADVANCE button as many times as necessary until the ALARM MEMORY LED comes on steadily. The point numbers will be displayed in the order in which they signalled the alarms.
- 4 If there had been bypassing and the BYPASSED LED is flashing, press the DISPLAY ADVANCE button as many times as necessary until the BYPASSED LED illuminates steadily. The points or zones that were bypassed will be displayed.

RESETTING THE SYSTEM:

If there was an alarm and/or bypassing during the previous arming period, the PinPoint must be reset before the system can be armed. The system must also be reset if there was a trouble condition, and the trouble has been corrected. To reset the system the DISPLAY ADVANCE button is held down for 6 seconds. All LEDs turn on and "188" is displayed briefly to verify that all indicators are functioning. All LEDs should now be off.

MANUAL ARMING

If an arming voltage is not available from the Host alarm control panel, the PinPoint can be operated manually. To do so it must be programmed for manual operation. The RC/D requires the use of an additional key: ARM/DISARM, located in the lower right corner of the RC/D. Manual operation is identical to automatic operation with the exception of the following:

A. Arming the System:

As with automatic operation, the system must be RESET if an alarm, bypassing, or trouble had occurred during the previous arming period. If no point is open, (OPEN LED off) the host alarm control panel can be armed. Press the ARM/DISARM key on the RC/D then arm the host system. The RC/D displays "Ar" continuously when the system is manually armed.

MANUAL DISARMING

B. Disarming: After No Alarm and No Bypassing:

Disarming is the same as for automatic operation except the ARM/DISARM key is pressed after the host alarm control panel is disarmed. This turns off the "Ar" display. If the ARM/DISARM key is not pressed the PinPoint will think that the system is still armed. The point number that was used for entry will time out, and be entered into alarm memory with any additional points that are violated with the PinPoint still manually armed, and the host panel disarmed.

C. Disarming: After An Alarm:

The display will flash "Ar" (not "AL" as in automatic operation) to indicate that the system is armed. The flashing indicates that an alarm has occurred. The ALARM MEMORY LED will also flash. Press the ARM/DISARM key after the host alarm control panel is disarmed. The display will change, "Ar" will disappear, and "AL" will appear and flash. This indicates that an alarm has occurred and that the system is no longer armed. If the ARM/DISARM key is not pressed, points opened as the property is checked will be added to the alarm memory, because the PinPoint still thinks the host panel is armed.

TROUBLE REPORTING

- 1 Trouble indications result if a point fails to report to the system, even momentarily. Failure to report can be caused by a broken wire or the removal of a PA cover.
- 2 The TROUBLE LED will flash.
- 3 Press the DISPLAY ADVANCE button as many times as necessary until the TROUBLE LED comes on steadily. The points indicating trouble will be displayed in numerical sequence.

- 4 To clear the trouble from the PinPoint 128, the cause of the trouble must be found and fixed. Then the PinPoint 128 can be reset. Resetting should clear any trouble zones displayed on the host panel and the ready LED should go on.

MEMORY

- 1 The DISARM ACTIVITY memory stores the numbers of all points that reported an open condition while the system was disarmed. This memory can be displayed at any time while the system is disarmed to check reporting frequency patterns or to ensure that all points are functioning correctly. To view, press the DISPLAY ADVANCE button as many times as necessary until the DISARM ACTIVITY LED illuminates steadily. The points indicating trouble will be displayed in numerical sequence.
- 2 The ALARM MEMORY stores the point numbers reporting alarms. Up to 18 alarms are stored, then later displayed, in the order in which they occurred. To view, press the DISPLAY ADVANCE button as many times as necessary until the ALARM MEMORY LED illuminates steadily, signalling the end of stored alarms. The points indicating trouble will be displayed in numerical sequence.

CHIME MODE

When PinPoint is in the chime mode (system disarmed), the piezo/buzzer in the RC/D and any external horns will sound when one of the designated burglary points change from closed to open. Four chime modes can be programmed:

- Chime mode disabled.
 - Entry/exit points only.
 - Entry/exit points plus all points in zone 1 of the PinPoint System.
 - All burglary PA's.
- 1 The chime mode can be alternately activated and deactivated (toggled on/off), by holding the CHIME button down for 6 seconds. At the end of that time a short beep will sound and the new-status will be displayed: "ON" or "OF" (off).
 - 2 The status can be checked at any time by briefly pressing the CHIME button. The display will show "ON" or "OF" (off).
 - 3 When Chime Mode is on, and one of the designated points opens, the chime tone sounds and that point number is displayed on the RC/D. This action is independent from the host panel chime mode function.

BYPASSING

Options are as follows:

A. Automatic Bypassing

If this option is programmed any burglary point indicating OPEN or TROUBLE can be bypassed.

- 1 With points open or indicating trouble, press the BYPASS button on the RC/D, wait three seconds and arm the system (either manual or auto).
- 2 The PinPoint 128 zone output lines will reset, causing the host panel READY LED to illuminate. The system may now be armed.

B. Zone Bypassing

- 1 Press the BYPASS button and then the DISPLAY ADVANCE button. The number of the first zone used will be displayed. To bypass the displayed zone, press the BYPASS button. A minus sign "-" will be displayed preceding the number of the zone that is bypassed. Then the host panel can be armed with the selected zone bypassed.
- 2 If a zone is not to be bypassed, the DISPLAY ADVANCE button should be pressed again instead of the BYPASS button. The next zone number will be displayed. The user can display all zones by repeatedly pressing the DISPLAY ADVANCE button. Only burglary zones will be displayed.
- 3 While displaying a zone number, the bypass status alternates each time the BYPASS or DISPLAY ADVANCE buttons are pressed. This prevents the user from running out of time as the bypassing and arming take place.

C. Bypassing of Individual Points:

If this option is selected the bypass touchpad overlay is required to identify the location of the number keys. Press the BYPASS button, then enter the point number to be bypassed and press the BYPASS button again. The display will go blank awaiting another point number. If an incorrect number is entered, it can be cancelled by pressing the DISPLAY ADVANCE button before pressing the BYPASS button. Once a point has been bypassed it can be reactivated. Just wait for the bypass operation to time out in 24 seconds and start the procedure again. To review the point numbers and zones that were bypassed, press the BYPASS REVIEW key. All zone outputs (1 - 8), and points bypassed will be displayed. The bypassed zone outputs will be displayed first; each zone number is preceded by "-" so it will not be confused with point numbers. Next, the point numbers will be displayed. Each time a button or key is pressed, the 24 second bypass timer is restarted. While the bypass review is in progress, the bypass timer will also be disabled until the display is completed, then it will restart. This will give the user 24 seconds to perform the bypassing and arming operation without being rushed.

INSTALLING THE PINPOINT SYSTEM 128

OVERVIEW

When the PinPoint System 128 is to be added to an existing hardwire system, an inspection should be made of the existing wiring and components.

- 1 If the existing two wire burglary loop is in good condition it can be used to connect the Point Annunciators to the PinPoint. With all protected doors, windows, etc. closed, measure the resistance in the protection circuit. The reading should be within plus or minus 5% of the EOL resistor value. *A continuous one wire burglary loop will not work with PinPoint.* In order to use the existing one wire loop, parallel the loop with new wiring (22 ga. twisted)
- 2 Check each detection device such as magnetic contacts, motion detectors, etc., to insure that they are in good working order.
- 3 Lay out the system visually indicating all protected points. As you plan, use the Installer's Planning Chart (Appendix C) and fill in all information.
- 4 Assign numbers and zone types to each point. Write them on the planning chart (standard, entry/exit, fire).

NOTE: Wire run length, and size restrictions apply according to the device you are connecting. SEE APPENDIX C for particular restrictions.

Each dual PA monitors two points. The two points have consecutive identity numbers, odd then even (1&2, 3&4, through 127&128). Each Identipoint monitors a single point, and program differently from dual PA's.

DO NOT ASSIGN FIRE AND BURGLARY POINTS TO THE SAME DUAL CHANNEL PA.

Both channels of a PA do not have to be used. For maximum utilization a dual channel PA can monitor a pair of windows, a door and window, a glass break detector and the contact for that window. The Identipoint is used for a single point. Assign each point to one of the eight zones: All entry/exit points should be assigned to the zone that connects to the entry/exit zone of the panel. Fire points are assigned to zones exclusively dedicated to fire monitoring.

DO NOT MIX FIRE AND BURGLARY POINTS ON ANY ZONE.

MOUNTING THE COMPONENTS

DUAL CHANNEL PA'S: Remove the cover. Mount the PA's using the hardware supplied. It is usually secured at opposite corners. A third mount can be used if needed.

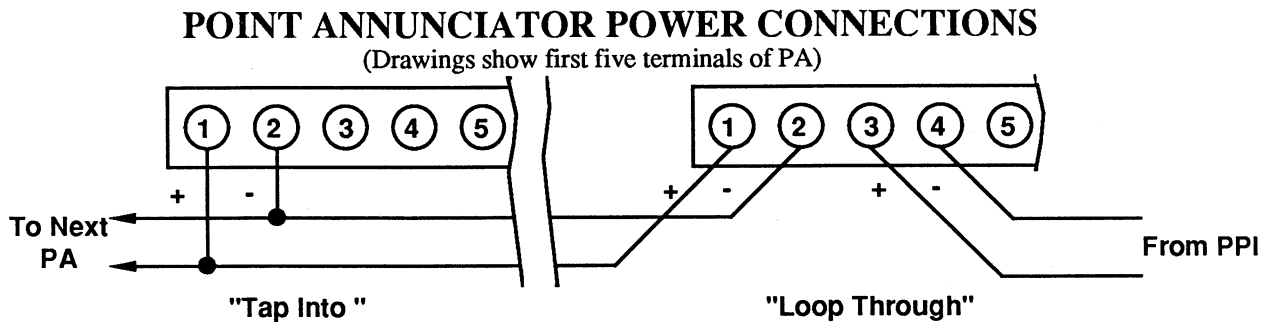
IDENTIPOINTS: Mount as you would any magnetic contact, except the connections are parallel rather than in series.

RC/Ds (4 MAXIMUM): Using the hardware provided, mount a PinPoint RC/D next to each remote arming station for the host alarm control panel.

PINPOINT: Mount the PinPoint 128 inside the host alarm control cabinet or adjacent to it. Double sided foam tape is provided to attach the PinPoint to the center panel or to the side of the cabinet. Be sure there is room to remove the cover for programming. Also, the replaceable .5A fuse is located under the cover. Ensure that there is room to reach the terminals with a screwdriver. It may be easier to prewire the PinPoint terminals.

WIRING THE PA's TO THE PPI

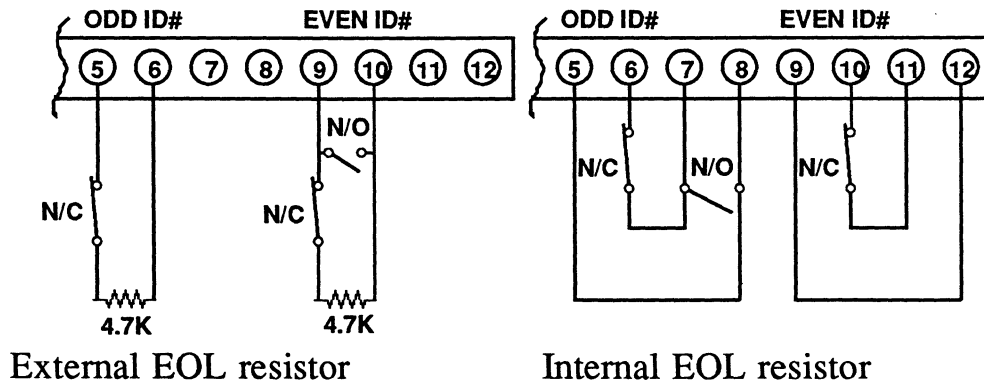
Assign polarity values to the existing or new burglary loop, one color positive and the other for negative. Connect the first PA into the burglary loop wire (22 ga.) as shown below (either way). Disconnect the detection devices (if existing wire is used) and make a new wire run (22 ga.) from each point to the PA as shown on top of page 14.



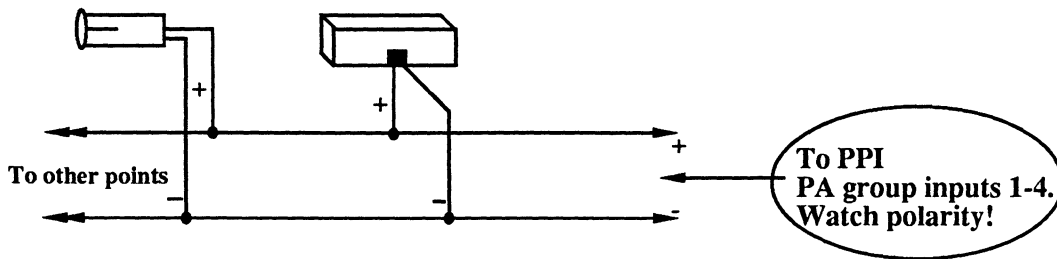
OBSERVE POLARITY. Choose wire colors for (+) and (-) and be consistent throughout the installation. The PA's can tap into the line from the PPI. Either pair of terminals (1-2, 3-4) can be used. Or, the line from the PPI can loop through the PA, IN on one pair of terminals, OUT on the other pair.

PA Terminals	Description
1 and 3(+)	Power input, and signalling to/from PPI, PA's.
2 and 4(-)	are internally connected and are common.
5 and 6	Alarm loop input, ODD identity number. It must be terminated with a 4.7K resistor either external or internal. Normally closed contacts are connected in series. Normally open contacts are connected in parallel.
7 and 8	Internal end of line resistor. Used to terminate terminals 5 and 6.
9 and 10	Alarm loop input, EVEN identity number (see 5 and 6).
11 and 12	Internal end of line resistor. Used to terminate terminals 9 and 10.

CONNECTING INPUT DEVICES TO THE DUAL CHANNEL PA

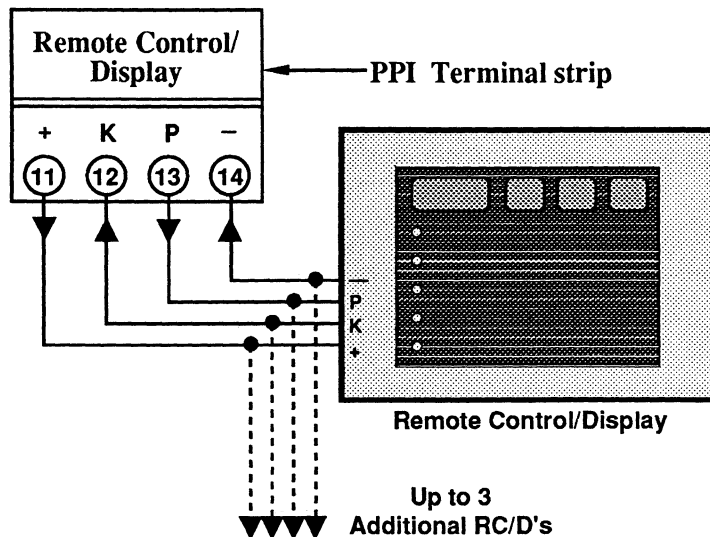


CONNECTING IDENTIPOINTS TO PA INPUT GROUPS



WIRING THE RC/D'S TO THE PPI

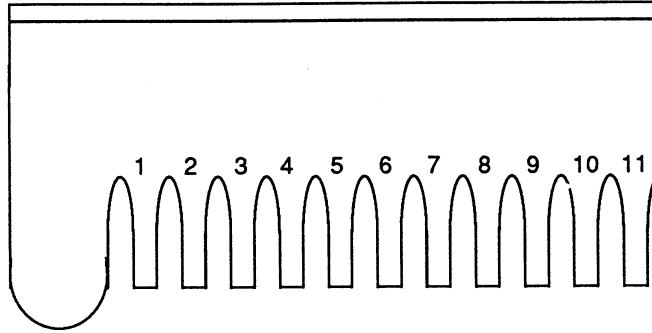
Connect the RC/D's to the PPI with 22 ga. quad cable. Choose wire colors for the (+), (-), (K), and (P) terminals for multiple RC/D installations to ensure proper connections.



PROGRAMMING

PROGRAMMING THE DUAL CHANNEL PA'S

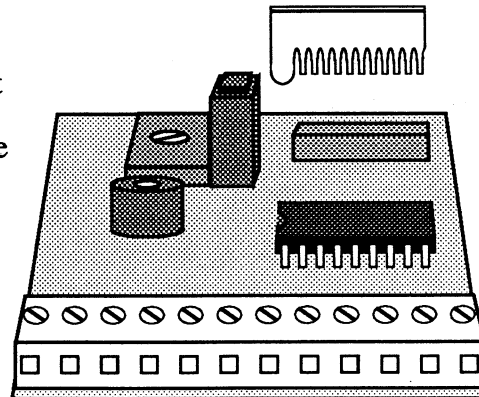
(Identipoints will be programmed with the PPI) Remove the programming comb from each of the PA's. Using the planning chart, cut or bend the teeth in the comb to program the PA.



Teeth	Description
1 to 6	Point numbers. See Installer's Planning Chart for teeth to cut.
7.....	Ground pin. DO NOT CUT!
8.....	Fast response, ODD identity number. Cut for 7 millisecond loop response. Normal response (not cut) is 250 milliseconds.
9.....	Fast response, EVEN identity number.(see 8 above)
10.....	Disable the ODD identity number. (Do not cut unless this is used by another point in a large system.)
11.....	Disable the EVEN identity number. (see 10 above)

DO NOT CUT THE WIDE PIN. This is the key pin that prevents the comb from being installed backwards.

After programming and marking a comb, insert it in the PA with the wide tooth nearest the tamper switch. Mark the PA cover and replace. Hook the cover onto the base at the end nearest the terminals and snap the other end into place.



PROGRAMMING THE PPI USING THE RC/D

PinPoint can be put into the program mode at any time so changes can be made if the installation is modified.

Setup: (the programming chart is used to program point information)

- 1..... Place the programming overlay over the touchpad on the RC/D located closest to the PPI. It may be more convenient to temporarily connect a spare RC/D to the PPI rather than using an RC/D already installed.
- 2..... Put the PPI in the program mode. Remove the programming jumper on the PPI circuit board. The **Program Mode LED** turns on steadily.
3. Clear the entire user memory **ONLY** if programming is being done for the first time or the memory is to be cleared for a new start. Remove the **Clear Memory** jumper on the PPI board. After 3 seconds, 00 appears in the display indicating erasure. Replace the **Clear Memory** jumper.
- 4..... Some items are preprogrammed, such as entry/exit time. These are default values which are shown in the programming steps. If the default values can be used, these programming steps are unnecessary.

1. PA and Label programming: (Enter label code on programming chart)

This programming assigns the PA its point I.D. number, point type, zone output.

- Press the **Mode Advance** button once.
- The **PA Prog LED** flashes indicating that it expects data.
- "PA" prompt is displayed.
- Key in the first point number used (1 through 128).
- Press the **Enter** button.

- "L" for Label, is displayed next. A 2 digit label code is expected next. The PA label code consists of: PA type in the first digit, followed by the zone output (1-8) assigned to that particular PA number.

The label first digit is the type code:

<i>Type Code</i>	<i>Description</i>
0.....	PA not used. For taking a PA out of the system.
1.....	Type A. Burglary. No delay.
2.....	Type A. Burglary. With delay.
3.....	Type B. Fire.

The label second digit is the zone number(1 through 8).

The ZONE number 1 thru 8 is the zone output of the PINPOINT that activates when a particular point is violated. This output, in turn, trips the host panel zone it is connected to.

- Key in the 2 digit Label code.
- Press the **Enter** button.

Repeat the above steps for all other PA's in the system.

General Notes for PA Programming:

- If out of range numbers are entered, the warning tone sounds and the entry is ignored. If it is a point number, the error message "Er" is displayed then the display goes blank.
- Zero should not be entered before single digit point numbers.

2. PA and Label Review:

- Press the **Mode Advance** button.
- The **PA Prog** LED illuminates steadily indicating that PA data is being displayed.
- Each PA number is displayed followed by its Label code.
- A "-" is displayed between the PA number and the Label. A longer space occurs between the Label and the next PA number.
- The display continues in numerical sequence. It starts over again after it reaches the highest PA number. The display continues until the **Mode Advance** button is pressed.

*Press the **Change Speed** key to double the display speed. Press it again to return to normal speed.*

3. Entry/Exit Time Programming: (Default Value 30 sec.)

- Press the **Mode Advance** button again.
- The **E/E Prog** LED flashes indicating that it expects data.
- "E E" prompt appears.
- Key in the desired delay time (1 through 99 sec). It should be 10 to 15 seconds longer than the delay time used in the alarm control panel.
- Press the **Enter** button.
- The "EE" prompt reappears.

NOTE: The time is rounded up to the next multiple of 3.

4. Entry/Exit Time Review:

- Press the **Mode Advance** button again.
- **E/E Prog** LED lights steadily indicating data is being displayed.
- The time is displayed continuously. It remains in the display until the **Mode Advance** button is pressed.

OPTION PROGRAMMING

- Press the **Mode Advance** button again.
- The **Option** LED flashes indicating data is expected.
- The "Ar" prompt is displayed requesting entry of the arming code.

Five options are available:

Arming, chime, zone output polarity, bypass, and scan length.

First, in response to the "Ar" prompt, is the arming code. The arming code consists of 2 digits. The first number to be entered is shown in the center display. It defines manual or automatic mode. If in the automatic mode, this digit also defines the polarity of the arming signal: armed when high or armed when low. If automatic arming is selected, the second digit entered is displayed in the right display. In some alarm control panels the signal available is not steady but pulsates instead. It is often the same signal used to flash a LED in the remote arming station for the alarm control panel. Some alarm control panels flash the LED when armed, others flash the LED when disarmed. The PPI must insert a delay for arming or disarming so it will not respond to the flashes. The following programming codes define different arming signals from alarm control panels.

OPTION DEFAULT CODES ARE INDICATED BY *

The default code is the program code that the PINPOINT initially powers up with.

Arming codes:

- **Manual Mode:** Code 00.
- **Automatic Mode,** when arming signal goes HIGH to arm:

Code	Description
10 *.....	*Arming voltage steady when armed and disarmed.
11	Arming voltage may pulse when armed.
12.....	Arming voltage may pulse when disarmed.

- **Automatic Mode,** arming signal goes LOW to arm:

Code	Description
20	Arming voltage steady when armed and disarmed.
21.....	Arming voltage may pulse when armed.
22.....	Arming voltage may pulse when disarmed.

- Select the code and enter the 2 digit number.
Press the ENTER button.

NEXT You Will See

Chime mode:

- The "CH" prompt displayed, expecting data for the chime mode.
- The **Option LED** is still flashing.

Enter the chime mode code (0 through 3):

Code	Chime Mode
0*.....	*Chime mode disabled.
1.....	Entry/Exit points only.
2.....	Entry/Exit points plus all points in PINPOINT zone 1.
3.....	All burglary points.

Press the ENTER button.

NEXT You Will See

Zone output polarity:

- The "PL" prompt is displayed, expecting zone polarity data.
- The **Option LED** is still flashing.

Select the zone polarity code from the table below:

NOTE: 0 is used for normal polarity, zone output opens on alarm. 1 is used when the zone output closes on alarm. The first digit entered controls polarity for zone 8. The second controls polarity for zones 1 through 7.

Code	Zone Polarity
00*.....	*All zones open on alarm.
11.....	All zones close on alarm.
10.....	Zone 8 closes on alarm. Zones 1 to 7 open on alarm.
01.....	Zone 8 opens on alarm. Zones 1 to 7 close on alarm.

Press the ENTER button:

NEXT You Will See

Bypassing options:

- The "bP" prompt displayed, expecting bypassing data.
- The **Option LED** is still flashing.

Select the bypassing options from the table below:

Bypassing Options:

Code	Automatic	Individual Pt	Zone
0.....	No.....	No.....	No
1*.....	*No.....	No.....	Yes
2.....	No.....	Yes.....	No
3.....	No.....	Yes.....	Yes
4.....	Yes.....	No.....	No
5.....	Yes.....	No.....	Yes
6.....	Yes.....	Yes.....	No
7.....	Yes.....	Yes.....	Yes

Press the ENTER button:

NEXT You Will See

Scan length data:

- The "SL" prompt displayed, expecting scan length data.
- The **Option LED** is still flashing.

Select the scan length from the table below.

Code	Scan Length
1.....	16
2.....	32
3*.....*	128

IMPORTANT: Do not change the scan length unless all Identipoints will be programmed to that length. No PA can have an identity number greater than the scan length. THE SCAN LENGTH MUST BE 128(CODE 3) IF ANY DUAL PA's ARE USED.

Enter the selected code:

- When the new scan length is entered, a beeping sounds to remind you of the restriction.

Press the ENTER button:

- You have 3 seconds to press the **Enter** button after the code is entered. If it is not pressed in time, the new scan length is discarded. This is done to prevent you from inadvertently changing the scan length.

Option review: After the ENTER button is pressed in the above step:

The **Option LED** comes on steadily indicating option review.

- "Ar" is displayed followed by the arming code.
- "CH" is displayed followed by the chime code.
- "PL" is displayed followed by the zone polarity code.
- "bP" is displayed followed by the bypassing code.
- "SL" is displayed followed by the scan length code.
- The review repeats until the **Mode Advance** button is pressed. The LEDs then turn off and the display goes blank. The next press of the **Mode Advance** button starts the programming sequence again displaying the "PA" prompt.

Programming the Identipoint:

The PPI is used as a programmer for the Identipoint. To program, connect the Identipoint to a pair of the PA terminals on the PPI (observe polarity). To minimize the chance for error, Identipoints should be programmed before installation. It is possible, but not recommended, to program them while installed.

Programming can proceed only if the following conditions are met:

- The Identipoint must be open, the magnet removed.
- It must be the only PA reporting an open condition.
- It must be assigned an identity number not already in use.
- The identity number must be within the scan length.

Press the **Mode Advance** button DURING THE OPTION REVIEW and hold it down for 6 seconds. This prevents Identipoints from being accidentally programmed. At the end of 6 seconds, if all the conditions are met, "Sn" (Sensor number) is displayed. It is asking for an identity number. If the conditions are not met, error message "E1", "E2", or "E3" is displayed. These are listed in the error code table. If "Sn" is displayed, enter the identity number for the Identipoint and press the **Enter** button.

If the entered number is not allowed, error message "E4" or "E5" is displayed followed by "Sn". If the number is allowed, a line moves around the right display indicating the data flowing to the Identipoint. After a pause, if programming was successful, "AA" is displayed followed by "Sn". If programming was not successful, the error message "E6" is displayed followed by "Sn" so it can be retried. To exit the Identipoint programming mode, press the **Mode Advance** button. This returns you to the beginning of the PINPOINT 128 programming sequence.

Error Code Table:

Error Code	Cause	Correction
"E1"	No PA's indicate an open condition.	Remove the magnet from the PA to be programmed.
"E2"	More than 1 PA is open. These numbers are displayed.	Close all but the Identipoint to be programmed.
"E3"	Signal clash between Identipoint and PA in the system. The number is displayed.	Temporarily disconnect PA not to be programmed. If a dual PA, remove the cover.
"E4"	Entered PA number will not fit scan length.	Enter a number that fits or change scan length.
"E5"	Entered PA number is being used.	Use another PA number.
"E6"	Identipoint did not ... program properly.	Be sure the contact remains open during programming sequence. Replace if error still occurs.

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"E5"	Entered PA number is being used.	Use another PA number.
"E6"	Identipoint did not ... program properly.	Be sure the contact remains open during programming sequence. Replace if error still occurs.

NOTES ON ERRORS:

- "E1" and "E2" can be cleared by correcting the problem. "Sn" is displayed and programming can continue.
- After an "E3" problem is corrected, the **Cancel** button must be pressed. There will be a 6 second delay to be sure the problem is corrected. If it is, "Sn" is displayed.
- "E4", "E5", and "E6" are displayed briefly followed by "Sn". If a wrong number was entered, the correct one can then be entered.

Program Review:

Press the **Prog Review** key:

- All programmed information in the PINPOINT is displayed starting with PA and Label review.
- As the review progresses, the LEDs indicate what is being displayed: PA's, E/E time, Options.
- When completed, the LEDs turn off and the display blanks. The review can be stopped at any time by pressing the **Mode Advance** button.

GENERAL PROGRAMMING NOTES:

- *Activation of the Mode Advance button steps through the programming and review modes.*
- *Programming can be done in any sequence. An entry can be changed by advancing the mode to that step and making a new entry.*
- *If the Mode Advance button is pressed before the Enter button, the data entered is not stored.*

When programming is complete:

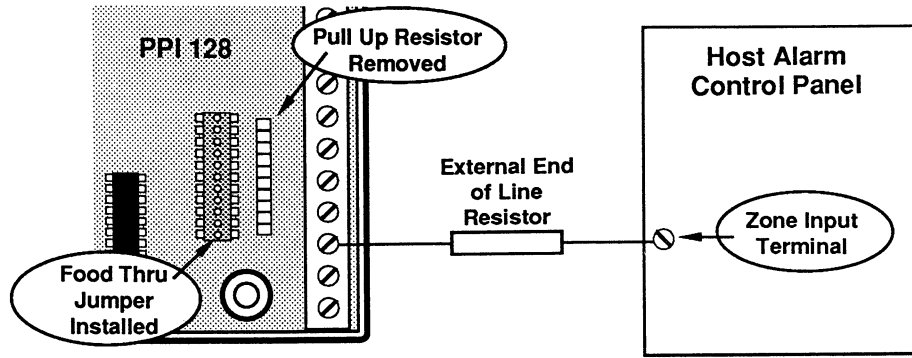
Replace the PROGRAM jumper on the PINPOINT circuit board.

CONNECTING THE SYSTEM TO THE HOST ALARM CONTROL PANEL

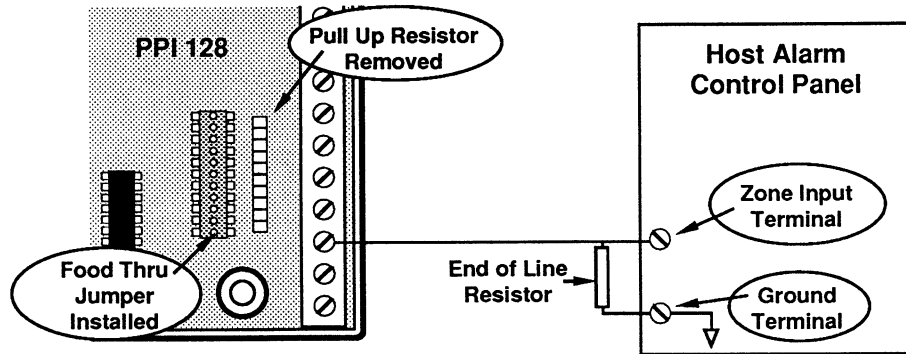
<i>Terminals</i>	<i>Descriptions</i>
1(+), 2(-).....	12 VDC from alarm control panel. OBSERVE POLARITY!
3 to 10.....	PA connections. Four groups, each overload protected. Stay with the wire colors you chose when the PA's were connected.
11 to 14.....	Connections to the PinPoint RC/Ds. Stay with the wire colors used when connecting the RC/Ds.
11(+), 14(-).....	Power connections to the RC/Ds.
12 (T)	Signal from the RC/D Touchpad.
13 (P)	Signal from PPI to the RC/D.
15 to 17.....	Status outputs. Positive voltage when activated. Connect directly to the communicator channel chosen for the bypass and trouble status outputs.
15 (BYP).....	Active if point or zone is bypassed.
16 (TROUB A).....	Active if burglary PA reports trouble.
17 (TROUB B).....	Active if fire PA reports trouble.
18.....	Optional. Connect to Sonalert or equivalent low power sounding device. Sonalert (-) to terminal 18. Sonalert (+) to the (+) power supply terminal from the alarm control panel.
19 to 26.....	Zone outputs. Connect to the zone inputs of the host alarm control panel. There are four configurations for the zone outputs. Their set-up is explained under the headings Zone Output Configurations and Zone Output Circuit Diagrams . Three of the examples are for various methods of EOL resistor supervision. One example for a voltage trip.
27.....	Signal from host alarm control panel indicating that it is armed or disarmed. If not available PinPoint 128 must be programmed for Manual Operation.

PPI 128 ZONE OUTPUT CONFIGURATIONS

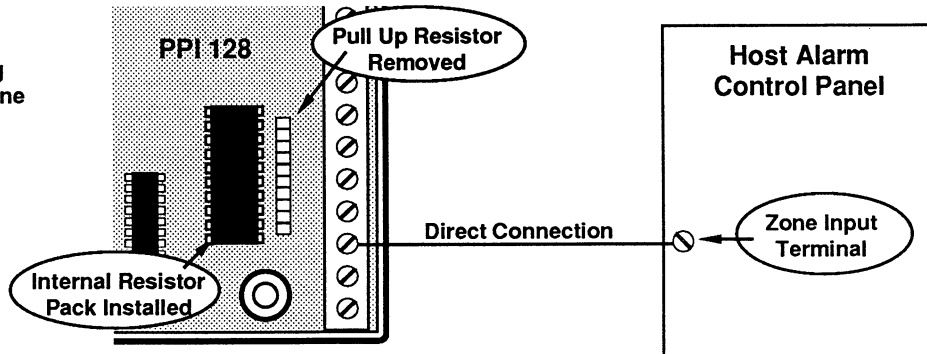
A. Series Connection using External End of Line Resistor.
Zone outputs are programmed to open on alarm.



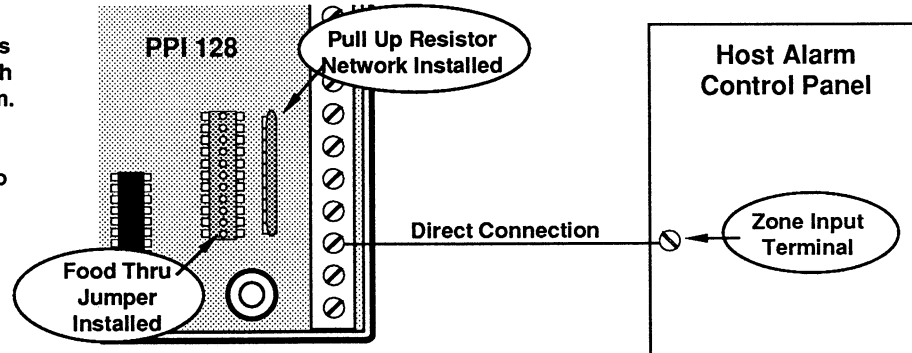
B. Shunt Connection using External End of Line Resistor.
Zone outputs are programmed to close on alarm.



C. Series Connection using Internal End of Line Resistor.
Zone outputs are programmed to open on alarm.

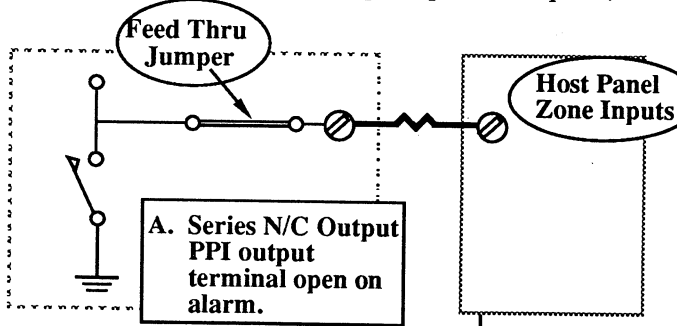


D. Voltage Outputs For a voltage which goes high on alarm.
The zone outputs are programmed to open on alarm

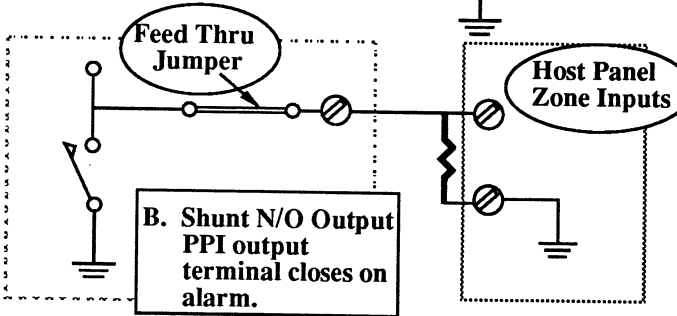


PPI ZONE OUTPUT CIRCUIT DIAGRAMS, EOL RESISTOR SUPERVISION

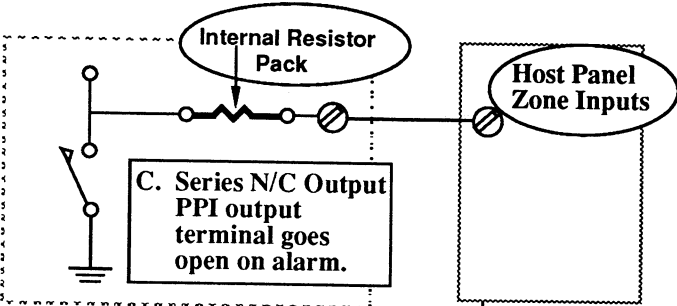
The four examples below show the various Zone Output configurations for the PPI. You will need to know the Zone Input requirements for your Host alarm panel. You need to know the EOL resistor value, N/C, N/O circuit, voltage input, (what input trips the host panel, and how that line is supervised).



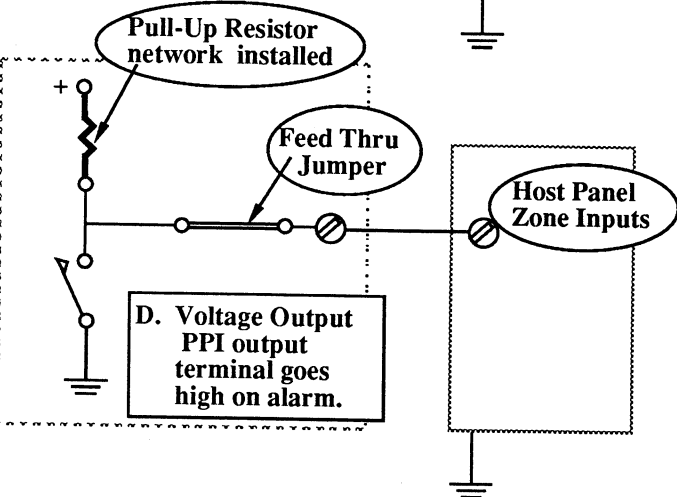
The PPI outputs should be programmed to open on alarm. Connect the proper value EOL resistor in series between each PPI zone output and the corresponding zone input of the host alarm panel. This is the most secure configuration. If the PPI should lose power for any reason (blown fuse, etc.) the zone outputs open and signal an alarm.



The PPI should be programmed to close on alarm. Connect the zone outputs from the PPI directly to the zone inputs of the host alarm panel. Connect the EOL resistors across the zone inputs of the host alarm panel to chassis ground. This configuration does not supervise the line between the PPI and the host alarm panel, a loss of power at the PPI will not be detected.



In this example, the alarm signal is fed thru an Internal EOL resistor pack plugged into where the feed thru jumper is. The value of the pack is determined by the host panel requirements (contact ITI for available resistor pack values). This configuration is identical to the 'A' connection, except that the EOL resistor is connected internally in the PPI. The PPI output is a series N/C circuit.



Some host alarm control panels may require Voltage outputs from the PPI. In that case a Pull-Up resistor network is needed. Contact ITI to obtain the pullup resistor network. This configuration is not EOL resistor supervised. The PPI zone output goes high on alarm. The circuit is N/C.

TESTING THE PINPOINT SYSTEM 128

Replace the PROGRAM jumper on the PPI circuit board.

- "188" is displayed and all LEDs illuminate for 3 seconds.
- The **Trouble** LED should not flash.
- The **Open** and **Alarm Memory** LEDs flash if any points are not secure.

If the TROUBLE LED flashes:

- Press the **Display Advance** button as many times as necessary until the **Trouble** LED lights steadily.
- Note which point numbers indicate trouble. If only a few indicate trouble, check the following and make the necessary corrections:
 - Are the PA covers secure?
 - Are their combs programmed correctly?
 - Check for 12VDC at PA terminals 1 and 2(or 3 and 4). If no voltage is detected, check the line.
 - If all PA's connected to the same output from the PPI indicate trouble, check the following:
 - Check the voltage at the PPI terminals(1-2 &3-4). If zero, it is most likely a short on the line. If not zero, but less than one volt and pulsating, a short could have occurred momentarily or some PA's may be connected with reverse polarity.
- After corrections are made, PinPoint must be reset ("188").

When the TROUBLE LED no longer flashes:

Secure all points until the **Open** LED no longer flashes. If the **Open** LED flashes after you think everything is closed, check which point numbers indicate open. Check its contact, the wiring, and the end-of-line resistor.

When the OPEN LED no longer flashes:

Reset ("188") the system to clear the memory if the **Disarm Activity** LED is flashing.

When no LEDs are flashing, verify that all points can signal an alarm:

- Go to each point. Open, then close it.
- When finished, display all points in the **Disarm Activity** memory.
- If any point fails to report, check its contact.
- Replace the cover on the PPI. The PinPoint System is ready to be put into service.

Connect the Communicator to the phone line:

- Verify its operation with the Central Station by tripping a point.
- Verify any bypass, trouble communications to the Central Station.

APPENDIX A

POWER REQUIREMENTS

The PinPoint System is powered by 12VDC from the host alarm control panel. The current it draws depends on the number of PA's, the number of RC/Ds, and whether voltage or resistance outputs are used from the zones of the PINPOINT. Be sure the host alarm control panel can supply the necessary current. If it can not a separate power supply may have to be used.

PPI:

If zones use resistance terminations.....	40.0 ma
If zones are configured as voltage outputs.....	62.0 ma
Dual channel PA.....	1.0 ma
Identipoint.....	0.5 ma

RC/D:

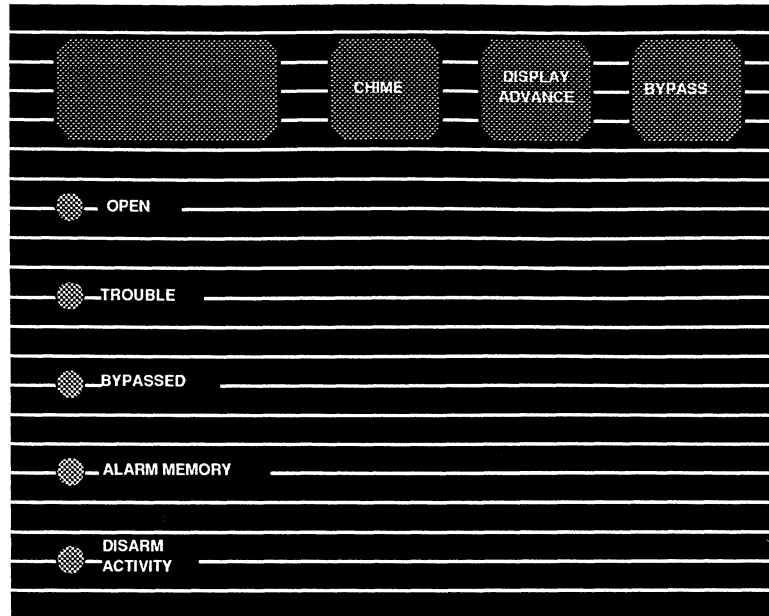
Displays off.....	10.0 ma
All displays on ("188")	70.0 ma
Typical, 2 LEDs flashing and "--" displayed	17.0 ma

Note: Seldom are all display elements on at once. Usually only the Open and Memory LEDs are flashing. The alarm control panel must be able to supply the maximum current, but it is not necessary to supply it continuously. The typical current should be used to determine the discharge rate of the standby battery.

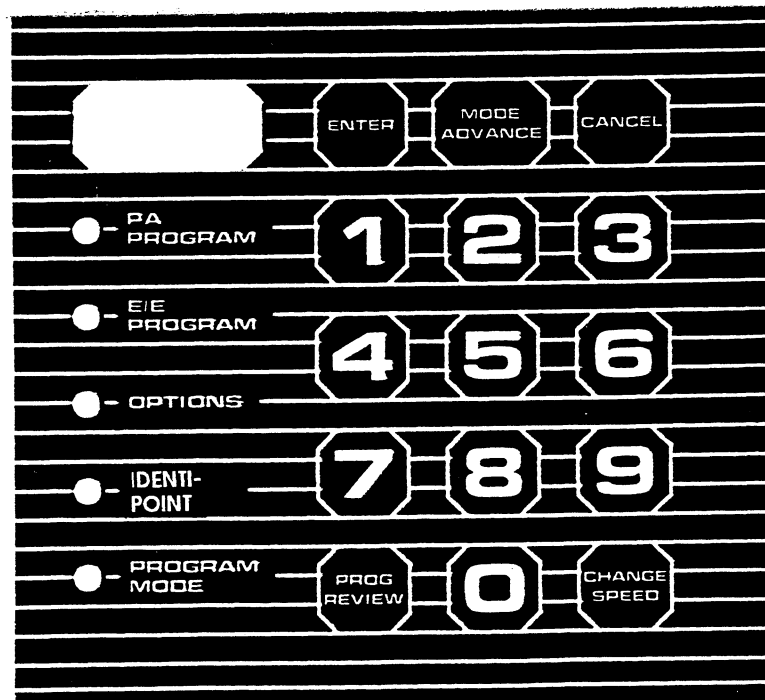
Example of a fully loaded system:	Displays Off	Typical	All Displays On
PPI, voltage outputs	62.0	62.0	62.0
64 dual PA's or 128 Identipoints	64.0	64.0	64.0
4 RC/Ds	40.0	68.0	280.0
Totals	166.0ma	194.0ma	408.0ma

APPENDIX B

TOUCHPAD OVERLAYS (actual size, can be cut out and used if needed)



POINT BYPASSING OVERLAY



PROGRAMMING OVERLAY

APPENDIX C

INSTALLER'S PLANNING CHART

Fill out in pencil so changes can be made easily. Keep this chart with the system.

PINPOINT PROGRAMMING OPTIONS:

See programmable instructions for codes.

ARMING SIGNAL: _____

CHIME OPTIONS: _____ (Burglary only) Not used=0, E/E only=1,
E/E + Zone 1=2, All=3

ZONE OUTPUT POLARITY: _____ (1st Digit Zone 8, 2nd: Zones 1-7)
0 = Normal, 1 = Reverse.

BYPASS OPTIONS: _____ (0-7, see programming instructions).

SCAN LENGTH OPTIONS: _____ scan of 16=1, scan of 32=2,
scan of 128=3

DUAL CHANNEL PA PROGRAMMING OPTIONS:

Point identity numbers. (ID#): 1-128 (see PA-comb programming chart)

TYPE: Standard (1), Entry/Exit (2), Fire (3) (see chart)

ZONE NUMBER (ZN): 1-8 (see PA-comb programming chart)

E/E TIME: _____ Sec, (99 sec max)

PA COMB TOOTH PROGRAMMING: (see chart)

POINT IDENTITY NUMBERS (1 thru 128).

DISABLE ONE OF TWO PA CHANNELS, CUT: 10=ODD, 11=EVEN.

FOR 7mSEC LOOP RESPONSE TIME, CUT: 8=ODD, 9=EVEN.

IDENTIPOINT PROGRAMMING:

POINT IDENTITY NUMBERS (1 thru 128). (see chart)

PA/COMB PROGRAMMING CHART

CUT - BEND COMB TEETH

PT ID#	PA-LABEL TYPE ZONE	INSTALLATION LOCATION	PA point disable 10=odd 11=even	loop time 8=odd 9=even	POINT IDENT #
1			10	8	None
2			11	9	None
3			10	8	6
4			11	9	6
5			10	8	5
6			11	9	5
7			10	8	56
8			11	9	56
9			10	8	4
10			11	9	4
11			10	8	4 6
12			11	9	4 6
13			10	8	45
14			11	9	45
15			10	8	456
16			11	9	456
17			10	8	3
18			11	9	3
19			10	8	3 6
20			11	9	3 6
21			10	8	3 5
22			11	9	3 5
23			10	8	3 56
24			11	9	3 56
25			10	8	34
26			11	9	34
27			10	8	34 6
28			11	9	34 6
29			10	8	345
30			11	9	345
31			10	8	3456
32			11	9	3456
33			10	8	2
34			11	9	2
35			10	8	2 6
36			11	9	2 6
37			10	8	2 5
38			11	9	2 5
39			10	8	2 56

(PA program comb tooth numbers 1 thru 11)

CUT - BEND COMB TEETH

PT ID#	PA-LABEL		INSTALLATION LOCATION	PA point	loop	POINT IDENT #
	TYPE	ZONE		disable	time	
				10=odd 11=even	8=odd 9=even	
40				11	9	2 56
41				10	8	2 4
42				11	9	2 4
43				10	8	2 4 6
44				11	9	2 4 6
45				10	8	2 45
46				11	9	2 45
47				10	8	2 456
48				11	9	2 456
49				10	8	23
50				11	9	23
51				10	8	23 6
52				11	9	23 6
53				10	8	23 5
54				11	9	23 5
55				10	8	23 56
56				11	9	23 56
57				10	8	234
58				11	9	234
59				10	8	234 6
60				11	9	234 6
61				10	8	2345
62				11	9	2345
63				10	8	23456
64				11	9	23456
65				10	8	1
66				11	9	1
67				10	8	1 6
68				11	9	1 6
69				10	8	1 5
70				11	9	1 5
71				10	8	1 56
72				11	9	1 56
73				10	8	1 4
74				11	9	1 4
75				10	8	1 4 6
76				11	9	1 4 6
77				10	8	1 45
78				11	9	1 45
79				10	8	1 456
80				11	9	1 456
81				10	8	1 3
82				11	9	1 3
83				10	8	1 3 6
84				11	9	1 3 6

(PA program comb tooth numbers 1 thru 11)

CUT - BEND COMB TEETH

PT ID#	PA-LABEL		INSTALLATION LOCATION	PA point	loop	POINT IDENT #
	TYPE	ZONE		10=odd 11=even	time 8=odd 9=even	

(PA program comb tooth numbers 1 thru 11)

85				10	8	1 3 5
86				11	9	1 3 5
87				10	8	1 3 56
88				11	9	1 3 56
89				10	8	1 34
90				11	9	1 34
91				10	8	1 34 6
92				11	9	1 34 6
93				10	8	1 345
94				11	9	1 345
95				10	8	1 3456
96				11	9	1 3456
97				10	8	12
98				11	9	12
99				10	8	12 6
100				11	9	12 6
101				10	8	12 5
102				11	9	12 5
103				10	8	12 56
104				11	9	12 56
105				10	8	12 4
106				11	9	12 4
107				10	8	12 4 6
108				11	9	12 4 6
109				10	8	12 45
110				11	9	12 45
111				10	8	12 456
112				11	9	12 456
113				10	8	123
114				11	9	123
115				10	8	123 6
116				11	9	123 6
117				10	8	123 5
118				11	9	123 5
119				10	8	123 56
120				11	9	123 56
121				10	8	1234
122				11	9	1234
123				10	8	1234 6
124				11	9	1234 6
125				10	8	12345
126				11	9	12345
127				10	8	123456
128				11	9	123456

APPENDIX D

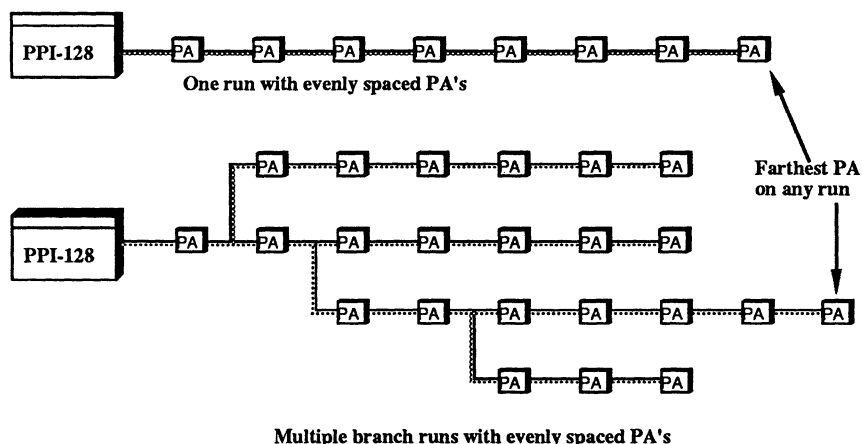
PA WIRING RESTRICTION CHARTS

The wire length restrictions ensure that the PA's operate correctly under all conditions, even at the lowest voltage reached by the standby battery during a power failure before the panel shuts down. The wire gauge, the number of PA's and how they are distributed along the line determine the maximum wire length.

Each run shown on the charts is a 'home run' from the PPI. Although 4 separate PA inputs are provided from the PPI, there is no limit to the number of home runs as long as the total number of dual channel PA's does not exceed 64. If either type of Identipoint is used, the maximum is 128 points.

PA's can be uniformly spaced along the line or they can be grouped along several branches connected to the PPI by means of a feed line. Several configurations are shown.

PA's UNIFORMLY SPACED ON THE LINE



When PA's are uniformly spaced from each other (equal distance between PA's) the distance to the farthest PA is the limiting factor concerning wire run distance restrictions. Wire gauge, and the number of PA's determine how far the last PA can be from the PPI. The chart on the next page shows these relationships.

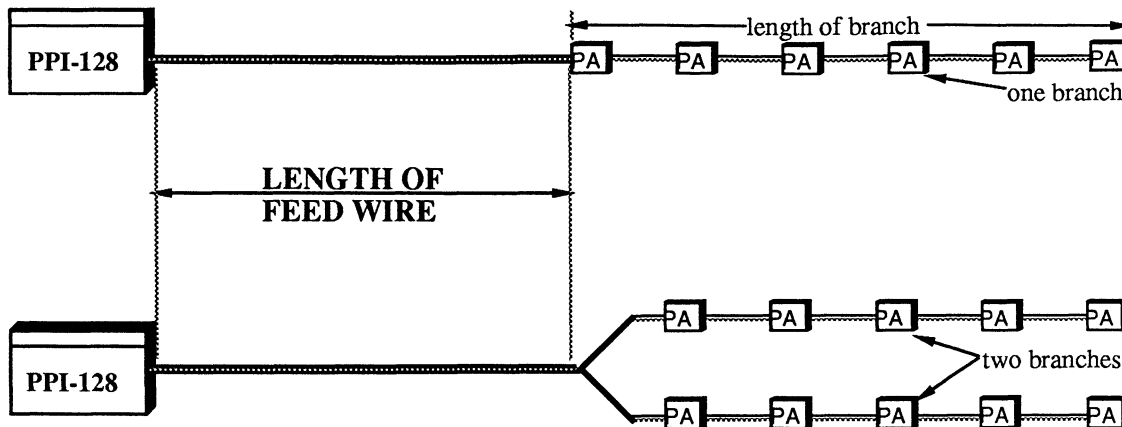
WIRE GAUGE	TOTAL NUMBER OF PA'S USED			
	1 to 16	17 to 32	33 to 48	49 to 64
16	20,000	13,500	9,000	6,800
18	12,000	8,400	5,500	4,200
20	7,800	5,300	3,600	2,700
22	4,900	3,600	2,200	1,700

MAXIMUM DISTANCE (in feet) TO FURTHEST PA UNIFORM SPACING

For example: if there are 22 PA's in the system, evenly spaced apart, and the wire used is 20 Ga, the farthest PA can be 5,300 ft. from the PPI - 128. Remember that PA's protect 2 points, INTELLIPOINTS protect one point. For simplicity these charts assume PA's are used.

USING A FEED WIRE TO CONNECT EVENLY SPACED PA'S ON ONE OR TWO BRANCHES

In some installations you may connect PA's to the PPI by a feed line. This enables you to have branches of PA's at distances of up to 12,500 ft from the PPI. Below are diagrams that show various configurations, and their distance limitations.



Maximum FEED LINE length (feet), 1 branch of evenly spaced PA's, 1,000 feet long

Ga. Feed Line	Branch wire gauge: #20				Branch wire gauge: #22			
	Number of PA's on each branch				Number of PA's on each branch			
	1 - 16	17 - 32	33 - 48	49 - 64	1 - 16	17 - 32	33 - 48	49 - 64
16	12,000	5,700	3,400	2,300	11,000	5,100	2,700	1,600
18	7,500	3,600	2,000	1,400	7,000	3,100	1,700	1,000
20	4,700	2,200	1,300	900	4,400	1,900	1,000	650
22	.	.	.	.	2,700	1,200	650	400

* The feed line wiring should be the same gauge or heavier than the branch wiring

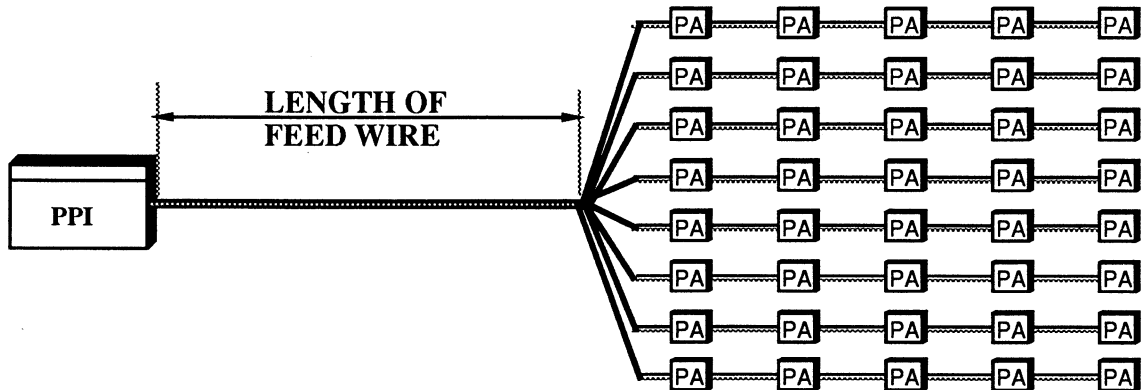
Maximum FEED LINE length (feet), 2 branches of evenly spaced PA's, each branch is 1,000 feet long

Ga. Feed Line	Branch wire gauge: #20				Branch wire gauge: #22			
	Number of PA's on each branch				Number of PA's on each branch			
	1 - 8	9 - 16	17 - 24	25 - 32	1 - 8	9 - 16	17 - 24	25 - 32
16	12,500	6,200	3,600	2,800	11,500	6,000	3,600	2,500
18	7,700	3,800	2,300	1,800	7,300	3,700	2,200	1,500
20	4,800	2,400	1,400	1,100	4,500	2,300	1,400	950
22	.	.	.	.	2,900	1,500	900	500

For example: if there are 21 PA's evenly spaced along 1 branch, and the wire is 18 ga., the feed line can be a maximum of 2,300 feet long.

USING A FEED WIRE TO CONNECT EVENLY SPACED PA'S ON MULTIPLE BRANCHES

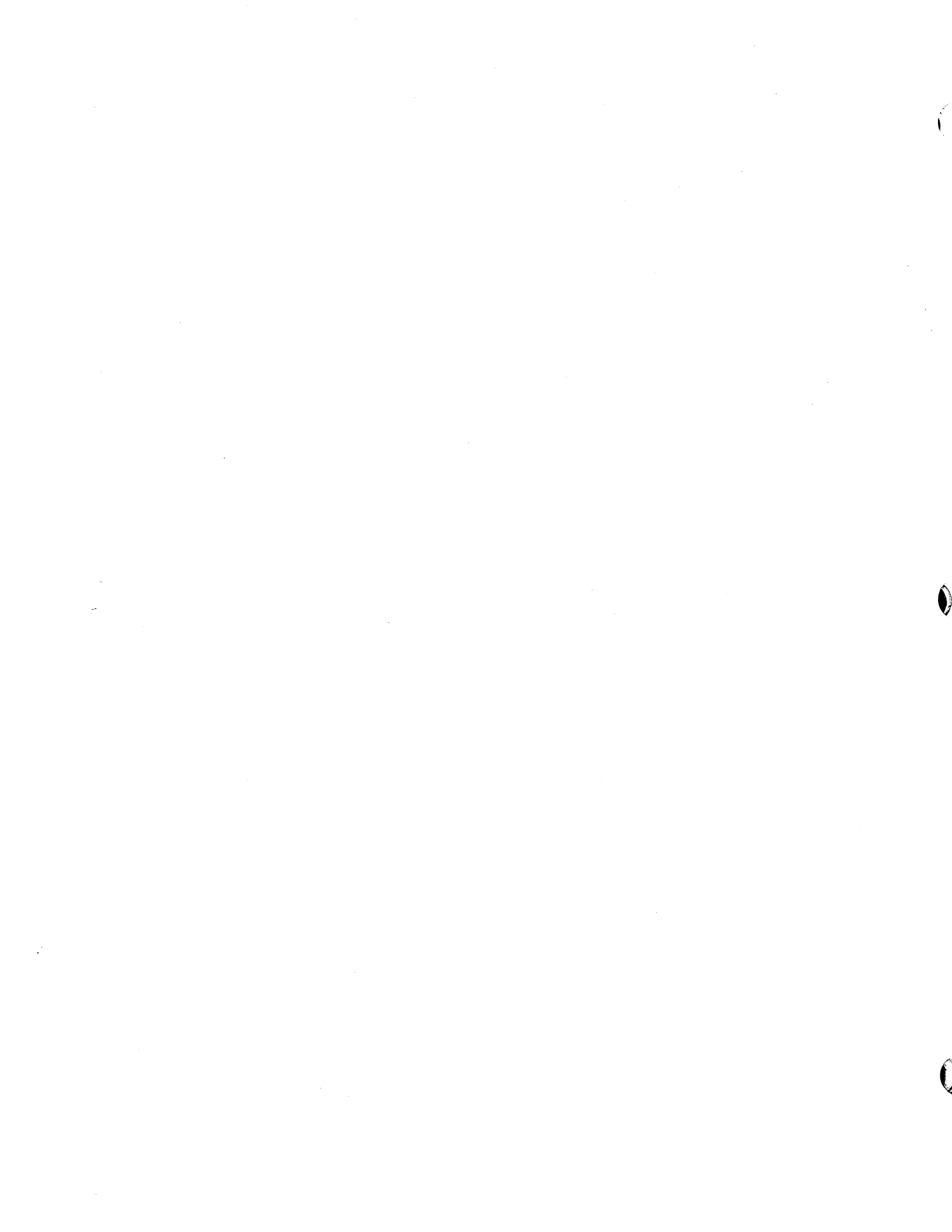
When the PA's are evenly spaced apart, the maximum distance you can have for a FEED LINE only varies by a small percent. But the number of PA's on multiple branches is a factor that can have a greater impact on the length of feed lines.

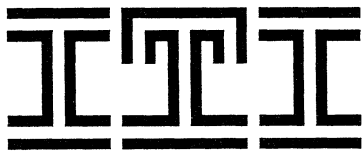


Maximum FEED LINE length (feet) 8 branches of evenly spaced P.A.s, each branch is 200 feet long.

Ga. Feed Line	Branch wire gauge: #22			
	Number of P.A.s on each branch			
	1 - 2	3 - 4	5 - 6	7 - 8
16	12,000	6,100	4,000	3,000
18	7,600	3,800	2,500	1,900
20	4,800	2,400	1,500	1,200
22	3,000	1,500	1,000	750

This example shows how having many branches on one feed line will reduce the feed line distance dramatically with relatively few PAs. You can see how an increase of the gauge of the feed line will make much greater feed line runs possible. For example: If you use 22 gauge wire for you feed line and all eight branches have eight P.A.s, the feed line distance is limited to 750 feet. If 16 gauge wire were used, the feed line length could be up to 3,000 feet.





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