

No.1034 ZONE EXPANSION CENTER

GENERAL INFORMATION:

The No. 1034 Zone Expansion Center permits additional protection zones to be added to No. 1022, 1024, 1026 or BCI026 Alarm Processing Centers and No. 1000, 1003, 1005 or 1020 Deluxe Controls. A single protection circuit in the main control may be expanded to four individually controlled zones by the addition of a No. 1034. Additional groups of four zones may be added by connecting up to four more No. 1034's in parallel with the first (see SPECIFICATIONS).

If desired, up to two of each No. 1034's four zones may be connected as 24 hour zones with "day" sounder annunciation of disturbances in permanently closed or seldom opened protection.

The remote warning sounder will also give audible notification of other than normal conditions in any zone at closing time.

Outputs for individual zone triggering of a dialer or digital communicator and signalling loop status to remote stations are provided as well.

FUNCTIONAL DESCRIPTION:

Protection Zones:

I. GENERAL (applicable to all zones):

a. Protective Loops: Four two wire zone loops are provided. Each is supervised and employs a 1000 ohm End-of-Line resistor. There may be up to 300 ohms of resistance in each loop (excluding the EOL resistor). Each loop may contain closed circuit (in series) or open circuit (in parallel) contacts in any combination.

b. Response Times: Each zone loop normally provides a 250ms (millisecond) response time (swingers, transients or momentary loop disturbances lasting less than 250ms will be ignored by the unit.)

If a vibration contact or other fast responding device is used in one of the zone loops, cutting the ZONE RESPONSE JUMPER for that zone located on the unit's PC board (Zone 1: BROWN, 2: RED, 3: ORANGE, 4: YELLOW. See Diagram 1) will change the zone to the fast response mode (15ms).

c. Zone ON-OFF Switches: Each zone has its own ON-OFF switch, which, if turned OFF, enables an unused or faulty protection zone to be ignored by the system. While the system is armed, these switches are supervised. A zone may be turned ON without incident, but an attempt to turn a zone OFF will trigger an alarm from that zone.

d. Zone LED Indicators (with memory): Each zone has its own LED for circuit test purposes and zone annunciation. A loop disturbance after arming will cause the corresponding zone LED to light and remain lit until the system is disarmed. If the loop disturbance has by then cleared (or when it subsequently clears) the LED will turn OFF. If the zone is turned OFF, the LED will indicate the status of the zone at all times.

2. 24 HOUR ZONE OPTION (Available on Zones 1 & 2):

Zone 1 and/or 2 may be set up as 24 hour ("day" sounder; "night" alarm) zones if desired by cutting the appropriate 24 HOUR ZONE OPTION JUMPER(S) located on the unit's PC board (Zone 1: GREEN, Zone 2: BLUE. See Diagram 1).

If the zone loop is disturbed during the "day" (system disarmed) period, the external sounder (No. 706) connected to the No. 1034 will turn on and stay on. After 2 seconds the sounder may be silenced by momentarily closing a N.O. switch (see WIRING Step 4a for suggested switches that may be used).

The sounder will also be triggered if an attempt is made to turn off a 24 hour zone during the "day". Sound will continue for at least 2 seconds (should someone operate the reset switch immediately) or until the reset switch is operated.

No alarm is initiated, of course, while the system is disarmed. While the system is armed, disturbance of any zone or an attempt to turn OFF a zone switch will result in an alarm as described next under "Outputs".

Outputs:

1. PROTECTION ZONE OUTPUT (Terminal 14):

This output is connected to (one of) the protective circuit(s) on the main control panel. No other protection should be connected to this circuit.

To PREVENT AN ALARM, any No. 1034 zone with a fault must be switched OFF before the main control is armed. If an attempt is made to arm the system with one of the No. 1034's zones in a fault condition, but turned ON, the remote sounder will sound for five seconds to alert the subscriber to the condition. Unless the main control is turned OFF within five seconds AN ALARM WILL BE TRIGGERED. The five second delay is also important since it prevents controls with automatic zone shunting (such as the No. 1022 and 1024) from setting up initially with the basic protection zone (to which the No. 1034 is connected) shunted out because of the alarm condition.

While the system is armed, if a fault occurs on any of the No. 1034's ON zone loops (or an ON zone loop of any additional paralleled No. 1034's) or if an ON zone is turned OFF, a short will appear from this output to the negative (-) protection circuit terminal for two seconds and then clear. Subsequent zone disturbances will cause additional output shorts of two seconds duration.

2. "DIALER" TRIGGER OUTPUTS (6V. DC, 5 ma):

- a. Individual Zones 1-4: Each zone has an individual "DIALER" TRIGGER OUTPUT post associated with it on the PC board (See Diagram 1) that may be connected to the voltage triggering connection points of a dialer or digital communicator. The triggers are enabled five seconds after the system is armed. A subsequent disturbance on any ON zone loop, including an attempt to turn OFF a loop, will generate a two second output at the associated post. If a digital communicator is used, the channel selected should be set for "non-abort" operation, and programmed to an alarm code.
- b. "Zone Shunted (OFF) at Arming" Output (Post 5): This DIALER TRIGGER OUTPUT POST (see Diagram 1) is intended to trip a dialer or digital communicator if the system has been armed with any of the zones OFF. It is enabled five seconds after the system is armed and, when tripped, provides a steady output. If a digital communicator is used, connection should be

made to a channel that has been set for the "abort" mode and programmed to a lower than alarm priority code that will tell the central monitoring station that arming has taken place without all zones ON.

This trigger will also be tripped if any zone loop goes into a steady fault condition after arming or any zone switch is subsequently turned off. Alarm output signals simultaneously appearing on the appropriate individual zone post(s) will take priority, however.

3. SOUNDING DEVICE OUTPUTS:

Two types of outputs for a sounding device (e.g.: No. 706 Mini-Howler) are provided:

- a. Directly Powered, Terminals 10 (-), 13 (+) (6V, 25 ma): These terminals can power one No. 706 directly with a two wire hookup and should be used in conjunction with No. 1000, 1003, 1005 or 1020 Deluxe Controls and No. 1022 Alarm Processing Centers as shown in Diagrams 2,3 and 4.
- b. "Buzzer" Signal Post is a low current output to be used in conjunction with Alarm Processing Centers such as Nos. 1024 and 1026 so that accessories used with them may receive signals from the No. 1034. In this instance a three wire connection is required for the No. 706 Mini-Howler to be connected to the No. 1034. See Diagrams 5 and 6.

With either output, the No. 1034's remote sounding device (No. 706) will be activated at the following times:

- 1) If the 24 hour zone option has been selected and the zone is disturbed or someone attempts to turn it OFF. This will occur only when the system is disarmed.

Note: The buzzers in remote stations such as the Nos. 215 or 227 (used with the Nos. 1024 and 1026 panels) will not function as 24 hour warning sounders. They will function for all other sounder signals produced by the No. 1034.

- 2) If the system is armed with a zone switch OFF, the No. 706 will sound for five seconds and then shut off. This serves as a reminder that all is not normal in the system.
- 3) If an attempt is made to arm the system with an ON zone in a fault condition, the No. 706 will sound for five seconds AFTER WHICH AN ALARM WILL BE TRIGGERED, unless the system is disarmed during those five seconds. The system should be disarmed, the problem corrected (or the zone turned OFF) and the system rearmed.

4. STATUS OUTPUT (Terminal 16):

This output is used with No. 1024 and 1026 panels utilizing single LED remote stations. It will indicate at each remote station (status LED will be OFF) if any of the ON loops are in a fault condition. See Diagrams 5 and 6.

5. SYSTEM ARMED LED:

This LED lights when the five second delay at arming time has elapsed and the "dialer" triggers are enabled.

Additional Feature:

SUPERVISED PROTECTION ZONE OUTPUT AND POWER WIRES:

If the protection zone output wires from terminals 14 and 15 to the control are cut or shorted together during the armed period, an alarm will be initiated at the control. This also applies to the wires bringing power from the control to terminals 9 and 10 of the No. 1034.

INSTALLATION AND WIRING:

1. Select locations for the No. 1034 and the No. 706. The No. 1034 should be located near the main control. The sounder may be located in any convenient location where it may be heard at the control and elsewhere as required if any 24 hour zones are used.
2. Wire the No. 1034's protection zones to terminals 1 through 8 in accordance with Diagram 1, the "Protection Zones" information in the FUNCTIONAL DESCRIPTION section, and the following summary:
 - a. Use Zones 1 and/or 2 as 24 hour zones, if desired. If used, cut appropriate 24 HOUR ZONE OPTION JUMPER: 1-GREEN, 2-BLUE.
 - b. Open and/or closed circuit contacts may be used. For "fast" zone response, cut appropriate ZONE RESPONSE JUMPER(S): 1-BROWN, 2-RED, 3-ORANGE, 4-YELLOW.
 - c. Maximum allowable loop resistance (excluding end-of-line resistor) is 300 ohms.
 - d. If a zone is not used, connect 1000 ohm end-of-line resistor directly across protection zone terminals.
3. BEFORE PROCEEDING FURTHER, DISCONNECT THE BATTERY AND A.C. POWER FROM THE MAIN CONTROL PANEL.
4. Connect wiring between the No. 1034 and the main control panel, sounder and (if needed) 24 hour zone reset switch in accordance with the appropriate Diagram 2, 3, 4, 5 or 6 and the following:
 - a. A "24 Hour Zone Reset Switch" (N.O. Momentary) is required only if the optional 24 hour zone operation has been selected. Suggested switches: No. 2174-70 (flat key), No. 4073-70 (round key), No. 5073-70 (higher security, pick resistant)...or simply a No. 8064 Pushbutton may be used.
 - b. With a No. 1000, 1003, 1050 or 1020 control, a filtered, rechargeable power source must be used (e.g.: No. 497 or 492 Battery Pack). The No. 89 Energy Pack is not suitable. The No. 1034 takes the place of the usual connections to the control's protective circuit terminals.
 - c. Connection to a No. 1020 control is recommended only for existing installations. (On a new installation, a No. 1005 control would be a better choice.) If a No. 1020 must be used, its day circuit buzzer must be disabled as follows: 1) Remove the clear plastic cover on the rear of the panel. 2) Cut and tape one of the buzzer wires.
 - d. When the No. 1034 is connected to an alarm processing center, (such as the No. 1022, 1024 or 1026) cut the WHITE jumper on the No. 1034. No separate end-of-line resistor is required for the main panel's protective loop.

- e. Additional No. 1034's may be paralleled with the first (up to four more... see SPECIFICATIONS) by connecting terminals 9, 10, 11, 12, 13, 15 and 16 (not 14) of the first unit to the correspondingly numbered terminals on each additional unit. No other connections to these terminals are required on the additional units. Cut the WHITE jumper on each additional unit only if indicated for the first unit. No connection should be made to terminal 14 on any of the additional units.

The protection zones (terminals 1 through 8) of each additional No. 1034 may be connected similarly to, but independently of, those for the first unit. Optional 24 hour zone operation is available for zones 1 and 2 of each unit and normal or fast response can be selected for any zone by cutting the appropriate jumpers.

5. If connection is to be made to a dialer or digital communicator, refer to the "DIALER" TRIGGER OUTPUTS information in the FUNCTIONAL DESCRIPTION section. As indicated in Diagram 1, the desired "DIALER" TRIGGER OUTPUT POST(S) (+) and terminal 10 (-) of the No. 1034 should be connected to the 6V.DC triggering terminals of the dialer or digital communicator. Observe polarity!
6. Leave battery and A.C. power disconnected from the main control until ready for TESTING AND OPERATION.

TESTING AND OPERATION:

If the No. 1034 has been connected to a dialer or digital communicator, it is suggested that the latter be disconnected during initial testing of the No. 1034, in order to avoid transmission of unwanted messages.

1. Place the main control in the disarmed (OFF) mode and connect its battery and AC power. The No. 706 may sound. If it does, turn it off by closing the 24 hour zone reset switch momentarily (or short terminals 11 and 12 on the No. 1034 momentarily).
2. Place the No. 1034's zone switches in the ON position. All of the zone LED's should be off. If any are lit, check the appropriate zone loop wiring (its resistance, including end-of-line resistor should measure between 1000 and 1300 ohms.)
3. Check conditions at the main control:
- a. With a 1000, 1003, 1005 or 1020 Deluxe Control, move the switch on the control to the CIRCUIT TEST position. The meter should read at least 3 ma.
- b. With an Alarm Processing Center (e.g.: No. 1022, 1024 or 1026) the panel's red zone LED corresponding to basic protection zone 1 should be off.

If these conditions are not present, check the main protective loop wiring between the No. 1034 and the main control.

4. Use a wire to short the No. 1034's No. 1 zone loop terminals (1,2) momentarily. The zone 1 LED should light while the short is applied. For a No. 1000, 1003, 1005 or 1020 Deluxe Control the meter should drop to "0" for 2 seconds and return to normal. For a No. 1022, 1024 or 1026 Alarm Processing Center its basic protection zone 1 LED should come on for 2 seconds and go off. If the zone is set as a 24 hour zone, the No. 706 will sound. It may be silenced by operating the 24 hour zone reset switch (or shorting terminals 11 and 12) momentarily.

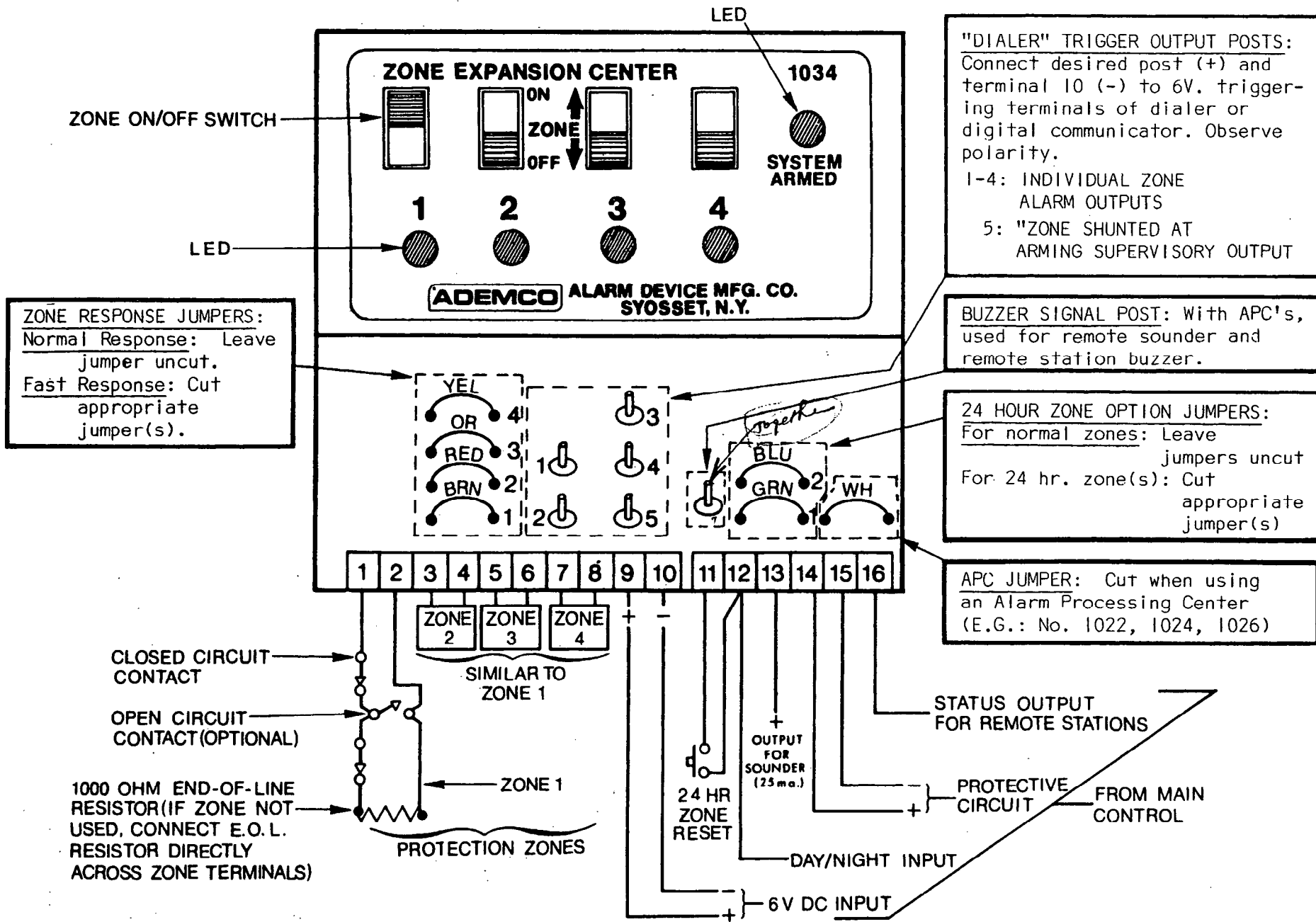


Diagram 1: CONNECTION SUMMARY

(Note: See instructions and other diagrams for connections to specific controls)

Repeat step 4 for each of the other No. 1034 zones (including zones on paralleled No. 1034's if used).

6. If remote stations are used with the main control (e.g.: No. 1024, 1026) that indicate protective loop status (via, for example, No. 244, 245, 216 or 228 Adapters), conduct a STATUS OUTPUT TEST as follows:
 - a. Observe the status LED at a remote station. It should be flashing, indicating all loops are normal.
 - b. Short one of the zone loops at the No. 1034 (e.g.: Zone 3 terminals 5 and 6). The zone LED in the No. 1034 should light and the flashing LED on the remote station should go out. Note: If zone 1 or 2 is shorted and it is set up as a 24 hour zone, the remote sounder will be tripped. Silence it as described in Step 4, after the short is removed in Step 6c below.
 - c. Remove the short. The zone LED should go out and the remote station LED should resume flashing.
7. Turn OFF one of the No. 1034's zone switches, wait at least 2 seconds, and ARM the main control. The remote sounders (and buzzers, if any) should sound for approximately 5 seconds and then stop. The No. 1034's SYSTEM ARMED LED should light after 5 seconds.

Zone ON-OFF Switch Note: To AVOID TRIGGERING AN ALARM, zones should be turned OFF only while the main control is DISARMED. The system should not be ARMED for at least 2 seconds after turning a zone OFF (on 1000 series Deluxe Controls the meter should have returned to a normal indication, on No. 1022, 1024, 1026 Type Alarm Processing Centers, the zone 1 LED should have gone out, and on systems with remote stations the status LED should have resumed flashing).

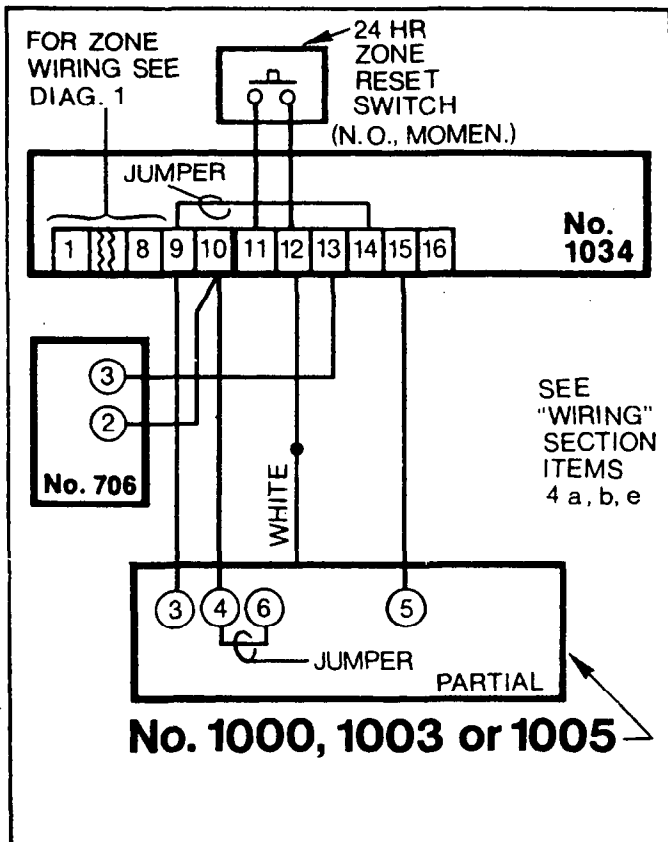


Diagram 2: No. 1000, 1003 or 1005 DELUXE CONTROLS

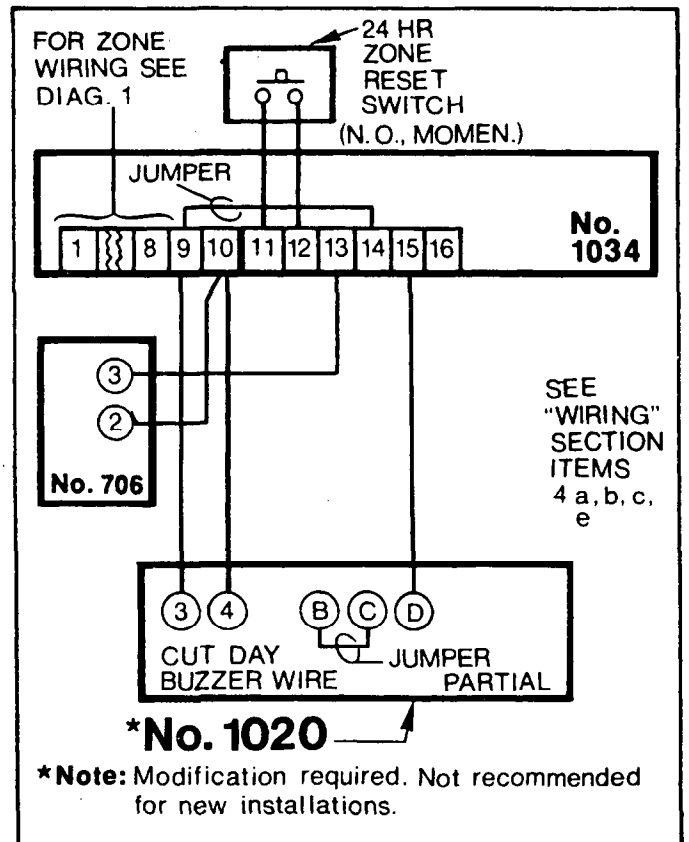


Diagram 3: No. 1020 DELUXE CONTROL

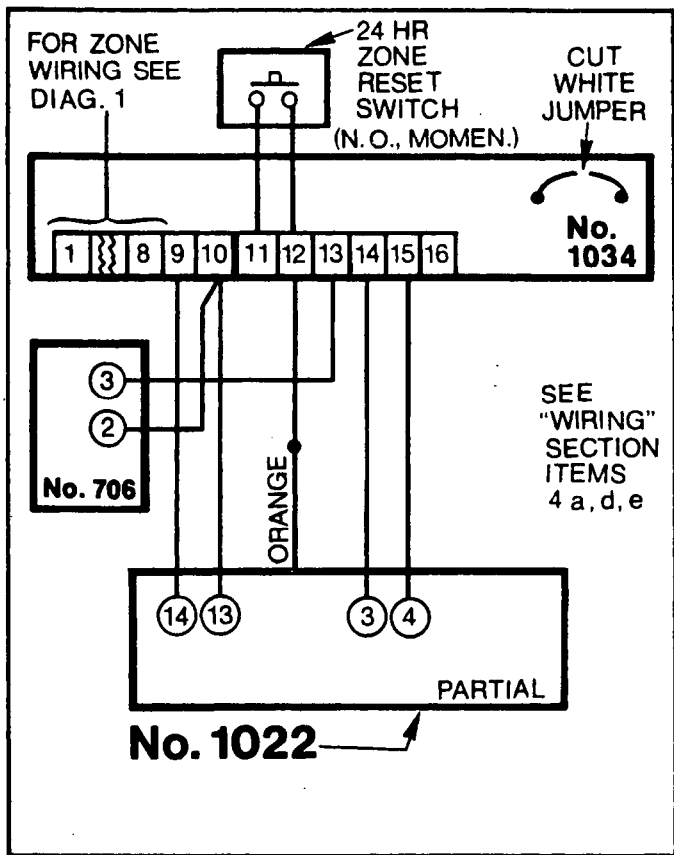


Diagram 4: No. 1022 A. P. C.

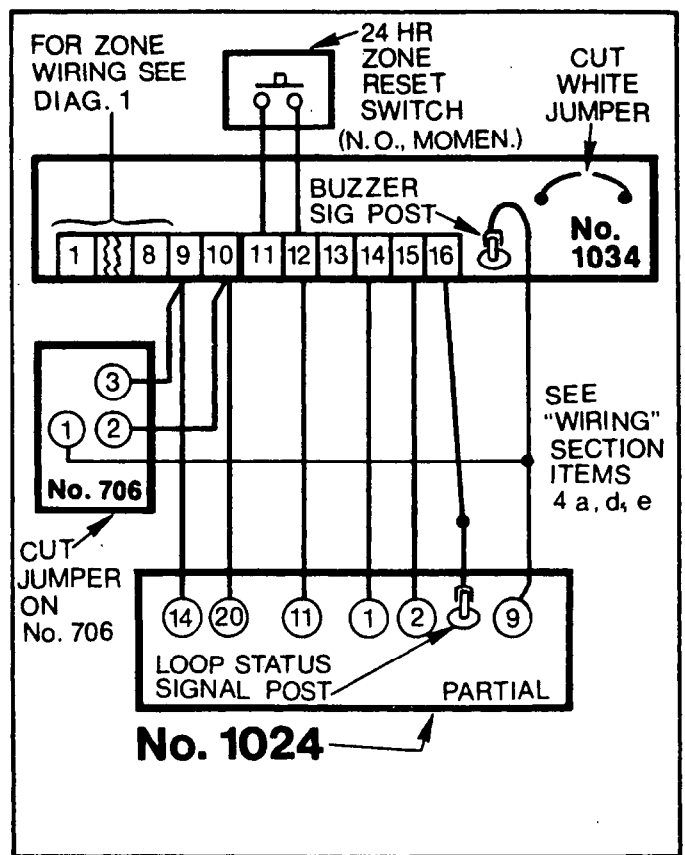


Diagram 5: No. 1024 A. P. C.

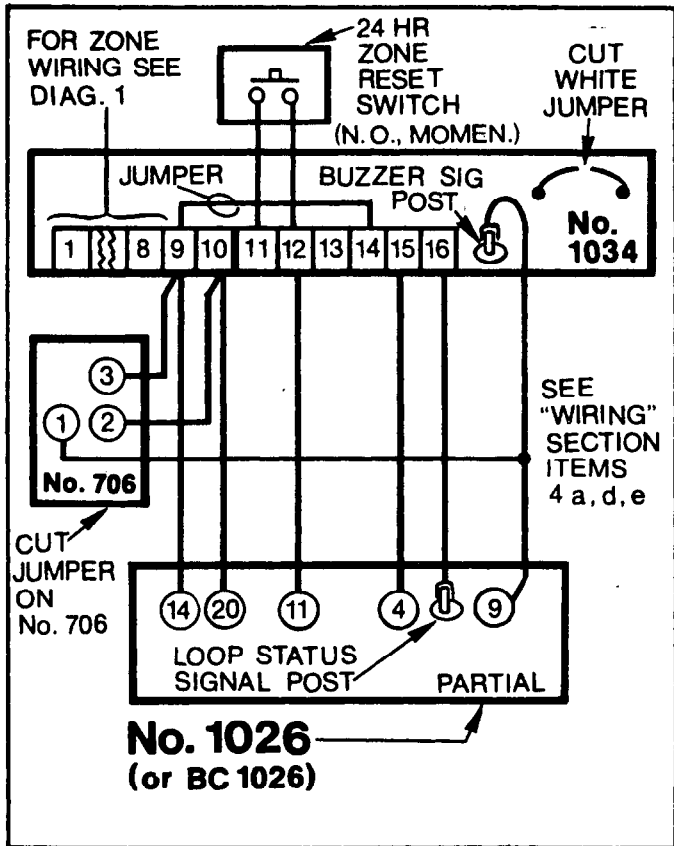


Diagram 6: No. 1026 or BC 1026 A. P. C.

SPECIFICATIONS:

Physical: Width: 8" (20.3 cm)
 Height: 8" (20.3 cm)
 Depth: 2" (5.1 cm)

Electrical: The No. 1034 is powered with 6V. DC (filtered only) from the control instrument. See the GENERAL INFORMATION section for controls with which it may be used.

Current Drain: Approximately 20 ma at 6 V. (per No. 1034... SYSTEM ARMED LED ON, all others OFF).

The number of 1034's that may be connected in parallel (up to a maximum of 5) is determined by the output current available from the control less the current drain of its accessories.

TROUBLESHOOTING No.1034

TROUBLE: 1. WITH ALARM SYSTEM DISARMED, A ZONE LED ON THE 1034 REMAINS LIT.

<u>PROBABLE CAUSE</u>	<u>REMEDY</u>
A. <u>An entry point is open, or a break or short circuit exists in the protective loop corresponding to the zone with the lit LED. See TROUBLESHOOTING procedure below:</u>	A. <u>Take corrective action to restore protective circuits to their proper status (see Part I, Section H for Troubleshooting Techniques).</u>
1. Remove the wires from the particular zone indicating a fault (i.e. terminal 1 and 2 for Zone 1, terminals 3 and 4 for Zone 2, terminals 5 and 6 for Zone 3, terminals 7 and 8 for Zone 4). If Zones 1 or 2 are used as 24 hours zones, then silence buzzer by activating reset switch.	
2. Attach a 1000 ohm resistor (color-coded BROWN, BLACK, RED, SILVER) to faulted zone terminals.	
3. All zone status LEDs should be off now. If not, see Part C, below.	
B. <u>The loop resistance of the faulty zone does not meet specifications (disconnect the loop wires from the zone in question, as described in Part A, Section I, above. With an ohmmeter, measure the resistance of the problem loop. The proper resistance reading should be between 1000 and 1300 ohms).</u>	B. <u>Inspect the protective loop for dirty contacts, shorted wiring or breaks as described in Part I, Section H of this manual, if the resistance measured differs from specifications.</u>
C. <u>Problems exist in the No. 1034 circuitry.</u>	C. <u>Return panel to ADEMCO for repair.</u>

TROUBLE: 2. THE WARNING BUZZER SOUNDS FOR 5 SECONDS WHEN ARMING CONTROL PANEL WITH NO SUBSEQUENT ALARM.

<u>PROBABLE CAUSE</u>	<u>REMEDY</u>
A. <u>A zone ON-OFF switch has been left in the OFF position (buzzer will sound for 5 seconds and then shut off).</u>	A. <u>The buzzer serves as a reminder that a zone switch has been turned off. Restore switch to ON position if desired.</u>

TROUBLE: 3. THE WARNING BUZZER SOUNDS FOR 5 SECONDS WHEN ARMING CONTROL PANEL, AFTER WHICH AN ALARM OCCURS.

<u>PROBABLE CAUSE</u>	<u>REMEDY</u>
A. <u>There is a faulted zone attached to the No. 1034 (look for LED indication as to which zone is faulted; troubleshoot according to procedures found in TROUBLE 1).</u>	A. <u>Repair fault(s) in problem zone (use Part I, Section H, to aid in troubleshooting).</u>

TROUBLE: 4. WITH THE SYSTEM DISARMED, THE WARNING BUZZER SOUNDS CONTINUOUSLY (INDICATING A FAULT IN A 24 HOUR ZONE).

<u>PROBABLE CAUSE</u>	<u>REMEDY</u>
A. <u>An opening in a 24 hour zone has been disturbed (silence buzzer by momentarily pressing reset button).</u>	A. <u>Investigate contacts and/or foil or any points of entry on the faulted 24 hour zone. Restore zone to proper status.</u>
B. <u>An opening or short has occurred in a 24 hour zone (silence buzzer by momentarily pressing reset button).</u>	B. <u>Troubleshoot particular loop (zone 1 or zone 2) according to instructions found in Part I, Section H.</u>
C. <u>A 24 hour (zone 1 or zone 2) ON-OFF switch has been turned off (silence buzzer by momentarily pressing reset button).</u>	C. <u>Restore zone ON-OFF switch to the ON position.</u>

TROUBLE: 5. AN ALARM HAS OCCURRED IN ONE (OR MORE) OF THE ZONES OF THE NO. 1034.

<u>PROBABLE CAUSE</u>	<u>REMEDY</u>
A. <u>A zone disturbance or swinger has triggered an alarm.</u>	A. <u>Check for open points of entry. Use No. 12 tester or equivalent to find fault (see Part I, Section H).</u>
B. <u>A zone ON-OFF switch has been moved to the OFF position while system was armed.</u>	B. <u>Restore switch to the proper position.</u>

TROUBLE: 6. WITH SYSTEM ARMED, A DIALER OR DIGITAL COMMUNICATOR FAILS TO TRIP WHEN AN ATTACHED ZONE CAUSES AN ALARM.

<u>PROBABLE CAUSE</u>	<u>REMEDY</u>
A. <u>Wiring breaks or errors between No. 1034 and digital communicator or tape dialer (check wiring continuity between appropriate zone post on No. 1034 to triggering terminals of digital communicator or dialer. Observe proper polarity).</u>	A. <u>Restore wiring and check tightness of push-on connectors between proper trigger output post(s) of No. 1034 and communicator or dialer (normally a wire from terminal 10 will accompany any wire(s) used from No. 1034 trigger output posts to the dialer or the communicator).</u>
B. <u>In the case of a digital communicator, the channel selected has <u>NOT</u> been set for <u>non-abort</u> operation.</u>	B. <u>Set the selected communicator channel for <u>non-abort</u> operation.</u>

TROUBLE: 7. WITH SYSTEM ARMED, AND A ZONE SWITCH PLACED IN THE OFF POSITION, NO SUCH INFORMATION IS RELAYED TO THE DIGITAL COMMUNICATOR (IF USED).

PROBABLE CAUSE

REMEDY

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|---|--|
| A. <u>Wiring breaks or errors between No. 1034 and communicator (check wiring continuity between trigger output post 5 and proper post on digital communicator. Observe proper polarity).</u> | A. <u>Restore wiring and check tightness of push-on connectors between trigger output post 5 of No. 1034 and the communicator (normally a wire from terminal 10 will accompany any wire(s) used from No. 1034 trigger output posts to the communicator).</u> |
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NOTE: When using trigger output post 5, the connection should be made to a communicator channel set for the abort mode and programmed to a lower than alarm priority code.

TROUBLE: 8. MINI-HOWLER (NO. 706) FAILS TO SOUND DURING ANY OF THESE CONDITIONS:
1. AN OPENING OR FAULT EXISTS IN A 24-HOUR ZONE
2. AN ATTEMPT IS MADE TO TURN OFF A 24-HOUR ZONE
3. A FAULTED ZONE OR A ZONE SWITCH TURNED OFF AT THE TIME OF SYSTEM ARMING

PROBABLE CAUSE

REMEDY

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|---|--|
| A. <u>Wiring errors or incomplete wiring exists between No. 1034 and mini-howler.</u> | A. <u>See Diagrams 2 through 6 in the Installation Instructions to verify proper wiring used with appropriate control panel.</u> |
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TROUBLE: 9. WITH ALL PROTECTION ZONES INTACT, AN ALARM OCCURS AS SOON AS SYSTEM IS ARMED.

PROBABLE CAUSE

REMEDY

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|---|--|
| A. <u>Shorted or cut protection zone output wires (from terminals 14 and 15 to control panel protective circuit terminals).</u> | A. <u>Check wiring for continuity and freedom from shorts. Repair or replace as necessary.</u> |
| B. <u>Shorted or cut wiring supplying power from control panel to terminals 9 and 10 of No. 1034.</u> | B. <u>See Part A, above.</u> |

TROUBLE: 10. WHEN UTILIZING SINGLE LED REMOTE STATIONS (WITH CONTROL NO. 1023, 1024, AND 1026 ONLY), THE CORRECT SYSTEM STATUS IS NOT OBTAINED ON THE REMOTE STATION'S LED.

PROBABLE CAUSE

REMEDY

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| A. <u>A wire is missing, broken, or disconnected between No. 1034 status output (terminal 16) and loop status signal on control panel.</u> | A. <u>Connect or restore wiring (see diagram 5 or 6 in the Installation Instructions).</u> |
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TROUBLE: 11. IMPROPER OR ERRATIC OPERATION RESULTS WHEN USING THE NO. 1034 IN CON-
JUNCTION WITH NOS. 1000, 1003, 1005, OR 1020 DELUXE CONTROLS.

PROBABLE CAUSE

REMEDY

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|---|--|
| A. <u>The source of power for the control panel (and therefore No. 1034) is not a filtered rechargeable source.</u> | A. <u>Replace power source with a No. 497 or No. 492 battery pack or equivalent.</u> |
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NOTE: A No. 89 Energy Pack is not suitable for this application.

TROUBLE: 12. IMPROPER OPERATION OCCURS WHEN USING NO. 1034 WITH NOS. 1022, 1023,
1024, OR 1026 ALARM PROCESSING CENTERS.

PROBABLE CAUSE

REMEDY

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|--|---|
| A. <u>The WHITE jumper at the lower right-hand side of No. 1034 terminal board has not been cut.</u> | A. <u>Cut the WHITE jumper when using an Alarm Processing Center as the main control.</u> |
|--|---|