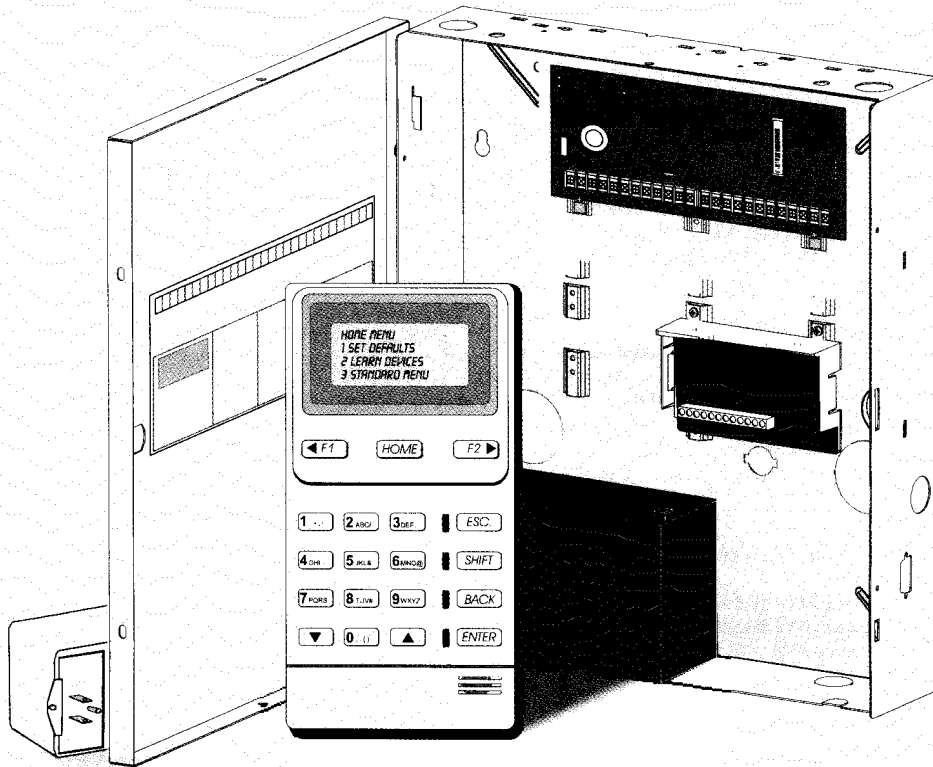
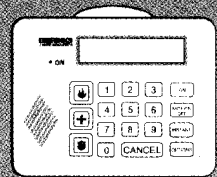
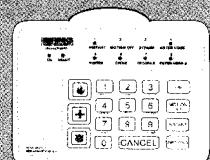


BHS-4000A



Installation and Programming Instructions

BRINKS
HOME SECURITY®



1 BHS-4000A Regulatory Notices

1.1 FCC Notice

1.1.1 FCC Rules Part 15

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If interference generated by this unit is suspected, call Brink's Customer Service at 1-800-445-0872.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ◆ Re-orient the radio/television antenna;
- ◆ Move the television or receiver away from the unit.
- ◆ Plug the unit and the TV/radio receiver into different outlets, i.e. not on the same circuit breaker.
- ◆ Contact Brinks Home Security or an experienced TV/Radio technician for additional suggestions.

1.1.2 FCC Rules Part 68

This equipment complies with FCC Rules, Part 68.

On the outside of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. If requested, provide this information to your telephone company.

This equipment is equipped with a USOC RJ31X connector. This equipment is designated to be connected to the telephone network or premises wiring using a compatible modular jack (RJ31X) which is part 68 compliant.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your number is called. In most, but not all areas, the sum of the REN's of all devices should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should call your local telephone company to determine the maximum REN for your calling area.

Should you experience trouble with the telephone lines, disconnect the equipment from the line to determine the source of the trouble. If it is determined that the equipment is malfunctioning, discontinue its use until the malfunction has been corrected. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telephone company cause to request the user to disconnect the equipment. If you experience trouble with this equipment, please contact Brink's Home Security Customer Service at 1-800-445-0872 for information on obtaining service or repairs.

Should this equipment cause harm to the telephone network, the telephone company may temporarily discontinue your service. If possible, they will provide you with advance notice. Otherwise they will notify you as soon as possible. The telephone company will also advise you of changes in its facilities, equipment, operations or procedures which could affect the operation of your equipment, allowing you the opportunity to maintain uninterrupted service. You will also be advised of your right to file a complaint with the FCC.

This equipment must not be used on party lines or coin-operated phone lines.

The FCC Registration # is C2D MUL-35516-AL-E

Ringer Equivalence: 0.5B

1.2 Industry Canada

NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements documents. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must be installed using an acceptable method of connection.

The customer should be aware that compliance with the above conditions may not prevent the degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

NOTICE: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

This Class B digital apparatus Complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Contact Brink's Customer Service at 1-800-445-0872 for information on obtaining service or repairs.

IC Certification Number is 1140 10954A

IMPORTANT

Please read and fully understand the BHS-4000A user's manual before reading this manual or attempting to install the system.

The user's manual describes the system's features, functions, and user interface requirements in great detail. That information is *not* repeated in this manual.

2 Mounting

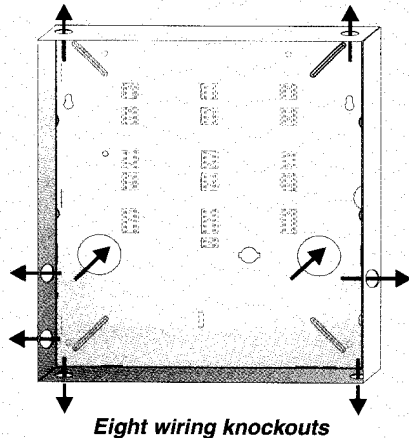
2.1.1 Choose a mounting location for the panel

Choose a mounting location that is:

- accessible to both AC power and telephone service
- protected from excessive heat or cold and
- away from large metal objects, like heating ducts

2.1.2 Remove wiring knockouts

The BHS-4000A enclosure has eight circular wiring knockouts. These knockouts are located at the sides and back of the enclosure as shown below.



The knockouts can be easily removed using your fingers.

2.1.3 Mounting the panel enclosure

Secure the panel enclosure to the wall as outlined below:

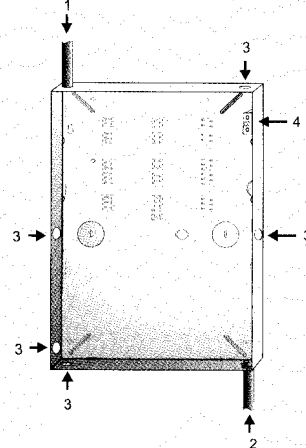
1. Remove the main PCB before mounting the housing.
2. Using the base of the housing as a template, mark the mounting holes (top and bottom) and the wire-entry holes.
3. Drill the top mounting holes and wire entry holes.
4. Insert the top mounting screws, but do not tighten. (Mount the panel using #10 square-drive screws, not provided.)
5. Temporarily hang the enclosure and verify the location of the lower mounting holes.
6. Drill the lower mounting holes and replace the enclosure.

2.1.4 Mounting the panel for commercial installations

When installing the panel in a commercial environment, additional steps must be taken, as outlined below.

1. The Bell Wiring must use the upper left-hand knockout and be enclosed in conduit (#1 in the diagram above right).
2. All other wiring must use the lower right-hand knockout with the conduit being optional (#2 in diagram).

3. All unused knockouts must be removed and covered with cap bolts (provided).



Installing the cap bolts

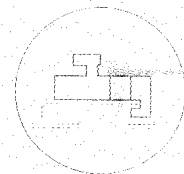
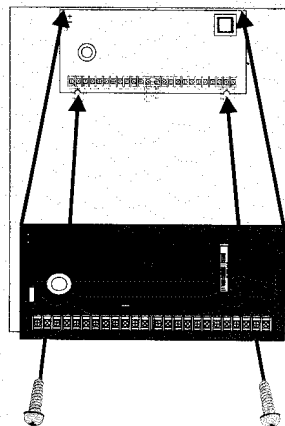


4. Install the tamper switch, provided in the kit (#4 in diagram above) and connect it to a zone input on the panel.
5. Secure the door with the key lock provided in the kit.

2.1.5 Install the panel's main PCB

Re-install the panel's main printed circuit board as outlined below:

1. Place the PCB in the enclosure as shown.
2. Screw the PCB in place using #7 x 1/2" self-tapping screws and star washers (provided).
3. After mounting, secure the cover with #7 sheet metal screws (provided) or separate lock (not provided).



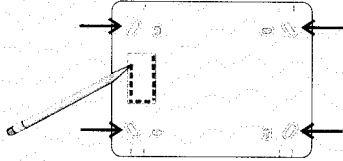
Match PCB to mounting standoffs

BHS-4000A Installation and Programming Instructions

2.1.6 Mounting the keypad

The keypad is mounted on the wall in any convenient interior location. The keypad should be mounted at a height that is convenient for viewing by the end user. To mount the keypad, follow the directions listed below.

1. Open the keypad housing by depressing the latches at the base of the keypad with a flat-head screwdriver.
2. Remove the rear cover
3. Holding the rear cover level against the wall, mark the locations of the mounting and wire-entry holes.



Mark the mounting and wire-entry holes

4. Drill the mounting holes and wire entry holes.
5. Attach the rear cover to the wall using #8 screws, (not provided).
6. Snap the front of the keypad onto the rear cover.

2.1.7 Cover unused emergency keys

Cover any unused emergency keys with the plastic key covers. These covers are distributed in separate packages (P/N 5-531-234-00), and are not included with the keypads. Remove the paper backing from the back of the key cover, and press in place.

2.2 Mount the ZEM

2.2.1 Mounting the ZEM inside the panel enclosure

The Zone Expander Module (ZEM) can be mounted internally or externally of the BHS-4000A's enclosure. The enclosure can accommodate one ZEM.

When selecting an external mounting location, do not exceed the maximum wiring distances listed in the table below.

Installation Type	Maximum Distance (m / ft)
UL Installation	152 m / 500 ft
Non-UL Installation	305 m / 1000 ft

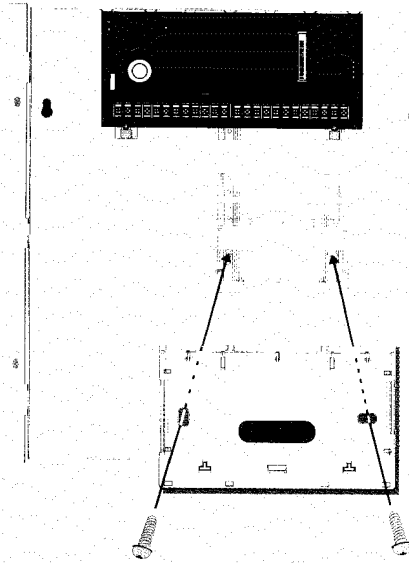
To install a ZEM inside the panel enclosure, do the following:

1. Remove the ZEM printed circuit board, as shown.



Remove the PCB

2. Attach the ZEM mounting bracket to the rear of the enclosure, as shown below.



Attach mounting bracket to the enclosure

3. Replace the ZEM circuit board in the mounting bracket.

2.2.2 Mounting the ZEM outside the panel enclosure

Additional modules can be mounted in their individual housings. To mount an external Zone Expander Module, follow the directions below:

1. While you are grounded, remove the ZEM's PCB, as shown above.
2. Hold the mounting bracket level against the wall and mark the mounting hole locations.
3. Secure the mounting bracket to the wall using #8 screws, not provided.
4. Replace the PCB on the mounting bracket.

2.2.3 Addressing the ZEM

The ZEM has 11 pairs of jumper pins, which are used to select the range of zone inputs. The pins are labeled with the beginning and ending zone numbers for each available input range.

The jumper is factory-installed on the first pair of pins, indicating that the input range for the ZEM is zones 9 - 16. To change the input range of the ZEM, disconnect power to the panel, then move the jumper to the set of pins with the appropriate zone numbers.

Jumper	9-16
● ●	17-24
● ●	25-32
● ●	33-40
● ●	41-48
● ●	49-56
● ●	57-64
● ●	65-72
▲ ● ●	73-80
● ●	81-88
● ●	89-96

Move jumper to address the ZEM

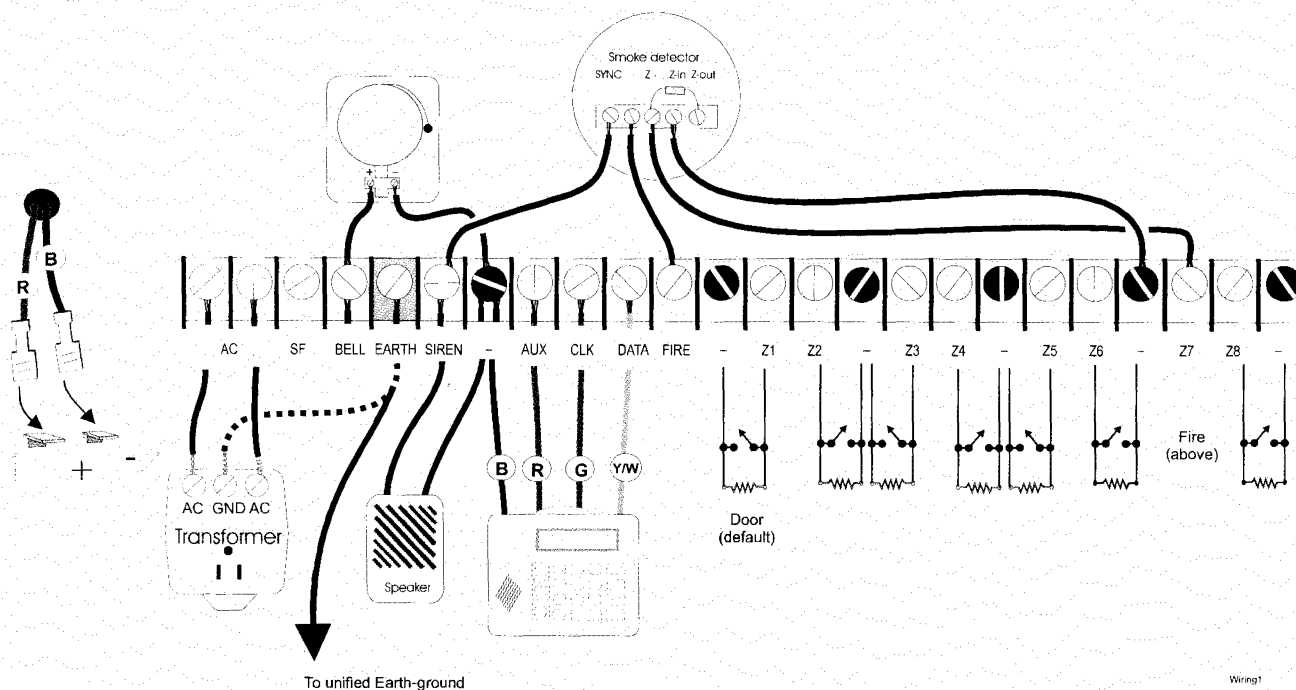
2.3 Mounting the speakers and siren

Mount the system's speaker(s) and the external siren or bell in accordance with the manufacturer's instructions.

3 Wiring

3.1 Terminals

The layout of the terminals of the BHS-4000A is shown below. The function of each terminal is summarized in the table.



3.1.1 Function of each terminal

Label	Description	Value	Connects to
AC	AC Input	16.5 VAC, 25 or 40 VA	Class 2 AC transformer, 120 VAC 50/60 Hz
AC	AC Input	16.5 VAC, 25 or 40 VA	Class 2 AC transformer, 120 VAC 50/60 Hz
SF	Special Function Terminal	0 – 12 VDC nominal, 10 mA	Relay device or programmable output device
BELL	Bell output positive	12.8 VDC	External bell
EARTH	Earth-Ground Connection	Not applicable	Refer to Section 3.9.2 – Connecting to Earth Ground
SIREN	Siren Output positive	90 dB with 8-Ohm load	Up to four 8-Ohm speakers. Total minimum impedance: 4 Ohm.
–	Siren -	Not applicable	Circuit common
AUX	Auxiliary Output Positive	1000 mA @ 13.2 V	Keypads, sensors, relays, and accessory modules.
CLK	Keypad data bus	RS-485: 38.4 kHz	Differential keypad data bus.
DATA	Keypad data bus	RS-485: 38.4 kHz	Differential keypad data bus.
FIRE	4-wire smoke detector power	12.8 VDC	Power for 4-wire smoke detector
–	Common terminal	Not applicable	Circuit common
Z1	Zone input	0 – 12.8 VDC, 3 mA max.	Zone 1 detection device
Z2	Zone input	0 – 12.8 VDC, 3 mA max.	Zone 2 detection device
–	Common terminal	Not applicable	Circuit common
Z3	Zone input	0 – 12.8 VDC, 3 mA max.	Zone 3 detection device
Z4	Zone input	0 – 12.8 VDC, 3 mA max.	Zone 4 detection device
–	Common terminal	Not applicable	Circuit common
Z5	Zone input	0 – 12.8 VDC, 3 mA max.	Zone 5 detection device
Z6	Zone input	0 – 12.8 VDC, 3 mA max.	Zone 6 detection device
–	Common terminal	Not applicable	Circuit common
Z7	Zone input	0 – 12.8 VDC, 3 mA max.	Zone 7 detection device
Z8	Zone input	0 – 12.8 VDC, 3 mA max.	Zone 8 detection device
–	Common terminal	Not applicable	Circuit common

NOTE: All DC voltages listed are nominal values with AC power applied.

3.2 Wire the zones

3.2.1 Wiring the burglary zones

Burglary zones circuits can have a normally-open, normally-closed, or an end-of-line (EOL) configuration. For UL applications, however, an end-of-line configuration is required. When configuring an EOL circuit, use a minimum 22 AWG wire and a maximum wire length less than 1000 feet.

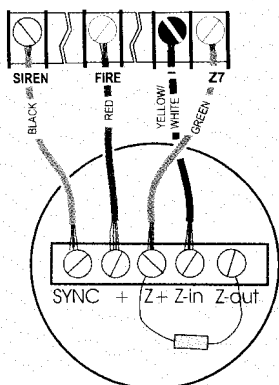
Wire the zone's detection device(s) according to the manufacturer's instructions. Connect the sensor between the appropriate Z terminal on the panel and the adjacent common terminal.

3.2.2 Wiring the fire zone

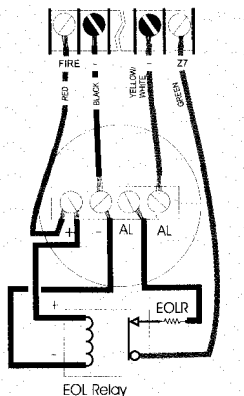
The BHS-4000A panel is designed for four-wire smoke/heat detectors only. Fire zones always require the EOL configuration.

Wire the smoke/heat detector as outlined below:

1. Connect the positive power loop wire to the FIRE terminal.
2. Connect the negative power loop wire to one of the common terminals.
3. Connect the detection loop to the zone and common terminals on the panel. Make sure the zone is configured as a fire zone.
4. When using the System Sensor Model 2112ATL Smoke Detector, connect the Sync terminal to the Siren output.



System Sensor Model 2112ATL Smoke Detector



Other listed 4-wire Smoke Detector using a listed EOL Relay module

Wiring the smoke detector

5. Connect the smoke detector using 14 – 22 AWG wire. The maximum wiring distance is not to exceed 500 feet.

3.3 Wire the keypad

3.3.1 Connect the keypad wires to the terminals

Connect the keypad wires to the terminals, as follows:

Keypad terminal	Panel terminal
V+	AUX
V-	– (Common)
CLK	CLK
DATA	DATA

Note: Connect the keypad using a minimum 22 AWG wire and a maximum wire length of 650 feet.

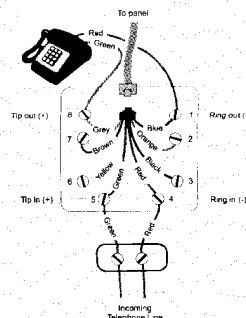
3.3.2 Wiring multiple keypads

The BHS-4000A can support up to 16 keypads, but they can have ID numbers that range from 1 - 128. These keypads can be connected in daisy-chain (parallel), individually home-run, or wired using a combination of these two methods. A combination of LED and icon keypads can be used in the same installation.

3.4 Wire the digital communicator

The digital communicator is integrated into the BHS-4000A control panel. To connect the panel to the house phone, do the following:

1. Locate the 8-conductor cable, attached to the right-hand side of the BHS-4000A's main PCB.
2. Insert the cable's plug into an RJ31X or an RJ38X jack.
3. Wire the RJ31X jack as shown:



Wire the RJ31X jack

Note

The colors of house phone wires vary. If the wire colors do not match the diagram above, connect the yellow wire to the wire that was connected to terminal 4, and connect the black wire to the wire that was connected to terminal 5.

3.5 Wire the ZEM

3.5.1 Connect the wires to the terminals

Wire the ZEM, following the instructions below:

1. Disconnect the system's AC and DC power.
2. Wire the ZEM according to the table and illustration.

ZEM terminal	Panel terminal
V+	AUX
V-	– (Common)
CLK	CLK
DATA	DATA
GND	EARTH Ground (optional) *

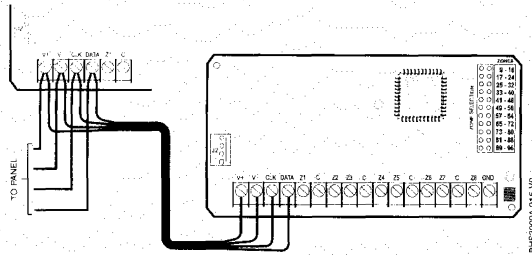
3. Wire the zone inputs in the same manner used to connect devices to the panel's eight on-board inputs.

* If the ZEM is mounted more than 10 feet from the control panel, a separate earth ground connection is recommended. Refer to Section 3.11.2 for additional information on connecting to earth ground.

3.5.2 Daisy chaining

To simplify the system's wiring, devices can be daisy-chained together. Use each device's V+, V-, CLK, and Data terminals for making daisy chain connections.

Daisy chaining is not recommended and extreme care should be taken when using this wiring method. If daisy chaining is used, a broken wire or loose connection in one device affects all additional devices in the chain.

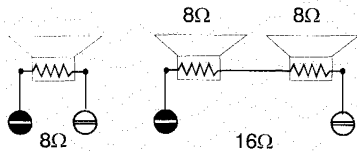


Daisy-Chaining a ZEM

3.6 Wire the speaker(s)

The BHS-4000A can support up to four 8-Ohm speakers. When connecting the speaker, ensure that the speaker is located not more than 125 feet from the control panel and use at least 18 AWG wire.

3.6.1 Wire one or two speakers in series

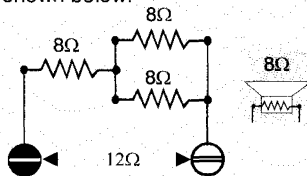


Wire one or two speakers in series

For Residential Fire Installations, use either a single speaker or two speakers in series.

3.6.2 Wire three speakers in series-parallel

When using three speakers wire them in a series-parallel combination, as shown below.

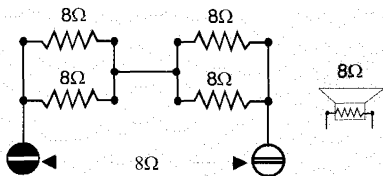


Wire three speakers in series-parallel

Use in Residential Burglary Installations only.

3.6.3 Wire four speakers in series-parallel

When using four speakers, wire them in series-parallel as shown.



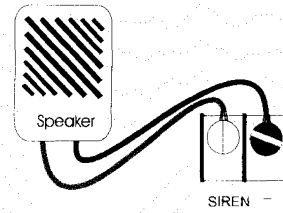
Wire four speakers in series-parallel

Use in Residential Burglary Installations only.

3.7 Connect speaker(s) to the panel

To connect the speaker to the control panel, do the following:

1. Connect the positive side of the speaker to terminal 6 (SIREN).
2. Connect the negative side of the speaker to terminal 7 (common).

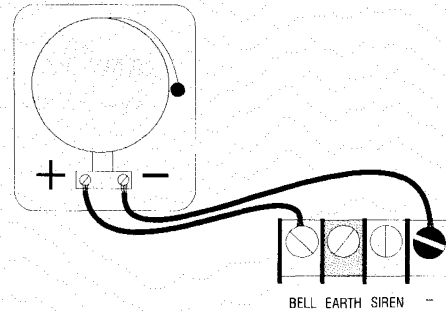


Connect speaker(s) to the control panel

3.8 Wire the siren or bell

Wire the external siren or bell as outlined below:

1. Connect the positive wire to terminal 4 (BELL).
 2. Connect the negative power loop wire to terminal 7 (common).
- Note: Connect the bell using 18 AWG or larger and do not exceed a wire length of 150 feet.



Wire the external siren or bell

3.9 2350-SUP Bell Supervision Module

The 2350-SUP Bell supervision module monitors the bell wiring. The 2350-SUP can detect opens and shorts, which would prevent normal operation of the bell. The 2350-SUP consists of two parts: The Bell supervision module which must be mounted in the control panel enclosure and the termination assembly which mounts and connects inside of the ADEMCO AB-12M bell enclosure.

2350-SUP Supervision Module

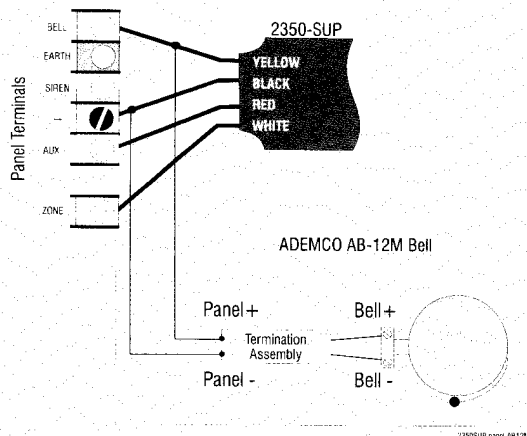
Wire Color	Connection to BHS-4000A
Red	Aux
Black	-
Yellow	BELL
White	Zone

Termination Assembly

Label	Connection to ADEMCO AB-12M
Bell +	Terminal 1 (Bell +)
Bell -	Terminal 2 (Bell -)
Label	Connection out to BHS-4000A
Panel +	BELL
Panel -	-

Programming under Advanced Menu | Device Menu | Control Panel | Vw/Edt Device | Inputs

Zone Response time of 150-500ms (150ms default)
4.7K EOL Resistance
EOL
Instant Zone Type



Wiring 2350-SUP, BHS-4000A and AB-12M

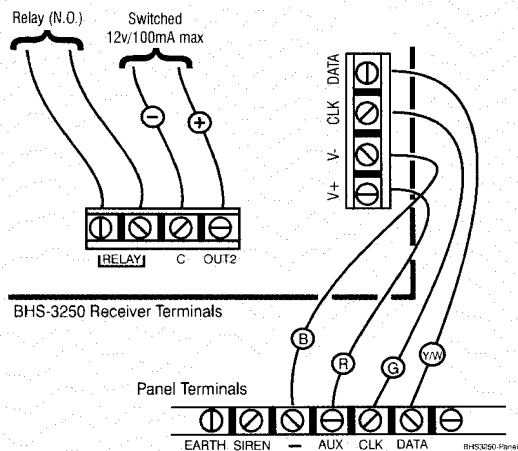
3.10 Wire the BHS-3250 Receiver

Refer to the BHS-3250 Installation Instructions P/N K0982 for more information.

To wire the receiver, do the following:

1. Disconnect the system's AC and DC power.
2. Wire the receiver according to the table and illustrations.

Receiver Terminal	Wire Color	Panel Terminal
V+	Red	AUX
V-	Black	- (common)
CLK	Green	CLK
DATA	Yellow or white	DATA



Wire the receiver to the panel

3.10.1 Wire Relay and Switched 12V/100mA Output

The receiver has a 24 V, 0.5 A (form A) reed relay, and a transistor switched 12V/100mA output, for control of external devices.

Wire the relay terminals in the same manner that you would connect a normally-open switch. Wire the 12V/100mA switched output as required; OUT2 is the +12V output and C is the return.

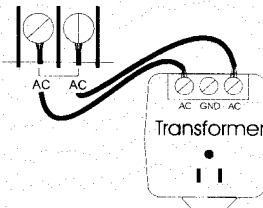
For additional information regarding mounting and wiring, refer to the BHS-3250 Receiver installation instructions.

3.11 Connect to AC power

3.11.1 Wire the transformer

The BHS-4000A uses a 16.5 VAC, 25 VA or 40 VA transformer. (See Section 6.1.2 for a list of approved models.) Connect the power terminals of the transformer to the AC terminals on the main PCB, as shown in the following diagram.

Note: Connect the transformer using 18 AWG or larger and do not exceed a wire length of more than 100 feet.



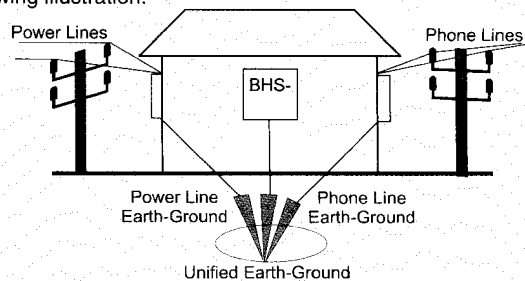
Wire the transformer

3.11.2 Connect to Earth-Ground

An Earth-ground connection protects the system from damage caused by power surges. For the most effective protection, a "unified Earth-ground" is recommended. A unified Earth-ground provides a common ground to the power and telephone lines, and the security system.

To create an Earth-ground connection, run a 14-gauge solid copper wire from terminal 5 (Earth) to the central terminal (Ground) of the transformer, if the terminal is available.

If your transformer does not have an Earth Ground terminal, you can create a Unified Earth Ground connection as shown in the following illustration.



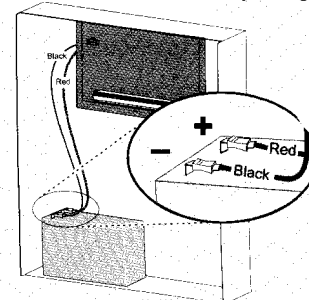
Unified Earth-ground connection

3.12 Connect the backup battery

The BHS-4000A uses a Premier or Universal Brand 12 VDC lead-acid backup battery (see section 6.1.2). Choose either a 4 Ah or a 7 Ah model. To determine the proper Ah rating for the battery, refer to the Battery Loading Chart in Section 3.13.

To connect the backup battery, do the following:

1. Connect the red lead to the battery's positive terminal.
2. Connect the black lead to the battery's negative terminal.

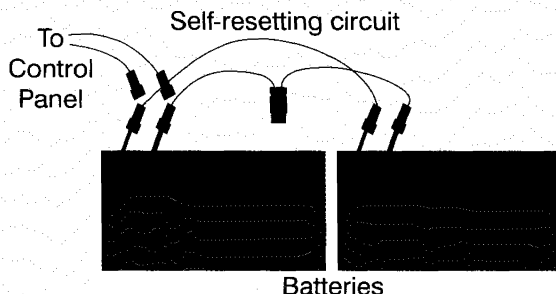


Mounting and connecting the battery

Operational States under no AC/ Battery condition

- ≥ 12 VDC – Normal Operation
- ≤ 11.9 VDC – Normal Operation – Low Battery Condition
- < 9.9 VDC – Load Shed Condition

Two batteries can be connected in parallel to achieve a higher Ah rating. The BHS-3902 battery harness uses a self-resetting circuit to protect against short circuit and battery reversal.



Using the BHS-3902 Battery Harness

When using the BHS-3902 battery harness:

- Connect the lead to the panel battery leads, and observe the proper polarity when connecting the batteries.
- Both batteries must have the same Ah rating, and should have the same lot number or date code.
- Batteries should be replaced every 3-5 years
- Use a 40VA transformer when using batteries having a capacity over 7.5Ah.

3.13 Calculating System Loading

The tables below will help you calculate system loading and the size of backup battery required for your installation.

The first table lists the requirements for the BHS-4000A control panel and each system accessory. Use this table to determine the Standby Current (Is) requirements for UL installations.

Product	Max Current	Qty	Total
BHS-4000A Control Panel	110 mA	1	110 mA
BHS-3101 Icon Keypad or BHS-3102 Irda Keypad	55 mA		
BHS-3111 LED Keypad or BHS-3112 Irda Keypad	80 mA		
S3201 Zone Expander Module	60 mA		
S3210 Keyfob Receiver	55 mA		
DT-720 Motion Sensor	25 mA		
FG-1515 Glassbreak Detector	15 mA		
240-COe Carbon Monoxide Detector	8 mA		
BHS-3250 Receiver	135 mA		
BHS-3230 Commercial ZEM	45 mA		
BHS-3420 Barran Reporting Module	650 mA		
Aux output on BHS-3250			
2350-SUP Bell Sup. Module	15 mA		
(Sensors) Auxiliary Power + Aux out on BHS-3250			
Fire Power (2mA per 2112ATL)			
Active Zones (normally closed)	3 mA (each)		
Active Zones (EOL)	1.5 mA (each)		
Total Is			

The second table will aid you in determining the backup requirements of the system during an alarm condition. Use this table to determine the total Alarm current (Ia).

Product	Alarm	Total
Control Panel and Accessories	From above	
2112ATL Smoke Detector	30 mA	
240-COe Carbon Monoxide Detector	75 mA	
Bell	*	
4 Ohm Siren Load	260 mA	
8 - 12 Ohm Siren Load	170 mA	
Total for Ia		

*The current requirements for a bell vary. Refer to the documentation that comes with the sensor for the actual current requirements.

The battery's Ah rating must be reduced (derated) based upon the amount of standby time required. The derating value (D) is 1.05 for 24-hour backup and 1.25 for 4-hour backup.

To determine the total Ah rating of your battery, use the following formula:

$$Ah = ((Is * Standby Hours) + (Ia * Alarm hours)) * D$$

Note: Is and Ia should be in Amps (Example: 170mA = 0.17A)

The Alarm hours are calculated as follows: Alarm Hours = Alarm Minutes/60. For example, 4 - 5 minutes = 0.083 hours; 10 minutes = 0.167 hours; and 15 minutes = 0.25 hours.

3.14 Output Current Limits

The following table shows the Voltage Range and Current Limits for each Output terminal of the BHS-4000A.

Function	Terminal	Voltage Range	Current Limit	Combined Current	Comments
Bell/Strobe	Bell	9 - 14	1 A	1.2 A**	
Speaker	Siren	N/A	N/A		4 - 12 Ohm
Keypad and Accessories	Aux	9 - 14	1 A		
4-wire Smoke	Fire	9 - 14	1 A		

** The total combined current shown is for the 40 VA transformer. If using a 25 VA transformer, the total should be reduced to 1.0 A. The maximum current draw needs to include the control panel current.

4 Panel Programming

The BHS-4000A has two programming modes: Standard and Advanced. Most of the programming options required for a normal installation are accessible through the Standard Menu. All options are available in the Advanced Menu.

To start the panel programming, connect the S3121 Alphanumeric Programmer and enter the Installer Access Code (0-1-2-3-4-5-Enter).

Configure the control panel and accessories using Option #2 – Learn Devices.

4.1 Standard Programming

Select Option #3 to enter Standard Programming. The Table below shows the panel programming in Standard Mode.

MENU ITEM/TOPIC	COMMENTS
Account	
Comm 1 Report Account	This is the Account Number used when reporting alarms to the central station. The Report Account is an alphanumeric field, up to 5 characters in length.
Comm 2 Rpt Acnt	This is the Account Number used when sending reports to the numeric pager. By default, the Account Number for Comm 2 is 11.
Comm 3-8 Rpt Acnt	These Account Numbers are for sending reports to additional receivers. The default for each is blank.
Dial Prefix	
Dial Prefix	The Dial Prefix identifies the special codes needed to connect to outside telephone lines when placing a call. Standard characters are Access outside line from a PBX system (8 or 9); 5-second Pause (,); and Wait for dial tone (W). The Dial Prefix can be up to eight characters long.
Comm/Pager	
Select the Comm to edit and Press [Enter]	If the Comm does not exist, you will be asked if you wish to create it. Press 1 for Yes or 2 for No. Comm 1 and Comm 2 are predefined. Comm 1 is the Alarm Reporting device and Comm 2 is a Personal Pager. Comms 3 – 8 must be created.
Comm 1 Comm Type	The Comm Type specifies the reporting format used when sending reports. For Comm 1 the default Type is SIA.
Address	Specify the server address to which the system will send reports (Multiple Account Systems).
Dial Area Code	This is the Area Code for connecting to the central station. If the call is long distance, enter 1 + Area Code.
Dial Phone Number	This is the 7-digit phone number of the central station.
Address	Specify the email address to which the system will send reports. (Multiple Account Systems.)
Comm 2 Comm Type	The Comm Type specifies the reporting format used when sending reports. For Comm 2 the default Type is Numeric Pager.
Dial Area Code	If required, this is the area code for the pager.
Dial Phone Number	This is the 7-digit phone number of the pager.
Comm 3-8 Comm Type	The Comm Type specifies the reporting format used when sending reports. Comm 3 – 8 need to be created, and the default Type is Unconfigured.
Dial Area Code	If required, this is the area code for the Comm device.
Dial Phone Number	This is the 7-digit phone number of the device.
Zone Block	
Starting Zone #	Select the zone number for the beginning of the block to be programmed. All zones specified will use the same zone type.
Ending Zone #	Select the last zone in the block.
Zone Type	Select the zone type from the list of available types. Use the Up and Down arrow keys to scroll to the desired zone type. The default is Unconfigured.

Circuit Type	This identifies the circuit as Normally Open, Normally Closed, EOL, Supervised, or Burg. Trouble. The default is Normally Closed.
Account	This option only appears in Multiple Account systems.
Set Zone Block?	This is a confirmation that you wish to program the block of zones. Press 1 for Yes or 2 for No.
Zones/Panics	
Select the Zone to edit and Press [Enter]	If the zone does not exist, you will be asked if you wish to create it. Press 1 for Yes or 2 for No. Zones 1 – 96 are detection zones; Zones 252 – 254 are the Emergency Key soft zones; Zone 255 is Duress; Zone 256 is Line Cut. Initially, all zones except 255 & 256 are enabled, but only zones 1, 252, 253, and 254 are configured.
Enabled	This option allows zones to be disabled without having to change the configuration.
Zone Type	Specify the Zone type from the list of available types Use the Up and Down arrow keys to scroll to the desired zone type.
Account	This option only appears in Multiple Account systems.
Set Exit Dlys	
Set Exit Delay for all Keypads	This option allows you to configure the Exit Delay for all keypads on the system in a single step. The Exit Delay can still be changed for a single keypad using the Advanced Programming Menu.
Account	This option only appears in Multiple Account systems.
Set Entry Dlys	
Set Entry Delay for all Zones	This option allows you to configure the Entry Delay for all entry zones on the system in a single step. The Entry Delay value may still be changed for individual zones using the Advanced Programming Menu.
Account	This option only appears in Multiple Account systems.
Learn Fob (Option only appears when Keyfob(s) available for programming)	
User n Fob Press one keyfob button twice <Esc to cancel>	This option allows you to program a keyfob to operate with the system. The user does not need to be active in order to program the Fob. When the user is activated, the Fob will function with the specific user number.
User Codes	
Account	This option only appears in Multiple Account systems.
Select the User number to edit and press [Enter]	This option allows you to set up the Name and User Code for all users. If the User does not exist, you will be asked if you wish to create it. Press 1 for Yes or 2 for No.
Name	Initially, there are 5 user codes which are pre-defined: Host Access User – User #92; TCM User – User #93; Special Bypass User – User #94; Duress User – User #95; and Master User – User #96.
Access Code	The Host Access User, TCM User, and Master User have factory-assigned Access Codes, all others are blank.
Line Cut	
Line Cut Enable	This option determines whether or not the telephone line is monitored for Line Cut. The default is No.
Terminal 3	
Terminal 3 mode	This is the Special Function Output. It can be programmed for Courtesy Output or Cellular Backup. You can also disable the output by selecting None.
EOL Resistors	
EOL Resistors	Determines whether or not the system will look for End-of-Line Resistors on the hardwired zones.
Op/Ci Reports	
Open/Close reports	If enabled, will send Opening and Closing Reports for all users to the central station. Reports are automatically sent to Comm 2 (Pager), if the Pager is enabled.

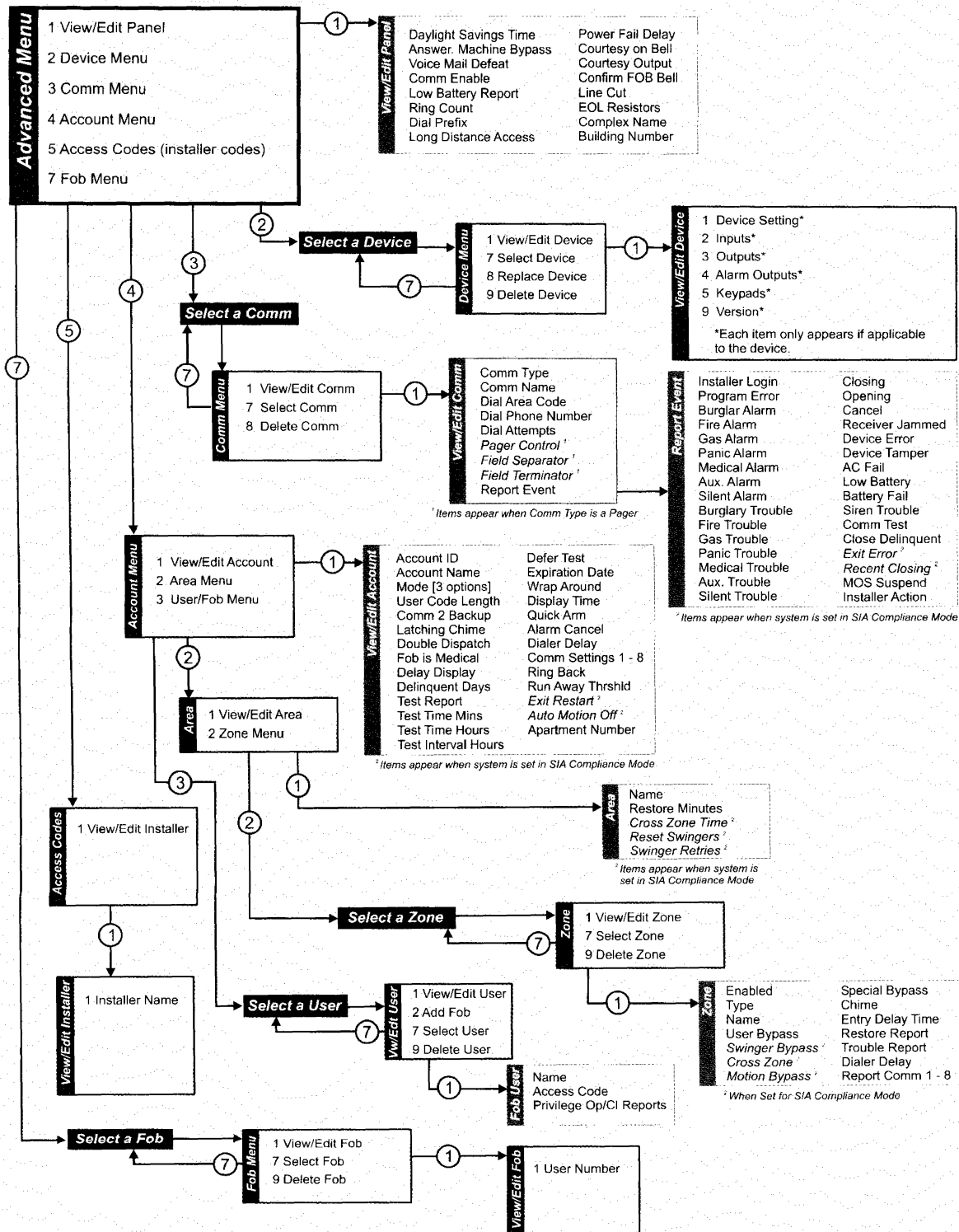
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Enroll Xmtr	
Enroll RF Device	This option allows you to enroll various 5800 series wireless devices. Select from a list of RF device types, enter the device serial number, select the device input and assign the device to a zone number. You will be asked to trigger the transmitter to complete the enrollment.
Account	This option only appears in Multiple Account systems.
User Code Len	
Account	This option only appears in Multiple Account systems.
User Code Length	Set user code length for Account 1 from 3 to 8 digits/characters.

4.2 Advanced Programming

Additional programming options not found in the Standard Programming section are available through the Advanced Programming Menu.

Advanced Menu Tree



The Advanced Menu allows you to program the entire system.

Adv_tree-4A_3-05

5 Troubleshooting

5.1 Browse events

The BHS-4000A system stores more than 1000 events in its event memory. You can review the events from installer programming. Select **Option 7: Browse Events** from the Home Menu. The display will show the following selections:

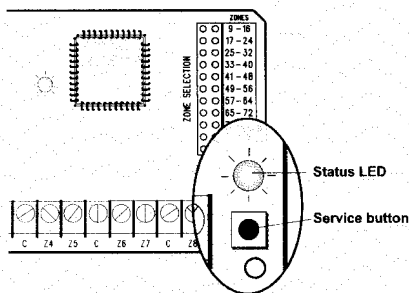
```

EVNT BROWSE MENU
1 Browse Oldest
2 Browse Newest
8 View Upload
9 Clear Events
  
```

To view the events in the order they occurred, select **Browse Oldest**. To view the events in reverse chronological order (most recent to least recent), select **Browse Newest**. Select **View Upload** to see a list of the records that are pending upload to Vivaldi. To erase all of the events in event memory, select **Clear Events**.

5.2 Status LED

The system's bus devices provide you with system status information by blinking the status LED at different rates. Specifically, the status LED blinks to indicate whether the device is properly configured and whether or not it is communicating with the panel.



Status LED, shown here on a ZEM

The LED blinks one to five times, pausing for two seconds before repeating the pattern. To determine the system's status, count the number of blinks, and compare it to the table below.

Blinks*	Significance	
	Is device configured?	Is panel communicating?
1	Yes	This device
2	Yes	Other devices only
3	Yes	Panel not polling
4	No	Other devices only
5	No	Panel not polling

*Cadence: 250 milliseconds on, 250 milliseconds off, repeated one to five times, then off 2 seconds.

5.2.1 Determining the Device Number

Each bus device is automatically assigned a Device Number, or polling address, during the Learn Devices procedure. You can obtain the Device Number by doing the following:

1. Press the device's Service Button. (The Service Button is located in the lower right-hand corner of the PCBs of the ZEM, the keyfob receiver, and the keypads.)
2. The Status LED (located near the Service Button) blinks the Device Number in a decimal format. Zeros are indicated with a continuous two-second pulse; digits are separated by a one-second pause. There is a 2.5-second pause at the end of the number.

The example below shows how Device Number 12 would be broadcast:

LED action	Significance
1 pulse	1
1 second pause	end of digit
2 pulses	2
2.5 second pause	End of Device Number

5.3 Troubleshooting specific problems

5.3.1 System will not initialize

Condition: When power is applied to the system, it fails to operate.

Indications: None of the system components operate properly.

Possible causes:

- The backup battery may be defective.
- The transformer may be defective.
- The breaker switch may be thrown.
- A peripheral device may be defective.

Solutions:

- If the battery is completely discharged, the panel will not power up until the battery has been recharged to approx. 11.5 VDC. Allow sufficient time to recharge the battery and monitor the voltage level.
- If the battery or transformer is defective, replace it. (Disconnect the electrical power to the panel before investigating.)
- Move the breaker switch to the ON position.
- Remove all keypads and attempt to initialize the system. If successful, reconnect the keypads one at a time, replacing any keypad that does not work.
- Remove all devices connected to AUX power and attempt to initialize the system. If successful, reconnect the devices one at a time, replacing any one that does not work.
- If none of these solve the problem, replace the panel.
- Panel will not power up on battery unless the siren output is momentarily shorted several seconds after the battery is connected.

5.3.2 Keypad does not work at startup

Condition: When first installed, the keypad is not able to communicate with the control panel.

Indications:

- The keypad does not respond when a key is pressed.
- The keypad icons and/or LEDs are not lit.
- The keypad does not appear on the programmer's list of learned devices.

Possible causes:

- The keypad's black and red wires are not connected to the common and AUX terminals, respectively.
- The keypad wires are damaged.
- CLK and DATA wires are reversed.

Solutions:

- Verify that the panel is receiving power at the AC inputs.
- Verify the wiring connections, replacing any wires that are damaged.
- If none of these solve the problem, replace the keypad.

5.3.3 Keypad stops communicating

Condition: One or more of the system's keypads are no longer able to communicate with the control panel. The keypad(s) previously operated properly.

Indications:

- The siren clicks twice, then pausing for two to three seconds. (The user can silence this by pressing the **CANCEL** key on an operative keypad.)

- The programmer's list of learned devices shows the keypad is "NA" or not answering.
- The keypad may be unresponsive to commands. Its LEDs or icons may be off, or its ON LED may be blinking.
- If trouble reporting is enabled, the system reports a Trouble Report containing the Device ID and a failure code to the central station.
- The system's other keypads are beeping. (The user can silence this by pressing the **CANCEL** key.)

Possible causes:

- The keypad's wires may have been damaged.
- The keypad's hardware may be damaged.

Solutions:

- Replace or repair any damaged wiring.
- If the keypad is malfunctioning, replace it.

5.3.4 Test report fails

Condition: The system fails to send a successful test report.

Possible causes:

- The telephone service to the panel is out.
- The digital communicator is improperly wired.
- The panel is improperly programmed.

Solutions:

- Repeat the test when telephone service has resumed.
- Verify the wiring connections, and replace any wires that are damaged.
- Verify that the system is programmed as follows:
 - the communicator is properly configured;
 - the communicator's telephone number is properly programmed;
 - test reporting is enabled;
 - the panel's account mode is correctly configured.

5.3.5 Event report fails

Condition: The system fails to send a successful event report.

Indications: The system should have reported a system event to the central station or to another communicator, but it did not.

Possible causes:

- Digital communication is impaired, as described in the previous section.
- The panel is improperly programmed.

Solutions:

- Verify that the digital communicator is properly wired and that telephone service is in place, as described in the preceding section.
- Verify that the system is programmed as follows:
 - the communicator is properly configured;
 - the communicator's telephone number is properly programmed;
 - the zone is programmed to report that type of event to the communicator;
 - the panel's account mode is not programmed for local fire or local burglary.

5.3.6 Siren does not sound

Condition: The siren is malfunctioning.

Indications: The siren does not sound when or as it should.

NOTE: The siren output is only designed to drive speakers.

Possible causes:

- The siren is improperly wired.
- The panel is improperly programmed.

Solutions:

- Verify the wiring connections. Replace any wires that are damaged.

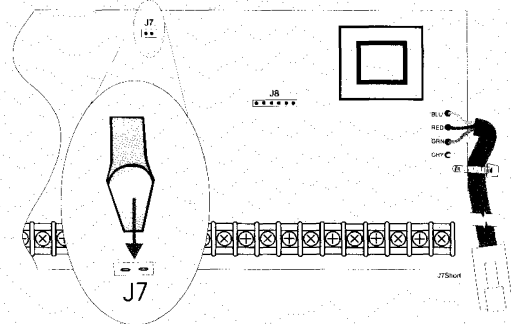
- Generate an alarm, then measure the voltage across the SIREN and common terminals. The voltage should be between 4-6 VAC.
- Verify that the system is programmed as follows:
 - the alarm cadence is correct;
 - the alarm cutoff time is correct;
 - the siren warble is correct.
- Measure the resistance of the siren. It should be between 3 and 15 Ohm.
- If these solutions are not effective, replace the siren.

5.3.7 Handheld programmer is broken or missing

Condition: A new system needs to be programmed, but the handheld programmer is broken or missing.

Solution: Configure the system remotely, following the procedure described below:

1. Following installation, use a small screwdriver to momentarily short J7 while applying power to the system.



Short J7 during power-up

2. Wait while the control panel restores the system's default programming and learns all the system's devices. When this is completed, the keypads' on LED flash at a fast rate.
3. Using the keypad, enter the four or five digit Report Account Number for Communicator 1. Press the Options key. The keypad beeps once to indicate that it has written the number into memory.
4. Enter the eleven-digit telephone number for the Brink's Monitoring Center into the keypad. The number includes the 1(800) XXX-XXXX sequence. Press the Options key. The keypad beeps once to indicate that it has written this number into memory.
5. The control panel then contacts the valid Downloader software and uploads the panel's programming. An operator can now revise the panel's programming and download the new programming data to the panel.

5.3.8 System does not recognize a ZEM

Condition: The system does not recognize one of its ZEMs.

Indications: The system does not allow you to create and program zones for one of the system's ZEMs.

Possible causes:

- The ZEM is not properly wired.
- The ZEM's zone selection jumper is incorrect.
- The ZEM was not found during the Learn Devices process.
- The ZEM may be damaged.

Solutions:

- Verify the wiring connections. Replace any wires that are damaged.
- Verify that the zone selection jumper is in place, and that it does not occupy the same position as the jumper on another system ZEM. If the jumpers of two ZEMs are in the same position, move the jumper on one to a new position not used by any other ZEM in the system, then select learn devices again.

- Repeat the Learn Devices process.
- If these solutions are not effective, replace the ZEM.

5.3.9 Keyfob not working

Condition: A system keyfob does not work.

Indications: The system does not respond to the commands of a keyfob.

Possible causes:

- The keyfob or the keyfob receiver was not properly programmed.
- The customer has deleted the keyfob's user code.
- The keyfob's battery needs replacing.
- The keyfob is defective.
- The keyfob is out of range.
- The keyfob's signal is being blocked.
- The keyfob receiver is not communicating with the panel.

Solutions:

- Verify that you have both learned the keyfob and created a user code for that keyfob.
- Verify that the keyfob receiver was properly learned. (If the receiver is working with other system keyfobs, you can skip this step.)
- Watch the keyfob's Battery Indicator LED as you press and hold the red ON button for five seconds (not applicable to the 5804E Keyfob.) If the LED blinks or fails to light, replace the battery. If the LED is steadily lit, the battery is good. (The keyfob takes one A23 battery.)
- Attempt to arm the system while standing in front of the keypad. If the keyfob's signals are being received, the keypad's display will mirror the changing status of the system. If the signals are not being received, repeat the keyfob learning sequence.
- Open the receiver and repeat the keyfob test. Verify that the receiver's status LEDs show the appropriate responses to the keyfob commands. If the keyfob's signals are not being received in a portion of the house, consider adding a second keyfob receiver in that area. If applicable, remind the customer of the keyfob's range.
- Look for and correct problems with the receiver's wiring. (If the receiver is working with other system keyfobs, you can skip this step.)
- If the receiver is working properly, replace the keyfob. If the receiver is not working properly, replace it and reprogram the receiver and all the keyfobs.

5.3.10 Trouble condition on startup

Condition: When the system is powered up, a trouble condition is identified on the zone.

Indications: The keypad identifies a trouble condition on a zone at startup.

Possible causes:

- The zone was faulted during the first five seconds of zone scanning after startup.
- The zone was in alarm when the system was powered down and is still faulted when power is restored.
- An independent trouble condition exists on the zone.

Solutions:

- Allow the zone a short time to restore itself.
- If the zone is faulted, correct the fault.
- Look for and correct wiring problems or other sources of a trouble condition.

The trouble and trouble restoral conditions are reported (unless Trouble Reporting is disabled).

5.4 Icon keypad service messages

The table below lists the service (or trouble) messages displayed by the icon keypad, and the significance and corrective measures for each.

Message	Significance	Correction
LINE CUT	The telephone line has been cut, or service has been interrupted.	Hang up all telephones. If the telephone service is interrupted, instruct the customer to call the telephone company.
LOW BATT, CALL (800) 445-0872	The backup battery's voltage has dropped below 11.9 V.	Allow the battery 24 hours to recharge. If problem persists, replace the battery.
NO AC	The AC power to the panel has been lost.	If there is electrical power to the building, check and reset the circuit breaker. Verify the transformer wiring. Repair/replace wiring, or transformer. Replace control panel.
TROUBLE, CALL (800) 445-0872. In addition, the display reads "CP."	Communication failure. The panel could not make a report to the central station.	Verify the telephone service is working. Verify wiring connections. Replace any defective wires. Replace control panel, if necessary.
TROUBLE, CALL (800) 445-0872. Also, the display reads "CS."	Siren supervisory failure. A wiring, communication, or power problem.	Verify the wire connections. Replace any defective wires. If the system has a Barran Reporting Module, verify it is working. Replace siren or panel, as necessary.
TROUBLE, CALL (800) 445-0872. The display also shows "CF."	Device supervisory problem. Caused by wiring, power, or communication problem.	Verify the wire connections. Replace any defective wires. Replace peripheral device or panel, as necessary.
TROUBLE, CALL (800) 445-0872. In addition, the display reads "CH."	Host failure. The control panel could not complete a call to the Downloader.	Verify the telephone service is working. Verify the panel programming. Verify wiring connections. Replace any defective wires. Replace control panel, if necessary.
TROUBLE, CALL (800) 445-0872. In addition, the display reads "CJ."	RF Interference. The Receiver has trouble receiving messages due to RF interference.	Try to locate the source(s) of RF interference (such as from cell phones, wireless phones or devices, etc.) and turn them off.
ZONE NUMBER TROUBLE	Trouble on fire zone.	If the trouble follows a canceled fire alarm, allow time for any airborne particles to disperse. Replace the detector if necessary.
TROUBLE, LOW BATT	The Transmitter indicated the battery needs to be replaced.	Change the battery.

5.5 LED keypad service messages

When a trouble condition exists, the TROUBLE LED on the LED keypad either lights or blinks. This section tells you how to interpret and correct the trouble messages.

Steadily lit Trouble LED. This indicates that one of nine trouble conditions exists. To identify the condition, press OPTIONS key, and then the 9 key. A zone LED will blink. Compare the blinking zone LED to the table below to determine which trouble condition exists:

Blinking LED	Message	Correction
1	Low battery. The backup battery has dropped below 11.9VDC.	Allow the battery 24 hours to recharge. If the problem persists, replace the battery.
2	Communication failure. The system could not complete a report to the central station.	Verify the telephone service is working. Verify the panel programming. Verify wiring connections. Replace any defective wires. Replace control panel, if necessary.

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Blinking LED	Message	Correction
3	Trouble on fire zone.	If the trouble follows a canceled fire alarm, allow time for any smoke particles to disperse. Replace the detector, if necessary.
4	Call Brink's at 1 (800) 445-0872.	Call Brink's Customer Care.
5	Device supervisory problem. A wiring problem exists.	Verify the wire connections. Replace any defective wires. Replace device or panel, as necessary.
6	Siren supervisory failure. A wiring problem exists.	Verify the wire connections. Replace any defective wires. Replace siren or panel, as necessary.
8	Line cut. The telephone line has been cut, or service is interrupted.	Hang up all telephones. If the telephone service is interrupted, instruct the customer to call the telephone company.

To identify whether the ninth condition exists, press the OPTIONS + 9 keys again. If the zone LED 1 is lit, a Host failure has occurred.

1	Host failure. The control panel could not complete a call to the Downloader.	Verify the telephone service is working. Verify the panel programming. Verify wiring connections. Replace any defective wires. Replace control panel, if necessary.
2	AC Failure. The AC power to the panel is interrupted.	Check to ensure the panel is plugged in. Check for broken or loose wires. Is power out in the rest of the house? If not, check the circuit breaker. If AC is present across terminal 1 and 2, then replace control panel.

6 Compliance Information

6.1 UL/CUL Compliance

6.1.1 Residential Listings (US and Canada)

When installed following the guidelines presented below, the BHS-4000A system is compliant with these agency listings:

- UL 985 – Household Fire Warning System Units
- UL 1023 – Household Burglar Alarm System Units
- UL 1635 – Digital Alarm Communicator system Units
- UL 1637 – Home Health Care Signaling Equipment

The system also complies with the following Canadian listings:

- CAN/CUL-S545-M89 – Standard for Residential Fire Warning System Control Units
- UL 1023 – Household Burglar Alarm System Units

6.1.2 Hardware Guidelines

- Use only UL listed devices.
- Use recognized limited energy cables.
- Do not plug the transformer into a receptacle that is controlled by a switch. Use an approved transformer from the list below (according to location of installation):

Note: Part Numbers in *italics* = w/Ground Terminal

	US (UL Listed)	Canada (UL/CSA Listed)
Basler		
16.5V 25VA	<i>BE116225CAA0002</i>	BE116225AAA0024
16.5V 25VA	BE116225CAA0001	
16.5V 40VA	BE156240CAA0007	
UltraTech		
16.5V 40VA	<i>IM-16V 40VA</i>	<i>IM-16V 40VA</i>
16.5V 40VA	<i>E-HWA T16V40</i>	<i>E-HWA T16V40</i>
ELK		
16.5V 40VA	<i>TRG1640</i>	
Universal		
16.5VAC 40VA	UB1640W	
16.5VAC 25VA	UB1625B/US2	
16.5VAC 25VA	<i>UB1625B/US3</i>	<i>UB1625B/CA3</i>
Revere		
16.5VAC 40VA	RT-1640	

- Use one of the 12 VDC batteries listed below:

Premier 12VDC 4Ah	PT1245
Power Sonic 12VDC 5Ah	PS1250
Power Sonic 12VDC 7Ah	PS1270
Universal Battery 12VDC 7Ah	UB1270
Universal Battery 12VDC 4.5Ah	UB1245
Yuasa 12VDC 4Ah	NP4-12
Yuasa 12VDC 7Ah	NP7-12

- Battery backup requirement: Residential Fire (US & Canada), Home Health Care = 24 hour w/ 4 minute alarm time.
- Battery backup requirement: Residential Burglary (US & Canada) Commercial Burglary and DACT = 4 hour w/ 5-15 minute alarm time.
- Use Premier or Universal PTS-15 BHSW Range 4–16 Ohm speaker across the SIREN and Common terminals for Residential Fire and Burglary applications. For Canadian Residential Fire, use the Amseco MSB Series 12VDC bell. In a Multi Area system, these devices must be placed so that it can be heard in all areas as they are the primary sounding devices. The sounder on the 2112ATL smoke detector is a supplementary sounding device.
- Fire zones must use System Sensor Model 2112ATL smoke detector, ADEMCO 5808LST wireless smoke detector or other UL Listed 4-wire Smoke Detector with EOL Relay.
- Use the IntelliSense/Honeywell 9.X 4.7 K EOL resistors for all hardwired fire zones.
- Use 4.7K Ohm end-of-line resistors on all burglary zones.

- Do not exceed the maximum combined auxiliary, fire and keypad current (1.0A for a 25VA or 1.2A with a 40VA transformer, including alarm outputs).
- Do not exceed the maximum current draw for the Bell output (1 A). The primary sounding output device should be a siren for residential systems or a bell for commercial systems.
- Install the keypads within the protected area. If mounted outside of protected areas, keypads must be set up for tamper protection.
- Use SIA format with Silent Knight 9800 Receiver.

Note: The Keyfob, Keyfob Receiver, BHS-3420, and Virtual Keypad have not been investigated by Underwriters Laboratories, Inc.

6.1.3 Programming Guidelines

To ensure that the BHS-4000A system is compliant with the Listings in Section 6.1.1, program the system as follows:

- The MOS Suspend mode is not to be used in UL Certified installations.
- Program each keypad's exit delay to be 120 seconds or less. (**Standard Menu | Set Exit Delay**)
- Program each entry delay for 45 seconds or less. (**Advanced Menu | Account | Area | Zone | Vw/Edt Zone | Entry Delay Time**) Program each Entry/Exit Zone individually.
- User Codes must be at least 3 digits long (**Advanced Menu | Account | Vw/Edt Acnt | User Code Length**).
- Siren Supervision must be enabled when using the siren output.
- Program all burglary sounding devices to operate for at least 4 minutes. (**Advanced Menu | Device | Vw/Edt Device 0 | Alarm outputs | Burglary Cutoff**) Set Medical Cutoff Time to a minimum of 5 minutes for Home Health Care applications.
- Burglary zones must be programmed as EOL and the Alarm output cadence must be steady.
- Fire zones (both hardwire and soft zones) must be programmed as supervised, with Temp Code 3 (USA or CAN) alarm cadence.
- Medical zones must be programmed for silent or a pulsing cadence.
- No zone may be programmed for silent alarm.
- Do not program the panel to dial a police station.
- Do not program the panel to dial an emergency, police station, or fire alarm number.
- Program the fire alarm time-out for manual shutdown. (**Advanced Menu | Device | Vw/Edt Device 0 | Alarm outputs | Fire Cutoff**; program 0.)
- Program the dialing attempts for Comms 1 and 2 to be at least 5, and no more than 10. (**Advanced Menu | Comm | Vw/Edt Comm | Dial Attempts**)
- Program the test message interval to once every 24 hours. (**Advanced Menu | Account | Vw/Edt Acnt | Test Interval Hrs**) In a multiple area system, it is only necessary to send the test interval on one of the area accounts since they share the same dialer.
- Program the panel to report all fire trouble conditions to the central station. (**Advanced Menu | Comm | Vw/Edt Comm | Fire Trouble**; program "yes" for Communicator 1.)
- Enable AC and Battery trouble reporting. (**Advanced Menu | Comm | Vw/Edt Comm | AC Fail**; and **Advanced Menu | Comm | Vw/Edt Comm | Low Battery**; program both as "yes" for Communicator 1.)
- Pager reporting can only be used as a supplementary method, primary reporting **must** be to a central station.

- Do not program a 24-hour zone to allow bypassing. (**Advanced Menu | Account | Area | Zone | Vw/Edt Zone | User Bypass**; and **Advanced Menu | Account | Area | Zone | Vw/Edt Zone | Motion Bypass**; and **Advanced Menu | Account | Area | Zone | Vw/Edt Zone | Special Bypass**; program “no” for each 24-hour zone.)
- Disable the dialer delay. (**Advanced Menu | Account | Vw/Edt Acnt | Dialer Delay**; program for 0.)

6.1.4 Additional Guidelines for CUL installations

- Notify the local authority of the installation.
- Use recognized limited-energy cables for all devices. Refer to the Canadian Electrical Code, Part 1, for the use of the proper class of wiring.
- Refer to the following installation standards:
 - CAN/CUL-540-M89 – Standard for the Installation of Residential Fire Warning Systems.
 - CAN/ULC-S310-M91-standard for the Installation and Clarification of Residential Burglar Alarm Systems.

6.2 CSFM Compliance

6.2.1 Installation Guidelines

To install a BHS-4000A system that is compliant with the California State Fire Marshall residential fire installation requirements, use the following setup:

- Use a 12V 7Ah battery to ensure a backup time of 24 hours.
- Use the Premier or Universal PTS-15BHSW siren as the primary sounding device.
- Fire Verification feature must be disabled.

6.3 Special Commercial Burglary Guidelines

6.3.1 Commercial Listings (US)

When installed following the guidelines presented below, the BHS-4000A system is compliant with these agency listings:

- UL 365 – Police Station Connected Burglar Alarms System Units and Systems
- UL 609 – Local Burglar Alarm Units and Systems

6.3.2 Installation Guidelines

To install a BHS-4000A system that meets the Commercial installation requirements, use the following setup:

General Guidelines:

- The medical and fire features / functions have not been listed for Commercial Mercantile applications.
- Zone response time cannot exceed 1 second. (Default: Follower and Follower Delay = 350mS, 150mS on all other zone types.
- Place a label over the Medical and Fire Emergency Keys.

UL609 Grade A Local Mercantile Premises. Follow instructions for Commercial Enclosure per section 2.1.4 .

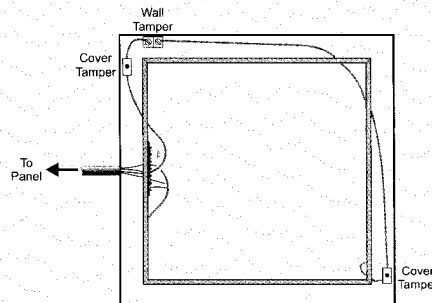
- Use of the ADEMCO AB-12M and 2350-SUP is required for Commercial installations. (See illustrations for connection information and section 3.9.)
- Conduit connection must be made behind the AB-12M.

Additional requirements for UL609 Grade A Local Mercantile Safe & Vault:

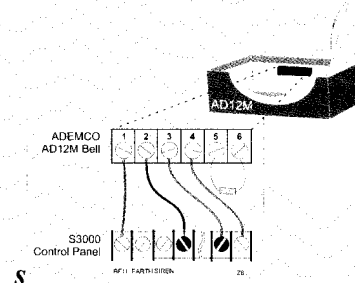
- The BHS-4000A must be installed inside the complete vault, complete safe, or extend number 1 stockroom.

or

- The Sentrol 5402 shock sensor must be used on the enclosures back box. Follow the manufacturer's instructions on proper sensor mounting.
- A UL Listed contact must be used inside the cabinet through one of the knockouts for pry-off tamper purposes. Wire the shock sensor and pry-off tamper contacts to the same zone that supervises the panel's tamper switch.



Bell Housing with Tamper Switches



Wiring the Bell to the Panel

- Battery backup time: 4 hours
- Program zones for tamper switch as an EOL Day/Night Zone.

UL365 Grade A Police Station Connected Burglar Alarm

- Follow the instructions for UL609 Grade A Local Mercantile Premises.
- Enabling of the dialer is required.
- BHS-4000A must be able to report Burglary, Low battery, and Communicator test reports.
- Program the test reports to be sent once every 24 hours.

6.3.3 Programming Guidelines

- Bell ring back must be enabled (**Advanced Menu | Account Menu | Vw/Edt Acnt | Ring Back**) Note: Ring Back will sound a 1 second blast on Bell and Siren outputs at the completion of the Exit Delay.
- Alarm time: 15 minutes
- If siren is not used, disable supervision (**Advanced | Device Menu | Control Panel | Vw Edit | Alarm outputs | Supervised**)
- Entry delay must not exceed 45 seconds. (**Advanced Menu | Account | Area | Zone | Vw/Edt Zone | Entry Delay Time**) Program each Entry/Exit Zone individually.

6.3.4 Related Installation and Wiring Method References

- Commercial Burg. - UL 681 – Installation and Classification of Burglar and Holdup alarm systems.
- Commercial Burg. – UL611 – Standard for Central-Station Burglar-Alarm systems.
- Residential Burg. – UL 1641 – Installation and Classification of Residential Burglar Alarm Systems
- NFPA 70-1996

6.3.5 SIA Programming/Installation Guidelines

The BHS-4000A, which is marked with the integral UL/SIA label, complies with the Control Panel Standard ANSI/SIA CP-01-2000: Features for False Alarm Reduction.

NOTE: The partitioning (multi area) mode cannot be used for SIA classified installations.

The panels come defaulted in the SIA mode and contain some programming areas, which are not available in the Brinks Default mode. Below are the default values.

Advanced Menu | Account Menu | Area Menu | Vw/Edt Area

Cross Zone Time: 20 seconds

Swinger Trips ⁵: 1

Automatic Swinger Reset ⁵: Disabled

Restoral Minutes ⁵: Default is 5 minutes

Advanced Menu | Account Menu | Area Menu | Zone Menu | Vw/Edt Zone

Cross Zone Enable: Disabled

Swinger Bypass ⁵: Enabled for Non-Fire zones, disabled for Fire zones.

Fire Verification Enable: Disabled.

Dialer Delay Enable: Enabled for Non-Fire zones, Disabled for Fire zones and CO zones.

Standard Menu

Exit Time: 60 seconds (Residential), 120 seconds (Commercial)

Entry Time: 30 seconds

Advanced Menu | Account Menu | Vw/Edt Acnt

Exit Time Restart: Enabled

Automatic Motion Off (Auto stay arm on unvacated premise feature): Enabled (System automatically arms with Motions Off if no Exit/Entry zone is opened during the Exit Delay countdown.)

Alarm Cancel: Enabled

Dialer Delay (Abort Window): 30 seconds

Double Dispatch: Enabled (Requires the user to press the Fire, Medical, or Panic emergency key twice within three seconds to trigger a soft zone alarm.)

Advanced Menu | Device Menu | (Keypad Device) | Vw/Edt Device | Keypads

Exit tone: Yes

Advanced | Comm Menu | Vw/Edt Comm

Exit Error Event Report: Enabled

Recent Closing Event Report: Enabled

Standard Menu | Zone/Panics

Duress (Code) Zone 256 – Disabled

Standard Menu | User Codes

Duress Code 95 - Blank

Standard Menu | Dial Prefix

Area Blank – used to enter call waiting digits/characters

Additional Notes and Cautions:

1. The aggregate of the Entry Delay and Abort Window (Dialer Delay) shall not be programmed to exceed one minute.
2. **Caution:** A call waiting cancel on a non-call waiting line will prevent successful connection to the central station.
3. The panel will not allow Duress Codes to be programmed as an existing code plus one (+ 1).
4. Recent Closing interval is always enabled.
5. Automatic Swinger Reset (default disabled) – If enabled, zones shut down due to swinger bypass will automatically reset after 48 hours with no trips on any zone. Zones can also be manually reset.
Swinger Bypass – If enabled, the zone will shut down after the programmed value in the Swinger Trips area.
Restoral Minutes – sets the time that a particular zone must be restored before it causes another alarm if re-violated.
6. Additional keypads may be required so that Exit/Entry annunciations can be heard within the entire protected area.
7. System Test is initiated under the installer programming mode under **Test | Installer Test**. Indication of this mode on keypads is displayed by a fast flashing red ON LED on the keypads. A two-tone annunciation occurs to indicate that the test mode will automatically terminate within 5 minutes. Make sure all zones are functional before leaving the premises.
8. If Cross Zoning is enabled, do not Cross Zone Exit/ Entry and Fire zone types.
9. If more than eight (8) zones are being used, use the Premium (ICON) keypads.

6.4 System Specifications

Alarm output: Internal Siren, 8 Ohm (nominal)

Auxiliary and Fire power: 1.2 A maximum

Control Panel Enclosure (Residential):

Dimensions: 15.0" L x 12.7" W x 3.0" D
38.0 cm L x 32.3 cm W x 7.8 cm D

Weight: 5.77 lb / 2.85 kg

Environmental Range:

Temperature: 0 – 50°C

Relative Humidity: up to 95% non-condensing

Control Panel Enclosure (Commercial):

Dimensions: 18.5" L x 15.0" W x 4.4" D
47.0 cm L x 38.0 cm W x 11.2 cm D

Weight: 15.89 lb / 7.85 kg

Notes

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