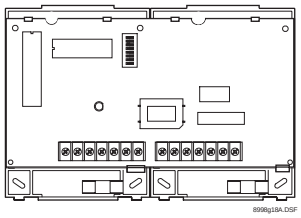
SuperBus® 2000 Phone Interface/Voice Module



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Installation Instructions

Product Summary

The SuperBus 2000 Phone Interface/Voice Module (PIV) adds phone and voice functions to Concord™ panels.

The module provides on-site and remote system control from any touch-tone telephone, allowing access to both installer and user operations for easy panel access from any location. An on-board digital-voice chip is used to "speak" system status messages over phones and speakers connected to the module.

The module provides phone control of one single or multiple-partition Concord panel. With multiple panel partitions, one module may be used per partition, with each module connected to a separate phone line.

The module communicates with the panel through bus connections and is powered by the panel 12 VDC supply.

SuperBus 2000 *vs.* SuperBus

Compatible panels (SuperBus 2000) have the ability to auto-address module unit numbers. When the panel is powered up, the panel automatically reads the unique SuperBus 2000 device ID number and assigns a unit number to the module. This eliminates manually setting DIP switches and the chance of identical unit number conflicts.

Non-Compatible panels (SuperBus) communicate with SuperBus 2000 modules but require the module unit number to first be set manually using dip switches.

SuperBus 2000 Panels

- ❑ Concord (software versions 2.0 and later)

SuperBus Panels

- ❑ Concord (software versions 1.0–1.6)

Features

The module features the following:

- ❑ User-adjustable status speaker volume control.
- ❑ On/Off hook detection.
- ❑ Extensive 220+ word vocabulary.
- ❑ In-panel cabinet or optional wall mounting.
- ❑ Backward compatibility with Concord panels software versions 1.0–1.6.

Figure 1 shows the main module components and Table 1 describes them.

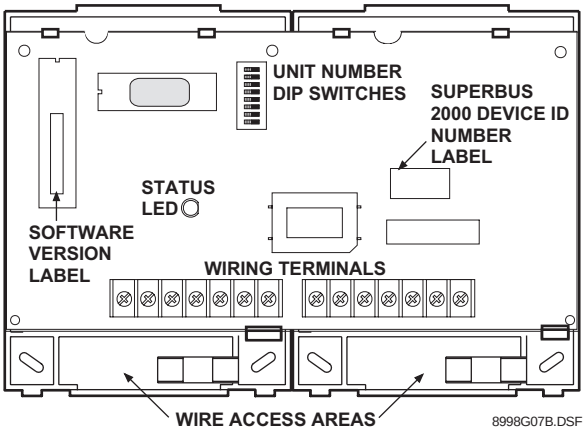

Figure 1. Main Module Components

Table 1: Module Component Descriptions

Component	Function
Status LED	Flashes to indicate normal communication with the panel bus.
Unit Number DIP Switches	Used for manually setting unit numbers (Concord software versions 1.0–1.6).
Wiring Terminals	Provide panel, speaker, and telephone connections.
SuperBus 2000 Device ID Number Label	Identifies the unique device ID number (SuperBus 2000 panels).
Software Version Label	Identifies the installed module software version.

Installation Guidelines

Use the following guidelines when installing the module:

- ❑ Concord systems allow a maximum of one Phone Interface/Voice Module per partition. On multiple partition systems, each module must be connected to a separate phone line and speaker.
- ❑ Always connect the phone line using an RJ-31X jack. This gives the customer the ability to unplug the system from the phone line, in case the system malfunctions and the customer needs to use the phone.
- ❑ Mount the module inside the cabinet or wall-mount using the optional plastic housing (part no. 60-800).
- ❑ Use 4-conductor, 22-gauge or larger stranded wire to connect the module to the panel.
- ❑ Although the module can be located up to 120 feet from the panel (using 18-gauge or larger wire), it is recommend that the module be mounted as close as possible to the panel.
- ❑ All bus modules must be set with a different bus unit number (set manually on Concord panels with software version 1.0–1.6).
- ❑ The module draws a maximum 600 mA from the panel power supply.
- ❑ Do not exceed the total panel power when using panel power for bus and hardwired device power (refer to the specific panel *Installation Instructions*).

Tools and Supplies

- ❑ Screwdrivers (small blade)
- ❑ Drill with bits
- ❑ Wire cutter/stripper
- ❑ Screws and anchors (included)
- ❑ Optional plastic housing (part no. 60-800) for wall-mounting (not included)
- ❑ 4-conductor, 22-gauge or larger stranded wire
- ❑ RJ-31X Phone Jack (not included)
- ❑ DB-8 Cord (included with Concord cabinet)
- ❑ Support standoffs (included with Concord cabinet)

Installation

Installation consists of mounting the Phone Interface/Voice Module inside the panel cabinet or on a wall.

CAUTION
To prevent damaging the panel or module, remove the Panel AC power transformer and disconnect the backup battery before installation.

CAUTION
You must be free of all static electricity when handling electronic components. Touch a grounded bare metal surface before touching the circuit board.

To mount the module in a Concord panel cabinet:

1. Remove AC panel power and disconnect the backup battery.
2. Install the support standoffs (included with panel) at the panel locations shown in Figure 2.

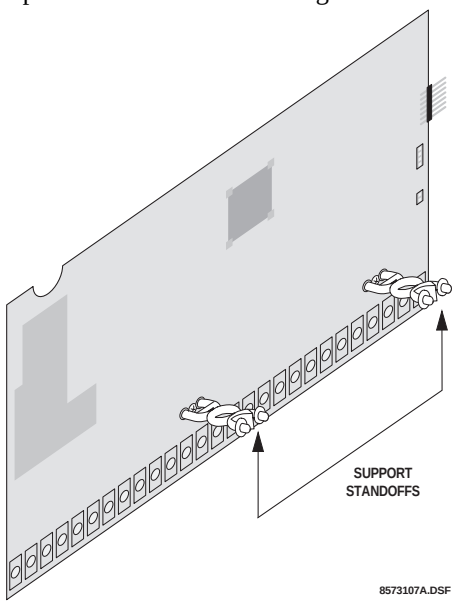

Figure 2. Installing Panel Support Standoffs

3. Slide the top of the back-plates onto the top left and center module mounting clips on the panel cabinet (see Figure 3).

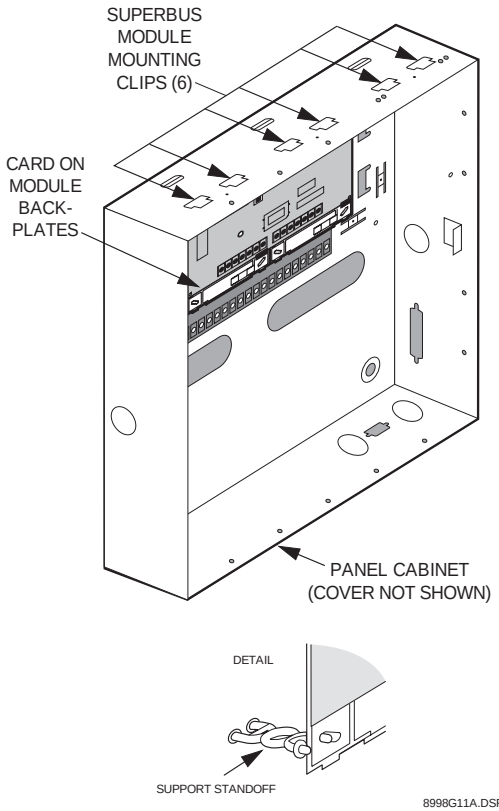

Figure 3. Mounting the Module Inside the Panel Cabinet

4. Lift back-plate assembly until it rests on the left cabinet wall tab (not shown) and standoffs align into lower back-plate holes (see detail in Figure 3).

To mount the module on a wall using the optional plastic housing:

1. Loosen the two cover screws and lift the cover up and off. Set the cover aside (Figure 4).

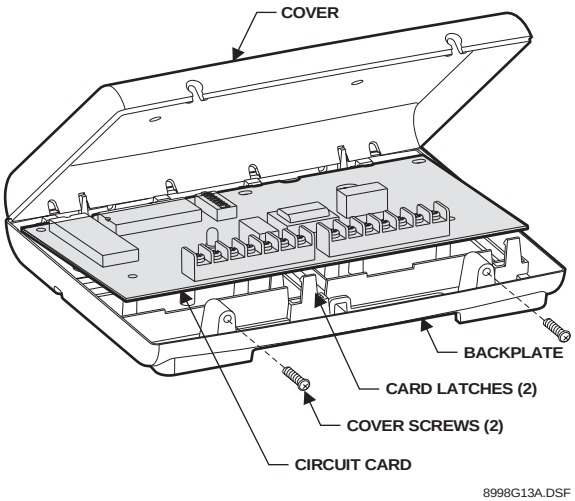

Figure 4. Removing the Cover Screws and Cover

2. Place the back-plate on the wall at the desired location, check for level, and mark the mounting holes (see Figure 5).

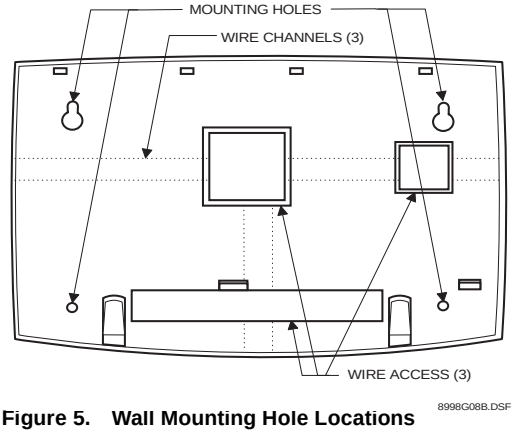

Figure 5. Wall Mounting Hole Locations

3. Drill holes, install anchors where studs are not present, and secure the back-plate to the wall with screws.
4. Drill holes for wires at any of the three wire access locations (see Figure 5).
5. Carefully, remove the circuit board from its original back-plates.
6. Install the circuit board onto the housing back-plate (top first), then gently press on the bottom until the board snaps under the card latches (Figure 4).

Wiring

Wiring consists of the following:

- ❑ Running Required Wires— for power, bus, speaker, and phone line connections.
- ❑ Installing an RJ-31X Jack—for phone line connections.
- ❑ Wiring connections for modules in Concord systems.

Running Required Wires

1. Run a 4-conductor, 22-gauge or larger, stranded wire from the module to the panel for power and bus connections (see Table 2 for limits).

Table 2: Maximum Lengths (module to panel)

Wire Gauge	Maximum Length
18	120 feet
22	40 feet

2. Run a 2-conductor, 22-gauge or larger, stranded wire cable from the module to the speaker location.
3. Run a 4-conductor, 22-gauge or larger, stranded wire cable from the RJ-31X jack location to the telephone protector block.

Installing an RJ-31X Phone Jack

Use the following guidelines when installing an RJ-31X phone jack.

- ❑ Locate the RJ-31X jack (CA-38A in Canada) no further than five feet from the panel (or module for partition 2 installations).
- ❑ The panel (or module) must be connected to a standard analog (loop-start) phone line that provides 48 volts DC (on-hook or idle) which increases between 89 to 130 volts DC when the line is ringing.

Note
The panel (or module) cannot be used on a digital or PBX phone line. These systems are designed for digital type devices only, operating anywhere from 5 volts DC and up. The panel uses an analog modem and does not have a digital converter, adapter, or interface to operate through such systems.

- ❑ For full line seizure in partition 1, install an RJ-31X phone jack on the premises phone line so the panel is ahead of all phones and other devices on the line. This allows the panel to take control of the phone line when an alarm occurs, even if the phone is in use or off-hook.

Note
The Phone Interface/Voice Module does not seize the line during an alarm.

❑ If an analog line is not available, contact your customers' telecommunications specialist and tell him/her you need an analog line off the phone switch (PBX mainframe) or a 1FB (standard business line).

Note
Connecting the panel (or module) to an analog line off the phone switch places the panel (or module) *ahead* of the phone system, preventing system access from phones on the premises. However, the system can still be accessed from off-site phones.

To install an RJ-31X jack:

1. Run a 4-conductor cable from the TELCO protector block to the jack location (see A in Figure 6).
2. Connect one end of the cable to the jack (see B in Figure 6).
3. At the TELCO protector block, remove the premises phone lines (lines from phone jacks on premises) from the block and splice them to the black and white (or yellow) wires of the 4-conductor cable (see C in Figure 6).
4. Connect the green and red wires from the 4-conductor cable to the TIP (+) and RING (-) posts on the block (see D in Figure 6).

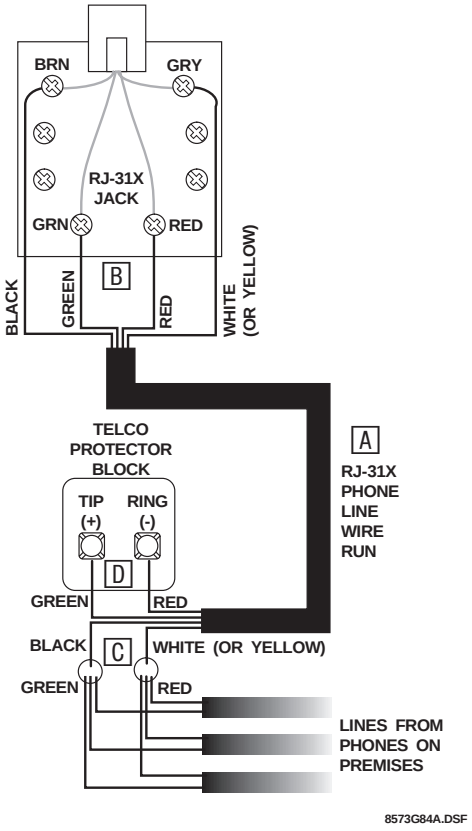

Figure 6. Connecting an RJ-31X Jack to the Phone Line

Wiring Connections for Concord Panels

Wiring for Concord systems consists of wiring for power, bus, speaker, and phone line. Use the figures below for wiring to the designated partition.

CAUTION
To prevent damaging the panel or module, remove the Panel AC power transformer and disconnect the backup battery before wiring.

Wiring—Power and Bus

Partition 1 and 2

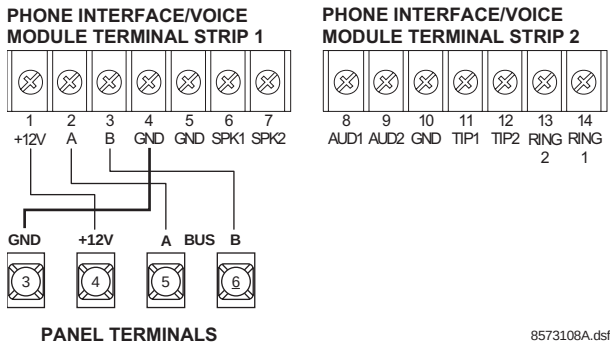

Figure 7. Wiring the PIV to the Panel Power and Bus Terminals

Wiring—Phone Line

Note
Partition 1 and Partition 2 must be wired to separate phone lines.

Partition 1

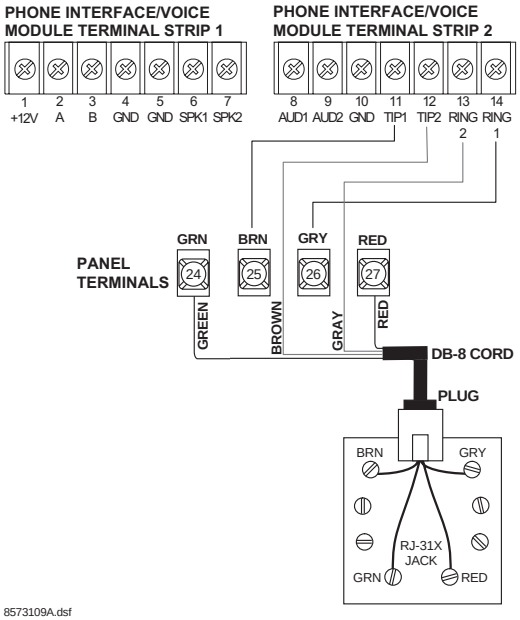

Figure 8. Wiring the PIV to a Phone Line (Partition 1)

Partition 2

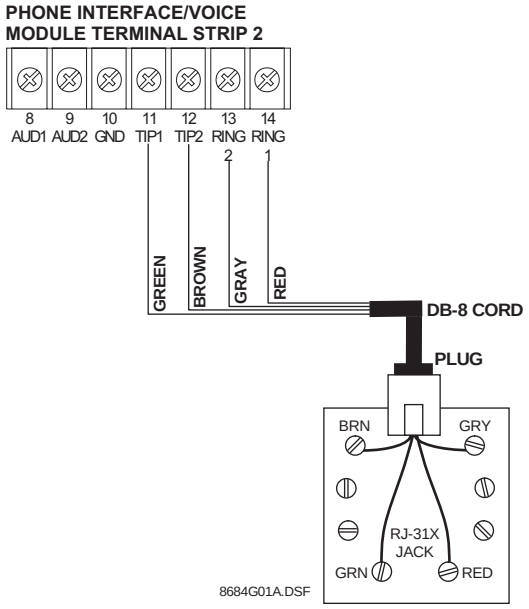

Figure 9. Wiring the PIV to a Phone Line (Partition 2)

Wiring—Speakers

Partition 1

Note
Do not connect speakers to panel if terminals 7 and 8 are connected to PIV terminals 8 and 9 as shown in Figure 10.

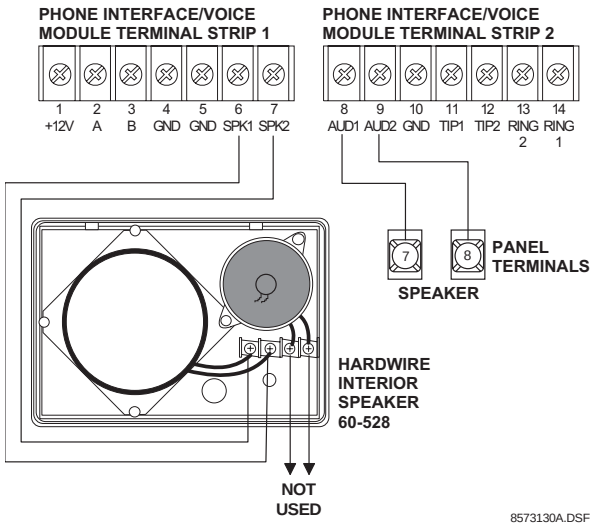

Figure 10. Wiring a speaker to the PIV (Partition 1)

Partition 2

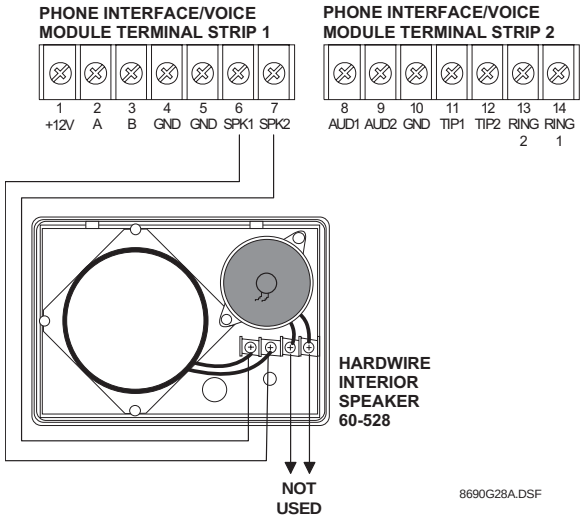

Figure 11. Wiring a Speaker to the PIV (Partition 2)

Setting the Unit Number

Each bus module connected to the panel must have a different unit number for correct communication.

Setting the Unit Number on Concord Panels with Software Versions 1.0–1.6

The module can be set to any unit number 0–15, using the module dip switches. The default setting (0) can be used if no other bus modules are installed in the system.

When using one module per partition, the lower unit number will be assigned to partition 1, while the higher unit number will be assigned to partition 2.

Note
Do not use module unit number 15 if it is installed in a Concord RF system since the built-in receiver is factory set to unit number 15 and cannot be changed.

To set the module unit number:

Locate the DIP switches on the module circuit board (see Figure 1) and set them to the desired unit number (0–15) *before* applying power (see Figure 12).

Note
DIP switches 1–4 are not used and must remain off.

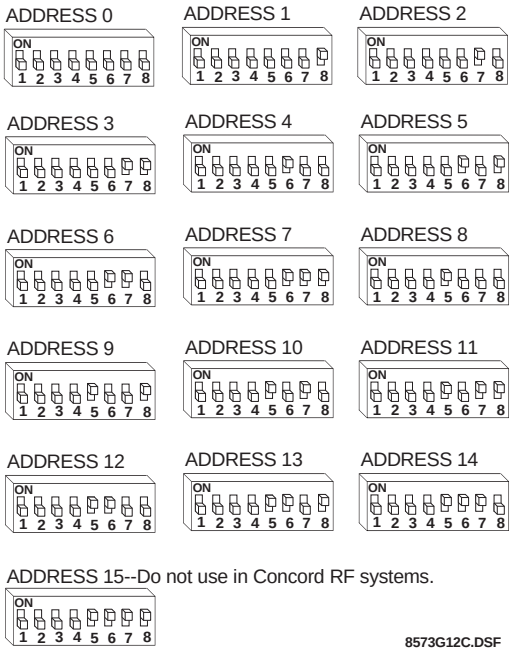

Figure 12. Unit Number DIP Switch Settings

Setting the Unit Number on Concord Panels with Software Version 2.0 or Later

The unit number will be automatically set when powering up the system. When using one module per partition, the panel automatically assigns *each* module with a partition number.

Power Up and Bus Communication

Use the following procedures for powering up the system and verifying bus communication.

> Note
> In order to enter panel program mode to verify unit numbers, an alphanumeric touchpad must be connected to all Concord panels.

To power up panel and Phone Interface/Voice Module:

1. Verify that all wiring at the panel and the module is correct.
2. Connect the panel backup battery and plug in the panel AC power transformer.
3. Verify that the module status LED is on and flashing.
4. If desired, enter panel program mode to verify the unit number exists and the module is enrolled into the correct partition (see panel *Installation Instructions* for more information).

> Note
> If the status LED is not on and flashing, unplug the panel AC power transformer, disconnect the backup battery, and see “Troubleshooting.”

Changing the Module Unit Number (software versions 1.0–1.6)

> Note
> Whenever the module unit number is changed, you must remove the panel AC power transformer and backup battery, then reconnect them for the panel and module to communicate successfully.

Use the following guidelines when changing unit number assignments to avoid communication conflicts between bus devices and the panel:

- ❑ Whenever possible, assign alphanumeric touchpad unit numbers before all other panel programming.
- ❑ All unit numbers must be set before applying power and entering program mode.

To change the PIV module unit number:

1. Remove panel AC power transformer and disconnect the backup battery.
2. Change the DIP switch setting on the module (see Figure 12). Remember, the setting must be different from all other bus devices.
3. Connect the panel backup battery and plug in the AC power transformer. The panel automatically scans all bus devices and learns any new settings.
4. The system may still indicate a bus failure if the panel learned a unit number that is no longer assigned to any bus device. To clear the failure, enter program mode and locate the unused unit number (under *BUS DEVICES*) and delete it by pressing [D]. Please refer to the panel *Installation Instructions* for more information on deleting bus devices.
5. Exit from program mode. The touchpad and all other bus devices should operate correctly and any bus failures should be cleared.

Programming and Testing

For complete module/panel programming, operating, and testing information, refer to the panel *Installation Instructions* and *Owner’s Manual*.

Troubleshooting

Table 3: PIV Troubleshooting

Problem	Action/Solution
The module status LED stays off.	1. Check for incorrect wiring connections. 2. Make sure the panel AC power transformer is plugged in and the backup battery is connected. 3. Verify that the panel recognizes the module and is enrolled in the correct partition by entering program mode (see panel *Installation Instructions*). 4. If the LED still remains off, replace the module.
The module status LED stays lit but doesn't flash.	1. Verify that the panel recognizes the module and is enrolled in the correct partition by entering program mode (see panel *Installation Instructions*). 2. Check for incorrect wiring connections. 3. If the LED still doesn't flash, replace the module.
The module has random, inconsistent behavior.	1. Check for incorrect wiring connections. 2. Verify that the panel recognizes the module and is enrolled in the correct partition by entering program mode (see panel *Installation Instructions*).

Table 4: Phone Troubleshooting

Problem	Action/Solution
Loss of dial tone at on-site phones after wiring RJ-31X jack or connecting the DB-8 cord.	1. Wait 2 minutes and try again. The panel may be busy trying to report to the central station. 2. Disconnect the panel DB-8 cord from the RJ-31X jack. If the phone still doesn't work the system is okay and the problem is in the phone wiring. 3. Check RJ-31X jack wiring and TELCO block wiring. Replace RJ-31X jack if necessary. 4. Check DB-8 cord connections at the panel and RJ-31X jack. Replace cord if necessary.

Table 4: Phone Troubleshooting (Cont.)

Problem	Action/Solution
Constant dial tone, preventing dial-out on premises phones.	1. One or more polarity-sensitive phones exist on-site. Reverse the phone wires connected to the brown and gray wire terminals on the RJ-31X jack.

Table 5: Speaker Troubleshooting

Problem	Action/Solution
Speakers don't make any sounds.	1. Make sure the speaker is wired correctly. 2. Ensure that the PIV is working correctly. 3. Verify the module is enrolled into the correct partition by entering program mode (see panel *Installation Instructions*). 4. Replace the speaker.
Speakers sound status messages but don't sound alarms.	1. Alarm is in partition 2 and speaker is connected to panel terminals 7 and 8, which activate only for partition 1 alarms. 2. Make sure the speaker is wired correctly. 3. Ensure that the PIV is working correctly. 4. Speaker output may have shut down because panel detected terminal 7 or 8 is shorted to ground. Disconnect panel AC and battery backup power. Locate short and correct. Apply panel AC and backup battery power and try again.
Speakers annunciate in/for the wrong partition.	1. Verify the module is enrolled into the correct partition by entering program mode (see panel *Installation Instructions*).

Specifications

Compatibility:	Concord panels
Power Requirements:	12 VDC nominal (10V minimum), 600 mA maximum draw from panel
Storage Temperature:	-30° to 140° F (-34° to 60° C)
Operating Temperature:	32° to 140° F (0° to 60° C)
Humidity:	90% relative humidity, non-condensing
Dimensions:	5.5" x 8.0" x 1.5" (H x W x D)
Listings:	UL 985 Household Fire Warning System Units UL 1023 Household Burglar-Alarm System Units

Note
See specific panel *Installation Instructions* for complete UL installation requirements for the system you are installing.

Notices

FCC Part 15 Class B

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 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 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:

- ❑ Reorient or relocate the receiving antenna.
- ❑ Increase the separation between the equipment and receiver.
- ❑ Connect the affected equipment and the panel receiver to separate outlets, on different branch circuits.
- ❑ Consult the dealer or an experienced radio/TV technician for help.

FCC Part 68

This equipment complies with part 68 of the FCC Rules. Located on this equipment is a label that contains, among other information, the FCC registration number and the ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

The REN is used to determine the maximum number of devices that may be connected to your telephone line. In most areas, the sum of all device RENs should not exceed five (5.0).

REN for this device: 0.4

If this equipment causes harm to the telephone network, the telephone company may temporarily disconnect your service. If possible, you will be notified in advance. When advance notice is not practical, you will be notified as soon as possible. You will also be advised of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. You will be given advance notice in order to maintain uninterrupted service.

If you experience trouble with this equipment, please contact the company that installed the equipment for service and repair information. The telephone company may ask you to disconnect this equipment from the network until the problem has been corrected or you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

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