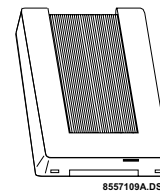


# SuperBus® 2000 Dual Phone Line Module



Document Number: 466-1363 Rev. B  
December 2000

## Installation Instructions

### Product Summary

The SuperBus® 2000 Dual Phone Line Module switches event and alarm reporting between two phone lines on Advent® fire/security panels.

The panel normally uses the primary line. If the primary line fails, the module switches to the secondary line.

You may use one Dual Phone Line Module per system.

Additional safety features include the following:

- Space for installing a magnetic reed switch that provides tamper protection when the switch is connected to a hardwire zone.
- Each phone jack includes a tamper loop that provides tamper protection when connected to a hardwire zone.

The module comes with mounting hardware (screws and anchors). Power for the module is provided by the panel.

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

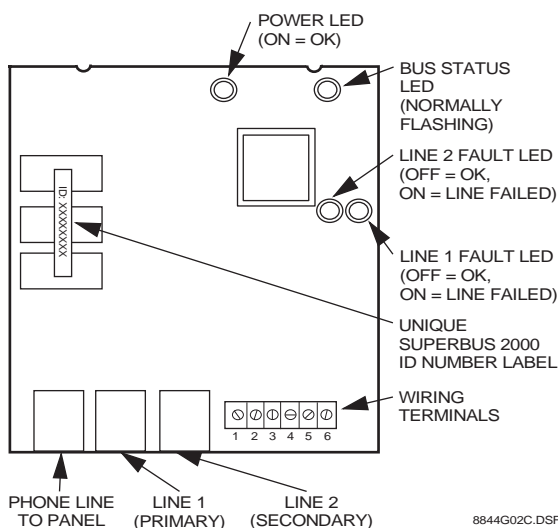


Figure 1. Dual Phone Line Circuit Board Components

Table 1: Module Component Descriptions

Component	Function
Unique SuperBus 2000 ID Number Label	Identifies module to the panel.
Power LED	Indicates module power status.

Table 1: Module Component Descriptions

Component	Function
Bus Status LED	Flashes to indicate normal communication with the panel.
Phone Line Fault LEDs	Indicates fault status of each phone line.
Wiring Terminals	Provide bus connections to and from the panel.
Panel Phone Line Jack	Connects module to panel phone line.
Primary Phone Line Jack	Connects module to primary (TELCO) phone line.
Secondary Phone Line Jack	Connects module to secondary (backup) phone line.

### Installation Guidelines

- Supports two phone lines.
- You may have one phone module per system.
- Do not exceed the total panel auxiliary power output when using panel power for bus devices and hardwired sensors that require panel power (see the specific panel *Installation Instructions*).
- Maximum current draw of each Dual Phone Line Module is 60 mA.
- Use 4-conductor, 22-gauge or larger stranded wire from the module to the panel. For UL-listed installations use 18 gauge or larger wire.
- Use the cables provided for the phone connection.

### Tools and Supplies Needed

- Screwdriver.
- 3/8 -inch self-tapping screws (included).
- Wall anchors where needed (included).
- #6 panhead screws.
- Drill with bits.
- Case tamper reed switch and magnet (optional).
- 2K Ohm EOL resistors (49-467).
- Two RJ-31X (CA-78A) phone jacks.
- Attack-resistant accessory cabinet (optional).
- Two 6', 8-conductor RJ-31X phone cables (49-442).

## Installation

The Dual Phone Line Module can be mounted on a wall, inside the panel cabinet, or in an attack-resistant accessory cabinet.



**CAUTION**

You must be free of static electricity before handling circuit boards. Wear a grounding strap or touch a bare metal surface to discharge static electricity.

**To mount the module on a wall:**

1. Disconnect AC power from the panel and disconnect backup battery(s).
2. Remove the cover and set it aside (Figure 2).

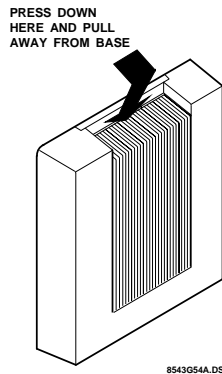


Figure 2. Removing the Cover

3. Place the back plate on the wall and mark the mounting holes (Figure 3).

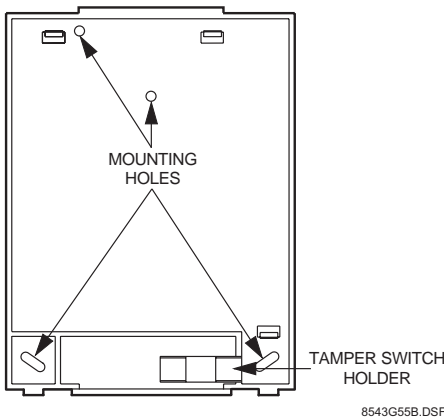


Figure 3. Mounting Holes

4. Drill holes and insert appropriate anchors.
5. Secure the back plate to the wall with panhead screws.

**To mount the module inside the cabinet:**

1. Disconnect panel power and disconnect backup battery(s).
2. Remove the module cover and set it aside (Figure 2).

3. Place the back plate inside the cabinet and secure it with three self-threading screws (Figure 3).

**To mount the module in an accessory cabinet:**

1. Follow the instructions included with the accessory cabinet to mount it on a wall within 5 feet of the panel.
2. Turn off panel power and disconnect backup battery(s).
3. Remove the module cover and set it aside (Figure 2).
4. Remove the circuit board from the base.
5. Mount the circuit board in the accessory cabinet with the machine screws included with the accessory cabinet.

## Advent Panel Wiring

This section describes how to wire the module to the Advent panel and how to connect phone lines to the module.

**Note**

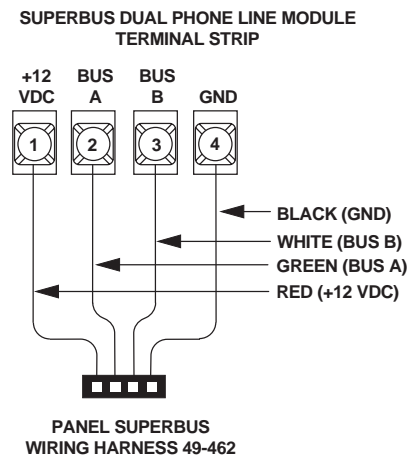
(A) Class 2, Class 3, and power-limited fire alarm circuits must be installed using FPL, FPLR, FPLP, or substitute cable permitted by the National Electrical Code ANSI/NFPA 70. Wire that extends beyond the cable jacket must be separated from all other conductors by a minimum of 1/4-inch or by a nonconductive barrier.

Or

(B) Class 2, Class 3, and power-limited fire alarm circuit conductors must be installed as Class 1 or higher circuits.

**To wire the module data bus to the panel:**

1. Make sure the panel power is off.
2. Remove the panel's AC power and backup battery(s).
3. Wire the module to the panel SuperBus wiring harness as shown in figure 4.



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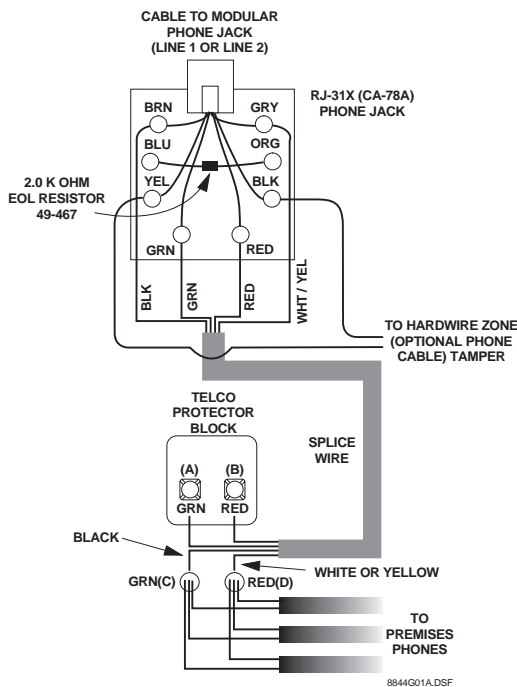
Figure 4. Connecting the Module SuperBus to the Advent Panel

**Table 2: Panel/Zone Terminals**

Terminal #	Description	Wire
1	+ 12VDC	Red
2	BUS A	Green
3	BUS B	White
4	GND	Black
5	ZONE 1	(Opt.)
6	ZONE COMMON	(Opt.)

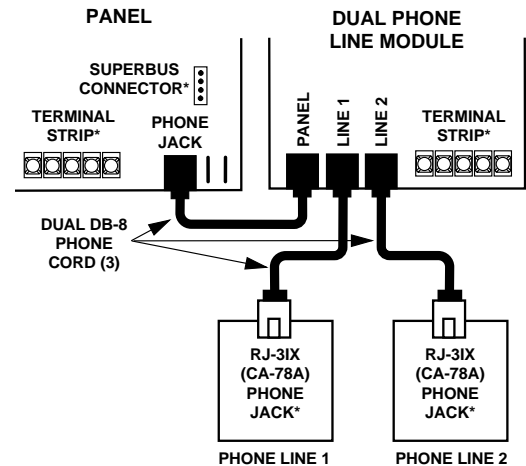
**To connect phone lines to the module:**

1. Mount an RJ-31X jack for each phone line. Locate the jacks within 5 feet of the module.
2. Wire the phone line and premises phones to the RJ-31X jack as shown (Figure 5).



**Figure 5. Wiring the Phone Lines**

1. Connect an 8-conductor phone cable between each RJ-31X jack and the appropriate jack on the module (line 1 or line 2) as shown in figure 6.



\* SEE DETAILED WIRING FIGURES

**Figure 6. Connecting Phone Lines to the Module**

2. Connect an 8-conductor phone cable from the panel's phone line connector to the TO PANEL jack on the module as shown in figure 6.

## Installing a Case Tamper Switch

If the module is not located in a secure location, you may want to add case tamper detection.

**To install tamper protection:**

- ❑ Install a listed reed switch in the plastic cover and wire the switch to any unused hardwire input on the panel or Dual Phone Line Module. If someone opens the cover, the switch opens and causes an alarm.

The tamper switch holder is located at the lower-right side of the back plate (Figure 3). The plastic cover holds the magnet.

**To install the reed switch:**

1. Slide the reed switch into the holder.
2. Connect the reed switch (with a 2K ohm EOL resistor [49-467]) to the module zone input (Figure 7) or to any unused hardwire input on the panel.
3. Insert the magnet into the nibs on the top cover. Press the magnet clip down over the magnet until it clicks into place into the cover.

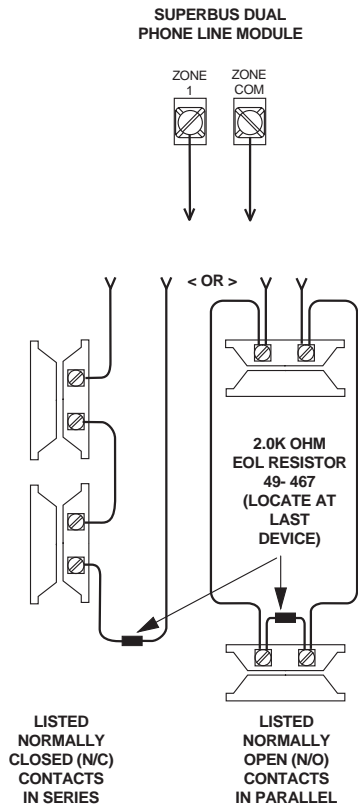


Figure 7. Connecting Module Hardwire Zone

## Power Up and Bus Communication

This section describes how to power up the panel and the module and get them communicating with each other.

### To power up the panel and the module:

1. Verify that all wiring at the panel and the module is correct.
2. Return AC power to the panel and reconnect the panel backup battery(s).
3. On initial power up, the panel adds (learns) the module automatically.

After a few seconds, the module bus status LED should flash to indicate successful communication to the panel. If the bus status LED does not flash, add (learn) the module into the panel memory as directed in the panel *Installation Instructions*.

## Testing

Normally the module power LED should be on, the bus status LED should be flashing, and the line 1 and line 2 status LEDs should remain off.

### To test the Dual Phone Line Module:

1. Verify that all wiring at the panel and the module are correct.
2. Press \* twice on the Advent touchpad to return to the normal mode of operation.
3. Test the system telephone reporting operation with all used lines.

### To test the phone lines:

1. Unplug the cable at the module's LINE 1 jack. The following occurs.
  - Line 1 LED turns on.
  - The phone cable tamper zone for line 1 is in the alarm state.
  - The system annunciates phone line failure within 90 seconds.
  - The panel automatically commands the module to switch to line 2 when it needs to make a report to the monitoring station.
2. Restore the cable at the module's LINE 1 jack. The following occurs.
  - Line 1 LED turns off.
  - Phone cable tamper zone restores.
  - Phone line failure annunciation ceases.
3. Repeat steps 1 and 2 for line 2.

#### Note

Phone line failures that are being annunciated have to be acknowledged (press \*) for them to cease.

## Troubleshooting

### Module green power status LED stays off.

1. Check module and panel power.
2. Check SuperBus wiring and connections.

### Module bus status LED stays off.

1. Check SuperBus wiring and connections.
2. Check for proper panel/module programming and initialization.

### Module bus status LED stays on.

1. Reinitialize module by disconnecting and reconnecting the SuperBus connections.
2. Possible module failure. Replace the module.

### Module bus status LED blinks, but phones don't work.

1. Panel and module are communicating correctly via the SuperBus.
2. Check panel/module programming.
3. Check phone wiring and connections.

### Phones connected to module work intermittently.

1. Check module and panel power.

2. Check SuperBus wire routing and length (shielded cable may be required).
3. Check module and phone wiring and connections.

## Specifications

- Compatibility:** ..... All Advent panels (60-562-01, 60-562-02, 60-562-03).
- Power Requirement:** .. 12V nominal, 60 mA maximum (from panel).
- Data Bus:** ..... One, 4-wire ITT® SuperBus® 2000 power/data bus.
- Telephone Lines:** ..... One primary, one secondary phone line, and one panel. RJ-31X type connections.
- Temperature:**
- Operating ..... 32° F to 120° F (0° to 49° C). Up to 140° F or 60° C under temporary conditions.
- Storage ..... -30° F to 140° F (-34° to 60° C).
- Maximum Humidity:** .90% relative humidity, noncondensing.
- Dimensions:** ..... 5.25" x 4.125" x 1.0" (L x W x D).
- Case Material:** ..... High-Impact ABS plastic.
- Case Color:** ..... Belgian gray.
- Mounting:** ..... On wall or in-panel mounting.

## Listings

- Canada CS03
- UL 365: Police Station Connected Burglar Alarm Units and Systems
- UL 609: Local Burglar Alarm Units and Systems
- UL 864: Control Units for Fire-Protective Signaling Systems
- UL 985: Household Fire Warning System Units
- UL 1023: Household Burglar-Alarm System Units
- UL 1610: Central-Station Burglar Alarm Units
- UL 1635: Digital Alarm Communications System Units
- UL 1637: Home Health Care Signaling Equipment
- ULC Canada Commercial Fire/Burglary Warning System
- DOD Sensitive Compartment Information (applied for)
- FM Factory Mutual (applied for)
- MEA New York City Material Equipment Acceptance (applied for)
- Complies with NFPA 72 for National Fire Alarm Code

## Notices

### FCC Part 15 Information to the User

Changes or modifications not expressly approved by Interactive Technologies, Inc. can void the user's authority to operate the equipment.

### FCC Part 15 Class A

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case users will be required to correct the interference at their own expense.

### 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).

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 advanced 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.

### AVIS D'INDUSTRIE CANADA

#### AVIS:

L'étiquette d'Industrie Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme aux normes de protection, d'exploitation et de sécurité des réseaux de télécommunications, comme le prescrivent les documents concernant les exigences techniques relatives au matériel terminal. Le Ministère n'assure toutefois pas que le matériel fonc-

tionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêche pas le dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être coordonnées par un représentant désigné par le fournisseur. L'entreprise de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

Avertissement: L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à un électricien, selon le cas.

**AVIS:**

L'indice d'équivalence de la sonnerie (IES) assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface. La terminaison d'une interface téléphonique peut consister en une combinaison de quelques dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5.



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