



# SuperBus 2000 2-Amp Power Supply • 600-1019 Installation Instructions

466-2185 Rev. A (March 2005)

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## Description

The power supply provides an additional 12 VDC, 2 amps (current limited) for Concord 4 system devices and is supervised via the SuperBus® 2000 digital data bus.

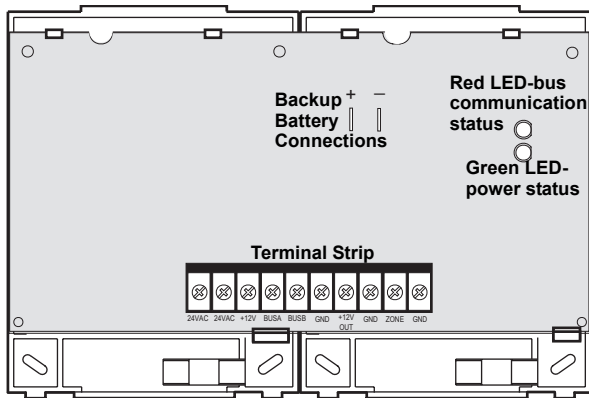
**Note:** For 24 hour backup, external power drain is limited to 95mA (during normal standby conditions) using a 4.5 Ah battery, or 190mA continuous using a 7.0 Ah battery.

The power supply uses a 24 VAC, 50 VA power transformer. In case of an AC power failure, a 12 VDC, 4.5 or 7 Ah backup battery (not included) provides power to connected devices. The battery is tested by the power supply on power up, every two minutes afterward, and whenever the panel tests its own backup battery.

The power supply also includes a hardwire zone input that accepts normally open (NO) or normally closed (NC) intrusion detection devices. The power supply can be located inside the Concord 4/Concord Express V4 cabinet or it can be mounted in a separate Concord Residential Enclosure (444-1700 and 444-1711 ordered as a separate kit) or Concord Commercial Expansion Enclosure (444-1391 ordered as 60-816). See [Mounting inside panel cabinet](#) on page 2, [Mounting inside Concord residential enclosure](#) on page 2, and [Mounting inside Concord Commercial enclosure](#) on page 3 for more information on mounting in a separate enclosure.

Figure 1 describes the power supply main components.

Figure 1. Power supply main components



## Installation

Use the following guidelines for installing the power supply.

### Guidelines

- Up to 16 SuperBus 2000 devices can be connected to Concord 4/Concord Express V4 panels (touchpads, receivers, transceivers, HIMs, HOMs, ESMS, etc.).
- The power supply AC transformer must be plugged into an AC outlet that is not a ground fault interrupt circuit (GFIC) or controlled by a switch.
- When mounting the power supply inside the panel cabinet, the backup battery can also be stored inside the panel cabinet.
- When mounting the power supply in a separate enclosure, the maximum wire length from the power supply bus and power connections to the panel is 4,000 feet.
- When mounting the power supply in a separate enclosure, the power supply mounting location should be determined

by the wire runs needed to provide power to devices with minimal loss on the +12V OUT wire. Table 1 shows the maximum wire runs between the power supply +12V OUT terminal and the devices it will power.

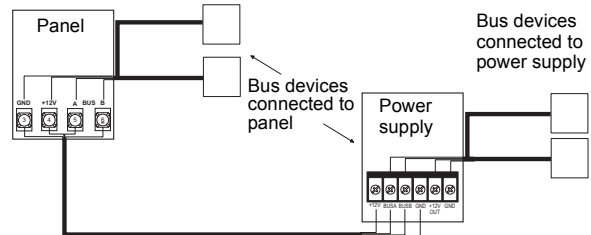
- For UL installations, the +12V OUT is not fully supervised for open circuits. Therefore, sirens cannot be connected directly to the output.

Table 1. Maximum +12V OUT wire length

| Wire Gauge | Maximum wire length from power supply +12V OUT terminal |
|------------|---|
| 22         | 100 feet  |
| 18         | 200 feet  |
| 16         | 350 feet  |
| 14         | 550 feet  |

- For large installations with long wire runs, power supply location is important. The total system wiring length (all partitions) for all bus devices connected to a Concord 4/Concord Express V4 panel must not exceed 4,000 feet. This not only includes the power supply bus and power connections to the panel, but also any bus devices you may connect to the power supply. For example, touchpads and other bus devices in a remote partition should be connected to the power supply rather than running the wires all the way to the panel (Figure 2).

Figure 2. Bus device wiring example for remote partitions



## Tools and Supplies

- 12 V backup battery (4.5 Ah part no. 60-681 or 7 Ah part no. 60-680)
- Screwdrivers
- Separate enclosure—if not mounting power supply inside panel cabinet
- Mounting screws
- Support Standoffs (included with panel)
- 4-conductor, 22- or 18-gauge stranded wire
- 2-conductor, 18-gauge wire (for AC transformer)

## Mounting



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

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.

**Note:** (A) Class 2, Class 3, and power-limited fire alarm circuits must be installed using FPL, FPLR, FPLP, or substitute cable

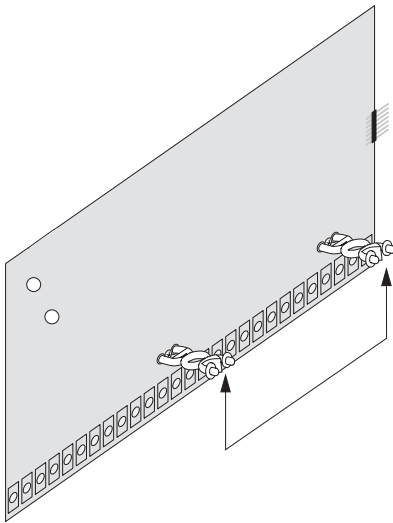
permitted by the National Electrical Code ANSI/NFPA 70. Wire that extends beyond the cable jacket must be separated from all other conductors by a minimum of 0.25 in. or by a nonconductive barrier.

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

### Mounting inside panel cabinet

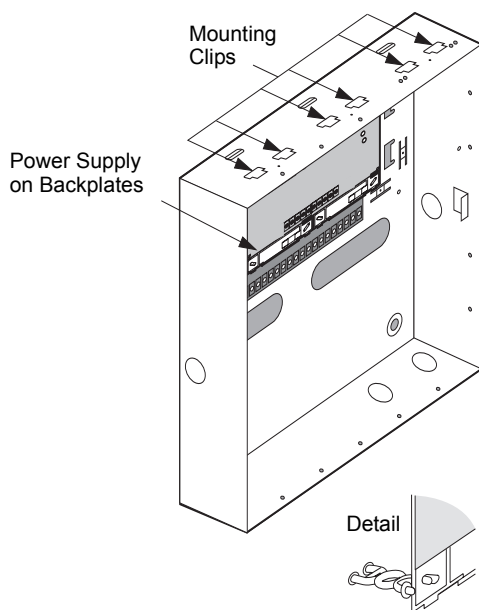
1. Unplug the panel AC power transformer and disconnect the backup battery.
2. Install the support standoffs (included with panel) at the panel locations shown in Figure 3.

Figure 3. Installing panel support standoffs



3. Slide the top of the backplates onto the left and center module mounting clips on the panel cabinet (Figure 4), then snap the backplates on to the support standoffs (Detail in Figure 4).

Figure 4. Mounting power supply inside panel cabinet

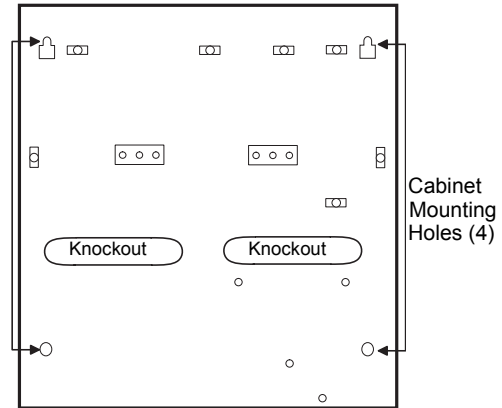


### Mounting inside Concord residential enclosure

**Note:** This module is UL listed as a subassembly and must be mounted in the same enclosure as the Concord 4 in UL systems.

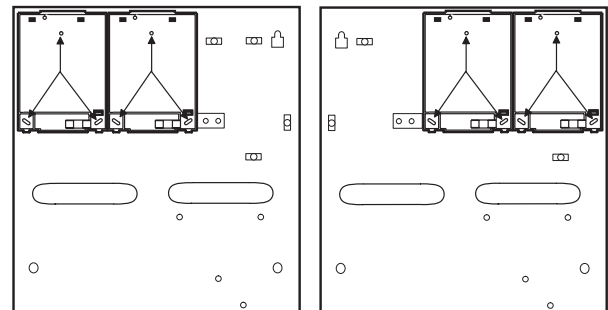
1. Unplug the panel AC power transformer and disconnect the backup battery.
2. Place the cabinet at the desired location and mark the cabinet mounting holes and knockouts (Figure 5).

Figure 5. Residential enclosure mounting holes and knockouts



3. Drill holes and insert the appropriate anchors where studs are not present.
4. Run wires from all devices to be powered, to the power supply.
5. Run a 4-conductor, 22-gauge or larger stranded wire from the power supply to the panel.
6. Run a 2-conductor, 18-gauge stranded wire from the power supply to the AC transformer location.
7. Feed all wires through the knockouts and secure the cabinet to the wall with the included screws.
8. Remove the power supply circuit board from the plastic mounting plates.
9. Position the plastic mounting plates in the cabinet on the top-left or top-right side and secure them with the six self-tapping screws included with the power supply (Figure 6).

Figure 6. Power supply mounting positions in residential enclosure (arrows indicate screw locations)



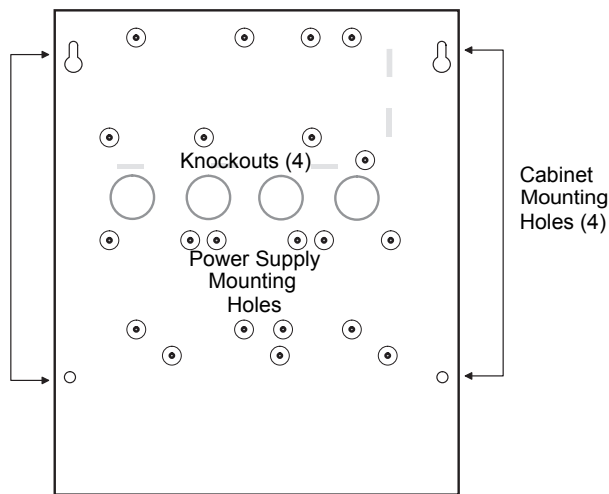
10. Re-install the power supply circuit board on the plastic mounting plates.

### Mounting inside Concord Commercial enclosure

**Note:** This module is UL listed as a subassembly and must be mounted in the same enclosure as the Concord 4 in UL systems.

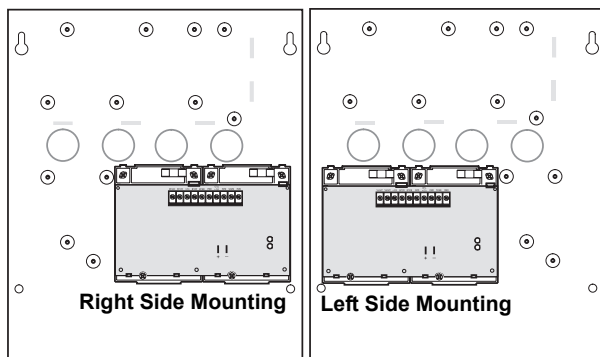
1. Unplug the panel AC power transformer and disconnect the backup battery.
2. Remove the necessary knockouts for wire access (Figure 7).
3. Place the cabinet at the desired location and mark the cabinet mounting holes and knockouts (Figure 7).

Figure 7. Commercial enclosure power supply mounting holes and knockouts



4. Drill holes and insert the appropriate anchors where studs are not present.
5. Run wires from all devices to be powered, to the power supply.
6. Run a 4-conductor, 22-gauge or larger stranded wire from the power supply to the panel.
7. Run a 2-conductor, 18-gauge stranded wire from the power supply to the AC transformer location.
8. Feed all wires through the knockouts and secure the cabinet to the wall with the included screws.
9. Secure the power supply to the cabinet using either the right side or left side power supply mounting holes, with the six self-tapping screws included with the power supply (Figure 8).

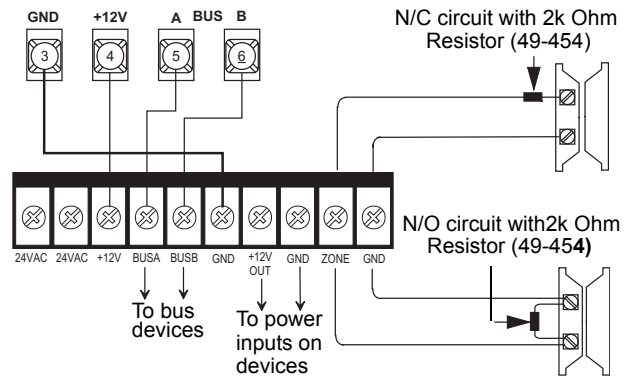
Figure 8. Power supply mounted in commercial enclosure



### Wiring

Connect the power supply to the panel terminals and devices as shown in Figure 9.

Figure 9. Power supply wiring connections to panel and devices

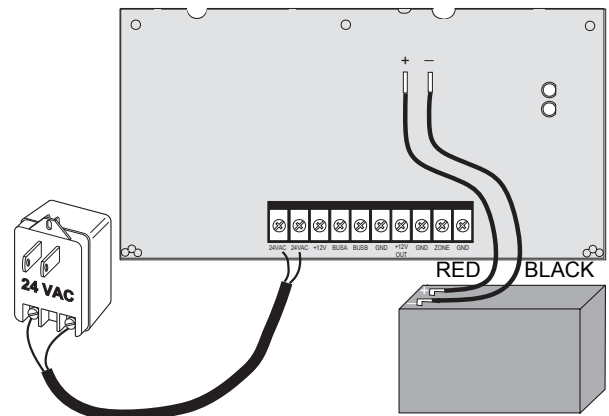


### Power Up

Use the following procedure for powering up the power supply and panel to verify bus communication.

1. Verify that all wiring at the panel and devices are correct.
2. Connect the power supply backup battery to the battery terminals on the power supply board (Figure 10).

Figure 10. Power supply AC and DC power connections



3. Wire the power supply AC transformer to the power supply board, then plug in the transformer (Figure 10). The green LED should turn on to indicate power is present. The red LED should be off for the moment.

**Note:** If the green LED is not on, unplug the power supply AC power transformer, disconnect the backup battery, and proceed to Table 2 in "Troubleshooting".

4. Connect the panel backup battery and plug in the panel AC power transformer. The panel should automatically scan for new bus devices and the red LED on the power supply board should flicker to indicate bus communication with the panel.
5. If using the optional zone input, learn the zone into panel memory (see panel *installation instructions*).

## Troubleshooting

| Problem  | Action   |
|--|--|
| Green LED is off                                 | <ol style="list-style-type: none"> <li>1. Check that power supply transformer is plugged into outlet.</li> <li>2. Check that transformer is not plugged into an outlet controlled by a switch.</li> <li>3. Check outlet circuit breaker/fuse. Reset/replace as needed.</li> </ol>              |
| Red LED is off.                                  | Check/correct bus (A & B) wiring connections at module and panel.  |
| System touchpads display AUX POWER FAIL.         | <ol style="list-style-type: none"> <li>1. Check for shorts on wire connected to power supply +12V OUT terminal.</li> <li>2. Verify that devices connected to power supply +12V OUT terminal are not drawing more than 2 amps.</li> </ol>   |
| System touchpads display AUX POWER BATT trouble. | <ol style="list-style-type: none"> <li>1. Check that power supply battery is connected.</li> <li>2. Power supply battery needs charging. Battery may need at least 4 hours to fully charge.</li> </ol>   |
| System touchpads display AUX AC POWER trouble.   | <ol style="list-style-type: none"> <li>1. Check that power supply transformer is plugged into outlet.</li> <li>2. Check that power supply transformer is not plugged into an outlet controlled by a switch.</li> <li>3. Check outlet circuit breaker/fuse. Reset/replace as needed.</li> </ol> |

## Trademark/disclaimer

SuperBus is a registered trademark of GE Security. Concord is a trademark of GE Security. All other trademarks are property of their owners.

## FCC compliance

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions.

This device may not cause harmful interference.

This device must accept any interference that may be received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by GE Security can void the user's authority to operate the equipment.

## Specifications

|                                   |   |
|-----------------------------------|---|
| Panel compatibility               | Concord 4 series control panels                         |
| Power input required              | 24 VAC, 50 VA class II power transformer                |
| Power output                      | 9 to 14 VDC, 2.0 amps maximum, current limited          |
| Battery type                      | 12V, 4.5Ah or 7Ah lead acid                             |
| Recommended Battery Manufacturer  | Portalac Model # PE12V7 (7Ah), PE12V4.5 (4.5 Ah)        |
| Maximum load for UL installations | 95 mA (4.5Ah battery), 190 mA (7 Ah battery)            |
| Operating temperature             | 32° to 120° F (0° to 49° C)                             |
| Storage temperature               | -30° to 140° F (-34° to 60° C)                          |
| Max. relative humidity            | 85%, non-condensing                                     |
| Dimensions (LxWxD)                | 5.125 in. x 7.85 in. x 1.0 in. (13 cm x 20 cm x 2.5 cm) |
| UL                                | 985, 1023, and 1610                                     |
| cUL                               | C1023-1974, S545-M89                                    |

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