600-1053-3 Concord 4 GSM Module Installation Sheet

Description

The module interfaces with the Concord panel data bus and is powered by the panel battery or an auxiliary 12 VDC power supply. The module can be used on Concord 4.0 and higher. Status LEDs indicate bus and paging network communications. A supervised zone input allows you to connect a hard-wired contact.

Figure 1 below shows the location of the main module components and Table 1 below describes the component functions.
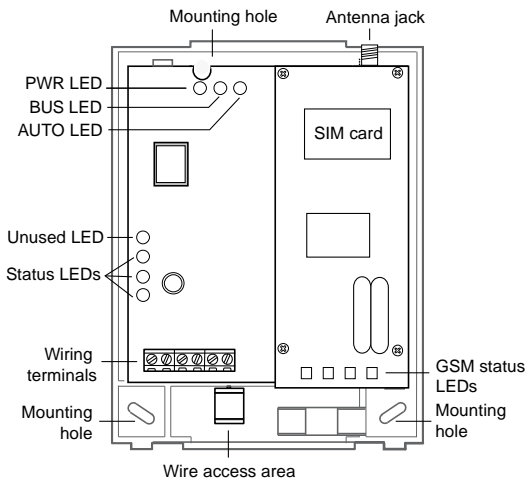
Figure 1: Components

Table 1: Components

Component	Function
PWR LED	Indicates module power status.
BUS LED	Indicates data bus activity between the panel and module.
AUTO LED	Indicates module/data transceiver communication.
Status LEDs	Indicates communication status with GSM network.
Wiring terminals	Provides panel and zone wiring connections.

Component	Function
Antenna jack	Antenna connection for wireless data transceiver.
GSM status LEDs	Indicates communication with the GSM network, report errors, and signal strength.
Serial number	A 15-digit number beginning with 35323900. Only the last 10 digits, starting with 900 are used for account activation.

Use the following tips to ensure success with the Alarm.com Concord GSM module:

- Make sure you create the customer account on the Alarm.com dealer website at least 24 hours before installation.

- Make sure you turn off the Access Code Lock feature.

- Use the LEDs on the module to check the signal strength before you permanently mount the module.

- Power the module off the battery, not off the panel.

- Do a manual phone test to initiate communication (see "Power up" on page 3).

Account creation

Alarm.com recommends creating the customer account 24 hours prior to installation to ensure that the GSM radio is activated. If you are not currently an Alarm.com dealer, please visit the Alarm.com website (www.alarm.com) and submit an information request, or email info@alarm.com.

To create a new customer account:

1. Log on to the Alarm.com dealer website (www.alarm.com/dealer).

2. Enter your dealer login and password, and then click Go To Customer Support to access the Customer Search Data web page.

3. Click Create Customer. The Step One: Customer Information screen appears. Enter the required

information. (Enter the email address where you would like Alarm.com to send messages.)

4. Click Next. The Step Two: Create Customer's Login screen appears. Enter the customer login name and follow the directions on the screen. You can also click Automatically Generate Login and Alarm.com assigns a login for you.

5. Click Next. The Step Three: System Location screen appears. If the system is being installed at the address entered in Step One: Customer Information, select Yes and that information will appear automatically in some of the fields. If the address is different from Step One: Customer Information, select No and enter the address and time zone where the system is being installed.

6. Click Next. The Step Four: Panel Information screen appears. The Modem Serial # is the last 10 digits of the label on the module circuit board. Alarm.com needs at least 24 hours notice for new accounts to ensure the module is active on the wireless network by 5 a.m. EST on the installation date you enter.

7. Click Next. The Step Five: Choose a Service Plan screen appears. Select one of the options. Selections on this screen will vary depending on availability of service plans.

8. Click Next. The Step Six: Central Station Forwarding screen appears. Select one of the options and enter the central station information.

9. Click Next. A confirmation screen appears that lets you review all entered information. If changes/corrections are needed, click Edit next to that data field and correct the information.

10. When you are satisfied with the information entered, click Done. The Account Creation Successful screen appears.

11. Click View and Print Welcome Letter. Print two copies of the welcome letter, one for the customer and one for your records. This letter includes the customer's login, temporary password, and instructions on how to get started.

Note: If you leave the Account Creation Successful screen without printing the welcome letter, you must click Search Customer Data, and then select the customer support option New Welcome Letter.

Installation

Before you install the system, the module must be activated. The account creation process automatically activates the module within 24 hours.

The module draws a maximum of 65 mA (continuous) from the panel in power save mode, and 100 mA (continuous) from the

panel in idle and connected modes. Do not exceed the panel total output power when using panel power for bus devices and hardwired sensors (refer to the panel documentation).

Use four-conductor, 22 or 18 gauge stranded wire to connect the module to the panel. Table 2 below shows the maximum wire length for each gauge.

Table 2: Maximum wire length

Gauge	Maximum wire length to panel
22 gauge	40 ft. (12.2 m)
18 gauge	90 ft. (27.4 m)

You will need the following tools and supplies to install the module:

- Small blade and Phillips screwdrivers
- Drill and bits for screws and/or anchors
- Wire cutter/stripper
- Four-conductor, 22-gauge or larger stranded wire
- Wall anchors (four included)
- 2-Kohm EOL resistor (included)

Use the following guidelines to choose a location for the module:

- Check the signal strength before choosing a location. Do a walking signal strength test by powering the module off the battery directly (connect the GND and +12V terminals). After 2 minutes, GSM status LED 4 will flash between one and five times, equivalent to the number of bars on a cell phone. We recommend a signal level of two or higher.

- Avoid mounting the module in areas with excessive metal or electrical wiring, such as furnace or utility rooms.

- Locate the module near an outside wall, preferably on an upper level.

- Leave 12 to 18 in. (30 to 45 cm) of open space above the module for the antenna.

- For homes or businesses located in canyons or with hills nearby, it is necessary to place the antenna higher in the building.

Caution: You must be free of static electricity before handling electronic components. Touch a grounded metal surface before touching the circuit board.

To mount the module:

1. Press down on the top of the enclosure cover, remove it, and set it aside.

2. Screw the antenna onto the antenna jack (see Figure 1 on page 1).

3. Place the backplate on the wall at the desired mounting location, check for level, and mark the three mounting holes and the wire access area (see Figure 1 on page 1). Be sure to leave at least 12 to 18 in. (30 to 45 cm) above the backplate for the antenna.

4. Set the backplate aside and drill holes at the mounting and wire access area locations.

5. Use wall anchors where studs are not present and secure the backplate to the wall with the enclosed screws.

Wiring

Caution: To prevent damaging the panel or module, you must remove panel AC power and disconnect the backup battery before making or changing wiring connections.

To wire the module:

1. Remove AC panel power and disconnect the backup battery.

2. Wire the module to the panel bus and to the battery terminals for power. (The module can also be powered off the SuperBus 2000 two-amp power supply (600-1019), but should not be powered directly off the panel.)

3. You can connect an input device to the module ZI and ZCOM terminals if required.

Figure 2: Wiring connections
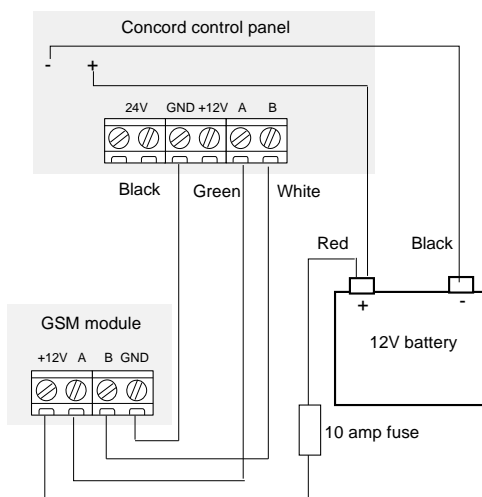
Case tamper switch

If the module is easily accessible, you can add case tamper detection to activate an alarm or trouble (depending on panel programming) when the cover is removed.

To install the tamper switch:

1. Slide the reed switch into the plastic holder on the module backplate.

2. Connect a UL-Listed reed switch (with 2 Kohm EOL resistor 01-022) to the module zone input or to any unused hardwired input on the panel.

3. Insert the magnet into the nibs on the top cover and press the magnet clip down over the magnet until it clicks into place into the cover.

Figure 3: Case tamper switch
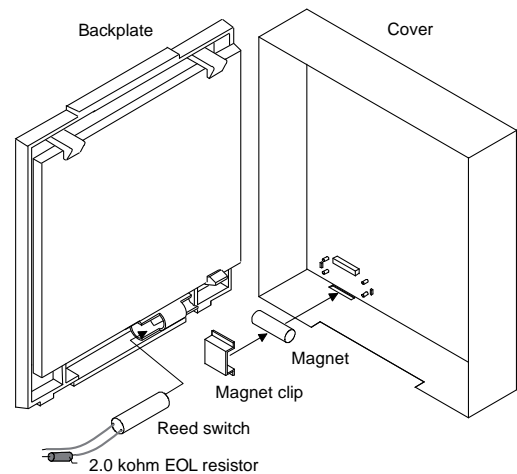
Power up

You will need to power up the module and panel to start communication between them.

To power up:

1. Verify that all wiring between the panel and module is correct.

2. Connect the backup battery and restore AC power to the panel.

   Whenever any module is added or changed, you must remove panel power and reapply it for the panel and module to communicate successfully.

3. Enter installer program mode and turn off the Access Code Lock feature (in the Security menu).

   This must be set to off for the system to communicate with Alarm.com. The module PWR LED should turn on. After a few seconds, the module BUS and AUTO LEDs should flash to indicate successful communication with the panel.

4. Verify that GSM status LED 1 is not flashing any errors and that LED 4 is at flashing at least a level of two.

   Otherwise, relocate the module. If LED 1 and LED 4 are not flashing at all, and LED 2 and LED 3 are flashing together, the module is in power save mode and the battery needs to be changed.

5. Do an installer GSM manual phone test (at system touchpad, enter 8, installer code, 3). Disarm the panel by entering 1 <installer code> within 10 seconds of starting the phone test.

   Before doing the manual phone test, the bottom red status LED should be on and the yellow status LED should be flashing. The yellow LED will stay on solid once the manual phone test is completed.

   Do not press any system touchpad buttons during the 5 to 8 minutes, or the time will not set. During this time, the keypad will go in and out of programming mode and will beep several times.

Status LEDs

The status LEDs located on the left side of the module indicate the current signal and the status of the wireless gateway module. The bottom red LED indicates if the module is in range and if it is registered. The yellow and green LEDs indicate the message status. The top LED is not used.

Red LED

- On when the module is in range and registered with the network.

- Off when the module is out of range and not registered with the network.

- Blinks when the module is registered with the network, but out of range.

Yellow LED

- On after the first message has been sent by the module and received by Alarm.com.

- Off until a message has been sent by the module.

- Blinks when the first message is being sent by the module.

Green LED

- Off as soon as Alarm.com receives the message from the module (off most of the time).

- Blinks when the message is being sent by the module.

Table 3 below describes status LED condition patterns.

Table 3: Status LED condition patterns

Number	Red LED	Yellow LED	Green LED	Module condition
1	Off	Off	Off	Not powered up/not working.
2	On	Off	Off	In range, first message not sent, currently sending message.
3	On	On	Off	In range, first message sent, not currently sending message.
4	On	On	Blinks	In range, first message sent, currently sending message.
5	On	Blinks	Blinks	In range, sending first message, currently sending message.
6	Blinks	On	Blinks	Out of range, first message sent, currently sending message.
7	Blinks	On	Off	Out of range, first message sent, not currently sending message.
8	Blinks	Blinks	Blinks	Out of range, sending first message, currently sending message.

GSM status LEDs

The GSM status LEDs are four small LEDs located below the serial number label on the module.

Figure 4: GSM status LEDs
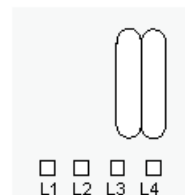
LED 1 (red). Flashes 1 to 8 times in an 8-second interval to indicate specific error conditions. The number of flashes indicates the error number. If there are two or more errors at the same time, the errors will flash one after the other. The LED will stay off for at least 4 seconds between errors.

Table 4: LED 1 errors

Flashes	Error
1 flash	Module cannot communicate with the panel. Check wiring between the panel and the module. Make sure the bus wires are not swapped.
2 flashes	The SIM card is missing. The SIM cardholder can be found in the gateway just below the antenna.

Flashes	Error
3 flashes	This is a common error if the module takes more than 10 seconds to register with the GSM network. It is normal for this error to show up for approximately 30 seconds while the module registers with the GSM network (at power up, for example). If it persists, the module is unable to register with the GSM network. Check LED 4 for signal level. If the signal level is too low, change the module's location or use a higher gain antenna. If the signal is good, the module may be roaming on a GSM network that doesn't partner with our ATT-Cingular. If the module had been communicating in the past, there may be new interference from some other device or building.
4 flashes	The module is registered on the GSM network, but cannot connect with Alarm.com. Contact Alarm.com technical support.
5 flashes	The radio portion of the module is not working correctly.
6 flashes	This is an error only if it persists for more than a minute. Otherwise, it is just an indication that the module is fixing an unusual condition regarding communication with the GSM network.
7 flashes	Access Code Lock is on. The module cannot do certain operations with the panel. This option should be turned off at the panel (System Programming – 0003).
8 flashes	Contact Alarm.com technical support.

LED 2 (yellow). Flashes with every communication between the module and the panel. Normal pattern calls for a series of quick flashes every 2 seconds in idle mode or every 4 seconds in power save mode.

LED 3 (green). Flashes with every communication between the module and its radio unit in idle mode, and with every communication with Alarm.com in connected mode. In power save mode, this LED flashes in unison with LED 2.

LED 4 (green). Indicates GSM signal level as a number of flashes (1 to 5). The signal level is updated every 8 seconds. No flashes indicate one of the following:

- The module is in power save mode or in connected mode.

- The module is just powering up, or has just exited power save mode.

- There is no GSM tower coverage in the area.

In connected mode, the LED toggles on and off.

Module modes

The module modes (states) include:

Idle mode. AC power is up, the battery level is greater than 11.5 volts, and the module is currently not connected to Alarm.com servers. This is normal for the module and the most common state.

- LED 1 flashes errors, if any.
- LED 2 indicates communication with panel.

- LED 3 indicates communication with radio unit.
- LED 4 indicates the signal level (1 to 5 bars).

Power save mode. The module just powered up, AC power is down, or battery level is less than 11.5 volts. The radio part of the module draws 10 mA in power save mode. It is fully functional and will go into connected mode as soon as a signal needs to be sent. Doing a manual phone test will switch the module into idle mode and update the signal level reading.

- LED 1 is inactive.
- LED 2 indicates communication with panel.
- LED 3 flashes in unison with LED 2.
- LED 4 is inactive.

Connected mode. The module is connected to Alarm.com servers and reported an alarm or other condition. The module stays in connected mode for at least 6 minutes after the last message is exchanged. Entering the panel's Installer Programming mode will cause the module to go into idle mode.

- LED 1 flashes errors, if any.
- LED 2 indicates communication with panel.
- LED 3 indicates communication with Alarm.com.
- LED 4 alternates 2 seconds on, then 2 seconds off.

Sensors 94, 95, and 96

If sensors 94, 95, and 96 are not learned in, after doing a manual phone test, the text for these sensors will display important information for troubleshooting purposes. Alarm.com technical support staff may request this information during service calls.

- Sensor 96 text displays the SIM card number.

- Sensor 95 text displays the type of central station reports enabled.

- Sensor 96 text displays the serial number.

Troubleshooting

Check GSM status LED 1 to see if it is flashing any errors. See Table 4 on page 4 for descriptions of the errors indicated.

- The power LED (the green LED at the top of the module) is not on.

  Turn off the panel power and verify that all wiring is correct.

- Module status LEDs (on the left side of the module) do not turn on immediately after initial power up.

  You must wait 5 to 8 minutes after power up for the module to communicate with Alarm.com.

  Access Code Lock feature (in panel memory) must be turned off for correct operation.

- Touchpads/sirens are beeping even though the system is not armed.

  Press the touchpad Status button and the panel reports the status issue and stops beeping.

- The status LEDs (on the left side of the module) are all off.

  Verify that there is GSM coverage in the location.

  Do a walking signal test. Ensure that the module is correctly powered off the battery.

If the wireless gateway module is powered down for a short period, buffered messages may be received from the GSM network when module power is restored.

The GSM module does support reporting of all touchpad panics, but will not send touchpad numbers along with the cancel report. This module does not support the keypad tamper feature at this time.

Specifications

Compatibility	Concord panels with software versions 4.0 and higher
Voltage	12 V nominal, 65 mA (continuous) 1600 mA (instantaneous peaks) maximum (from panel or auxiliary power supply)
Inputs	One hardwired zone input
Cellular network	Quad-band GSM/GPRS
Power/data bus	One four-wire SuperBus auto addressing power/communication data bus
Indicators	One module/panel communication status LED, one module power LED, one automation LED, three wireless communication status LEDs
Dimensions (H × W × D)	5.25 × 4.125 × 1 in. (133 × 105 × 25 mm)
Case color	Belgian gray
Case material	High-impact, ABS plastic
Operating temperature	32 to 120ºF (0 to 49ºC)
Storage temperature	-30 to 140ºF (-34 to 60ºC)
Relative humidity	90% noncondensing (maximum)
Listings	FCC Part 15, PTCRB, AT&T or T-Mobile

Regulatory information

FCC

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions.

1. This device may not cause harmful interference.

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

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

In accordance with FCC requirements of human exposure to radiofrequency fields, the radiating element shall be installed such that a minimum separation distance of 20 cm is maintained from the general population.

FCC ID: MIVGSM0108

IC: 4160A-GSM0108

ETL

A representative sample of this product was evaluated and found to comply with the applicable requirements of the standards for:

- Household Fire Warning System Units, ANSI/UL 985, 5th Ed rev 04/04
- Household Burglar-Alarm System Units, ANSI/UL 1023, 6th Ed rev 12/04
- Digital Alarm Communicator System Units, ANSI/UL 1635, 3rd Ed rev 12/04
- Residential Fire Warning System Control Units, ULC-S545, 2nd Ed dated 07/02
- Household Burglar Alarm System Units, ULC Subject C1023, 1st Ed dated 01/74

Contact information

For contact information, see www.utcfireandsecurity.com or www.interlogix.com.

For technical support, toll-free: 888.437.3287 in the US including Alaska, Hawaii, Puerto Rico, and Canada. Outside the tool-free area, contact your dealer.