NAPCO®
333 Bayview Avenue
Amityville, New York 11701
For Sales and Repairs, (800) 645-9445
For Technical Service, (800) 645-9440 or visit us at
http://tech.napcosecurity.com/
(Note: Technical Service is for security professionals only)
Publicly traded on NASDAQ Symbol: NSSC

Gemini C-Series GEMC-RECV Wireless RF Receiver Installation Instructions

WI1682A 12/14

DESCRIPTION

The Gemini GEMC-RECV RF Receiver is the hardwired interface to NAPCO's Wireless-Ready™ Gemini C-Series control panels (see WI1653 for installation instructions). The wireless system is comprised of a compatible Gemini C-Series control panel, at least one GEMC-RECV receiver, and one or more companion GEMC-Series (Commercial) or GEM-Series (Residential Fire or Burglary only) transmitters. The transmitters may be wireless smoke detectors, space-protection devices, window/door sensors, or other listed devices that report zone status and supervision information to the receiver without the use of wires.

There are three differences between the GEM-RECV and GEMC–RECV-Series wireless receivers:

1. The Signal Strength level 5 is adjusted to 3dB greater than the Signal Strength level 4.
2. The green Signal Strength LED is activated at SS3 on the GEMC–RECV instead of SS4 on the GEM-RECV-Series.
3. An additional back tamper has been added to the GEMC-RECV to detect removal from the mounting location.

THE GEMC-RECV RECEIVER

The GEMC-RECV can accommodate up to 200 wireless zones. The number of transmitters is limited by the associated Gemini C-Series control panel selected, because only the number of zones supported by the panel can be mapped to transmitters. The receiver is connected to the Gemini C-Series control panel 4-wire Fire bus (or Burglary bus for Burg-only applications). For Fire-only applications or Fire-Burg combination applications, the GEMC-RECV must be connected to the Gemini C-Series control panel Fire bus (see the Gemini C-Series installation instructions WI1653). The receiver monitors each transmitter, updating transmitter status as reports are received, and conveys this information to the control panel. Also monitored is the elapsed time since the last report from each transmitter. If no report of sufficient signal strength is received within a programmed time, a Supervision Failure will result.

COMPATIBLE CONTROL PANELS

The Gemini C-Series receivers listed are suitable for Commercial Fire and Burglary only with Gemini C-Series control panels.

COMPATIBLE COMMERCIAL FIRE TRANSMITTERS

GEMC-WL-CO - Wireless supervised Carbon Monoxide Detector, with back tamper to detect removal from base and opening of battery compartment.

GEMC-WL-HEAT - Wireless Heat Detector 135°F / Rate of Rise, with back tamper to detect removal from base and opening of battery compartment.

GEMC-WL-SMK - Wireless Photoelectric Supervised Smoke Detector, with back tamper to detect removal from base and opening of battery compartment.

GEMC-WL-WD2* - This supervised, front and back tampered transmitter's supervised loop may be used for normally-open Fire devices (Heat Detectors, Manual Pull Stations, etc.).

NOTE: For UL Fire Installations, a maximum of 125 supervised reporting transmitters may be installed. This does not include GEM-KEYF or GEM-WP remotes.

COMPATIBLE MERCANTILE BURGLARY TRANSMITTERS

Any of the following NAPCO wireless transmitters may be used with the GEMC-RECV-Series receivers in UL Mercantile Burglary installations:

GEMC-WL-DT - Dual-Technology PIR / Microwave Sensor, with front and back tamper.

GEMC-WL-GB - Glass Break Sensor.

GEMC-WL-PIR - Wireless PIR Motion Sensor, with front and back tamper.

GEMC-WL-WD2* Window/Door Contact **-** This supervised, front and back tampered, two-point transmitter provides an internal magnetic reed switch and/or terminals for two external normally-closed devices, or one external normally-open device.

GEMC-WL-WD - Low Profile Window / Door Transmitter.

NOTE: For UL Burglary Installations, a maximum of 200 supervised reporting transmitters may be installed. This does not include GEM-KEYF or GEM-WP remotes.

COMPATIBLE RESIDENTIAL TRANSMITTERS

GEM-DT - Wireless PIR / Microwave Motion Sensor

GEM-GB - Glass-Break Sensor (Not evaluated by UL).

GEM-HEAT - Wireless Heat Detector with Rate of Rise

GEM-KEYF - Mini Keyfob / Key Chain Remote Arming or Emergency Transmitter.

GEM-KEYFLR - Full-size, Long-Range Key Chain / Pendant Remote Arming / Emergency Transmitter (Not evaluated by UL).

GEM-PIR - Wireless PIR Motion Sensor

GEM-PIRPET - Wireless 30 pound Pet Immune PIR Motion Sensor.

GEM-RTRANS - Recessed Window/Door Transmitter.

GEM-SMK - Supervised Digital Smoke Detector.

GEM-TRANS2 - Window/Door Transmitter, 2-Point.

GEM-TRANSLP - Window/Door Transmitter, Low-profile (Not evaluated by UL).

GEM-WP - Wireless Waterproof Panic Button.

GEMC-WL-WD - Low Profile Window / Door Transmitter.

GEMC-WL-CO - Wireless supervised Carbon Monoxide Detector.

GEMC-WL-GB - Glass Break Sensor

GEMC-RECV SPECIFICATIONS

Electrical Ratings

Input Power: 12.5 - 9.4VDC, 70mA.

Storage Temperature: 20°C to + 85°C.

Antenna: ¼-Wave (2)

Dimensions: 6¾" x 3⅝" x 1½" (W x H x D)

Operating Frequency: 319.5Mhz

***** The GEMC-WL-WD2 may be wired in any of the configurations as shown in WI1743. **Note:** For *Commercial Fire* and *Residential Fire* installations, only ONE initiating device may be connected to this transmitter. For *Commercial Burglary* installations, multiple initiating devices may be used as long as the devices all serve the same function (i.e. door, window, motion, etc.).

INSTALLATION

DESIGNING THE SYSTEM

In planning the layout of the system, give careful consideration to the location of the receiver. Regardless of where the control panel is mounted, the receiver should be centrally located within the premises, that is, equally distant from all transmitters, and not located too close to the control panel. Choose a location as high above ground level as practical (attic installations are *not* recommended), keeping in mind that metal objects may adversely affect reception. Draw a layout of the system, identifying all proposed transmitter locations and the anticipated receiver location. Also include notations indicating construction materials in use. Although wood and wallboard construction will have little effect upon signal strength at the receiver, concrete or brick can reduce signal strength by up to 35%, while steel-reinforced concrete or metal lath and plaster can reduce transmitter strength as much as 90%.

Note: In difficult installations wherein distant transmitters pose reception problems, the use of multiple receivers throughout the premises is recommended. Receivers are connected to the panel's 4-wire bus. If any Commercial Fire transmitters are used, all receivers must be wired to the Fire / CO bus. If no Fire transmitters are used, the receiver may be wired to the Burg bus. Receivers should be uniquely addressed *(see ADDRESSING MULTIPLE RECEIVERS)*.

MOUNTING AND WIRING THE RECEIVER

After its location has been determined, remove the front cover and orient the receiver so that the antennas are vertical upon installation. Allowing at least 12 inches clearance for the antenna, mount the receiver using two screws suitable to the mounting surface through the two mounting holes in the rear cover (see Wiring Diagram). Using 4-conductor cable (maximum distance to the GEMC-BM/PS is 1000 feet with minimum 22-14 AWG wire), wire the receiver to the control panel in accordance with the following table:

GEMC-RECV	GEMINI C-Series Control Panel
1 (+)	18 Remote Power (+)
2 (–)	19 Remote Power (–)
3 (RX)	20 (GREEN)
4 (TX)	21 (YELLOW)

GEMC-RECV	GEMC-BM; GEMC-BM/PS Burg Modules
1 (+)	7 Remote Power (+)
2 (–)	8 Remote Power (–)
3 (RX)	9 (GREEN)
4 (TX)	10 (YELLOW)

GETTING UP AND RUNNING

(Also see ***Quick Method**, which follows).*

For each transmitter, enter:

- the zone number to which the transmitter will be mapped;
- the 6-digit ID Code: 1-digit checksum number printed on the transmitter and box;
- the wireless point number.

Note: When programming the ID Code at the keypad,

press [✳] [0] for "A"
press [✳] [1] for "B"
press [✳] [2] for "C"
press [✳] [3] for "D"
press [✳] [4] for "E"
press [✳] [5] for "F"

Press [ENTER] to save and **NEXT** / **YES** (or **PRIOR** / **NO**) to continue.

Key Fob Transmitters. Referring to the programming instructions for the control panel, enter the following:

- an assigned Key Fob Transmitter number (1—16);
- the Area number(s) to which the Key Fob Transmitter is designated;
- the 6-digit hexadecimal identification code with 1-digit checksum number printed on the transmitter (enter all numbers and/or letters, including leading zeros, if any);
- Aux. 1 options (see programming worksheets);
- Aux. 2 options (see programming worksheets).

QUICK METHOD

If a receiver is already installed in the panel, Napco Transmitter wireless points can be programmed automatically *("enrolled").* **Note:** (1) The transmitter point will be enrolled only if the signal strength is 3 or greater in residential installations, 5 or greater in Commercial installations (2) Enroll a single-point device by merely powering it up. (3) *Quick Method* is not applicable to Keyfob Transmitters.

Enter the Program Mode. Scroll to the RF Transmitter Points entry screen and proceed as follows.

1. Enter the zone number to which the transmitter point will be mapped.
2. Press [BYPASS] or [SILENCE] to enter the Enroll Mode. The red and green LED's on the keypad will flash and will display as shown below.

```
ZN# XMIT#+CS  P
ZN01-ENROLL:A--
```

3. Open the loop of a GEMC-WL-WD2 of the point that is to be programmed. (not required of PIR's or DT's).
4. Install the transmitter battery. The keypad will indicate that the point has been successfully enrolled.

Multi-Point Transmitters (not applicable to Commercial transmitters) can be mapped to successive zones simultaneously (Example 1) or to selected point by point. (Example 2).

Example 1: *A 2 point transmitter has the ID Code number 410078. Map* the *two points to Zones 11 and 12 respectively.*

1. Enter the Enroll mode as described in step 2 above.
2. Enter Zone "11".
3. Open the loops of points 1 and 2.
4. Install the transmitter battery. The keypad will beep twice to indicate that two points have been programmed

Transmitter 410078, point 1 will be mapped to Zone 11
Transmitter 410078, point 2 will be mapped to Zone 12

The keypad will now display Zone 12, the last zone enrolled.

Example 2: *A 2-point transmitter has the ID Code number 287613. Map point 1 to Zone 6 and point 2 to Zone 9.*

1. Enter the Enroll mode as described above.
2. Enter Zone 06.
3. Open point-1 loop.
4. Install the battery. The keypad will beep once to indicate that one point has been programmed. (Transmitter point 1 will be mapped to Zone 6).
5. Enter Zone "09".
6. Open point-2 loop.
7. Remove the transmitter battery, then re-install it. The keypad will beep once to indicate that one point has been programmed. (Transmitter 287613, point 2 is Zone 9.)

CHECKING TRANSMITTERS

The status of each transmitter may be checked at the keypad. Referring to the control panel installation instructions and the user's guide for the keypad in use, display transmitter status to show (a) the zone to which transmitter point is mapped; (b) the transmitter's 6-digit RF ID number (c) the point number; (d) transmitter status (normal, open, low battery, etc.); and (e) the signal strength of its last transmission.

SIGNAL STRENGTH

Relative signal strength is displayed on a scale of 1-10, with 10 being the strongest. A reading of "No Data S —" denotes that a report from that not yet been received. Readings less than "4" indicate reception is poor and may be unreliable. If this is the case, the use of a second receiver located closer to the transmitter is advisable and required in Commercial installations. For installations that include several transmitters, multiple receivers may be connected to the panel. (Only the highest signal strength will be displayed).

In Commercial installations, a reading of at least 5 is required. Additionally, if the Commercial receiver does not receive a transmission signal strength of at least 5 within 4 hours, a transmitter supervision fail trouble for that transmitter will be generated on the system.

It should be noted that UL has determined a signal strength of 4 (3dB lower than the required signal strength of 5) would be sufficient in residential systems. However, the 3dB higher signal strength is required in Commercial installations to ensure that the level is sufficient for alarm conditions to be received when initiated.

DETERMINING TRANSMITTER SIGNAL STRENGTH

For Fire transmitters, unlock the Fire keypad and press **MENU**; then press **NEXT** or **PRIOR** to scroll to the menu option "**DISPLY RF XMITTER STAT**". Press **YES** to select. For Burg transmitters, enter your keypad dealer program code at the Burg keypad and scroll to menu option "**DISPLY RF XMITTER STAT**" and press **ENTER**. In Commercial installations, verify a minimum signal strength of 5 is displayed on the keypad.

ADDRESSING MULTIPLE RECEIVERS

If more than one receiver is being utilized, each must be individually addressed so that it can be identified by the control panel. This is accomplished by the placement of jumpers on JP1 and JP2 at the tower-left corner of the board. Refer to the Wiring Diagram for jumper configuration. **Note:** Each receiver leaves the factory internally configured as #1. Therefore, if only one receiver, and no SLC Modules are being used, address assignment is not required. If SLC Modules are used in the system, the maximum number of receivers is reduced by the same number. Up to two (2) SLC modules may be installed, replacing receiver address 1 and/or 1 and 2.

WIRELESS SYSTEM TROUBLES

Burglary transmitter troubles will only display on the GEMC-BK1 Burglary keypad(s) and Fire transmitter troubles will only display on the GEMC-FK1 Fire keypad(s).

Burglary keypads (GEMC-BK1) display transmitter/receiver troubles by scrolling all troubles when disarmed. To view the zone description of the offending transmitter, note the zone number (the zone number displays as "NNN" following the system trouble "EXX-NNN"). Scroll through the menu options until "Display Directory" appears, then press the **ENTER** key.

Fire keypads (GEMC-FK1) display only the initial highest priority event. To view all existing un-restored conditions, the keypad must be unlocked with the appropriate code and queried with the **NEXT** and **PRIOR** keys. To view the zone description of the displayed transmitter trouble, press and hold the **DETAILS** key.

The following system trouble codes are displayed at the keypad and are related to wireless operation.

TRANSMITTER TROUBLES

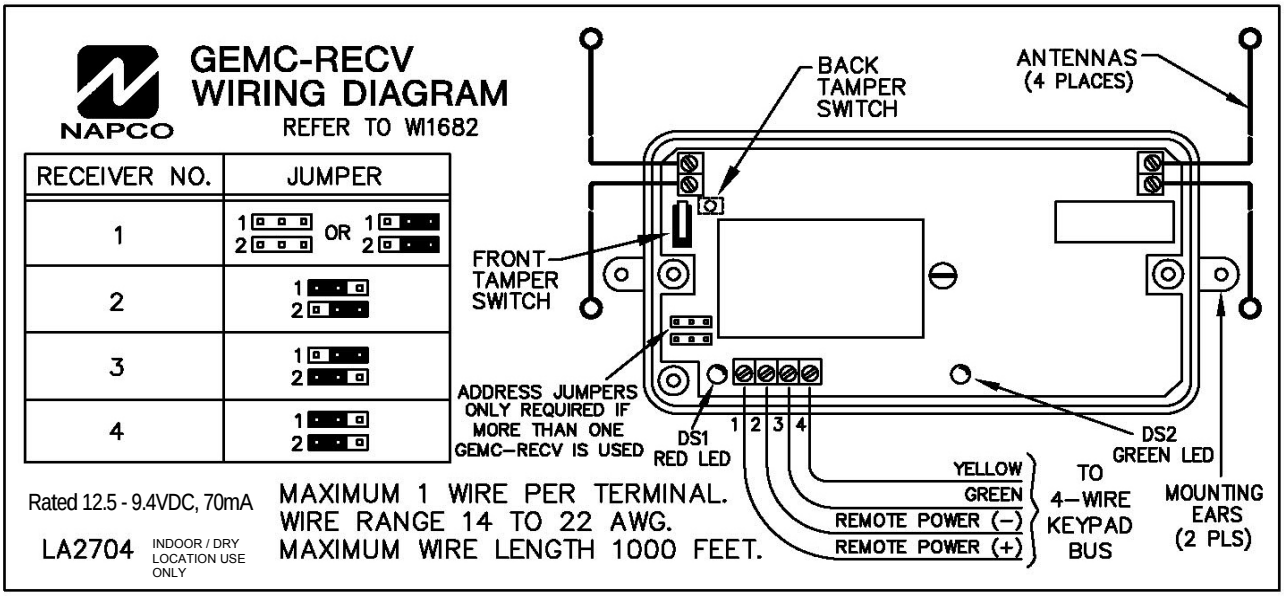
Note: Also displayed with the transmitter trouble code are the zone number (*"NNN"* to which Point 1 is mapped) and the transmitter's identification number.

WL LOBATT - E05-NN. Transmitter low battery. **Note:** If all transmitters were installed at the same time, it is recommended to replace all transmitter batteries to avoid service callbacks.

LOBATT KEYFOB - E18-NN. Key Fob transmitter low battery.

WL TRBL - E04-NN. Supervision failure. Indicates that a transmitter has not "checked in" with a signal strength equal to or greater than 5 within the required 4 hour timeout. Check the transmitter for a dead battery (see note above). Also, check for an object recently placed in the path of the transmitter blocking reception.

WL TAMPER - E15-NN. Tamper condition indicates that a transmitter case is open or removed from its base, exposing the battery holder. Re-install cover, and/or re-install transmitter. **Note:** If the Area is disarmed, the transmitter tamper will not affect the zone to which the transmitter is assigned (keypad will only display a "**WL TAMPER - E15-NN**" trouble). Once the tamper is corrected, press **RESET** and the display will revert to its previous message, such as "System Ready". If the Area is armed, the zone mapped to that transmitter will go into alarm.



RECEIVER TROUBLES

Note: Also displayed with the receiver trouble code is the receiver number *("NN")*.

RF REC JAMMED - E16-NN. Transmitter interference from nearby radio-frequency source.

RF REC RES TRBL - E06-NN. Receiver response trouble (data failure between receiver and control panel). Check the wiring between the receiver and the panel.

RF REC TAMPER - E17-NN. Receiver open or removed from mounting location. Install cover and/or re-mount in correct location.

RF REC HIGH NOISE - E72-NN. Extraneous wireless signals are being detected. Try re-locating receiver to a quieter position.

LED INDICATIONS

RED LED (DS1)

Off - Indicates no power.

On steady - Indicates powered, but not receiving communication from the panel. This can be caused by the following:

1. Open/shorted green wire.
2. Panel not programmed correctly for receiver.
3. The receiver address jumpers are incorrect.

Flashing - Indicates receiver is receiving power and communication. Will flash the configured address of the receiver.

GREEN/ LED (DS2)

The green signal strength LED will flash while receiving a transmission having a signal strength of 3 or greater. **Caution:** A green LED display with no transmitter in operation is a sign of high ambient RF interference. If the green LED remains lit continuously, relocate the receiver.

NAPCO LIMITED WARRANTY

NAPCO SECURITY SYSTEMS, INC. (NAPCO) warrants its products to be free from manufacturing defects in materials and workmanship for thirty-six months following the date of manufacture. NAPCO will, within said period, at its option, repair or replace any product failing to operate correctly without charge to the original purchaser or user.

This warranty shall not apply to any equipment, or any part thereof, which has been repaired by others, improperly installed, improperly used, abused, altered, damaged, subjected to acts of God, or on which any serial numbers have been altered, defaced or removed. Seller will not be responsible for any dismantling or reinstallation charges.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THERE IS NO EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. ADDITIONALLY, THIS WARRANTY IS IN LIEU OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF NAPCO.

Any action for breach of warranty, including but not limited to any implied warranty of merchantability, must be brought within the six months following the end of the warranty period.

IN NO CASE SHALL NAPCO BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, EVEN IF THE LOSS OR DAMAGE IS CAUSED BY THE SELLER'S OWN NEGLIGENCE OR FAULT.

In case of defect, contact the security professional who installed and maintains your security system. In order to exercise the warranty, the product must be returned by the security professional, shipping costs prepaid and insured to NAPCO. After repair or replacement, NAPCO assumes the cost of returning products under warranty. NAPCO shall have no obligation under this warranty, or otherwise, if the product has been repaired by others, improperly installed, improperly used, abused, altered, damaged, subjected to accident, nuisance, flood, fire or acts of God, or on which any serial numbers have been altered, defaced or removed. NAPCO will not be responsible for any dismantling, reassembly or reinstallation charges.

This warranty contains the entire warranty. It is the sole warranty and any prior agreements or representations, whether oral or written, are either merged herein or are expressly canceled. NAPCO neither assumes, nor authorizes any other person purporting to act on its behalf to modify, to change, or to assume for it, any other warranty or liability concerning its products.

In no event shall NAPCO be liable for an amount in excess of NAPCO's original selling price of the product, for any loss or damage, whether direct, indirect, incidental, consequential, or otherwise arising out of any failure of the product. Seller's warranty, as hereinabove set forth, shall not be enlarged, diminished or affected by and no obligation or liability shall arise or grow out of Seller's rendering of technical advice or service in connection with Buyer's order of the goods furnished hereunder.

NAPCO RECOMMENDS THAT THE ENTIRE SYSTEM BE COMPLETELY TESTED WEEKLY.

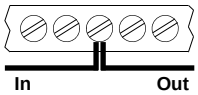
Warning: Despite frequent testing, and due to, but not limited to, any or all of the following; criminal tampering, electrical or communications disruption, it is possible for the system to fail to perform as expected. NAPCO does not represent that the product/system may not be compromised or circumvented; or that the product or system will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; nor that the product or system will in all cases provide adequate warning or protection. A properly installed and maintained alarm may only reduce risk of burglary, robbery, fire or otherwise but it is not insurance or a guarantee that these events will not occur. CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE, OR OTHER LOSS BASED ON A CLAIM THE PRODUCT FAILED TO GIVE WARNING. Therefore, the installer should in turn advise the consumer to take any and all precautions for his or her safety including, but not limited to, fleeing the premises and calling police or fire department, in order to mitigate the possibilities of harm and/ or damage.

NAPCO is not an insurer of either the property or safety of the user's family or employees, and limits its liability for any loss or damage including incidental or consequential damages to NAPCO's original selling price of the product regardless of the cause of such loss or damage.

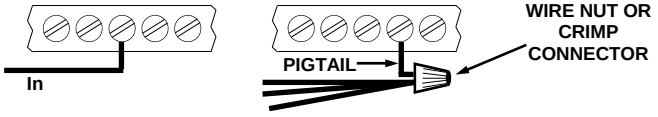
Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusion or limitation of incidental or consequential damages, or differentiate in their treatment of limitations of liability for ordinary or gross negligence, so the above limitations or exclusions may not apply to you. This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

IMPORTANT WIRING METHODS

For single-conductor terminal blocks (like the type shown at left), to terminate more than one conductor to a terminal, use the wiring methods shown at right:

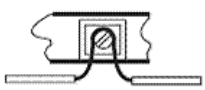


Incorrect

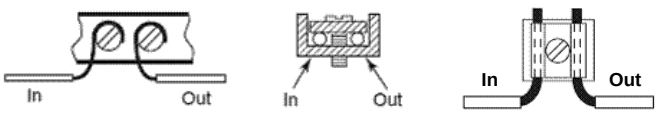


Correct -- Single incoming and/or pigtail with wire nut / crimp connectors

For "barrier" type terminal blocks (like the type shown at left), to terminate two conductors to a terminal, use the wiring methods shown at right:

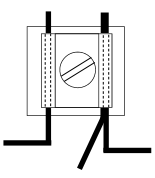


Incorrect

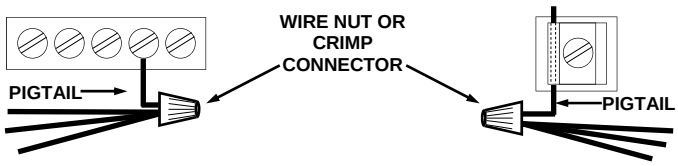


Correct -- Separate incoming and outgoing conductors

To terminate more than two conductors or conductors of different wire sizes to a terminal, use the "pigtail" type wiring method as shown at right. Use insulated wire for the pigtail, and firmly secure the conductors to the pigtail using an appropriate wire nut or crimp connector for the number and gauge of conductors used.



Incorrect



Correct -- Use pigtail and wire nut / crimp connector