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INSTALLATION INSTRUCTIONS

GEM-RECV8
GEM-RECV16
GEM-RECV96
Wireless Receivers

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DESCRIPTION

GEM-RECV Series receivers are the hardwired interface to Napco's Wireless-Ready™ Control Panels. The wireless system comprises a GEM-Series control panel, at least one GEM-RECV receiver and one or more companion GEM-Series transmitters. The transmitters may be wireless smoke detectors, space-protection devices, window/door sensors, or other devices that report zone status and supervision information to the receiver without the use of wires.

THE GEM-RECV RECEIVER

Three receivers are available: GEM-RECV8, GEM-RECV16 and GEM- RECV96 will accommodate up to 8, 16 and 96 zones, respectively. The receiver is connected to the control panel's 4-wire bus. 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 is received within a programmed time, a Supervisory Failure will result.

COMPATIBLE TRANSMITTERS

Any of the following Napco wireless transmitters may be used with GEM-RECV Series Receivers.

- **GEM-TRANS2 Window/Door Sensor.** This supervised, two-point transmitter provides an internal magnetic reed switch and/or terminals for one or two external normally-closed devices.
- **GEM-PIR.** Dual-element passive infrared sensor.
- **GEM-DT.** Dual-technology PIR/microwave sensor.
- **GEM-SMK Smoke Detector.** Supervised smoke detector.
- **GEM-KEYF Key Fob Transmitter.** Keychain/pendant remote arming or emergency transmitter.
- **GEM-GB.** Glass-break sensor.

SPECIFICATIONS, GEM-RECV Receiver

Operating Temperature: 0° C to 49° C
Storage Temperature: –20° C to + 85° C
Power Requirements: 12Vdc, 70mA (supplied by panel)
Antenna: ¼-wave (2)
Dimensions: 7" x 4¾" x 1½" (HxWxD)

Wireless Ready™ is a trademark of Napco Security Systems, Inc.

ORDERING INFORMATION

Note: Batteries are included with all transmitters.

GEM-RECV8	8-Point Receiver/Interface with dual antennas
GEM-RECV16	16-Point Receiver/Interface with dual antennas
GEM-RECV96	96-Point Receiver/Interface with dual antennas
GEM-DT	Dual-technology PIR/Microwave sensor
GEM-GB	Glass-Break Detector
GEM-KEYF	Hand-Held Key Fob Pendant/Keychain Panic Button
GEM-PIR	Passive Infrared Transmitter
GEM-SMK	Supervised Smoke Detector
GEM-TRANS2	2-Point Window/Door Transmitter
DL123A	Replacement Lithium Battery for GEM-TRANS2, GEM-PIR (2) and GEM-GB (2) (bulk packed)

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, approximately equally distant from all transmitters. 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 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. (The GEM-P3200 Control Panel will accommodate two receivers; the GEM-P9600, up to four.) Receivers are connected to the panel's 4-wire bus. They should be uniquely addressed (see *ADDRESSING MULTIPLE RECEIVERS* and all be of the

same type, that is, all GEM-RECV8s, all GEM-RECV16s, etc. **Note**: If receivers are intermixed, the panel will only recognize the capacity of the lowest one.

Mounting and Wiring the Receiver

After its location has been determined, remove the front cover and orient the receiver so that the antennas are at the top. Allowing at least 12 inches clearance for the antenna, mount the receiver using two screws suitable to the mounting surface through the two large oval holes in the rear cover (see *Wiring Diagram*). Using 4-conductor cable, wire the receiver to the control panel in accordance with the following table.

GEM-RECV	GEM-P3200*, GEM-P9600
1 (+)	9 (REMOTE POWER +)
2 (—)	10 (REMOTE POWER —)
3 (RX)	11 (GREEN)
4 (TX)	12 (YELLOW)

Table 1. GEM-RECV Series terminal connections to the panel

*Note: The GEM-P3200 is limited to 24 zones

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 [ON/OFF] to save. Press NEXT 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. (2) Enroll a single-point device by merely powering it up. (3) *Quick Method* is not applicable to Key Fob 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 the [BYPASS] Key to enter the Enroll mode. The red and green LEDs on the keypad will flash and the window will display as shown at left.

3. Open the loop of the point that is to be programmed.

4. Install the transmitter battery. The keypad will beep to indicate that the point has been successfully enrolled.

Multi-point transmitters can be mapped to successive zones simultaneously (Example 1) or to selected zones 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 287613, 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 mapped to Zone 9.)

CHECKING TRANSMITTERS

The status of each transmitter may be checked at the keypad. Referring to the installation instructions for the control panel and the user's guide for the keypad in use, display transmitter status to show (a) the zone to which the transmitter point is mapped; (b) the transmitter's 6-digit identification 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 transmitter has not yet been received. Readings less than "3" indicate that reception is poor and may be unreliable. In this case, the use of a second receiver located closer to the transmitter is advisable. For installations that include several distant transmitters, multiple receivers may be connected to the panel. (Only the highest signal strength will be displayed.)

Note: When using the Fault-Find Mode on wireless zones, the keypad will beep when the zone is opened or closed only if if the signal strength of the transmitter 3 or greater.

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 lower-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 is being used, address assignment is not required.

WIRELESS SYSTEM TROUBLES

The following system-trouble codes displayed at the keypad(s) are related to wireless operation.

Transmitter Troubles

Note: Also displayed with the transmitter trouble code are the zone number ("*NN*") 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. Supervisory failure. Indicates that a transmitter has not "checked in" within the programmed timeout. Check the transmitter for a dead battery (see note above). Also, check for an object in the path of the transmitter blocking reception.

WL TAMPER - E15-NN. Tamper condition. Indicates that a transmitter case is open. Re-install cover.

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. Install cover.

LED INDICATIONS

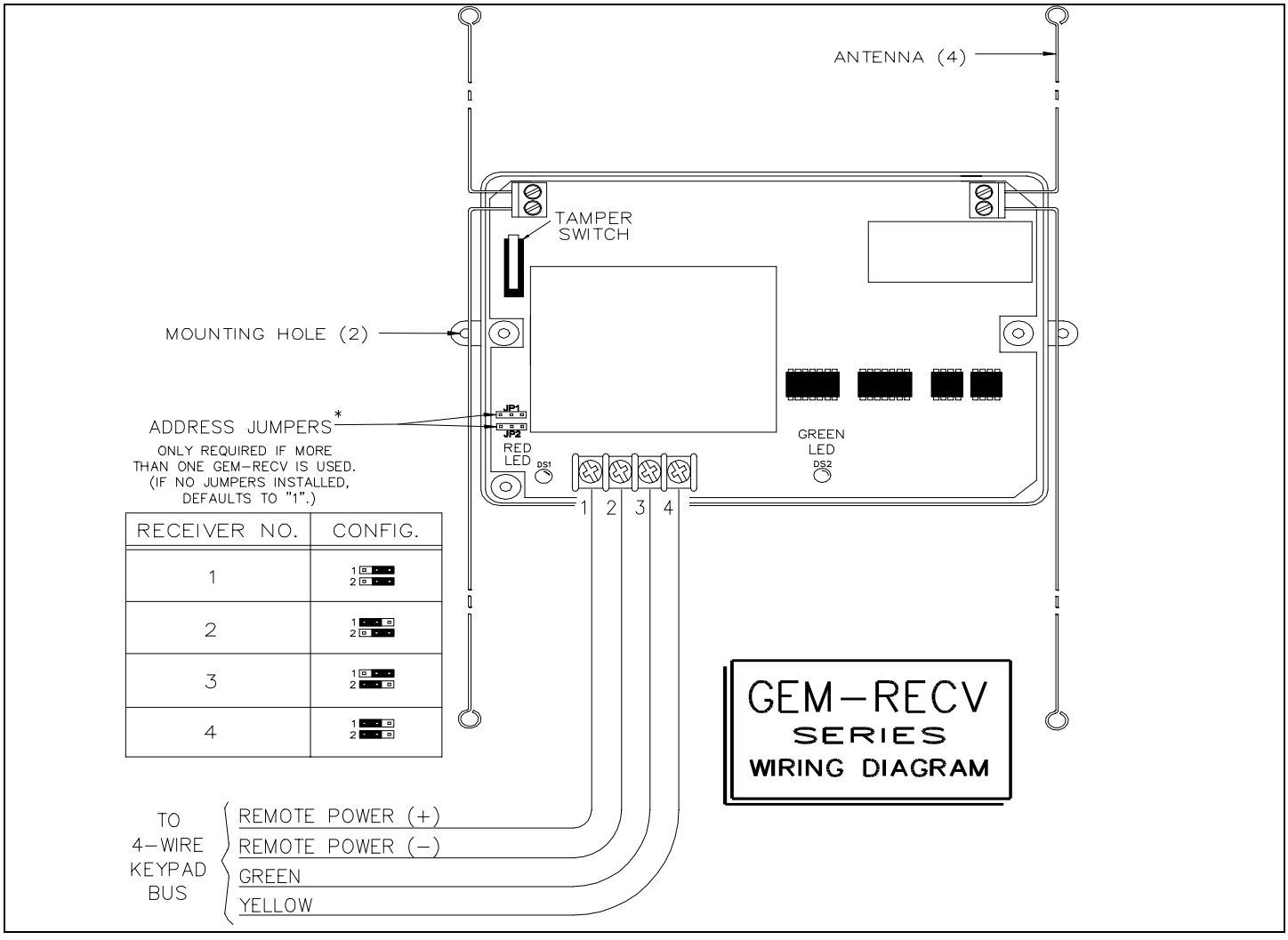
RED LED	R3000 CONDITION
OFF	No power.
ON	Powered, but not communicating with panel.
FLASHING	Powered and receiving signal from panel.

Table 2. Red LED indications.

Red LED (DS1)

Green LED (DS2)

The green LED will flash while receiving a transmission having a strength of 4 or greater, indicating a signal of sufficient strength. *Caution: A green LED display with no transmitters in operation is a sign of high ambient rf interference. If the green LED remains lit continuously, relocate the receiver.*



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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.

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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.

CAUTION: This equipment generates and uses radio-frequency energy. If not installed using conventional installation practices for rf devices, it may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. However, there is no guarantee that interference will not occur in a particular installation. If it has been found to cause interference to radio or television reception, which can be determined by removing and reapplying ac and battery power to the equipment, the installer is encouraged to try to correct the interference by one or more of the following measures: reorient the receiving antenna; connect the power transformer to a different outlet so that the control panel and radio or television receiver are on different branch circuits; relocate the control panel with respect to the radio or television receiver.