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**GEM-RECV8**  
**GEM-RECV16**  
**GEM-RECV32**  
**GEM-RECV96**  
**GEM-RECV255**

INSTALLATION INSTRUCTIONS

## Wireless Receivers

WI751C 5/06

### DESCRIPTION

GEM-RECV Series receivers are the hardwired interface to Napco's Wireless-Ready™ Control Panels. The wireless system comprises a compatible 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

Five receivers are available: GEM-RECV8, GEM-RECV16, GEM-RECV32, GEM-RECV96, GEM-RECV255 will accommodate up to 8, 16, 32, 96 and 255 wireless 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 CONTROL PANELS

The GEM-receivers listed above are compatible with the following control panels:

- GEM-P816
- GEM-P1632
- GEM-P1664
- GEM-P3200
- GEM-P9600
- GEM-X255

### COMPATIBLE TRANSMITTERS

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

- GEM-TRANS2** Window/Door Sensor - This supervised, two-point transmitter provides an internal magnetic reed switch and/or terminals for two external normally-closed devices, or one external normally-open device.
- GEM-PIR** - Wireless PIR Motion Sensor.
- GEM-PIRPET** - Wireless 30lb. Pet Immune PIR Motion Sensor.
- GEM-DT** - Dual-Technology PIR / Microwave Sensor.
- GEM-SMK** - Wireless Photoelectric Supervised Smoke Detector.
- GEM-HEAT** - Wireless Heat Detector 135°F / Rate of Rise.
- GEM-KEYF** - Mini Keyfob/Key Chain Remote Arming or Emergency Transmitter.
- GEM-WP** - Wireless Waterproof Panic Button.
- GEM-GB** - Glass-Break Sensor.
- GEM-RTRANS** - Recessed Window/Door Transmitter
- GEM-KEYFLR** - Full-size, Long-Range Key Chain/Pendant Remote Arming/Emergency Transmitter

### 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:..... 6¾" x 3⅝" x 1½" (W x H x D)

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

### ORDERING INFORMATION

**Note:** Batteries are included with all transmitters.

- GEM-RECV8** 8 - Point Receiver/Interface
- GEM-RECV16** 16 - Point Receiver/Interface
- GEM-RECV32** 32 - Point Receiver/Interface
- GEM-RECV96** 96 - Point Receiver/Interface
- GEM-RECV255** 255 - Point Receiver/Interface
- GEM-DT** Dual-Technology PIR/Microwave sensor
- GEM-GB** Glass-Break Detector
- GEM-KEYF** Hand-Held Key Fob Pendant/Key chain Panic Button
- GEM-PIR** Wireless PIR Motion Sensor
- GEM-PIRPET** Wireless 30lb. pet immune PIR Motion Sensor
- GEM-SMK** Supervised Smoke Detector
- GEM-HEAT** Wireless 135°F Heat Detector / Rate of Rise
- GEM-TRANS2** 2-Point Window/Door Transmitter
- GEM-WP** Wireless Waterproof Panic Button
- DL123A** Replacement Lithium Battery for GEM-TRANS2, GEM-RTRANS, GEM-PIR (2), GEM-PIRPET (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, 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-P816, P1632, P1664 and P3200 control panels will accommodate two receivers; the GEM-P9600 and GEM-X255, 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-RECV8, all GEM-RECV16, 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 mounting 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-Control Panel
1 (+)	9 Remote Power (+)
2 (-)	10 Remote Power (-)
3 (RX)	11 (GREEN)
4 (TX)	12 (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 for "A"  
 press for "B"  
 press for "C"  
 press for "D"  
 press for "E"  
 press for "F"

Press to save and 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 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 to enter the Enroll Mode. The red and green LEDs on the keypad will flash and will display as shown below (GEM-RP1CAe2).

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

3. Open the loop of the point that is to be programmed.
4. Install the transmitter battery. The keypad will indicate that the point has been successfully enrolled.

**Multi-Point 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

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 1D 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 "3" indicate reception is poor and may be unreliable. In this case, the use of a second receiver located closer to the is ad-

visible. For installations that include several 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 the signal strength of the transmitter is 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 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 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.

**WI 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.

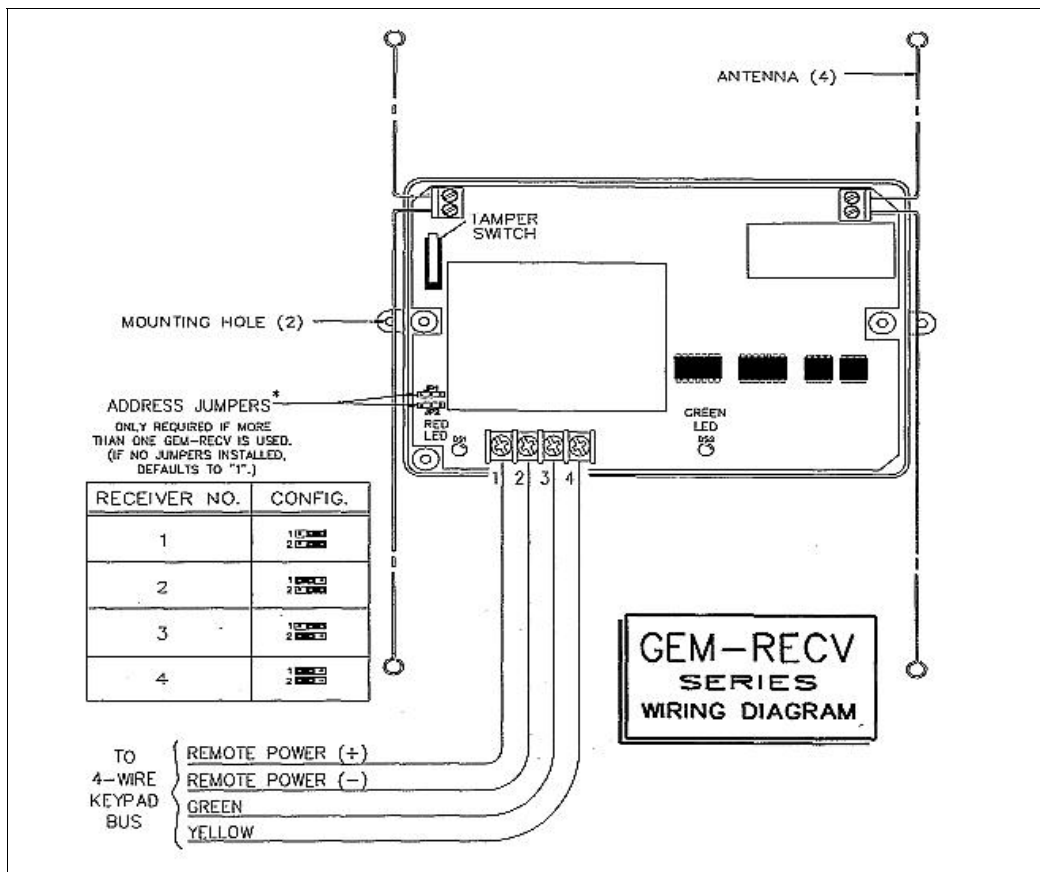
**RF REC TAMPER - EI 7-NN.** Receiver open. Install cover.

### LED INDICATIONS

RED LED	Receiver Condition
OFF	No Power
ON	Powered, but not communicating with panel
FLASHING	Powered, properly communicating with panel

#### Red LED (DS1) Green LED (DS2)

The green LED will flash while receiving a transmission having a signal strength of 4 or greater, indicating a signal of sufficient strength. **Caution:** A green LED display with no transmitter in operation *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.

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NAPCO RECOMMENDS THAT THE ENTIRE SYSTEM BE COMPLETELY TESTED WEEKLY.

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