



# INSTALLATION INSTRUCTIONS

## GEM-K4RF

### Digital Icon Keypad with Integral RF Receiver

This Guide includes programming instructions for the following control panels:

- GEM-P816 (v.9A or prior)
- GEM-P1632 (v.9A or prior)

This Guide is to be used in conjunction with the Programming Instruction Manual for the following control panels:

|           |   |                                  |
|-----------|---|----------------------------------|
| GEM-P816  | - | WI995 and WI1182 (v.10 or later) |
| GEM-P1632 | - | WI897 and WI1148 (v.10 or later) |
| GEM-P3200 | - | WI818 and WI1184                 |
| GEM-P9600 | - | WI777 and WI1185                 |

#### Quick Start:

1. Referring to the control panel wiring diagram, connect siren, auxiliary power, PGM output, remote bus, earth ground, zone and telephone wiring. NOTE: See Installation Instructions for the appropriate control panel.
2. Connect AC power first and then the battery.
3. Configure the keypad (see page 3).
4. Access the Easy Menu Driven (Dealer Program) Mode:

Press **4** **5** **6** **7F** **8A** **9P** **MENU**

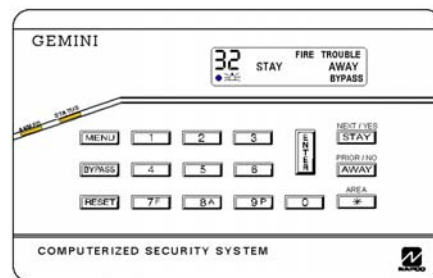
Dealer Code

Press NO (**AWAY**) Until "17" appears on the keypad display.

Press YES (**STAY**) to Enter Easy Menu Driven Dealer Program Mode.

The Easy Menu Driven Program Mode allows you to complete all basic programming functions by answering questions which allow the automatic programming of the control panel.

**NOTE:** The programming examples in this manual reflect the GEM-K4RF keypad connected to a GEM-P1632 panel. When used with the GEM-P816 panels, the programming is identical except for the panel limits such as: Areas = 1; Zones = 16; User Codes = 16; Zone Doubling = Not available.



GEM-K4RF Keypad

# THE GEM-K4RF KEYPAD

## DESCRIPTION

The GEM-K4RF is a multi-segment LCD digital keypad that is compatible with the NAPCO GEM-Series GEM-P816, P1632, P3200 & P9600 control panels. Refer to User Guide OI283 for operation instructions. **While the GEM-K4RF may be used to fully program the control panel, the GEM-K1CA keypad provides the optimum in ease of keypad programming.** **Note:** Do not mix classic RP series keypads with "K Series" keypads within one system.

The wireless system comprises a compatible GEM-Series control panel, at least one GEM-RECV receiver and one or more companion GEM-Series transmitters. Built inside the GEM-K4RF keypad is a receiver to save space and simplify installation. 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 integral receiver inside the keypad will accommodate up to 32\* wireless points. The receiver is connected to the control panel's 4-wire bus through the same 4 wires as the keypad. 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-P3200
- GEM-P9600

**\*Note:** All current panels listed above will accommodate up to 16 points with the GEM-K4RF keypad; however for the GEM-P816/P1632 (v.10) panels, and for the GEM-P3200/P9600 (v.30) panels, up to 32 points will be accommodated. **Note:** If the number of allowed points are exceeded, an E-39-00 (receiver capacity) system trouble will occur ("00" = the number of the receiver).

## SPECIFICATIONS

Operating Voltage: 12VDC (supplied by panel)

Current Drain: 75 mA Standby

**Note:** Subtract keypad current from combined auxiliary current of the control panel.

Operating Temperature: 0° C to 49° C

Storage Temperature: 20° C to + 85° C

Power Requirements: 12VDC, 75mA (supplied by panel)

Antenna: ¼-wave (external wire), and internal antennas.

Dimensions: 5 7/8" x 4 3/8" x 1" (WxHxD)

## ORDERING INFORMATION

**Note:** Any of the following Napco wireless transmitters may be used with the GEM-RECV Series Receivers. Batteries are included with all transmitters.

**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-RTRANS:** Recessed Window/Door Transmitter

**GEM-PIR** - Wireless PIR Motion Sensor.

**GEM-PIRPET** - Wireless 30 lb. 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** - Hand-Held Key Fob Transmitter. Key chain/Pendant remote arming or emergency transmitter.

**GEM-WP** - Wireless Waterproof Panic Button.

**GEM-GB** - Glass-break sensor.

**DL123A** - Replacement Lithium Battery for GEM-TRANS2, GEM-PIR (2), GEM-PIRPET(2) and GEM-GB (2) (bulk packed).

**GEM-RECV8:** Wireless Receiver, 8 Zones

**GEM-RECV16:** Wireless Receiver, 16 Zones

For Sales and Repairs, call toll free: (800) 645-9445  
For direct line to Technical Service, call toll free: (800) 645-9440  
Internet: <http://www.napcosecurity.com>

## INSTALLATION

### Designing the System

A keypad should be located near each exit/entry door. However, give careful consideration to the location of the keypad, since it has a receiver built inside it. Regardless of where the control panel is mounted, the keypad should be centrally located within the premises, that is, equally distant from all transmitters. Metal objects close to the installation may adversely affect reception. Draw a layout of the system, identifying all proposed transmitter locations and anticipated keypad 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 keypads and/or GEM-REC16's throughout the premises is recommended. (The GEM-P816, P1632 and 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 GEM-RECV16.

**Note:** If receivers are intermixed, the panel will only recognize the capacity of the lowest one.

After determining the general location for the keypad additional time should be spent determining the exact location of keypad using the template provided. In addition to the hole in the wall used to connect the bus wires to the keypad, an additional hole should be made into the wall to allow the antenna wire to be recessed into the wall. The design of the keypad keeps the antenna as far away from the bus wires as possible so that RF noise emitted from the bus wires does not affect the sensitivity of the receiver. If the placement of both these holes are not carefully considered, additional effort may be required to drill through or chisel existing wall beams. In addition the tamper is located close to the antenna hole. If care is not taken to leave sufficient space between the antenna hole and the tamper, the tamper may not function correctly.

To open the case, insert a screwdriver into either slot at the bottom and push up with a slight twisting motion to release the retainer tab. Repeat for the other slot. Pull out at the bottom and lift off the two hooks at the top.

The GEM-K4RF features a handy pull-up reference label. (This label must be used in UL installations). Before mounting the keypad onto the wall, push the Sliding Label Plate (with label and felt backing affixed and handle facing forward) down the guides at the rear of the keypad until it snaps into place. Once installed, the Sliding Label Plate cannot be removed without first removing the keypad from the wall. **Note:** The keypad fire and panic keys should not be considered a substitute for a listed manual initiating device, such as a pull box.

If installing onto a double-gang box, insert mounting screws through the two vertical elongated holes on the left side of the case and into the box. If the box is visible when viewed from the front, adjust the keypad vertically and tighten the screws. Then, using hardware suitable for the mounting surface, add one or two screws at the right side of the keypad case directly into the wall to ensure a secure installation. **Note:** *Do not over tighten the screws!* Uneven walls may cause the keypad case to distort.

### WIRING

After the bus wires are brought through the bus wire hole, and the keypad back case is mounted the wires can be connected as shown in the table at the right. After connecting the wires care must be taken to loop the antenna wire carefully into the antenna hole as the front cover is connected to the keypad back case. The antenna should fall easily into the wall cavity away from the keypad bus wires. The wire should hang as straight as possible below the keypad for optimal reception. If the wire cannot be hung inside the wall, it is better for the wire to be cut flush with the printed circuit board rather than to have the wire become tangled behind the keypad.

| COLOR  | TERMINAL  |
|--------|-----------|
| RED    | 9         |
| BLACK  | 10        |
| GREEN  | 11        |
| YELLOW | 12        |
| WHITE* | N/O PANIC |
| WHITE* | N/O PANIC |

\* Cut and insulate 2 white wires if not used.

### KEYPAD AND RECEIVER ADDRESS JUMPERS

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 jumper "RX" located in the upper right corner of the back of the keypad, as shown below. Factory default is no jumper, therefore making the receiver inside the keypad as RF Receiver #1. With the jumper in place, it is receiver #2. When more than 2 RF receivers are needed (only if a GEM-P9600 is used) a GEM-RECV16 can be addressed as receiver 3, and an additional GEM-RECV16 as receiver #4. 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.

In summary, if more than one keypad is installed:

- Each must be assigned a unique address (that is, no two keypads may be numbered alike).
- Keypads must be addressed consecutively (that is, missing numbers are not permitted).
- Only Keypad No. 1 may be used for programming. (However, for ease of programming, it is recommended that a GEM-K1CA be selected as Keypad #1).

## KEYPAD OPTION JUMPERS

Up to 7 GEM-K4RF keypads may be connected to the control panel (Keypads 1–7). Each must be configured for a keypad address. In addition, the keypad may be configured to disable touchpad backlight and entry sounder. Keypads are configured by the proper selection of jumpers. Refer to the label on the keypad circuit board for jumper locations and a summary of settings.

### A: DISABLE PUSHBUTTON BACKLIGHT

Cut Jumper A to disable touchpad pushbutton back-lighting.

### B: DISABLE LCD BACKLIGHT

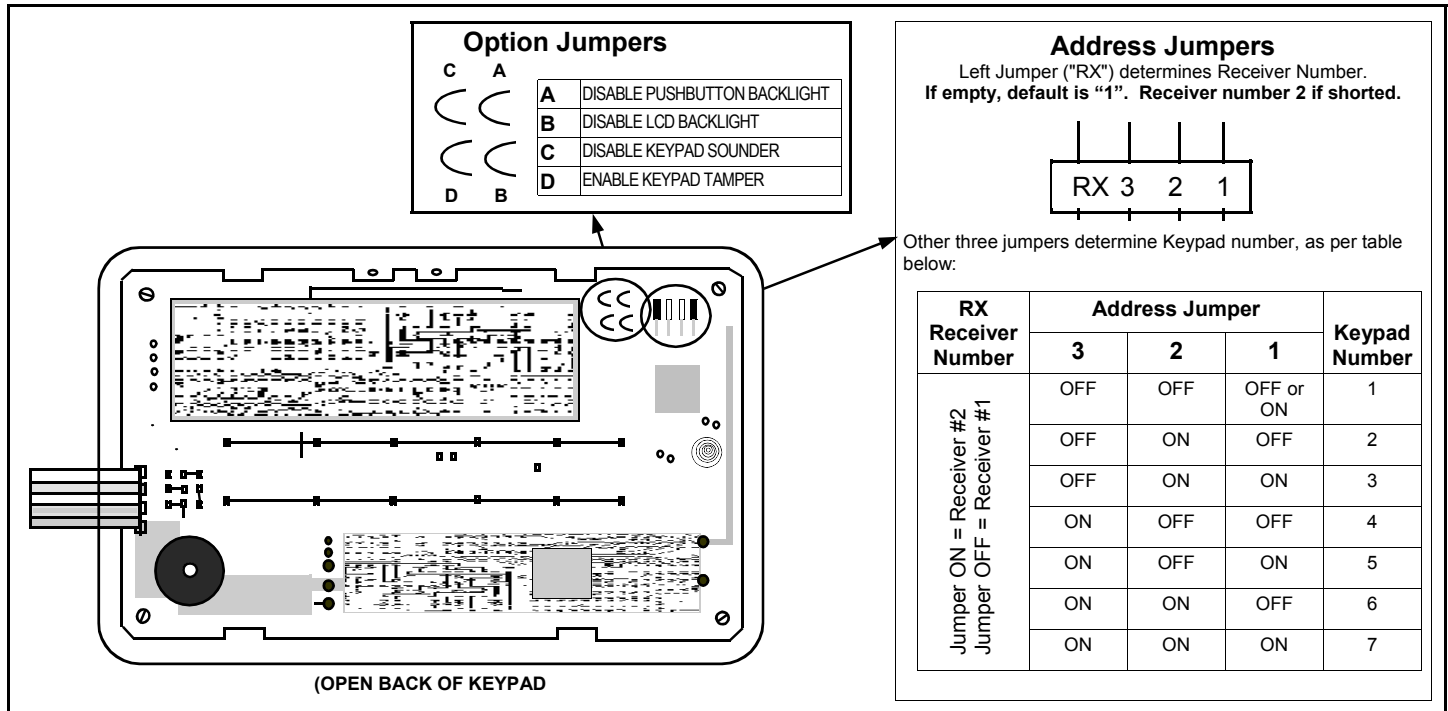
Cut Jumper B to disable liquid crystal display back-lighting.

### C: DISABLE KEYPAD SOUNDER

Cut Jumper C to disable the keypad sounder. (Do not disable in UL Installations)

### D: ENABLE KEYPAD TAMPER

Cut Jumper D to enable the keypad tamper switch.



## GETTING UP AND RUNNING

(Use the GEM-K1CA to program. For the GEM-K4RF, see page 11, "RF Transmitter Programming". Also see *Quick Method, which follows.*)

Using the GEM-K1CA keypad, 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 (Using the GEM-K1CA keypad)

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 **[BYPASS]** to enter the Enroll Mode. The red and green LEDs on the keypad will flash and will display as shown below (GEM-K1CA).

ZN# XMIT# +CS P

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 enrolled.
  - 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.

### Testing Wireless Signal Strength with GEM-P1632/P816 Panels

To test the operation of wireless transmitters, proceed as follows.

1. Enter the Fault-Find Mode from the Function Menu (use Dealer Security Code to enter).
2. Fault a point of the transmitter to be tested by opening the loop. If the signal strength of the transmitter is 3 or greater, the keypad will beep, as follows:

| WIRELESS SIGNAL STRENGTH |       |
|--------------------------|-------|
| Signal Power             | Beeps |
| 0-2                      | 0     |
| 3                        | 1     |
| 4-5                      | 2     |
| 6-7                      | 3     |
| 8-10                     | 4     |

3. Restore the wireless point (close the loop). When restored, the keypad will beep once regardless of signal strength.

**Note:** With the GEM-K4RF keypad, signal strength is not displayed but is annunciated by beeps as per the above table. 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. Signal strengths less than 3 will be entered into the system log (except in the Fault-Find Mode).

#### Testing Wireless Signal Strength with GEM-P9600/P3200 Panels:

**Note:** You MUST use a GEM-K1CA keypad (a GEM-K4RF is not capable of displaying signal strength and will not beep): First, fault a point of each transmitter to be tested by faulting the zone. The transmitter signal strength can be displayed (no beeps) using the DISPLAY RF XMITTER STAT function (enter a Level 3 User Code or enter the Dealer Code, press the **[MENU]** button and answer NO until "DISPLAY RF XMITTER STAT" is displayed). Press YES (**[STAY]**) and the Wireless Signal Strength of the wireless zone will be displayed. The Wireless Signal Strength will be displayed from 1 to 10 with 10 being the strongest signal and any signal under 3 as unacceptable. Except in the Fault-Find Mode, signal strengths less than 3 will be entered into the system log. Press NEXT (**[STAY]**) to step the next zone. **Note:** The last transmitted signal strength for each zone is stored in the panel, and will be displayed in this mode. To view the signal strength for each zone, scroll through the zones using the NEXT (**[STAY]**) or PRIOR (**[AWAY]**) buttons.

### 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

**Note:** The LED's are located on the back of the keypad, centered on the printed circuit board on top. DS2 is on the left and DS10 is on the right.

#### Red LED (DS10)

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

#### 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 is a sign of high ambient RF interference. If the green LED remains lit continuously, relocate the receiver.

## EASY PROGRAM MODE OVERVIEW (Using a GEM-K4RF Keypad)

### ENTERING THE EASY KEYPAD PROGRAM MODE

- 1 Enter the Dealer Security Code (default = 456789) for a new panel or enter your custom Dealer Program Code if programmed and press **[MENU]**
- 2 Press NO (**[AWAY]**) repeatedly until function "17" (Activate Program Mode) is displayed.

**NOTE:** If you pass "17" you can scroll back by pressing **[BYPASS]** .

- 3 Press YES (**[STAY]**) to enter the Dealer Program Mode.

Use the following guide to answer the Easy Program Mode questions which will quickly allow you to create a custom default program. Press **[MENU]** to set cursor, NEXT (**[STAY]**) to go forwards, PRIOR (**[AWAY]**) to go backwards, **[END]** to save and **[RESET]** twice to exit the Easy Program Mode .

### ANSWERING A QUESTION IN THE EASY PROGRAM MODE

The Easy Program Mode the questions will be in the form of a 2-digit number flashing in the digital display. Pressing **[MENU]** will set the cursor into the next field to answer the question.

Using this book as a guide, enter the appropriate data in response to each question and then press **[END]** to save.

If no additional programming is necessary for the question, press NEXT (**[STAY]**) to go to the next question.

### REVIEWING THE DATA ENTRY IN THE EASY PROGRAM MODE

The data entered in response to an Easy Program Mode question may be reviewed before saving.

- After entering the data before pressing **[END]** to save, **[MENU]** may be pressed until the 2 digit question number appears flashing in the display again.
- Pressing **[MENU]** will step through all the fields of the question for review and will then result in the 2 digit question number flashing in the display again.

☞ If the data is correct, press **[END]** to save.

☞ If the data is not correct, press **[MENU]** to set the cursor into the next field and again enter the appropriate data.

**Note:** The contents of an Easy Program Mode question may be reviewed after the initial programming of the control, with the exception of the questions which are marked (Appears for New Panel Only). These questions set up the basic structure of the control panel program (Number of zones in an area, etc.) and cannot be viewed or altered once set.

### EXITING THE DEALER PROGRAM MODE

If in the Easy Program Mode, press **[RESET]** to enter the Direct Address Program Mode. Press **[RESET]** once again to end all programming and resume normal keypad operation.

### RESETTING THE CONTROL PANEL TO FACTORY DEFAULT

If necessary, the control panel can be returned to the factory default and be re-programmed from scratch.

- For the GEM-P816 and GEM-P1632, enter the Direct Address program mode, go to location 1198 and press **[END]**.  
( **[MENU]** **[1]** **[1]** **[9P]** **[8A]** **[END]** )

## Programming the GEM-P816 & GEM-P1632 (v.9A and Earlier) with the GEM-K4RF

Refer to the GEM-P9600/3200 Programming Manuals (WI1185 & WI1184) and follow the GEM-K3DGTL Keypad Easy Programming Mode instructions. The following applies to the GEM-P816/1632:

01

H

(Direct Entry)

### Total Number of Zones in Area 1 *(Appears for New Panel Only)*

Press the **MENU** button and then directly enter the total number of zones to be programmed for Area 1. Valid entries are from 01 to 32. Directly enter the total number of zones, including leading zeros. Use number buttons **1** through **9 P**. **NOTE:** Press the **0** button for a zero. The system is based on groups of 4 zones each (after the first 8 zones), and will automatically round up to the next group of 4. For example, if you enter 18, it will automatically convert this to 20 zones. Press **SAVE** to save. Press NEXT (**STAY**) button to proceed. **NOTE:** If you are programming a 2 Area system,

enter the total number of zones required for Areas 1 & 2. The Direct Address Program Mode can then be used to remove zones from Area 1 and place them in Area 2. See Zone Options. If Programming a Wireless Only system, or using wireless only on Zones 9-32, enter the total number of zones in system. Enter the transmitter points in the RF Transmitter section of the Easy Menu Driven Programming Mode.

03

(Press YES or NO)

### Panel Zone Doubling? *(Appears for New Panel Only) (GEM-P1632 only)*

If the total number of zones in Area 1 entered was 16 or greater, press YES (**STAY**) to effectively double the capacity of the control panel's hard wired zones from 8 to 16. The 16 zones can no longer use normally open devices but will be designated for Normally Closed devices only. The terminal for Zone 1 will now support Zones 1 and 9 with the use of the supplied EZ Zone

Doubling™ resistors, supplied. (Refer to Wiring Diagram and Installation Instructions). If Panel Zone doubling is not desired, press NO (**AWAY**). **NOTE:** Answer NO for GEM-P816.

04

H

(Direct Entry)

### Fire Zones in Area 1 *(Appears for New Panel Only)*

Press the **MENU** button and then directly enter the zone number of any zones which are to be used as Fire Zones (both 2-wire, 4-wire or wireless). Valid entries are from 01 to 32. Directly enter each zone number, including leading zeros, and press **SAVE** to save, and then repeat for any additional zone(s). Press NEXT (**STAY**) button to proceed.

05

H

(Direct Entry)

### 2-Wire Fire Zones in Area 1 *(Appears for New Panel Only)*

Press the **MENU** button and then directly enter the zone number of any Fire Zones (from previous question) which are to be used with 2-wire smoke detectors. The only valid entries are 07 and 08. Directly enter each zone number, including leading zeros. Press **ON-OFF** to save and then repeat for any additional zone(s). **NOTE:** Only zones which have been designated as Fire Zones may be programmed as 2 Wire Fire zones. Press NEXT (**STAY**) button to proceed. **NOTE:** JP3 must be set to "2-WF" position for 2-wire fire zones for

zones 7 and 8 (refer to Installation Instructions).

06

(Press YES or NO)

### Report all Zones to Central Station? *(Appears for New Panel Only)*

Press YES (**STAY**) button for all zones to report to central station; press NO (**AWAY**) button for no zones to report (LOCAL SYSTEM).

## Programming the GEM-P816 & GEM-P1632 (v.9A and Earlier)

07

H

(Direct Entry)

### Entry/Exit Zones in Area 1 *(Appears for New Panel Only)*

Press the **[MENU]** button and then directly enter the zone number of any zones which are to be used as Entry/Exit zones. Valid entries are from 01 to 32. Directly enter each zone number, including leading zeros. Use number buttons **[0]** through **[9P]**.

Press **[ ]** to save and then repeat for any additional zone(s). Press NEXT (**[STAY]**) button to proceed. **NOTE:** Chime will automatically be programmed for all E/E zones.

08

H

(Direct Entry)

### Interior Zones in Area 1 *(Appears for New Panel Only)*

Press the **[MENU]** button and then directly enter the zone number of any zones which are to be used as Interior Zones. Valid entries are from 01 to 32. Directly enter each zone number, including leading zeros. Use number buttons **[0]** through **[9P]**. Press **[ ]** to save and then repeat for any additional zone(s). Press NEXT (**[STAY]**) button to proceed. **NOTE:** All Interior zones will also be automatically programmed as "Exit/Entry Follower" zones.

22

0

(Direct Entry)

### Number of Keypads in Area 1

Press the **[MENU]** button and then directly enter the total number of Keypads to be installed in Area 1. Valid entries are from 01 to 07. Directly enter the number of keypads, including leading zeros. Use number buttons **[0]** through **[9P]**. Press **[ ]** to save. Press NEXT (**[STAY]**) button to proceed.

**NOTE:** Area 2 keypads can only be assigned in Direct Address Programming. See Keypad Options.

24

-

(Direct Entry)

### Central Station Receiver 1 Telephone Number

Press the **[MENU]** button and using the number buttons, directly enter telephone number of up to 16 digits including prefix, if necessary, for receiver 1.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

**NOTE:** Central Station Receiver 2 and 3 Telephone Numbers can be entered in Direct Address Programming. See CS Reporting Options.

Press **[ ]** to save. Press NEXT (**[STAY]**) button to proceed.

25

-

(Direct Entry)

### Central Station Receiver 1 Account Number

Press the **[MENU]** button and then directly enter an account number of up to four digits.

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

Central Station Account #

**NOTE:** Central Station Receiver 2 and 3 Account Numbers can be entered in Direct Address Programming. See CS Reporting Options.

Press **[ ]** to save. Press NEXT (**[STAY]**) button to proceed.

**For Central Station Telephone and Account Numbers:** Use number buttons **[1]** through **[9P]** for digits 1–9; press **[\*]** **[0]** for a zero and **[\*]** **[1]** through **[\*]** **[5]** for letters B–F, respectively. **NOTE:** Pre-Dial Delay = "D"; Dial-Tone Detection = "E". Pressing the **[0]** button will produce a blank space (\*).

## Programming the GEM-P816 & GEM-P1632 (v.9A and Earlier)

26

0

(Direct Entry)

### Central Station Receiver 1 Format

From the table below, enter the central station's receiver format. Use number buttons  through . **NOTE:** Press   for a zero and  for a blank space (\*). Press   through   for letters B–E, respectively. Press  to save. Press NEXT () button to proceed.

**NOTE:** Central Station Receiver 2 and 3 Formats can only be entered in Direct Address Programming. See CS Receiver Options.

| DATA ENTRY | CS RECEIVER 1 FORMAT            |
|------------|---------------------------------|
| •(blank)   | Ademco Slow, Silent Knight Slow |
| 2          | Radionics Fast                  |
| 3          | Silent Knight Fast              |
| 4          | Radionics, CD, Franklin Slow    |

| DATA ENTRY | CS RECEIVER 1 FORMAT |
|------------|----------------------|
| 5          | Universal High Speed |
| B          | SIA                  |
| C          | Ademco Point ID      |
| E          | Pager                |

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01

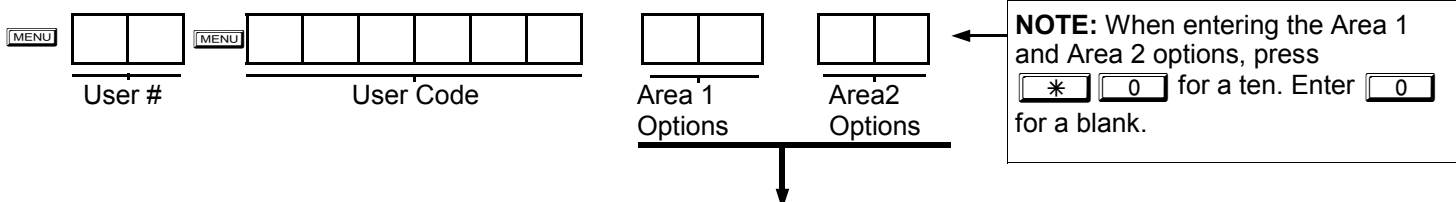
(Direct Entry)

### Enter User Codes

For default program, enter up to 32 User Codes, with Area 1 and Area 2 Options. Press the () button once to set the cursor to the User Code.

Use the number buttons  through  to enter the User Number, followed by  and a User Code of up to 6 digits. Enter   for a blank.

**NOTE:** If “Enable Global Ambush Code”(Address 0720) is enabled and “Global Ambush Code” (Address 1054) is left blank(•), *do not* program the first two digits of ANY User Code as '99'.



| USER AREA OPTIONS - Select the desired Area Options (Area 1 and |          |                |                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------|----------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DATA ENTRIES                                                    |          | OPTION ENABLED | EXPLANATION                                                                                                                                                                                                                                                            |
| L                                                               | R        |                |                                                                                                                                                                                                                                                                        |
| blank(•)                                                        | blank(•) | Disabled       | User Code not active in this area.                                                                                                                                                                                                                                     |
| blank(•)                                                        | 1        | Arm/Disarm     | Allows User Code to arm/disarm this area.                                                                                                                                                                                                                              |
| blank(•)                                                        | 2        | Arm Only       | Prevents User Code from disarming this area.                                                                                                                                                                                                                           |
| blank(•)                                                        | 3        | Service        | A Service Code has restricted arm/disarm rights; if an area is armed with a Service Code, the area can be disarmed with any valid User Code, including a Service Code. If the area is armed with OTHER than a Service Code, it CANNOT be disarmed with a Service Code. |
| blank(•)                                                        | 4        | Access         | This is normally used to activate a door striker while an area is disarmed. Also program “Access Control on PGM2 Output” (Address 0719) and “PGM2 Output Access Control Timeout” (Address 0711).                                                                       |
| blank(•)                                                        | Add 8    | * User Program | User Program Option is enabled for Keypad 1 only, wherever it is connected (Area 1 or Area 2).                                                                                                                                                                         |

- Press  to save. To proceed to the next User Code, press the () button to set the cursor to the User Number and change it using the number buttons.
- If the programmed code was less than 6 digits, enter blanks   for the remaining digits.

**Example:** Program a code of “2222” for user 02, with area 1 options of “Arm/Disarm” and “User Program”:

Enter   for the user number,         for a user code,    “(blank) 9” for area 1 options and     “(blank) (blank)” for area 2 options.

**CHANGING OR CANCELING A CODE:** To change any code, merely program over the existing code as described above and press  to save. Similarly, to cancel a code, blank out each number of the code press  to save.

## Programming the GEM-P816 & GEM-P1632 (v.9A and Earlier)

28

01

(Direct Entry)

## RF Transmitter Programming

(For wireless systems only. Also see Quick Method, which follows)

Press the  button and for each transmitter (key fob transmitters also), then directly enter:

- 1 The zone number (01–32) to which the transmitter will be mapped, including leading zeros. Press the **[MENU]** button again.
- 2 The 6-digit RF ID # printed on the transmitter and box.
- 3 The 1-digit checksum number (C) printed on the transmitter and box.
- 4 The Point number (1–4) (P); *enter “9” for unsupervised* (all points).

Press  to save. Then go to step 1 to enter next transmitter. When all transmitters are entered, press NEXT (  ) button to proceed.

Diagram illustrating the structure of the 12-digit RF ID:

- Zone # (2 digits)
- MENU button
- 6-digit RF ID # (6 digits)
- Checksum # (2 digits)
- Point # (2 digits)

**NOTE:** When programming the RF ID number:

"A" = 

|   |
|---|
| * |
|---|

|   |
|---|
| 0 |
|---|

 ; "B" = 

|   |
|---|
| * |
|---|

|   |
|---|
| 1 |
|---|

 ;  
"C" = 

|   |
|---|
| * |
|---|

|   |
|---|
| 2 |
|---|

 ; "D" = 

|   |
|---|
| * |
|---|

|   |
|---|
| 3 |
|---|

 ;  
"E" = 

|   |
|---|
| * |
|---|

|   |
|---|
| 4 |
|---|

 ; "F" = 

|   |
|---|
| * |
|---|

|   |
|---|
| 5 |
|---|

 .

**Quick Method.** If a receiver is already installed in the panel, Napco

transmitter wireless points can be programmed automatically ("enrolled") using the following procedure. **NOTE:** The transmitter point will be enrolled only if the signal strength is 3 or greater.

1. Enter the zone number to which the transmitter point will be mapped.
2. Press the **BYPASS** button to enter the Enroll Mode. The red and green LEDs on the keypad will flash.
3. Open the loop of the point that is to be programmed (GEM-TRANS2 only).
4. Install the transmitter battery. The keypad will beep once 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 GEM-TRANS2 transmitter has the RF ID number 410078:1. Map both points to Zones 11–12, 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 3 times to indicate that three points have been programmed.
  - Transmitter 410078:1, point 1 will be mapped to Zone 11.
  - Transmitter 410078:1, point 2 will be mapped to Zone 12.

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

*Example 2. A GEM-TRANS2 transmitter has the RF ID number 287613:1. 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 287613:1, point 1 will be mapped to Zone 6.)
5. Enter Zone "09".
6. Close point-1 loop and 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 287613:1, point 2 is mapped to Zone 9).

**KEY FOB ZONE ASSIGNMENT:** Key fobs can also be assigned to zones to allow multiple wireless panic buttons on one alarm system, each reporting to a central station, or pager while having a description on the keypad that describes the person holding the key fob, the location where the person holding the key fob is stationed, or the special purpose of the key fob button being depressed. *See the next page on Key fob Zone Assignment.*

## Programming the GEM-P816 & GEM-P1632 (v.9A and Earlier)

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01

(Direct Entry)

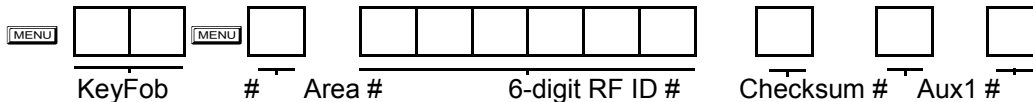
### Key Fob Transmitters

Keyfobs can be programmed as “Arm/Disarm” devices using the **ON** and **OFF** buttons (refer to control panel installation instructions).

Press the **[MENU]** button and for each Key Fob Transmitter, enter:

- 1 The Key Fob Transmitter number (01–15). Press **[MENU]** again.
- 2 The area number to which transmitter is assigned (1 or 2); enter 0 to disable keyfob.
- 3 The 6-digit RF ID # printed on the transmitter (enter all numbers and/or letters, including leading “0”s, if any).
- 4 The 1-digit checksum number printed on transmitter.
- 5 The Aux-1 Option (see key fob Aux 1 & Aux 2 options).
- 6 The Aux-2 Option (see key fob Aux 1 & Aux 2 options).

| DATA ENTRY | AUX 1/AUX 2 OPTIONS |
|------------|---------------------|
| • (blank)  | None                |
| 1          | Relay Group 1       |
| 2          | Relay Group 2       |
| 9          | Keypad Panic        |
| 0          | Aux K.P. Panic      |
| B          | Instant             |
| C          | Toggle Aux Relay    |
| D          | Access Control      |



Press **[ ]** to save. Then go to step 1 to enter next Key Fob.

When all Key Fobs are entered, press NEXT (**[STAY]**) button to proceed.

**Note:** If the Key Fob is converted for Two Button “Emergency Use” (by cutting an internal jumper), both top or bottom buttons must be depressed to activate an alarms. In this case, the Aux-1 and Aux-2 cannot be programmed.

**NOTE:** When programming the ID Code number:

“A” = [\*] [0] ; “B” = [\*] [1] ;  
 “C” = [\*] [2] ; “D” = [\*] [3] ;  
 “E” = [\*] [4] ; “F” = [\*] [5] .

### Key Fob Zone Assignment

Each of the 4 key fob buttons can be assigned to a zone. For example, On button = point 1; Off button = point 2; A1 = point 3; A2 = point 4. Up to 32 key fobs (using 1 button) or 16 key fobs (using 2 buttons) or 8 key fobs (using all 4 buttons) or any combination up to a maximum of 32 controlled zones can be assigned, providing multiple wireless panic buttons on a system, each reporting to the Central Station or a pager and/or annunciating on a keypad the key fob zone number with description/location. *To assign a key fob to a zone:* program the keyfob as you would a transmitter, entering the keyfob's ID code, check sum and point number at the appropriate zone. The “Quick Method” is not allowed. The zone may be hardwired to a sensor as well as assigned to a key fob (either one will activate the zone alarm output). **NOTE:** If assigning a key fob to a zone, the “ON/OFF” buttons on the key fob will no longer arm/disarm the system. The key fob is converted to a “panic only” device.

**ZONE DESCRIPTIONS:** GEM-K4RF cannot be used to enter Zone Descriptions. To enter Zone Descriptions you must use the *GEM-K1CA Keypad* or the *Napco Quickloader Software*.

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4

7E

### Dealer Code

Press the **[MENU]** button directly enter the Dealer Code (default = 456789), including leading zeros. Use the [1] through [9P] buttons. **NOTE:**

Press the [0] button for a zero. Press **[ ]** to save.

Re-enter the Dealer Code.

Press **[ ]** to save. Press NEXT (**[STAY]**) button to proceed.

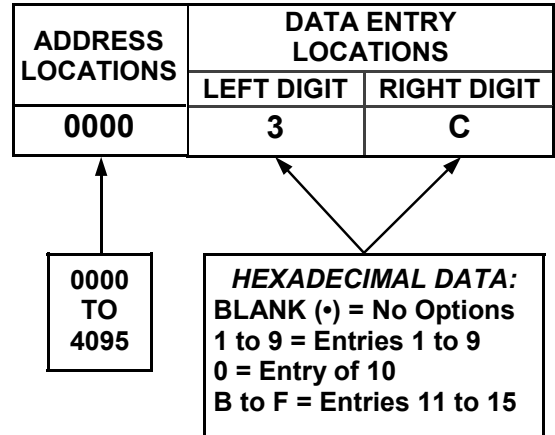
**EXIT DEALER PROGRAM MODE:** This completes the custom default program. Press the **[RESET]** button to enter the Direct Address Program Mode for further programming or press the **[RESET]** button once again to end all programming and resume normal keypad operation.

## DIRECT ADDRESS PROGRAM MODE

This is an extension of the Dealer Program Mode. This method of programming is used in conjunction with the Keypad Programming Worksheets contained in the control panel programming guide. Refer to these worksheets to identify the 4-digit location (address) of the feature to be programmed. An illustrative example is provided on the next page.

### KEYPAD PROGRAMMING OVERVIEW

Direct Address Programming allows you to go directly to the address locations and change the data entries to customize your control panel options. Whereas the Easy Menu Program Mode is a simple quick start guide with limited options, the Direct Address Program Mode is more flexible allowing you to change all the options. It consists of multiple address locations with two data entry locations each (left and right) as shown in the adjacent diagram.



### ACCESSING DIRECT ADDRESS PROGRAM MODE

17

--

(Direct Entry)

- 1 Enter the Dealer Security Code (default = 456789) for a new panel or enter your custom Dealer Program Code if programmed.
- 2 Press **MENU**
- 3 Press NO (**AWAY**) repeatedly until function "17" (Activate Program Mode) is displayed.
- 4 Press YES (**STAY**) to enter the Dealer Easy Program Mode.
- 5 Press **RESET** to enter the Dealer Address Program Mode.

### ENTERING DATA IN THE ADDRESS PROGRAM MODE

- 1 Press **MENU**
- 2 Enter the 4 digit Address location
- 3 Enter the 2 digit data
- 4 Press **ENTER** to save.

**MENU**

Address #

Use 0 - 9P  
for digits 0 - 9

Data

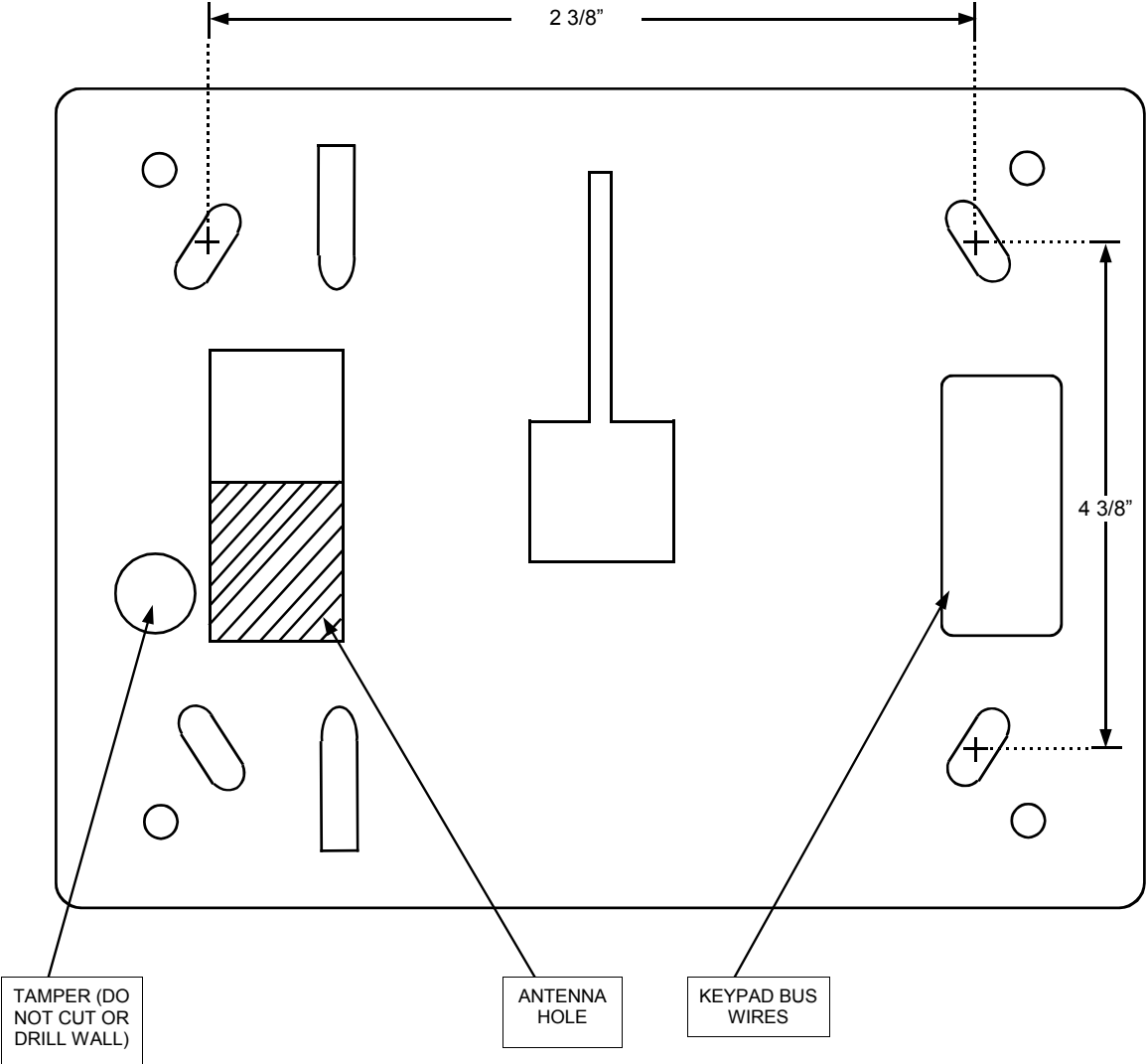
Use 1 - 9P for digits 1 - 9  
  
 BLANK = 0  
 A/10 = \* 0  
 B = \* 1  
 C = \* 2  
 D = \* 3  
 E = \* 4  
 F = \* 5

EXAMPLE: Program an Alarm Timeout of 30 seconds.

Press **MENU** 0 7F 1 2 1 \* 4 **ENTER**

- Alarm Timeout location = 0712
- 30 second timeout = 1E

# MOUNTING TEMPLATE



# NOTES

# 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 cancelled. 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.

# **NOTICE**

## **Reset / Silence now requires User Code entry**

Please be advised that due to UL 985 requirements, the entry of a User Code is now required to reset/silence fire alarms or system troubles, as described in the User Guide.

# **ADDENDUM**

## **GEM-K4RF KEYPAD OPTION JUMPERS**

The following is an addendum to the GEM-K4RF keypad installation instructions (WI1179):

### **KEYPAD OPTION JUMPERS**

Up to two (2) GEM-K4RF keypads may be connected to the control panel. Each must be configured for a keypad address (programmed as Keypad #1 through #7). In addition, the keypad may be configured to disable touchpad backlight and entry sounder. Keypads are configured by the proper selection of jumpers. Refer to the label on the keypad circuit board for jumper locations and a summary of settings.

# NOTICE

The GEM-K4RF keypad will provide 32 points of coverage only when used with the panel versions as indicated (\*) below:

| PANEL                 | FIRMWARE VERSION      | MAX # OF POINTS |
|-----------------------|-----------------------|-----------------|
| GEM-P816              | ALL                   | 16              |
| GEM-P1632             | V9 OR LESS            | 16              |
| <b>GEM-P1632</b>      | <b>V10 OR HIGHER*</b> | <b>32</b>       |
| GEM-P3200/9600        | V29 OR LESS           | 16              |
| <b>GEM-P3200/9600</b> | <b>V30 OR HIGHER*</b> | <b>32</b>       |

Earlier panel versions will all support only 16 points, unless the panel is upgraded to the latest firmware (except the GEM-P816). To provide 32 points, use Kit **SE1632-3** to upgrade the GEM-P1632 firmware to version 10.