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# GEMC-EZM8

## ZONE EXPANSION MODULE for the GEMINI C-Series Control Panels Installation Instructions

WI1683 08/10

**UL LISTED: BURGLARY AND FIRE WARNING SYSTEM CONTROL UNIT ACCESSORY**

### DESCRIPTION

The capacity of the GEMC-Series control panels may be expanded through the use of a **GEMC-EZM8** Zone Expansion Module. Each GEMC-EZM8 module provides up to 8 additional zones, and may be configured to provide for either 4 zones or 8 zones. Using either configuration, several GEMC-EZM8 modules may be combined as necessary to supply the required number of zones to the GEMC-Series control panel. Refer to the GEMC-Series control panel installation instructions (WI1653) for wiring requirements.

if one or more zones are not used. **NOTE:** The addition of Zone Expansion Modules will reduce the amount of current available by 60mA at the control panel's Auxiliary Power Output terminals.

### WIRING

Wire the expansion zones to the module and the module to the control panel in accordance with the wiring diagrams shown using 12-22AWG wire (see WI1653 for maximum wire length depending on wire gauge and current load of home run). Install end-of-line resistors on all zones, even

### SPECIFICATIONS

#### Electrical Ratings

**Input Power:** 12.5 - 7.5VDC, 60mA.

**Zone Loop current:** 4.7mA nominal, 5.5mA when shorted.

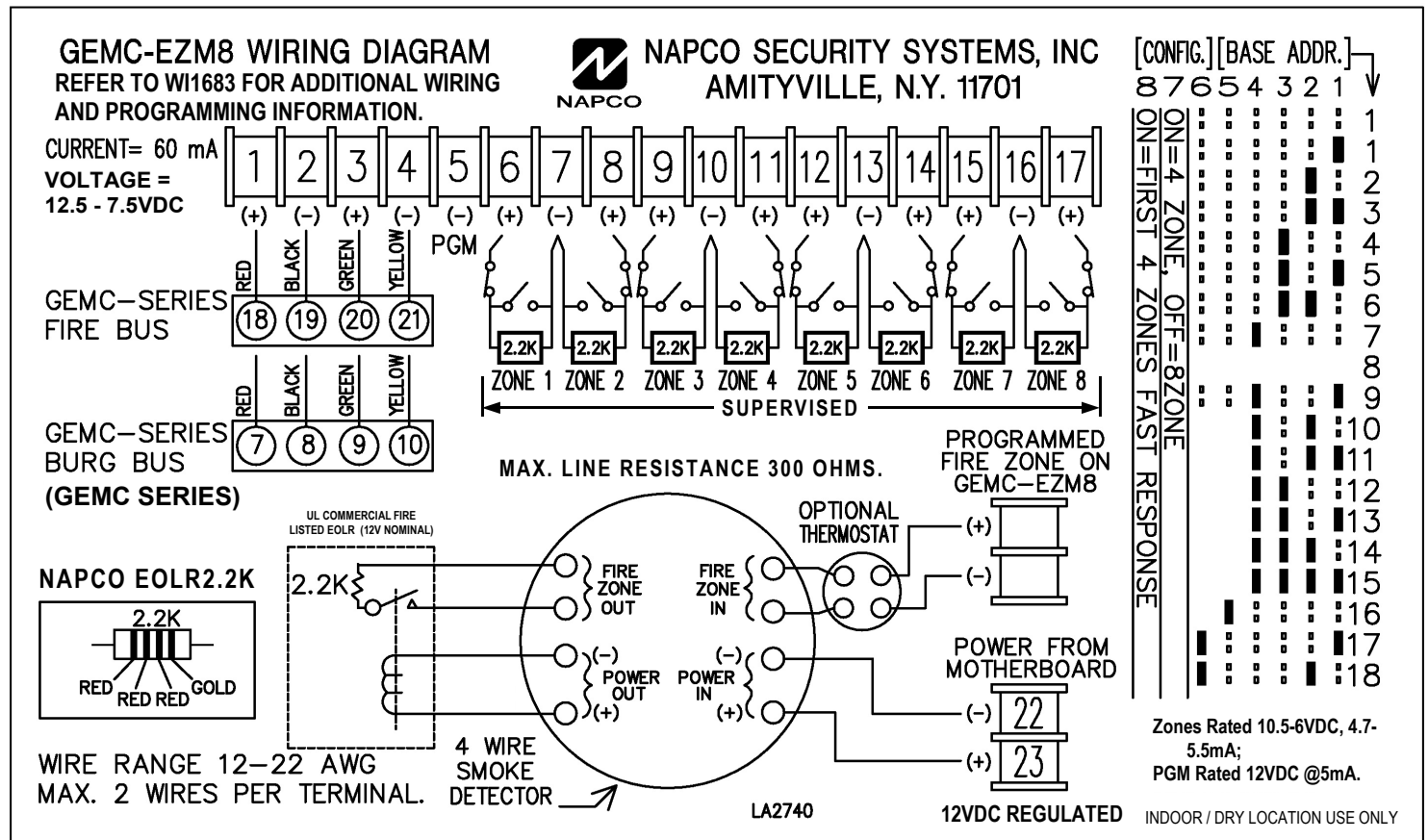
**Maximum Zone Loop Resistance:** 300 ohms.

**2.2K End of line resistor** (UL Listed part number EOL2.2K required in Fire applications).

#### Output Power:

**PGM Output (Active low):** 5mA, 12V. Connect only to power-limited circuits less than 14VDC. Use only in Burglary applications.

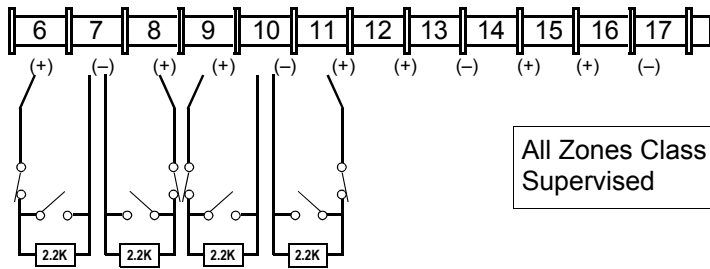
**Ground Faults Detected:** 1.25KΩ to ground or less.



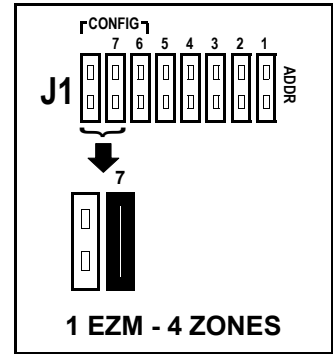
GEM-EZM8 Wiring Diagram

## 4 ZONE CONFIGURATION (1 EZM-4 ZONES)

Loop supervision with one contact using a 2.2K across the contact and a 2.2K EOL resistor, as shown in the illustration below:



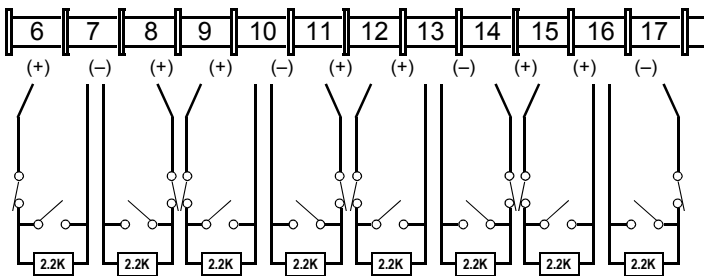
All Zones Class B, Style B and Supervised



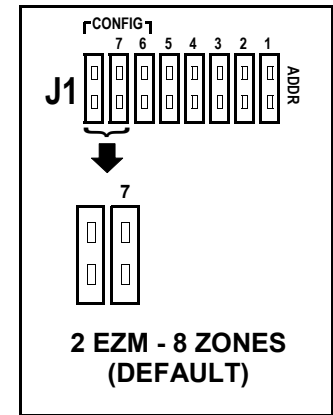
Types of devices include: Magnetic contacts PIR's, pull stations, heat detectors, waterflow tamper switches, 4-wire smokes, carbon monoxide detectors, etc.

## 8 ZONE CONFIGURATION (2 EZM-8 ZONES)

Loop supervision with one contact using a 2.2K across the contact and a 2.2K EOL resistor, as shown in the illustration below:



All Zones Class B, Style B and Supervised



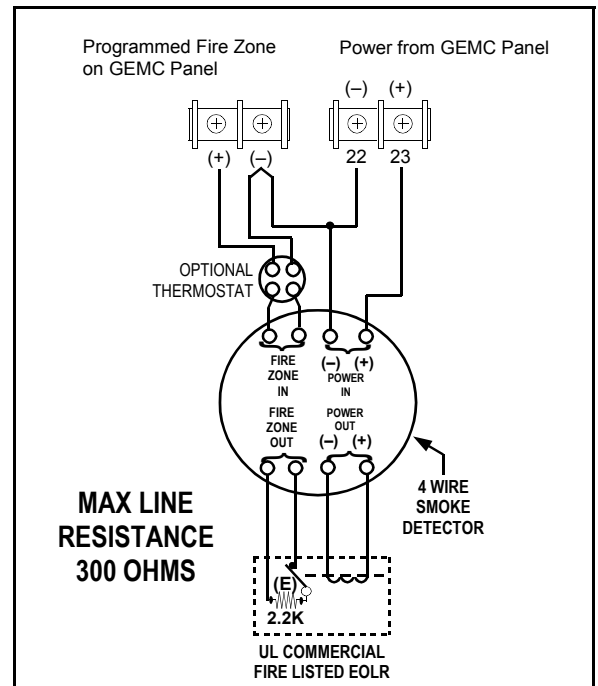
Types of devices include: Magnetic contacts PIR's, pull stations, heat detectors, waterflow tamper switches, 4-wire smokes, carbon monoxide detectors, etc.

### 4 OR 8 ZONE ASSIGNMENT

Regardless of how the modules are arranged, the expansion zones are divided into consecutively-numbered groups of four. Each module may comprise 1 group (4 zones) or 2 groups (8 zones). **NOTE:** The default setting is 2 groups (8 zones). Place jumper J1 on #7 for 4 zone, remove for 8 zone.

### BASE ADDRESS ASSIGNMENT

Every module must be assigned a unique "base address". The Base Address indicates which zones the module will contain. The base address depends on the number of zones used by the previous module or by the control panel. **NOTES:** (1) Groups must be numbered consecutively, that is, missing numbers are not permitted. (2) **NO TWO MODULES MAY BE NUMBERED ALIKE, EVEN IF THEY ARE ON SEPARATE BUSES.**



The base address is assigned to the module by proper selection of Address Jumpers (to the right of the LED) in accordance with the following tables. Also refer to the Zone Wiring Diagram.

Base Address	CONFIG		Base Address Jumpers						Without J7 installed		With J7 installed	
	First 4 Zone Loop Response	4 or 8 Zone EZM										
	8	7	6	5	4	3	2	1	First Zone #	Last Zone #	First Zone #	Last Zone #
1	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	OFF	OFF	OFF	OFF	9	16	9	12
1	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	OFF	OFF	OFF	ON	9	16	9	12
2	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	OFF	OFF	ON	OFF	13	20	13	16
3	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	OFF	OFF	ON	ON	17	24	17	20
4	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	OFF	ON	OFF	OFF	21	28	21	24
5	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	OFF	ON	OFF	ON	25	32	25	28
6	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	OFF	ON	ON	OFF	29	36	29	32
7	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	OFF	ON	ON	ON	33	40	33	36
8	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	ON	OFF	OFF	OFF	37	44	37	40
9	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	ON	OFF	OFF	ON	41	48	41	44
10	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	ON	OFF	ON	OFF	45	52	45	48

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## PROGRAMMING

The control panel must be programmed with regard to the total number of zones required. When keypad programming the control panel for the first time, the first programming option of the Easy Menu Driven Program Mode will be to enter the total number of zones in the system, rounded up to the nearest four. You can then support this total by adding the appropriate number of GEMC-EZM8 modules which can be configured as 4 or zone modules. The number of modules required is a function of the number of zones required as well as the configuration of the EZM's. If 24 additional zones are required (8 zones) is chosen, the number of EZM's required will be  $24/8 = 3$  EZM's.

When downloading a control panel, the total number of zones is determined on the Zone Features screen by activating the required number of EZM modules in the System Configuration screen.

## TAMPER

If the cover is removed or if the module is removed from the wall, the keypad sounder will pulse, and the display will indicate a zone-module tamper condition along with the module number. Press **RESET** to silence the sounder. **Note:** The EZM tamper displays differently depending on the bus to which it is wired. **Note:** The tamper will NOT function when used on a GEMC-Series control panel Fire system or Combination Fire/Burglary system (when the GEMC-EZM8 is programmed as a **4 Zone Fire** type or **8 Zone Fire** type in the Quickloader **System Assignment** screen).

## LOOP RESPONSE

Loop response times for Zones 1 through 8 are programmed in the control panel. Normal loop response for all expansion zones is 750mS. The module already comes without the jumper installed (defaulted to 750mS). To reduce the response time of zones 1 through 4 of the EZM Module to 50mS, add the Loop Response Jumper (jumper # 8 on = 50mS; off = 750mS). To enable normal loop response (750mS), remove the jumper. Refer to the Wiring Diagram. **DO NOT ENABLE THIS FEATURE IN UL INSTALLATIONS.**

## STATUS LED

The Status LED displays the condition of the zone module. The following is a list of conditions for the LED:

1. OFF = Control Panel has no power applied.
2. ON Steady = Control Panel has power applied but the panel is not polling because:
  - a. the panel is in "CONFIG",
  - b. the panel is not programmed correctly to poll the address of the EZM,
  - c. the GRN wire is not connected correctly.
3. PULSES off the EZM groups that are being polled.
  - a. If the first EZM group (the base number) is polled the LED is normally on and pulses off once slowly.
  - b. If the first and second EZM group are polled then the LED is normally on and pulses off once then twice sequentially.
  - c. If the first, second, third and fourth groups are polled the LED is normally off and will pulse 1, 2, 3, 4 sequentially.

Base Address	CONFIG		Base Address Jumpers						Without J7 installed		With J7 installed	
	First 4 Zone Loop Response	4 or 8 Zone EZM										
	8	7	6	5	4	3	2	1	First Zone #	Last Zone #	First Zone #	Last Zone #
11	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	ON	OFF	ON	ON	49	56	49	52
12	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	ON	ON	OFF	OFF	53	60	53	56
13	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	ON	ON	OFF	ON	57	64	57	60
14	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	ON	ON	ON	OFF	61	68	61	64
15	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	OFF	ON	ON	ON	ON	65	72	65	68
16	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	OFF	OFF	OFF	OFF	69	76	69	72
17	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	OFF	OFF	OFF	ON	73	80	73	76
18	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	OFF	OFF	ON	OFF	77	84	77	80
19	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	OFF	OFF	ON	ON	81	88	81	84
20	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	OFF	ON	OFF	OFF	85	92	85	88
21	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	OFF	ON	OFF	ON	89	96	89	92
22	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	OFF	ON	ON	OFF	93	100	93	96
23	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	OFF	ON	ON	ON	97	104	97	100
24	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	ON	OFF	OFF	OFF	101	108	101	104
25	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	ON	OFF	OFF	ON	105	112	105	108
26	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	ON	OFF	ON	OFF	109	116	109	112
27	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	ON	OFF	ON	ON	113	120	113	116
28	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	ON	ON	OFF	OFF	117	124	117	120
29	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	ON	ON	OFF	ON	121	128	121	124
30	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	ON	ON	ON	OFF	125	132	125	128
31	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	OFF	ON	ON	ON	ON	ON	129	136	129	132
32	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	OFF	OFF	OFF	OFF	133	140	133	136
33	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	OFF	OFF	OFF	ON	137	144	137	140
34	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	OFF	OFF	ON	OFF	141	148	141	144
35	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	OFF	OFF	ON	ON	145	152	145	148
36	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	OFF	ON	OFF	OFF	149	156	149	152
37	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	OFF	ON	OFF	ON	153	160	153	156
38	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	OFF	ON	ON	OFF	157	164	157	160
39	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	OFF	ON	ON	ON	161	168	161	164
40	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	ON	OFF	OFF	OFF	165	172	165	168

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Base Address	CONFIG		Base Address Jumpers						Without J7 installed		With J7 installed	
	First 4 Zone Loop Response	4 or 8 Zone EZM										
	8	7	6	5	4	3	2	1	First Zone #	Last Zone #	First Zone #	Last Zone #
41	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	ON	OFF	OFF	ON	169	176	169	172
42	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	ON	OFF	ON	OFF	173	180	173	176
43	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	ON	OFF	ON	ON	177	184	177	180
44	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	ON	ON	OFF	OFF	181	188	181	184
45	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	ON	ON	OFF	ON	185	192	185	188
46	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	ON	ON	ON	OFF	189	196	189	192
47	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	OFF	ON	ON	ON	ON	193	200	193	196
48	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	OFF	OFF	OFF	OFF	197	204	197	200
49	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	OFF	OFF	OFF	ON	201	208	201	204
50	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	OFF	OFF	ON	OFF	205	212	205	208
51	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	OFF	OFF	ON	ON	209	216	209	212
52	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	OFF	ON	OFF	OFF	213	220	213	216
53	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	OFF	ON	OFF	ON	217	224	217	220
54	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	OFF	ON	ON	OFF	221	228	221	224
55	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	OFF	ON	ON	ON	225	232	225	228
56	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	ON	OFF	OFF	OFF	229	236	229	232
57	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	ON	OFF	OFF	ON	233	240	233	236
58	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	ON	OFF	ON	OFF	237	244	237	240
59	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	ON	OFF	ON	ON	241	248	241	244
60	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	ON	ON	OFF	OFF	245	252	245	248
61	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	ON	ON	OFF	ON	249	256	249	252
62	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	ON	ON	ON	OFF	253	260	253	256
63	OFF= 750mS ON = 50ms	OFF= 8Z ON = 4Z	ON	ON	ON	ON	ON	ON	X	X	X	X

# NOTES

# NOTES

# 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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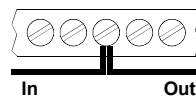
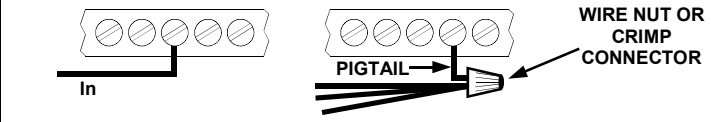
NAPCO RECOMMENDS THAT THE ENTIRE SYSTEM BE COMPLETELY TESTED WEEKLY.


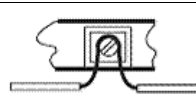
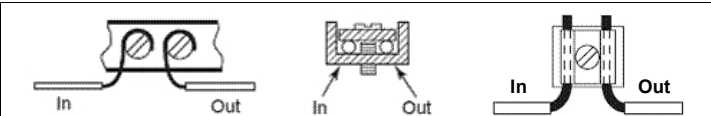
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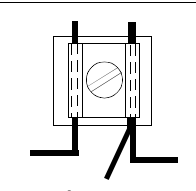
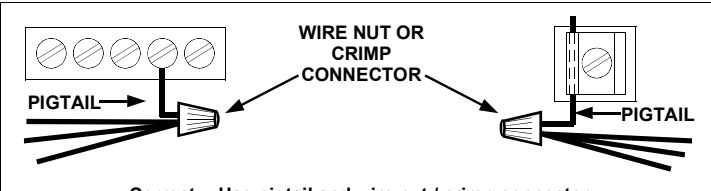
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## IMPORTANT WIRING METHODS

 <p><b>For single-conductor terminal blocks</b> (like the type shown at left), to terminate more than one conductor to a terminal, use the wiring methods shown at right:</p>	 <p>Incorrect</p>	 <p>Correct -- Single incoming and/or pigtail with wire nut / crimp connectors</p>
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 <p><b>For "barrier" type terminal blocks</b> (like the type shown at left), to terminate two conductors to a terminal, use the wiring methods shown at right:</p>	 <p>Incorrect</p>	 <p>Correct -- Separate incoming and outgoing conductors</p>
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<p><b>To terminate more than two conductors</b> 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.</p>	 <p>Incorrect</p>	 <p>Correct -- Use pigtail and wire nut / crimp connector</p>
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