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INSTALLATION INSTRUCTIONS

**GEM-EZM4/8
 ZONE EXPANSION MODULE
 for GEM-P1632 Control Panels**

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WI898B 8/99

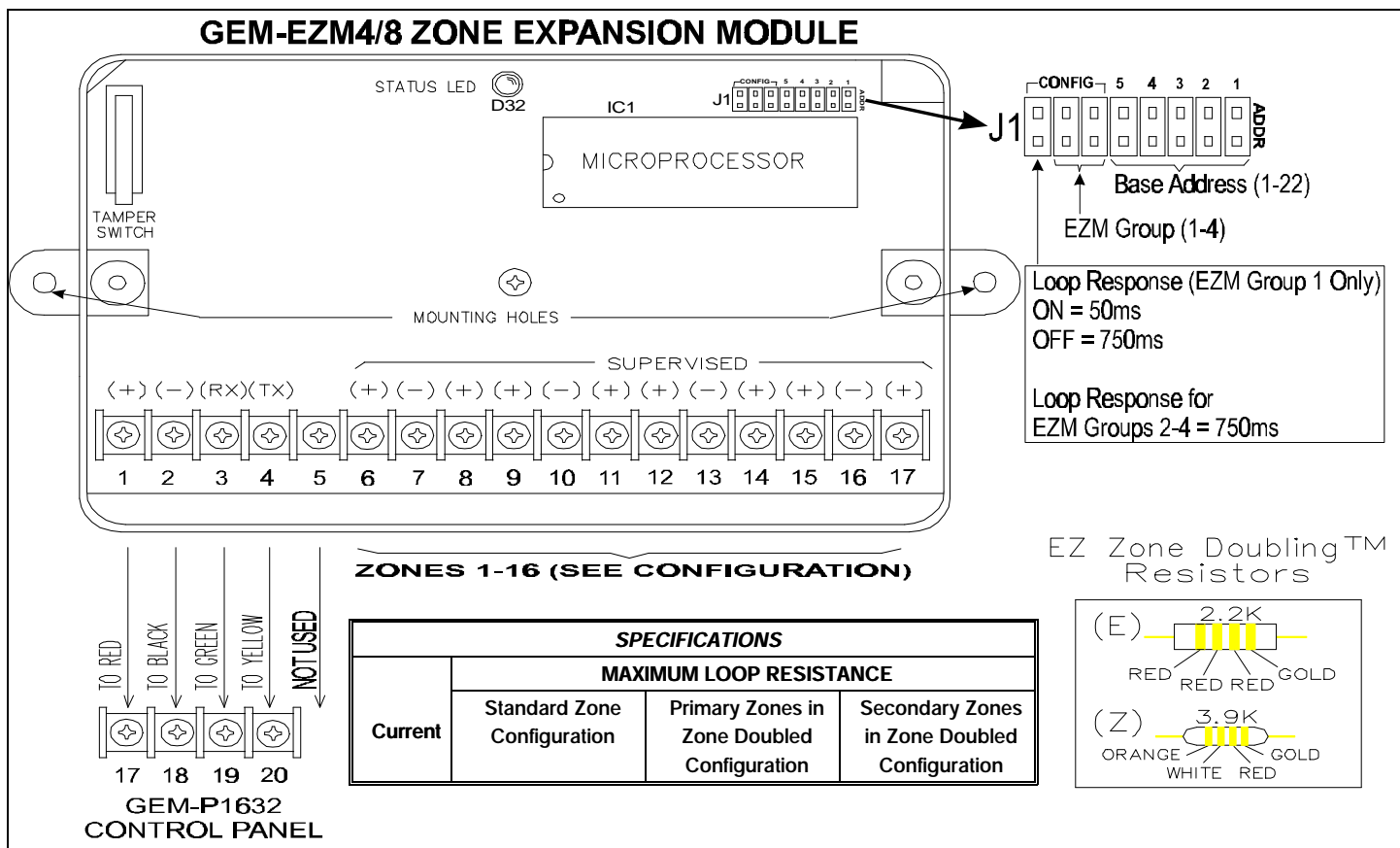
DESCRIPTION

The capacity of the GEM-P1632 control panels may be expanded through the use of GEM-EZM4/8 zone expansion module. Each GEM-EZM4/8 module provides up to 16 additional zones. It may be configured in a number of methods: 4 zones, 8 zones, 12 zones or 16 zones. Using any of these configurations, several GEM-EZM4/8 modules may be combined as necessary to supply the required number of zones to the GEM-P1632 control panel, which can total up to 32 zones). Refer to the GEM-P1632 Installation Instructions (WI808) for wiring requirements for UL-listed applications.

WIRING

Wire the expansion zones to the module and the module to the control panel in accordance with the wiring diagrams shown using wire no thinner than #22AWG. Install end-of-line resistors on all zones even if one or more zones are not used.

NOTE: The addition of Zone Expansion Modules will reduce the amount of current available by 50mA at the control panel's Auxiliary Power Output terminals.

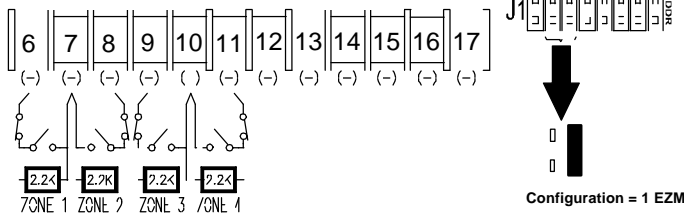


GEM-EZM4/8 Wiring Diagram.

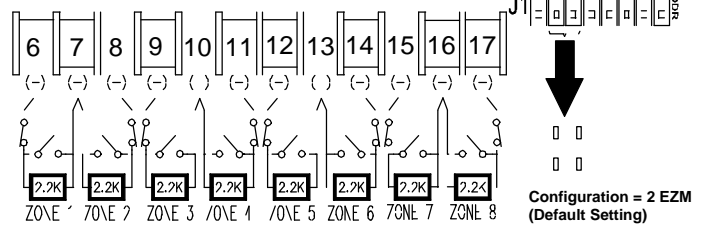
CONFIGURATION (EZM GROUPS)

The EZM Group Configuration indicates how many zones the module will contain. Additional zones can be added in the following configurations:

Configuration 1 (4 Zones)



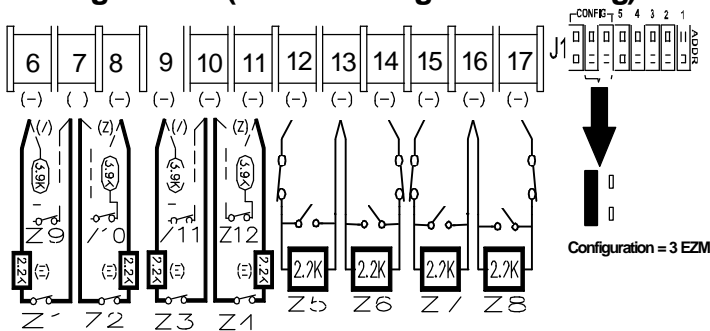
Configuration 2 (8 Zones)



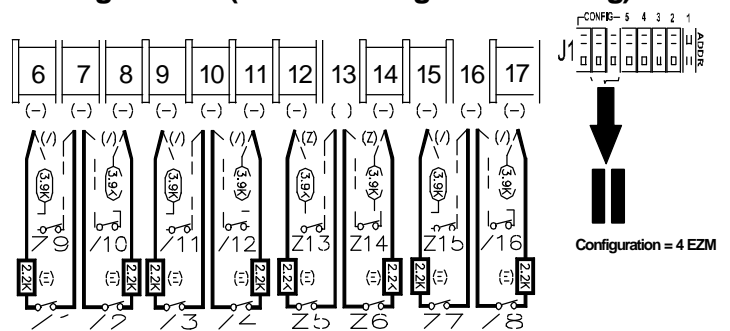
NOTE: Normally open and normally closed devices may be wired to any of the first four zones (1-4) in this configuration.

NOTE: Normally open and normally closed devices may be wired to any of the eight zones (1-8) in this configuration.

Configuration 3 (12 Zones using Zone Doubling)



Configuration 4 (16 Zones using Zone Doubling)



NOTE: If both zones in a zone-pair configuration (ex: zones 1 & 9 in the above diagrams) are to be used, then normally closed devices must be wired to both zones. If Normally open zones for fire or panic devices are required, then the lower zone (2.2K EOL resistor) must be used and the higher zone (3.9K EOL resistor) must not be programmed for any area. The 3.9K EOL resistor must be placed across the terminals of the higher zone. For proper supervision, the 2.2K EOL resistor must be placed at the end of the loop.

EZM GROUP MODULE 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), 2 groups (8 zones), 3 groups (12 zones) or 4 groups (16 zones). The EZM Group Assignment is done by configuring the jumpers as shown in the above wiring diagrams. **NOTE:** The default setting is 2 groups (8 zones).

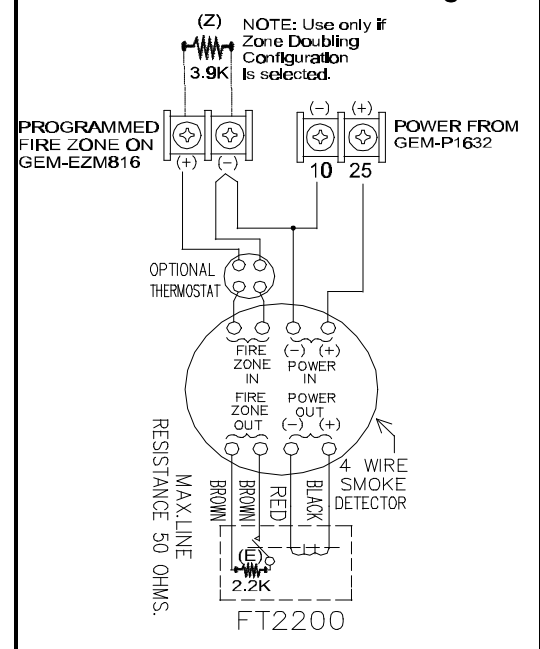
BASE ADDRESS ASSIGNMENT

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 on 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.

Example. One GEM-EZM4/8 is used to provide 16 expansion zones to an existing 8 zone installation, increasing the total to 24 zones. The next zone available is zone 9, because the previous 8 zones are used by the control panel. The GEM-EZM4/8 will provide zones 9-24 and its base address will be "1" (see tables on next page).

GEM-EZM4/8
Groups 1, 2, 3 & 4,
Zones 9-24,
Base Address "1"

4-Wire Smoke Detector Wiring



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.

GEM-P1632 WITHOUT ZONE DOUBLING ENABLED (Zones 1-8 on Control Panel)

Base Address Jumpers					Config. 1 (1 EZM) <input type="checkbox"/> 4 Zone		Config. 2 (2 EZM) <input type="checkbox"/> Default = 8 Zone		Config. 3 (3 EZM) <input type="checkbox"/> 12 Zone		Config. 4 (4 EZM) <input type="checkbox"/> 16 Zone	
5	4	3	2	1	Base Address	Zone No.	Base Address	Zone No.	Base Address	Zone No.	Base Address	Zone No.
off	off	off	off	ON	1	9-12	1,2	9-16	1,2,3	9-20	1,2,3,4	9-24
off	off	off	ON	off	2	13-16	2,3	13-20	2,3,4	13-24	2,3,4,5	13-28
off	off	off	ON	ON	3	17-20	3,4	17-24	3,4,5	17-28	3,4,5,6	17-32
off	off	ON	off	off	4	21-24	4,5	21-28	4,5,6	21-32		
off	off	ON	off	ON	5	25-28	5,6	25-32				

GEM-P1632 WITH ZONE DOUBLING ENABLED (Zones 1-16 on Control Panel)

Base Address Jumpers					Config. 1 (1 EZM) <input type="checkbox"/> 4 Zone		Config. 2 (2 EZM) <input type="checkbox"/> Default = 8 Zone		Config. 3 (3 EZM) <input type="checkbox"/> 12 Zone		Config. 4 (4 EZM) <input type="checkbox"/> 16 Zone	
5	4	3	2	1	Base Address	Zone No.	Base Address	Zone No.	Base Address	Zone No.	Base Address	Zone No.
off	off	off	off	ON	1	17-20	1,2	17-24	1,2,3	17-28	1,2,3,4	17-32
off	off	off	ON	off	2	21-24	2,3	21-28	2,3,4	21-32		
off	off	off	ON	ON	3	25-28	3,4	25-32				

NOTE: Shaded areas are not applicable.

PROGRAMMING

The control panel must be programmed with regard to the total number of zones required. When keypad programming the GEM-P1632 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 GEM-EZM4/8 modules which can be configured as 4, 8, 12 or 16 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 and Config 2 (8 zones) is chosen, the number of EZM's required will be $24/8 = 3$ EZM's.

When downloading a GEM-P1632, 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.

For Fire Zones, if an EZM module is selected as Config 3 or Config 4, which are both zone doubled configurations, and one of these doubled zones is programmed as a fire zone, the complimentary zone is lost. For example, if an EZM is configured as a 16 zone module (Config 4), and zone 1 of the module is programmed as a Fire Zone, zone 9 of the module will lose the zone doubling profile and cannot be used. It must be strapped out with a Z resistor (3.9K) across the zone. Zone 9 must be skipped in your control panel programming, and the next available zone will be Zone 10.

TAMPER

If the cover is removed, the keypad sounder will pulse and the display will indicate a zone-module tamper condition along with the module number. Press **C** to silence the sounder.

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 with out 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. To enable normal loop response (750 ms), remove the jumper. Refer to the Wiring Diagram.

STATUS LED

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

1. **OFF** = EZM-816 has no power applied
2. **ON Steady** = EZM-816 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.

4. Rapid Flashing

- a. GEM-EZM4/8 is connected to wrong panel type. **NOTE: Only GEM-P1632 may be connected.**

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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.

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NAPCO RECOMMENDS THAT THE ENTIRE SYSTEM BE COMPLETELY TESTED WEEKLY.

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