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GEM-EZM4/8 Zone Expansion Module for GEM-P816, GEM-P1632 & GEM-P1664 Control Panels Installation Instructions

WI898E.aLF 7/23

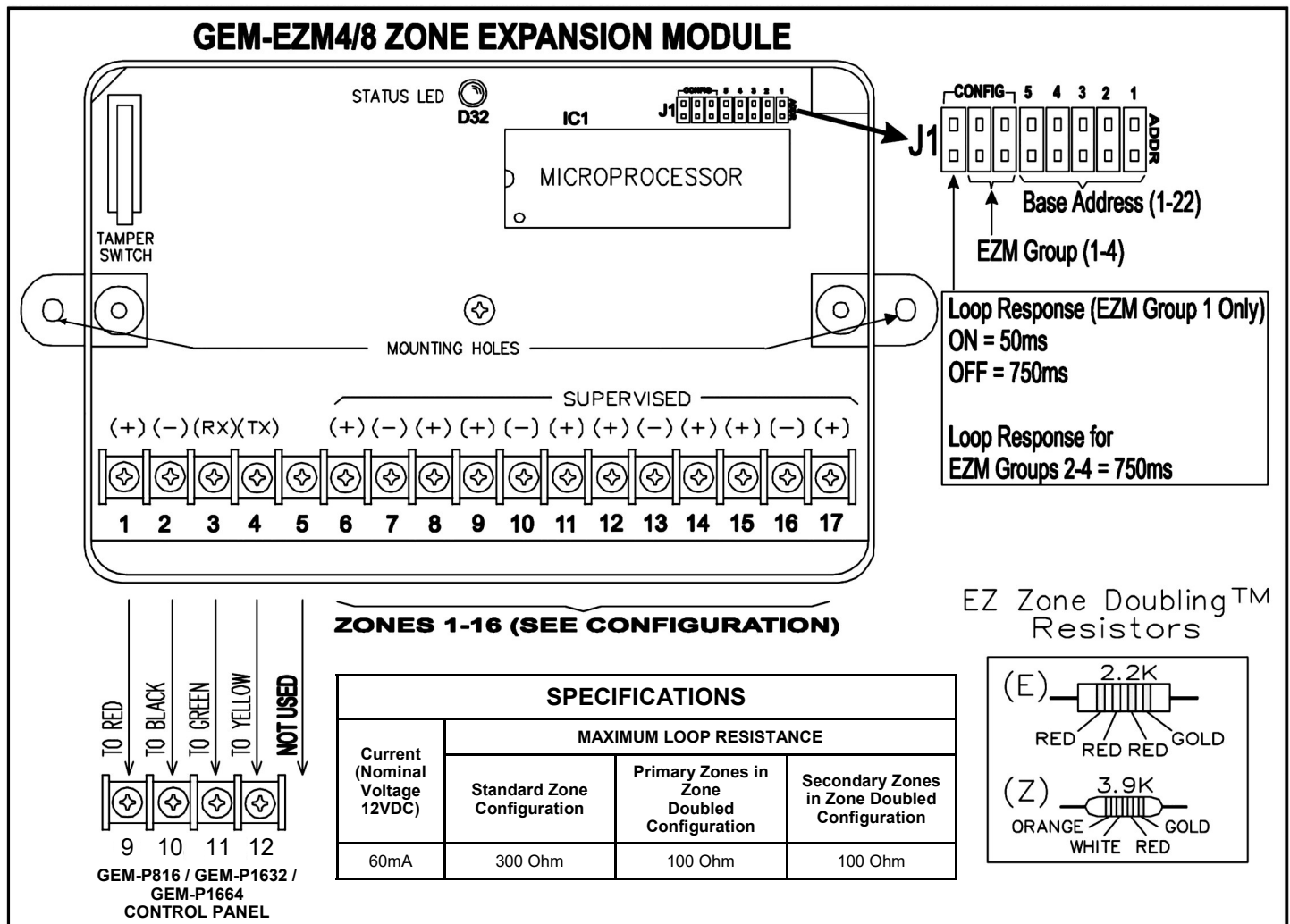
DESCRIPTION

The capacity of the GEM-P816, GEM-P1632 and GEM-P1664 control panels may be expanded through the use of the **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-P816, GEM-P1632 and GEM-P1664 control panels. Refer to the GEM-P816 Installation Instructions (WI994), the GEM-P1632 Installation Instructions (WI808) and the GEM-P1664 Installation Instructions (WI1424) for wiring requirements for ETL-Listed applications. **Note:** The GEM-P816 is limited to 16 zones.

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.

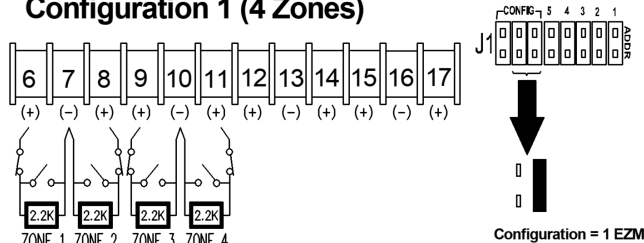
Note: The addition of Zone Expansion Modules will reduce the amount of current available by 60mA at the control panel's Auxiliary Power Output terminals.



CONFIGURATION (EZM GROUPS)

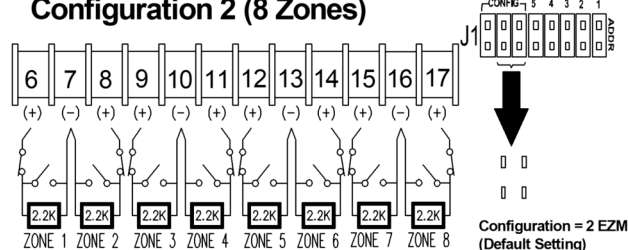
The EZM Group Configuration determines the number of zones the module will contain. Additional zones can be added using the following configurations:

Configuration 1 (4 Zones)



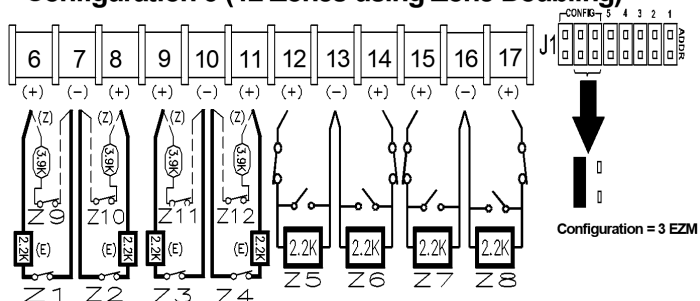
NOTE: Normally open and normally closed devices may be wired to any of the first four zones (1-4) in this configuration.

Configuration 2 (8 Zones)

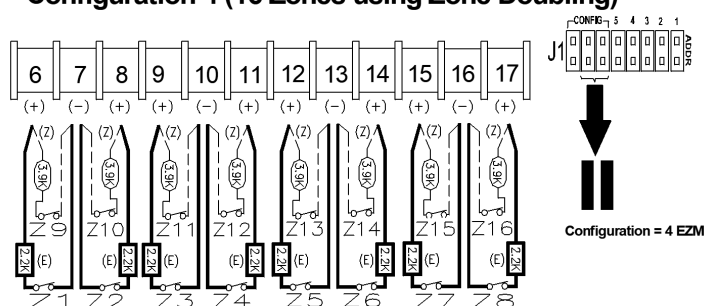


NOTE: Normally open and normally closed devices may be wired to any of the eight zones (1-8) in this configuration.

Configuration 3 (12 Zones using Zone Doubling)



Configuration 4 (16 Zones using Zone Doubling)



Note: If both zones in a zone-pair configuration (e.g., 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 removed from 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.

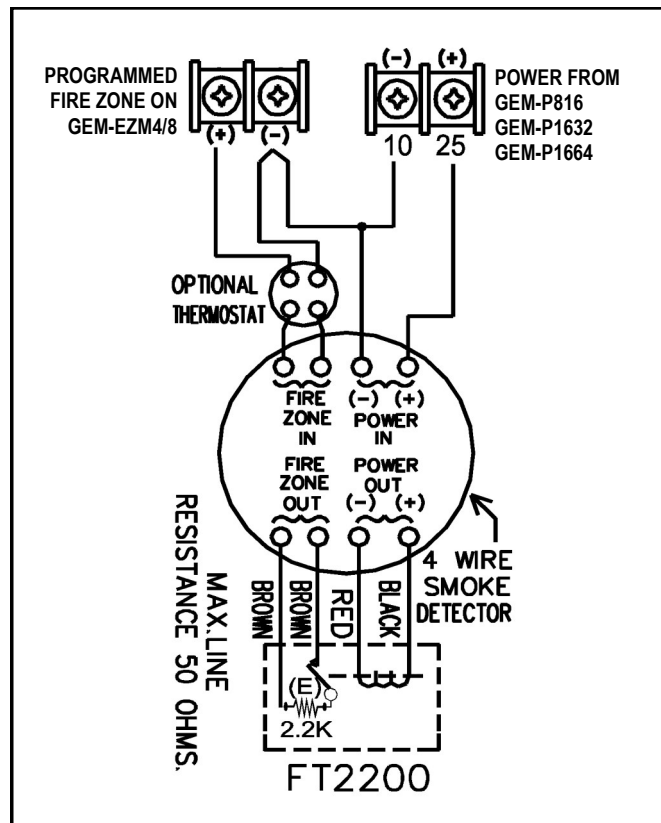
Note: The default setting is 2 groups (8 zones).

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 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.

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. **Note:** The GEM-P816 is limited to 16 zones.

GEM-P1632 WITH ZONE DOUBLING *DISABLED* (Zones 1-8 on Control Panel)

Base Address Jumpers					Config. 1 (1 EZM) 4 Zone		Config. 2 (2 EZM) 8 Zone (Default)		Config. 3 (3 EZM) 12 Zone		Config. 4 (3 EZM) 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	9-16	1, 2, 3, 4	9-24
off	off	off	ON	off	2	13-16	2, 3	13-20	2, 3, 4	13-20	2, 3, 4, 5	13-28
off	off	off	ON	ON	3	17-20	3, 4	17-24	3, 4, 5	17-24	3, 4, 5, 6	17-32
off	off	ON	off	off	4	21-24	4, 5	21-28	4, 5, 6	21-28		
off	off	ON	off	ON	5	25-28	5, 6	25-32				

GEM-P1632 WITH ZONE DOUBLING *ENABLED* (Zones 1-8 on Control Panel)

Base Address Jumpers					Config. 1 (1 EZM) 4 Zone		Config. 2 (2 EZM) 8 Zone (Default)		Config. 3 (3 EZM) 12 Zone		Config. 4 (3 EZM) 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				

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 is 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 that 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 EZMs. If 24 additional zones are required and "Config 2" (8 zones) is chosen, the number of EZM's required will be $24/8 = 3$ EZMs.

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.

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. Remove the Z resistor (3.9K) for zone 9. 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 **RESET** 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 is factory shipped with the jumper NOT 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 (750ms), remove the jumper. Refer to the Wiring Diagram.

STATUS LED

The Status LED displays the condition of the zone module:

- OFF** = Check power and wiring to the EZM.
- ON Steady** = Control panel has power applied but the control panel is not polling because:
 - the panel is in "CONFIG";
 - the panel is not programmed correctly to poll the address of the EZM;
 - the GRN wire is not connected correctly.

3. **PULSES** = Indicates the EZM groups that are being polled
- If the first EZM group (the base number) is polled, the LED is normally on and pulses off once slowly;
 - If the first and second EZM group are polled, the LED is normally on and pulses off once then twice sequentially;
 - 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**

- GEM-EZM4/8 is connected to wrong panel type.

Note: The GEM-EZM4/8 may only be connected to the GEM-P816, GEM-P1632 and GEM-P1664 control panels.

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