

Installation Manual: PAD100-ZM Zone Module

NOTICE TO THE INSTALLER

This manual provides an overview and the installation instructions for the PAD100-ZM module. This module is only compatible with addressable fire systems that utilize the PAD Addressable Protocol.

All terminals are power limited and should be wired in accordance with the requirements of NFPA 70 (NEC) and NFPA 72 (National Fire Alarm Code). Failure to follow the wiring diagrams in the following pages will cause the system to not operate as intended. For further information, refer to the control panel installation instructions.

The module shall only be installed with listed control panels. Refer to the control panel installation manual for proper system operation.

1. Description

The PAD100-ZM uses one (1) SLC loop address when monitoring two (2) Class B or one (1) Class A circuit. The module is used to supervise a zone of conventional 2-wire smoke detectors on an Initiating Device Circuit (IDC). The module requires and supervises a 24VDC auxiliary power connection. The 24VDC power source must be either a Potter IPA series addressable panel, or a Potter PSN series power supply. The IDC may be wired as two individual Class B circuits or one Class A circuit which is selectable by an on board DIP switch. The module mounts on either an UL Listed 2-1/2" deep 2-gang box or 1-1/2" deep 4" square box.

The PAD100-ZM includes one red LED to indicate the module's status. In normal condition, the LED flashes when the device is being polled by the control panel. When an input is activated, the LED will flash at a fast rate. If the LED blink has been disabled via the programming software, in a normal condition the LED of the device will be off. All other conditions remain the same.

2. Setting the Address

All PAD protocol detectors and modules require an address prior to connection to the panel's SLC loop. Each PAD device's address (*i.e.*, detector and/or module) is set by changing the dip switches located on the device. PAD device addresses are comprised of a **seven (7) position dip switch** used to program each device with an address ranging from 1–127.

Figure 1. PAD Device Dip Switch Addresses Table (Addresses 1–127)

1	2	4	8	16	32	64	1	2	4	8	16	32	64	1	2	4	8	16	32	64	1	2	4	8	16	32	64	1	2	4	8	16	32	64
1							27							53							78					103								
2							28							54							79					104								
3							29							55							80					105								
4							30							56							81					106								
5							31							57							82					107								
6							32							58							83					108								
7							33							59							84					109								
8							34							60							85					110								
9							35							61							86					111								
10							36							62							87					112								
11							37							63							88					113								
12							38							64							89					114								
13							39							65							90					115								
14							40							66							91					116								
15							41							67							92					117								
16							42							68							93					118								
17							43							69							94					119								
18							44							70							95					120								
19							45							71							96					121								
20							46							72							97					122								
21							47							73							98					123								
22							48							74							99					124								
23							49							75							100					125								
24							50							76							101					126								
25							51							77							102					127								
26							52																											

Note: Each "gray" box indicates that the dip switch is "On," and each "white" box indicates "Off."

The examples shown below illustrate a PAD device's dip switch settings: the 1st example shows a device *not addressed* where all dip switch settings are in the *default "Off" position*, the 2nd illustrates an *addressed PAD device* via the dip switch settings.

Figure 2. Examples of PAD Device Showing Default Dip Switch Setting (Unaddressed) & Addressed PAD Device



All dip switches are shown in the "Off" position.



Example shows this PAD device's address = 42. Dip switches #2, 8 & 32 are in the "On" position.

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When the PAD100-ZM is used to monitor two individual Class B circuits a single device address is assigned; each input is then identified as a sub-point of the module address. For example, if the address number is assigned as "8", the "B1" input will be "8.1", and the "B2" input will be "8.2."

Before connecting a device to the SLC loop, take the following precautions to prevent potential damage to the SLC or device.

- Power to the SLC is removed.
- Field wiring on module is correctly installed.
- Field wiring has no open or short circuits.

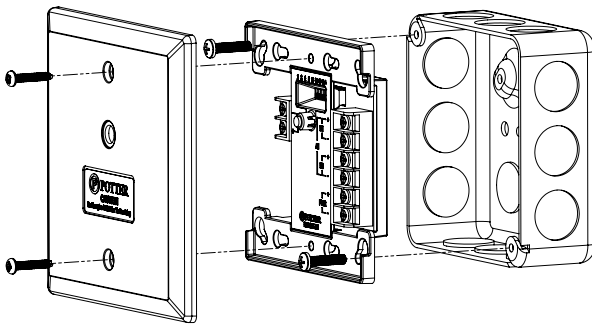
3. Technical Specifications

Operating Voltage	24.0V
Max SLC Standby Current	240 μ A
Max SLC Alarm Current	240 μ A
Aux Power Required	19 – 28V
Max Detector Standby Current of IDC at 24 VDC	1mA
Max Module Alarm Current of IDC at 24 VDC	50mA
Max Wiring Resistance of IDC	100 Ω
Max Wiring Capacitance of IDC	1 μ F
Smoke Detector Compatibility Identifier	A
EOL Resistor	5.1K Ω
Operating Temperature Range	32° to 120° F (0° to 49° C)
Operating Humidity Range	0 to 93% (non-condensing)
Max no. of Module Per Loop	127 units
Dimensions	4.17" L x 4.17" W x 1.14" D
Mounting Options	UL Listed 2-1/2" deep 2-gang box or 1-1/2" deep 4" square box
Shipping Weight	0.6 lbs

4. Wiring Diagrams

The wiring diagrams shown below illustrate how to wire a PAD100-ZM module as Class A and Class B. Additionally, an installation diagram shows how to install the module using a compatible electrical box.

Figure 3. Example of Installing a PAD100-ZM Using a Compatible Electrical Box



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Figure 4. Example of Wiring a PAD100-ZM as Class A

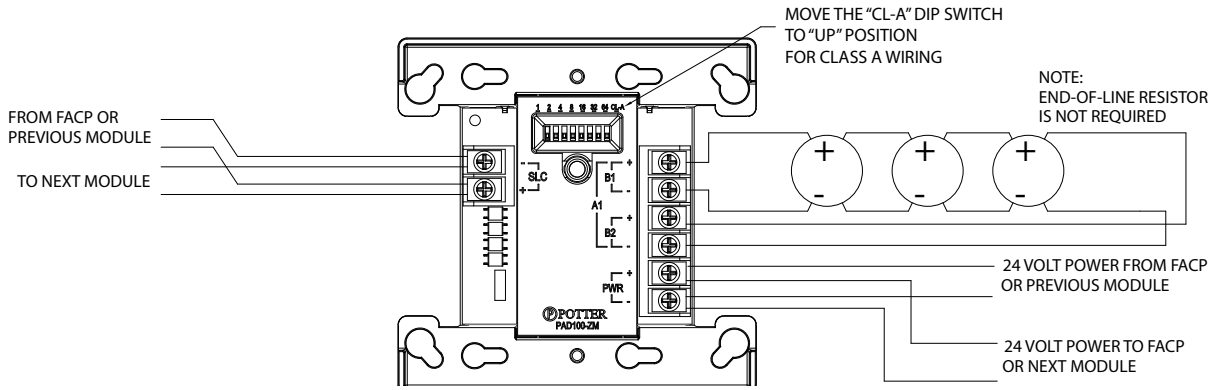
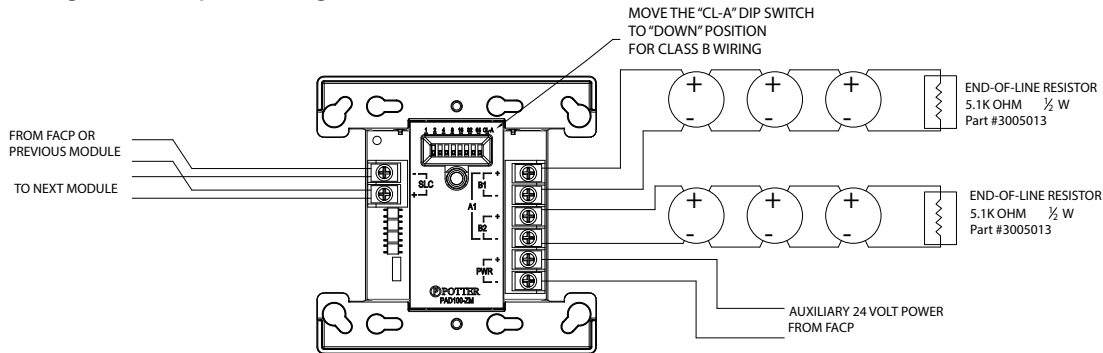


Figure 5. Example of Wiring a PAD100-ZM as Class B



Notes:

- SLC wiring style supports the Class A, Class B and Class X.
- IDC wiring style supports Class A and Class B.
- SLC loop wiring (SLC+, SLC-) and initiating device wiring (B1, B2 and A1) are power limited.
- Wiring for terminals SLC+, SLC- are supervised.
- Wiring for terminals (PWR) are supervised.
- Wiring for terminals (B1, B2 and A1) are supervised.
- All wiring is between #12 (max.) and #22 (min.).
- Wire Preparation – Strip all wires 1/4 inch from their edges as shown here:



1/4 inch

- Stripping too much insulation may cause a ground fault.
- Stripping too little may cause a poor connection and subsequently an open circuit.

These instructions do not purport to cover all the details or variations in the equipment described, nor provide for every possible contingency to be met in connection with installation, operation and maintenance.

Specifications subject to change without prior notification.

For Technical Assistance contact Potter Electric Signal Company at 866-956-1211.

Actual performance is based on proper application of the product by a qualified professional.

Should further information be desired or should particular problems arise, which are not covered sufficiently for the purchaser's purpose, the matter should be referred to a distributor in your region.

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Table 1: Compatible Conventional Smoke Detectors & Bases			
Detector Model	Identifier	Base Model	Identifier
System Sensor (Brk) (Max. No. Of Detectors Per Zone is 10)			
1400	A	N/A	N/A
2400	A	N/A	N/A
2400TH	A	N/A	N/A
2W-B	A	N/A	N/A
2WT-B	A	N/A	N/A
Detection System (Max. No. Of Detectors Per Zone is 11)			
DS250	A	MB2W/MB2WL	A
DS250TH	A	MB2W/MB2WL	A
ESL (Max. No. Of Detectors Per Zone is 20)			
611U	S10	601U	S00
611UD	S10	601U	S00
611UT	S10	601U	S00
612U	S10	601U	S00
612UD	S10	601U	S00
613U5	S10	601U	S00
611UD	S10	609U10	S00
612UD	S10	609U10	S00
425C	S10	N/A	N/A
425CT	S10	N/A	N/A
HOCHIKI (Max. No. Of Detectors Per Zone is 20)			
SLR-24	HD-3	HSC-221R	HB-71
		HSB-221	HB-54
		HSB-221N	HB-54
		NS6-221	
		NS4-221	
		NS6-220	HB-3
SLR-24H	HD-3	HSC-221R	HB-71
		HSB-221	HB-54
		HSB-221N	HB-54
		NS6-221	
		NS4-221	
SIJ-24	HD-3	HSC-221R	HB-71
		HSB-221	HB-54
		HSB-221N	HB-54
		NS6-221	
		NS4-221	
FENWAL (Max. No. Of Detectors Per Zone is 14)			
CPD-7051	151FE1	2-WIRE	FE51A
PSD-7155	P55FE1	2WRLT	FE52A
PSD-7156	P56FE1	2WRB	FE55A
All of the above Fenwal detectors and bases can be used in any combination. Retrofit Base Adaptor 70-501000-003, Identifier MAFE1 (for series 70-201000 Bases, Models -001,-002,-003 and -005). Duct Housing with Detector Base DN-51, Identifier DH22FE5 (for CPD-7051 and PSD-7155 detectors only).			
POTTER (Max. No. Of Detectors Per Zone is 25)			
PS-24	HD-3 (HOCHIKI)	SB-46	HB-71 (HOCHIKI)
			HB-54 (HOCHIKI)
		SB-93	HB-3 (HOCHIKI)
PS-24H	HD-3 (HOCHIKI)	SB-46	HB-71 (HOCHIKI)
			HB-54 (HOCHIKI)
IS-24	HD-3 (HOCHIKI)	SB-46	HB-71 (HOCHIKI)
			HB-54 (HOCHIKI)
NOTE: If using a mix of System Sensor and other smoke detectors, a maximum of 20 detectors shall be permitted.			