

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

<div> <div>1 2 4 8 16 32 64</div> <div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> <div>On</div> <div>Off</div> </div>	<div> <div>All dip switches are shown in the "Off" position.</div> </div>	<div> <div>1 2 4 8 16 32 64</div> <div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> <div>On</div> <div>Off</div> </div>	<div> <div>Example shows this PAD device's address = 42. Dip switches #2, 8 & 32 are in the "On" position.</div> </div>
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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

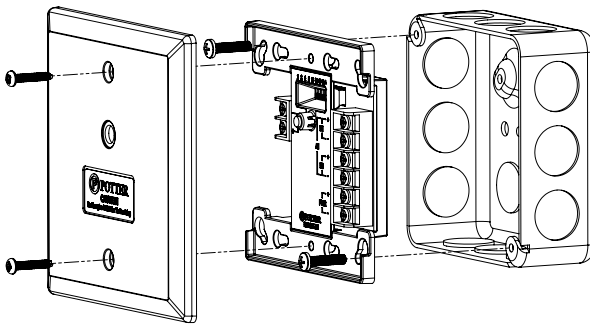


Figure 4. Example of Wiring a PAD100-ZM as Class A

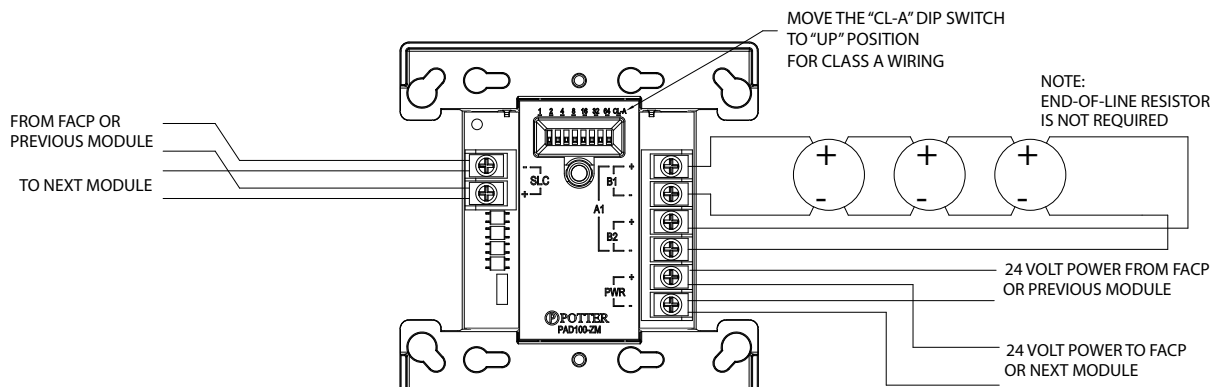
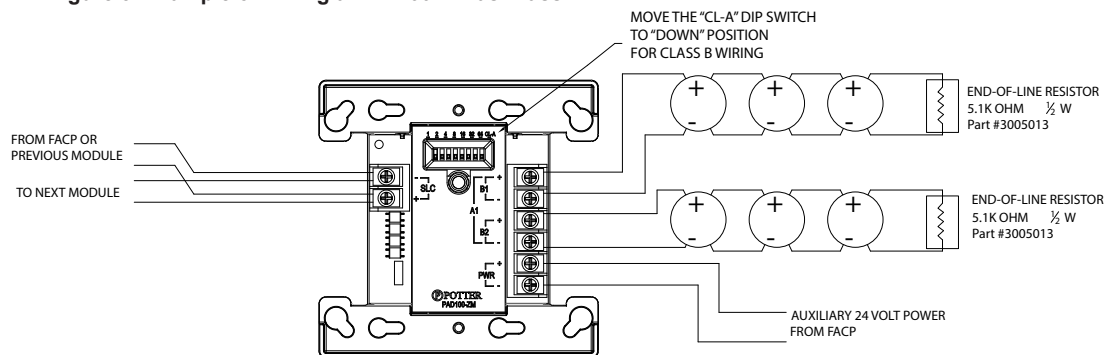


Figure 5. Example of Wiring a PAD100-ZM as Class B



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.

INSTALLATION MANUAL: PAD100-ZM ZONE MODULE

Table 1: Compatible Conventional Smoke Detectors & Bases

Detector Model	Identifier	Base Model	Identifier	Max. No. of Detectors Per Zone
System Sensor (Brk)				
1400	A	N/A	N/A	10
2400	A	N/A	N/A	10
2400TH	A	N/A	N/A	10
2W-B	A	N/A	N/A	10
2WT-B	A	N/A	N/A	10
Detection System				
DS250	A	MB2W/MB2WL	A	11
DS250TH	A	MB2W/MB2WL	A	11
ESL				
611U	S10	601U	S00	20
611UD	S10	601U	S00	20
611UT	S10	601U	S00	20
612U	S10	601U	S00	20
612UD	S10	601U	S00	20
613U5	S10	601U	S00	20
611UD	S10	609U10	S00	20
612UD	S10	609U10	S00	20
425C	S10	N/A	N/A	20
425CT	S10	N/A	N/A	20
HOCHIKI				
SLR-24	HD-3	HSC-221R	HB-71	10
		HSB-221	HB-54	16
		HSB-221N	HB-54	16
		NS6-221		16
		NS4-221		16
		NS6-220	HB-3	16
SLR-24H	HD-3	HSC-221R	HB-71	10
		HSB-221	HB-54	16
		HSB-221N	HB-54	16
		NS6-221		16
		NS4-221		16
SIJ-24	HD-3	HSC-221R	HB-71	16
		HSB-221	HB-54	16
		HSB-221N	HB-54	16
		NS6-221		16
		NS4-221		16
SOC-24V	HD-3	HSB-221	HB-54	16
		NS6-221	HB-4	16
		NS4-221	HB-4	16
		NS6-220	HB-3	16
SOC-24VN	HD-3	HSB-221	HB-54	16
		NS6-221	HB-4	16
		NS4-221	HB-4	16
		NS6-220	HB-3	16

INSTALLATION MANUAL: PAD100-ZM ZONE MODULE

Detector Model	Identifier	Base Model	Identifier	Max. No. of Detectors Per Zone
SOE-24V	HD-3	NS4-100 and NS6-100	HB-55	10
		NS4-220 and NS6-220	HB-3	16
		NS4-221 and NS6-221	HB-4	16
		NS4-224 and NS6-224	HB-5	16
SOE-24H	HD-3	NS4-100 and NS6-100	HB-55	10
		NS4-220 and NS6-220	HB-3	16
		NS4-221 and NS6-221	HB-4	16
		NS4-224 and NS6-224	HB-5	16
FENWAL				
CPD-7051	151FE1	2-WIRE	FE51A	14
PSD-7155	P55FE1	2WRLT	FE52A	14
PSD-7156	P56FE1	2WRB	FE55A	14
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				
PS-24	HD-3 (HOCHIKI)	SB-46	HB-71 (HOCHIKI)	16
			HB-54 (HOCHIKI)	16
		SB-93	HB-3 (HOCHIKI)	16
PS-24H	HD-3 (HOCHIKI)	SB-46	HB-71 (HOCHIKI)	16
			HB-54 (HOCHIKI)	16
IS-24	HD-3 (HOCHIKI)	SB-46	HB-71 (HOCHIKI)	16
			HB-54 (HOCHIKI)	16
CPS-24	HD-3 (HOCHIKI)	SB-46	HB-4 (HOCHIKI)	16
		SB-93	HB-3 (HOCHIKI)	16
CPS-24N	HD-3 (HOCHIKI)	SB-46	HB-4 (HOCHIKI)	16
		SB-93	HB-3 (HOCHIKI)	16
CPSD-24V	HD-3 (HOCHIKI)	SB-46	HB-4 (HOCHIKI)	10
		SB-93	HB-3 (HOCHIKI)	10
CPSHD-24H	HD-3 (HOCHIKI)	SB-46	HB-4 (HOCHIKI)	10
		SB-93	HB-3 (HOCHIKI)	10
PC-2P	PES	PC-6DB	PES	10
		PC-4DB	PES	10
PC-2H	PES	PC-6DB	PES	10
		PC-4DB	PES	10
PC-2PH	PES	PC-6DB	PES	10
		PC-4DB	PES	10
PC-2PN	PES	PC-6DB	PES	10
		PC-4DB	PES	10
NOTE: If using a mix of System Sensor and other smoke detectors, a maximum of 20 detectors shall be permitted.				