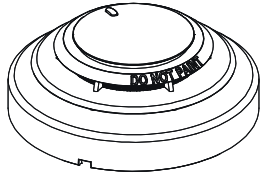




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### PAD300-DD (In-Duct/Plenum Mount Applications)



#### Contents

|                    |               |
|--------------------|---------------|
| A. Introduction    | E. Addressing |
| B. Specifications  | F. Testing    |
| C. Installation    | G. Cleaning   |
| D. Locking Feature | H. Warranty   |

## A. Introduction

The PAD300-DD is an intelligent addressable photoelectric duct smoke detector designed and built to meet both UL268A and NFPA regulations. It is intended for indoor use within a duct (In-duct) or in plenums. It can also be mounted in a PAD300-DUCT or PAD300-DUCTR with sampling tubes extending into a duct. Maximum air velocity for In-duct/plenum applications is 3,000 fpm. Maximum air velocity for PAD300-DUCT and PAD300-DUCTR is 4,000 fpm. To minimize false alarms, avoid placing in areas where excessive dust, humidity, air movement, or extreme temperature is present.

This manual only covers the installation guidelines for In-duct/plenum applications. For standard external mount duct applications, please refer to the installation manual for PAD300-DUCT and PAD300-DUCTR.

Each detector includes one (1) LED to indicate the device status. The LED flashes momentarily in normal conditions and flashes at a fast rate when activated. The LED can be turned off using the programming software.

The PAD300-DD communicates on a proprietary protocol to the addressable fire alarm control panel. It must be connected to either the IPA series, AFC series, or ARC fire alarm control panel for proper operation. For detector sensitivity settings and supervision, please refer to the panel installation instructions.

Refer to the company website for the latest revision of this manual.

## B. Specifications

| PAD300-DD                                                                                                                                                                              |                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Operating Voltage                                                                                                                                                                      | 24 VDC                    |
| Standby Current (*)                                                                                                                                                                    | 300 $\mu$ A               |
| Alarm Indicator Current                                                                                                                                                                | 1.4 mA                    |
| Alarm Set Point                                                                                                                                                                        | 2.5%/ft                   |
| Installation Temp Range                                                                                                                                                                | 32°F to 120°F             |
| Operating Humidity Range                                                                                                                                                               | 0% - 93% (Non-condensing) |
| Air Velocity (In-duct)                                                                                                                                                                 | 300 to 3,000 fpm          |
| Dimension                                                                                                                                                                              | $\Phi$ 3.93 in            |
| Weight                                                                                                                                                                                 | 3.20 oz                   |
| Height                                                                                                                                                                                 | 1.42 in                   |
| *Standby current is the current the device consumes when the device is in a non-activated condition and where no communication current is transmitted to the fire alarm control panel. |                           |

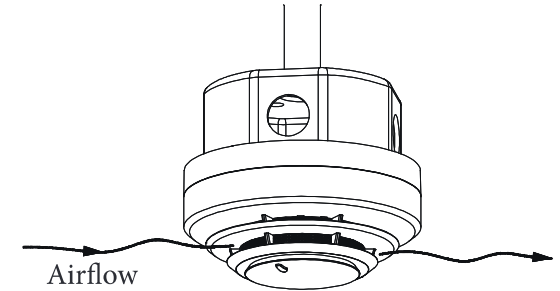
## C. Installation

Installation must meet the requirements of the Authority Having Jurisdiction (AHJ). It is recommended to follow guidelines as described in NFPA 72 and NFPA 90A.

- Before connecting a device to the SLC loop, take the following precautions to prevent potential damage to the SLC or device.
  - Use only the PAD300 series bases PAD300-4DB and PAD300-6DB (supplied separately).
  - Confirm the field wiring on device is correctly installed on the base. Refer to the base manual.
  - Enable the locking feature if needed. Refer to section D for details of the locking feature.
- Set the desired address using the DIP switch located on back of the sensor. See section E for addressing instructions.
- Plug detector into base and turn clockwise to secure in place.

**CAUTION** KEEP DUST COVER ON DETECTOR DURING CONSTRUCTION. REMOVE DUST COVER TO ALLOW THE DETECTOR TO DETECT SMOKE. DETECTORS ARE NOT TO BE USED WITH DETECTOR GUARDS UNLESS THE COMBINATION HAS BEEN EVALUATED AND FOUND SUITABLE FOR THAT PURPOSE.

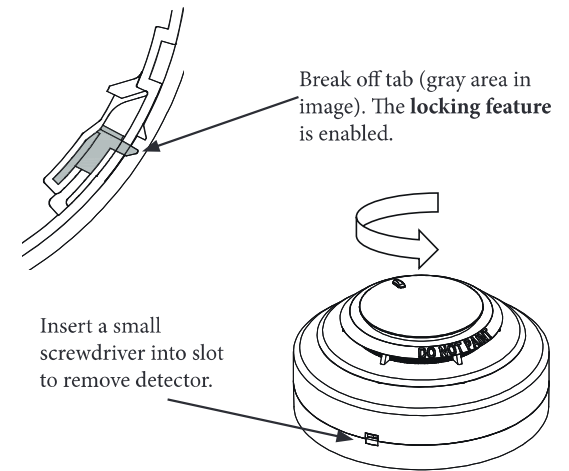
- To minimize the impact of air turbulence and stratification on performance, detector should be located as far as possible downstream from any obstruction. Confirmation of velocity within specifications is required.
- Identify a code compliant location (supply or return side, or both) for the installation of the duct unit that will permit easy access for inspection and serviceability.
- When mounted in plenum space or duct handling space, it is critical that the detector is situated such that the airstream flows through the opening of the head. See below.



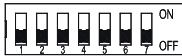
**NOTE: THIS DETECTOR IS NOT INTENDED AS A SUBSTITUTE FOR OPEN AREA PROTECTION.**

## D. Locking Feature

The device includes a tamperproof feature that locks the detector and does not allow removal without the use of a tool.



## E. Addressing



Detector address can be configured using the table below for DIP switch position settings.

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

## F. Testing

According to NFPA72, remote testing is NOT necessary for duct applications. But if testing is still desired, it is recommended to follow guidelines as described below.

**CAUTION** NOTIFY APPROPRIATE AUTHORITY BEFORE TESTING THE DETECTOR. PLACE FIRE PANEL IN *WALK TEST* MODE BEFORE CONDUCTING THE FOLLOWING TEST. REFER TO THE PANEL INSTALLATION MANUAL FOR DETAIL.

### Smoke Aerosol Test

Use a canned aerosol to spray directly to the side of the detector. SmokeCheck 25S from HSI Fire and Smoke Centurion from SDi are acceptable. Please contact local fire and safety equipment distributors to see which products are available. Units failing the aerosol test should be immediately cleaned. If cleaning cannot restore the unit to normal, it should be replaced.

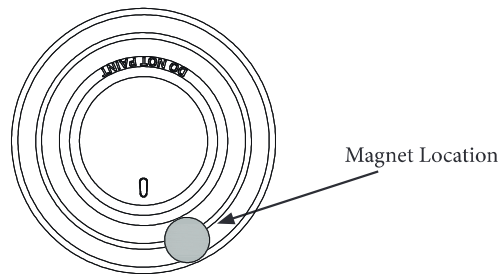
### Air Sampling Verification

This detector is designed to be used in air handling systems with air velocities of 300 to 3000 feet per minute. To ensure that the air velocity in the duct falls within these parameters, use a velocity meter (anemometer) to check the air velocity in the duct.

### Magnet Test

The magnet test provides a quick test to verify the connections and the detector electronically. This test should not replace the aerosol test, which is required as part of regular testing and maintenance per NFPA 72.

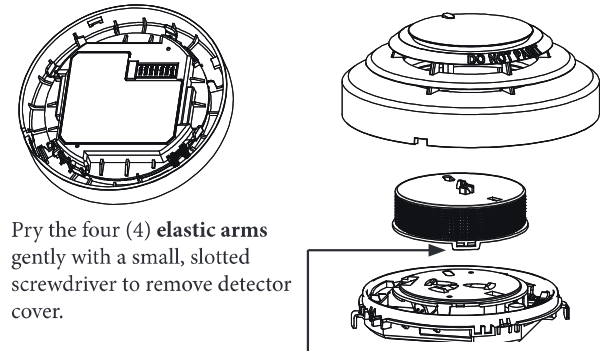
1. Hold the test magnet in the magnet test area as shown below.



2. The LED flashes rapidly to indicate the detector is in alarm.
3. Remove magnet.
4. Alarm on the fire alarm panel should be reset.
5. If the unit fails the magnet test, test the unit with an aerosol testing spray to confirm any failures.

## G. Cleaning

NOTE: Before cleaning, notify the proper authorities that the system is undergoing maintenance. Disable the loop or system undergoing maintenance to prevent unwanted alarms. It is recommended that the detector be removed from its mounting base for easier cleaning and that detectors be cleaned at least once a year. Use a vacuum cleaner remove dust from the sensing chamber.



Pry the **elastic arm** gently with a small, slotted screwdriver to remove cage for cleaning.

## H. Warranty

POTTER warrants that the equipment herein shall conform to said descriptions as to all affirmation of fact and shall be free from defects of manufacture, labeling, and packaging for a period of five (5) years from the invoice date to the original purchaser, provided that representative samples are returned to POTTER for inspection. The product warranty period is stated on the exterior of the product package. Upon a determination by POTTER that a product is not as warranted, POTTER shall, at its exclusive option, replace or repair said defective product or parts thereof at its own expense, except that Purchaser shall pay all shipping, insurance, and similar charges incurred in connection with the replacement of the defective product or parts thereof. This Warranty is void in the case of abuse, misuse, abnormal usage, faulty installation, or repair by unauthorized persons, or if for any other reason POTTER determines that said product is not operating properly as a result of causes other than defective manufacture, labeling, or packaging.

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