

### Application

Model SMD-401M is a class I leakage rated modulating smoke damper with extruded airfoil blades. This smoke damper may be installed vertically (with blades running horizontal) or horizontally and is rated for airflow and leakage in either direction.

### Ratings

#### UL 555S Leakage Rating

Leakage Class: I

Operational Rating: Actual ratings are size dependent

Velocity: Up to 2000 fpm (10.2 m/s)

Pressure: Up to 4 in. wg (1 kPa)

Temperature: Up to 250°F (177°C)



W&H dimensions furnished approximately ¼ in. (6mm) undersize.  
(Add sleeve thickness for overall sleeved damper dimension). Right hand drive is shown.



See complete marking on product.  
UL 555S Classification  
R13317

### Size Limitations

W x H	Minimum Size	Maximum Size	
		Single Section	Multiple Section
2000 fpm (10.2 m/s); 4 in. wg (1 kPa) pressure			
Inches	4 x 6*	36 x 36	36 x 72
mm	102 x 152	914 x 914	914 x 1829

\* Overall damper size is 8 in. x 8 in. (203 mm x 203 mm).

Model SMD-401M meets the requirements for smoke dampers established by:

**National Fire Protection Association**

NFPA Standards 90A, 92, 101 & 105

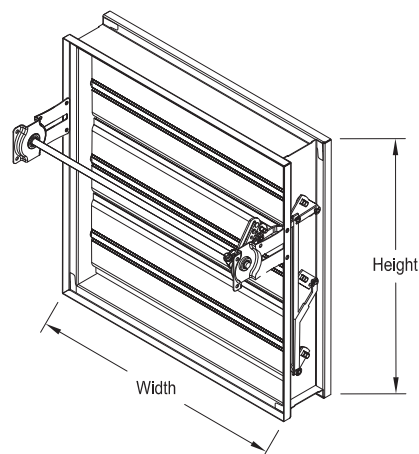
**IBC International Building Codes**

**CSFM California State Fire Marshal**

Leakage (Smoke) Damper Listing (#3230-0981:104)

## Construction

	Standard	Optional
<b>Frame Material</b>	Galvanized steel	-
<b>Frame Material Thickness</b>	16 ga. (1.5 mm)	-
<b>Frame Type</b>	5 in. x 1in. (127 mm x 25 mm) hat channel	-
<b>Blade Action</b>	Opposed	-
<b>Blade Material</b>	Aluminum	-
<b>Blade Material Thickness</b>	Heavy gauge aluminum	-
<b>Blade Type</b>	Airfoil	-
<b>Blade Orientation</b>	Horizontal	-
<b>Linkage</b>	Plated steel out of airstream, concealed in jamb	-
<b>Axle Bearings</b>	316SS	-
<b>Axle Material</b>	Plated steel	-
<b>Blade Seals</b>	Silicone	-
<b>Jamb Seals</b>	Stainless Steel	-
<b>Mounting</b>	Vertical	Horizontal



### Note:

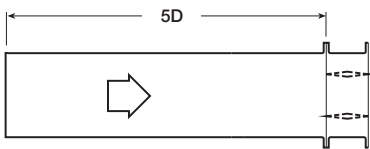
The frames are constructed with reinforced corners. Low profile head and sill are used on sizes less than 17 in. (432 mm) high for lower pressure drop and improved damper performance.

## Options

- Access door mounted in the sleeve
- [BACnet test module - 120V](#)
- [BACnet test module - 24V](#)
- [Breakaway connections](#)
- Clean wrap
- [Greenheck test switches](#)
- Grille tabs
- [Momentary test switch](#)
- [OCI \(Open closed indication switches\)](#)
- [Retaining angles](#)
- Sealed transitions and sleeves
- [Security bars](#)
- [Smoke detector - no flow](#)
- [Smoke detector - low flow](#)
- Transitions: C, O, R

# Pressure Drop

## AMCA 5.2



12 in. x 12 in. (305mm x 305mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.06
1500	0.13
2000	0.23
2500	0.35
3000	0.50
3500	0.68
4000	0.88

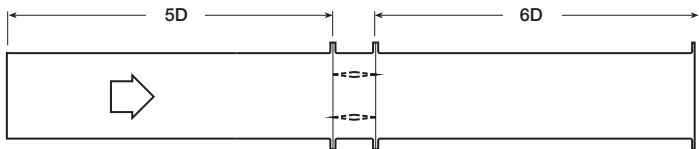
24 in. x 24 in. (610mm x 610mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.04
1500	0.10
2000	0.18
2500	0.28
3000	0.40
3500	0.54
4000	0.70

36 in. x 36 in. (914mm x 914mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.03
1500	0.06
2000	0.12
2500	0.18
3000	0.26
3500	0.35
4000	0.46

12 in. x 48 in. (305mm x 1219mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.06
1500	0.13
2000	0.23
2500	0.36
3000	0.51
3500	0.71
4000	0.93

48 in. x 12 in. (1219mm x 305mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.03
1500	0.06
2000	0.10
2500	0.16
3000	0.23
3500	0.30
4000	0.39

## AMCA 5.3



12 in. x 12 in. (305mm x 305mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.03
1500	0.07
2000	0.14
2500	0.21
3000	0.29
3500	0.39
4000	0.51

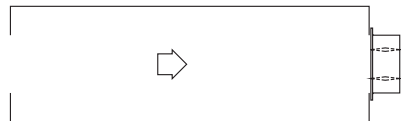
24 in. x 24 in. (610mm x 610mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.02
1500	0.04
2000	0.08
2500	0.13
3000	0.19
3500	0.26
4000	0.34

36 in. x 36 in. (914mm x 914mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.01
1500	0.02
2000	0.04
2500	0.06
3000	0.09
3500	0.13
4000	0.17

12 in. x 48 in. (305mm x 1219mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.03
1500	0.06
2000	0.11
2500	0.17
3000	0.25
3500	0.34
4000	0.45

48 in. x 12 in. (1219mm x 305mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.02
1500	0.04
2000	0.08
2500	0.12
3000	0.18
3500	0.24
4000	0.31

## AMCA 5.5



12 in. x 12 in. (305mm x 305mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.04
1000	0.14
1500	0.31
2000	0.55
2500	0.86
3000	1.23
3500	1.67
4000	2.19

24 in. x 24 in. (610mm x 610mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.12
1500	0.27
2000	0.48
2500	0.75
3000	1.07
3500	1.47
4000	1.91

36 in. x 36 in. (914mm x 914mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.10
1500	0.22
2000	0.39
2500	0.61
3000	0.87
3500	1.19
4000	1.56

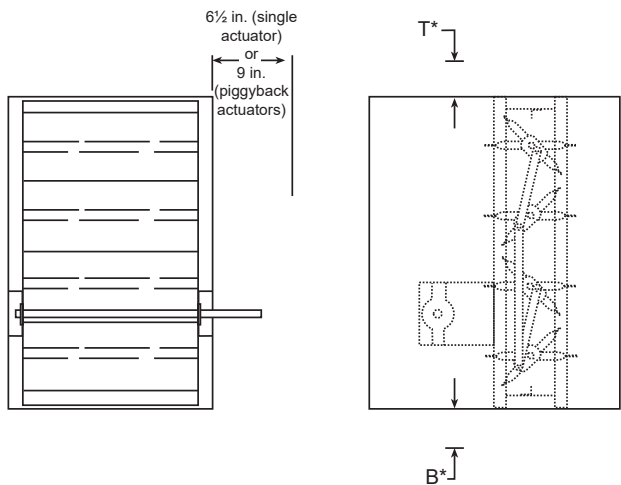
12 in. x 48 in. (305mm x 1219mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.11
1500	0.25
2000	0.46
2500	0.72
3000	1.05
3500	1.43
4000	1.87

48 in. x 12 in. (1219mm x 305mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.11
1500	0.26
2000	0.46
2500	0.72
3000	1.02
3500	1.40
4000	1.83

# Space Envelopes

Externally mounted actuators always require space outside of the damper sideplate or sleeve.

On dampers less than 18 in. (457mm) high, actuators may also require clearances above and/or below the sideplate or sleeve. “B” and “T” dimensions are **worst** case clearance requirements for some dampers less than 18 in. (457mm) high. All dampers 18 in. (457mm) or more in height, do not require these worst case clearances. If space availability above or below the damper sleeve is limited, each damper size should be individually evaluated.

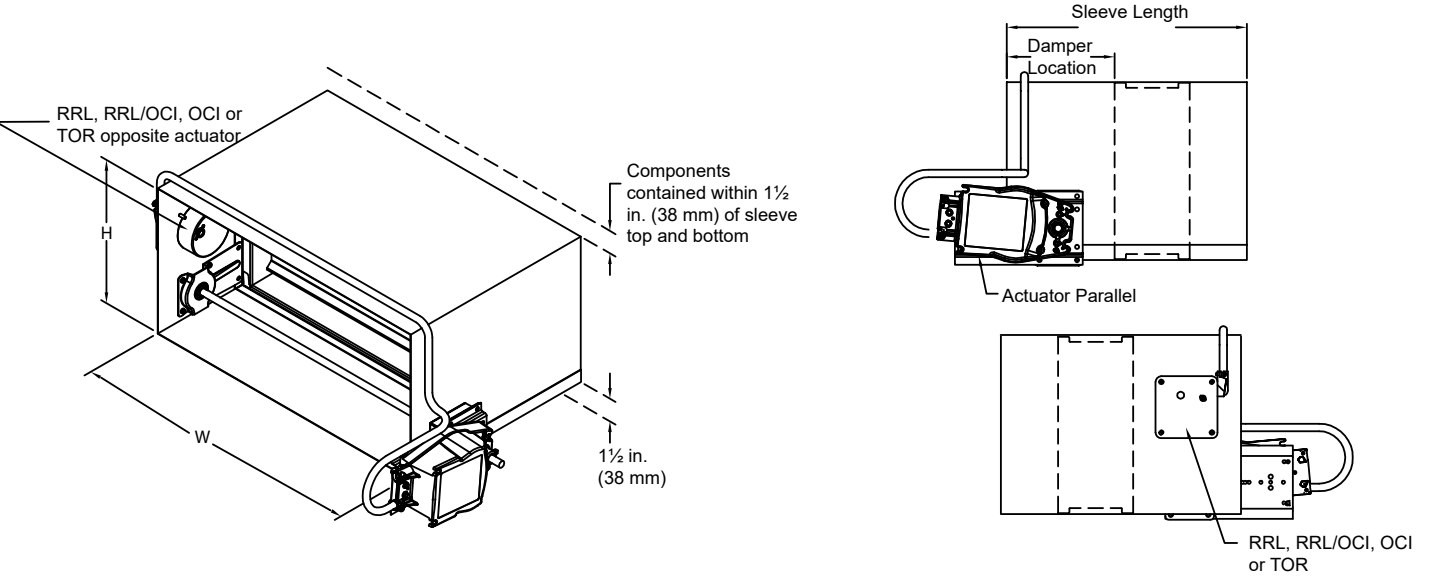


Actuator Type/Model	B*	T*	D	
	With OCI	With OCI	PiggyBack	
			No	Yes
24 Volt AC				
FSAFB24-SR Belimo	½ in. (13 mm)	9 <sup>13</sup> / <sub>16</sub> in. (249mm)	6 in. (152 mm)	NA
FSAFB24-SR-S Belimo	½ in. (13 mm)	9 <sup>13</sup> / <sub>16</sub> in. (249 mm)	6 in. (152 mm)	NA

\*When damper height is 18 in. (457mm) or greater, these dimensions are zero.

# Contained Actuator Option

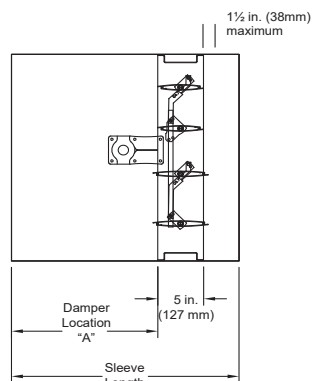
Dampers can be ordered with a “contained actuator option”. This option will result in the actuator being oriented such that it extends no more than 1 1/2 inches above or below the sleeve. Note that some damper configurations that are 11 inches high or less will have the OCI mounted on the side opposite the actuator when the contained actuator option is selected.



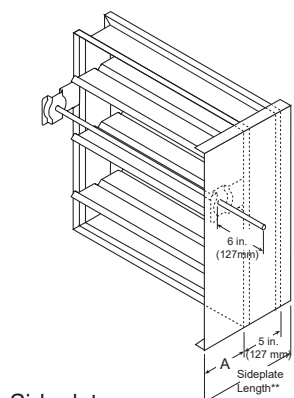
## Sleeve and Sideplate Dimensions

The drawings below and corresponding table show the position of the SMD-401M damper when mounted in a factory sleeve ("A" dimension). The standard mounting locations provide enough space for the mounting of actuators, controls and allow space for installation of retaining angles and duct connections. The following options may affect the range of available mounting locations: smoke detector, NEMA 7 enclosure, transitions, security bars, grille tabs.

The standard location of a damper mounted in a factory sleeve ("A" dimension) is shown below. The damper can be positioned at other locations within a range of 6 in. (152mm) to 16 in. (406mm) for the "A" dimension.



Sleeve



Sideplate

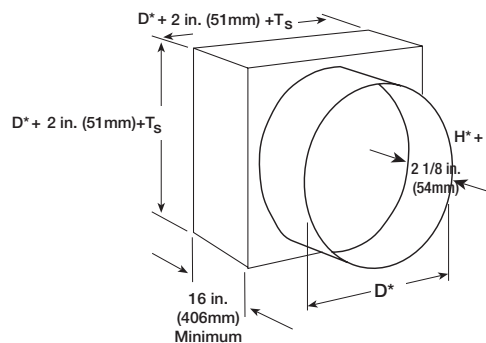
in. (mm)	With Sleeve		Sideplate Damper Location "A"
	Minimum Damper Location "A"	Maximum Damper Location "A"	
Compact configuration*	7 3/16 in. (183)	16 (406)	-
Standard (non-compact) Height < 12 in. (305) RRL, RRL/OCI, or TOR	12 (305)	16 (406)	12 (305)
Standard (non-compact) Height ≥ 12 in. (305) RRL, RRL/OCI, or TOR	7 3/16 in. (183)	16 (406)	12 (305)

\* Contact factory for more information.

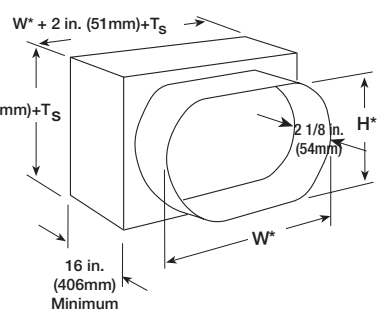
**NOTE:** Entire damper frame is not required to be installed within the wall. The damper blades, when closed should be contained within the wall.

## Transitioned Damper Dimensions

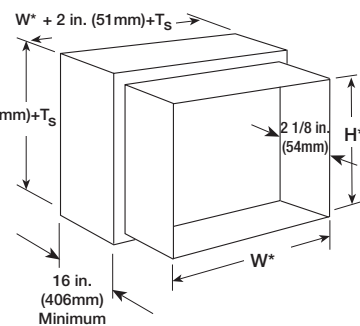
When a fire/smoke damper is being used in conjunction with round or oval ductwork, the SMD-401 can be supplied in a factory sleeve with round or oval transitions on both ends of the sleeve. Dampers should be ordered to the duct dimensions. Drawings below show overall damper size.



TYPE R



TYPE O



TYPE C

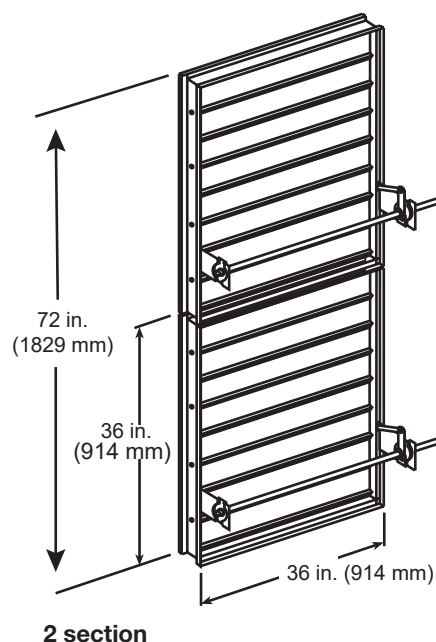
\* These dimensions are furnished approximately 1/4 in. (6mm) undersize, except round and oval dimensions which are approximately 1/8 in. (3mm) undersize.

$T_s = (2)(\text{Sleeve Thickness})$

## Multiple Section Dampers

## SMD-401M Smoke Damper

Dampers larger than maximum single section size are supplied as a factory assembly of two or more sections of equal size. The following figures show maximum damper section size and assembly configurations for multi-section dampers.



## Document Links



[INSTALLATION](#)



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[SELECTION GUIDE](#)



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