

### Application

The SMD-301M is a leakage rated modulating smoke damper with airfoil blades for operational closure in emergency smoke control situations. This model serves the function of both a control damper and smoke damper. The SMD-301M 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 4000 fpm (20.4 m/s)
- Pressure: Up to 8 in. wg (2 kPa)
- Temperature: Up to 250°F (121°C)



W and H dimensions furnished approximately 1/4 in. (6 mm) undersize. Add sleeve thickness for overall sleeved damper dimension.  
Internal left hand drive is shown.



See complete marking on product.  
UL 555S Classification R13317  
CAN/ULC S112.1 Classified Smoke Damper

### Size Limitations

W x H	Minimum Size	Maximum Size*	
		Single Section	Multiple Section
<b>Up to 3000 fpm (15.2 m/s)</b>			
<b>Inches</b>	6 x 6*	32 x 50	128 x 100
<b>mm</b>	102 x 102	813 x 1270	3251 x 2540
<b>4000 fpm (20.4 m/s)</b>			
<b>Inches</b>	6 x 6*	24 x 24	96 x 48
<b>mm</b>	102 x 102	610 x 610	2438 x 1219

\* Down to 4 in. x 4 in. (102 mm x 102 mm) using transitions.  
**Note:** Maximum sizes are dependent on velocities and pressures.

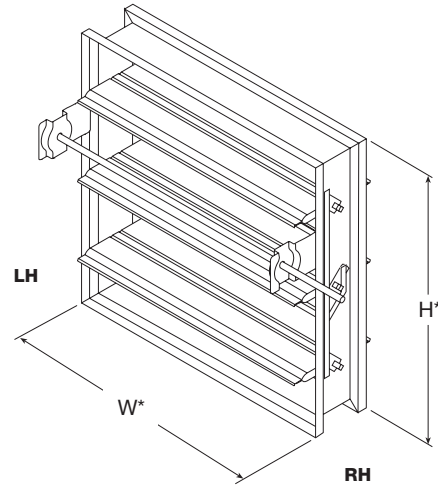
Model SMD-301M meets the requirements for fire dampers, smoke dampers and combination fire smoke dampers established by:

**National Fire Protection Association**  
NFPA Standards 90A, 92, 101, & 105

**IBC International Building Codes**

## 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 1 in. (127 mm x 25 mm) hat channel	-
<b>Blade Action</b>	Opposed	-
<b>Blade Material</b>	Galvanized steel	-
<b>Blade Material Thickness</b>	14 ga. (2 mm) equivalent	-
<b>Blade Type</b>	Double Skin Airfoil	-
<b>Blade Orientation</b>	Horizontal	-
<b>Linkage</b>	Plated steel out of airstream, concealed in jamb	316SS
<b>Axle Bearings</b>	316SS	-
<b>Axle Material</b>	Plated steel	316SS
<b>Blade Seals</b>	Silicone	-
<b>Jamb Seals</b>	Stainless Steel	-
<b>Mounting</b>	Vertical	Horizontal



### Note:

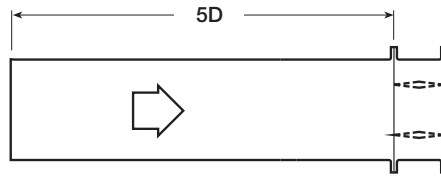
The frames are constructed with reinforced corners. Low profile head and sill are used on sizes less than 17 in. high (432 mm) for lower pressure drop and improved damper performance.

## Options and Accessories

- Access door mounted in sleeve
- BACnet test module (120V or 24V)
- Breakaway connections
- Clean wrap
- GTS Test Switches
- Grille tabs
- Momentary test switch
- Retaining angles
- OCI (Open Closed Indication Switches)
- Sealed transitions and sleeves
- Security bars
- Smoke detectors - no flow or low flow
- Transitions: C, O, R

# Pressure Drop Data

AMCA Figure 5.2



12 in. x 12 in. (305 mm x 305 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.11
1500	0.24
2000	0.42
2500	0.66
3000	0.95
3500	1.30
4000	1.70

24 in. x 24 in. (610 mm x 610 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.06
1500	0.12
2000	0.22
2500	0.34
3000	0.49
3500	0.67
4000	0.87

36 in. x 36 in. (914 mm x 914 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.05
1500	0.12
2000	0.21
2500	0.32
3000	0.47
3500	0.63
4000	0.83

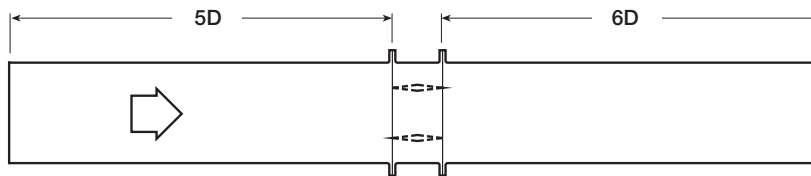
12 in. x 48 in. (305 mm x 1219 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.05
1500	0.12
2000	0.21
2500	0.33
3000	0.48
3500	0.65
4000	0.85

48 in. x 12 in. (1219 mm x 305 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.02
1000	0.08
1500	0.18
2000	0.33
2500	0.51
3000	0.74
3500	1.00
4000	1.31

AMCA Figure 5.3



12 in. x 12 in. (305 mm x 305 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.06
1500	0.13
2000	0.23
2500	0.37
3000	0.53
3500	0.73
4000	0.95

24 in. x 24 in. (610 mm x 610 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.02
1500	0.06
2000	0.10
2500	0.16
3000	0.23
3500	0.32
4000	0.42

36 in. x 36 in. (914 mm x 914 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.02
1500	0.05
2000	0.09
2500	0.14
3000	0.21
3500	0.29
4000	0.38

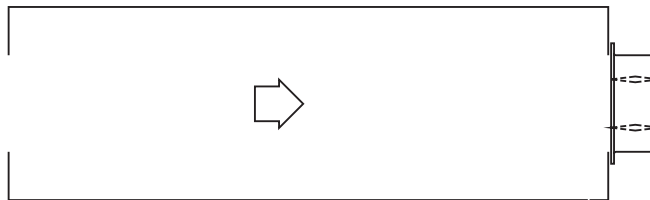
12 in. x 48 in. (305 mm x 1219 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.03
1500	0.06
2000	0.11
2500	0.18
3000	0.25
3500	0.34
4000	0.45

48 in. x 12 in. (1219 mm x 305 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.04
1500	0.10
2000	0.18
2500	0.29
3000	0.42
3500	0.57
4000	0.74

AMCA Figure 5.5



12 in. x 12 in. (305 mm x 305 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.04
1000	0.18
1500	0.42
2000	0.75
2500	1.17
3000	1.68
3500	2.29
4000	2.09

24 in. x 24 in. (610 mm x 610 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.13
1500	0.29
2000	0.52
2500	0.81
3000	1.17
3500	1.60
4000	2.14

36 in. x 36 in. (914 mm x 914 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.12
1500	0.27
2000	0.48
2500	0.75
3000	1.08
3500	1.48
4000	1.93

12 in. x 48 in. (305 mm x 1219 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.12
1500	0.27
2000	0.49
2500	0.77
3000	1.11
3500	1.51
4000	1.97

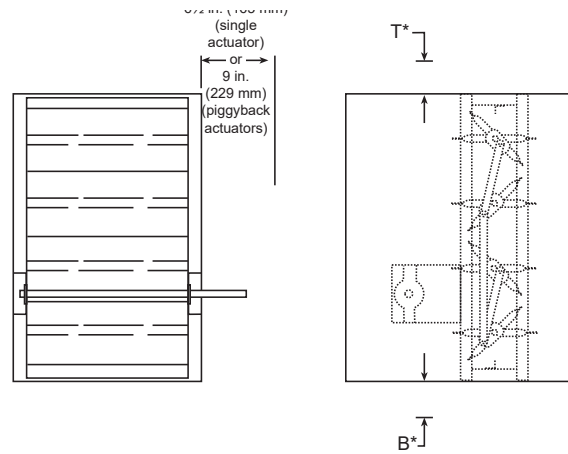
48 in. x 12 in. (1219 mm x 305 mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.03
1000	0.14
1500	0.32
2000	0.57
2500	0.89
3000	1.28
3500	1.75
4000	2.29

## Space Envelopes

Externally mounted actuators always require space outside of the damper sleeve. The "S" dimension illustrates the clearance required for various available actuators.

Worst case space envelopes shown below. Exact dimensions may vary based on specific damper configuration. Consult factory for specific space envelope if necessary.

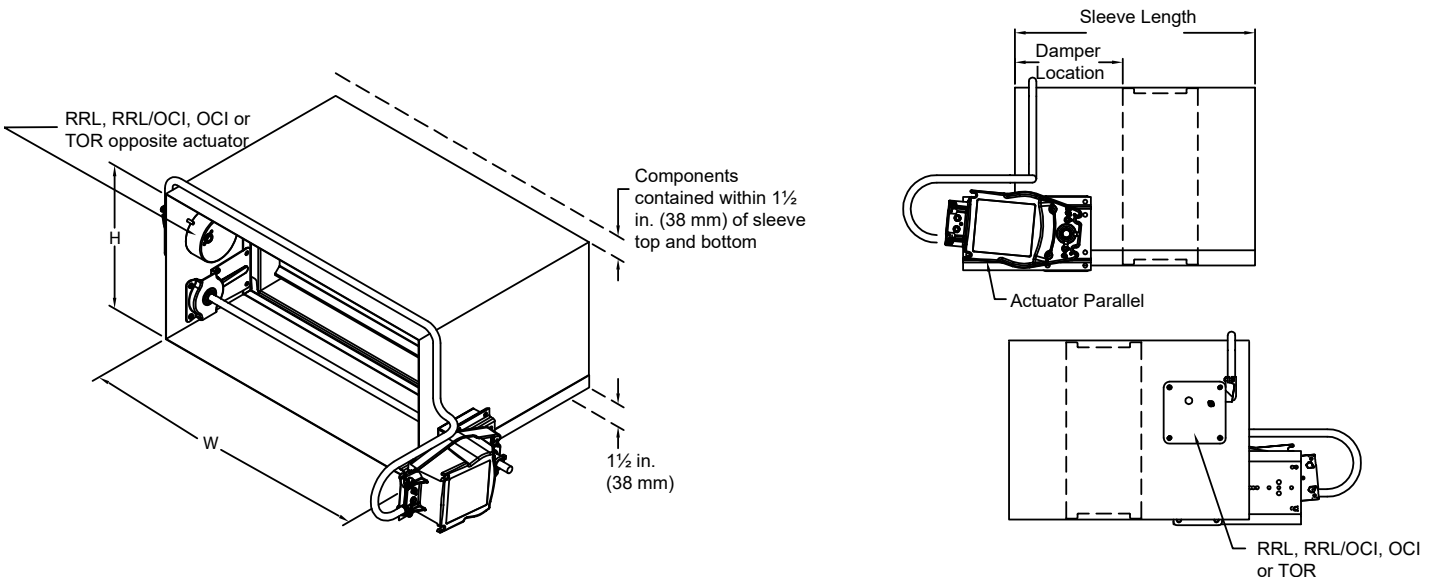


Actuator Type/Model	B*	T*	S	
			Piggyback	
	With OCI	With OCI	No	Yes
<b>24 Volt AC</b>				
MS7520A2015/B Honeywell MS7520A2213/B Honeywell	1/2 in. (13 mm)	9 1/16 in. (249 mm)	6 in. (152 mm)	NA

\* For dampers 18 in. (457 mm) or more in height these dimensions are 0 in. .

## Contained Actuator Option

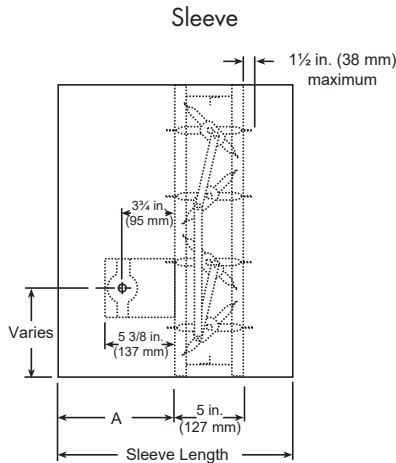
Dampers can be ordered with a "contained actuator option". This option will result in the actuator being oriented such that it extends no more than 1 1/2 inches (38 mm) above or below the sleeve. Note that some damper configurations that are 11 inches (279 mm) high or less will have the RRL, RRL/OCI, or TOR mounted on the side opposite the actuator when the contained actuator option is selected.



## Sideplate and Sleeve Dimensions

The drawings below and corresponding table show the position of the SMD-301M 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.

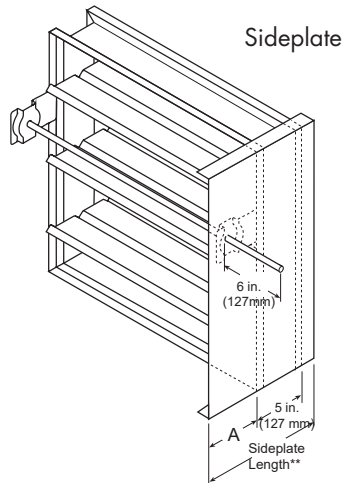
The standard location of a damper mounted in a factory sleeve ("A" dimension) is shown below. The damper can be positioned at other locations within a range of 6 in. (152 mm) to 16 in. (406 mm) for the "A" dimension.



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)

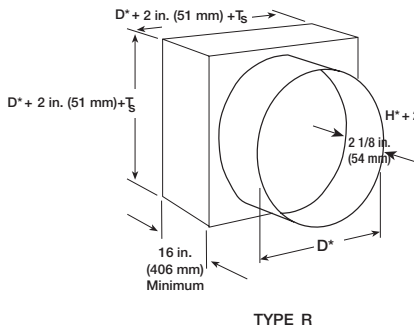
\* Contact factory for more information.

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

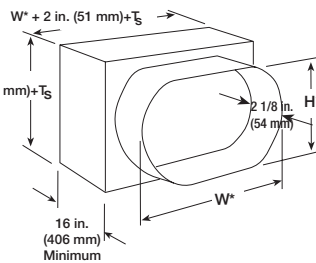


## Transitioned Damper Dimensions

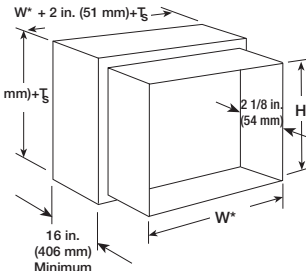
When a smoke damper is being used in conjunction with round or oval ductwork, the SMD-301M can be supplied in a factory sleeve with round or oval transitions on both ends of the sleeve. Dampers should be ordered to the duct dimensions. Drawings below show overall damper size.



TYPE R



TYPE O



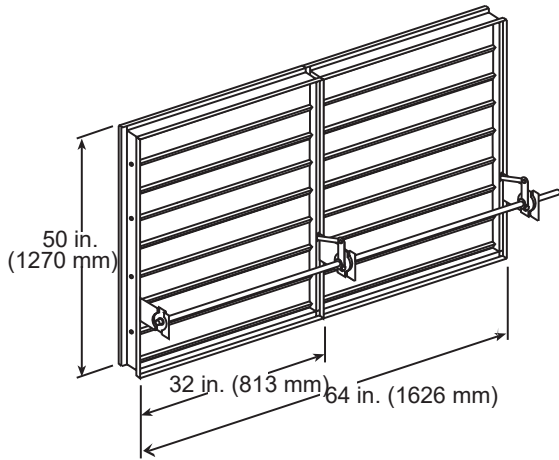
TYPE C

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

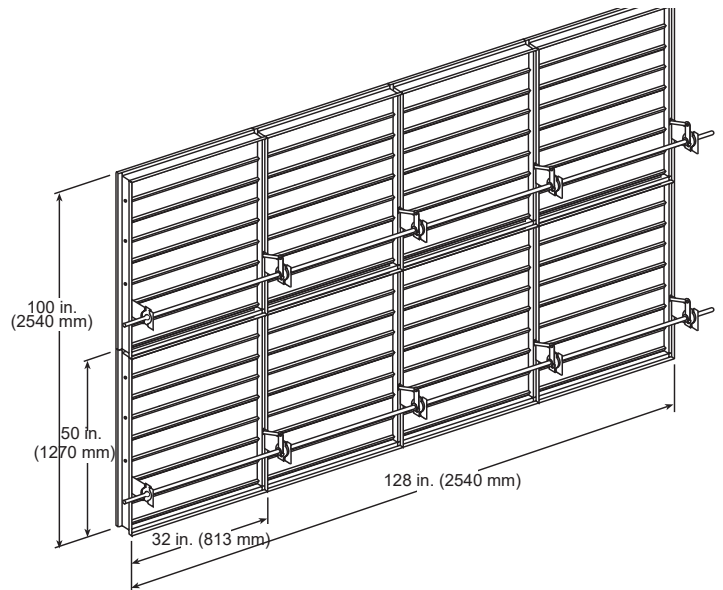
Ts = (2)(Sleeve Thickness)

## Multiple Section Dampers

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 damper sections and assemblies that have been qualified for operation with a single actuator. Larger size can be accommodated using multiples of these assemblies.



**Two Section**



**4 sections wide  
2 sections high**

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