

Application

The SMD-301 is a leakage rated smoke damper with airfoil blades for operational closure in emergency smoke control situations. The SMD-301 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 (20.3 m/s)

Pressure: Up to 8 in. wg (2 kPa)

Temperature: Up to 350°F (177°C) - depending upon the actuator



W and H dimensions furnished approximately ¼ in. (6mm) undersize. Add sleeve thickness for overall sleeved damper dimension.

External right 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
Inches	6 x 6*	32 x 50	192 x 100
mm	152 x 152	813 x 1270	4877 x 2540

* 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-301 meets the requirements for smoke dampers established by:

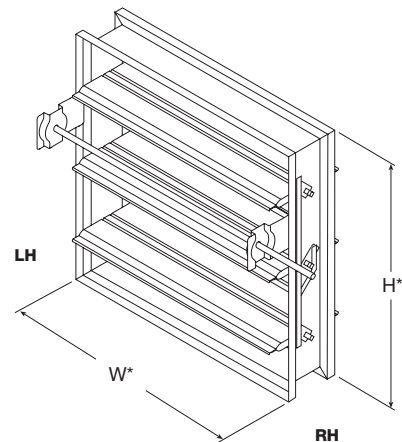
National Fire Protection Association

NFPA Standards 90A, 92, 101, & 105

International Building Codes (IBC)

Construction

	Standard	Optional
Frame Material	Galvanized steel	-
Frame Material Thickness	16 ga. (1.5 mm)	-
Frame Type	5 in. x 1 in. (127 mm x 25 mm) hat channel	-
Blade Material	Galvanized steel	-
Blade Material Thickness	14 ga. (2 mm) equivalent	-
Blade Type	Double skin airfoil	-
Blade Action	Opposed	-
Linkage	Plated steel out of airstream, concealed in jamb	316SS
Axle Bearings	316SS	-
Axle Material	Plated steel	316SS
Blade Seals	Silicone	-
Jamb Seals	Stainless Steel	-
Mounting	Vertical	Horizontal



Note:

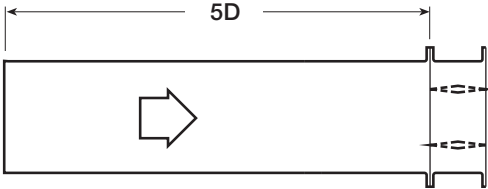
The frames are constructed with reinforced corners. Low profile head and sill are used on sizes less than 17 in. high (432 mm) for lower pressure drop and improved damper performance.

Options

- 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. (305mm x 305mm)

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. (610mm x 610mm)

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

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

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

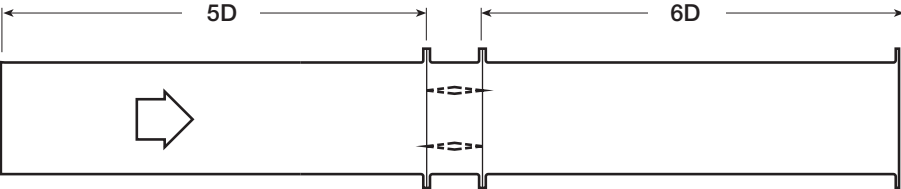
12in. X 48 in. (305mm x 1219mm)

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. (1219mm x 305mm)

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. (305mm x 305mm)

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. (610mm x 610mm)

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

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

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

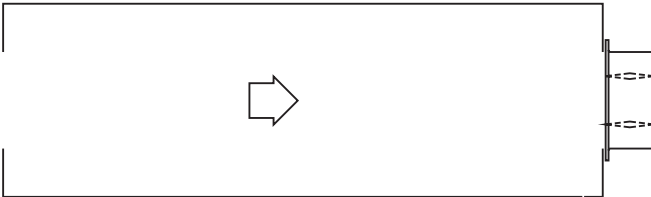
12in. X 48 in. (305mm x 1219mm)

Velocity (fpm)	Pressure Drop (in. wg)
500	0.01
1000	0.03
1500	0.06
2000	0.11
2500	0.18
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	0.04
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. (305mm x 305mm)

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. (610mm x 610mm)

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

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

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

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

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

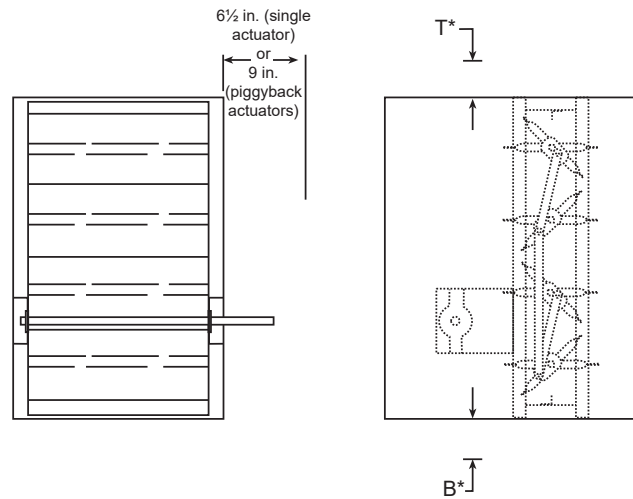
48 in. x 12 in. (1219mm x 305mm)

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.

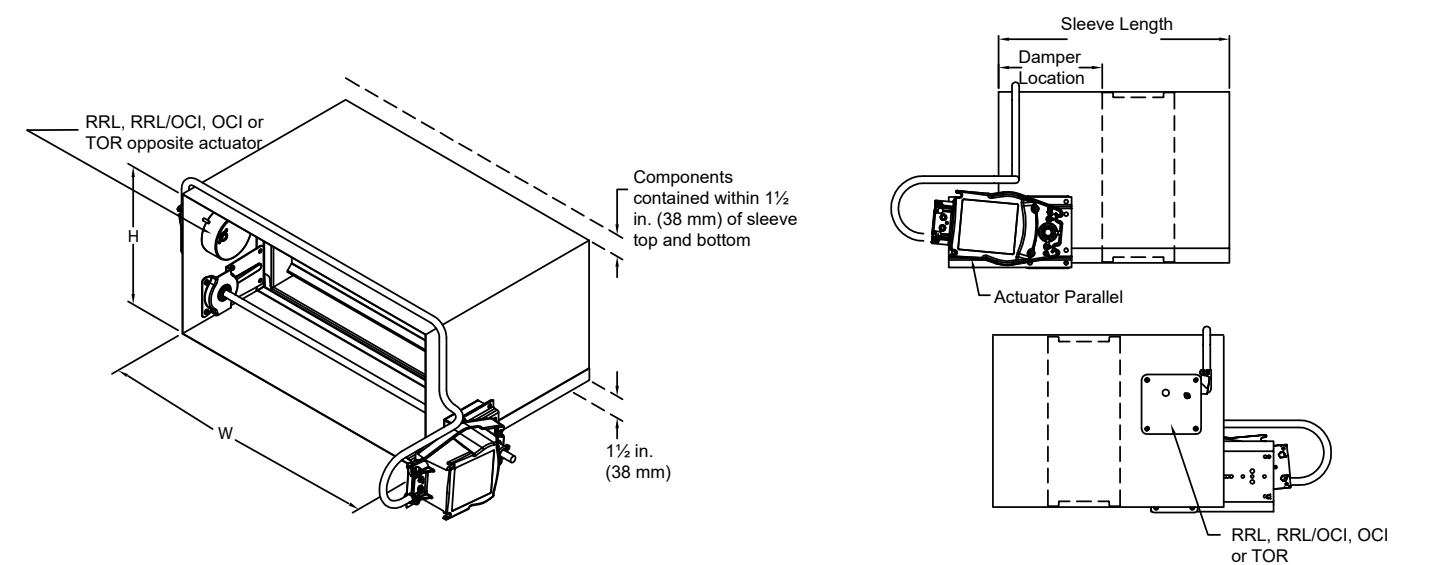


Actuator Type/Model	B*	T*	S	
	With RRL, RRL/OCI, or TOR	With RRL, RRL/OCI, or TOR	Piggyback	
			No	Yes
Belimo				
FSAFB24-SR (-S)	1 ½ in (38mm)	9¼ in. (235mm)	6 in. (152mm)	9 in. (229mm)
FSLF series	8 in. (203mm)	1 ½ in (38mm)	6½ in. (165mm)	NA
FSNF series	1 ½ in (38mm)	9¼ in. (235mm)	6 in. (152mm)	9 in. (229mm)
FSTF Series	8 in. (203mm)	1 ½ in (38mm)	6½ in. (165mm)	NA
Siemens				
GJD Series	7 in. (178mm)	1 ½ in (38mm)	6½ in. (165mm)	NA
GRD Series	1 ½ in (38mm)	7½ in (191mm)	6½ in. (165mm)	NA
GXVD Series	1 ½ in (38mm)	9¼ in. (235mm)	6 in. (152mm)	9 in. (229mm)
Honeywell				
MS4103, MS8103 Series	8¾ in. (222mm)	1 ½ in (38mm)	6½ in. (165mm)	NA
MS4104, MS4604, MS8104 Series	1 ½ in (38mm)	8½ in (216mm)	6½ in. (165mm)	NA
MS4109, MS4609, MS8109 Series	1 ½ in (38mm)	8½ in (216mm)	6½ in. (165mm)	NA
MS4120, MS4620, MS8120 Series	1 ½ in (38mm)	9½ in. (241mm)	6 in. (152mm)	9 in. (229mm)

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

Contained Actuator Option

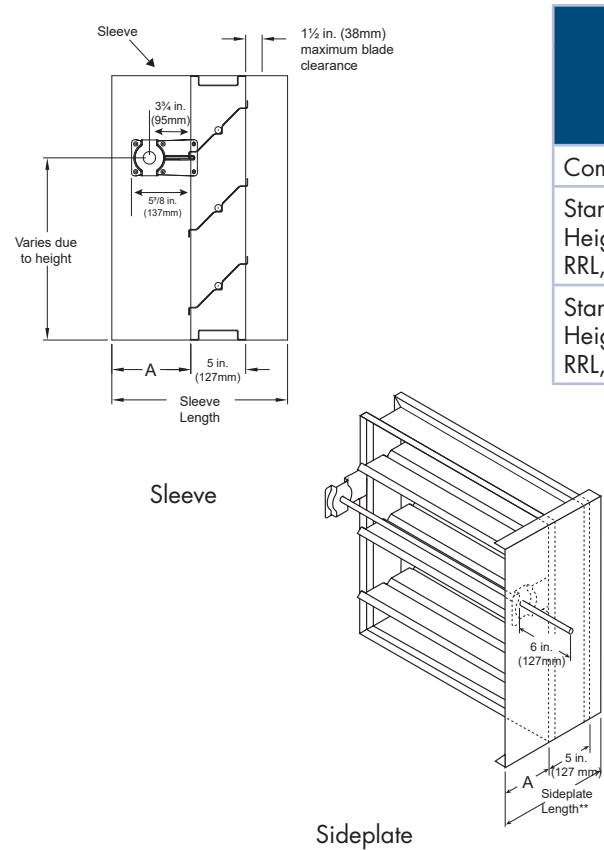
Dampers can be ordered with a “contained actuator option”. This option will result in the actuator being oriented such that it extends no more than 1½ inches above or below the sleeve. Note that some damper configurations that are 11 inches high or less will have the OCI mounted on the side opposite the actuator when the contained actuator option is selected.



Sleeve and Sideplate Dimensional Data

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

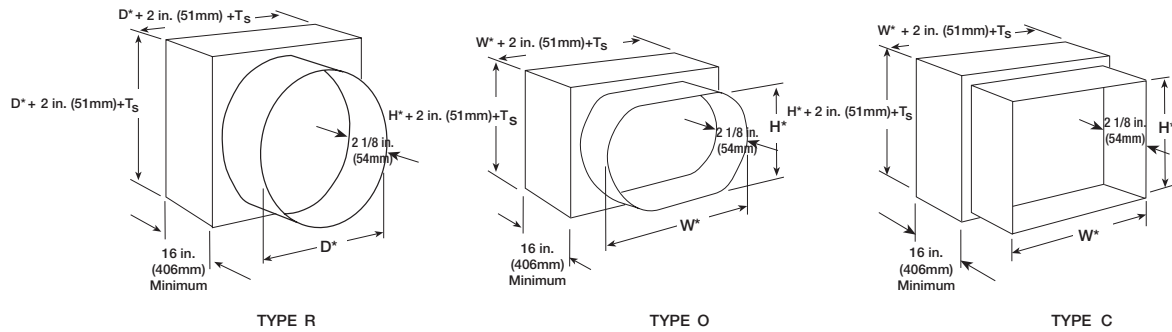


in. (mm)	With Sleeve		Sideplate Damper Location "A"
	Minimum Damper Location "A"	Maximum Damper Location "A"	
Compact configuration*	7 3/16 in. (183)	16 (406)	-
Standard (non-compact) Height < 12 in. (305) RRL, RRL/OCI, or TOR	12 (305)	16 (406)	12 (305)
Standard (non-compact) Height ≥ 12 in. (305) RRL, 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-301 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.

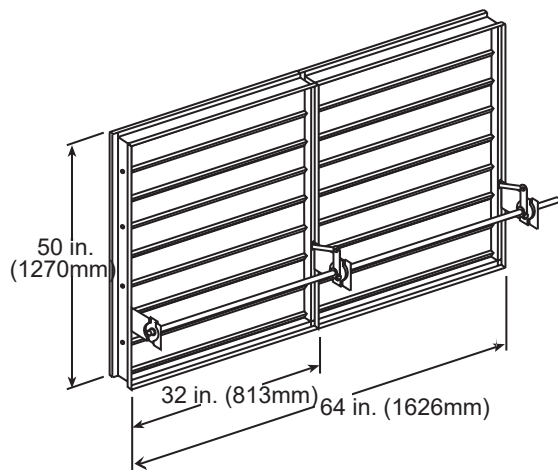


* These dimensions are furnished approximately 1/4 in. (6mm) undersize, except round and oval dimensions which are approximately 1/8 in. (3mm) undersize.

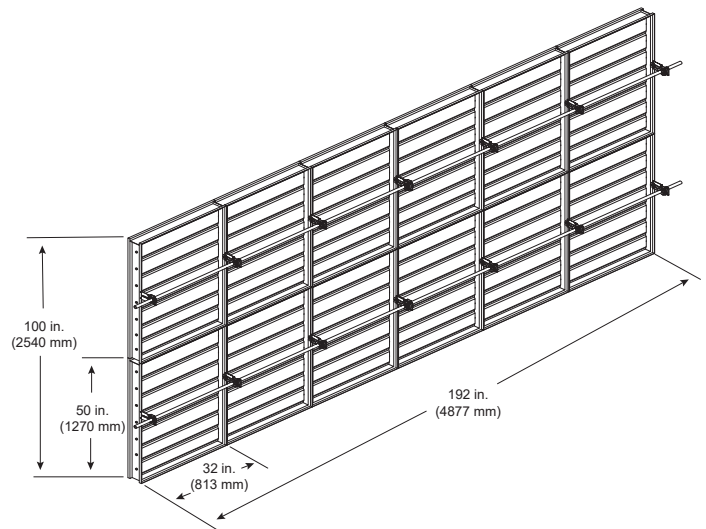
$T_s = (2)(\text{Sleeve Thickness})$

Multiple Section Dampers

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.



2 section



6 sections wide
2 sections high

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