

Application

Model SMD-401 is a class I leakage rated smoke damper with extruded airfoil blades. Model SMD-401 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 3000 fpm (15.2 m/s)

Pressure: Up to 6 in. wg (1.5 kPa)

Temperature: Up to 250°F (121°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

CAN/ULC S112.1 Classified Smoke Damper

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*	48 x 60	192 x 120
mm	102 x 152	1219 x 1524	4877 x 3048
3000 fpm (15.2 m/s); 6 in. wg (1.5 kPa) pressure			
Inches	4 x 6*	48 x 36	192 x 72
mm	102 x 152	1219 x 914	4877 x 1829

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

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

National Fire Protection Association

NFPA Standards 90A, 92, 101 & 105

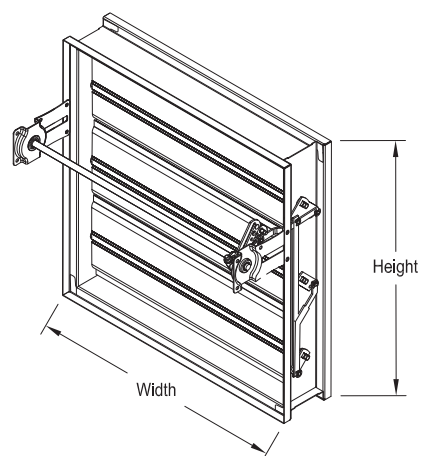
IBC International Building Codes

CSFM California State Fire Marshal

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

Construction

	Standard	Optional
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 Action	Opposed	
Blade Material	Extruded aluminum	-
Blade Material Thickness	Heavy gauge aluminum	-
Blade Type	Airfoil	-
Blade Orientation	Horizontal	-
Linkage	Plated steel out of airstream, concealed in jamb	-
Axle Bearings	316SS	-
Axle Material	Plated steel	-
Blade Seals	Silicone	-
Jamb Seals	Stainless steel	-
Mounting	Vertical	Horizontal



Note:

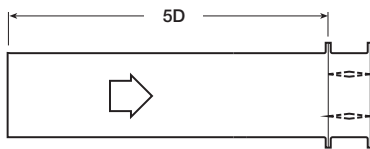
The frames are constructed with reinforced corners. Low profile head and sill are used on sizes less than 17 in. (432 mm) high for lower pressure drop and improved damper performance.

Options

- Access door mounted in sleeve
- [BACnet test module - 120V](#)
- [BACnet test module - 24V](#)
- [Breakaway connections](#)
- Clean wrap
- [Greenheck test switches](#)
- Grille tabs
- [Momentary test switch](#)
- [Retaining angles](#)
- [OCI \(Open Closed Indicator switch\)](#)
- 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

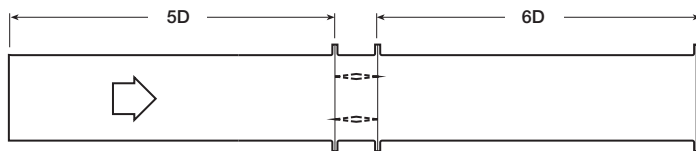
12 in. x 48 in. (305mm x 1219mm)

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

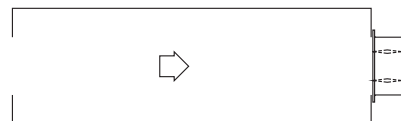
12 in. x 48 in. (305mm x 1219mm)

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

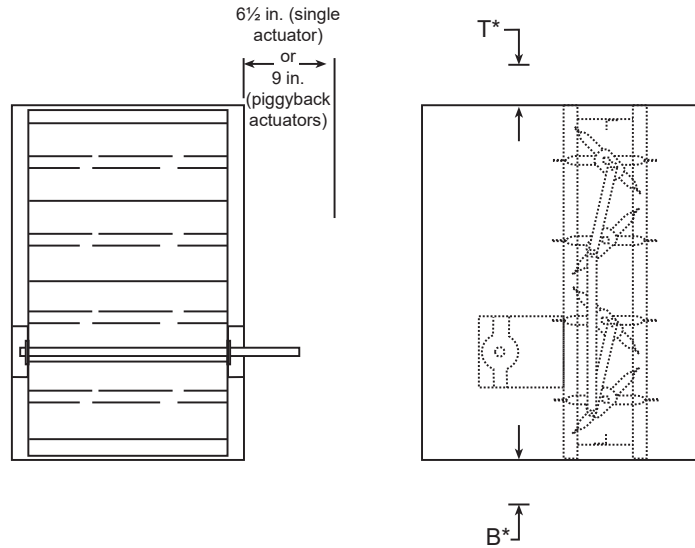
48 in. x 12 in. (1219mm x 305mm)

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. (457 mm) 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. (457 mm) high. All dampers 18 in. (457 mm) 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.

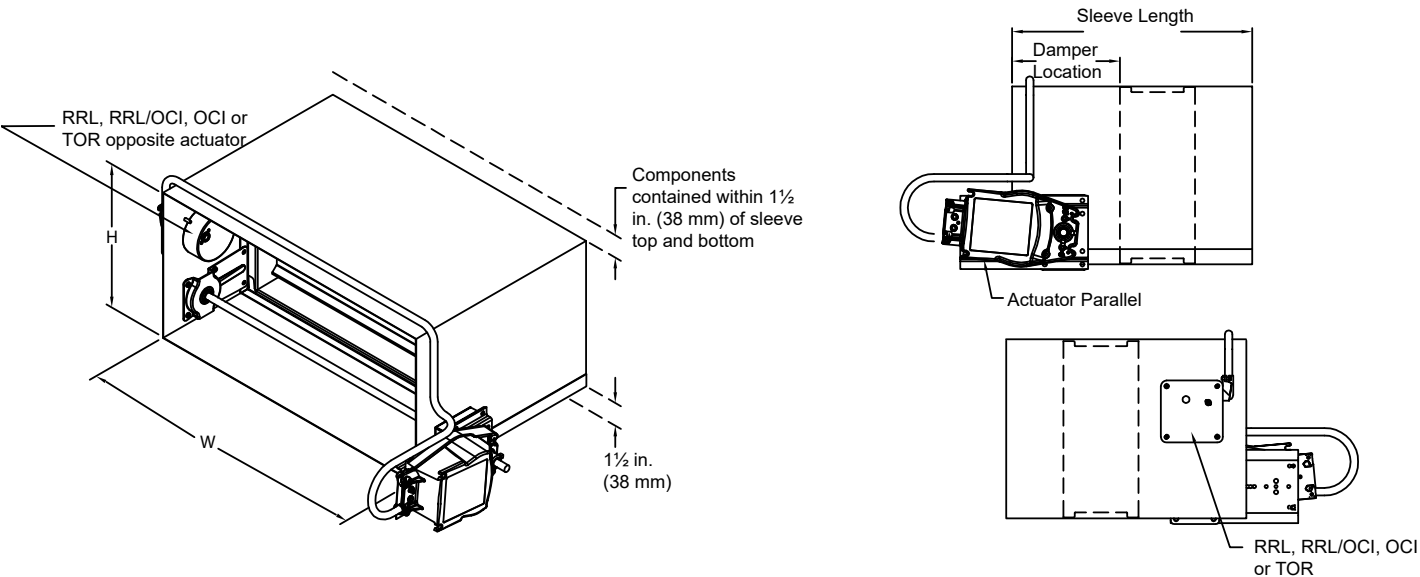


Actuator Type/Model	B*	T*	S	
	With RRL, RRL/OCI, or TOR	With RRL, RRL/OCI, or TOR	Piggyback	
			No	Yes
Belimo				
FSAFB24-SR (-S)	1½ in (38 mm)	9¼ in. (235 mm)	6 in. (152 mm)	9 in. (229 mm)
FSLF series	8 in. (203 mm)	1½ in (38 mm)	6½ in. (165 mm)	NA
FSNF series	1½ in (38 mm)	9¼ in. (235 mm)	6 in. (152 mm)	9 in. (229 mm)
FSTF Series	8 in. (203 mm)	1½ in (38 mm)	6½ in. (165 mm)	NA
Siemens				
GJD Series	7 in. (178 mm)	1½ in (38 mm)	6½ in. (165 mm)	NA
GRD Series	1½ in (38 mm)	7½ in (191 mm)	6½ in. (165 mm)	NA
GXVD Series	1½ in (38 mm)	9¼ in. (235 mm)	6 in. (152 mm)	9 in. (229 mm)
Honeywell				
MS4103, MS8103 Series	8¾ in. (222 mm)	1½ in (38 mm)	6½ in. (165 mm)	NA
MS4104, MS4604, MS8104 Series	1½ in (38 mm)	8½ in (216 mm)	6½ in. (165 mm)	NA
MS4109, MS4609, MS8109 Series	1½ in (38 mm)	8½ in (216 mm)	6½ in. (165 mm)	NA
MS4120, MS4620, MS8120 Series	1½ in (38 mm)	9½ in. (241 mm)	6 in. (152 mm)	9 in. (229 mm)

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

Contained Actuator Option

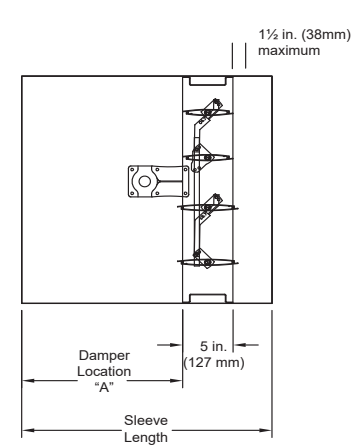
Dampers can be ordered with a “contained actuator option”. This option will result in the actuator being oriented such that it extends no more than 1½ inches above or below the sleeve. Note that some damper configurations that are 11 inches high or less will have the OCI mounted on the side opposite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



Sleeve and Sideplate Dimensions

The drawings below and corresponding table show the position of the SMD-401 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.

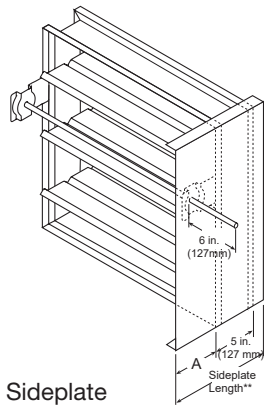


in. (mm)	With Sleeve		Sideplate Damper Location "A"
	Minimum Damper Location "A"	Maximum Damper Location "A"	
Compact configuration*	7 3/16 in. (183)	16 (406)	-
Standard (non-compact) Height < 12 in. (305) RRL, RRL/OCI, or TOR	12 (305)	16 (406)	12 (305)
Standard (non-compact) Height ≥ 12 in. (305) RRL,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

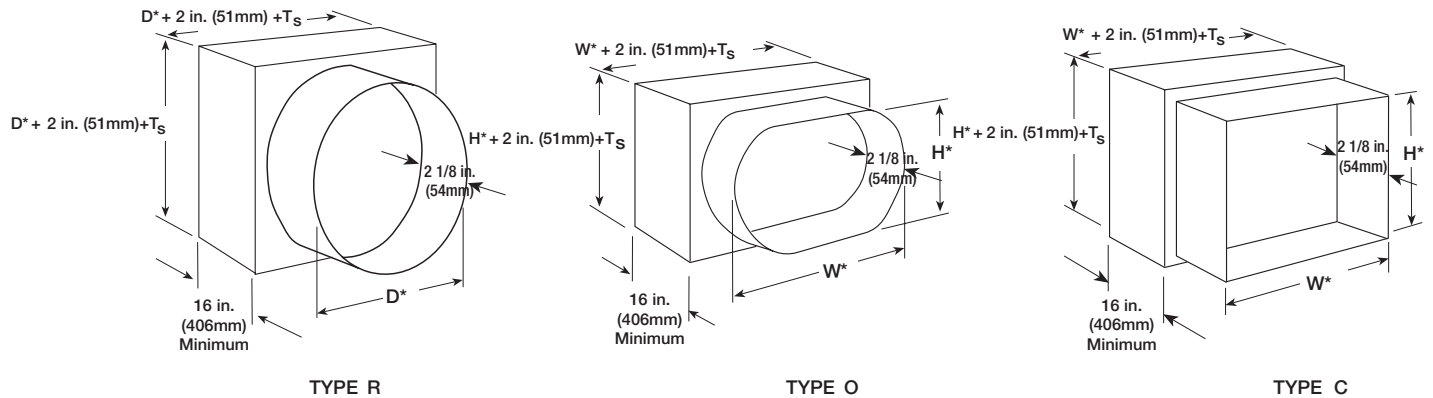
Sleeve



Sideplate

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.

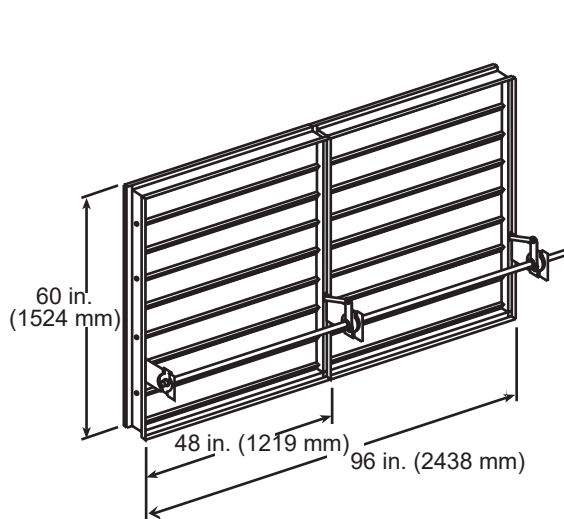


* These dimensions are furnished approximately 1/4 in. (6mm) undersize, except round and oval dimensions which are approximately 1/8 in. (3 mm) undersize.

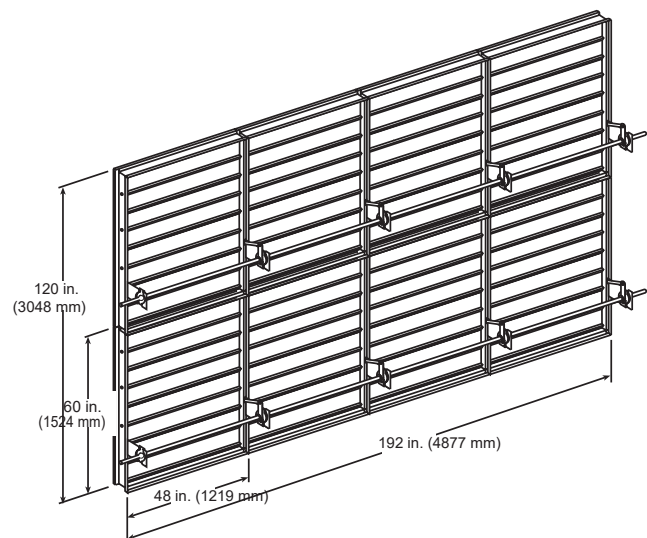
$T_s = (2)(\text{Sleeve Thickness})$

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



**4 sections wide
2 sections high**



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