



Model OFSD-311

Out of Wall Combination Fire Smoke Damper UL555S Leakage Class I UL555 1 ½ Hour Fire Resistance Rating

Application

Model OFSD-311 is an 'out of wall' high performance combination fire smoke damper with Class I leakage. The OFSD-311 is approved for use in walls, partitions, and floors with fire resistance ratings less than 3 hours. Removal of wall grille allows access to the actuator and other components. High strength airfoil blades insure the lowest resistance to airflow in HVAC systems with velocities up to 4,000 fpm (20.3 m/s) and pressures up to 8 in. wg (2 kPa). Model OFSD-311 shall be installed vertically (with blades running horizontal) or horizontally and rated for airflow and leakage in either direction.

UL555 Fire Resistance Ratings

Fire Rating	1 ½ hours in walls
Dynamic Closure	Actual ratings are size dependent
Maximum Velocity	Up to 4,000 fpm (20.3 m/s)
Maximum Pressure	Up to 8 in. wg (2 kPa) - differential pressure

UL555S Leakage Ratings

Leakage Class	I
Operational Rating	Actual ratings are size dependent
Maximum Velocity	Up to 4,000 fpm (20.3 m/s)
Maximum Temperature	350°F (177°C) - actuator dependent

Size Limitations

WxH	Minimum Size	Maximum Size	
		Single Section	Multiple Section
Inches	8 x 8	32 x 30	36 x 36
mm	203 x 203	813 x 762	914 x 914



Grille is not provided.

W & H dimensions furnished approximately ¼ in. (6mm) undersize. Add blanket thickness (⅛ in. 3mm) and sleeve thickness for overall sleeved damper dimension.
Oversize wall opening as follows: Nominal damper size plus ⅜ in. (9.5mm).



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

Model OFSD-311 meets the requirements for fire dampers, smoke dampers and combination fire smoke dampers established by:
National Fire Protection Association
 NFPA Standards 80, 90A, 92, 101 & 105
IBC International Building Codes

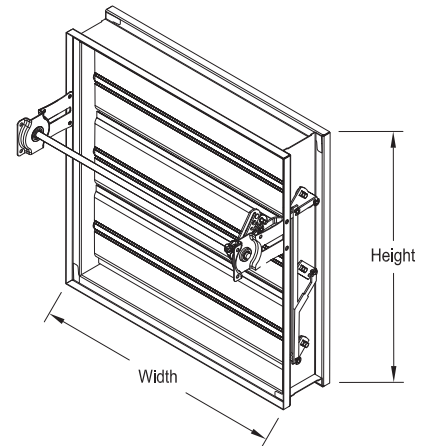
Construction

	Standard	Optional
Frame Material	Galvanized Steel	-
Frame 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	Galvanized Steel	-
Blade Thickness	14 ga. (2 mm) equivalent	-
Blade Type	Airfoil	-
Blade Orientation	Horizontal	-
Linkage	Plated steel out of air-stream, concealed in jamb	316SS
Axle Bearings	316SS	-
Axle Material	Plated Steel	316SS
Blade Seals	Silicone	-
Jamb Seals	Stainless Steel	-
Closure Device	RRL	RRL/OCI, TOR, Fusible Link
Closure Temperature	165°F (74°C)	212°F (100°C), 250°F (121°C), 286°F (141°C)*, 350°F (177°C)
Mounting	Vertical	Horizontal

* only available with fusible link

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.

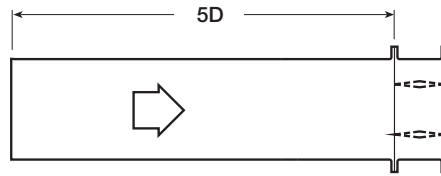


Options

- BACnet test module - 120V or 24V
- Clean wrap
- GTS test switches
- Grille tabs
- Momentary test switch
- Retaining angles
- Sealed transitions and sleeves
- Smoke detector - no flow or low flow
- Transitions: R, C, O

Pressure Drop

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

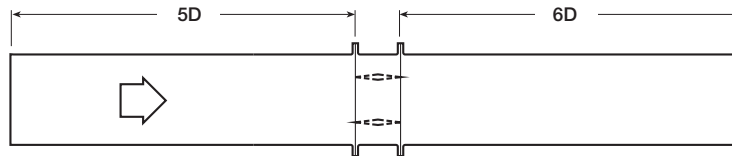
12 in. x 48 in. (305 mm x 1219 mm)

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

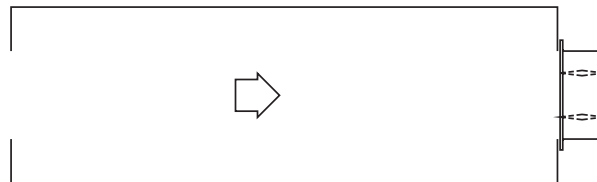
12 in. x 48 in. (305 mm x 1219 mm)

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

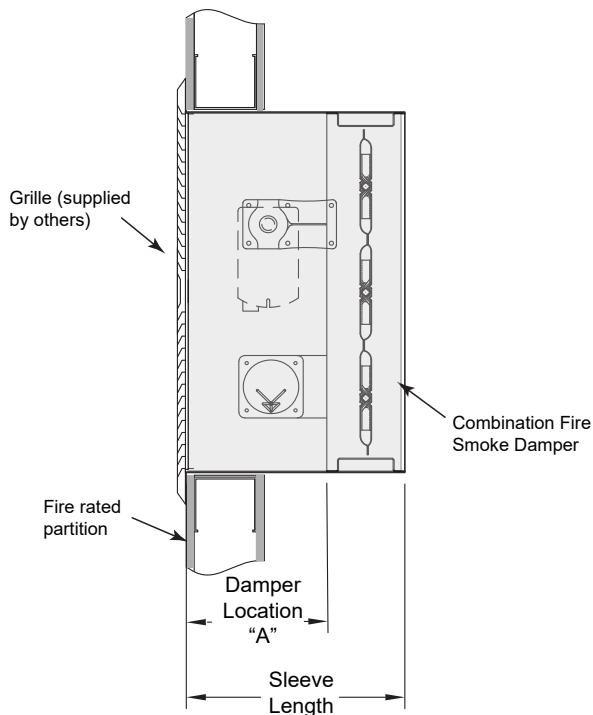
48 in. x 12 in. (1219 mm x 305 mm)

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

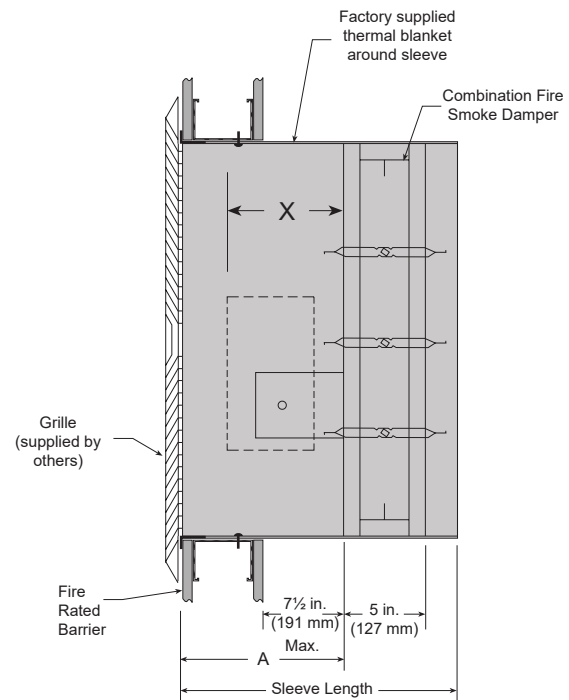
Application Data

Actuator Space Envelopes

The drawing below and corresponding table show the minimum dimensions required for internal actuator mounting on OFSD-311. The standard mounting locations provide enough space for the mounting of actuators and controls plus allowing space for a grille.



OFSD's that don't require a breakaway connection



OFSD's that require a breakaway connection

Actuator Type/Model	'X' Dimension
FSLF24-S, 120, 230-S Belimo	7 1/2 in (191 mm)
FSNF24, 120, 230-S Belimo	7 5/8 in. (187 mm)
FSTF24, 120, 230-S Belimo	7 1/8 in (181 mm)
MSXX09 Series Honeywell	7 1/2 in (191 mm)
MSXX04 Series Honeywell	7 1/2 in (191 mm)
MSXX20 Series Honeywell	7 1/2 in (191 mm)

Sleeve Information

Sleeve length is dependent on actuator, grille depth, OBD depth, and damper height and whether or not a breakaway connection is required on the side opposite the actuator.

'Sleeve Gauge' = 16 ga. or 20 ga. (1.5 mm or 1 mm)

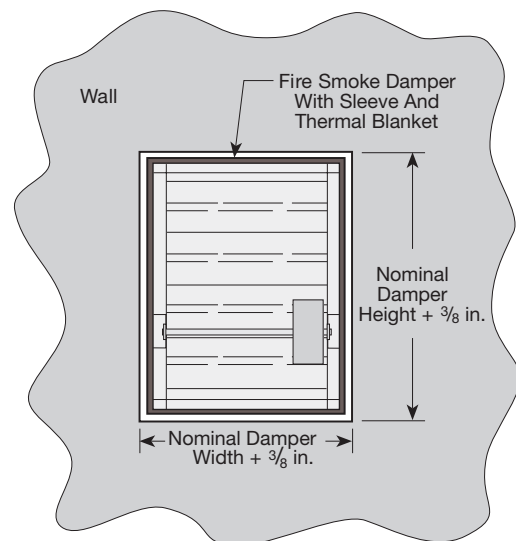
Wall Opening Sizing

To accommodate for sleeve and thermal blanket thickness, the wall opening must be oversized by 3/8 in. (9.5 mm) as shown.

For example:

If the nominal damper size required is 18 in. x 14 in. (457 mm x 356 mm), the wall opening size needs to be 18 3/8 in. x 14 3/8 in. (467 mm x 365 mm).

The damper itself is undersized a 1/4 in. (6mm) on each dimension for an actual size of 17 3/4 in. x 13 3/4 in. (451 mm x 349 mm). This is also the inside dimension of the sleeve (for grille considerations).



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