

FSD60-3M COMBINATION FIRE SMOKE DAMPER AND VOLUME CONTROL DAMPER

3 HOUR UL555 RATED, UL555S LEAKAGE CLASS 1

APPLICATION

The FSD60-3M is a combination fire and smoke damper designed with airfoil blades (for lowest pressure drop) and equipped with either a modulating electric or pneumatic actuator so it can also be used as a volume control damper. It can be installed vertically in walls or horizontally in concrete floors in HVAC systems with velocities to 2,000 fpm and pressures to 4" w.g.

STANDARD CONSTRUCTION

FRAME

5" x 16 gage (127 x 1.6) galvanized, hat-shaped channel, structurally superior to 13 (2.3) gage channel frame.

BLADES

Airfoil-shaped, double-skin, single piece construction with 14 gage equivalent thickness, maximum 6" (152) wide.

BEARINGS

Stainless steel sleeve, pressed into frame.

JAMB SEALS

Stainless steel, flexible metal compression type.

BLADE SEALS

Silicone edge type for smoke seal to 450°F (232°C) and galvanized steel for flame seal to 1900°F (1038°C).

LINKAGE

Concealed in frame.

HEAT-ACTUATED CONTROLLED CLOSURE DEVICE (EFL ONLY)

165°F (74°C) standard. 212°F (100°C) or 250°F (121°C) EFL only, are available at no additional cost.

ACTUATOR

Electric

120VAC - M9182A120.

24VAC - M9182A24.

Both actuators come factory equipped with an interface module (Q7230A) that provides current or voltage control (4 - 20 mA and 2 - 10 Vdc) with adjustable zero and span.

Pneumatic

331-2961P (includes pilot positioner)

DAMPER SIZES

MINIMUM SIZE

8"w x 6"h (203 x 152).

MAXIMUM SIZE

Single Section – 32"w x 48"h (813 x 1219)

Multiple Section

Vertical/Horizontal Installation – 120"w x 48"h (3048 x 1219)

OPTIONS

- **TS150 FireStat** for reopenable operation in dynamic smoke management systems.
- **DSDF/DSDN Duct Smoke Detector** (Flow rated or No-Flow).
- **SP100 Switch Package** to remotely indicate damper blade position.
- **FAST Angle** factory supplied for labor saving angle one-side installations.
- **Factory Sleeves** of various lengths and gages to insure field compliance with UL installation requirements.

NOTES

1. Damper are furnished approximately 1/4" (6) smaller than given opening dimensions.
2. Dimensions shown in parentheses () indicate millimeters.

Model FSD60-3M meets the requirements for fire, smoke and combination fire and smoke dampers established by:

- **National Fire Protection Association NFPA Standards** 90A, 92A, 92B and 101
- **BOCA National Building Codes**
- **ICBO Uniform Building Codes**
- **SBCCI Standard Building Codes**
- **ICC International Building Codes**
- **CSFM California State Fire Marshal Fire Damper Listing** (#3225-245:102) and Smoke Damper Listing (#3230-245:110)
- **New York City (BSA Listing #176-82-SM)**

UL CLASSIFIED

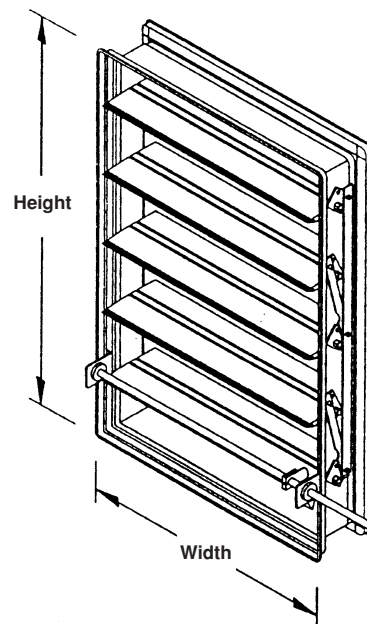
UL555 Listing R5531, UL555S Listing R5531



SEE COMPLETE
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FEATURES

- EFL (Electric Fuse Link) or PFL (Pneumatic Fuse Link) heat-actuated release devices permit controlled (rather than instantaneous) closure through the damper actuator. The EFL and PFL allow the damper to automatically reopen after a test, smoke detection or power failure condition.
- EFL is standard on dampers with electric actuators.
- PFL is standard on dampers with pneumatic actuators.
- EFL's may be ordered on dampers with pneumatic actuators but require an additional EP switch.

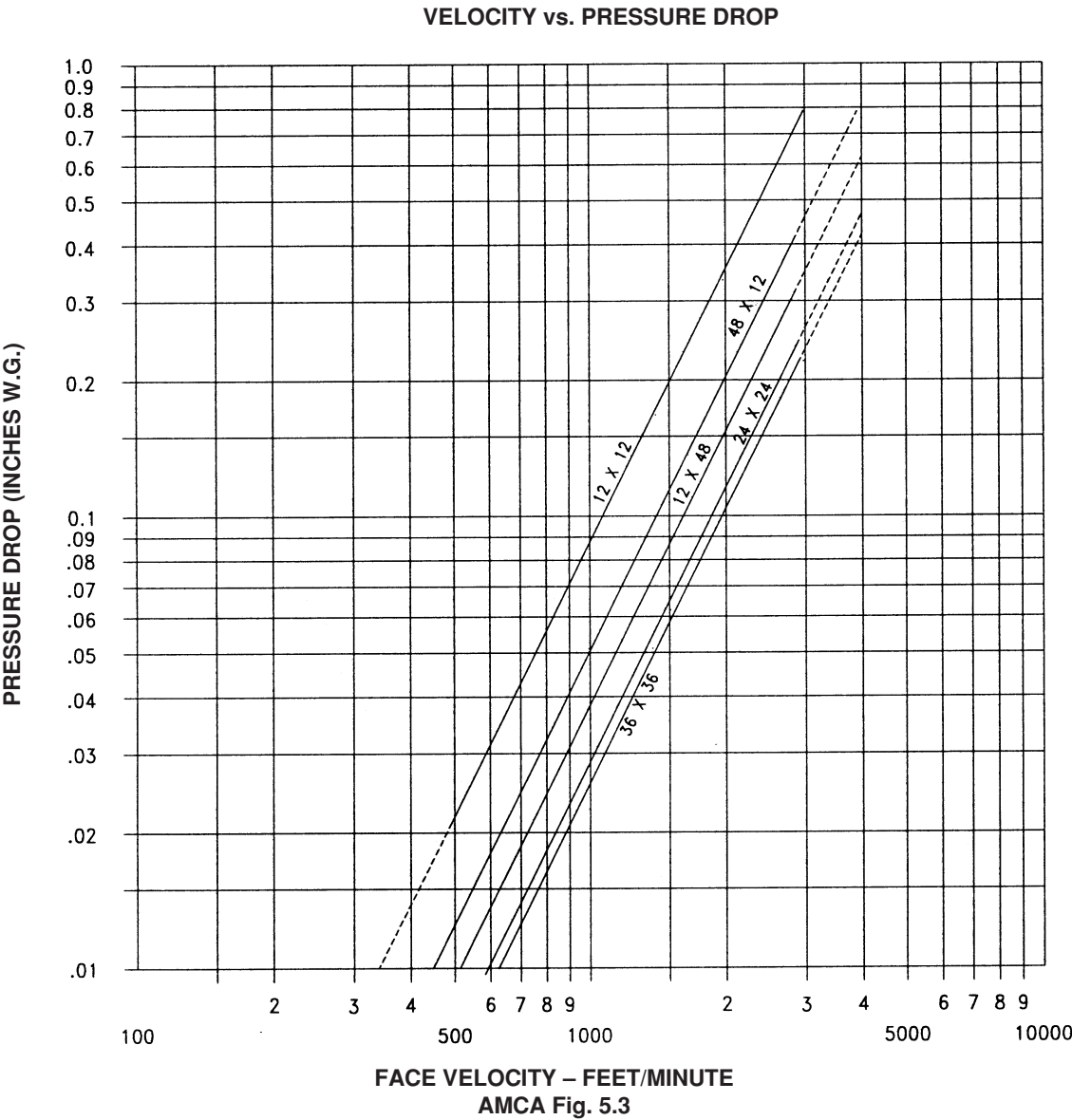


AMCA LICENSED AIR PERFORMANCE DATA

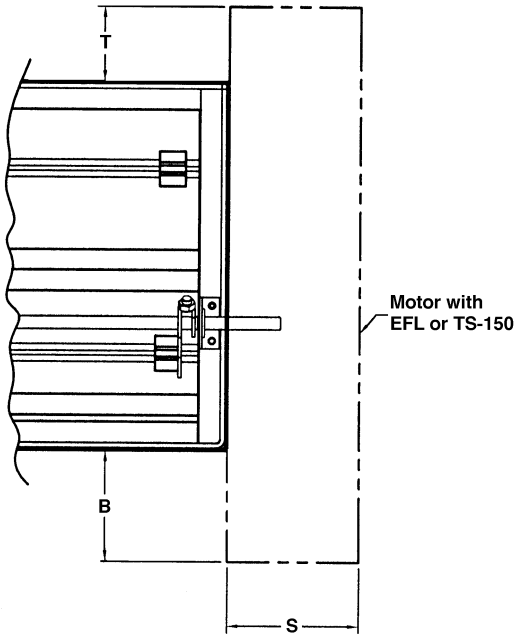


Ruskin Company certifies that the FSD60-3M shown hereon is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance for the FSD60-3M.

To determine the AMCA Licensed air performance:
Locate the applicable feet per minute face velocity on the bottom of the velocity vs. pressure drop chart below. Move up the chart to the most appropriate size damper line. From the intersection point, move left to determine the pressure drop on the left side of the chart.
For other damper sizes refer to **Air Performance Data For All Fire and Smoke Dampers** spec sheet.



SPACE ENVELOPE



Externally mounted actuators require space outside the damper sleeve. The "S" dimension is the "side" clearance, the "T" dimension is the "top" clearance and the "B" dimension is the "bottom" clearance required for the various actuators approved for use with Ruskin fire/smoke dampers. Actuators and accessories are factory mounted on the right side when viewed from the actuator side of the wall or floor. Ruskin fire/smoke dampers can be rotated or turned over to accommodate the application.

ACTUATORS	H (Damper Height)	S	T	B
M9182A	21" (533)	11" (279)	0" (0)	N/A

NOTES:

1. The "H" dimension represents the required height to encompass the actuator and accessories with nothing protruding above or below the damper.
2. The "B" (bottom) dimension does **Not Apply** to the "H" size shown. The M9182A will hang up to 3" (76) below the damper on sizes less than 21" (533) high.

DAMPER SLEEVE DIMENSIONAL DATA

The drawing and corresponding table show the position of the damper when mounted in a factory sleeve. 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 minimum factory sleeve length is 17" (432). Consult Ruskin for shorter sleeve lengths.

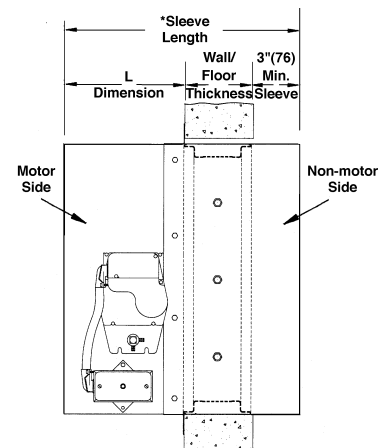
The standard location of a damper mounted in a factory sleeve ("L" dimension) is shown at right.

NOTE:

The entire damper frame is not required to be installed within the wall. The damper blades, when closed should be contained within the wall.

*Minimum Sleeve Length Formula:

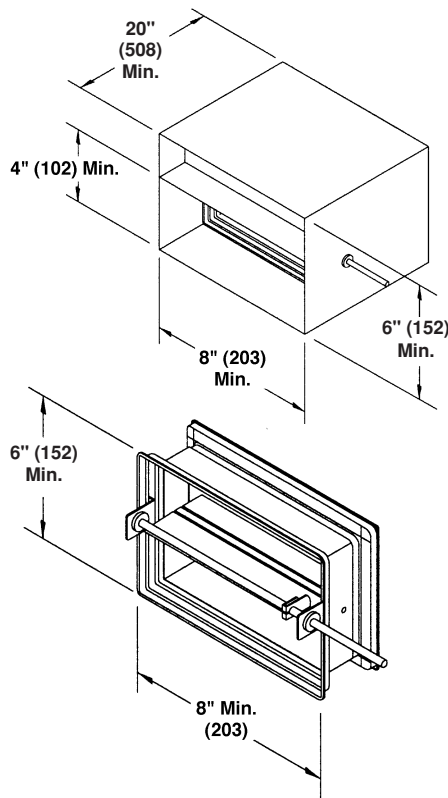
Sleeve Length = "L" dimension + wall/floor thickness + 3" sleeve non-motor side



Note: See basic UL Installation Instructions for complete installation requirements.

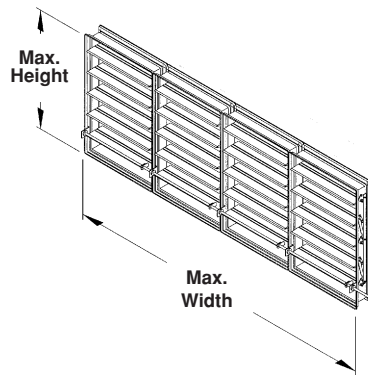
	All dampers with EFL or PFL		All dampers with TS150 or SP100			
			M9182A		331-2961P	
	Over 10" (254) High	10" (254) High and Under	Over 21" (533) High (see note)	21" (533) High and Under (see note)	Over 32" (813) High	32" (813) High & Under
"L"	7 ¹ / ₈ " (181)	10 ⁵ / ₈ " (270)	7 ¹ / ₈ " (181)	10 ⁵ / ₈ " (270)	7 ¹ / ₈ " (181)	10 ⁵ / ₈ " (270)

DIMENSIONAL INFORMATION



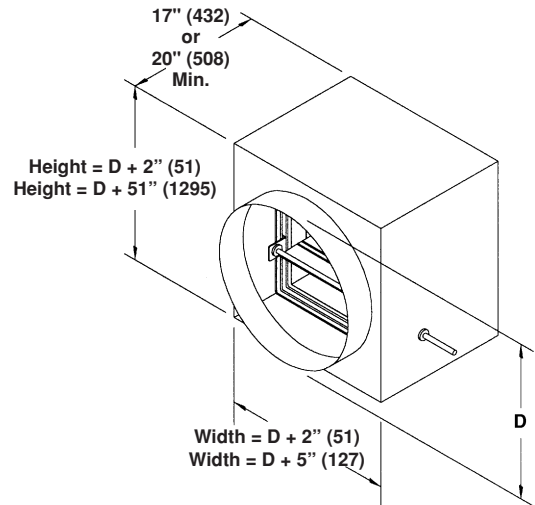
MINIMUM SIZES

Nominal – 8" w x 6" h (203 x 152).
Actual – 7³/₄" w x 5³/₄" h (197 x 146).
Dampers with heights (B dimension) less than 6" (152) require Style B transitions and a sleeve. The damper itself remains 6" (152) high.



MAXIMUM UL CLASSIFIED SIZE

Single Section:
32" w x 48" h (813 x 1219)
Multiple Section Assembly
Vertical Installation –
120" w x 48" h (3048 x 1219)
Horizontal Installation
120" w x 48" h (3048 x 1219)
For dampers exceeding these dimensions consult Ruskin.



ROUND, OVAL OR RECTANGULAR DUCT TRANSITION CONNECTION

FSD60 dampers supplied with round connections (R for low pressure, CR for medium pressure or WR welded for high pressure) are:
Minimum 4" (102) in diameter
Maximum 46" (1168) in diameter

The square size of the damper will be 2" (51) larger than the diameter dimension ordered.

FSD60 dampers supplied with rectangular or oval connections (C, CO, LO for low to medium pressure or WC, WO welded for high pressure) are:

Minimum 6" w x 4" h (152 x 102)
Maximum 118" x 46" h (2997 x 1168)

The square size of the damper will be 2" (51) larger than the width and height of the damper A x B dimensions.

SPECIFICATION

Combination fire smoke dampers meeting or exceeding the following specifications shall be furnished and installed at locations shown on plans or as described in schedules. Dampers shall meet the requirements of NFPA90A, 92A and 92B. Dampers shall have a fire rating of 3 hours in accordance with the latest edition of UL555 and shall be classified as Leakage Class I Smoke Dampers in accordance with the latest version of UL555S. Dampers shall be warranted to be free from defects in material and workmanship for a period of 5 years after date of shipment.

Each fire smoke damper shall be AMCA licensed and shall bear the AMCA Certified Ratings Seal for air performance. AMCA certified testing shall verify pressure drop does not exceed .03" w.g. at a face velocity of 1,000 fpm on a 24" x 24" damper.

In addition the dampers and their actuators shall have a UL555S elevated temperature rating of 250°F (121°C). Appropriate modulating electric or pneumatic actuators shall be installed by the damper manufacturer at time of damper fabrication.

Each fire smoke damper shall be equipped with a "controlled closure" quick detect heat-actuated release device to prevent duct and HVAC component damage. Instantaneous damper closure through the use of fusible links is unacceptable.

Damper frame (when size permits) shall be constructed using the UniFrame Design Concept (UDC) and shall be a roll-formed structural hat channel, reinforced at the corners, formed from a single piece of minimum 16 gage (1.6) galvanized steel. Damper blades shall be airfoil shaped with 13 gage (2.3) equivalent thickness formed from a single piece of galvanized steel. Bearings shall be stainless steel turning in an extruded hole in the frame. Blade edge seals shall be silicone rubber and galvanized steel mechanically locked in to the blade edge (adhesive type seals are not acceptable). Each damper shall be supplied with a factory mounted sleeve of 17" (432) minimum length. Dampers shall be Ruskin model FSD60-3M.

(Consult Ruskin for detailed CSI *MasterFormat* Specification).

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