

FSD36SS STAINLESS STEEL COMBINATION FIRE AND SMOKE DAMPER 1½ HOUR UL555 RATED, UL555S LEAKAGE CLASS 2 FOR USE IN DYNAMIC AND STATIC SYSTEMS

APPLICATION

The FSD36SS stainless steel combination fire and smoke dampers is used in corrosive applications where normal galvanized steel dampers may not be suitable. It is designed with triple V-groove blades and controlled closure technology that provides point-of-origin fire containment and operational flexibility in static and dynamic smoke management systems. The FSD36SS is designed to be installed vertically in walls or horizontally in floors in HVAC systems with velocities to 2,000 fpm and pressures to 4" w.g.

STANDARD CONSTRUCTION

FRAME

5" x 16 ga. (127 x 1.6) 304 or 316 stainless steel, hat-shaped channel.

BLADES

6" (152) wide, 16 (1.6) ga. 304 or 316 stainless steel. Triple V-groove shaped approximately 6" (152) on center.

BEARINGS

300 Series stainless steel sleeve pressed into frame.

JAMB SEALS

300 Series stainless steel, flexible metal compression type.

BLADE SEALS

Silicone edge type for smoke seal to 450°F (232°C) and 300 Series stainless steel for flame seal to 1900°F (1038°C).

LINKAGE

300 Series stainless steel concealed in frame.

AXLES

½" (13) 300 Series stainless steel hex.

CONTROLLED CLOSURE DEVICE

(HEAT-ACTUATED)

165°F (74°C) standard. 212°F (100°C) or 250°F (121°C).

DAMPER SIZES

MINIMUM SIZE VERTICAL OR HORIZONTAL

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

MAXIMUM SIZE VERTICAL OR HORIZONTAL

90"w x 48"h (2286 x 1219)

OPTIONS

- **SP100 Switch Package** to remotely indicate damper blade position.
- **TS150 Firestat** for reopenable operation in dynamic smoke management systems.
- **DTS Damper Test Switch** and "Momentary" push button test switch for cycle testing the damper assembly.
- **DSDF/DSDN Duct Smoke Detector** (Flow rated or No-Flow).
- **FM Approvals** as Specification Tested Product.
- **Factory Sleeves** of various lengths and gages to insure field compliance with UL installation requirements.
- **MCP** control panels for test purposes or smoke management systems.

Notes:

1. Dampers furnished approximately ¼" (6) smaller than given opening dimensions.
2. Dimensions shown in parentheses () indicate millimeters.

The FSD36SS meets the requirements for fire, smoke and combination fire/smoke dampers established by:

- **National Fire Protection Association NFPA** Standards 90A, 92A, 92B and 101.
- **ICC International Building Codes**
- **CSFM California State Fire Marshal** Fire Damper Listing (#3225-245:005 and Smoke Damper Listing (#3230-245:109)
- **New York City** (BSA Listing #176-82-SM)

UL CLASSIFIED

UL555 Listing R5531, UL555S Listing R5531



SEE COMPLETE
MARKING
ON PRODUCT

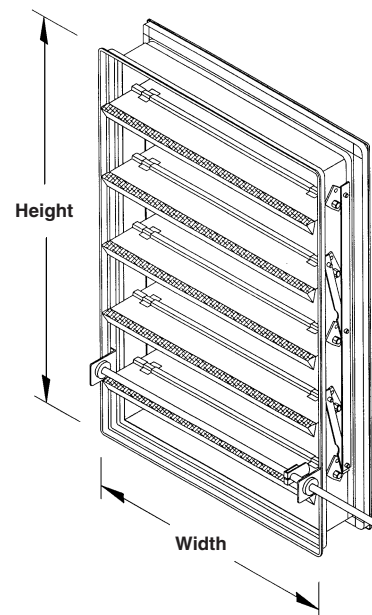
FM Approvals

Specification Tested Product
(Option)

FEATURES

The FSD36SS offers:

- **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 LEAKAGE AND AIR PERFORMANCE DATA



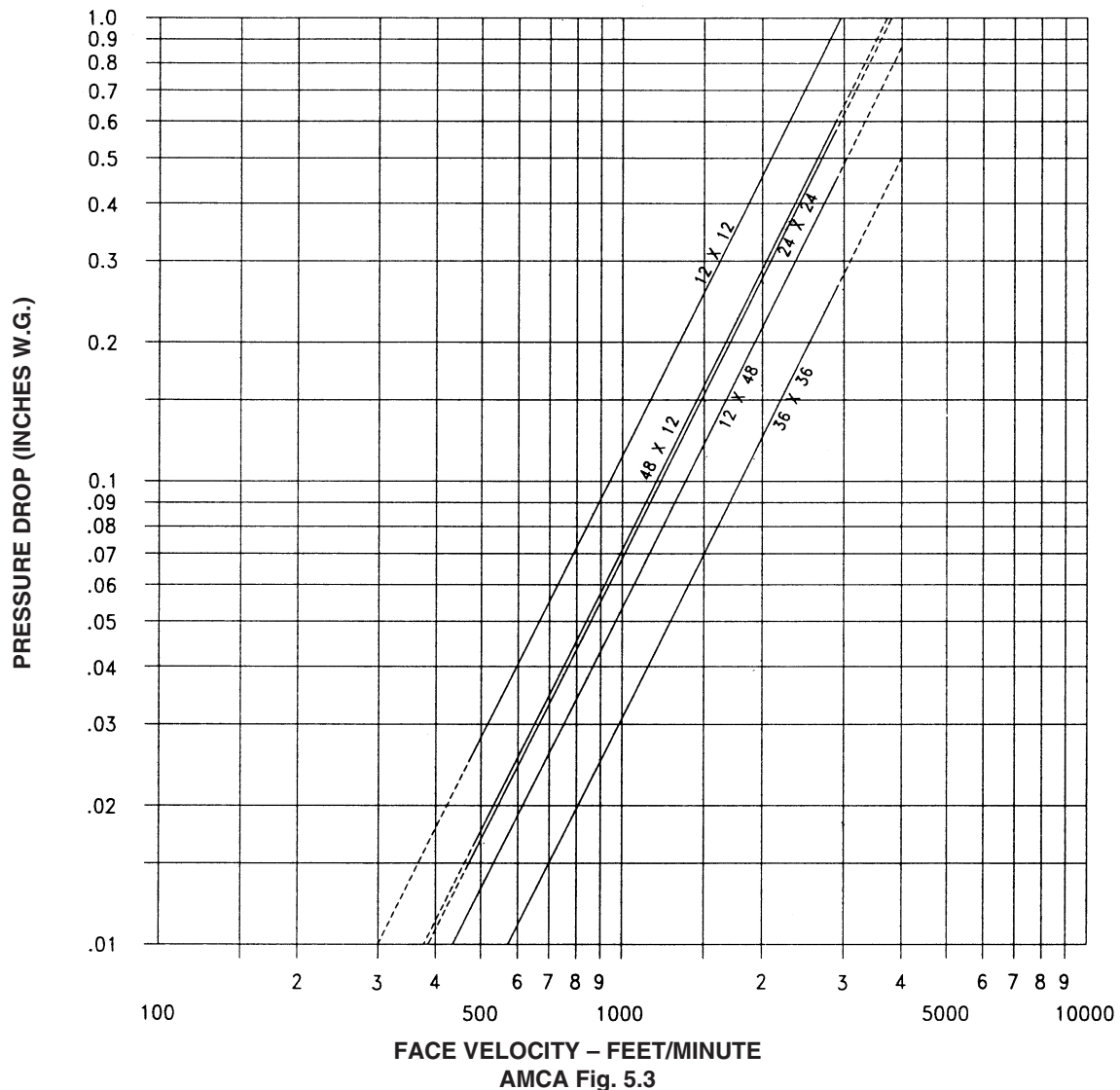
Ruskin Company certifies that the FSD36SS shown hereon is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance for the FSD36SS.

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.

VELOCITY vs. PRESSURE DROP

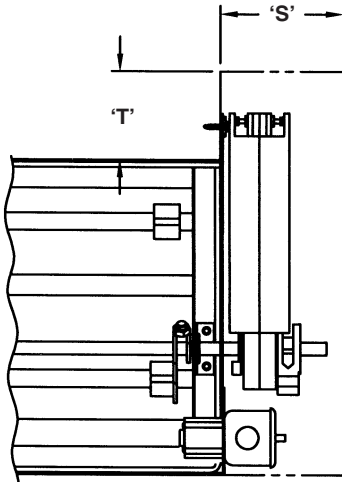


ACTUATOR and ACCESSORIES SPACE ENVELOPE

Ruskin's standard combination fire/smoke damper is external mount actuators and accessories. Ruskin's standard for combination fire/smoke dampers is external mount actuators and accessories. Also available is internal mount or a combination of external and internal mounted actuator and accessories.

Externally mounted actuators require space outside the damper sleeve. The "S" dimension is the "side" clearance, the "T" dimension is the "top" clearance required for the various actuators

approved for use with Ruskin fire/smoke dampers. Actuators and accessories are factory mounted. Ruskin's standard mount is on the right side of the damper as viewed from the jackshaft face of the damper. (NOTE: damper assemblies larger than single section may require actuators to be mounted on both the right hand and left hand sides). Ruskin fire/smoke dampers can be rotated 180° or turned over to accommodate the application as long as the blades are in the horizontal position.



ACTUATORS	S	T
ML, FSLF, H2000 MS4209	4" (102)	0" (0)
FSNF, FSAF, MS4120	5" (127)	5" (127)
331-4827	5" (127)	5" (127)
331-2961	8" (203)	8" (203)
331-3060	9" (229)	11" (279)

NOTES:

- The dimensions shown in the chart above are for dampers 14" (356) tall.
- Dampers shorter than 14" (356) tall, increase the "T" dimension by 1" (25) for every 1" (25) the damper is less than 14" (356).
- Dampers taller than 14" (356) high reduce the "T" dimension by 1" (25) for every 1" (25) the damper height is greater than 14" (356).

Example:

- 12" (305) tall damper with a FSLF actuator, "T" = 2" (52) and "S" = 4" (102).
- 18" (457) tall damper with a FSNF actuator, "T" = 1" (25) and "S" = 5" (127).

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.

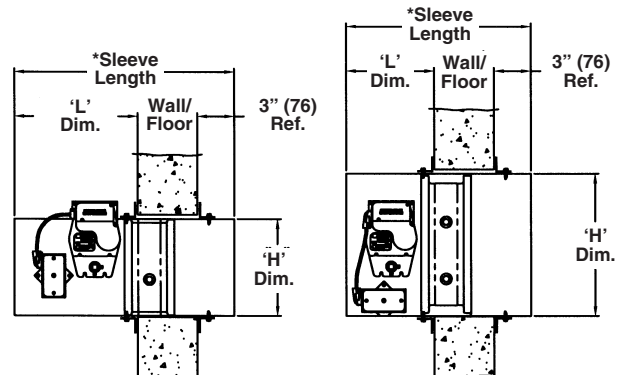
The standard location of a damper mounted in a factory sleeve ("L" dimension) is shown at right.

*Minimum Sleeve Length Formula:

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

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.
- See basic UL installation instructions for complete installation requirements.



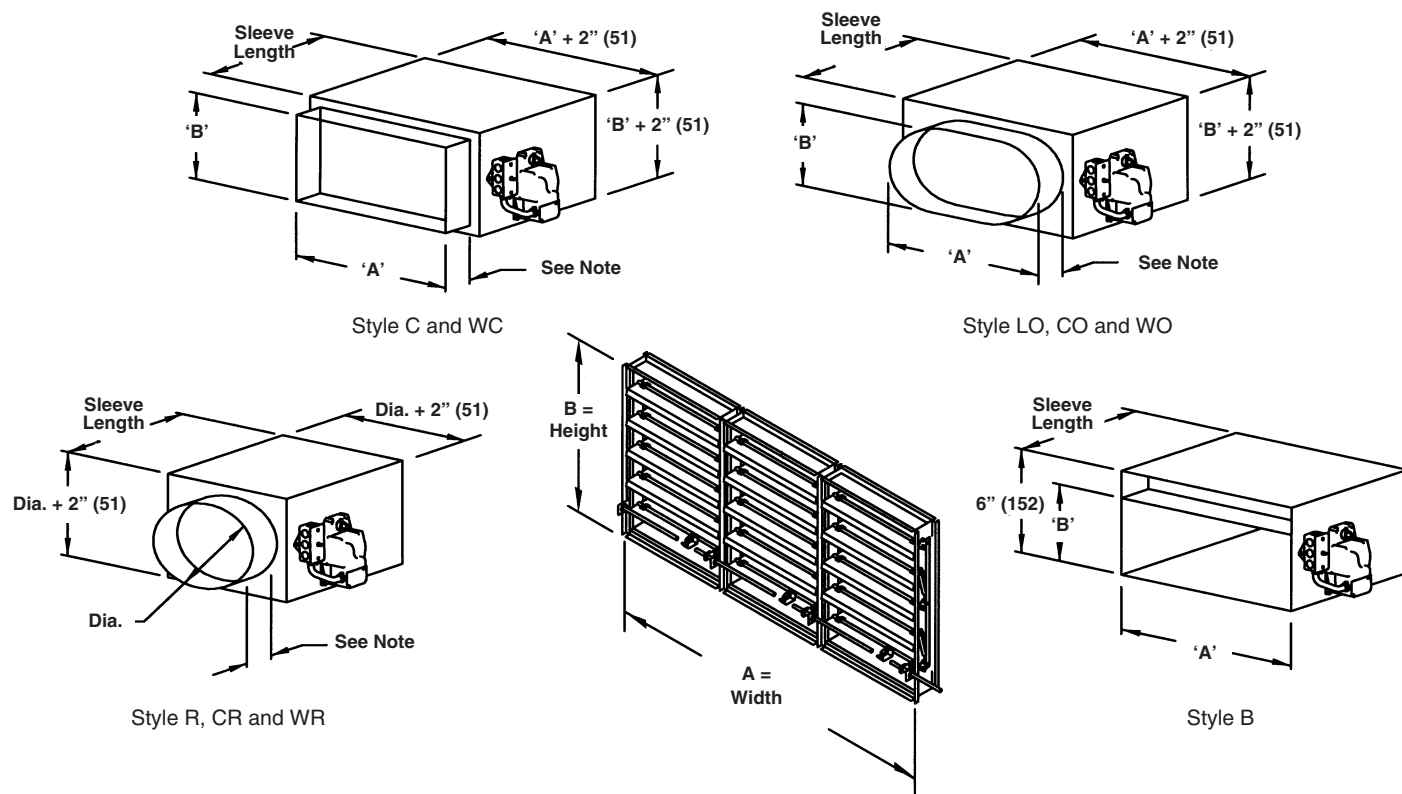
'H' High and Under

Over 'H' High

Actuator Side	All dampers with EFL or PFL		All dampers with TS150, SP100 or DTS							
			Electric Actuators		Pneumatic Actuators					
	'H' Over 10" (254) High	'H' 10" (254) High and Under	'H' Over 21" (533) High (see note)	'H' 21" (533) High and Under (see note)	331-4827(P)		331-2961(P)		331-3060(P)	
					'H' Over 28" (711) High	'H' 28" (711) High & Under	'H' Over 32" (813) High	'H' 32" (813) High & Under	'H' Over 40" (1016) High	'H' 40" (1016) 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)	7 1/8" (181)	10 5/8" (270)	7 1/8" (181)	10 5/8" (270)

Note: The 21" (533) dimension becomes 32" (813) when the MS4120, MS8120, GGD221 or FSNF and FSAF Series are utilized.

DIMENSIONAL INFORMATION



DUCT TRANSITION CONNECTIONS

FSD36SS dampers may be supplied with Round, Oval and Rectangular duct connections.

Style	Description
B	Units Under 6" Tall
R	Round Non-Sealed (Low Pressure)
CR	Round Sealed (Medium Pressure)
WR	Round Welded (High Pressure)
C	Rectangular Sealed (Low and Medium Pressure)
WC	Rectangular Welded (High Pressure)
LO	Oval Non-Sealed (Low Pressure)
CO	Oval Sealed (Medium Pressure)
WO	Oval Welded (High Pressure)

The square damper size will be 2" (51) larger in width and height than the round, oval or rectangular duct size ordered.

MINIMUM and MAXIMUM SIZES

Round Transitions

Minimum 6" (152) diameter
Maximum 46" (1168) diameter

Rectangular and Oval Transitions

Minimum 6"w x 4"h (152 x 102)
Maximum 88"w x 46"h (2235 x 1168) in diameter

'B' Style Transitions

Minimum height 4" (102) 'B' style transitions are utilized on units where the damper height is less than 6" (152).

Consult Ruskin for other available styles and sizes.

Note: For medium pressure units (Styles CR, C and CO) the collar extends 1 1/2" (38) beyond the sleeve length and for low pressure and high pressure units (Styles R, WR, WC and LO) the collar extends 2 1/2" (64) beyond the sleeve length.

SPECIFICATION

Stainless steel 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 1 1/2 hours in accordance with the latest edition of UL555 and shall be classified as Leakage Class 2 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.

In addition the dampers and their actuators shall have a UL555S elevated temperature rating of 250°F (121°C). Appropriate electric or pneumatic actuators shall be installed by the damper manufacturer at time of damper fabrication. Electric actuators shall have been energized hold open tested for a period of at least 1 year with no spring return failures.

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 shall be minimum 16 gage (1.0) 304 stainless steel formed in to a structural hat channel, reinforced at the corners. Damper blades shall be single skin 16 gage (1.0) 304 stainless steel reinforced with minimum three longitudinal grooves. Bearings shall be stainless steel turning in an extruded hole in the frame. Blade edge seals shall be silicone rubber and stainless 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 FSD36SS.

(Consult Ruskin for detailed CSI MasterFormat Specification).

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