

## FSD60-C CORRIDOR DAMPER CLASSIFIED UL555 1 HOUR UL555S CLASS 1

### APPLICATION

The FSD60-C is two dampers in one. It is a one hour fire rated, UL labeled Corridor Damper and a 1<sup>1</sup>/<sub>2</sub> hour fire rated, Leakage Class 1, UL labeled Combination Fire Smoke Damper. As a Corridor Damper it is designed to be used in openings in the ceilings of wood stud or metal stud constructed interior tunnel corridors. As a Combination Fire Smoke Damper it is designed to be used anywhere a vertical or horizontal, Leakage Class 1 fire smoke damper is needed. The FSD60-C is also rated for airflow in either direction 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 steel channel.

#### SLEEVES

18<sup>1</sup>/<sub>2</sub>" x 20 gage (470 x 1.0) galvanized steel.

#### 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 (1083°C).

#### LINKAGE

Concealed in frame.

#### AXLES

1/2" (13) plated steel hex.

#### CONTROLLED CLOSURE DEVICE (HEAT-ACTUATED)

EFL (Electric Fuse Link) 165°F (74°C) is standard. 212°F (100°C), 250°F (121°C) or 350°F (177°C) are options.

PFL (Pneumatic Fuse Link) 165°F (74°C) is standard. 212°F (100°C) or 285°F (141) are options.

#### UL555S Elevated Temperature Rating

250°F (121°C) or 350°F (177°C) depending on actuator.

### DAMPER SIZES

#### MINIMUM SIZE

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

#### MAXIMUM SIZE

Single Section – 24"w x 24"h (610 x 610)

### OPTIONS

- **FM Approvals** as Specification Tested Product.
- **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.
- **Sleeve** in lengths other than 18<sup>1</sup>/<sub>2</sub>" and gages to insure field compliance with UL installation requirements.
- **MCP** control panels for test purposes or smoke management systems.

### NOTES

1. Dampers are furnished actual size to the inside of the sleeve.
2. D imensions shown in parentheses ( ) indicate millimeters.

The FSD60-C meets the requirements for fire, smoke and combination fire/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)



SEE COMPLETE  
MARKING  
ON PRODUCT

**FM Approvals**  
Specification Tested Product  
(Option)

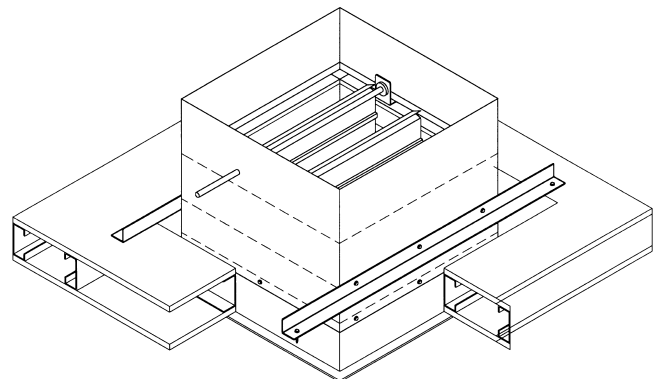
### UL CLASSIFIED

UL555 Listing R5531, UL555S Listing R5531

### FEATURES

The FSD60-C series 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 conditions.
- 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 (consult factory).



# AMCA LICENSED AIR PERFORMANCE DATA



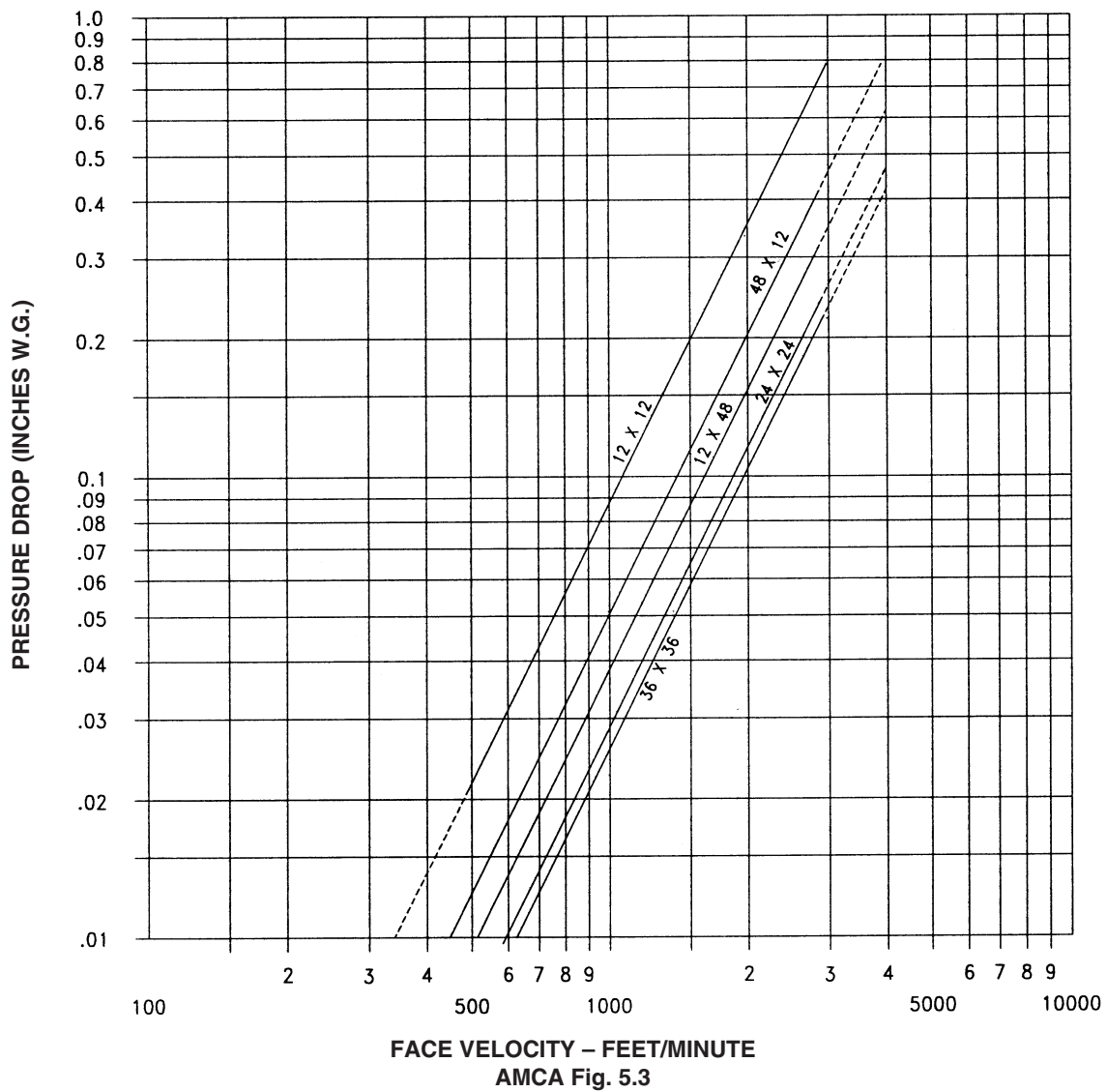
Ruskin Company certifies that the FSD60-C shown hereon is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies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

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**



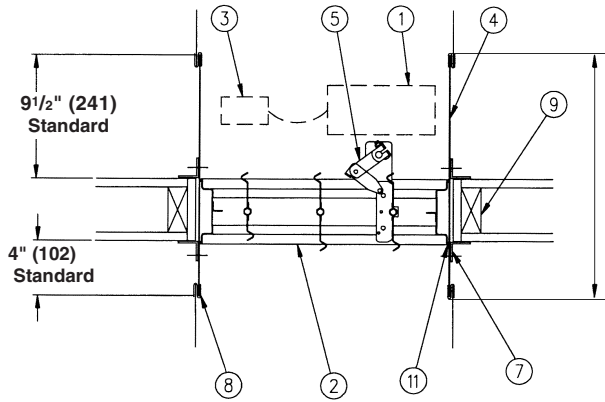
# FSD60-C APPLICATIONS

The illustrations below depict the different installation configurations for the FSD60-C.

## C1 WOOD OR METAL STUD DUCTED THROUGH PENETRATION

This illustration depicts the **C1** application in which the FSD60-C is installed in a ducted fire rated ceiling above the finished ceiling. Actuators can be mounted internally or externally above or below the rated ceiling.

**\*If space is a problem the 9 1/2" (241) dimension can be reduced to 6 3/4" (171) by relocating the EFL, PFL, TS150 or SP100 (consult Ruskin).**

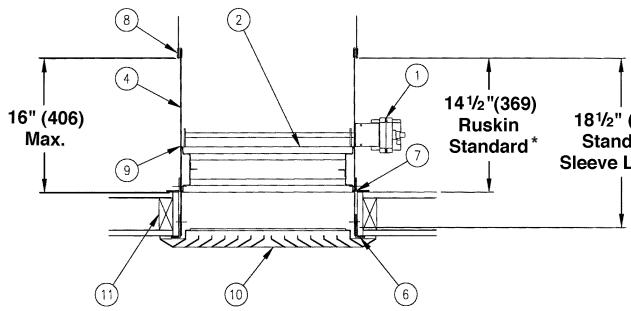


ITEM	DESCRIPTION
1.	Actuator (location may vary)
2.	Damper Frame
3.	TS150 FireStat, EFL or PFL (location may vary)
4.	Sleeve (20 gage standard)
5.	Over Center Link
6.	Mounting Angles 1 x 2 1/2 x 16 gage
7.	Mounting angles 1 1/2 x 1 1/2 x 20 gage
8.	Sleeve to Duct Break-away Connections
9.	Single Stud Construction
10.	Steel grille/diffuser (by others)
11.	Caulking Material (meets 25/50 flame spread/smoke developed criteria)

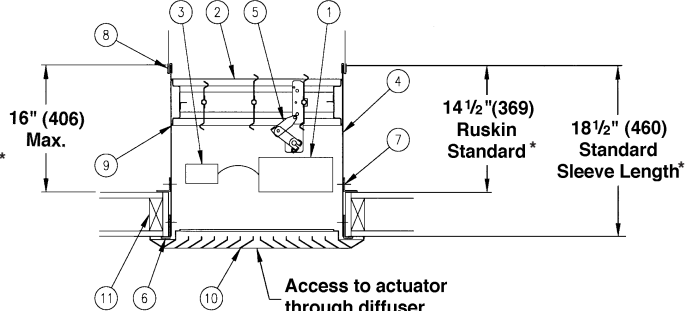
## C2 WOOD OR METAL STUD WITH V-FRAME DIFFUSER

This illustration depicts the **C2** application in which the FSD60-C is applied with a V-Frame diffuser and the fire rated ceiling is the finished ceiling. Access to the actuator is available from the finished ceiling (**external mount**) or through the diffuser (**internal mount**). See actuator limitations on back page. Ruskin will configure the assembly based on internal or external mount actuator.

**\*If space is a problem the 14 1/2" (368) dimension and sleeve length can be shortened (consult Ruskin).**



EXTERNAL MOUNT ACTUATOR

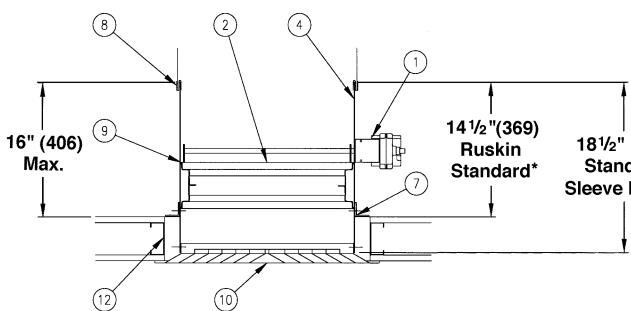


INTERNAL MOUNT ACTUATOR

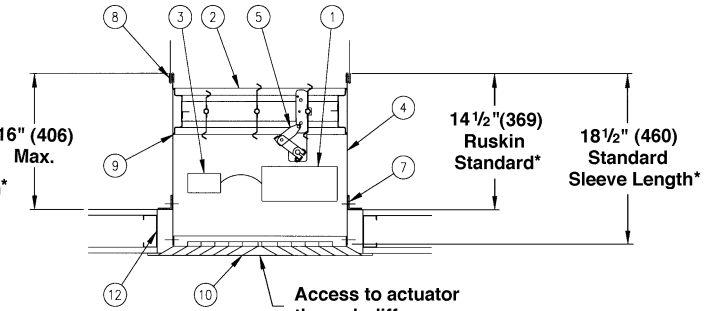
## C3 METAL STUD WITH FLAT FRAME DIFFUSER

This illustration depicts the **C3** application in which the FSD60-C is applied with a Flat-Frame diffuser and the fire rated ceiling (**metal stud only**) is the finished ceiling. Access to the actuator is available from above the finished ceiling (**external mount**) or through the diffuser (**internal mount**). Ruskin will configure the assembly based on internal or external mount actuator.

**\*If space is a problem the 14 1/2" (608) dimension and sleeve length can be shortened (consult Ruskin).**



EXTERNAL MOUNT ACTUATOR



INTERNAL MOUNT ACTUATOR

## REQUIRED MOUNTING ANGLES

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### For C1 installations

PFMA or Retaining angles (shipped loose)

### For C2 installations

4 ea special 1" x 2 1/2" x 16 gage (25 x 64 x 1.6) angle  
1 ea FAST

### For C3 installations

2 ea 1" x 1 1/2" x 30" (25 x 38 x 762) minimum 16 (1.6) gage retaining angle

## SUGGESTED SPECIFICATION

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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 be classified for use for installation in tunnel corridor ceilings and shall be classified as Leakage Class 1 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) or 350°F (177°C) depending upon the actuator. 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 a structural hat channel and shall be low profile, high performance type for lowest possible pressure drop. 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 18 1/2" (470) minimum length. Dampers shall be Ruskin model FSD60-C.

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

**RUSKIN**<sup>®</sup>

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