

Combination Fire/Smoke Damper ▲ 1½ Hour Rated ▲ Single Thickness Blades ▲ Leakage Class I ▲ 250°F or 350°F Rated ▲ Front Access Grille ▲ Galvanized Steel

STANDARD MATERIALS AND CONSTRUCTION

- FRAME:** 5½" x 7⁄8" x 16 GA. galvanized steel hat channel.
- BLADES:** 16 GA. galvanized steel single thickness, parallel action.
- AXLES:** Square plated solid steel stub.
- BEARINGS:** Oil impregnated bronze.
- LINKAGE:** Plated steel angle and crank plates with stainless steel pivots, in-jamb type.
- STOPS:** 20 GA. galvanized steel angles at head and sill.
- BLADE SEALS:** Silicone.
- JAMB SEALS:** Stainless steel.
- SLEEVE:** 20-GA galvanized steel by 15" long (1½" grille clearance) or 17" long (3½" grill clearance) with 1³⁄₁₆" front flange
- CAULKING:** Hardcast ironrip 601 or UL-listed equivalent.
- ACTUATOR:** Electric with heat response device (EHRD) or pneumatic with heat response device (PHRD). Factory-installed for Power-Open/Spring-Close (fail close) operation. External left hand mounted as viewed from jackshaft side of damper.
- FINISH:** Mill.

OPTIONS

- Integral dual position indication (IDPI) switches
- Sensotherm re-openable heat response device (ESOT) for electric actuator
- Sensotherm re-openable heat response device (ESOP) for pneumatic actuator
- Model SM-501 flow-rated smoke detector
 - Shipped loose
- Model 2D51 no-flow smoke detector (14" minimum damper height)
- Tab-lock retaining angles
- Stainless steel bearings
- Copper tubing (for pneumatic actuators)
- Sleeves of various gauge thicknesses
- Round or oval transitions
- Short-width (< 16") and/or Short-height (< 8") Transitions

NOTES

1. Damper frames are provided approximately ¼" undersized. The addition of a sleeve and insulation will increase the size of the assembly. See II-FAGM for sizing openings.
2. Dampers smaller than minimum frame size require a transition. Refer to SD-TRFS. When transitioned on one-side only (which will be a damper supplied with a transition on the non-jackshafted side only), the grille size should be selected to match the damper frame size, not the transition collar size.
3. Damper with smoke detector must have a minimum sleeve of 16" (1½" setback) or 18" (3" setback).
4. Dampers for horizontal installation can only be mounted in a fire barrier constructed of masonry/concrete materials.

DAMPER SIZES

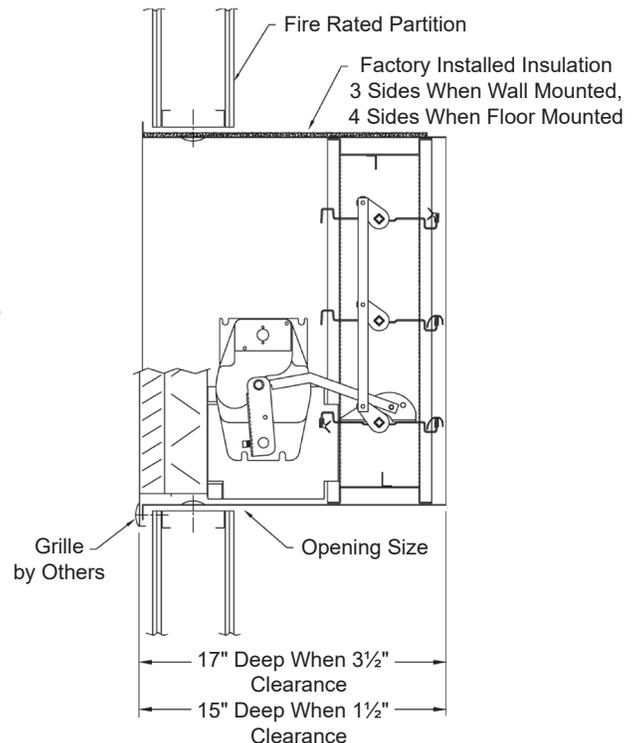
Orientation	2000 fpm, 4 in.wg		
	Hor & Vert	Horizontal	Vertical
Panel	Min Panel	Max Panel	Max Panel
Rectangular	10"W x 10"H (16"W x 10"H frame)	36"W x 42"H	36"W x 42"H
Round	8" dia. (16"W x 10"H frame)	34" dia.	34" dia.
Oval	8"W x 8"H (16"W x 10"H frame)	34"W x 40"H	34"W x 40"H

UNDERWRITERS LABORATORIES INC.®
 CLASSIFIED DYNAMIC FIRE AND SMOKE DAMPER
 FIRE RESISTANCE RATING 1½ HR
 LEAKAGE RESISTANCE CLASS I

FILE # R4708

This combination fire/smoke damper meets the construction and performance requirements of:

- Underwriters Laboratories Inc. Standards 555 and 555S
- National Fire Protection Association Standards 80, 90A, 92, 101, 105
- ICC's International Building Code
- New York City MEA Listing #111-99-M
- California State Fire Marshal Listing #3225-1328:119
- Underwriters Laboratories Inc. Approved for dual direction airflow and dynamic conditions.
- Underwriters Laboratories Inc. Classified for use in fire resistive ratings of less than 3 hours.
- Underwriters Laboratories Inc. Classified for use in smoke control systems for Leakage Class I and 250°F or 350°F.
- Actuators must be arranged to operate automatically, must fail closed upon loss of power, and must be controlled by a smoke detection system.



Combination Fire/Smoke Damper ▲ 1½ Hour Rated ▲ Single Thickness Blades ▲ Leakage Class I ▲ 250°F or 350°F Rated ▲ Front Access Grille ▲ Galvanized Steel

OPERATIONAL RATINGS

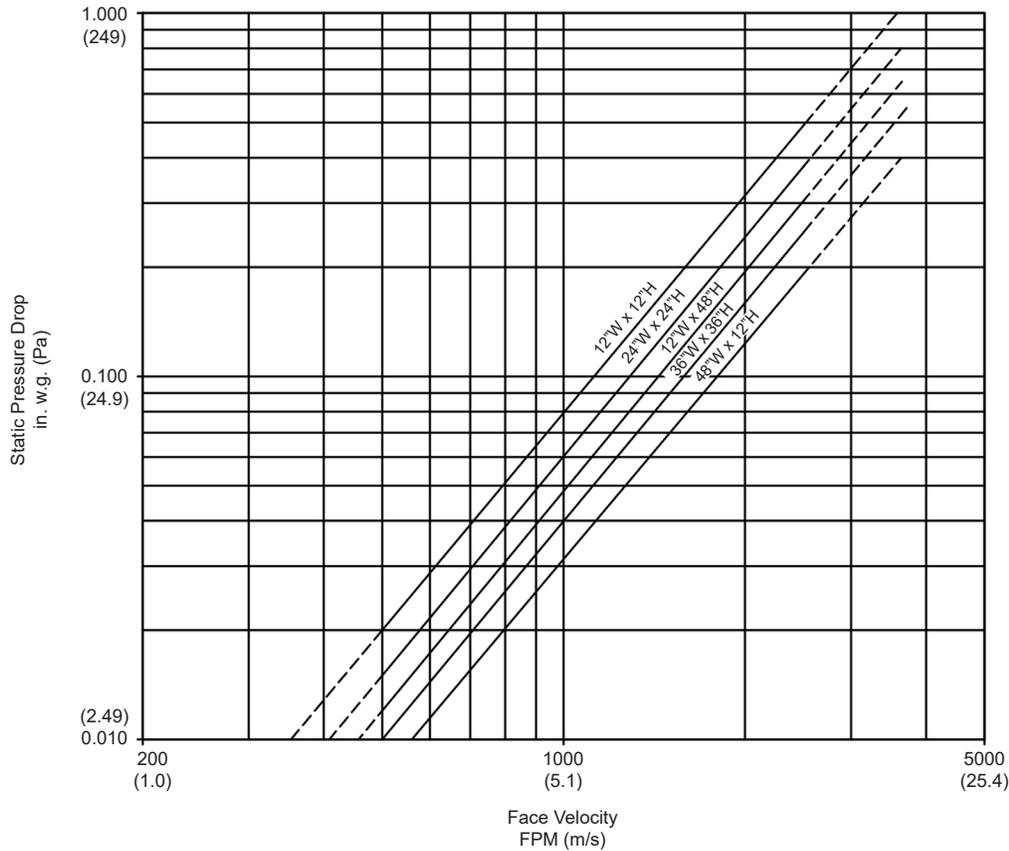
Maximum Differential Pressure: 4 in. w.g.
Maximum Face Velocity: 2000 fpm

LEAKAGE RATINGS

UL Leakage Class I
4 cfm per sq.ft. maximum @ 1 in.wg
8 cfm per sq.ft. maximum @ 4 in.wg

PRESSURE DROP RATINGS

The pressure drop data shown below is based on laboratory conditions. The test setup does not take into account elbows or other duct fittings that are part of every actual duct system. The configuration of the actual duct system immediately upstream and downstream of the damper often contributes more pressure loss than the damper itself.



This product was tested in accordance with AMCA Standard 511, Figure 5.3.

Intake air converted to standard air density.

Sizes listed on this chart exceed the size limitations of the FS1GF. These sizes are based on the model FS1 approval.

									
Item #	Qty	Damper Size	Horizontal	Vertical	250°F	350°F	Velocity	Pressure	
Arch. / Eng.:			Orientation		Temp. Rating		Operational Rating		Union Made
Contractor:				EDR:		ECN:		Job:	
Project:				Date:		DWN:		DWG:	