

Leakage Class II • 1½ Hour • Airfoil Blade • 250°F or 350°F • Galvanized Steel Airfoil Blade Fire/Smoke Damper

**STANDARD MATERIALS AND CONSTRUCTION**

- FRAME:** 5½" x 7⁄8" x 16-GA galvanized steel hat channel; A flat head and sill are used for sizes thru 13" high
- BLADES:** 20-GA galvanized steel double skinned (equal to 14-GA); Parallel action
- AXLES:** Plated solid steel stub
- BEARINGS:** Oil impregnated bronze
- LINKAGE:** Plated steel angle and crank plates with stainless steel pivots; In-jamb type
- STOPS:** 18-GA galvanized steel at head and sill
- BLADE SEALS:** Silicone
- JAMB SEALS:** Stainless steel
- SLEEVE:** Minimum 20-GA galvanized steel by 18" long (sizes greater than 84" wide or 84" high require minimum 18-GA)
- CAULKING:** Hardcast Irongrip 601 or UL-listed equivalent
- FINISH:** Mill on galvanized steel
- 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

**OPTIONS**

Exact Size (No Undercut)  
 Sleeve - Transitions  
 Actuators - 120V, 24V, 230V or Pneumatic  
 Right Hand and/or Internal Actuator Mounting Locations (Restrictions Apply)  
 Dual Position Indication (IDPI) Switches  
 Sensotherm Re-Openable Heat Response Device (ESOT) for Electric Actuator  
 Sensotherm Re-Openable Heat Response Device (PSOT) for Pneumatic Actuator  
 Model SM-501 Flow-Rated Smoke Detector  
 Model 2151 No-Flow Smoke Detector (12" Minimum Damper Height)  
 Momentary Test Switch  
 Remote Test Box  
 Transformers  
 Tab-Lock Retaining Angles  
 Stainless Steel Bearings  
 Stainless Steel Axle  
 Security Bars  
 Copper Tubing (for Pneumatic Actuators)  
 Sleeves Of Various Depth And Gauge Thickness (restriction apply)  
 No Sleeve (restrictions apply)  
 Round or Oval Transitions.  
 Short-Width (<8") and/or Short-Height (<6") Transitions

**NOTES**

- Damper frames are provided approximately ¼" undersized. The addition of a sleeve will increase the size of the assembly.
- Damper >= 12" in height with factory mounted SM-501 smoke detectors require a minimum 19" deep sleeve (10.5" on the actuator side); detectors will be mounted on the side of the damper opposite actuator.
- Damper < 12" in height with factory mounted SM-501 smoke detectors require a minimum 20" deep sleeve (11.5" on the actuator side); detectors will be mounted on the bottom or top of damper.
- Smoke Detectors can be ordered for field mounting with standard 18" deep sleeve.
- Dampers for horizontal installation can only be mounted in a fire barrier constructed of masonry/concrete materials.

**Damper Sizes**


Orientation	Hor & Vert	** 2000 fpm, 4 in wg				4000 fpm, 6 in wg	
		Horizontal		Vertical		Horizontal & Vertical	
Panel	** Min Panel	Max Panel 250°/350°	Max Assy 250°/350°	Max Panel 250°/350°	Max Assy 250°/350°	Max Panel 250°	Max Assy 250°
Rectangular	4"W x 4"H (8"W x 6"H frame)	32"W x 48"H	96"W x 96"H	32"W x 48"H	128"W x 96"H	24"W x 24"H	96"W x 24"H
Round	4" dia. (8"W x 6"H frame)	30" Dia.	81" Dia.	30" Dia.	81" Dia.	22" Dia.	N/A
Oval	4"W x 4"H (8"W x 6"H frame)	30"W x 46"H	45 sq. ft. 94"W x 94"H	30"W x 46"H	45 sq. ft. 106"W x 94"H	22"W x 22"H	45 sq. ft. 106"W x 94"H

\*Dampers smaller than minimum frame size require a transition. Reference SD-TRFS.

\*\* See Addendum for additional ratings

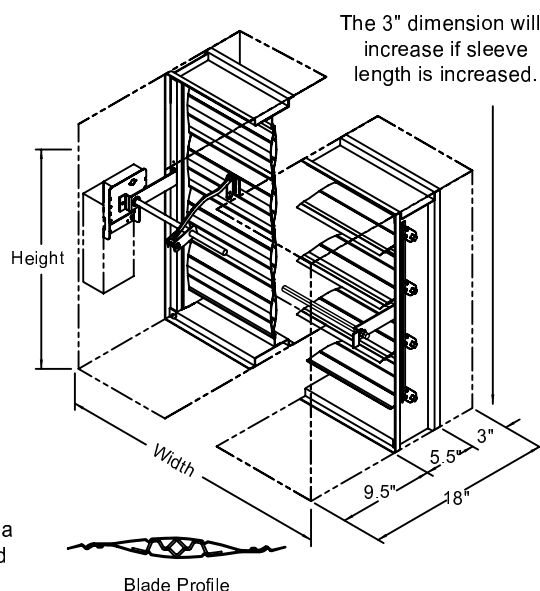
**UNDERWRITERS LABORATORIES INC.®**  
 CLASSIFIED DYNAMIC FIRE AND SMOKE DAMPER  
 FIRE RESISTANCE RATING 1½ HR  
 LEAKAGE RESISTANCE CLASS II

**abi** air balance **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 and 90A
- ICC's International Building Code
- New York City MEA Listing #111-99-M
- California State Fire Marshal Listing #3225-1328:118
- 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 II 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.



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**Operations Ratings:**

Maximum Differential Pressure: 4 in. wg (6 in. wg for selected size/actuator combinations)

Maximum Velocity: 2000 fpm (4000 fpm for selected size/actuator combinations)

**Leakage Ratings:**

UL Class II

10 cfm per sq. ft. maximum @ 1 in. wg

20 cfm per sq. ft. maximum @ 4 in. wg

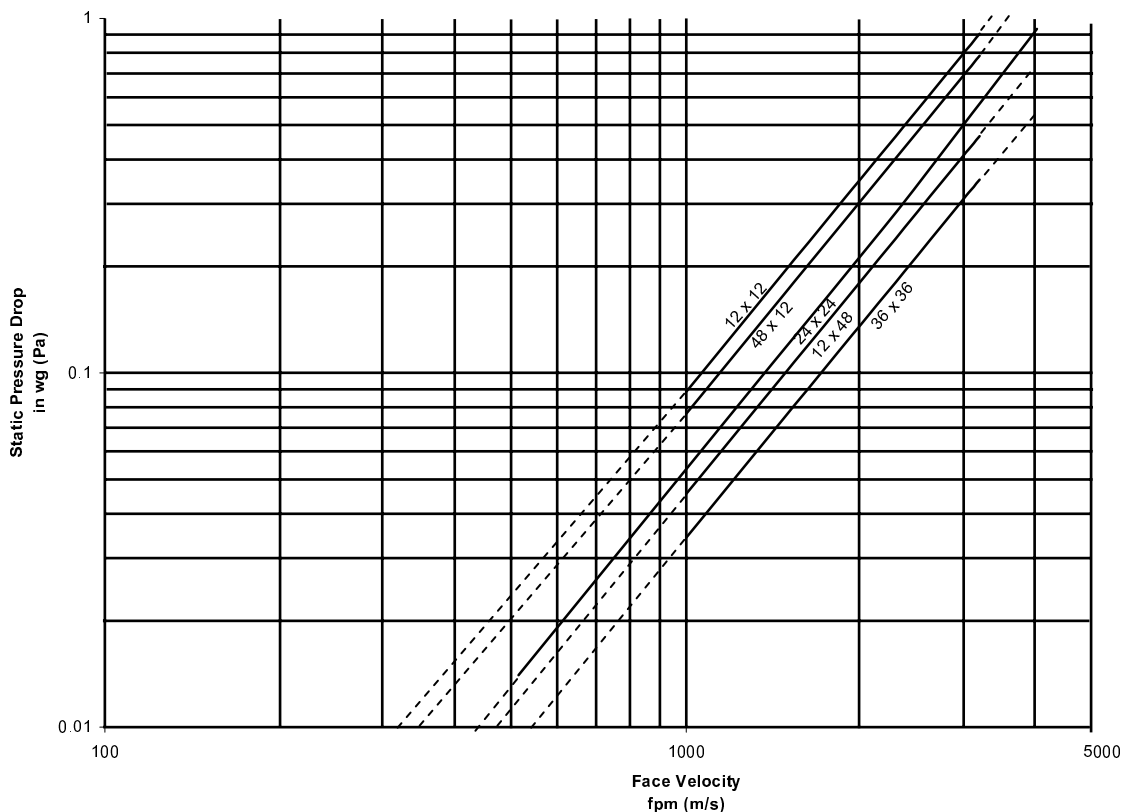
24.5 cfm per sq. ft. maximum @ 6 in. wg

**Sound Ratings:**

None Available

**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.

**FA Pressure Drop****AMCA FIGURE 5.3**

Air Balance certifies that the model FA2 damper shown here is licensed to bear the AMA Seal. The ratings shown are based on tests and procedures performed in accordance with AMA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to the Air Performance Ratings only.

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**ADDENDUM SD-FA2-13-08**  
**Extended Pressure & Velocity Ratings****FA2 Extended Pressure & Velocity Ratings**

Damper Style	Temp Rating (°F)	Velocity & Pressure	Horizontal & Vertical Min Panel	Horizontal (floor mount)		Vertical (wall mount)	
				Max Panel	Max Assy	Max Panel	Max Assy
No Transition	250° - or - 350°	2000 fpm, 4" w.g.	8" x 6" frame	32" x 48" frame	96" x 96" frame	32" x 48" frame	128" x 96" frame
		3000 fpm, 4" w.g.		24" x 36" frame - or - 32" x 24" frame	96" x 72" frame	24" x 36" frame - or - 32" x 24" frame	96" x 72" frame
		4000 fpm, 4" w.g.		24" x 36" frame - or - 32" x 24" frame	96" x 36" frame	24" x 36" frame - or - 32" x 24" frame	96" x 36" frame
	250°	4000 fpm, 6" w.g.		24" x 24" frame	96" x 24" frame	24" x 24" frame	96" x 24" frame
	350°	4000 fpm, 6" w.g. (external act only for 350°)		16" x 24" frame	n/a	16" x 24" frame	n/a
C-Round - or - C-Square	250° - or - 350°	2000 fpm, 4" w.g.	4" dia. duct - or - 4" x 4" duct (8" x 6" frame)	30" dia. duct - or - 30" x 30" duct	81" dia. duct - or - 81" x 81" duct	30" dia. duct - or - 30" x 30" duct	81" dia. duct - or - 81" x 81" duct
		3000 fpm, 4" w.g.		22" dia. duct - or - 22" x 22" duct	70" dia. duct - or - 70" x 70" duct	22" dia. duct - or - 22" x 22" duct	70" dia. duct - or - 70" x 70" duct
		4000 fpm, 4" w.g.		22" dia. duct - or - 22" x 22" duct	34" dia. duct - or - 34" x 34" duct	22" dia. duct - or - 22" x 22" duct	34" dia. duct - or - 34" x 34" duct
	250°	4000 fpm, 6" w.g.		22" dia. duct - or - 22" x 22" duct			
	350°	4000 fpm, 6" w.g. (external act only for 350°)		14" dia. duct - or - 14" x 14" duct	n/a	14" dia. duct - or - 14" x 14" duct	n/a
C-Oval - or - C-Rectangle	250° - or - 350°	2000 fpm, 4" w.g.	4" x 4" duct (8" x 6" frame)	30" x 46" duct	70" x 94" duct - or - 94" x 70" duct	30" x 46" duct	70" x 94" duct - or - 94" x 70" duct
		3000 fpm, 4" w.g.		22" x 34" duct - or - 30" x 22" duct	94" x 70" duct	22" x 34" duct - or - 30" x 22" duct	94" x 70" duct
		4000 fpm, 4" w.g.		22" x 34" duct - or - 30" x 22" duct	94" x 34" duct	22" x 34" duct - or - 30" x 22" duct	94" x 34" duct
	250°	4000 fpm, 6" w.g. (external act only for 350°)		22" x 22" duct	94" x 22" duct	22" x 22" duct	94" x 22" duct
	350°	4000 fpm, 6" w.g. (external act only for 350°)		14" x 22" duct	n/a	14" x 22" duct	n/a

all dimensions are shown as width x height  
for **NO TRANSITION**, order size = frame size = duct size  
unless otherwise noted, duct size = order size

**WITH TRANSITIONS**, damper **frame** size = order width + 2" x order height + 2"