


MODEL AS2

MODEL AS2 250 • MODEL AS2 350

LEAKAGE AND TEMPERATURE RATED COMBINATION FIRE/SMOKE DAMPER

LEAKAGE CLASS II • DYNAMICALLY CLASSIFIED TEMPERATURE CLASS 250°F OR 350°

UNDERWRITERS LABORATORIES INC.®
 CLASSIFIED FIRE DAMPER
 FIRE RESISTANCE RATING 1½ HR
 ALSO AS TO LEAKAGE RESISTANCE CLASS II
 LISTING R4708



IN ACCORDANCE WITH UL STANDARDS 555 & 555S
 California State Fire Marshal
 Listing No. 3225-1328:113, 114

STANDARD MATERIALS AND CONSTRUCTION

- FRAME: 5½" x 7/8" x 16-GA galvanized steel hat channel.
- BLADES: 16-GA Galvanized steel, 8" maximum width, parallel action.
- AXLES: ½"-square, plated solid steel stub.
- BEARINGS: Oil Impregnated Bronze.
- LINKAGE: On-blade type, located within the airstream; galvanized steel angle interconnect, with plated steel brackets and pivots.
- STOPS: 18-GA galvanized steel at head and sill.
- BLADE EDGE SEALS: Silicone.
- COMPRESSION SIDE JAMB SEALS: Stainless steel.
- SLEEVE: Minimum 20-GA galvanized steel by 20" long is standard on sizes over 24"W x 12"H. A 20-GA by 17" long integral sleeve is standard on sizes 24"W x 12"H and smaller.
- CAULKING: Hardcast Irongrip 601, or UL-listed equivalent.
- FINISH: Mill on galvanized steel.
- ACTUATOR: ELECTRIC, with 165°F thermal disc; or PNEUMATIC, with 165°F fusible link and P.E.R.V. Factory-installed for Power-Open/Spring-Return (Fail Close) operation. See reverse side.

DIMENSIONAL DATA

See notes 1 & 2

RECTANGULAR DAMPERS

Minimum Size: 8"W x 6"H

Dampers can be furnished with a duct size minimum of 8"W x 6"H using a type B enclosure pan in a factory furnished sleeve. The overall frame is 8"W x 8"H.

Maximum Size :	<u>Vertical</u>	<u>Horizontal</u>
Single Panel:	36"W x 48"H or 48W" x 36"H	36"W x 48"H
Multiple Panel:	96"W x 36"H or 108W" x 48"H	72"W x 48"H

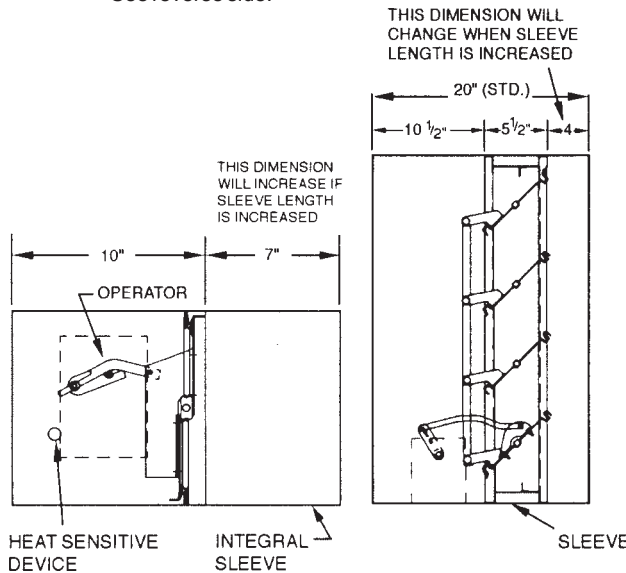
ROUND AND OVAL DAMPERS (Type C Housing, Duct Dimensions)

Frame Width = Duct Width + 2"
 Frame Height = Duct Height + 2"

Minimum Size:	Round:	6" Diameter
Maximum Size:	<u>Vertical</u>	<u>Horizontal</u>
	<u>Single Panel</u>	<u>Single Panel</u>
Round:	34" Diameter	34" Diameter
Oval:	34"W x 46"H	34"W x 46"H
	<u>Double Panel</u>	<u>Double Panel</u>
Round:	46" Diameter	46" Diameter
Oval:	70"W x 46"H or 94"W x 34"H	70"W x 46"H

AVAILABLE OPTIONS: (Must Be Specified)

1. Sleeve thicknesses heavier than the standard 20-GA and longer than the standard 20" length (17" standard on integral sleeve.).
2. Type C Housing for round and oval ductwork.
3. 212°F thermal disc (electric models) or fusible link (pneumatic models).
4. "Sens-O-Therm" Thermally Reopenable Temperature Sensing System is available with 165°F (Standard) or 212°F settings. This system includes contacts for connection to open and closed position indicator lamps. It also includes a second thermal disc to re-close the damper when the rated degradation temperature is reached.
5. Dual position indication package.
6. Smoke detector (minimum 20" sleeve required, damper height must be 10" minimum).




NOTES:

1. Units up to 24"W x 12"H will have a 20-GA by 17" long integral sleeve as standard with a single blade.
2. Dampers will be fabricated ¼" undersize (½" width undersizing when two panels wide).
3. Approved for vertical and horizontal installation.

Wall Thickness	Recommended Sleeve Length	
	W/Integral Sleeve	W/Non-Integral Sleeve
4", 6"	17"	20"
8"	19"	22"
12"	23"	26"

NOTE: The length of the sleeve should not extend over 6" beyond the wall, except on the actuator side, where the sleeve may extend to a maximum 16" beyond the wall.

PROJECT: _____
 LOCATION: _____
 ARCHITECT: _____
 ENGINEER: _____
 CONTRACTOR: _____
 PO NUMBER: _____
 DATE: _____



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Additional Information
 on reverse side

ARROW UNITED INDUSTRIES SUBMITTAL DATA

ACTUATOR SELECTION

Underwriter's Laboratories requires that all UL-555S rated dampers be accompanied with their matching UL-approved factory-supplied actuators. The factors for proper actuator selection are actuator type (electric or pneumatic), voltage requirement, temperature rating, and damper size. Arrow United will factory install actuators for all combination fire/smoke dampers.

ELECTRIC

	Honeywell ML 4115 (120 VAC) ML 8115 (24 VAC)	Honeywell MS 4209 (120 VAC) MS 8209 (24 VAC)	Honeywell MS 4120 (120 VAC) MS 8120 (24 VAC)	Siemens GGD 221 (120 VAC) GGD 121 (24 VAC) GGD 321 (230 VAC)	Belimo FSNF120 (120 VAC) FSNF24 (24 VAC)	MultiProducts MP3721 (120 VAC)
Max. Panel Size at 250°	4 sq. ft.—Width or height not to exceed 36"	36" x 36" or 48" x 24" (Sizes up to 24" x 24" rated for 3000FPM, 4 in.wg.)	36" x 48" or 48" x 36" (Sizes up to 36" x 36" rated for 3000FPM, 4 in.wg.)	36" x 48"	36" x 36" or 48" x 24"	10" x 10"
Max. Panel Size at 350°	24" x 24" (External mount only)	48" x 24"	36" x 48"	N/A	36" x 36"	N/A
Min. Size for internal mount:	12" x 12"	12" x 12"	12" x 20"	12" x 20"	12" x 20"	External (Left) Only

PNEUMATIC

	Siemens 331-4830 (25PSI)	Siemens 331-2906 (25PSI)	Siemens 331-2996 (22PSI)
Max. Panel Size at 250°	24" x 24"	36" x 36"	36" x 48"
Max. Panel Size at 350°	Contact Factory	Contact Factory	Contact Factory
Min. Size for internal mount:	12" x 12"	12" x 20"	16" x 24"

AMP DRAW

MP3721	(120VAC) Amp draw: run .16, hold .10
ML 4115	(120VAC) Amp draw: run .18, hold .11
ML 8115	(24VAC) Amp draw: run .70, hold .35
MS 4209	(120VAC) Amp draw: run .25, hold .13
MS 8209	(24VAC) Amp draw: run 1.0, hold .13
MS 4120	(120VAC) Amp draw: run .35, hold .15
MS 8120	(24VAC) Amp draw: run 1.8, hold .42
GGD 221	(120VAC) Amp draw: run 1.3, hold .10
GGD 121	(24VAC) Amp draw: run 6.25, hold .42
FSNF120	(120VAC) Amp draw: run .23, hold .09
FSNF24	(24VAC) Amp draw: run .23, hold .09

NOTE: When the optional "Sens-O-Therm" Thermally Reopenable Temperature Sensing System is supplied, the pneumatic actuator's air supply is controlled by a factory-supplied 120-VAC (Standard) Electric/Pneumatic Valve. Optional valves are available for 120VDC, 24VAC, 24VDC or 12VDC. Contact customer service for pricing.

GENERAL NOTES

- Underwriters Laboratories Inc. approved for dual direction air flow and dynamic applications.
- Normally, actuators will be mounted externally on the left side of the sleeve as viewed from the linkage side of the damper. Certain actuators may be mounted on the right side, if specified on the order.
- Underwriters Laboratories Inc. classified for use in fire resistance ratings of less than 3 hours, in accordance with UL Standard 555.
- Underwriters Laboratories Inc. classified leakage-rated (smoke) damper for use in smoke control systems designed for Leakage Class II, and Temperature Class 250°F or 350°F in accordance with UL Standard 555S.
- Installation must comply with the requirements of NFPA-90A & -92A. Actuators must be arranged to operate automatically, must fail-close upon loss of power, and must be controlled by a smoke detection system.

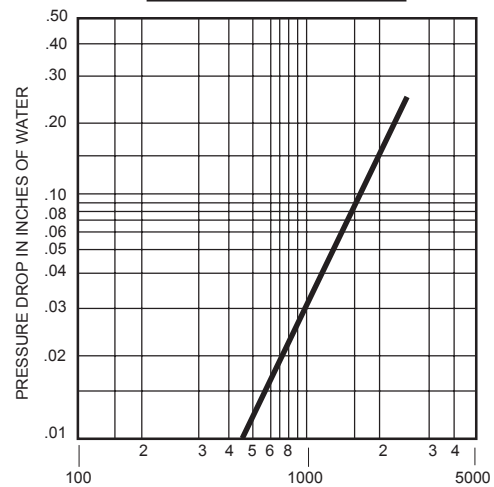
PERFORMANCE

MAXIMUM DIFFERENTIAL PRESSURE: 4in.wg
MAXIMUM VELOCITY:
2000 / 3000 FPM Based on Actuator Model

LEAKAGE

Definition: UL 555S Class II:
Leakage Not Greater Than:
 10 CFM per sq. ft. @ 1 in. wg
 20 CFM per sq. ft. @ 4 in. wg

PRESSURE DROP



FACE VELOCITY IN FEET PER MINUTE
 TYPICAL PERFORMANCE CURVE
 TESTED PER AMCA STANDARD 500; FIGURE 5.3:
 SIZE TESTED — 36" X 48" (Std. Sleeve Damper)
 SIZE TESTED — 16" X 16" (Integral Sleeve Damper)
 Smaller sizes will have higher pressure drops.



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