

# MODEL AS1

MODEL AS1 250 • MODEL AS1 350

## LEAKAGE AND TEMPERATURE RATED COMBINATION FIRE/SMOKE DAMPER

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

UNDERWRITERS LABORATORIES INC.®  
 CLASSIFIED FIRE DAMPER  
 FIRE RESISTANCE RATING 1½ HR  
 ALSO AS TO LEAKAGE RESISTANCE CLASS I  
 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 RECTANGULAR DAMPERS See notes 1 & 2

**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	36"W x 48"H
or 48"W x 36"H	
Multiple Panel: 96"W x 36"H	72"W x 48"H
or 108"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:**

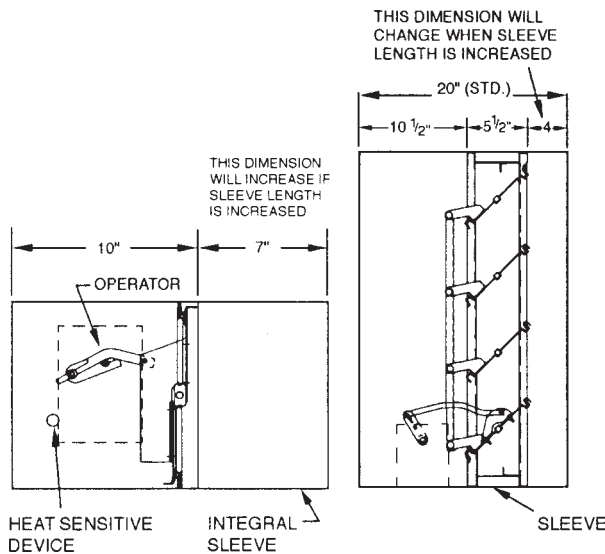
Round: 6" Diameter

**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	
Oval:	70"W x 46"H	70"W x 46"H
	or 94"W x 34"H	

### AVAILABLE OPTIONS: (Must Be Specified)

1. Sleeve thicknesses heavier than the standard 20-GA and longer than the standard 20" length (17" 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. Units that are both less than 16"W and over 16"H are Leakage Class II.
3. Dampers will be fabricated ¼" undersize (½" width undersizing when two panels wide).
4. 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	Honeywell	Honeywell	Siemens	Belimo
	ML 4115 (120 VAC) ML 8115 (24 VAC)	MS 4209 (120 VAC) MS 8209 (24 VAC)	MS 4120 (120 VAC) MS 8120 (24 VAC)	GGD 221 (120 VAC) GGD 121 (24 VAC) GGD 321 (230 VAC)	FSNF120 (120 VAC) FSNF24 (24 VAC)
<b>Max. Panel Size at 250°</b>	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, 4in.wg.)	36" x 48"	36" x 36" or 48" x 24"
<b>Max. Panel Size at 350°</b>	24" x 24" (External mount only)	24" x 24"	36" x 48"	Contact Factory	36" x 36"

Min. Size for Internal Mount: 12" x 12"      12" x 12"      12" x 20"      12" x 20"      12" x 20"

### AMP DRAW

### PNEUMATIC

	Siemens 331-4830 (25PSI)	Siemens 331-2906 (25PSI)	Siemens 331-2996 (22PSI)
<b>Max. Panel Size at 250°</b>	24" x 24"	36" x 36"	36" x 48"
<b>Max. Panel Size at 350°</b>	24" x 12"	24" x 24" (Sens-O-Therm N/A)	36" x 48" (Sens-O-Therm N/A)

Min. Size for Internal Mount: 12" x 12"      12" x 20"      16" x 24"

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 I, 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.

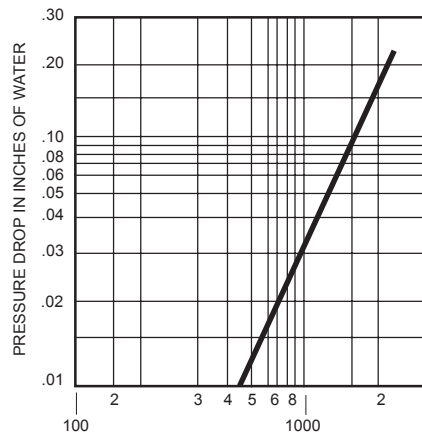
## PERFORMANCE

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

### LEAKAGE

Definition: UL 555S Class I:  
 Leakage Not Greater Than:  
 4 CFM per sq. ft. @ 1 in. wg  
 8 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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