Model KH1

Smoke Damper • Single Thickness Blade • Leakage Class I • 250°F or 350°F • Galvanized Steel

STANDARD CONSTRUCTION

FRAME: 5½" x ⅞" x 16 GA. galvanized steel hat channel. Flat 16 GA. galvanized steel head and sill for maximum free area on dampers less than or equal to 13" high.
BLADES: 16 GA. galvanized steel, single thickness, 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 or on-blade type.
STOPS: 18 GA. galvanized steel angles 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
ACTUATOR: Electric or pneumatic. External left hand mounted as viewed from jackshaft side of damper.
FINISH: Mill.

OPTIONS

Exact size (no undercut)
Sleeves and transitions
Actuators - 120V, 24V, 230V or pneumatic
Right hand and/or internal actuator mounting locations (restrictions apply)
Dual Position Indication (IDPI) switches
Model SM-501 flow-rated smoke detector.
Model 2151 no-flow smoke detector (12" minimum damper height)
Momentary test switch
Remote test box
Copper tubing (for pneumatic actuators)
Transformers
Tab-lock retaining angles - 1 or 2 sets
Stainless steel bearings
Stainless steel axles
Security bars
Short-width (less than 8") and/or short-height (less than 6") transitions
Round or oval transitions

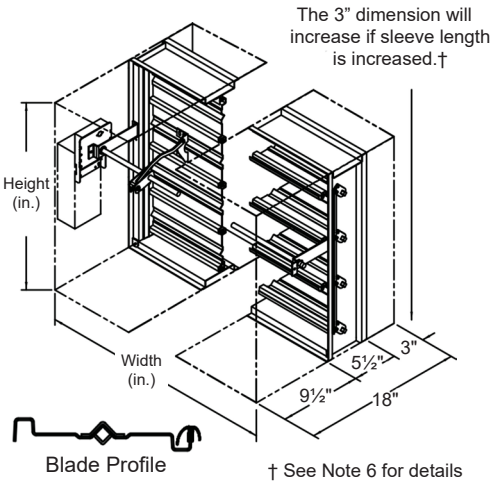
NOTES

1. Nominal deductions will be made to the opening size given.
2. Dampers greater than or equal to 12" in height with factory mounted SM-501 smoke detectors require a minimum 19" deep sleeve (10½" on the actuator side). Detectors will be mounted on the side of the damper opposite actuator.
3. Dampers less than 12" in height with factory mounted SM-501 smoke detectors require a minimum 20 deep sleeve (11½" on the actuator side). Detectors will be mounted on the bottom or top of damper.
4 Smoke detectors can be ordered for field mounting with standard 18" deep sleeve.
5. Dampers for horizontal installation can only be mounted in a fire barrier constructed of masonry/ concrete materials.
6. Unless ordered with a smoke detector, the 3" sleeve setback on the non-jackshaft side will increase when sleeve lengths greater than 18" are ordered. Custom non-jackshaft side setback dimensions must be specified on order. When ordered with a smoke detector, additional sleeve length is added to jackshaft side. If ordered with smoke detector and additional sleeve length (beyond requirements of notes 2 and 3), additional sleeve length will be added to jackshaft side unless custom setback dimension is otherwise specified on order.

UNDERWRITERS LABORATORIES INC.®
CLASSIFIED DYNAMIC SMOKE DAMPER
LEAKAGE RESISTANCE CLASS I
Louvers & Dampers
FILE # R16591

This smoke damper meets the construction and performance requirements of:

- Underwriters Laboratories Inc. Standard 555S
- National Fire Protection Association Standards 80, 90A, 92, 101, 105
- ICC's International Building Code
- California State Fire Marshal Listing #3230-1328:106
- New York City MEA Listing 112-99-M
- Underwriters Laboratories Inc. Approved for dual direction airflow and dynamic conditions.
- Underwriters Laboratories Inc. Classified for use in smoke control systems for Leakage Class I and 250°F or 350°F.
- Actuators must be controlled by a smoke detection system.



† See Note 6 for details

DAMPER SIZES

Orientation	Horizontal & Vertical	Actuator Response	2000 fpm, 4 in. w.g. Horizontal & Vertical				3000 fpm, 4 in. w.g. Horizontal & Vertical	
Panels	**Min. Panel Size**		**Max Panel 250°**	**Max Panel 350°**	**Max Assy 250°**	**Max Assy 350°**	**Max Panel 250°**	**Max Assy 250°**
Rectangular	4"W x 4"H (8"W x 6"H frame)	PO/SC	36"W x 48"H	36"W x 48"H	144"W x 70"H 288"W x 35"H	128"W x 62"H 256"W x 31"H	36"W x 36"H	108"W x 36"H
Rectangular	4"W x 4"H (8"W x 6"H frame)	SO/PC	36"W x 36"H	36"W x 36"H	108"W x 36"H	108"W x 36"H	N/A	N/A
Round	4" dia. (8"W x 6"H frame)	PO/SC	34" dia.	34" dia.	68" dia.	60" dia.	34" dia.	N/A
Oval	4"W x 4"H (8"W x 6"H frame)	PO/SC	36"W x 46"H	36"W x 46"H	45 sq.ft. 106"W x 68"H	106"W x 60"H	34"W x 34"H	106"W x 24"H

* Dampers smaller than minimum frame size require a transitions. Reference SD-TRFS.
** For sizes smaller than 16"w x 8"h, airfoil blades will be supplied.

In the interest of product development, Louvers & Dampers reserves the right to make changes without notice.

www.louvers-dampers.com

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OPERATIONAL RATINGS

Maximum Differential Pressure: 4 in.wg
Maximum Face Velocity: 2000 fpm (3000 fpm for selected size/actuator combinations)

LEAKAGE RATINGS

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

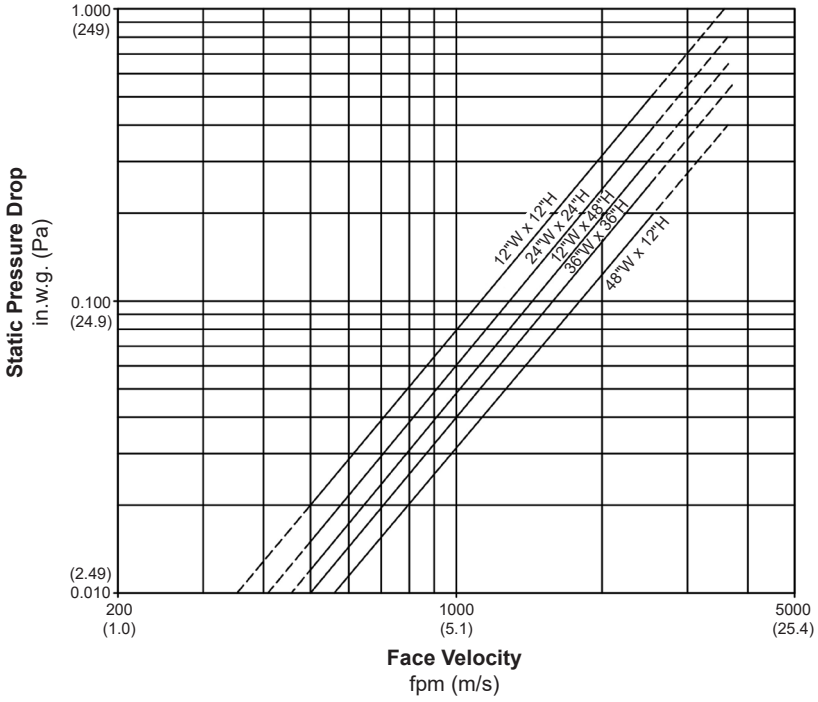
SOUND RATINGS

The Noise Criterion data below was tested in accordance with ASTM E477.99 in the center octave band.

Noise Criterion (NC)				
Damper Size	Velocity (fpm)			
	1000	2000	3000	4000
12"W x 12"H	31	53	64	71
24"W x 24"H	33	54	65	n/a

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.



Tested in accordance with AMCA Standard 500D, Figure 5.3
Intake air converted to standard air density.

Louvers & Dampers certifies that the model KH1 damper shown here 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 Ratings only.

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