

Application

The SMD-301 is a leakage rated smoke damper with airfoil blades for operational closure in emergency smoke control situations. The SMD-301 may be installed vertically (with blades running horizontal) or horizontally and is rated for airflow and leakage in either direction.

Ratings

UL 555S Leakage Rating

Leakage Class: I

Operational Rating: Actual ratings are size dependent

Velocity: Up to 4000 fpm (20.3 m/s)

Pressure: Up to 8 in. wg (2 kPa)

Temperature: Up to 350°F (177°C) - depending upon the actuator



W and H dimensions furnished approximately 1/4 in. (6mm) undersize. Add sleeve thickness for overall sleeved damper dimension.

External right hand drive is shown.



See complete marking on product.

UL 555S Classification R13317

CAN/ULC S112.1 Classified Smoke Damper

Size Limitations

| W x H | Minimum Size | Maximum Size* | |
|--------|--------------|----------------|------------------|
| | | Single Section | Multiple Section |
| Inches | 6 x 6* | 32 x 50 | 192 x 100 |
| mm | 102 x 102 | 813 x 1270 | 4877 x 2540 |

* Down to 4 in. x 4 in. (102 mm x 102 mm) using transitions

Note: Maximum sizes are dependent on velocities and pressures.

Model SMD-301 meets the requirements for smoke dampers established by:

National Fire Protection Association

NFPA Standards 90A, 92, 101 & 105

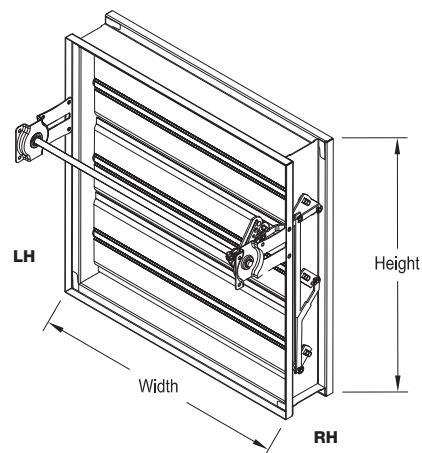
IBC International Building Codes

CSFM California State Fire Marshal

Leakage (Smoke) Damper Listing (#3230-0981:104)

Construction

| | Standard | Optional |
|---------------------------------|--|------------|
| Frame Material | Galvanized steel | - |
| Frame Material Thickness | 16 ga. (1.5 mm) | - |
| Frame Type | 5 in. x 1 in. (127 mm x 25 mm) hat channel | - |
| Blade Action | Opposed | - |
| Blade Material | Galvanized steel | - |
| Blade Material Thickness | 14 ga. (2 mm) equivalent | - |
| Blade Type | Double skin airfoil | - |
| Blade Orientation | Horizontal | - |
| Linkage | Plated steel out of airstream, concealed in jamb | 316SS |
| Axle Bearings | 316SS | - |
| Axle Material | Plated steel | 316SS |
| Blade Seals | Silicone | - |
| Jamb Seals | Stainless Steel | - |
| Mounting | Vertical | Horizontal |



Note:

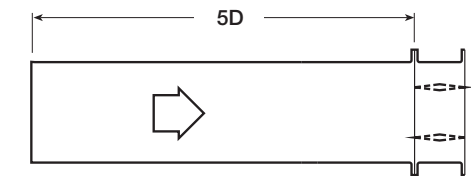
The frames are constructed with reinforced corners. Low profile head and sill are used on sizes less than 17 in. high (432 mm) for lower pressure drop and improved damper performance.

Options

- Access door mounted in sleeve
- [BACNet test module - 120V](#)
- [BACnet test module - 24V](#)
- [Breakaway connections](#)
- Clean wrap
- [GreenheckTest Switches \(GTS\)](#)
- Grille tabs
- [Momentary test switch](#)
- [Retaining angles](#)
- [OCI \(Open Closed Indicator Switch\)](#)
- Sealed transitions and sleeves
- [Security bars](#)
- [Smoke detector - no flow](#)
- [Smoke detector - low flow](#)
- Transitions: C, O, R

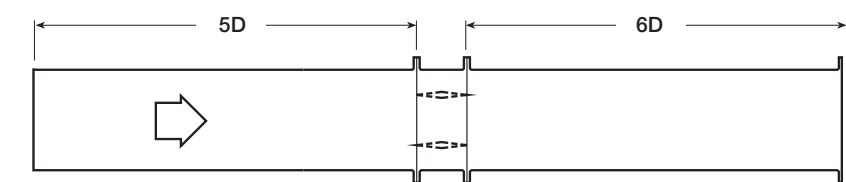
Pressure Drop Data

AMCA Figure 5.2



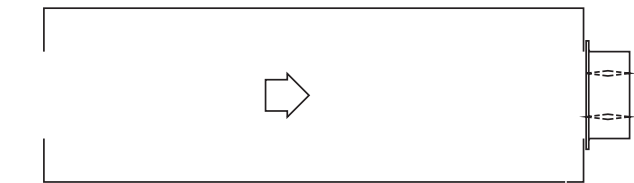
| 12 in. x 12 in. (305mm x 305mm) | | 24 in. x 24 in. (610mm x 610mm) | | 36 in. x 36 in. (914mm x 914mm) | | 12 in. X 48 in. (305mm x 1219mm) | | 48 in. x 12 in. (1219mm x 305mm) | |
|---------------------------------|------------------------|---------------------------------|------------------------|---------------------------------|------------------------|----------------------------------|------------------------|----------------------------------|------------------------|
| Velocity (fpm) | Pressure Drop (in. wg) | Velocity (fpm) | Pressure Drop (in. wg) | Velocity (fpm) | Pressure Drop (in. wg) | Velocity (fpm) | Pressure Drop (in. wg) | Velocity (fpm) | Pressure Drop (in. wg) |
| 500 | 0.03 | 500 | 0.01 | 500 | 0.01 | 500 | 0.01 | 500 | 0.02 |
| 1000 | 0.11 | 1000 | 0.06 | 1000 | 0.05 | 1000 | 0.05 | 1000 | 0.08 |
| 1500 | 0.24 | 1500 | 0.12 | 1500 | 0.12 | 1500 | 0.12 | 1500 | 0.18 |
| 2000 | 0.42 | 2000 | 0.22 | 2000 | 0.21 | 2000 | 0.21 | 2000 | 0.33 |
| 2500 | 0.66 | 2500 | 0.34 | 2500 | 0.32 | 2500 | 0.33 | 2500 | 0.51 |
| 3000 | 0.95 | 3000 | 0.49 | 3000 | 0.47 | 3000 | 0.48 | 3000 | 0.74 |
| 3500 | 1.30 | 3500 | 0.67 | 3500 | 0.63 | 3500 | 0.65 | 3500 | 1.00 |
| 4000 | 1.70 | 4000 | 0.87 | 4000 | 0.83 | 4000 | 0.85 | 4000 | 1.31 |

AMCA Figure 5.3



| 12 in. x 12 in. (305mm x 305mm) | | 24 in. x 24 in. (610mm x 610mm) | | 36 in. x 36 in. (914mm x 914mm) | | 12 in. X 48 in. (305mm x 1219mm) | | 48 in. x 12 in. (1219mm x 305mm) | |
|---------------------------------|------------------------|---------------------------------|------------------------|---------------------------------|------------------------|----------------------------------|------------------------|----------------------------------|------------------------|
| Velocity (fpm) | Pressure Drop (in. wg) | Velocity (fpm) | Pressure Drop (in. wg) | Velocity (fpm) | Pressure Drop (in. wg) | Velocity (fpm) | Pressure Drop (in. wg) | Velocity (fpm) | Pressure Drop (in. wg) |
| 500 | 0.01 | 500 | 0.01 | 500 | 0.01 | 500 | 0.01 | 500 | 0.01 |
| 1000 | 0.06 | 1000 | 0.02 | 1000 | 0.02 | 1000 | 0.03 | 1000 | 0.04 |
| 1500 | 0.13 | 1500 | 0.06 | 1500 | 0.05 | 1500 | 0.06 | 1500 | 0.10 |
| 2000 | 0.23 | 2000 | 0.10 | 2000 | 0.09 | 2000 | 0.11 | 2000 | 0.18 |
| 2500 | 0.37 | 2500 | 0.16 | 2500 | 0.14 | 2500 | 0.18 | 2500 | 0.29 |
| 3000 | 0.53 | 3000 | 0.23 | 3000 | 0.21 | 3000 | 0.25 | 3000 | 0.42 |
| 3500 | 0.73 | 3500 | 0.32 | 3500 | 0.29 | 3500 | 0.34 | 3500 | 0.57 |
| 4000 | 0.95 | 4000 | 0.42 | 4000 | 0.38 | 4000 | 0.45 | 4000 | 0.74 |

AMCA Figure 5.5



| 12 in. x 12 in. (305mm x 305mm) | | 24 in. x 24 in. (610mm x 610mm) | | 36 in. x 36 in. (914mm x 914mm) | | 12 in. X 48 in. (305mm x 1219mm) | | 48 in. x 12 in. (1219mm x 305mm) | |
|---------------------------------|------------------------|---------------------------------|------------------------|---------------------------------|------------------------|----------------------------------|------------------------|----------------------------------|------------------------|
| Velocity (fpm) | Pressure Drop (in. wg) | Velocity (fpm) | Pressure Drop (in. wg) | Velocity (fpm) | Pressure Drop (in. wg) | Velocity (fpm) | Pressure Drop (in. wg) | Velocity (fpm) | Pressure Drop (in. wg) |
| 500 | 0.04 | 500 | 0.03 | 500 | 0.03 | 500 | 0.03 | 500 | 0.03 |
| 1000 | 0.18 | 1000 | 0.13 | 1000 | 0.12 | 1000 | 0.12 | 1000 | 0.14 |
| 1500 | 0.42 | 1500 | 0.29 | 1500 | 0.27 | 1500 | 0.27 | 1500 | 0.32 |
| 2000 | 0.75 | 2000 | 0.52 | 2000 | 0.48 | 2000 | 0.49 | 2000 | 0.57 |
| 2500 | 1.17 | 2500 | 0.81 | 2500 | 0.75 | 2500 | 0.77 | 2500 | 0.89 |
| 3000 | 1.68 | 3000 | 1.17 | 3000 | 1.08 | 3000 | 1.11 | 3000 | 1.28 |
| 3500 | 2.29 | 3500 | 1.60 | 3500 | 1.48 | 3500 | 1.51 | 3500 | 1.75 |
| 4000 | 2.09 | 4000 | 2.14 | 4000 | 1.93 | 4000 | 1.97 | 4000 | 2.29 |

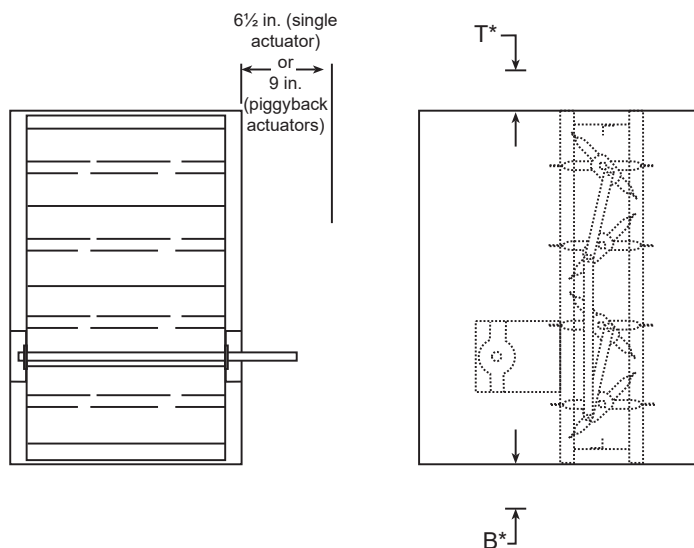


Greenheck Fan Corporation certifies that the model SMD-301 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Programs. The AMCA Certified Ratings Seal applies to air performance ratings only.

Space Envelopes

Externally mounted actuators always require space outside of the damper sleeve. The “S” dimension illustrates the clearance required for various available actuators.

Worst case space envelopes shown below. Exact dimensions may vary based on specific damper configuration. Consult factory for specific space envelope if necessary.

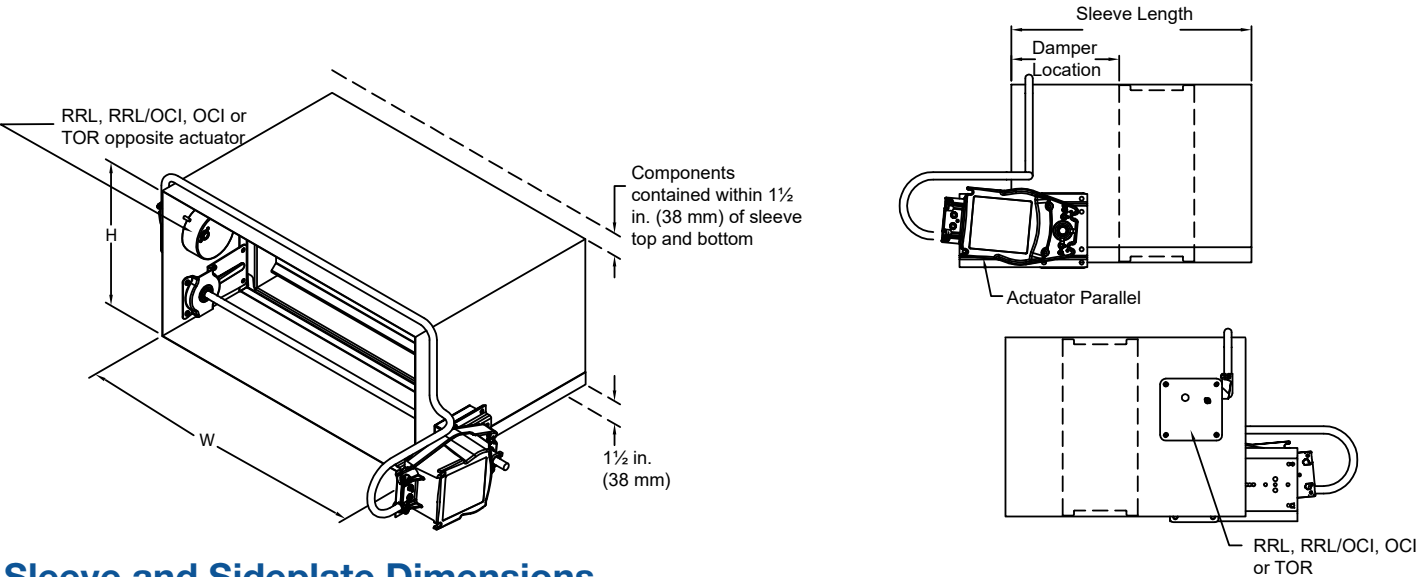


| Actuator Type/Model | B* | T* | S | |
|----------------------------------|---------------------------------|---------------------------------|----------------|---------------|
| | With RRL, RRL/OCI, or TOR | With RRL, RRL/OCI, or TOR | Piggyback | |
| | | | No | Yes |
| Belimo | | | | |
| FSAFB24-SR (-S) | 1½ in. (38mm) | 9¼ in. (235mm) | 6 in. (152mm) | 9 in. (229mm) |
| FSLF series | 8 in. (203mm) | 1½ in. (38mm) | 6½ in. (165mm) | NA |
| FSNF series | 1½ in. (38mm) | 9¼ in. (235mm) | 6 in. (152mm) | 9 in. (229mm) |
| FSTF Series | 8 in. (203mm) | 1½ in. (38mm) | 6½ in. (165mm) | NA |
| Siemens | | | | |
| GJD Series | 7 in. (178mm) | 1½ in. (38mm) | 6½ in. (165mm) | NA |
| GRD Series | 1½ in. (38mm) | 7½ in. (191mm) | 6½ in. (165mm) | NA |
| GXVD Series | 1½ in. (38mm) | 9¼ in. (235mm) | 6 in. (152mm) | 9 in. (229mm) |
| Honeywell | | | | |
| MS4103, MS8103 Series | 8¾ in. (222mm) | 1½ in. (38mm) | 6½ in. (165mm) | NA |
| MS4104, MS4604, MS8104 Series | 1½ in. (38mm) | 8½ in. (216mm) | 6½ in. (165mm) | NA |
| MS4109, MS4609, MS8109 Series | 1½ in. (38mm) | 8½ in. (216mm) | 6½ in. (165mm) | NA |
| MS4120, MS4620, MS8120 Series | 1½ in. (38mm) | 9½ in. (241mm) | 6 in. (152mm) | 9 in. (229mm) |

* For dampers 18 in. (457mm) or more in height these dimensions are 0 in.

Contained Actuator Option

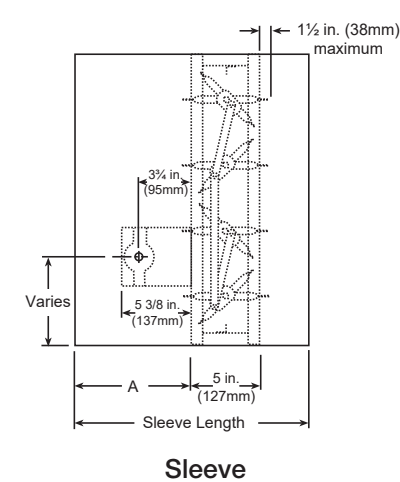
Dampers can be ordered with a “contained actuator option”. This option will result in the actuator being oriented such that it extends no more than 1½ inches above or below the sleeve. Note that some damper configurations that are 11 inches high or less will have the OCI mounted on the side opposite the actuator when the contained actuator option is selected.



Sleeve and Sideplate Dimensions

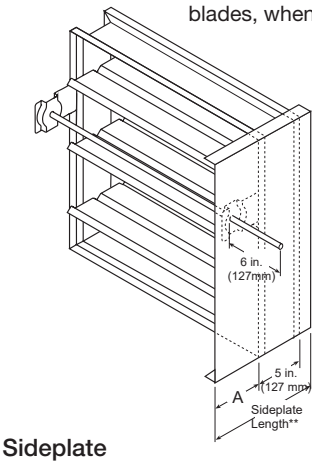
The drawings below and corresponding table show the position of the SMD-301 damper when mounted in a factory sleeve ("A" dimension). The standard mounting locations provide enough space for the mounting of actuators, controls and allow space for installation of retaining angles and duct connections. The following options may affect the range of available mounting locations: smoke detector, NEMA 7 enclosure, transitions, security bars, grille tabs.

The standard location of a damper mounted in a factory sleeve ("A" dimension) is shown below. The damper can be positioned at other locations within a range of 6 in. (152mm) to 16 in. (406mm) for the "A" dimension.



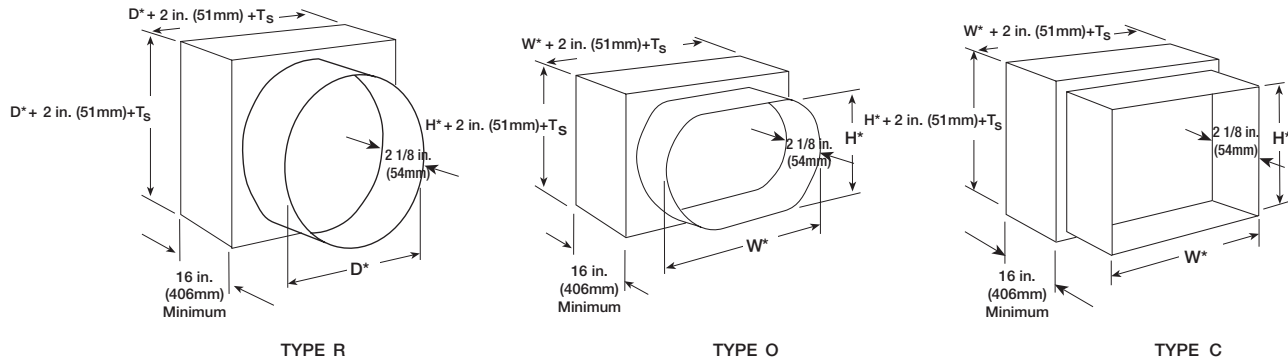
| in. (mm) | With Sleeve | | Sideplate Damper Location "A" |
|---|-----------------------------|-----------------------------|-------------------------------|
| | Minimum Damper Location "A" | Maximum Damper Location "A" | |
| Compact configuration* | 7 3/16 in. (183) | 16 (406) | - |
| Standard (non-compact) Height < 12 in. (305) RRL, RRL/OCI, or TOR | 12 (305) | 16 (406) | 12 (305) |
| Standard (non-compact) Height ≥ 12 in. (305) RRL, RRL/OCI, or TOR | 7 3/16 in. (183) | 16 (406) | 12 (305) |

* Contact factory for more information.
NOTE: Entire damper frame is not required to be installed within the wall. The damper blades, when closed should be contained within the wall.



Transitioned Damper Dimensions

When a smoke damper is being used in conjunction with round or oval ductwork, the SMD-301 can be supplied in a factory sleeve with round or oval transitions on both ends of the sleeve. Dampers should be ordered to the duct dimensions. Drawings below show overall damper size.

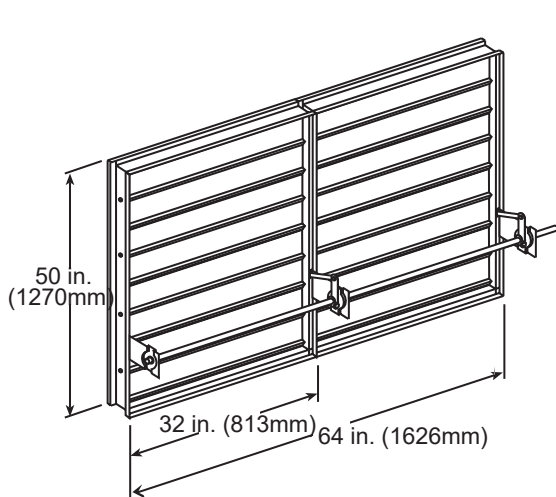


* These dimensions are furnished approximately $\frac{1}{4}$ in. (6mm) undersize, except round and oval dimensions which are approximately $\frac{1}{8}$ in. (3mm) undersize.

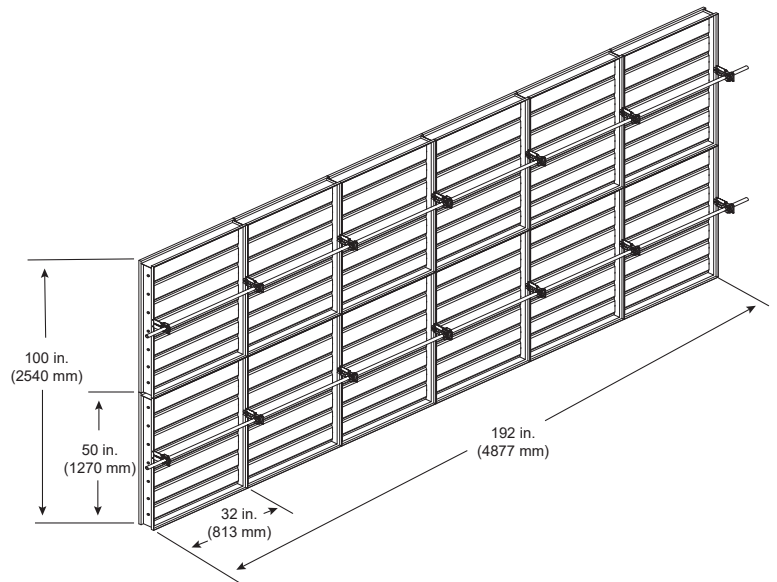
$T_s = (2)(\text{Sleeve Thickness})$

Multiple Section Dampers

Dampers larger than maximum single section size are supplied as a factory assembly of two or more sections of equal size. The following figures show maximum damper section size and assembly configurations for multi-section dampers.



2 section



**6 sections wide
2 sections high**



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