Model FSD60-3M meets the requirements for fire, smoke and combination fire and smoke dampers established by:

- National Fire Protection Association NFPA Standards 90A, 92A, 92B and 101
- BOCA National Building Codes
- ICBO Uniform Building Codes
- SBCCI Standard Building Codes
- ICC International Building Codes
- CSFM California State Fire Marshal Fire Damper Listing (#3225-245:102) and Smoke Damper Listing (#3230-245:110)
- New York City (BSA Listing #176-82-SM)

FEATURES

- EFL (Electric Fuse Link) or PFL (Pneumatic Fuse Link) heat-actuated release devices permit controlled (rather than instantaneous) closure through the damper actuator. The EFL and PFL allow the damper to automatically reopen after a test, smoke detection or power failure condition.
- EFL is standard on dampers with electric actuators.
- PFL is standard on dampers with pneumatic actuators.
- EFL’s may be ordered on dampers with pneumatic actuators but require an additional EP switch.

ALL STATED SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION.

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To determine the AMCA Licensed air performance:
Locate the applicable feet per minute face velocity on the bottom of the velocity vs. pressure drop chart below. Move up the chart to the most appropriate size damper line. From the intersection point, move left to determine the pressure drop on the left side of the chart.

For other damper sizes refer to *Air Performance Data For All Fire and Smoke Dampers* spec sheet.
The drawing and corresponding table show the position of the damper when mounted in a factory sleeve. 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 minimum factory sleeve length is 17” (432). Consult Ruskin for shorter sleeve lengths.

The standard location of a damper mounted in a factory sleeve ("L" dimension) is shown at right.

NOTE:
The entire damper frame is not required to be installed within the wall. The damper blades, when closed should be contained within the wall.

*Minimum Sleeve Length Formula:
Sleeve Length = "L" dimension + wall/floor thickness + 3” sleeve non-motor side

Externally mounted actuators require space outside the damper sleeve. The "S" dimension is the "side" clearance, the "T" dimension is the "top" clearance and the "B" dimension is the "bottom" clearance required for the various actuators approved for use with Ruskin fire/smoke dampers. Actuators and accessories are factory mounted on the right side when viewed from the actuator side of the wall or floor. Ruskin fire/smoke dampers can be rotated or turned over to accommodate the application.

<table>
<thead>
<tr>
<th>ACTUATORS</th>
<th>H (Damper Height)</th>
<th>S</th>
<th>T</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>M9182A</td>
<td>21” (533)</td>
<td>11” (279)</td>
<td>0” (0)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

NOTES:
1. The "H" dimension represents the required height to encompass the actuator and accessories with nothing protruding above or below the damper.
2. The "B" (bottom) dimension does Not Apply to the "H" size shown. The M9182A will hang up to 3” (76) below the damper on sizes less than 21” (533) high.

All dampers with EFL or PFL

<table>
<thead>
<tr>
<th>Over 10”</th>
<th>10”(254) High and Under</th>
</tr>
</thead>
<tbody>
<tr>
<td>(254)</td>
<td>10¾” (270)</td>
</tr>
<tr>
<td>&quot;L&quot;</td>
<td>7½” (181) 10¾” (270)</td>
</tr>
</tbody>
</table>

All dampers with TS150 or SP100

<table>
<thead>
<tr>
<th>Over 21” (533) High and Under</th>
<th>21” (533) High and Under</th>
</tr>
</thead>
<tbody>
<tr>
<td>(533)</td>
<td>(see note)</td>
</tr>
<tr>
<td>21” (533)</td>
<td>10¾” (270)</td>
</tr>
<tr>
<td>&quot;L&quot;</td>
<td>7½” (181) 10¾” (270)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Over 32” (813) High &amp; Under</th>
<th>32” (813) High &amp; Under</th>
</tr>
</thead>
<tbody>
<tr>
<td>(813)</td>
<td>(see note)</td>
</tr>
<tr>
<td>32” (813)</td>
<td>10¾” (270)</td>
</tr>
<tr>
<td>&quot;L&quot;</td>
<td>7½” (181) 10¾” (270)</td>
</tr>
</tbody>
</table>

Note: See basic UL Installation Instructions for complete installation requirements.
Combination fire smoke dampers meeting or exceeding the following specifications shall be furnished and installed at locations shown on plans or as described in schedules. Dampers shall meet the requirements of NFPA90A, 92A and 92B. Dampers shall have a fire rating of 3 hours in accordance with the latest edition of UL555 and shall be classified as Leakage Class I Smoke Dampers in accordance with the latest version of UL555S. Dampers shall be warranted to be free from defects in material and workmanship for a period of 5 years after date of shipment.

Each fire smoke damper shall be equipped with a "controlled closure" quick detect heat-actuated release device to prevent duct and HVAC component damage. Instantaneous damper closure through the use of fusible links is unacceptable.

Damper frame (when size permits) shall be constructed using the UniFrame Design Concept (UDC) and shall be a roll-formed structural hat channel, reinforced at the corners, formed from a single piece of minimum 16 gage (1.6) galvanized steel. Damper blades shall be airfoil shaped with 13 gage (2.3) equivalent thickness formed from a single piece of galvanized steel. Bearings shall be stainless steel turning in an extruded hole in the frame. Blade edge seals shall be silicone rubber and galvanized steel mechanically locked in to the blade edge (adhesive type seals are not acceptable). Each damper shall be supplied with a factory mounted sleeve of 17" (432) minimum length. Dampers shall be Ruskin model FSD60-3M.

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MINIMUM SIZES
Nominal – 8"w x 6"h (203 x 152).
Actual – 73/4"w x 53/4"h (197 x 146).
Dampers with heights (B dimension) less than 6" (152) require Style B transitions and a sleeve. The damper itself remains 6" (152) high.

MAXIMUM UL CLASSIFIED SIZE
Single Section: 32"w x 48"h (813 x 1219)
Multiple Section Assembly
Vertical Installation – 120"w x 48"h (3048 x 1219)
Horizontal Installation
120"w x 48"h (3048 x 1219)
For dampers exceeding these dimensions consult Ruskin.

ROUND, OVAL OR RECTANGULAR DUCT TRANSITION CONNECTION
FSD60 dampers supplied with round connections (R for low pressure, CR for medium pressure or WR welded for high pressure) are:
Minimum 4" (102) in diameter
Maximum 46" (1168) in diameter
The square size of the damper will be 2" (51) larger than the diameter dimension ordered.
FSD60 dampers supplied with rectangular or oval connections (C, CO, LO for low to medium pressure or WC, WO welded for high pressure) are:
Minimum 6"w x 4"h (152 x 102)
Maximum 118"x 46"h (2997 x 1168)
The square size of the damper will be 2" (51) larger than the width and height of the damper A x B dimensions.