Model SESMD-201 meets the requirements for smoke dampers established by:
National Fire Protection Association (NFPA) Standards 90A, 92, 101 & 105
International Building Codes (IBC)
California State Fire Marshal (CSFM)
Leakage (Smoke) Damper Listing (#3230-0981:104)

Application
Model SESMD-201 is a leakage rated smoke damper with 3V style blades. The SESMD-201 has been qualified to 2,000 fpm (10.2 m/s) and 6 in. wg (1.5 kPa) for operational closure in emergency smoke control situations. Model SESMD-201 may be installed vertically (with blades running horizontally) or horizontally and is rated for airflow and leakage in either direction.

Ratings
Leakage Class: I

Operational Rating
Maximum Velocity: 2,000 fpm (10.2 m/s)
Maximum Pressure: 6 in. wg (1.5 kPa)
Maximum Temperature: 350°F (177°C)

Construction
<table>
<thead>
<tr>
<th>Frame Material</th>
<th>316SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame Material Thickness</td>
<td>16 ga. (1.5mm)</td>
</tr>
<tr>
<td>Frame Type</td>
<td>5 in. x 1 in. (127mm x 25mm) hat channel</td>
</tr>
<tr>
<td>Blade Material</td>
<td>316SS</td>
</tr>
<tr>
<td>Blade Material Thickness</td>
<td>16 ga. (1.5mm)</td>
</tr>
<tr>
<td>Blade Type</td>
<td>3V</td>
</tr>
<tr>
<td>Linkage</td>
<td>316SS out of airstream, concealed in jamb</td>
</tr>
<tr>
<td>Axle Bearings</td>
<td>316SS</td>
</tr>
<tr>
<td>Axle Material</td>
<td>316SS</td>
</tr>
<tr>
<td>Blade Seals</td>
<td>Silicone</td>
</tr>
<tr>
<td>Jamb Seals</td>
<td>316SS</td>
</tr>
</tbody>
</table>

Features:
- Frames are constructed with reinforced corners. Low profile head and sill are used on sizes less than 17 in. high (432mm).
- Blades are reinforced with 3 longitudinal structurally designed vee’s.
- Actuators: 120V, 24V, 230V, Pneumatic

Size Limitations

<table>
<thead>
<tr>
<th>W x H</th>
<th>Minimum Size</th>
<th>Maximum Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single Section</td>
<td>Multiple Section</td>
</tr>
<tr>
<td></td>
<td>Inches x mm</td>
<td>Inches x mm</td>
</tr>
<tr>
<td>4 in. wg (1 kPa) pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inches</td>
<td>8 x 6</td>
<td>24 x 30</td>
</tr>
<tr>
<td>mm</td>
<td>203 x 152</td>
<td>610 x 762</td>
</tr>
<tr>
<td>6 in. wg (1.5 kPa) pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inches</td>
<td>8 x 6</td>
<td>24 x 30</td>
</tr>
<tr>
<td>mm</td>
<td>203 x 152</td>
<td>610 x 762</td>
</tr>
</tbody>
</table>

See complete marking on product.
UL 555S Classification R13317
Installation instruction available at www.greenheck.com
Options for SESMD-201:

- Factory mounted accessories
  - Retaining angles
- Greenheck test switches (GTS-3 & GTS-4)
- Momentary test switch
- POC retaining angles
- OCI (Open closed indication switches)
- Sealed transitions and sleeves
- Smoke detectors
- Transitions: R, C, O

Pressure Drop Data

This pressure drop testing was conducted in accordance with AMCA Standard 500-D using the three configurations shown. All data has been corrected to represent standard air at a density of \(0.075 \text{ lb/ft}^3(1.201 \text{ kg/m}^3)\).

Actual pressure drop found in any HVAC system is a combination of many factors. This pressure drop information along with an analysis of other system influences should be used to estimate actual pressure losses for a damper installed in a given HVAC system.

AMCA Test Figures

**Figure 5.3** Illustrates a fully ducted damper. This configuration has the lowest pressure drop of the three test configurations because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.

**Figure 5.2** Illustrates a ducted damper exhausting air into an open area. This configuration has a lower pressure drop than Figure 5.5 because entrance losses are minimized by a straight duct run upstream of the damper.

**Figure 5.5** Illustrates a plenum mounted damper. This configuration has the highest pressure drop because of extremely high entrance and exit losses due to the sudden changes of area in the system.
Pressure Drop

Greenheck Fan Corporation certifies that the model SESMD-201 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.

### AMCA Figure 5.2

<table>
<thead>
<tr>
<th>Velocity (fpm)</th>
<th>Pressure Drop (in. wg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>0.04</td>
</tr>
<tr>
<td>1000</td>
<td>0.14</td>
</tr>
<tr>
<td>1500</td>
<td>0.31</td>
</tr>
<tr>
<td>2000</td>
<td>0.55</td>
</tr>
<tr>
<td>2500</td>
<td>0.86</td>
</tr>
<tr>
<td>3000</td>
<td>1.24</td>
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<tr>
<td>3500</td>
<td>1.69</td>
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<tr>
<td>4000</td>
<td>2.20</td>
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</tbody>
</table>

### AMCA Figure 5.3

<table>
<thead>
<tr>
<th>Velocity (fpm)</th>
<th>Pressure Drop (in. wg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>0.02</td>
</tr>
<tr>
<td>1000</td>
<td>0.09</td>
</tr>
<tr>
<td>1500</td>
<td>0.20</td>
</tr>
<tr>
<td>2000</td>
<td>0.36</td>
</tr>
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<td>2500</td>
<td>0.61</td>
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<tr>
<td>3000</td>
<td>1.10</td>
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<tr>
<td>3500</td>
<td>1.44</td>
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<tr>
<td>4000</td>
<td>1.90</td>
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</table>

### AMCA Figure 5.5

<table>
<thead>
<tr>
<th>Velocity (fpm)</th>
<th>Pressure Drop (in. wg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>0.05</td>
</tr>
<tr>
<td>1000</td>
<td>0.22</td>
</tr>
<tr>
<td>1500</td>
<td>0.50</td>
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<tr>
<td>2000</td>
<td>0.89</td>
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<td>2500</td>
<td>1.39</td>
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<td>3000</td>
<td>2.00</td>
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<td>3500</td>
<td>2.72</td>
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<tr>
<td>4000</td>
<td>3.55</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Velocity (fpm)</th>
<th>Pressure Drop (in. wg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
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<td>1000</td>
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<tr>
<td>1500</td>
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<td>0.55</td>
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<td>0.86</td>
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<td>3500</td>
<td>1.66</td>
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<tr>
<td>4000</td>
<td>2.17</td>
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<table>
<thead>
<tr>
<th>Velocity (fpm)</th>
<th>Pressure Drop (in. wg)</th>
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</thead>
<tbody>
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<td>500</td>
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<td>1000</td>
<td>0.07</td>
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<td>1500</td>
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<td>4000</td>
<td>1.16</td>
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<table>
<thead>
<tr>
<th>Velocity (fpm)</th>
<th>Pressure Drop (in. wg)</th>
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</thead>
<tbody>
<tr>
<td>500</td>
<td>0.02</td>
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<table>
<thead>
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<th>Velocity (fpm)</th>
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<table>
<thead>
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<th>Velocity (fpm)</th>
<th>Pressure Drop (in. wg)</th>
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</thead>
<tbody>
<tr>
<td>500</td>
<td>0.01</td>
</tr>
<tr>
<td>1000</td>
<td>0.04</td>
</tr>
<tr>
<td>1500</td>
<td>0.09</td>
</tr>
<tr>
<td>2000</td>
<td>0.14</td>
</tr>
<tr>
<td>2500</td>
<td>0.25</td>
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<tr>
<td>3000</td>
<td>0.35</td>
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<tr>
<td>3500</td>
<td>0.48</td>
</tr>
<tr>
<td>4000</td>
<td>0.63</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Velocity (fpm)</th>
<th>Pressure Drop (in. wg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
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</tr>
<tr>
<td>1000</td>
<td>0.02</td>
</tr>
<tr>
<td>1500</td>
<td>0.03</td>
</tr>
<tr>
<td>2000</td>
<td>0.04</td>
</tr>
<tr>
<td>2500</td>
<td>0.05</td>
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<td>3500</td>
<td>0.07</td>
</tr>
<tr>
<td>4000</td>
<td>0.08</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Velocity (fpm)</th>
<th>Pressure Drop (in. wg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>0.01</td>
</tr>
<tr>
<td>1000</td>
<td>0.02</td>
</tr>
<tr>
<td>1500</td>
<td>0.03</td>
</tr>
<tr>
<td>2000</td>
<td>0.04</td>
</tr>
<tr>
<td>2500</td>
<td>0.05</td>
</tr>
<tr>
<td>3000</td>
<td>0.06</td>
</tr>
<tr>
<td>3500</td>
<td>0.07</td>
</tr>
<tr>
<td>4000</td>
<td>0.08</td>
</tr>
</tbody>
</table>

Greenheck Fan Corporation certifies that the model SESMD-201 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.
Actuators and Accessories
Space Envelopes

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

On dampers less than 18 in. (457mm) high, actuators may also require clearances above and/or below the sleeve. “B” and “T” dimensions are worst case clearance requirements for some dampers less than 18 in. (457mm) high. All dampers 18 in. (457mm) or more in height do not require these worst case clearances. If space availability above or below the damper sleeve is limited, each damper size should be individually evaluated.

---

### Application Data

#### SESMD-201

#### Actuators and Accessories

**Space Envelopes**

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

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---

#### Table: Actuator Type/Model

<table>
<thead>
<tr>
<th>Actuator Type/Model</th>
<th>B* With RRL, RRL/OCI, or TOR</th>
<th>T* With RRL, RRL/OCI, or TOR</th>
<th>S Piggyback</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>120 Volt AC</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSLF120 (-S) Belimo</td>
<td>7(\frac{1}{16}) in (195mm)</td>
<td>0</td>
<td>6 in. (152mm) NA</td>
</tr>
<tr>
<td>FSNF120 (-S) Belimo</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>9(\frac{3}{4}) in (249mm)</td>
<td>6 in. (152mm) 9 in. (229mm)</td>
</tr>
<tr>
<td>FSTF120 (-S) Belimo</td>
<td>7(\frac{1}{16}) in (195mm)</td>
<td>0</td>
<td>6 in. (152mm) NA</td>
</tr>
<tr>
<td>MS4X09 Series Honeywell</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>8(\frac{1}{2}) in (216mm)</td>
<td>6 in. (152mm) NA</td>
</tr>
<tr>
<td>MS4120 Series Honeywell</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>9(\frac{3}{4}) in (249mm)</td>
<td>6 in. (152mm) 9 in. (229mm)</td>
</tr>
<tr>
<td>GND-221.1 Siemens</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>7(\frac{3}{8}) in (186mm)</td>
<td>6 in. (152mm) NA</td>
</tr>
<tr>
<td><strong>24 Volt AC</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSAF24 (-S) Belimo</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>9(\frac{3}{4}) in (249mm)</td>
<td>6 in. (152mm) NA</td>
</tr>
<tr>
<td>FSTF24 (-S) Belimo</td>
<td>7(\frac{1}{16}) in (195mm)</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>6 in. (152mm) NA</td>
</tr>
<tr>
<td>FSLF24 (-S) Belimo</td>
<td>7(\frac{1}{16}) in (195mm)</td>
<td>0</td>
<td>6 in. (152mm) NA</td>
</tr>
<tr>
<td>FSNF24 (-S) Belimo</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>9(\frac{3}{4}) in (249mm)</td>
<td>6 in. (152mm) 9 in. (229mm)</td>
</tr>
<tr>
<td>MS8X09 Series Honeywell</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>8(\frac{1}{2}) in (216mm)</td>
<td>6 in. (152mm) NA</td>
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<tr>
<td>MS8120 Series Honeywell</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>9(\frac{3}{4}) in (249mm)</td>
<td>6 in. (152mm) 9 in. (229mm)</td>
</tr>
<tr>
<td>GND-121.1 Siemens</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>7(\frac{3}{8}) in (186mm)</td>
<td>6 in. (152mm) NA</td>
</tr>
<tr>
<td><strong>230 Volt AC</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSLF230 (-S) Belimo</td>
<td>7(\frac{1}{16}) in (195mm)</td>
<td>0</td>
<td>6 in. (152mm) NA</td>
</tr>
<tr>
<td>FSNF230 (-S) Belimo</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>9(\frac{3}{4}) in (249mm)</td>
<td>6 in. (152mm) 9 in. (229mm)</td>
</tr>
<tr>
<td>FSTF230 (-S) Belimo</td>
<td>7(\frac{1}{16}) in (195mm)</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>6 in. (152mm) NA</td>
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<td>MS4X09 Series Honeywell</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>8(\frac{1}{2}) in (216mm)</td>
<td>6 in. (152mm) NA</td>
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<td>MS4620 Series Honeywell</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>9(\frac{3}{4}) in (249mm)</td>
<td>6 in. (152mm) 9 in. (229mm)</td>
</tr>
<tr>
<td>GND 321.1 Siemens</td>
<td>(\frac{1}{2}) in. (13mm)</td>
<td>7(\frac{3}{8}) in (186mm)</td>
<td>6 in. (152mm) NA</td>
</tr>
<tr>
<td><strong>Pneumatic (25 psi min.)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>331-4551 Siemens</td>
<td>1(\frac{1}{2}) in. (38mm)</td>
<td>6(\frac{1}{4}) in. (175mm)</td>
<td>6 in. (152mm) NA</td>
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<tr>
<td>331-2976 Siemens</td>
<td>2(\frac{1}{4}) in. (60mm)</td>
<td>12(\frac{3}{8}) in. (306mm)</td>
<td>10 in. (254mm) NA</td>
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<tr>
<td>331-2856 Siemens</td>
<td>2(\frac{1}{4}) in. (60mm)</td>
<td>0</td>
<td>10 in. (254mm) NA</td>
</tr>
</tbody>
</table>

* For dampers 18 in. (457mm) or more in height these dimensions are 0 in.
**Application Data SESMD-201**

**Damper Sleeve and Sideplate Dimensional Data**

The drawings below and corresponding table show the position of the SESMD-201 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 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.

<table>
<thead>
<tr>
<th>in. (mm)</th>
<th>&quot;A&quot; Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sleeve</td>
</tr>
<tr>
<td></td>
<td>Standard</td>
</tr>
<tr>
<td>All Dampers</td>
<td>7 7/8 in. (183)</td>
</tr>
<tr>
<td>When Height is 11 in. (279) or less with OCI</td>
<td>12 (305)</td>
</tr>
</tbody>
</table>

**NOTE:** Entire damper frame is not required to be installed within the wall.

**Damper Sizing Information**

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.
Smoke Dampers meeting the following specifications shall be furnished and installed where shown on plans and/or as described in schedules. Dampers shall meet the requirements of NFPA 92, 101 & 105 and further shall be tested, rated and labeled in accordance with the latest edition of UL Standards 555S. Dampers shall have a low leakage design qualified to UL555S Leakage Class I.

Each damper/actuator combination shall have a UL555S elevated temperature rating of 250°F (121°C) minimum and shall be rated to operate at maximum design air flow at its installed location. Each damper shall be supplied with an appropriate actuator installed by the damper manufacturer at the time of damper fabrication. Damper actuator shall be (specifier select one of the following) electric type for 120 (24 or 230) Volt operation or pneumatic type for 25 psi minimum (30 psi maximum) operation.

Damper blades shall be 16 ga. (1.5mm) 316 stainless steel 3V type with three longitudinal grooves for reinforcement. Damper frame shall be 316 stainless steel formed into a structural hat channel shape with reinforced corners. Bearings shall be 316SS type rotating in extruded holes in the damper frame. Blade edge seals shall be silicone rubber designed to inflate and provide a tighter seal against leakage as pressure on either side of the damper increases. Jamb seals shall be stainless steel compression type. Blades shall be symmetrical relative to their axle pivot point, presenting identical resistance to airflow in either direction or pressure on either side of the damper.

The Damper Manufacturer’s submittal data shall certify all air performance pressure drop data is licensed in accordance with the AMCA Certified Ratings Program for Test Figures 5.2, 5.3, and 5.5. Damper air performance data shall be developed in accordance with the latest edition of AMCA Standard 500-D. Dampers shall be labeled with the AMCA Air Performance Seal.

Damper must be rated for mounting vertically (with blades running horizontal) or horizontally and be UL 555S rated for leakage and airflow in either direction through the damper.

The basis of design is Greenheck Model SESMD-201.

Specifications

Smoke Dampers meeting the following specifications shall be furnished and installed where shown on plans and/or as described in schedules. Dampers shall meet the requirements of NFPA 92, 101 & 105 and further shall be tested, rated and labeled in accordance with the latest edition of UL Standards 555S. Dampers shall have a low leakage design qualified to UL555S Leakage Class I.

Each damper/actuator combination shall have a UL555S elevated temperature rating of 250°F (121°C) minimum and shall be rated to operate at maximum design air flow at its installed location. Each damper shall be supplied with an appropriate actuator installed by the damper manufacturer at the time of damper fabrication. Damper actuator shall be (specifier select one of the following) electric type for 120 (24 or 230) Volt operation or pneumatic type for 25 psi minimum (30 psi maximum) operation.

Damper blades shall be 16 ga. (1.5mm) 316 stainless steel 3V type with three longitudinal grooves for reinforcement. Damper frame shall be 316 stainless steel formed into a structural hat channel shape with reinforced corners. Bearings shall be 316SS type rotating in extruded holes in the damper frame. Blade edge seals shall be silicone rubber designed to inflate and provide a tighter seal against leakage as pressure on either side of the damper increases. Jamb seals shall be stainless steel compression type. Blades shall be symmetrical relative to their axle pivot point, presenting identical resistance to airflow in either direction or pressure on either side of the damper.

The Damper Manufacturer’s submittal data shall certify all air performance pressure drop data is licensed in accordance with the AMCA Certified Ratings Program for Test Figures 5.2, 5.3, and 5.5. Damper air performance data shall be developed in accordance with the latest edition of AMCA Standard 500-D. Dampers shall be labeled with the AMCA Air Performance Seal.

Damper must be rated for mounting vertically (with blades running horizontal) or horizontally and be UL 555S rated for leakage and airflow in either direction through the damper.

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