Combination Fire/Smoke Damper
Class I, 250°F or 350°F - Galvanized Steel - Single Thickness Blade - UL Classified Damper

STANDARD MATERIALS AND CONSTRUCTION

**FRAME:**
- 20-GA galvanized steel flat by 18 long integral sleeve

**BLADES:**
- 16-GA galvanized steel single thickness; Parallel action

**AXLES:**
- Plated solid steel stub

**BEARINGS:**
- Oil impregnated bronze

**LINKAGE:**
- Galvanized steel angle interconnect, with plated steel brackets and pivots located on blade

**STOPS:**
- 18-GA galvanized steel at head and sill

**BLADE SEALS:**
- Silicone

**JAMB SEALS:**
- Stainless steel

**SLEEVE:**
- Integral 20-GA galvanized steel by 18 long

**RETAINING ANGLES:**
- Hardcast Irongrip 601 or UL-listed equivalent

**FINISH:**
- Mill on galvanized steel

**ACTUATOR:**
- Electric with heat response device (EHRD) or pneumatic with heat response device (PHRD); Factory-installed for Power-Open/Spring-Close (fail close) operation; External left hand mounted as viewed from jackshaft side of damper

OPTIONS

Right hand actuator mounting location
Integral Dual Position Indication (DPD) switches
Sensotherm re-openable heat response device (ESOT) for electric actuator
Sensotherm re-openable heat response device (PSOT) for pneumatic actuator
Model SM-501 Flow-rated smoke detector (10" minimum damper height) ship loose only
Model 2151 No-flow smoke detector (12" minimum damper height) ship loose only
Tab-Lock retaining angles
Stainless steel bearings
Copper tubing (for pneumatic actuators)
Sleeves of various depths
Round or oval transitions
Short-width (<16") and/or short-height (<6") transitions

NOTES

1. "A" width and "B" height are opening dimensions. Damper frames are provided approximately 1/4" undersized.
2. Dampers are available in 1" increments only.
3. Dampers for horizontal installation can only be mounted in a fire barrier constructed of masonry/concrete materials.
4. The blades must stay in the fire wall. The adjustable retaining angle may only be adjusted the distance shown on the label or installation instructions.

DAMPER SIZES

<table>
<thead>
<tr>
<th>Orientation</th>
<th>Horizontal &amp; Vertical</th>
<th>Panels</th>
<th>Minimum Panel</th>
<th>Maximum Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectangular</td>
<td>4 x 4 x 4 x 4 (16&quot; x 6&quot; frame)</td>
<td>24 x 24 x 24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Round</td>
<td>4 x 4 dia. (16&quot; x 6&quot; frame)</td>
<td>22 dia.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oval</td>
<td>4 x 4 x 4 x 4 (16&quot; x 6&quot; frame)</td>
<td>22 x 22 x 22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Dampers smaller than minimum frame size require a transition. Reference SD-TRFS.*
Combination Fire/Smoke Damper
Class I - 250°F or 350°F - Galvanized Steel - Single Thickness Blade - UL Classified Damper

CR1

**Operations Ratings:**

Maximum Differential Pressure: 4 in. wg  
Maximum Velocity: 2000 fpm

**Leakage Ratings:**

UL Class I  
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.

<table>
<thead>
<tr>
<th>Damper Size</th>
<th>Noise Criterion (NC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1000 (5.08) 2000 (10.16) 3000 (15.24) 4000 (20.32)</td>
</tr>
<tr>
<td>12&quot;W x 12&quot;H (305mm x 305mm)</td>
<td>22dB 44dB 55dB 62dB</td>
</tr>
<tr>
<td>24&quot;W x 24&quot;H (610mm x 610mm)</td>
<td>30dB 50dB 62dB not available</td>
</tr>
</tbody>
</table>

**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.

In the interest of product development, Cesco Products reserves the right to make changes without notice.
STANDARD MATERIALS AND CONSTRUCTION

FRAME: 20-GA galvanized steel flat by 18" long integral sleeve
BLADES: 16-GA galvanized steel single thickness; Parallel action
AXLES: Plated solid steel stub
BEARINGS: Oil impregnated bronze
LINKAGE: Galvanized steel angle interconnect, with plated steel brackets and pivots located on blade
STOPS: 18-GA galvanized steel at head and sill
BLADE SEALS: Silicone
JAMB SEALS: Stainless steel
SLEEVE: Integral 20-GA galvanized steel by 18' long
RETAINING ANGLES: 7/8" x 1 1/2" x 16-GA adjustable perimeter mounting angle for dampers > 10"W x 10"H; dampers ≤ 10"W x 10"H retaining angles shipped loose
CAULKING: Hardcast Irongrip 601 or UL-listed equivalent
FINISH: Mill on galvanized steel
ACTUATOR: Electric with heat response device (EHRD) or pneumatic with heat response device (PHRD); Factory-installed for Power-Open/Spring-Close (fail close) operation; External left hand mounted as viewed from jackshaft side of damper

OPTIONS

Right hand actuator mounting location
Integral Dual Position Indication (IDPI) switches
Sensetherm re-openable heat response device (ESOT) for electric actuator
Sensetherm re-openable heat response device (PSOT) for pneumatic actuator
Model SM-501 Flow-rated smoke detector (10' minimum damper height) shipped loose only
Model 2151 No-flow smoke detector (12" minimum damper height) shipped loose only
Tab-Lock retaining angles
Stainless steel bearings
Copper tubing (for pneumatic actuators)
Sleeves of various depths
Round or oval transitions
Short-width (<6") and/or short-height (<6") transitions

NOTES

1. "A" width and "B" height are opening dimensions. Damper frames are provided approximately 1/4" undersized.
2. Dampers are available in 1" increments only.
3. Dampers for horizontal installation can only be mounted in a fire barrier constructed of masonry/concrete materials.
4. The blades must stay in the fire wall. The adjustable retaining angle may only be adjusted the distance shown on the label or installation instructions.

DAMPER SIZES

<table>
<thead>
<tr>
<th>Orientation</th>
<th>Horizontal &amp; Vertical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panels</td>
<td>Minimum Panel</td>
</tr>
<tr>
<td>rectangular</td>
<td>4&quot;W x 4&quot;H</td>
</tr>
<tr>
<td></td>
<td>(6&quot;W x 6&quot;H frame)</td>
</tr>
<tr>
<td>Round</td>
<td>4&quot; dia.</td>
</tr>
<tr>
<td></td>
<td>(6&quot;W x 6&quot;H frame)</td>
</tr>
<tr>
<td>Oval</td>
<td>4&quot;W x 4&quot;H</td>
</tr>
<tr>
<td></td>
<td>(6&quot;W x 6&quot;H frame)</td>
</tr>
</tbody>
</table>

*Dampers smaller than minimum frame size require a transition. Reference SD-TRFS.*

UNDERWRITERS LABORATORIES INC.®
CLASSIFIED FIRE AND SMOKE DAMPER
FIRE RESISTANCE RATING 1 1/2 HR
LEAKAGE RESISTANCE CLASS II

This combination fire/smoke damper meets the construction and performance requirements of:

- Underwriters Laboratories Inc. Standards 555 and 555S
- National Fire Protection Association Standards 90A, 92A, and 92B
- ICC's International Building Code
- California State Fire Marshal Listing #3225-1328:120

- Underwriters Laboratories Inc. Approved for dual direction airflow and dynamic conditions.
- Underwriters Laboratories Inc. Classified for use in fire resistive ratings of less than 3 hours.
- Underwriters Laboratories Inc. Classified for use in smoke control systems for Leakage Class II and 250°F or 350°F.
- Actuators must be arranged to operate automatically, must fail closed upon loss of power, and must be controlled by a smoke detection system.

P.O. Box 606 • 7435 Industrial Rd. • Florence, KY 41042
Phone: 859-538-3450 • Fax: 859-647-7810
www.cescoproducts.com

SD-CR2-08.12
Combination Fire/Smoke Damper
Class II · 250°F or 350°F · Galvanized Steel · Single Thickness Blade · UL Classified Damper

CR2

Operations Ratings:
Maximum Differential Pressure: 4 in. wg
Maximum Velocity: 2000 fpm

Leakage Ratings:
UL Class II
20 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.

<table>
<thead>
<tr>
<th>Damper Size</th>
<th>1000 (5.08)</th>
<th>2000 (10.16)</th>
<th>3000 (15.24)</th>
<th>4000 (20.32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12&quot;W x 12&quot;H (305mm x 305mm)</td>
<td>22dB</td>
<td>44dB</td>
<td>55dB</td>
<td>62dB</td>
</tr>
<tr>
<td>24&quot;W x 24&quot;H (610mm x 610mm)</td>
<td>30dB</td>
<td>50dB</td>
<td>62dB</td>
<td>not available</td>
</tr>
</tbody>
</table>

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.

Cesco Products certifies that the model CR2 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.

In the interest of product development, Cesco Products reserves the right to make changes without notice.