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OUT OF WALL COMBINATION FIRE/SMOKE DAMPER
INSTALLATION INSTRUCTIONS
GRILLE MOUNT WITH ACTUATOR ACCESS
MODELS: 1221-OW & 1221-OWM 1 1/2 HR. LABEL

ITEMS:
A Typical 2 hour rated vertical concrete or steel stud construction and horizontal concrete fire partition
B Duct connection (see Note #3)
C Intumescent material (insulation)
D #10 steel screws or concrete anchors (see Note #5)
E Actuator
F Grille/Diffuser
G Rear retaining angle (see Note #5)
H ERL Electric Resettable Link (Heat Sensor)
I Typical 2 Hour Rated Vertical Wood Stud Construction

QUALIFICATIONS:
• Meets all the requirements of UL 555 and UL 555S.
• Meets the requirements for NFPA 80, 90A, 92, 101 and 105 as well as IBC and NBC (Canada) building codes.
• California State Fire Marshal Listing No. 3225-0935:0106.
• City of New York. MEA #336-03-M.

NOTES:
IMPORTANT: DAMPER IS FURNISHED FULL-SIZE (See Note #4)

1. Installation shall be in accordance with the appropriate requirements of the National Fire Protection Association Standard NFPA 90A latest edition.
2. Damper Sleeve: Factory furnished sleeves shall not be less than 20 gauge. (1.01) coated steel.
   Sleeve thickness must be equal to or thicker than the duct connected to it. Sleeve gauge requirements are listed in the SMACNA Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems and in NFPA 90A. If a break-away style duct/sleeve connection is not used, damper sleeves up to 36” wide by 24” (914 x 610) high of not less than 16 gauge (1.61) coated steel, or larger sleeves of not less than 14 gauge (1.99) thick coated steel may be attached to the duct with screws or other types of mechanical fasteners. The maximum sleeve thickness for such rigid joints is 10 gauge (3.51) for coated steel.
   The connecting duct shall not be continuous thru the wall or floor opening but shall terminate at the sleeve. Sleeves shall extend a maximum of 16” (406) from the wall.

3. Break-away duct/sleeve connections:
a. Rectangular ducts must use one or more of the following connections if the gauge is less than the requirement in note 2 for rigid connections:
   
<table>
<thead>
<tr>
<th>Connection Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>PLAIN &quot;S&quot; SLIP</td>
<td>Standing &quot;S&quot; Slip (ALT. BAR)</td>
</tr>
<tr>
<td>HEMMED &quot;S&quot; SLIP</td>
<td>Standing &quot;S&quot; Slip (ANGLE REINFORCED)</td>
</tr>
<tr>
<td>DOUBLE &quot;S&quot; SLIP</td>
<td>Standing &quot;S&quot; Slip (BAR REINFORCED)</td>
</tr>
<tr>
<td>INSIDE SLIP JOINT</td>
<td>Flat Drive Slip</td>
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In addition:
• A maximum of two #10 sheet metal screws on each side and on the bottom, located in the center of the slip pocket and penetrating both sides of the slip pocket may be used.

Dimensions are in inches (mm).
4. Opening Size: Dampers are furnished full ordered size to facilitate grille installation. Opening size in partition should be sized 1/2" (13) larger in all directions to allow for sleeve thickness and insulation.

5. Fasteners and Retaining Angles. For installation in a masonry wall or floor/ceiling and metal stud drywall partitions, no rear retaining angles are required. Insert damper/sleeve combination into opening so that the 3/4" (19) flange is tight to the drywall or concrete. Secure the damper in the wall opening from inside the sleeve as shown above by use of the following:
   a. In metal stud/drywall walls, partitions and cavity shaft wall partitions, use minimum #10 sheet metal screws.
   b. In masonry walls or floor/ceilings use minimum #10 self-tapping concrete anchors. Anchors must penetrate wall minimum 1 1/2" (38).
   c. In wood stud, use minimum #10 steel screws, 2 1/2" (64) long with minimum 1 1/2" (38) penetration into framing.

Fasteners shall be spaced a maximum of 6" (152) on center and 2" (51) maximum from corners, a minimum of two per side is required. Alternatively, 1 1/2" x 1 1/2" x 16 gauge (38 x 38 x 1.61) rear retaining angles may be used in lieu of the above prescribed method and secured to the sleeve with 1/2" (12.7) long welds, 1/4" (6.35) dia. bolts and nuts, 3/16" (4.76) dia. steel rivets or #8 sheet metal screws, 8" (203) on center and 2" (51) maximum from corner of sleeve on all four sides.

6. Maximum Size Limitations: Vertical: 36" x 48" (914 x 1219), Horizontal: 32" x 48" (813 x 1219). Minimum size is 12" x 8" (305 x 203).

7. Actuator Connections and Accessories: Combination fire/smoke dampers and qualified actuators are tested together by UL and are factory installed to qualify for damper/actuator standard warranties. Factory installed electric actuators are either 24, 120 or 230 VAC. All wiring must be in accordance with the appropriate electrical codes and NFPA 70. Factory installed pneumatic actuators are rated at and have a maximum pressure of 25 PSI. The pneumatic actuator shall be connected to the air supply thru metallic tubing. A short silicone tubing pigtail is acceptable.

**ERL (Electric Resettable Link):** Dampers are supplied with an electric thermostat-type temperature responsive device as standard. Refer to Figure 1 for wiring of the ERL. If dampers are ordered with a pneumatic actuator and ERL, an EP switch is required with an appropriate electric power circuit to allow the ERL to control the pneumatic actuator.

When DTO (MLS-400) re-openable controls or MLS-300 position indicators are used, refer to the installation and wiring instructions for these units. Documents IOM-MLS4 and IOM-MLS3 (H or N) respectively.

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**Figure 1. ERL Wiring**

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**Dimensions are in inches (mm).**