

**QUALIFICATIONS:**

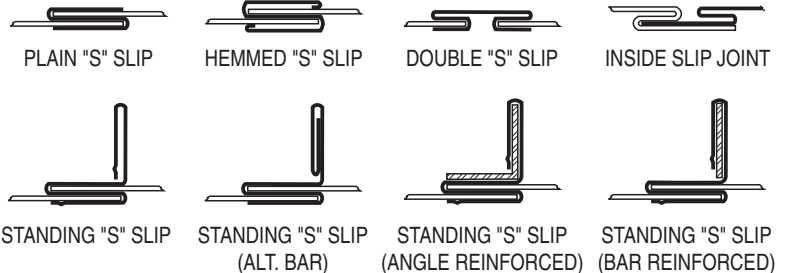
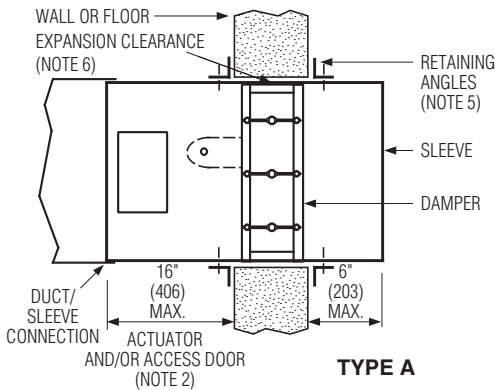
- Meets all the requirements of UL 555 and UL 555S.
- Meets NFPA 80, 90A, 92A, 92B, 101 and 105 as well as IBC & NBC (Canada) Building Code requirements.
- California State Fire Marshal Listing No. 03225-0935-106.
- City of New York. MEA #366-03-M.

**NOTES:**

1. Installation shall be in accordance with the appropriate requirements of the National Fire Protection Association Standard NFPA 90A latest edition.
2. **Damper Sleeve:** 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 6" (152) on either side of the wall or floor opening or 16" (406) on a side intended for use with an actuator and/or an access door. The sleeves may extend 16" (406) on each side for use with an actuator on one side and an access door on the other side.

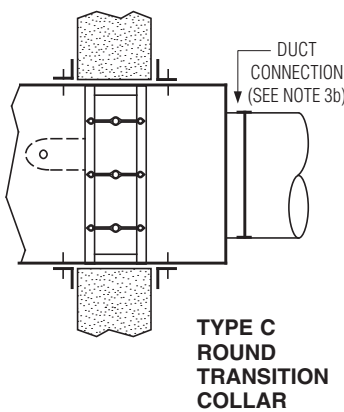
**3. Break-away duct/sleeve connections:**

- 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:



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.
- One of the above connections on the top and bottom joints with flat drive slip connections on the side joints may be used for dampers up to 20" (508) in height.



- b. Round or oval duct may be attached to the round or oval collar which is part of the damper/sleeve in the following manner:
  - Duct diameters 22" (559) and smaller must use three #10 sheet metal screws equally spaced around the circumference.
  - Duct diameters over 22" (559) up to and including 36" (914) may use five #10 sheet metal screws equally spaced around the circumference.
  - Duct diameters larger than 36" (914) wide or diameter may use eight #10 sheet metal screws equally spaced around the circumference.

**Note:** When optional sealing of these break-away connections is desired, the duct sealant shall be PA2084T Duct Sealant by Precision or water based DP1010 by Design Polymeric.

- c. For the use of approved alternative Ductmate or TDC/TDF break-away connections, refer to the supplements noted on this page.

**4. Damper/sleeve attachment:**

- For 1 1/2 Hour rating:** Damper shall be secured to sleeve with 1/4" (6.35) long welds, 1/4" (6.35) dia. bolts and nuts, #8 sheet metal screws, 3/16" (4.76) steel rivets or 3/16" (4.76) dia. buttonlocks on both sides of damper at 6" (152) on center and 4" (102) maximum from all four corners of the damper.
- For 3 Hour rating:** Damper shall be secured to sleeve with 1/4" (6.35) long welds or 1/4" (6.35) dia. bolts and nuts on both sides of damper at 6" (152) on center and 2" (51) maximum from all four corners of the damper.
- For field assembled sleeves, the inner dimensions of the sleeve shall be equal to the outer dimensions of the damper. All joints between the damper and the sleeve and between dampers in multiple sections, shall be sealed with Dow-Corning 732, G.E.108, Boss 310 or 315 RTV silicone sealant on one side only.

**5. Retaining angles** shall be a minimum of 1 1/2" x 1 1/2" x 16 gauge (38 x 38 x 1.61) for dampers up to 90" (2286) in width and up to 90" (2286) in height. For dampers exceeding these dimensions, the angles shall be a minimum of 2" x 2" x 10 gauge (51 x 51 x 3.51).

**1. Retaining angles shall be secured to sleeve as follows:**

**For 1 1/2 Hour rating:** Secure the retaining angles to the sleeve with 1/4" (6.35) long welds, 1/4" (6.35) dia. bolts and nuts, #8 sheet metal screws or 3/16" (4.76) dia. steel rivets at 8" (203) on center and 2" (51) maximum from all four corners of the sleeve.

**2. For 3 Hour rating:** Secure the retaining angles to the sleeve with 1/4" (6.35) long welds, 1/4" (6.35) dia. bolts and nuts or #10 sheet metal screws at 8" (203) on center and 2" (51) maximum from all four corners of the sleeve.

3. The retaining angles must lap the structural opening by 1" (25) minimum. When the ductwork terminates at the wall or floor, the retaining angles may be turned inwards, providing the opening size is increased by an amount equal to twice the combined thickness of the angle and the height of the screw or bolthead to maintain the required expansion clearance. Field fabricated retaining angles are not to be mechanically fastened at the corners.

**6. Expansion clearance** between the sleeve and wall or floor shall be a minimum of 1/8" per foot (3.18 per 305) of width or height of the sleeve. The maximum size of the opening shall be 2" (57) larger in either dimension than the allowable minimum size. For example; a sleeve dimension of 36" x 36" (914 x 914) shall have an opening size of 36 3/8" x 36 3/8" (924 x 924) minimum and 38 3/8" x 38 3/8" (975 x 975) maximum.

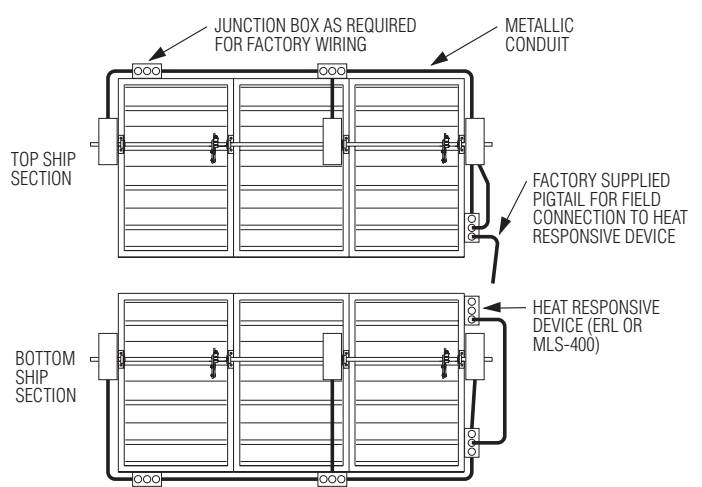
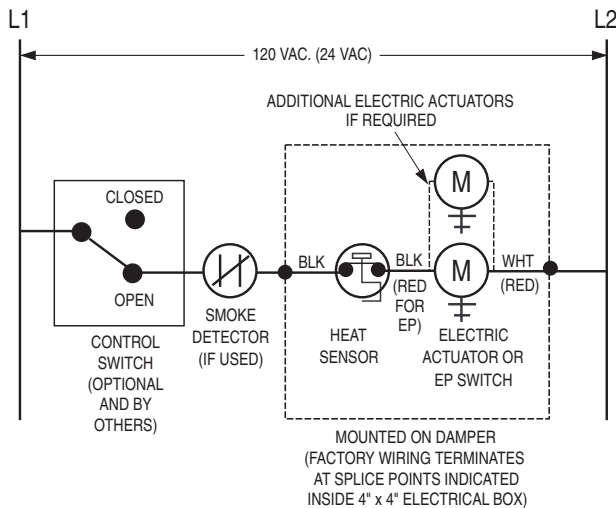
**7. Maximum Size Limitations:** The maximum Type A fire damper sizes are as follows:

Model Series			Single Section	Multiple Section
1220	Vertical	(1 1/2 hr. label)	36" x 48" (914 x 1219)	144" x 96" (3658 x 2438)
	Horizontal	(1 1/2 hr. label)	32" x 48" (813 x 1219)	128" x 96" (3251 x 2438)
1220-3	Vertical	(3 hr. label)	36" x 48" (914 x 1219)	120" x 96" (3048 x 2438) (Max. Section Size not to exceed 30" x 48" [762 x 1219])
	Horizontal	(3 hr. label)	32" x 48" (813 x 1219)	N/A
1220M	Vertical	(1 1/2 hr. label)	36" x 48" (914 x 1219)	144" x 96" (3658 x 2438)
	Horizontal	(1 1/2 hr. label)	32" x 48" (813 x 1219)	128" x 96" (3251 x 2438)
1220M-3	Vertical	(3 hr. label)	36" x 48" (914 x 1219)	120" x 96" (3048 x 2438) (Max. Section Size not to exceed 30" x 48" [762 x 1219])
	Horizontal	(3 hr. label)	32" x 48" (813 x 1219)	N/A

Type B and C dampers have the same overall damper size but the connecting ducts are smaller due to the B or C enclosures. See Type B and Type C specification drawings for maximum duct sizes.

**8. 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. Multiple section damper assemblies requiring more than one actuator must have all actuators wired to a single temperature responsive device (ERL or MLS-400) as shown in Figure 2. This is required for simultaneous closure of all damper sections. When 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.



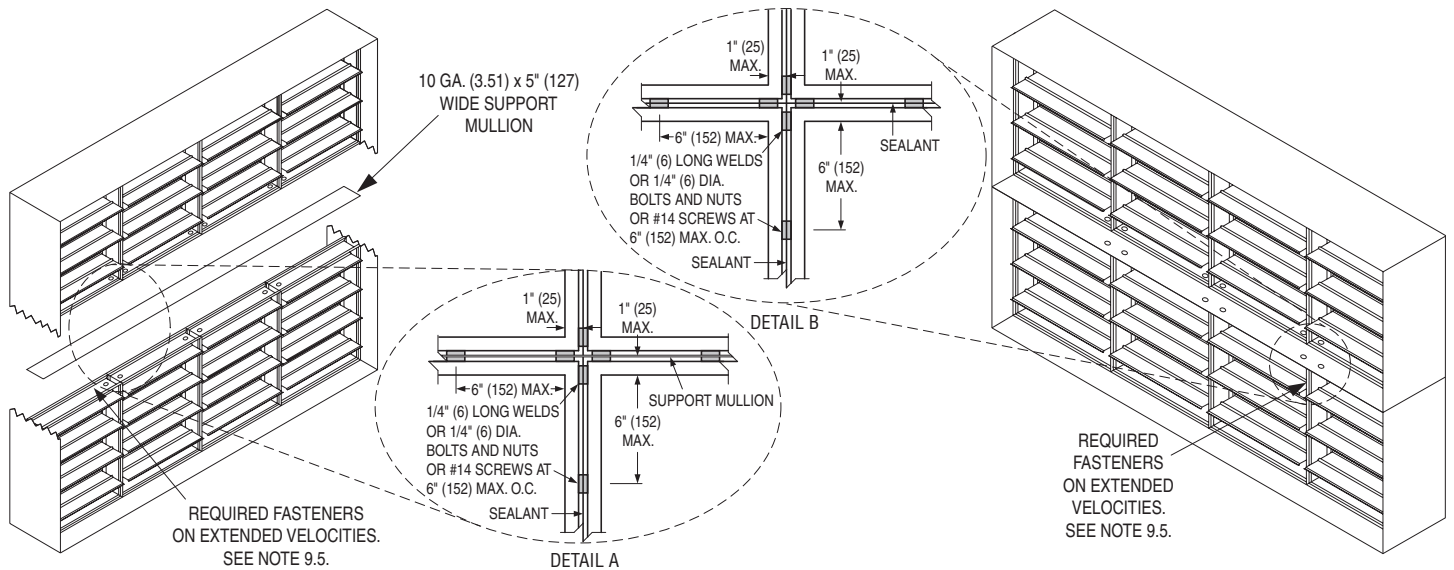
**Figure 1. ERL Wiring**

Dimensions are in inches (mm).

**Figure 2. Typical multiple actuator damper assembly ship detail**

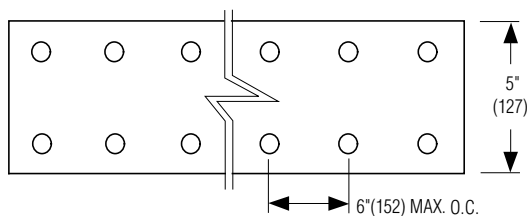
### 9. Multiple-section assemblies:

1. In multiple assemblies of vertical or horizontal dampers, the frames shall be joined together on both sides of the damper using 1/4" (6) long welds, 1/4" (6) dia. bolts and nuts, or #8 sheet metal screws. Maximum 6" (152) on center.
2. Multiple section vertical and horizontal damper assemblies, two sections high (deep), require a 10 ga. (3.51) x 5" (127) flat mullion between the upper and lower sections (see Figures 3 and 5).
3. On vertical assemblies only, when a minimum 16 ga. (1.6) sleeve is used and the top and bottom section are sleeved separately, the sleeve acts as the mullion, therefore no mullion is required (see Figure 4). In this case, sleeves shall be joined together using 1/4" (6) dia. bolts and nuts or #10 sheet metal screws 12" (305) on center and 2" (51) maximum from corners.
4. In addition, horizontal multiple section assemblies over two sections wide require a single 10 ga. (3.51) x 7" (178) "Z" mullion (Figure 6) between any two sections.
5. In addition, on multiple section assemblies with extended velocity ratings, greater than 2000 fpm, #14 screws, 1/4" (6) dia. bolts and nuts, or 1/4" (6) long welds shall be used for all damper to damper joints where four damper sections adjoin and shall be located within 1" (25) of each mating corner of each damper section. Fastener/welds required on both sides of the damper assembly. (See Detail A or B).

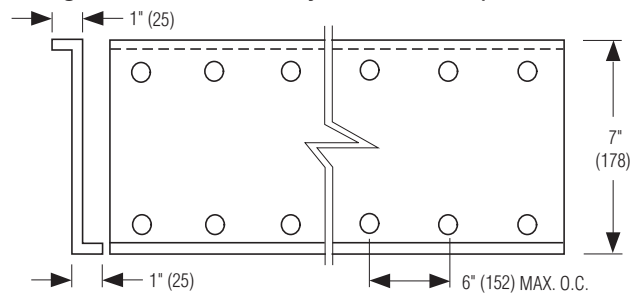


**Figure 3. Single sleeve around outside and support mullion**

**Figure 4. Two individually sleeved units (No mullion required)**



**Figure 5. Flat Mullion**



**Figure 6. "Z" Mullion**

**IMPORTANT:**

DO NOT CAST DAMPER IN PLACE.  
 DO NOT FASTEN RETAINING ANGLES OR DAMPER DIRECTLY TO WALL OR FLOOR.  
 DO NOT INSTALL DAMPER OUT OF SQUARE OR OUT OF FLAT.  
 VERTICAL MOUNTING SHOWN ON MASONRY WALL.  
 FOR INSTALLATION IN DRYWALL FRAMING, SEE DOC. FDSWSFINST.  
 HORIZONTAL MOUNTING SIMILAR FOR MASONRY WALL.

**REFER TO THE APPROPRIATE NAILOR INSTALLATION INSTRUCTION REQUIREMENTS FOR ADDITIONAL INFORMATION OR SPECIAL REQUIREMENTS:**

- |   |            |
|---|------------|
| MLS-300 (Honeywell) POSITION INDICATOR  | MLS3H      |
| MLS-300 (Nailor) POSITION INDICATOR   | MLS3N      |
| MLS-400 REOPENABLE FIRE SENSOR  | MLS4       |
| ERL ELECTRIC RESETTABLE LINK  | ERL        |
| STEEL MULLIONS (for dampers in oversized wall openings; for use in static systems only) | FDSMINST   |
| SINGLE SIDED RETAINING ANGLES   | FDSSRAINST |
| STEEL AND WOOD STUD FRAMING   | FDSWSFINST |
| CAVITY SHAFT WALL PARTITIONS  | FDCSWINST  |
| DUCTMATE BREAKAWAY CONNECTIONS  | FDDMINST   |
| TDC/TDF FLANGED DUCT CONNECTION   | FDTDCFINST |
| QUICK-SET RETAINING ANGLES  | FDQSRA     |
| SEALING IN WALL/PARTITION OR FLOOR  | FDS        |

Dimensions are in inches (mm).

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