Standard Installation

Smoke Damper Models: S1, S2, SA1, SA2

APPLICATION

These dynamically rated smoke dampers are intended to restrict the passage of smoke. This smoke damper may be mounted in the vertical or horizontal position with the damper blades running horizontally. Airflow can be from either direction. When mounted in the vertical position, the damper may be mounted right side up or upside down. It can be mounted within the plane of a smoke barrier, but can also be mounted out of the plane of a smoke barrier. When mounted out of the plane of the smoke barrier, it is to be installed within 24" of the barrier and before any duct inlets or outlets.

MULTIPLE PANEL SIZE LIMITATIONS

	Actuation	Electric		
	Orientation	Horizontal & Vertical		
	Assembly	Max Panel	Max Assy 250°	Max Assy 350°
Model	S1, S2	36"Wx48"H 48"Wx36"H	144"Wx70"H 288"Wx35"H	128"Wx62"H 256"Wx31"H
	SA1, SA2	36"wx48"H	144"Wx96"H 288"Wx48"H	144"Wx96"H 288"Wx48"H

	Actuation	Pneumatic		
	Orientation	Horizontal & Vertical		
	Assembly	Max Panel	Max Assy 250°	Max Assy 350°
Model	S1, S2	36"Wx48"H	108"Wx36"H	108"Wx36"H
	SA1, SA2	36"Wx48"H	144"Wx96"H 288"Wx48"H	144"Wx96"H 288"Wx48"H

SUPPLEMENTAL INSTALLATION INSTRUCTIONS / SUBMITTAL DATA

Sleeve Extension
Integral Duct Access Door
Integral Dual Position Indication (SD-IDPI)
Flow-Rated Smoke Detector (SM-501)
No-Flow Smoke Detector (2151)
Transitions (SD-TRFS)
Sleeves (SD-SLVS)

INSTALLATION

1. **General:** The installation of the damper shall conform to NFPA-90A and the SMACNA Fire, Smoke and Radiation Damper Installation Guide.

2. **Actuators:** Dampers must be supplied with factory mounted actuators and are intended to close automatically upon loss of electrical power or release of air pressure and is to be controlled by a smoke detector.

3. **Multiple Panel / Multiple Section Assembly:** Large damper assembly sizes may require multiple factory assembled modules that ship separately. Refer to page 3 for details.

4. **Sleeves:** Sleeve are not required as dampers can be installed into continuous ductwork. Dampers with factory mounted external actuators can be supplied without sleeves, but require sideplates. Dampers with factory mounted internal actuators can be supplied without sleeves or sideplates. Sleeves shall be the same gauge or heavier as the duct to which it is attached. Gauges shall conform to SMACNA or ASHRAE duct standards. A field supplied sleeve is attached to the damper frame with $^{3}/_{16}$" diameter steel rivets, $^{1}/_{4}$" diameter steel bolts, #10 steel sheet metal screws, or ½" long welds. Fasteners shall be staggered on each side of the damper frame on 6" maximum centers and 3-½" maximum from each corner. For Class I Smoke dampers, approved caulking (reference note 6) shall be applied along the perimeter between the sleeve and the damper on both sides. For Class II Smoke dampers, approved caulking (reference note 6) shall be applied along the perimeter between the sleeve and the damper on only one side.

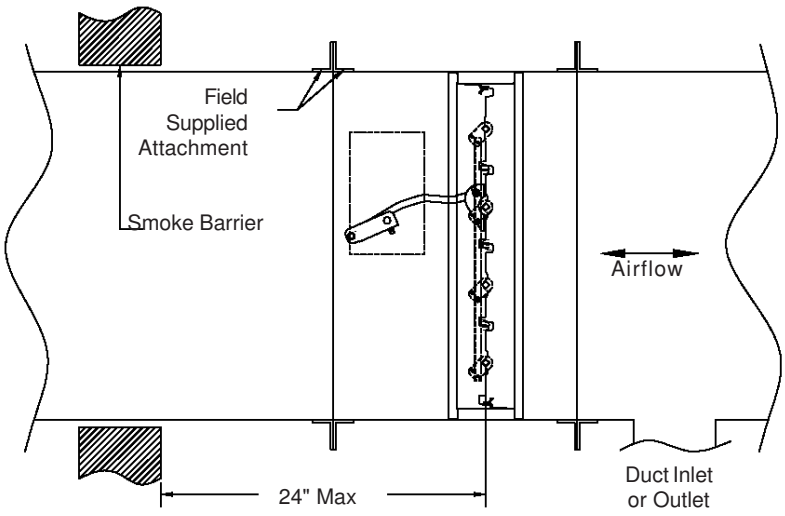
5. **Attachment:** For dampers without sleeves, use metal shims, if required, between the damper frame and ductwork to prevent distortion. The damper is to be anchored to the ductwork along the perimeter on both sides of the hat channel frame.

6. **Caulking:** Caulk shall be one of the following: Dow Corning RTV732, Silco Sil-Bond RTV 4500, General Electric IS808, or Novagard RTV300. For Class I dampers, approved caulking shall be applied along the perimeter between the sleeve/ductwork and frame on both sides. For Class II dampers, approved caulking shall be applied along the perimeter between the sleeve/ductwork and frame on only one side.

7. **Maintenance**: Dampers shall be maintained at intervals as stated in NFPA 90A and 92A. Local codes or building conditions may require more frequent inspections and maintenance.

STANDARD MOUNTING DETAILS

Smoke Only, Vertical or Horizontal



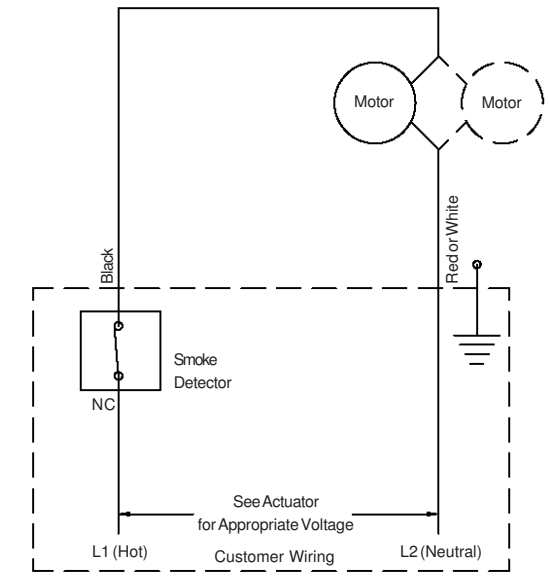
MULTIPLE PANEL / MULTIPLE SECTION INSTALLATION DETAILS

Smoke Dampers (Models S1, S2, SA1, SA2)

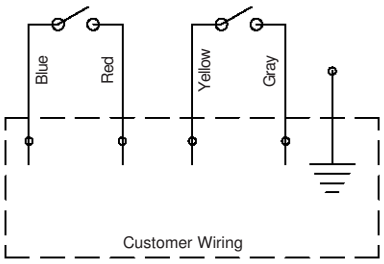
1. Damper assemblies ordered without factory mounted sleeves are limited in size, so that the entire assembly ships as a single section.
2. Multiple panel high damper assemblies are electrically/pneumatically, but not mechanically linked between top and bottom panels if assembled within a common sleeve. Large sizes may require multiple sleeve sections - multiple sleeve sections are not mechanically or electrically/ pneumatically linked.
3. Multiple panel wide damper assemblies are mechanically and electrically/pneumatically linked if assembled within a common sleeve. Large sizes may require multiple sleeve sections - multiple sleeve sections are not mechanically or electrically/pneumatically linked.
4. Damper assembly sections that are not mechanically or electrically/pneumatically linked each have their own supply connection point, such that they operate independently. Multiple actuators within a linked section are factory wired/plumbed together.
5. Damper assembly sections that are mechanically and electrically/pneumatically linked share a single supply connection point. Multiple actuators within a linked section are factory wired/plumbed together.
6. Damper assemblies that ship in multiple sections shall be fastened together using 1/4" diameter steel bolts, lockwashers, and nuts. Fasteners shall be on 6" maximum centers on both faces of the sleeve.

ELECTRIC WIRING SCHEMATICS

Notes
1. All wiring to be in accordance with N.E.C. (NFPA 70).
2. Refer to actuator label for appropriate voltage.
3. Connect incoming ground to the actuator assembly.



Integral Dual Position Indication (IDPI)



Integral Dual Position Indication (IDPI) Wiring Chart			
actuator mounting location	damper full open	damper full close	damper mid-stroke
	closed circuit		
external left	red / blue	yellow / gray	none
external right	yellow / gray	red / blue	none
internal left	yellow / gray	red / blue	none
internal right	red / blue	yellow / gray	none

* This wiring is opposite if the actuator is rotated 90°, so that it is parallel to the duct.

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