MODEL 1290S
TRUE ROUND

Model 1290S is a True Round Smoke Damper ideal for round ductwork applications where building codes require a leakage rated smoke damper for operational smoke control in static or dynamic smoke management systems. Features include a sturdy beaded casing for superior rigidity and a heavy duty 14 ga. (2.0) equivalent laminated blade that is double bolted to axles for positive connection. The 1290S smoke damper is designed and tested to provide premium performance and offers the lowest leakage class available, qualified for installation with airflow in either direction and inverted mounting.

Model 1290S

Model 1290S-SS

MODEL 1290S-SS
TRUE ROUND • STAINLESS STEEL

Model 1290S-SS Stainless Steel True Round Smoke Damper is ideal for high humidity or mildly corrosive applications where building codes require a leakage rated smoke damper for operational smoke control in static or dynamic smoke management systems. The 1290S-SS damper is designed and qualified for round ductwork and offers the lowest leakage class available, qualified for installation with airflow in either direction. Model 1290S-SS is available in either Type 304 Stainless Steel as standard or Type 316 Stainless Steel for more severe environment applications.

- TRUE ROUND DESIGN
- CLASS I LEAKAGE @ 350°F
- UL 555S CLASSIFIED SMOKE DAMPER

Model:
1290S

Model 1290S

Nailor Model 1290S True Round Smoke Damper is ideal for round ductwork applications where building codes require a leakage rated smoke damper for operational smoke control in static or dynamic smoke management systems. Features include a sturdy beaded casing for superior rigidity and a heavy duty 14 ga. (2.0) equivalent laminated blade that is double bolted to axles for a positive no-slip connection. The 1290S smoke damper is designed and tested to provide premium performance and offers the lowest leakage class available, qualified for installation with airflow in either direction and inverted mounting.

QUALIFICATIONS:

- **UL 555S CLASSIFIED SMOKE DAMPER (File # R9492) Leakage Class I at 350°F elevated temperature.**
- **Meets NFPA 90A, 92, 101 and 105 as well as IBC and NBC (Canada) Building Code requirements.**
- **City of New York. MEA # 366-03-M.**
- **California State Fire Marshal: Fire Damper Listing No. 03230-0935:0107.**
- **Maximum velocity: 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa).**

STANDARD CONSTRUCTION:

Frame:	20 ga. (1.0) galvanized steel integral sleeve and retaining plates.
Blade:	2 x 20 ga. (1.0) galvanized steel laminated together. 14 ga. (2.0) equivalent thickness.
Bearings:	1/2" (13) dia. self-lubricating oilite bronze.
Drive Shaft/	1/2" (13) dia. plated steel double bolted to blade.
Axles:	Drive shaft extends approx. 6" (152) beyond frame.
Jackshaft:	1/2" (13) dia. cadmium plated steel.
Blade Seal:	Silicone rubber. Peripheral gasket sandwiched between two piece blade.

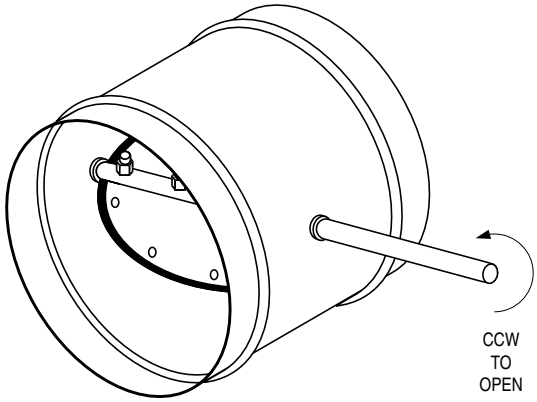
Model 1290S Sizes (Duct Dia.):

Minimum	Maximum
6" (152) dia.	24" (610) dia.

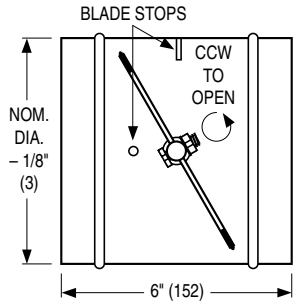
Note: Dampers available in 2" (51) increments.

COMMON OPTIONS:

- DTS Damper Test Switch for cycle testing.
- MLS-300 Position Indicator Switch Pack.



MODEL 1290S



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SMOKE DAMPERS

- HARSH ENVIRONMENTS
- TYPE 304 OR 316 AVAILABLE
- CLASS I LEAKAGE @ 350°F
- TRUE ROUND DESIGN
- UL 555S CLASSIFIED SMOKE DAMPER

Model:
1290S-SS

Model 1290S-SS

The 1290S-SS Stainless Steel True Round Smoke Damper is ideal for high humidity or mildly corrosive round ductwork applications where building codes require a leakage rated smoke damper for operational smoke control in static or dynamic smoke management systems. Features include a sturdy beaded casing for superior rigidity and a heavy duty 14 ga. (2.0) equivalent laminated blade that is double bolted to axles for a positive no-slip connection. The 1290S-SS damper is designed and tested to provide premium performance and offers the lowest leakage class available, qualified for installation with airflow in either direction. Available in either Type 304 Stainless Steel as standard or Type 316 Stainless Steel for more severe environment applications.

QUALIFICATIONS:

- **UL 555S CLASSIFIED SMOKE DAMPER (File # R9492) Leakage Class I at 350°F elevated temperature.**
- **Meets NFPA 90A, 92, 101 and 105 as well as IBC and NBC (Canada) Building Code requirements.**
- **City of New York. MEA # 366-03-M.**
- **California State Fire Marshal: Fire Damper Listing No. 03230-0935:0107.**
- **Maximum velocity: 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa).**

STANDARD CONSTRUCTION:

Frame:	20 ga. (1.0) stainless steel integral sleeve and retaining plates.
Blade:	2 x 20 ga. (1.0) stainless steel laminated together. 14 ga. (2.0) equivalent thickness.
Bearings:	1/2" (13) dia. stainless steel.
Drive Shaft/	1/2" (13) dia. stainless steel double bolted to blade.
Axles:	Drive shaft extends approx. 6" (152) beyond frame.
Jackshaft:	1/2" (13) dia. stainless steel.
Blade Seal:	Silicone rubber. Peripheral gasket sandwiched between two piece blade.

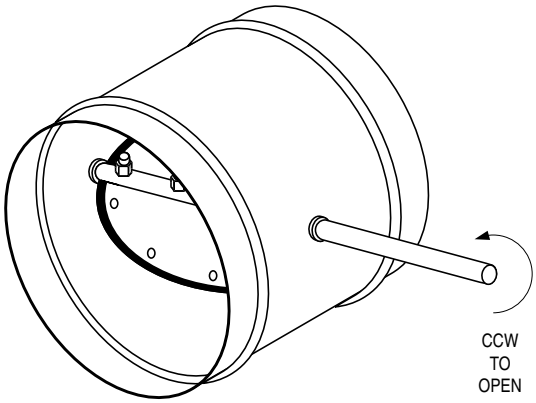
Model 1290S-SS Sizes (Duct Dia.):

Minimum	Maximum
6" (152) dia.	24" (610) dia.

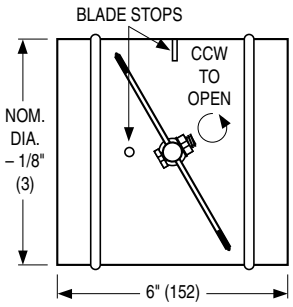
Note: Dampers available in 2" (51) increments.

COMMON OPTIONS:

- Type 316 Stainless Steel Construction.
- DTS Damper Test Switch for cycle testing.
- MLS-300 Position Indicator Switch Pack.



MODEL 1290S-SS



PERFORMANCE DATA:

MODEL SERIES: 1290S AND 1290S-SS

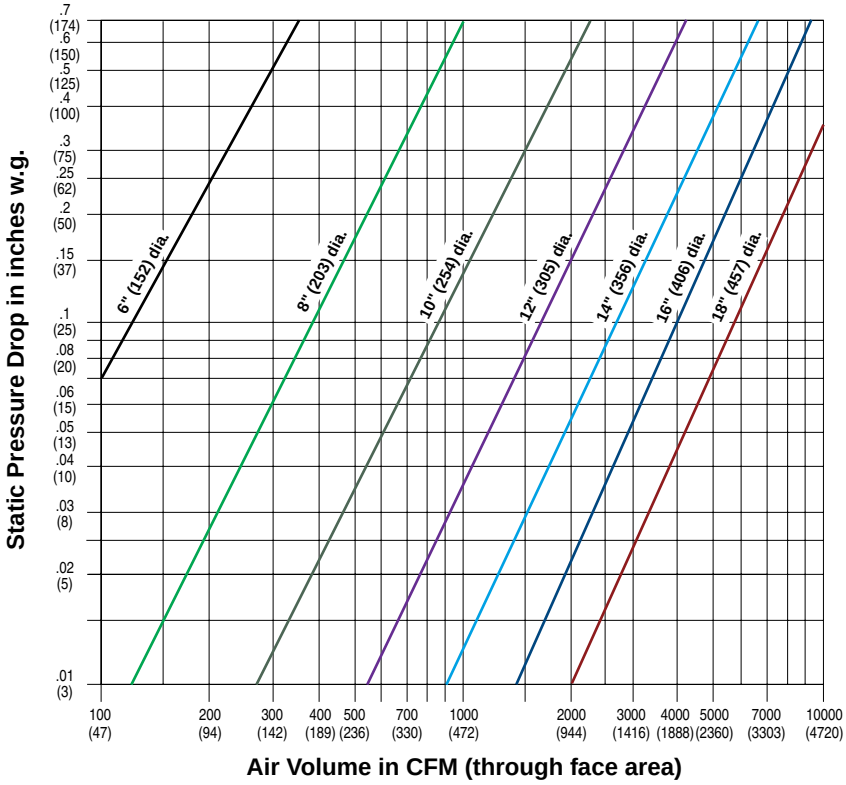
LEAKAGE CLASS:

The 1290S Series True Round Smoke Damper has been designed and qualified under UL 555S in order to provide maximum system design flexibility. It is available with a Class I leakage rating with all damper/actuator assemblies having been tested successfully at an elevated temperature of 350°F (177°C) under airflow of 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa).

The 1290S-SS Series Stainless Steel True Round Smoke Damper has been designed and qualified under UL 555S in order to provide maximum system design flexibility. It is especially ideal for high humidity or mildly corrosive applications. It is available with a Class I leakage rating with all damper/actuator assemblies having been tested successfully at an elevated temperature of 350°F (177°C) under airflow of 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa).

Maximum Performance Ratings	
UL 555S Leakage Rating	Class I
Maximum Velocity	2000 fpm (10 m/s)
Maximum Pressure	4 in. w.g. (1 kPa)
Maximum Temperature	350°F (177°C)

PRESSURE DROP



Tested per AMCA standard 500, Fig. 5.5.

HOW TO ORDER

TRUE ROUND SMOKE DAMPERS

MODEL SERIES: 1290S AND 1290S-SS

EXAMPLE: 1290S - 24 - H/V - AUTO - 120 - I - 24 - 350 - BO - EXT - CL - HM1

1. **Models**
   - 1290S True Round
   - 1290S-SS Stainless Steel, True Round
2. **Duct Size**
   - Diameter inches (mm's)
3. **Construction**
   - (Stainless Steel Model 1290S-SS only)
   - 304 Type 304 Stainless Steel
   - 316 Type 316 Stainless Steel
4. **Actuator Selected By**
   - AUTO Least Cost (Auto-Select) (default)
   - HON Honeywell
   - SIE Siemens
5. **Power Requirement**
   - 120 120 VAC (default)
   - 230 230 VAC
   - 24 24 VAC
   - 25 25 psi Pneumatic
6. **Max. Velocity / Pressure Rating**
   - 24 2000 fpm @ 4" w.g. (default)
7. **Elevated Temperature**
   - 350 350°F (default)
8. **Bearings**
   - BO Oilite Bronze (default)
   - BS Stainless Steel (Default on Model 1290S-SS)
9. **Actuator Mounting**
   - EXT External (default)
10. **Actuator Fail Position**
    - CL Close (default)
11. **Actuator Models**

Electric:

HL1	MS4104F	120VAC
HL2	MS8104F	24VAC
HL3	MS4604F	230VAC
HM1	MS4109F	120VAC
HM2	MS8109F	24VAC
HM3	MS4609F	230VAC
FL12	FSLF120	120VAC
FL23	FSLF230	230VAC
FL24	FSLF24	24VAC
F12	FSNF120	120VAC
F23	FSNF230	230VAC
F24	FSNF24	24VAC

Pneumatic:

482	331-4826
296	331-2961

OPTIONS & ACCESSORIES:

12. **Position Indicator**
    - — None (default)
    - 300 MLS-300 (4-wire)
13. **EP Switch**
    - — None (default)
    - EP1 120 VAC
    - EP2 24 VAC
14. **Damper Test Switch**
    - — None (default)
    - DTS Damper Test Switch

Notes:

1. Not all variants and options are available on all models. Refer to individual model for selection availability.
2. EP (electric-pneumatic) switch optional accessory is applicable only to pneumatic actuators and is shipped loose.

HOW TO SPECIFY

TRUE ROUND SMOKE DAMPERS

MODEL: 1290S

SUGGESTED SPECIFICATION:
Provide and install, as shown on plans and/or schedules, Round Smoke Dampers as manufactured by Nailor Industries, Inc. which meet or exceed the following criteria: Smoke dampers shall meet the requirements of NFPA 90A, 92, 101 and 105 and shall be classified as a Class I Leakage Rated Smoke Damper under UL 555S at an elevated temperature of 350°F (177°C) and each damper shall bear a UL label verifying same. Dampers shall be suitable for use in dynamic or static smoke control systems. Dampers shall have been operation tested by UL to a minimum velocity/pressure rating of 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa).
Frame/integral sleeve shall be roll-formed from 20 ga. (1.0) galvanized steel, beaded for structural strength. Blade shall be of two 20 ga. (1.0) galvanized steel pieces laminated together with an equivalent thickness of 14 ga. (2.0). Blade seal shall be silicone rubber sandwiched between blade pieces and shall completely encircle blade periphery. Blade axles shall be 1/2" (13) dia. plated steel double bolted to blade. Hex, square friction-fit or press-fit axles are not acceptable. Bearings shall be self-lubricating oilite bronze type.
Appropriate externally mounted (**specifier select type**) electrical **or** pneumatic actuators shall be installed by the damper manufacturer in the factory. Actuators shall incorporate an OEM internal spring return mechanism, external after-market spring mechanisms are not acceptable. Damper and actuator assembly shall be factory cycled a minimum of 3 times to ensure correct operation.
Submitted pressure drop data to be based on tests in accordance with AMCA Standard 500-D. Standard of acceptance shall be Nailor Industries, Inc. Model 1290S.

STAINLESS STEEL TRUE ROUND SMOKE DAMPERS

MODEL: 1290S-SS

SUGGESTED SPECIFICATION:
Provide and install, as shown on plans and/or schedules, Round Smoke Dampers as manufactured by Nailor Industries, Inc. which meet or exceed the following criteria: Smoke dampers shall meet the requirements of NFPA 90A, 92, 101 and 105 and shall be classified as a Class I Leakage Rated Smoke Damper under UL 555S at an elevated temperature of 350°F (177°C) and each damper shall bear a UL label verifying same. Dampers shall be suitable for use in dynamic or static smoke control systems. Dampers shall have been operation tested by UL to a minimum velocity/pressure rating of 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa).
Frame/integral sleeve shall be roll-formed from 20 ga. (1.0) stainless steel, beaded for structural strength. Blade shall be of two 20 ga. (1.0) stainless steel pieces laminated together with an equivalent thickness of 14 ga. (2.0). Blade seal shall be silicone rubber sandwiched between blade pieces and shall completely encircle blade periphery. Blade axles shall be 1/2" (13) dia. stainless steel double bolted to blade. Hex, square friction-fit or press-fit axles are not acceptable. Bearings shall be stainless type.
Appropriate externally mounted (**specifier select type**) electrical **or** pneumatic actuators shall be installed by the damper manufacturer in the factory. Actuators shall incorporate an OEM internal spring return mechanism, external after-market spring mechanisms are not acceptable. Damper and actuator assembly shall be factory cycled a minimum of 3 times to ensure correct operation.
Submitted pressure drop data to be based on tests in accordance with AMCA Standard 500-D. Standard of acceptance shall be Nailor Industries, Inc. Model 1290S-SS.

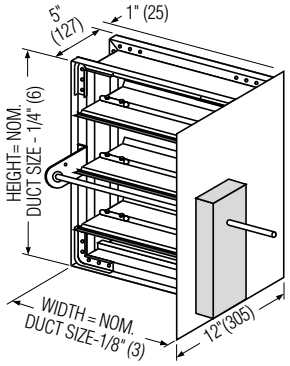
Options and Accessories

Nailor smoke dampers are tested by and listed with Underwriters Laboratories Inc. and are manufactured within UL procedural requirements.

SIDE PLATES/SLEEVES FOR ACTUATOR MOUNTING:

OPTION CODE **SMP**
SIDE ACTUATOR MOUNTING PLATE

Nailor's **SMP**, Side Mounting Plate, provides a practical and cost effective method of factory installing an actuator onto Model Series 1210, 1260, and 1280 smoke dampers. UL 555S, Standard for Smoke Dampers requires actuators to be factory mounted securely in position. This is to help ensure that the damper/actuator assembly functions properly and eliminates possible job site installation errors. Nailor's SMP option allows the damper/actuator assembly to be conveniently mounted in duct opening for fast, worry-free installation.



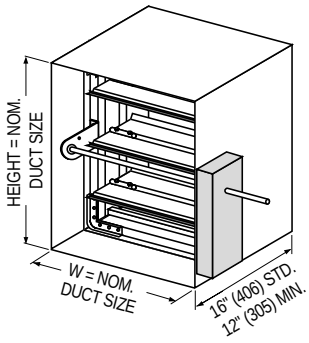
SIDE ACTUATOR MOUNTING PLATE FOR JACKSHAFT DRIVE

TYPE A SLEEVES
MODELS 1211, 1261, 1281

As an alternative to using a side mounting plate to mount an actuator onto a Series 1210, 1260 or 1280 smoke damper, Nailor smoke dampers can be provided in a full factory-fitted sleeve, factory caulked to UL specifications between the damper frame and sleeve. This eliminates on site worries about proper damper mounting in the duct and provides for quick and convenient job site installations. Standard Type A sleeve is 16" (406) long x 20 ga. (1.0) (18 ga. for dampers over 84" (2134) in width). Non-standard lengths and gauges are available to suit specific applications. See chart for specific sleeved model numbers.

The following indicates model numbers to order for smoke dampers with factory fitted Type A sleeves:

Standard Model #	With Type A Sleeve
1210 →	Model 1211
1260 →	Model 1261
1280 →	Model 1281

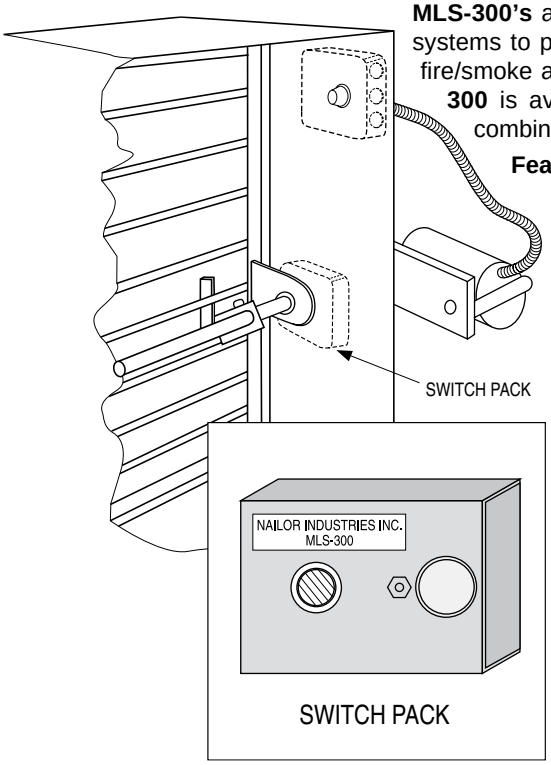


TYPE A SLEEVE FOR JACKSHAFT DRIVE

POSITION INDICATORS:

OPTION CODE **300**
MLS-300 POSITION INDICATOR SWITCH PACK

The **MLS-300 Series Position Indicator Switch Pack** is generally utilized to indicate open and closed position of the damper blades. It incorporates two SPDT switches that may be used to operate signal lamps or to provide a start/stop circuit for remote fans or to signal alarms.



MLS-300's are used in active smoke control management systems to positively indicate the status of all combination fire/smoke and smoke dampers in the building. The **MLS-300** is available only as a factory installed option on combination fire/smoke and smoke dampers.

Features:

- Operates as a function of the damper blade position.
- Provides remote indication of damper blade position.
- Provides the ability to remotely control ON/OFF fan stations.
- Provides the ability to remotely signal alarms.

Built-in Actuator Switch Packs

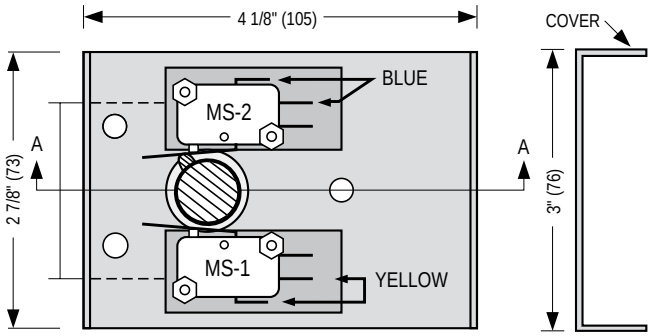
Many of the newer application specific actuators designed for use on fire/smoke dampers feature "add-on" component position indicator switches manufactured and UL tested by the actuator manufacturer. Honeywell MS4109F/MS8109F actuators are examples.

Some actuator models have variants with position indicator switches built right in to the actuator. Honeywell MS4120F/MS8120F and Belimo FSNF24S/FSNF120S actuators are examples.

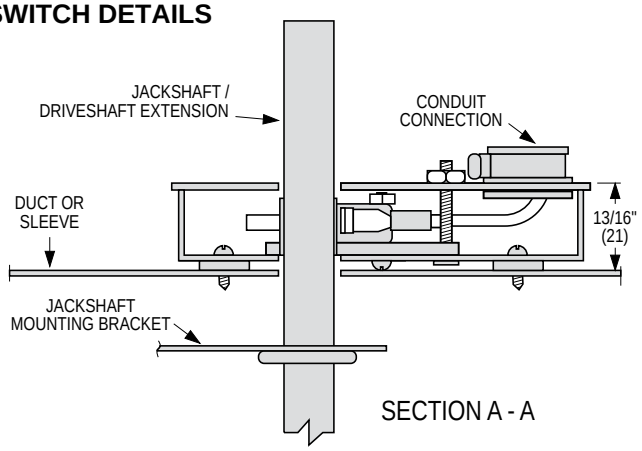
When ordered with the MLS-300 Position Indicator Switch Pack, Nailor combination fire/smoke and smoke dampers that utilize these actuators will usually be supplied with the actuator mounted switch pack, factory installed as required by UL.

POSITION INDICATORS:

MLS-300N (NAILOR) SWITCH DETAILS

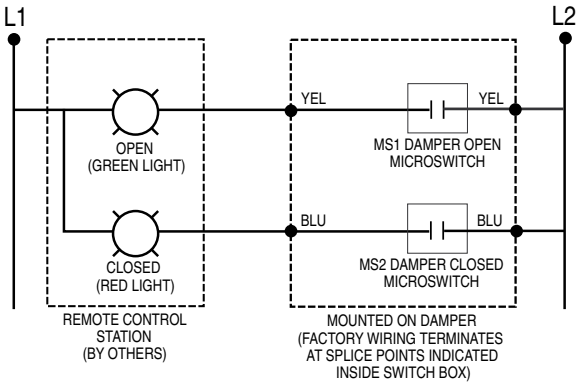


EXTERNAL RIGHT HAND MOUNTING: FRONT VIEW (LESS COVER)



TYPICAL JACKSHAFT MOUNTING

Position Indicator Microswitch Data:
Switch Type: Single Pole double throw (2)
15 Amps, 1/3 HP, 125, 250 Vac or 24 Vdc.
1/2 Amp, 125 Vdc. 1/4 Amp, 250 Vdc.
Standard Mounting:
MS1 is damper open signal.
MS2 is damper closed signal.
Non-Standard Mounting:
Important: Installer must double check continuity of MS1 and MS2 before wiring to determine which switch signals the damper's open or closed position.



FLANGED SLEEVE

OPTION CODES

TDF FLANGE

TDF2 BOTH ENDS

TDF1 ONE END

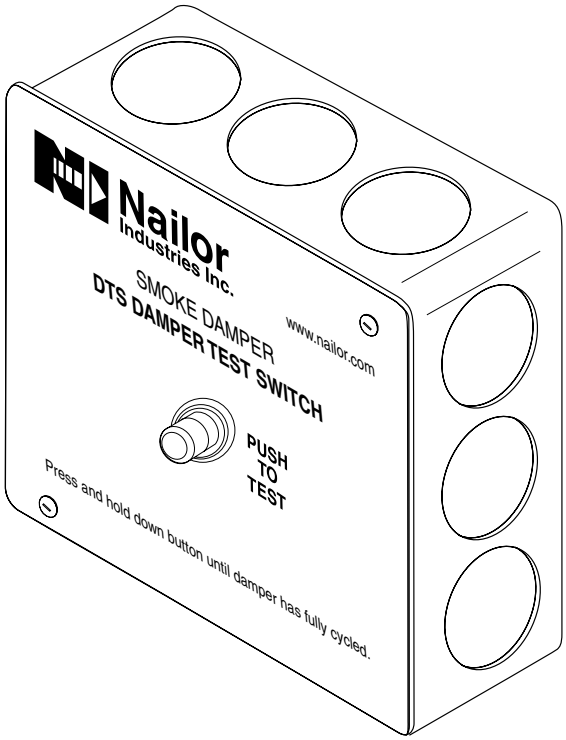
TDF (by Engle) and **TDC** (by Lockformer) proprietary flange systems are available as an option on all model smoke dampers fitted with a factory Type A sleeve of 22 or 20 gauge thickness. The flange system allows for fast, simple duct connections in the field.
For Option **TDF1** the sleeve is factory flanged on one end only.
For Option **TDF2** the sleeve is factory flanged on both ends.
Note that the maximum wall/floor opening size permitted by UL, relative to the damper size, may not physically allow the flange to fit through the opening. Consultation and co-ordination with the wall/floor contractor is recommended. **TDF1**, flange on one end only, will permit the non-flanged end of the sleeve to fit through the opening. Specify which end of sleeve to be flanged in relation to the jackshaft.

DAMPER TEST SWITCH

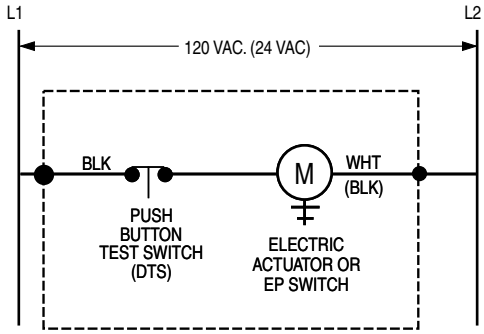
OPTION CODE **DTS**
PUSH BUTTON TEST SWITCH

The DTS (Damper Test Switch) is an optional "momentary" push button test switch available on all Nailor smoke and combination fire/smoke dampers. The DTS provides the ability to "cycle test" the damper by pushing and holding down the button until the damper has cycled and closure has been visually verified, either by inspecting the damper through the access door or by confirmation at a remote control panel when equipped with the optional MLS-300 position indicator.

The DTS is mounted right on the damper and enables a single maintenance person to test and cycle the damper, eliminating the need for help from another person in the control room.



DTS Damper Test Switch



MOUNTED ON DAMPER (FACTORY WIRING TERMINATES AT SPLICE POINTS INDICATED INSIDE 4" x 4" ELECTRICAL BOX)

Figure 1. DTS Damper Test Switch

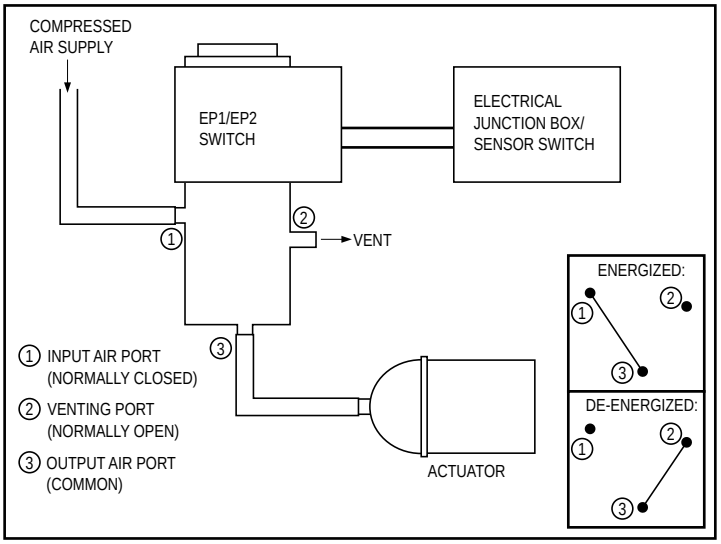
ELECTRO-PNEUMATIC SWITCHES:

OPTION CODES **EP1** AND **EP2**
EP1 120 VAC E/P SWITCH
EP2 24 VAC E/P SWITCH

EP1 Siemens 265-1008 120 V/60 Hz

EP2 Siemens 265-1007 24 VAC

Nailor Options **EP1** and **EP2** electro-pneumatic switches are electrically operated, two-position 3-way air valves. They are used to interlock an electrical smoke or fire alarm system with a pneumatic damper actuator. The **EP1 (120 VAC)** and **EP2 (24 VAC)** valves are utilized to alternately apply pressure to, and exhaust pressure from a pneumatic damper actuator by an electrical input that energizes or de-energizes the solenoid of the switch. Barb type pneumatic piping connections are sized for 1/4" (6) O.D. Polyethylene tubing. Units are UL and CSA approved and may be mounted in any position.



OPERATION:

Input air is connected to port 1 (normally closed) and the output to the actuator is connected to port 3 (common). When the solenoid is energized port 1 connects to port 3 allowing the actuator to be controlled by input air, usually holding the damper in open position. When the solenoid is de-energized, port 2 (normally open) is connected to port 3, exhausting the air from the actuator allowing it to return to its normal fail position (fail open or fail closed).

Note:

E.P. Switches ship loose when ordered with Smoke Dampers and require field installation.

DUCT SMOKE DETECTORS:

OPTION CODE **DSDN**
DSD-NF NO-FLOW
DUCT SMOKE DETECTOR

APPLICATION:

Nailor Model DSD-NF duct smoke detector (no-flow) can be utilized with Nailor UL555S Classified smoke dampers to detect the presence of smoke within HVAC ductwork, whether or not there is airflow, and close the damper to prevent the smoke from spreading. As most fatalities resulting from fires can be attributed to the effects of toxic smoke, detecting and controlling the smoke from spreading within the HVAC system is vital to preventing injury as well as limiting property damage, including damage to the HVAC system itself. Refer to NFPA Standards 72, 90A and 92 to determine when and where duct smoke detectors are required.

The DSD-NF detector features a low-profile design for optimum pressure drop and will operate with airflow in either direction. It can be factory installed to top of sleeve (side mounting optional) on Nailor Model Series 1210, 1260 and 1280 smoke dampers.

OPERATION:

Upon detection of smoke, the smoke detector causes the damper to close by cutting off power to the actuator. The actuator return spring forces the damper closed. The detector can be reset only by a momentary power interruption. The standard model DSD-NF detector and smoke damper combination is designed simply to close the damper upon detection of smoke. For applications requiring the detector to be wired into a fire fighters' smoke-control station (FSCS), contact Nailor.

DSD-NF STANDARD SPECIFICATION:

Model: System Sensor 2151 Low-Profile.

Sensor Type: Photoelectronic.

Dimensions: 6.1" (155) dia. flanged base.

Weight: 3.6 oz. (104 g).

Airflow Velocity Range: 0 to 3000 fpm (0 to 15.24 m/s).

Operating Temperature Range: 32°F to 120°F (0°C to 49°C).

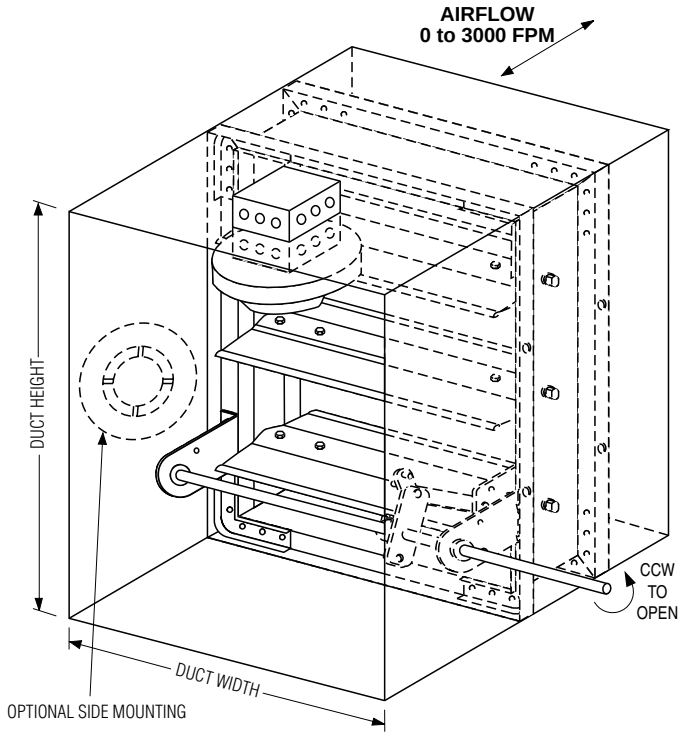
Operating Humidity Range: 10% to 93% Relative Humidity Non-Condensing.

Sensitivity: 3% ± .7%/ft

Voltage: 120 VAC or 24 VAC/DC.

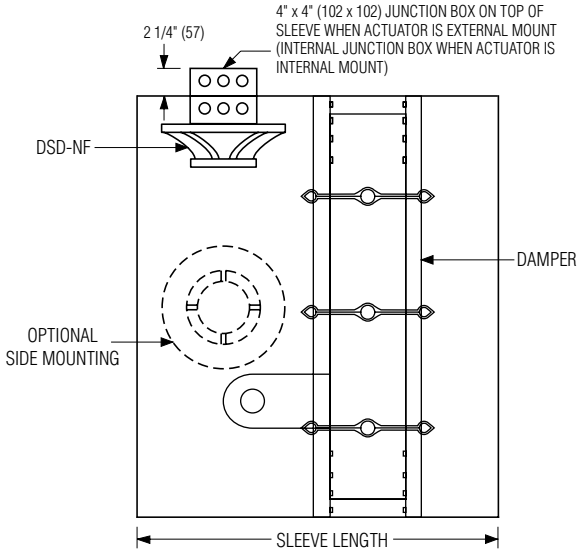
Latching Alarm: Reset by momentary power interruption.

Contact Nailor for minimum damper size and sleeve length for your specific application. See page C13 for general damper size, sleeve length and damper position guidelines.



NOTES:

1. Factory mounted smoke detectors will be factory wired to actuator(s) (or E.P. switch) and heat sensor(s), as applicable, into a 4" x 4" (102 x 102) common junction box in order to provide a single point wiring connection in the field.



F
SMOKE DAMPERS

DUCT SMOKE DETECTORS:

OPTION CODE **DSDL**
DSD-LF LOW-FLOW
DUCT SMOKE DETECTOR

APPLICATION:

Nailor Model DSD-LF duct smoke detector (low-flow) can be utilized with Nailor UL555S Classified smoke dampers to detect the presence of smoke within HVAC ductwork and close the damper to prevent the smoke from spreading. As most fatalities resulting from fires can be attributed to the effects of toxic smoke, detecting and controlling the smoke from spreading within the HVAC system is vital to preventing injury as well as limiting property damage, including damage to the HVAC system itself. Refer to NFPA Standards 72, 90A and 92A to determine when and where duct smoke detectors are required.

The DSD-NF detector can be factory installed to side of sleeve on Nailor Model Series 1210, 1260 and 1280 smoke dampers.

A minimum airflow velocity of 100 fpm (0.5 m/s) is required for Model DSD-LF.

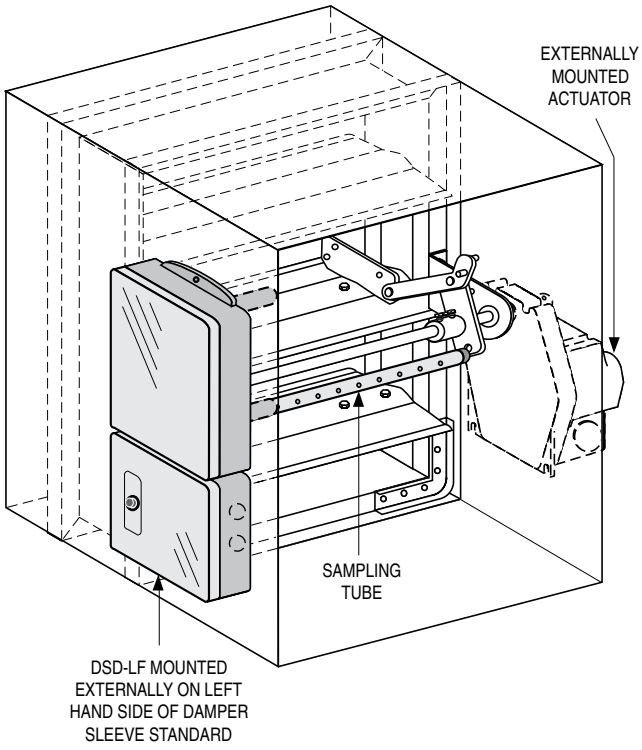
OPERATION:

Upon detection of smoke, the smoke detector causes the damper to close by cutting off power to the actuator. The actuator return spring forces the damper closed. The detector can be reset only by a momentary power interruption. The standard model DSD-LF detector and smoke damper combination is designed simply to close the damper upon detection of smoke. For applications requiring the detector to be wired into a fire fighters' smoke-control station (FSCS), contact Nailor.

DSD-LF STANDARD SPECIFICATION:

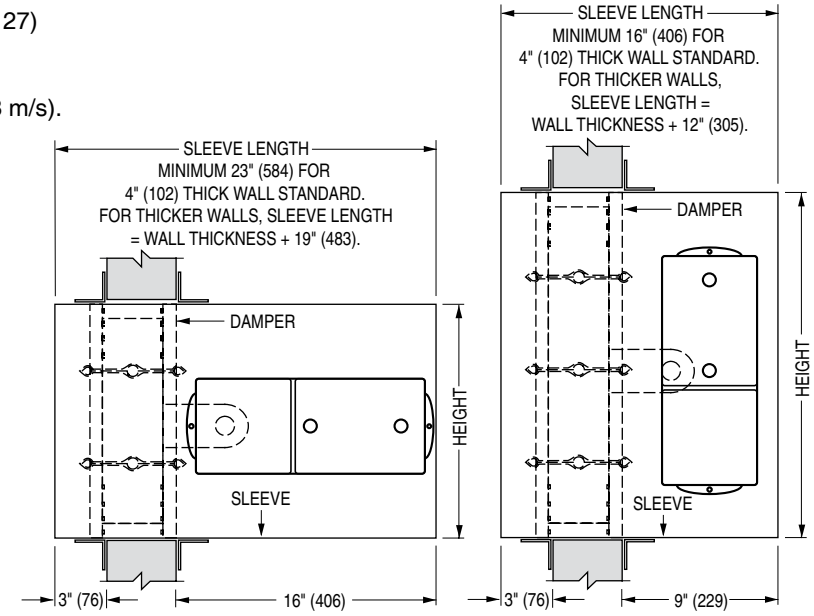
Model: System Sensor D4120.
Sensor Type: Photoelectric.
Dimensions: (Rectangular) 14.38" (365) Length, 5" (127) Width, 2.5" (64) Depth.
Weight: 2.5 lbs. (1.14 kg.).
Airflow Velocity Range: 100 to 4000 fpm (0.5 to 20.3 m/s).
Operating Temperature Range: –4°F to 158°F (–20°C to 70°C).
Operating Humidity Range: 0% to 95% Relative Humidity Non-Condensing.
Voltage: 24 VAC/DC or 120 VAC.

Contact Nailor for minimum damper size and sleeve length for your specific application.
See page C13 for general damper size, sleeve length and damper position guidelines.



NOTES:

1. Smoke detector is factory mounted externally on left side of sleeve (opposite side of sleeve to the actuator) and will be mounted horizontally on dampers under 20" (508) in height and mounted vertically on dampers 20" (508) in height and over. See orientation details below.
2. Factory mounted smoke detectors will be factory wired to actuator(s) (or E.P. switch) and heat sensor(s), as applicable, into a 4" x 4" (102 x 102) common junction box in order to provide a single point wiring connection in the field.



Height < 20" (508) **Height ≥ 20" (508)**

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SMOKE DAMPERS