



MODULATING SMOKE DAMPER
 AIRFOIL BLADE • HIGH PERFORMANCE
 ULTRA-LOW LEAKAGE • LOW PRESSURE DROP
 MODELS: 1210M AND 1211M (TYPE A)



QUALIFICATIONS:

- UL 555S CLASSIFIED SMOKE DAMPER (File # R9492) Leakage Class I at 250°F elevated temperature.
- Meets NFPA 90A, 92, 101 and 105 as well as IBC and NBC (Canada) Building Code requirements.
- California State Fire Marshal Listing No. 03230-0935:0107.
- City of New York MEA# 366-03-M.
- Maximum velocity: 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa).

The 1210M Series modulating dampers are classified for use as a volume control damper in applications where building codes require a leakage rated smoke damper as part of a static smoke control or dynamic smoke management system.

The 1210M Series has been especially designed and tested to offer premium performance. The 1210M Series provides the lowest leakage class available and is qualified for vertical or horizontal installation with airflow in either direction. Airfoil blade design and elimination of blade sills, top and bottom, provide lowest pressure drop. Unique inter-locking double skin blade design eliminates combustible blade seals and provides flame and smoke seal under fire conditions.

STANDARD CONSTRUCTION:

- Frame:** 5" x 7/8" x 16 ga. (127 x 22 x 1.6) galvanized steel hat channel.
- Blades:** 14 ga. (2.0) equivalent galvanized steel formed airfoil on 5 1/2" (140) centers. Opposed action.
- Linkage:** Concealed in frame. 12 ga. (2.7) plated steel.
- Bearings:** 1/2" (13) dia. self-lubricating oilite bronze.
- Axles:** 1/2" (13) dia. plated steel double bolted to blades.
- Jackshaft:** 1/2" (13) dia. cadmium plated steel.
- Jamb Seals:** Cambered stainless steel.

Sizes (Duct W x H):

Velocity/ Pressure Rating	Elevated Temp. °F	Minimum		Maximum	
		Single Section	Single Section	Multiple Section	
		Vertical/Horizontal	Vert./Horiz.	Vertical/Horizontal	Vertical/Horizontal
24	250	8" x 8" (203 x 203). 6" x 6" (152 x 152) with low profile frame (maximum size is 18" x 6" [457 x 152]).	36" x 48" (914 x 1219)	144" x 96" (3658 x 2438) or 288" x 48" (7315 x 1219)	

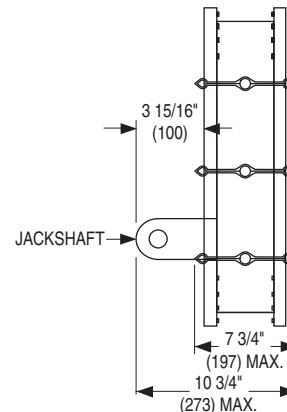
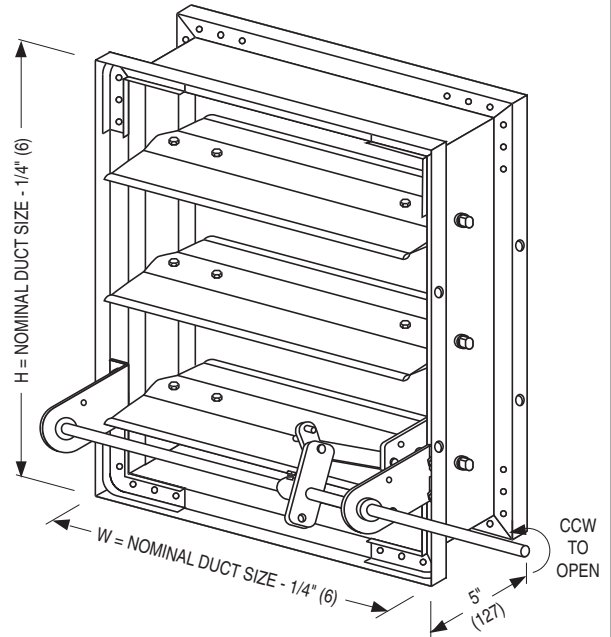
Note: Dampers with duct heights less than 6" (152) (8" [203] if width is over 18" [457]) require a Type 'B' sleeve enclosure (Model 1212M). Duct sizes less than 8" (203) in width require a Type 'C' enclosure (Model 1213M).

BASE MODEL SELECTION:

- 1210M** With side actuator mounting plate
- 1211M** Standard factory sleeve (caulked to UL requirements) 16" long x 20 ga. (406 x 1.0).
- 1211M** Non-standard sleeve. Specify _____ length _____ ga. Available up to 36" (914) in length and 10 through 20 ga. (3.5 through 1.0).

LEAKAGE CLASS/ELEVATED TEMPERATURE: I @ 250°F

DYNAMIC VELOCITY/PRESSURE RATING: 24 2000 fpm @ 4" w.g.



ACTUATOR SELECTION:

- Electric** **Pneumatic**

ACTUATOR LOCATION:

- External** **Internal** (in the airstream)

ACTUATOR FAIL POSITION: Closed.

OPTIONS:

- BS** Stainless steel bearings
- MLS-300** Position indicator switch pack
- TDF1** Flange (one end) } (20 or 22 ga. sleeves only)
- TDF2** Flange (both ends) }

For installation instructions, see IOM-SDINST.

Dimensions are in inches (mm).

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

DATE

B SERIES

SUPERSEDES

DRAWING NO.

6 - 14 - 13

1200

5 - 7 - 12

1210M-1



MODULATING SMOKE DAMPER
AIRFOIL BLADE • HIGH PERFORMANCE
ULTRA-LOW LEAKAGE
MODEL: 1212M
(TYPE B SLEEVE ENCLOSURE)



FOR DUCTS 8" (203) OR MORE IN WIDTH AND UNDER 8" (203) IN HEIGHT (6" [152] IF WIDTH IS 18" [457] OR UNDER).

QUALIFICATIONS:

- **UL 555S CLASSIFIED SMOKE DAMPER (File # R9492) Leakage Class I at 250°F elevated temperature.**
- **Meets NFPA 90A, 92A, 92B, 101 and 105 as well as IBC and NBC (Canada) Building Code requirements.**
- **California State Fire Marshal Listing No. 03230-0935:107.**
- **City of New York MEA# 366-03-M.**
- **Maximum velocity: 2000 fpm @ 4" w.g.**

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The 1210M Series has been especially designed and tested to offer premium performance. The 1210M Series provides the lowest leakage class available and is qualified for vertical or horizontal installation with airflow in either direction. Airfoil blade design and elimination of blade sills, top and bottom, provide lowest pressure drop. Unique inter-locking double skin blade design eliminates combustible blade seals and provides flame and smoke seal under fire conditions.

STANDARD SPECIFICATION:

Frame: 5" x 7/8" x 16 ga. (127 x 22 x 1.6) galvanized steel hat channel.

Blades: 14 ga. (2.0) equivalent galvanized steel formed airfoil on 5 1/2" (140) centers.

Linkage: Concealed in frame. 12 ga. (2.7) plated steel.

Bearings: 1/2" (13) dia. self-lubricating oilite bronze.

Axles: 1/2" (13) dia. plated steel double bolted to blades.

Jackshaft: 1/2" (13) dia. cadmium plated steel.

Jamb Seals: Cambered stainless steel.

Sizes (Duct W x H):

Velocity/Pressure Rating	Elevated Temp. °F	Maximum		
		Single Section		Multiple Section
		Vertical/Horizontal	Vertical/Horizontal	
24	250	8" x 4" (203 x 102). (Overall damper height is 8" [203]; [6" (152) on duct sizes 18" x 5 1/2 (457 x 140) and under].)	36" x 7 1/2" (914 x 191)	144" x 7 1/2" (3658 x 191)

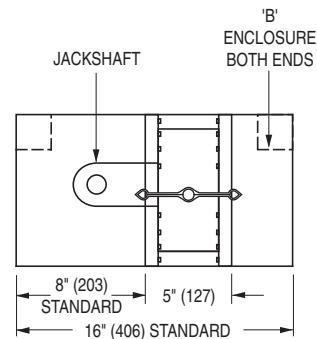
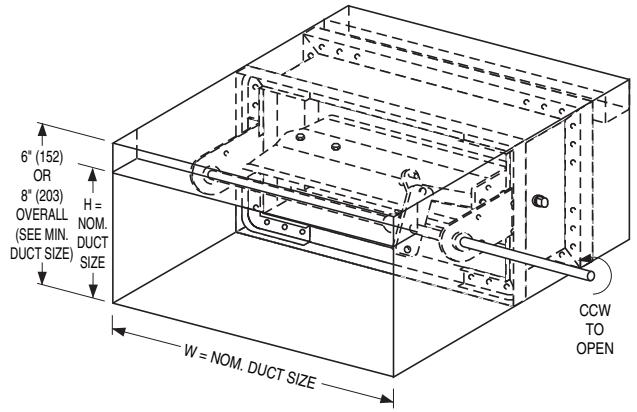
Note: Duct sizes less than 8" (203) in width require a 'C' Type enclosure (Model 1213M).

SLEEVE/ENCLOSURE SELECTION:

- 1212M** Standard factory sleeve (caulked to UL requirements) 16" long x 20 ga. (406 x 1.0).
- 1212M** Non-standard sleeve. Specify _____ length _____ ga. Available up to 36" (914) in length and 10 through 20 ga. (3.5 through 1.0).

LEAKAGE CLASS/ELEVATED TEMPERATURE: I @ 250°F

DYNAMIC VELOCITY/PRESSURE RATING: 24 2000 fpm @ 4" w.g.



ACTUATOR SELECTION:

- Electric** **Pneumatic**

ACTUATOR LOCATION: External.

ACTUATOR FAIL POSITION: Closed.

OPTIONS:

- BS** Stainless steel bearings
- MLS-300** Position indicator switch pack

For installation instructions, see IOM-SDINST.

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
5 - 7 - 12	1200	8 - 21 - 08	1210M-2



MODULATING SMOKE DAMPER
 AIRFOIL BLADE • HIGH PERFORMANCE
 ULTRA-LOW LEAKAGE
 ROUND DUCT CONNECTION
 MODEL: 1213M (TYPE C SLEEVE ENCLOSURE)



QUALIFICATIONS:

- UL 555S CLASSIFIED SMOKE DAMPER (File # R9492) Leakage Class I at 250°F elevated temperature.
- Meets NFPA 90A, 92A, 92B, 101 and 105 as well as IBC and NBC (Canada) Building Code requirements.
- California State Fire Marshal Listing No. 03230-0935:107.
- City of New York MEA# 366-03-M.
- Maximum velocity: 2000 fpm @ 4" w.g.

The 1210M Series modulating dampers are classified for use as a volume control damper in applications where building codes require a leakage rated smoke damper as part of a static smoke control or dynamic smoke management system.

The 1210M Series has been especially designed and tested to offer premium performance. The 1210M Series provides the lowest leakage class available and is qualified for vertical or horizontal installation with airflow in either direction. Airfoil blade design and elimination of blade sills, top and bottom, provide lowest pressure drop. Unique inter-locking double skin blade design eliminates combustible blade seals and provides flame and smoke seal under fire conditions.

STANDARD SPECIFICATION:

Frame: 5" x 7/8" x 16 ga. (127 x 22 x 1.6) galvanized steel hat channel.

Blades: 14 ga. (2.0) equivalent galvanized steel formed airfoil on 5 1/2" (140) centers.

Linkage: Concealed in frame. 12 ga. (2.7) plated steel.

Bearings: 1/2" (13) dia. self-lubricating oilite bronze.

Axles: 1/2" (13) dia. plated steel double bolted to blades.

Jackshaft: 1/2" (13) dia. cadmium plated steel.

Jamb Seals: Cambered stainless steel.

Sizes (Duct Diameter):

Velocity/ Pressure Rating	Elevated Temp. °F	Minimum			Maximum	
		Single Section		Single Section	Multiple Section	
		Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal	Vertical/Horizontal
24	250	4" (102) diameter		34" (864) dia.	94" (2388) dia.	

SLEEVE/ENCLOSURE SELECTION:

- 1213M Standard factory sleeve (caulked to UL requirements) 16" long x 20 ga. (406 x 1.0).
- 1213M Non-standard sleeve. Specify _____ length _____ ga. Available up to 36" (914) in length and 10 through 20 ga. (3.5 through 1.0).

LEAKAGE CLASS/ELEVATED TEMPERATURE: I @ 250°F

DYNAMIC VELOCITY/PRESSURE RATING: 24 2000 fpm @ 4" w.g.

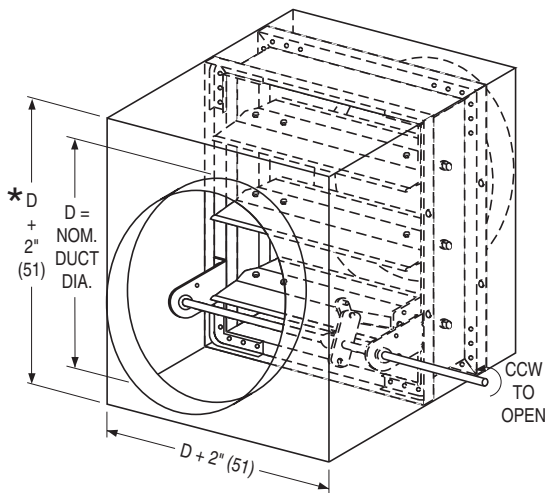
ACTUATOR SELECTION:

- Electric Pneumatic

ACTUATOR LOCATION:

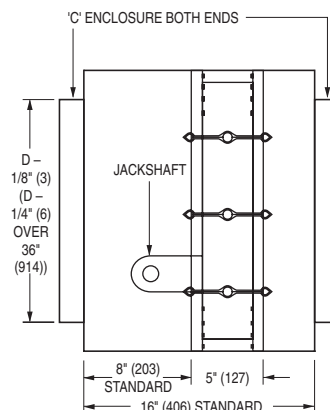
- External Internal (in the airstream)

ACTUATOR FAIL POSITION: Closed.



*** Exception:**

5" (127) duct dia. is 8" (203) overall height.



OPTIONS:

- BS Stainless steel bearings
- MLS-300 Position indicator switch pack

For installation instructions, see IOM-SDINST.

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

Dimensions are in inches (mm)

DATE	B SERIES	SUPERSEDES	DRAWING NO.
9 - 1 - 23	1200	5 - 7 - 12	1210M-3



MODULATING SMOKE DAMPER
 AIRFOIL BLADE • HIGH PERFORMANCE
 ULTRA-LOW LEAKAGE • SQUARE, RECT. OR
 OVAL DUCT CONNECTION
MODEL: 1213M (TYPE C SLEEVE ENCLOSURE)



QUALIFICATIONS:

- UL 555S CLASSIFIED SMOKE DAMPER (File # R9492) Leakage Class I at 250°F elevated temperature.
- Meets NFPA 90A, 92A, 92B, 101 and 105 as well as IBC and NBC (Canada) Building Code requirements.
- California State Fire Marshal Listing No. 03230-0935:107.
- City of New York MEA# 366-03-M.
- Maximum velocity: 2000 fpm @ 4" w.g.

The 1210M Series modulating dampers are classified for use as a volume control damper in applications where building codes require a leakage rated smoke damper as part of a static smoke control or dynamic smoke management system.

The 1210M Series has been especially designed and tested to offer premium performance. The 1210M Series provides the lowest leakage class available and is qualified for vertical or horizontal installation with airflow in either direction. Airfoil blade design and elimination of blade sills, top and bottom, provide lowest pressure drop. Unique inter-locking double skin blade design eliminates combustible blade seals and provides flame and smoke seal under fire conditions.

STANDARD SPECIFICATION:

Frame: 5" x 7/8" x 16 ga. (127 x 22 x 1.6) galvanized steel hat channel.

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Linkage: Concealed in frame. 12 ga. (2.7) plated steel.

Bearings: 1/2" (13) dia. self-lubricating oilite bronze.

Axles: 1/2" (13) dia. plated steel double bolted to blades.

Jackshaft: 1/2" (13) dia. cadmium plated steel.

Jamb Seals: Cambered stainless steel.

Sizes (Duct W x H):

Velocity/ Pressure Rating	Elevated Temp. °F	Minimum			Maximum		
		Single Section		Single Section		Multiple Section	
		Vertical/Horizontal		Vertical/Horizontal		Vertical/Horizontal	
24	250	4" x 4" (102 x 102)		34" x 46" (864 x 1168)		142" x 94" (3607 x 2388) or 286" x 46" (7264 x 1168)	

SLEEVE/ENCLOSURE SELECTION:

- 1213M** Standard factory sleeve (caulked to UL requirements) 16" long x 20 ga. (406 x 1.0).
- 1213M** Non-standard sleeve. Specify _____ length _____ ga. Available up to 36" (914) in length and 10 through 20 ga. (3.5 through 1.0).

LEAKAGE CLASS/ELEVATED TEMPERATURE: I @ 250°F

DYNAMIC VELOCITY/PRESSURE RATING: 24 2000 fpm @ 4" w.g.

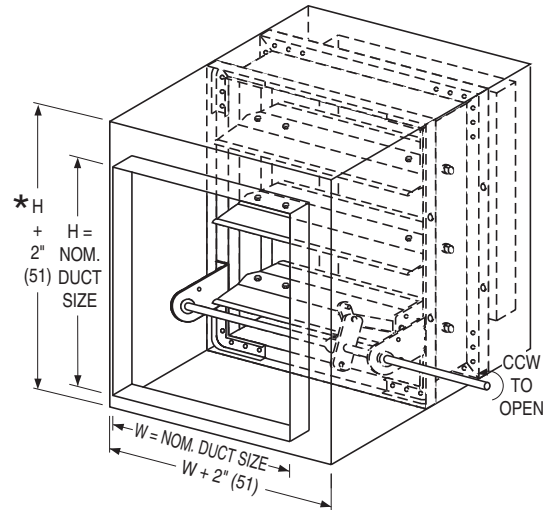
ACTUATOR SELECTION:

- Electric Pneumatic

ACTUATOR LOCATION:

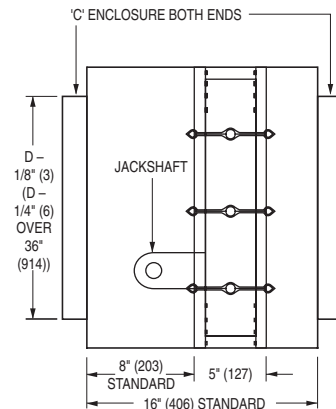
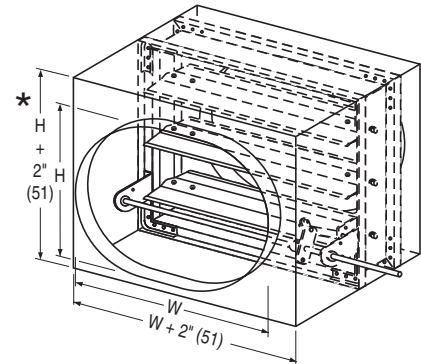
- External Internal (in the airstream)

ACTUATOR FAIL POSITION: Closed.



*** Exception:**

5" (127) duct height is 8" (203) overall height.



OPTIONS:

- BS** Stainless steel bearings
- MLS-300** Position indicator switch pack

For installation instructions, see IOM-SDINST.

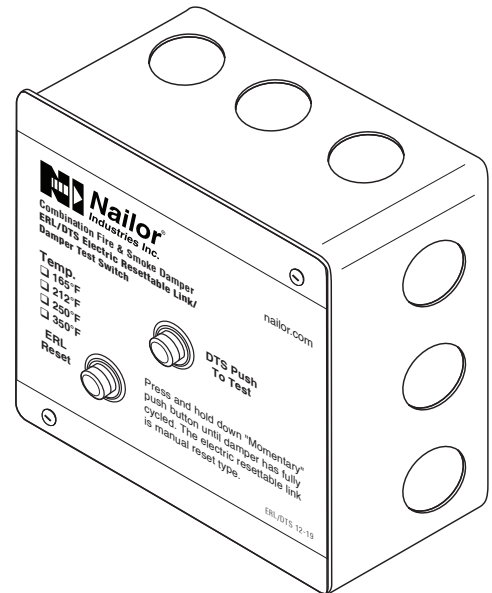
Dimensions are in inches (mm)

SCHEDULE TYPE:				
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	9 - 1 - 23	1200	5 - 7 - 12	1210M-4

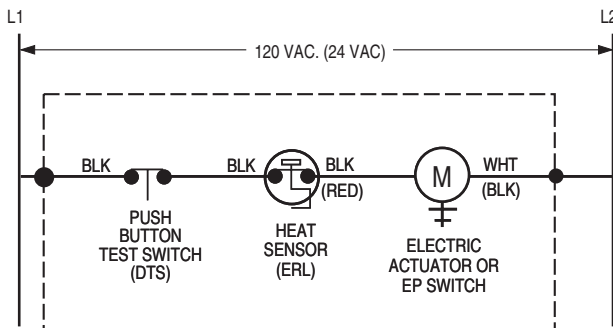
The DTS (Damper Test Switch) is an optional "momentary" push button test switch available on all Nailor smoke and combination fire/smoke dampers. The DTS provides the ability to "cycle test" the damper by pushing and holding down the button until the damper has cycled and closure has been visually verified, 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.

When a combination fire/smoke damper is ordered, the DTS is combined with the ERL (Electric Resettable Link), in a common enclosure.



WIRING DIAGRAMS:



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

Figure 1. DTS/ERL Damper Test Switch with Electric Resettable Link

Belimo Actuator Aux. Switch Wiring Connections

Model Series	Open (OP)	Closed (CL)
FSTF	Orange / Gray	Violet / Red
FSLF / FSAFA	Gray / Gray	Violet / Violet
FSNF / FSAFB	White S4 / S6	White S1 / S2

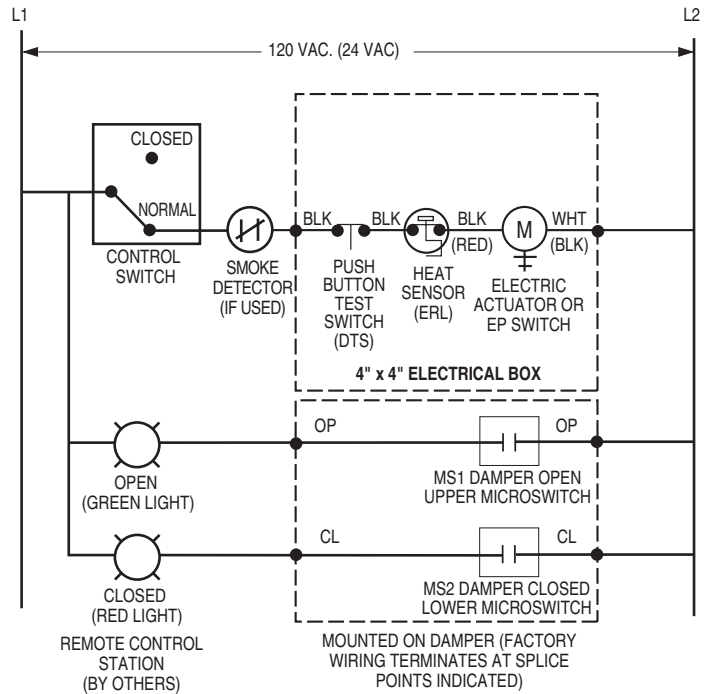


Figure 2. DTS/ERL with MLS-300 Belimo (actuator aux. switches) Position Indicator Package

SCHEDULE TYPE

PROJECT

ENGINEER

CONTRACTOR

DATE

B SERIES

SUPERSEDES

DRAWING NO.

9 - 3 - 20

FD-ACC

3 - 29 - 18

DTS

WIRING DIAGRAMS:

Honeywell Actuator Aux. Switch Wiring Connections

Model Series	Open (OP)	Closed (CL)
MSXX04	Yellow / Yellow	Blue / Blue
MSXX20	Yellow / Yellow	Blue / Blue

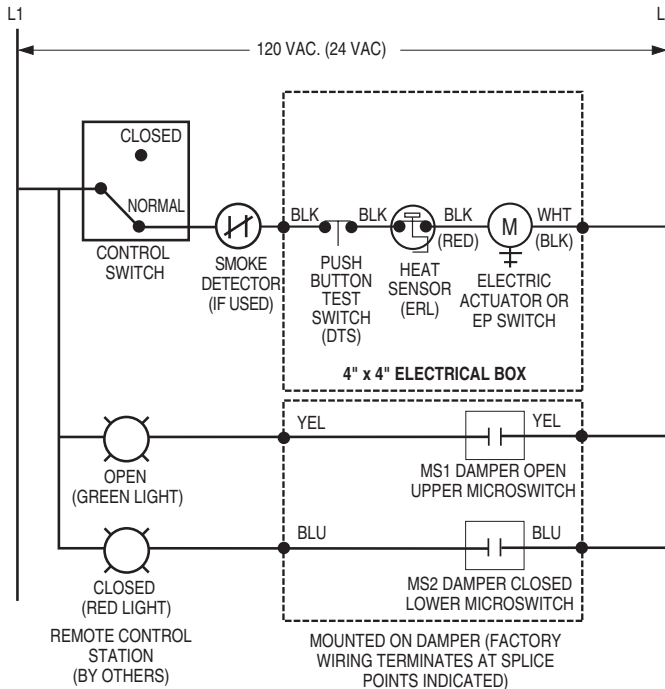


Figure 3. DTS/ERL with MLS-300 Nailor or Honeywell (actuator aux. switches) Position Indicator Package

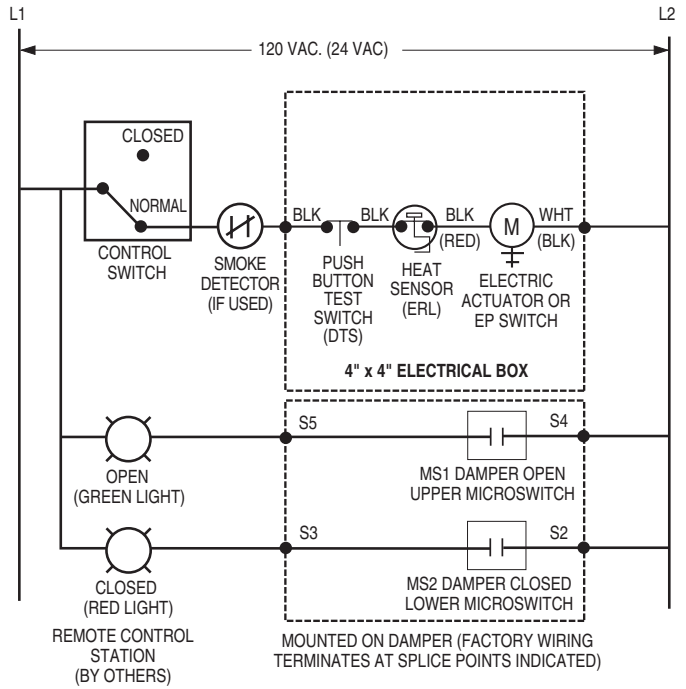
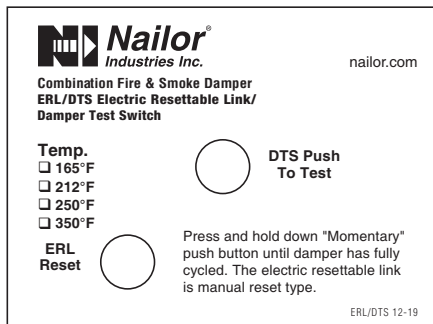
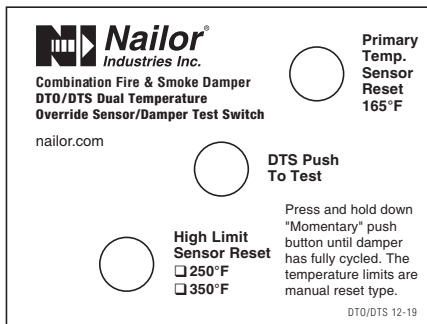


Figure 4. DTS/ERL with MLS-300 Siemens GJD Series (actuator auxiliary switches) Position Indicator Package

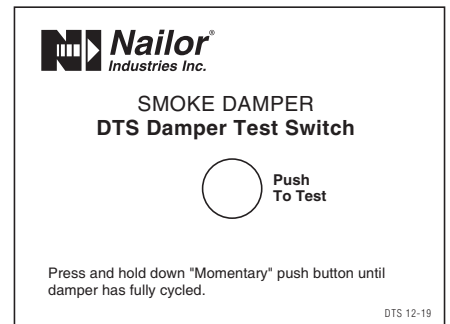
DTS LABEL VARIATIONS:



ERL/DTS Combination Fire/Smoke Damper



DTO/DTS Combination Fire/Smoke Damper



DTS Smoke Damper

SCHEDULE TYPE

PROJECT

ENGINEER

CONTRACTOR

DATE

B SERIES

SUPERSEDES

DRAWING NO.

9 - 3 - 20

FD-ACC

3 - 29 - 18

DTS

PERFORMANCE DATA:

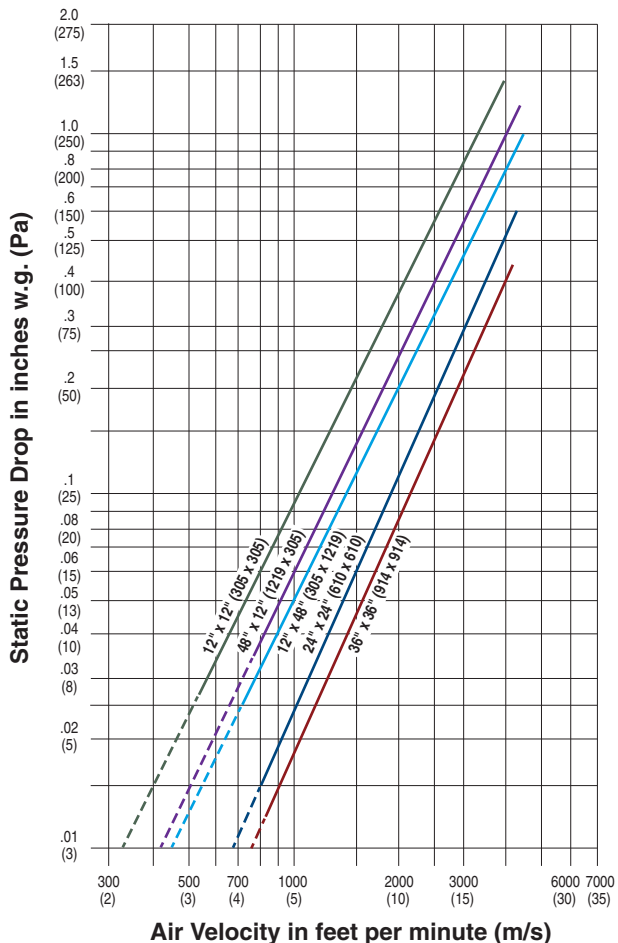
MODEL SERIES: 1210M

LEAKAGE CLASS:

The 1210M Series Modulating 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 250°F (121°C) under airflow of 2000 fpm (10 m/s) at 4" w.g. (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	250°F (121°C)

PRESSURE DROP:



Pressure drop tested per AMCA Standard 500-D, Figure 5.3.
Data corrected to standard air density of 0.075 lbs/ft.³.