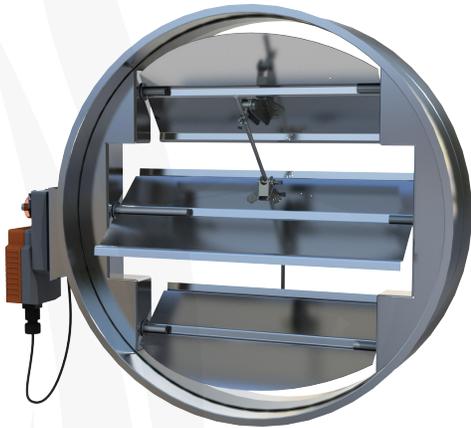


ENERVEX MDF MODULATING DAMPER

3903007 04.18

Installation & Operating Manual



READ AND SAVE THESE INSTRUCTIONS!



LISTED

UL File E467733

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ENERVEX® 
VENTING DESIGN SOLUTIONS



This symbol shows that the ENERVEX MDF Modulating Dampers are listed in the US and certified for Canada under Underwriters Laboratories Inc. file no. E467733.

IMPORTANT: READ THESE INSTRUCTIONS CAREFULLY PRIOR TO INSTALLATION.

- **EXAMINE ALL COMPONENTS FOR POSSIBLE SHIPPING DAMAGE PRIOR TO INSTALLATION.**
- **PROPER JOINT ASSEMBLY IS ESSENTIAL FOR A SAFE INSTALLATION. FOLLOW THESE INSTRUCTIONS EXACTLY AS WRITTEN. CHECK SECURENESS OF JOINTS UPON COMPLETION OF ASSEMBLY.**

WARNING

Failure to follow these installation instructions could cause FIRE, CARBON MONOXIDE POISONING, and/or DEATH. If you are unsure of installation requirements, contact ENERVEX.

Symbol Legend

The following terms are used throughout this manual to bring attention to the presence of potential hazards, or to important information concerning the product.



DANGER: Indicates an imminent hazardous situation which, if not avoided, will result in death, serious injury or substantial property damage.



WARNING: Indicates an imminent hazardous situation which, if not avoided, may result in personal injury or property damage.

How to use this manual

This installation manual does not contain any system design documentation. System design documentation is available from any authorized ENERVEX representative. Accessories, fans, and variable frequency drives are not covered by this manual. Please refer to these component's individual manuals.

TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed on the front of the manual.
2. Before servicing or cleaning the unit, switch off at service panel and lock service panel to prevent power from being switched on accidentally.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with applicable codes and standards.
4. Follow the appliance manufacturer's guidelines and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. This unit must be grounded.

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1. PRODUCT INFORMATION

1.1 FUNCTION

The MDF is a ruggedly built multi-blade damper in 316L-PCM stainless steel and equipped with a fast acting actuator attached to the damper shaft. The damper assembly has flanged connections and fits most types of Pressure Stack. It is of an opposed blade design to assure an extremely accurate control of the flow. Typical uses are individual over-fire draft damper for single boiler systems and common over-fire draft damper for multiple boiler systems.

The actuator uses a brushless DC motor that operates on 24VAC/VDC, which is controlled by an Application Specific Integrated Circuit (ASIC). The ASIC monitors and controls the actuator's rotation and provides a digital rotation sensing (DRS) function to prevent damage to the actuator in a stall condition. Power consumption is reduced in a holding mode. The motor delivers 54 in-lbs or 6 Nm torque at rated voltage and is custom configured for the damper. The minimum duration through the 95° operating angle is 15 seconds. It is also equipped with 2 endswitches to provide damper position open/closed. The MDF damper is manufactured to connect to chimneys with a standard 1/2" flanged connection. The MDF assembly is rated for temperatures up to 1400°F (760°C). The MDF should be installed with sufficient clearance above the boiler outlet to allow for damper protrusion into the stack when fully open. The MDF nameplate located as shown on the diagram on page 4. It is for installation with gas-fired or oil-fired equipment only.

1.2 SHIPPING

Standard Packing List

MDF is shipped completely assembled

1.3 WARRANTY

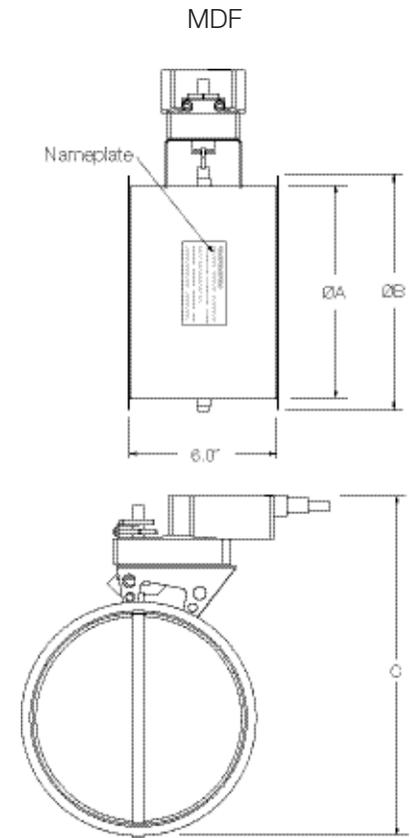
2-Year Factory Warranty. Complete warranty conditions are available from ENERVEX, Inc.

2. SPECIFICATIONS AND DIMENSIONS

2.1 DIMENSIONS AND CAPACITIES

Model	Stack ID in / mm	Dim. A in / mm	Dim. B in / mm	Dim. C in / mm	# Blades
MDF 4	4	3.94 / 100	4.88 / 124	8.86 / 225	1
MDF 6	6	5.91 / 150	6.85 / 174	10.83 / 275	1
MDF 8	8	7.87 / 200	8.82 / 224	12.80 / 325	1
MDF 10	10	9.84 / 250	10.79 / 274	14.76 / 375	1
MDF 12	12	11.81 / 300	12.76 / 324	16.73 / 425	2
MDF 14	14	13.78 / 350	14.72 / 374	18.70 / 475	2
MDF 16	16	15.75 / 400	16.69 / 424	20.67 / 525	2
MDF 18	18	18.00 / 457	19.00 / 483	23.00 / 584	3
MDF 20	20	20.00 / 508	21.00 / 533	25.00 / 635	3
MDF 22	22	22.00 / 559	23.00 / 584	27.00 / 686	3
MDF 24	24	24.00 / 610	25.00 / 635	29.00 / 737	3
MDF 26	26	26.00 / 660	27.00 / 686	31.00 / 787	4
MDF 28	28	28.00 / 711	29.00 / 737	33.00 / 838	4
MDF 30	30	30.00 / 762	31.00 / 787	35.00 / 889	4
MDF 32	32	32.00 / 813	33.00 / 838	37.00 / 940	4
MDF 34	34	34.00 / 864	35.00 / 889	39.00 / 991	4
MDF 36	36	36.00 / 914	37.00 / 940	41.00 / 1041	5

Other sizes available upon request.



3. MECHANICAL INSTALLATION

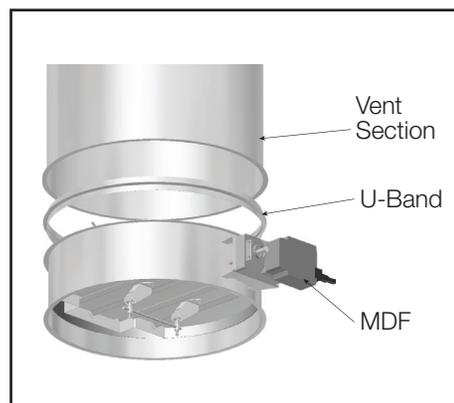
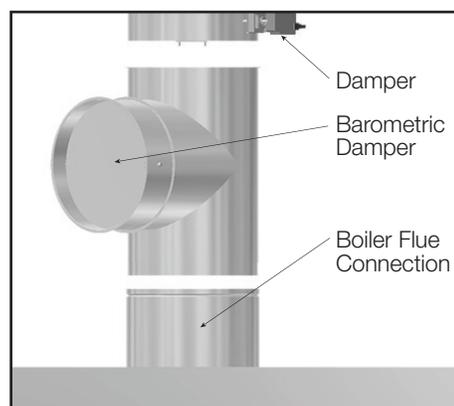
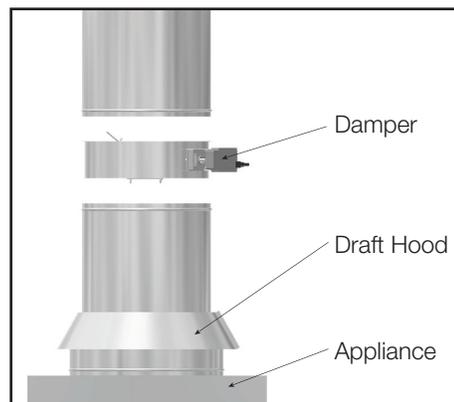
3.1 GENERAL

The MDF has standard flanged connections. Install using the accompanying U-Band and a gasket seal. Install the MDF in the vent system at least one vent diameter (A) plus one foot above an appliance outlet and at least three vent diameters away from any tee or elbow as shown in the figures on the right.

DO NOT COVER ACTUATOR WITH INSULATION.

IT IS FOR INSTALLATION WITH GAS-FIRED OR OIL-FIRED EQUIPMENT ONLY.

MINIMUM CLEARANCE TO COMBUSTIBLES IS 18 INCHES.



4. ELECTRICAL INSTALLATION

4.1 WIRING



DANGER

Turn off electrical power before servicing. Contact with live electric components can cause shock or death.

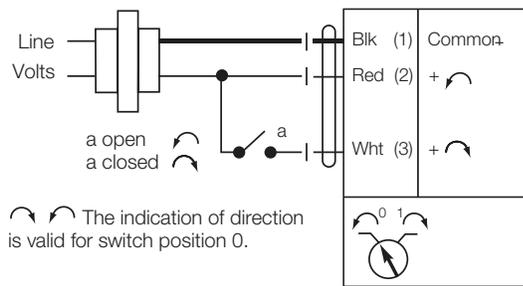
Éteignez l'alimentation électrique avant de procéder à l'entretien. Le contact avec des composants électriques sous tension peut provoquer un choc ou la mort.



Verify voltage of actuator before connecting to a power supply. Actuator will run on either 120VAC or 24VAC/VDC.

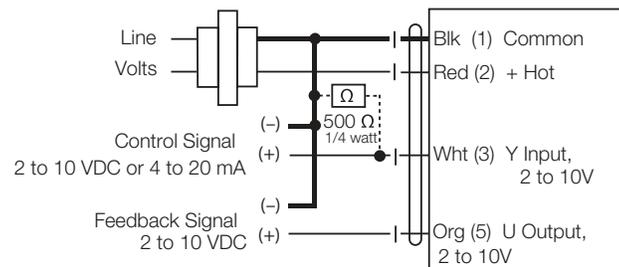
Vérifiez la tension de l'actionneur avant de le connecter à une source d'alimentation. Actuator fonctionnera sur 120VAC ou 24VAC / VDC.

24 VAC Transformer



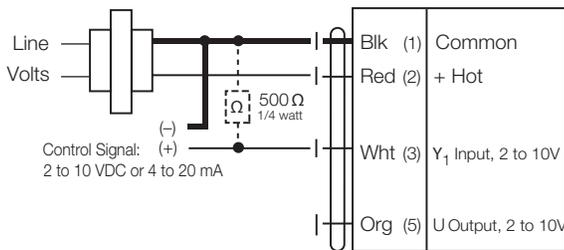
On/Off

24 VAC Transformer



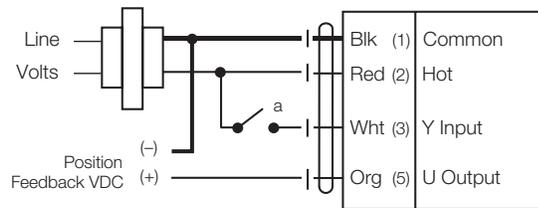
2 to 10 VDC

24 VAC Transformer



VDC/4-20 mA

24 VAC/DC Transformer



Two-Position

5. MAINTENANCE

5.1 GENERAL

Annual maintenance is recommended. During the maintenance check, verify the damper blade is in the correct position (the indicator on the damper rod will show the position of the damper blade). Check that the damper rod is firmly secured by the actuator and tighten fasteners if necessary.

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