



DEXON CANADA AIR SYSTEMS INC.

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## VENT FAN OWNERS MANUAL

### MDV2 MODEL



PROVIDING SAFETY VENTILATION TO THE WATER, WASTER WATER INDUSTRY

SINCE 1986

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Spare Parts List, Blower Curves, Spec Sheet, Quality Control Test Report

## 1. GENERAL COMMENTS

### 1.1 INTRODUCTION

Dexon vent fans are designed to provide continuous positive pressure safety ventilation in climates not requiring tempering of the supplied air. The MDV2 Vent Fan is a flat bottomed, outdoor free standing or flanged pipe mounted unit with 360° louvers and either 4" (100mm) or 6" (150mm) diameter discharge outlet.

#### FEATURES

- 2 Speed Adjustable Control and Toggle Switch
- Provisions for Low Temperature Shut Down
- Blower Boost Start
- CSA Certified
- Corrosive Resistant Aluminum Housing

### 1.2 PURPOSE

To provide continuous positive pressure safety ventilation to pumping station wet wells, dry wells, buildings, vaults and chambers for the safety of the operator and to provide a less corrosive environment for equipment.

MDV2 Vent Fan is intended for use in locations not requiring preheated air. It is not Dexon's responsibility to determine if preheated air is required. Dexon will not be liable for any personal injuries, equipment or property damage caused by inappropriate installation or operations.

This equipment is only suitable for use in Class 1, Division 2, Groups C and D, Temp Code T4 or Non-Hazardous Locations, Enclosure Type 3R.

## 2. OPERATOR AND EQUIPMENT SAFETY

### 2.1 OPERATOR SAFETY

The installation, operation and maintenance of this unit must be carried out by qualified personnel only and in accordance national and local electrical codes.

For your safety read the supplied Owner's Manual and Installation Instructions before installing.

Ensure all required lock-out procedures are followed.

Take note of all the safety labels on the unit.

If entering a confined space always follow confined space entry procedures.

Switch the vent fan into "High/Full" speed to purge the space before entering. NEVER leave the unit in "High/Full" speed unattended if freezing is a concern.

### 2.2 EQUIPMENT SAFETY

Store the vent fan in a safe, dry environment prior to installation.

Ensure that the factory preset continuous airflow meets the onsite requirements.

We strongly recommend providing surge protection.

When installing/servicing the unit ensure all the screws on the access panels are used and secured to maintain Type 3R rating.

Do not install vent fans on a down pipe smaller than the discharge outlet.

Ensure there is adequate distance between intake louvers and pressure relief vent/gooseneck.

Follow regular maintenance procedures as outlined in section 5.1 of this manual.

Locations with higher debris accumulation such as vegetation, construction, road dust or salt may require more monitoring and maintenance.

**IMPORTANT: The vent fan must run continuous. Not all components in the unit are corrosive resistant and rely on the continuous positive pressure of the unit to keep the damaging moist and corrosive gases from entering the vent fan. If the vent fan cannot be immediately started or run continuously, on site actions must be taken to prevent corrosive gases and moisture from entering the vent fan.**

**WARNING: EXPLOSION HAZARD; SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS 1, DIV. 2.**

### 3. SPECIFICATIONS

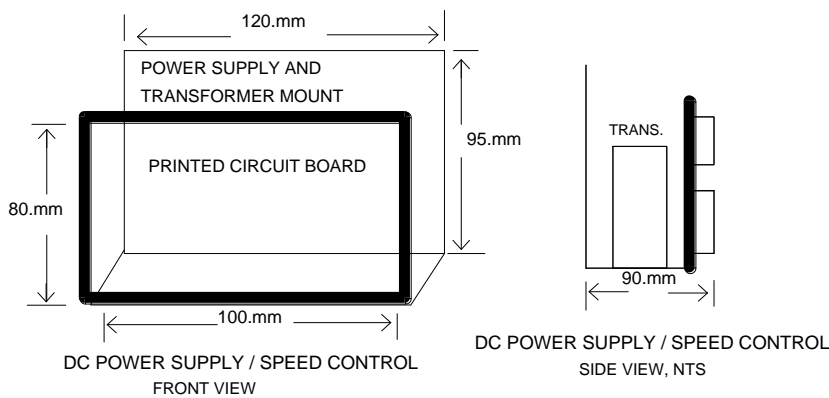
#### 3.1 POWER SUPPLY/SPEED CONTROLLER

The MDV2 Vent Fan is supplied with a remotely installed power supply/speed controller with the following characteristics:

- 120VAC input with 7-24VDC output to the blower.
- Potentiometers for adjusting both the “Low/Idle” speed and the “High/Full” speed.
- Toggle switch for alternating between “Low/Idle” and “High/Full” speed.
- Terminals for optional “Low Temp.” shut down feature.
- Blower boost start to provide a momentary full output voltage to the blower.



Power Supply/Speed Controller must be installed in appropriate enclosure remote from hazardous locations.



## 3.2 SPECIFICATIONS

- **Blower:** 24 Volt brushless DC axial
  - Papst 6224N manufacturers spec - 240cfm Max. @ 0" SP, 18Watt **or**
  - Papst 6224NH manufacturers spec - 283cfm Max. @ 0" SP. 26Watt.
- **Power Supply:** 120VAC, 50Watt Max input, 7 to 24VDC, 26Watt Max output.
- **Air Inlet:** 360 degree louvered air inlet.
- **Discharge Outlet:** Bottom 6 inch (150mm) or 4 inch (100mm) diameter.
- **CSA Certified:** Dexon vent fans are CSA certified for Class 1, Div. 2, Gas Groups C & D, Temp. Code T4, Enclosure Type 3R. Any modifications to existing certified units will require special CSA approvals/certification.

## 4. INSTALLATION

### 4.1 INSTALLATION REQUIREMENTS

- Power supply/speed controller must be installed remote from hazardous locations.
- Class 1, Div. 2 units must be fused remote from hazardous locations.
- A pressure relief vent/gooseneck at least equal in cross section to the discharge outlet is required.
- Ensure the pressure relief vent/gooseneck is not in close proximity to the vent fan intake louvers.
- Maintain 305mm (12") clearance to the bottom of the intake louvers for accumulating debris or drifting snow.
- Maintain a minimum of 1 meter (3'3") clearance on control access side of the vent fan for maintenance and servicing.

**IMPORTANT: The vent fan must run continuously. Not all components in the unit are corrosive resistant and rely on the continuous positive pressure of the unit to keep the damaging moist and corrosive gases from entering the vent fan. If the vent fan cannot be immediately started or run continuously, on site actions must be taken to prevent corrosive gases and moisture from entering the vent fan.**

## 4.2 INSTALLATION INSTRUCTIONS

All installations must be done by qualified personnel and in accordance with local electrical codes.

1. Using the 4 stainless steel bolts mount the vent fan to a raised flanged down pipe or directly over a hole at the top of the ventilated space. See vent fan bottom footprint drawing in appendices.
2. Install the power supply/speed control in a suitable enclosure in a non-hazardous dry location.
3. Provide 120VAC, 60Hz, 37.5Watt power to the power supply/speed controller, remote fused at 0.5Amp Max.

**For Class 1, Div. 2 Locations, unit must be fused remote from hazardous locations.**

4. Connect interfacing options to power supply/speed controller if applicable as per wiring diagram in appendices.

Please Note: One side of the DPST Switch is used for the “High/Low” function and the other side used for the “Low Temp.” shut down override feature if a thermostat is used as per attached wiring diagram. When the speed control side of the DPST switch is in open position the blower will run at “High/Full” speed; when in closed position the blower runs at “Low/Idle” speed. When the “Low Temp.” override side is in open position it overrides the “Low Temp.” shut down and when in closed position allows the “Low Temp.” shut down.

**WARNING: An open contact at TB5 “High/Low” switch terminal will cause the blower to operate at “High/Full” speed. An open contact at TB4 terminal will override the “Low Temp.” shut down.**

5. If required adjust blower speed to meet onsite requirements; units are shipped out with the blower preset to minimum and maximum capacity. Adjustments can be made by way of trim pots on the power supply/speed controller.

**ENSURE THE UNIT IS RUNNING ON “LOW/IDLE” SPEED BEFORE LEAVING THE UNIT. VENT FANS MUST RUN CONTINUOUSLY, FAILURE TO DO SO MAY VOID WARRANTY.**

## 5. MAINTENANCE

### 5.1 MAINTENANCE INSTRUCTIONS

MAINTENANCE SHOULD ONLY BE PERFORMED BY QUALIFIED PERSONNEL.

ONCE A YEAR, PREFERABLY BEFORE THE COLD WEATHER SETS IN, PERFORM THE FOLLOWING MAINTENANCE PROCEDURES.

1. Power down the vent fan and clear air intake louvers and pressure relief vent/gooseneck of any debris or obstructions.
2. Remove louver section to expose the blower and check for debris or obstructions to the blower and louvers. Clear any debris or obstructions.
3. Check blower for any signs of corrosion or restrictions. Remove any restrictions and replace any corroded parts.
4. Check all connections and make sure they are secure.
5. Check the “High/Low” switch by turning the remote toggle switch to “High/Full” speed then back again to the “Low/Idle” speed.
6. Ensure all conduit holes are completely sealed with duct seal.
7. Replace the louver section and secure the access panels with all the screws provided to maintain Type 3R rating.

**IMPORTANT:** Never leave the vent fan in “High/Full” speed unattended.

**CONTACT INFORMATION:**

Email: [techsupport@dexoncanada.com](mailto:techsupport@dexoncanada.com), Website: [www.dexoncanada.com](http://www.dexoncanada.com)

Tech Support Phone: 403-930-1284, Admin Phone: 403-272-0562



**6. TROUBLE SHOOTING GUIDES**

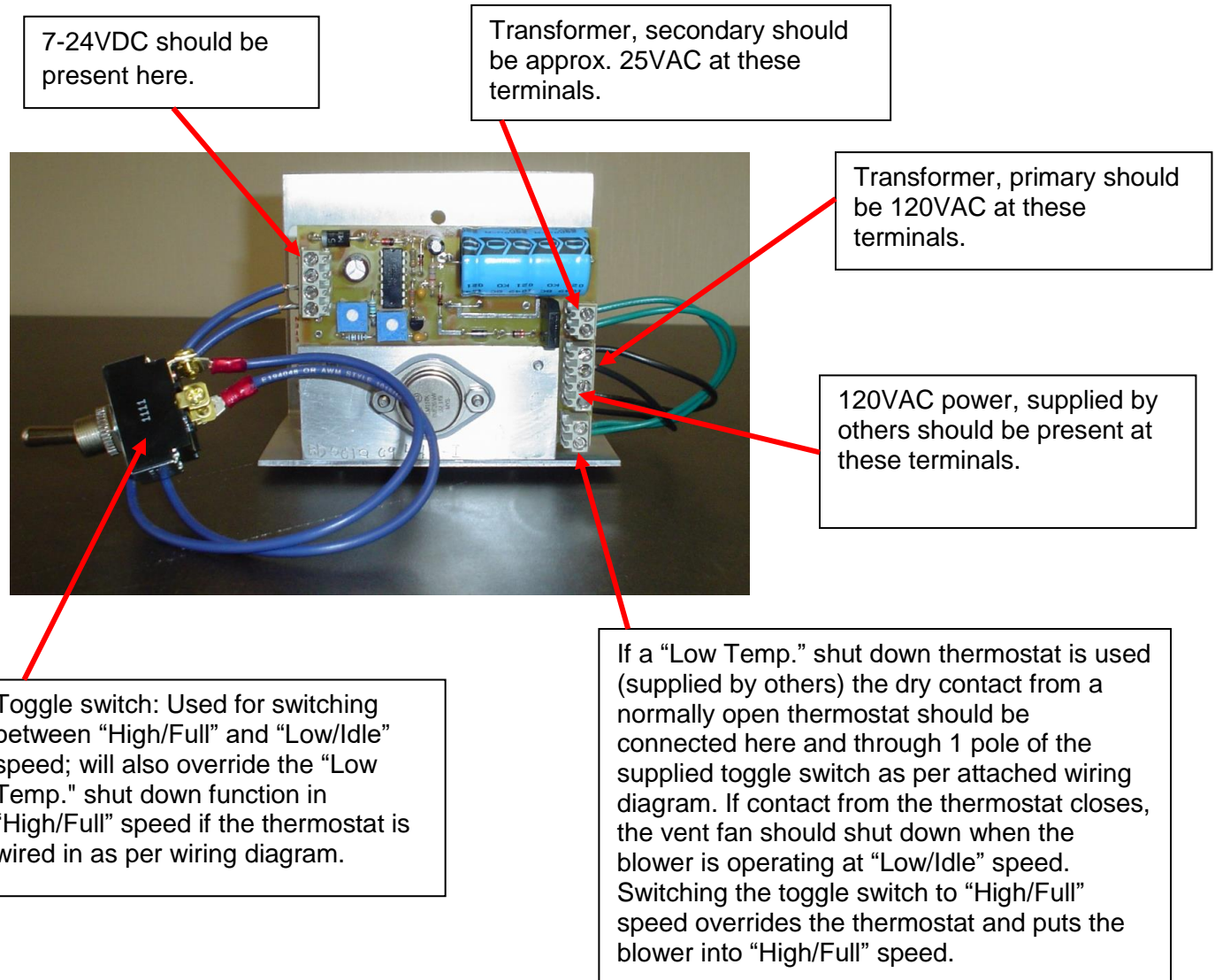
**6.1 TROUBLE SHOOTING GUIDE**

<b>Problem</b>	<b>POSSIBLE CAUSE</b>	<b>CORRECTIVE ACTION</b>
Vent fan not operating.	No 120VAC power to the power supply/speed controller.	Check for 120VAC at TB3 as per wiring diagram. If not present, check power source and fuses etc. Ensure the power supply/speed controller is energized.
	No 7-24VDC power present at TB5 on power supply/speed controller.	Disconnect blower wires at TB5 and check again for 7-24VDC. If still none, check transformer secondary at TB2 for 24VAC. If none, replace the transformer. If 24VAC is present from the transformer and still no 7-24VDC at TB5 then replace the power supply/speed controller.
	No 7-24VDC power present at terminal block inside vent fan housing.	If 7-24VDC is present at TB5 on the power supply/speed controller but not in the vent fan housing; check wiring and connections and rectify as required.
	Blower has expired or wiring terminals are corroded and/or broken.	De-energize 120VAC to power supply/speed controller; remove louver section, check that the blower spins freely, check wiring and connection pins. Replace blower as required.

If the above recommendations do not solve the problem please contact Dexon Canada Air Systems at 403-930-1284 or email [techsupport@dexoncanada.com](mailto:techsupport@dexoncanada.com).

## 6.2 POWER SUPPLY/SPEED CONTROLLER DESCRIPTION

Note: Description below is assuming the power supply/speed controller is energized.



CONTACT INFORMATION:  
Email: [techsupport@dexoncanada.com](mailto:techsupport@dexoncanada.com), Website: [www.dexoncanada.com](http://www.dexoncanada.com)  
Tech Support Phone: 403-930-1284, Admin Phone: 403-272-0562

## 7. WARRANTY

### Limited Warranty

Dexon Canada Air Systems Inc. warrants its Blower Heaters and Vent Fans to be free of defects in material and workmanship for a period of one (1) year from start up or eighteen (18) months from shipment, whichever comes first.

This warranty does not extend to abnormal or abusive wear and tear or improper installations and operations. All units and components of the unit must be installed according to Dexon's installation instructions provided with each unit. Responsibility for proper installation and operations must rest on the purchaser. Once properly installed all units must be operated as intended and maintained as outlined in owners and operators manuals supplied with each unit, and as per tags on each unit.

If the unit is shut down for any reason the unit must be completely sealed off to prevent any gases from entering the inside of the unit. This includes ducting/discharge, conduit and bolt holes, or any holes that would allow air to migrate into the unit. When removing the inside panels for repair or service, the discharge duct and any holes must still be covered in such a way as to prevent moisture from entering the body of the Blower Heater or Vent Fan.

Dexon's sole obligation under this warranty shall be to replace or repair defective parts or workmanship if upon evaluation it has been determined that they are defective and not a result of abnormal or abusive wear and tear or improper installations and operations.

Warranty services will only be extended to the original purchaser. In order to obtain warranty service the owner must ship the product prepaid to Dexon for evaluation. Dexon will ship the replaced or repaired product back prepaid if evaluation has determined that they are defective.

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**8. DRAWINGS**

**8.1 DIMENSION DRAWING**

## **8.2 WIRING DIAGRAM**