

AIR CURTAIN

USER'S MANUAL



www.everwellparts.com

Product Overview

Our company manufactures the FM series air curtain, which is built upon years of expertise accumulated at our Flow Survey Center. This product integrates both domestic and international advanced technologies to develop the next generation of centrifugal and crossflow air curtains. These air curtains offer optimal airflow with low noise levels, making them ideal for installation in spaces such as hotels, warehouses, theaters, office buildings, cold storage rooms, and medical facilities.

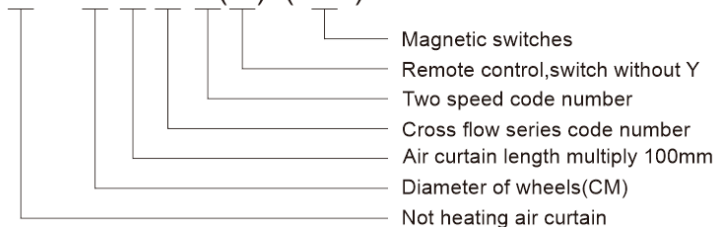
The air curtain creates a barrier at entrances, preventing the mixing of indoor and outdoor air, reducing temperature fluctuations, providing moisture protection, and offering protection against pollutants and flying insects.

Definition

Type		Code Number
Everwell Series	Air Curtain Unheated	FM
InstallPattern	Horizontal Install	-
	Vertical Install	N/A
Heat Source Type	Hot Water	-
	Steam	-
	Electricity	D
Air Blower Pattern	Cross Flow Series	N
	Centrifugal Series	L
	The Axis Flows Series	Z
Voltage	115V	S1
	220V	S2

Nomenclature

FM-1209N-2(Y)-(MC)



Model Selection

The selection of the air curtain model is primarily based on the width and height of the door, the length of the air curtain, and the diameter of the fan wheel. Generally, the length of the air curtain should be greater than the width of the door. For larger doors, it is recommended to use two or more units. If the door is taller, choose an air curtain with a larger fan wheel diameter; for shorter doors, opt for a smaller fan wheel diameter. In quieter environments, a smaller fan wheel diameter is preferable to reduce noise levels.

Ambient Working Temperature

Type	Specification
Working Conditions Temperature	14~104°F / -10~40°C
Ambient Air Relative Humidity (%)	≤90
Altitude Above Sea Level (ft/m)	≤3280 / ≤1000
Fixed Supply Voltage Deviation (%)	±10

General Safety Information

Use this product only as intended by the manufacturer. If you have any questions, please contact the manufacturer directly. Installation should be performed only by qualified personnel who are familiar with these instructions and aware of general safety precautions. Improper installation can lead to electric shock, injury from contact with moving parts, and other potential hazards.

1. Installation and Mounting Safety

- **Professional Installation:** Air curtains should always be installed by qualified personnel to ensure proper placement, secure mounting, and compliance with local building codes.
- **Correct Placement:** Ensure the air curtain is mounted at the proper height and position, typically above the door, to ensure effective air separation and prevent obstruction or damage.
- **Proper Ventilation:** Ensure there is adequate ventilation around the unit to allow airflow and prevent overheating.
- **Electrical Safety:** Only connect the air curtain to the correct electrical supply

as specified in the manufacturer's manual. Ensure the electrical connections comply with local electrical codes and safety standards.

2. Electrical and Wiring Precautions

- **Turn Off Power:** Always turn off the power supply before servicing, cleaning, or adjusting the air curtain.
- **Grounding:** Ensure the air curtain is properly grounded to prevent electrical shock or damage.
- **Avoid Overloading Circuits:** Ensure the air curtain's electrical requirements match the available circuit capacity to avoid overloading or tripping breakers.

3. Operational Safety

- **Do Not Block Airflow:** Ensure the air intake and outlet of the air curtain are not obstructed by objects, furniture, or debris, which could interfere with airflow and cause the unit to overheat.
- **Operating Environment:** Avoid installing the air curtain in areas where it could be exposed to excessive moisture, extreme temperatures, or corrosive chemicals unless it is specifically rated for such conditions.
- **Ensure Proper Functioning:** Regularly check that the air curtain is operating correctly. Any unusual noises, smells, or malfunctions should be addressed immediately by a qualified technician.

4. Maintenance and Cleaning

- **Power Off During Maintenance:** Always turn off the power before performing any maintenance.
- **Use Appropriate Cleaning Tools:** Clean the air curtain with a soft cloth and mild detergent. Avoid using harsh chemicals or abrasive materials that could damage the unit.
- **Fan Blade and Filter Maintenance:** Regularly inspect and clean the fan blades, filters (if applicable), and ventilation grilles. Dust or dirt buildup can reduce the efficiency and lifespan of the air curtain.

5. User Safety

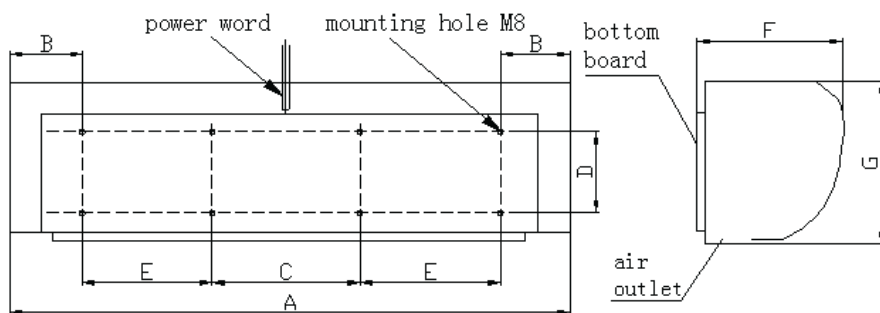
- Child and Animal Safety: Keep children and pets away from the air curtain to avoid injury. Air curtains have moving parts that could pose a safety risk.
- Avoid Direct Contact with Moving Parts: Never attempt to touch the fan blades or other moving parts of the air curtain while it is in operation to prevent injury.

6. Compliance with Safety Standards

- Local Regulations: Ensure that the air curtain complies with relevant local safety regulations, such as electrical safety standards, environmental regulations, and energy efficiency codes.
- Manufacturer's Manual: Always follow the manufacturer's guidelines for safety, installation, operation, and maintenance.

Unit Dimensions

Model		A	B	C	D	E	F	G
FM1209N-2Y-S1/S2	mm	900	30	240	100	300	195	220
	in	35.43	1.18	9.44	3.93	11.81	7.67	8.66
FM1212N-2Y-S1/S2	mm	1200	30	300	100	420	195	220
	in	47.24	1.18	11.81	3.93	16.53	7.67	8.66
FM1215N-2Y-S1/S2	mm	1500	30	360	100	360	195	220
	in	59.05	1.18	14.17	3.93	14.17	7.67	8.66
FM1218N-2Y-S1/S2	mm	1800	30	300	100	420	195	220
	in	70.86	1.18	14.17	3.93	16.53	7.67	8.66

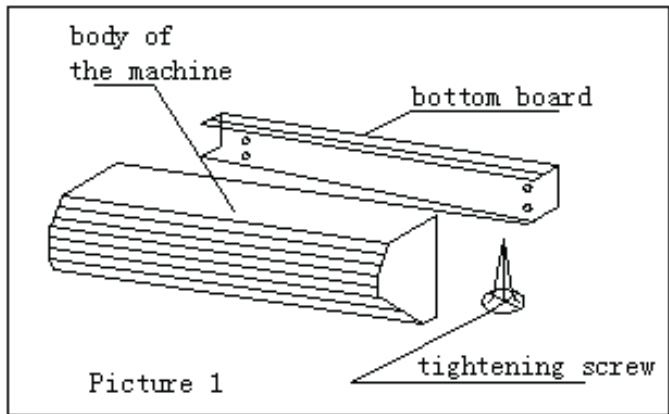


Picture 2

General Installation

This product has been assembled and thoroughly tested at the factory before shipping. To ensure optimal performance, the following procedures must be followed. Before proceeding with startup, it is essential to familiarize yourself with the safety controls included with the unit. Confirm that the electrical rating nameplate on the cover matches the available electrical power supply. Keep the shipping carton(s) until the air curtain(s) are fully installed and functioning correctly.

Everwell's air curtain has been designed with a quick mounting plate for ease of installation. 1) Loosen the screws to separate the body from the wall mounting plate, see Picture 1.

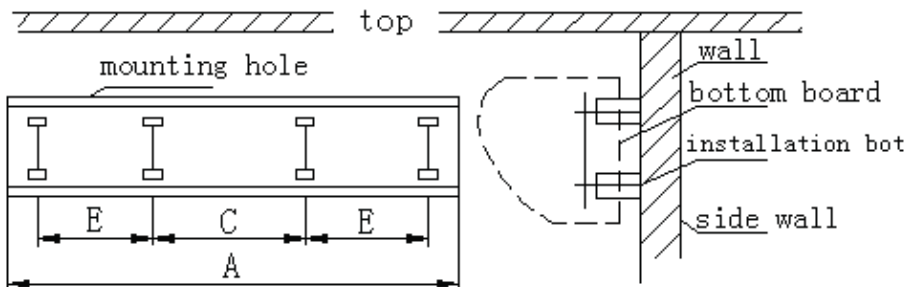


Concrete and Standard Wall Mounting

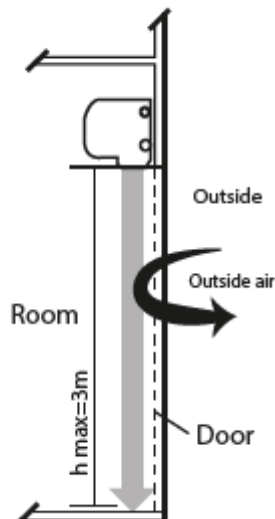
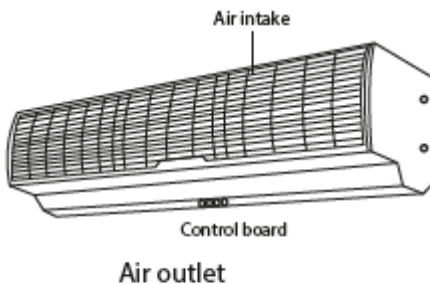
1. Position and center the mounting plate over the door opening, ensuring that the 45° lip and rubber vibration gasket are on top.
2. Mark and drill holes in the mounting plate where the wall will provide adequate support for the Air Curtain. It is recommended to drill at least four holes near the corners. See Picture 2.
3. The mounting hardware (provided by others) must be capable of supporting a minimum of three times the net weight of the Air Curtain.
4. Drill the four marked holes in the wall and secure the mounting plate using concrete anchors (if applicable) and or four wood mounting screws if mounting on wood beams.

Attaching The Air Curtain To The Mounting Plate

5. Lift the unit over the door, with the air discharge nozzle facing downward, and position it onto the mounting plate.
6. Tilt the unit upward, aligning the top recessed edge of the unit with the top 45° angled lip of the mounting plate. See Figure 3.
7. Lower the unit into place, ensuring it rests on the lower lip of the mounting plate.
8. Once the unit is securely attached to the mounting plate, reinstall the two (2) locking screws at the bottom corners.



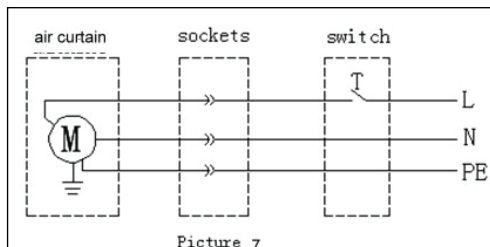
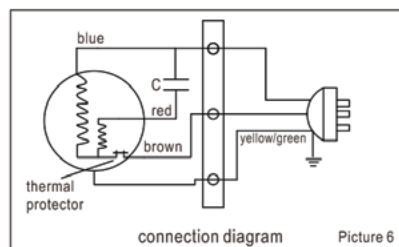
Picture 3



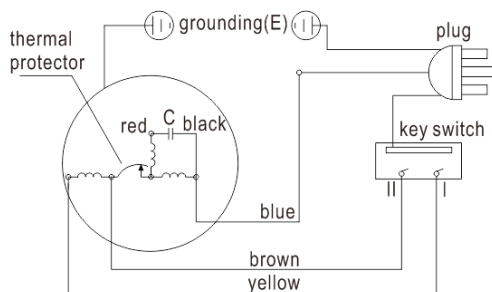
Wiring Diagram

Electrical Installation: Units must be field-wired in accordance with all local and national electric codes, including wire size and materials.

9. Single-speed air curtain control circuit. (Figure 6); the installation of the flange connection valve is in the diagram (Figure 7), It is controlled by an external switch, and if connected to external control, it will reach constant speed.

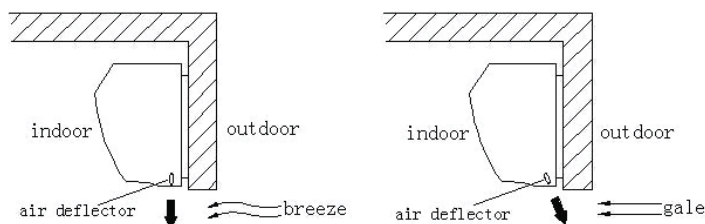


10. Two-speed air curtain with key switch, see Picture 8-1. Press I or II, to select the desired airdspeed, and press OFF to turn it off.



Picture 8-1

11. The air deflector on the air curtain is adjustable. The air direction can be changed depending on the desired airflow. See Picture 9.



picture 9

Technical Specifications

Item Model	Rated Voltage (V)	Rated Frequency (Hz)	Specification (mm)	Max Input Power (W)	Max Input Flow (m ³ /h)	Max Wind Speed (m/s)	Noise (dB)	N.W (kg)	Fuselage Size (mm)	Packing Box (mm)	Effective Height (m)
FM1209N-2Y-S2	230	60	120	161	1780	11	≤53	12.8	900x220x195	960x280x250	2.3-3
FM1209N-2Y-S1	115	60	120	158	1780	11	≤53	12.8	900x220x195	960x280x250	2.3-3
FM1212N-2Y-S2	230	60	120	201	2370	11	≤56	15.7	1200x220x195	1260x280x250	2.3-3
FM1212N-2Y-S1	115	60	120	195	2370	11	≤56	15.7	1200x220x195	1260x280x250	2.3-3
FM1215N-2Y-S2	230	60	120	244	2970	11	≤57	19.9	1500x220x195	1560x280x250	2.3-3
FM1215N-2Y-S1	115	60	120	240	2970	11	≤57	19.9	1500x220x195	1560x280x250	2.3-3
FM1218N-2Y-S2	230	60	120	295	3560	11	≤59	23.0	1800x220x195	1860x280x250	2.3-3
FM1218N-2Y-S1	115	60	120	291	3560	11	≤59	23.0	1800x220x195	1860x280x250	2.3-3

Service and Maintenance

Periodic maintenance of an air curtain is essential for ensuring its efficient operation, energy savings, and prolonged lifespan. Air curtains are commonly used in doorways or openings to create a barrier of air that separates different indoor environments, such as keeping conditioned air inside and preventing dust, insects, or odors from entering.

Here's a checklist for the periodic maintenance of air curtains:

12. Power Supply and Electrical Components

- A. Check the Power Source: Ensure that the air curtain is properly connected to a power supply and that there are no loose or damaged wires.
- B. Inspect Electrical Connections: Verify that the electrical components such as fuses, circuit boards, and control switches are functioning properly.

13. Cleaning and Dusting

- A. Clean the Air Filters: If the air curtain has filters, clean them regularly. Filters should be cleaned at least once every 3 to 6 months, depending on usage. Replace them if they are damaged or excessively dirty.

- B. Clean the Blower and Fan Blades: Dust and debris can accumulate on the fan blades and blower. Use a vacuum cleaner or compressed air to remove the dust.
 - C. Check for Obstructions: Ensure that the intake and exhaust vents are not obstructed by dirt, debris, or other objects. Blocked vents can affect the airflow and performance of the unit.
14. Check the Airflow
- A. Test Airflow: Ensure that the air curtain is generating a strong and consistent airflow. If the airflow is weak, there may be an issue with the fan motor, filter, or air ducts.
 - B. Adjust Airflow Settings: Some models allow you to adjust the speed or intensity of the airflow. Check that these settings are functioning as intended.
15. Inspect the Fan Motor
- A. Listen for Unusual Noises: Any strange or loud noises from the motor or fan should be investigated, as they could indicate a malfunction.
16. Check the Temperature Settings (If Applicable)
- A. For heated air curtains, verify that the heating element is working properly. Check for any signs of wear or damage, and clean it to prevent dust buildup, which can affect efficiency.
17. Check the Unit Housing
- A. Inspect the Housing: Check for any physical damage, such as cracks or dents, which can affect performance. Ensure that the unit is securely mounted to the wall or ceiling.
 - B. Seal Gaps and Leaks: Ensure that the air curtain is properly sealed against the wall or doorframe, as any gaps can reduce its effectiveness.
18. Control Settings and Sensors
- A. Test the Controls: Check that the air curtain's control panel (remote or manual) is functioning as expected. Test all functions such as power, fan speed, heating, and sensors.

- B. Check for Sensors and Timers: If your air curtain has sensors for automatic operation (e.g., activating when a door opens), make sure these sensors are clean and functioning properly.

19. Check the Drainage (For Heated Models)

- A. If the air curtain is equipped with a heating element, ensure that any condensation drainage pipes are clear and not clogged.

20. Professional Servicing (Annual Checkup)

- A. Once a year, consider having a professional technician to inspect and service the air curtain, especially if it is a complex or large unit. This can help address issues that may not be apparent during routine maintenance.

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