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Noctua NF-A85VPWM

Noctua NF-A8 5V PWM Fan User Manual

Model: NF-A85VPWM

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1. INTRODUCTION

The Noctua NF-A8 5V PWM is a premium quiet fan designed for various 5V applications requiring efficient cooling and low noise levels. This 80x80x25mm fan features advanced acoustic optimization and Flow Acceleration Channels for superior performance. It includes a USB power adapter cable for versatile power options and supports 4-pin PWM for automatic speed control.



Figure 1: Front view of the Noctua NF-A8 5V PWM fan.

2. SAFETY INFORMATION

Important: This fan is designed for 5V operation. **It cannot be run at 12V** and will be permanently damaged if connected to typical 12V power sources, such as standard PC motherboard fan headers. Ensure your power source provides 5V DC before connecting the fan.

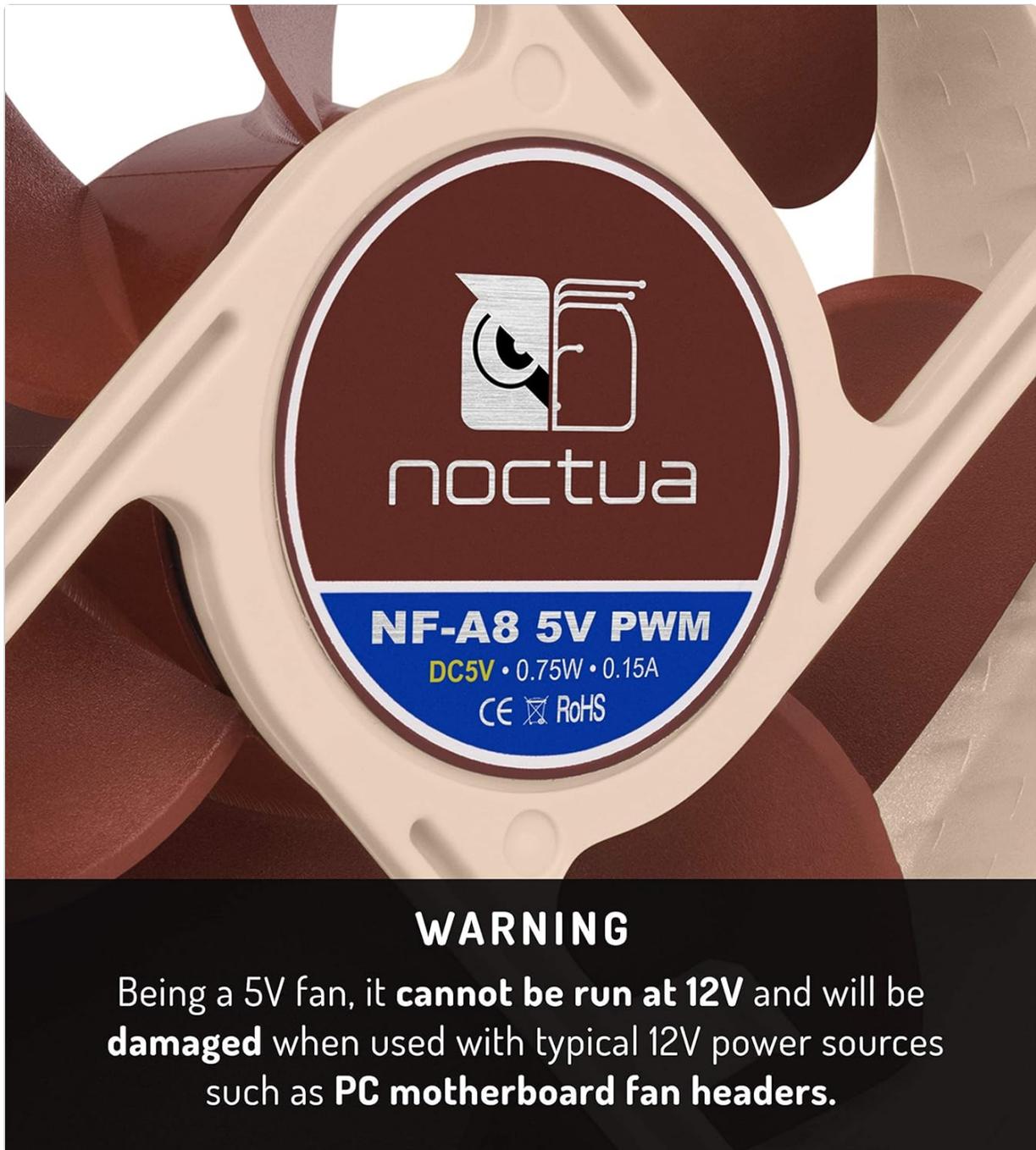


Figure 2: Back view of the fan showing the 5V PWM label and warning.



NF-A8 5V PWM
80x80x25mm. 4-pin PWM. 2200RPM.

Figure 3: Visual warning indicating the fan is not for use in standard 12V PC systems.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- Noctua NF-A8 5V PWM Fan
- USB Power Adaptor Cable
- Anti-vibration Mounts
- Fan Screws
- Extension Cable
- OmniJoin Adaptor Set



Figure 4: Included accessories with the NF-A8 5V PWM fan.

4. SETUP AND INSTALLATION

4.1 Mounting the Fan

The NF-A8 5V PWM fan can be mounted using either the provided anti-vibration mounts or standard fan screws.

- **Using Anti-vibration Mounts:** Gently pull the anti-vibration mounts through the fan's mounting holes and into the desired mounting location. These mounts help reduce noise transfer.

- **Using Fan Screws:** Secure the fan to your device or chassis using the included fan screws.



Figure 5: Close-up of the anti-vibration mounts.

4.2 Connecting the Fan

The NF-A8 5V PWM fan offers flexible connection options:

- **4-pin PWM Header:** Connect the fan's 4-pin connector directly to a compatible 5V 4-pin PWM fan header on your device. This allows for automatic speed control based on system temperature.
- **USB Power:** Use the included USB power adaptor cable to power the fan from any standard USB host port (e.g., on a computer, power bank, or USB wall adapter). This connection provides constant fan speed.
- **OmniJoin Adaptor Set:** For specific proprietary fan headers, use the OmniJoin adaptor set to ensure compatibility. Refer to your device's manual for specific wiring diagrams if using OmniJoin.



Figure 6: The 4-pin PWM connector for speed control.



Figure 7: The USB power adaptor cable for flexible power options.

5. OPERATION

Once properly connected to a 5V power source, the fan will begin to operate. If connected via a 4-pin PWM header, the fan speed will be automatically adjusted by the host device based on its temperature readings. If connected via the USB power adaptor, the fan will operate at a constant speed.

5.1 Flow Acceleration Channels

The fan blades feature Flow Acceleration Channels, which are small ridges on the suction side of the blades. These channels accelerate the airflow in the outer region of the blade, reducing flow separation and improving efficiency and acoustic performance.



Figure 8: Detail of Flow Acceleration Channels on a fan blade.

5.2 SSO2 Bearing

The fan utilizes Noctua's second-generation self-stabilizing oil-pressure bearing (SSO2). This advanced bearing system ensures long-term stability and quiet operation by precisely positioning the rotor axis with a magnetic field.



Figure 9: Diagram illustrating the SSO2 bearing mechanism.

6. MAINTENANCE

To ensure optimal performance and longevity of your Noctua NF-A8 5V PWM fan, periodic cleaning is recommended.

- **Dust Removal:** Use a soft brush, compressed air, or a damp cloth to gently remove dust accumulation from the fan blades and frame.
- **Avoid Liquids:** Do not immerse the fan in liquids. Ensure the fan is completely dry before reconnecting it to power.
- **No Lubrication Required:** The SSO2 bearing is self-lubricating and does not require additional oil or grease.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Fan does not spin.	Incorrect voltage (e.g., 12V instead of 5V). Loose connection. Insufficient power.	Verify the power source is 5V DC. Ensure all cables are securely connected. Try a different USB port or power adapter.
Fan is unusually loud.	Obstruction in fan blades. Loose mounting. Fan operating at maximum speed (if PWM controlled).	Check for and remove any obstructions. Ensure the fan is securely mounted using anti-vibration mounts or screws. If using PWM, check software settings to reduce fan speed.
Fan spins intermittently.	Unstable 5V power supply. Faulty connection.	Use a stable 5V power source. Check and secure all connections.

8. SPECIFICATIONS

Feature	Detail
Model	NF-A8 5V PWM
Dimensions	80x80x25mm (3.15"L x 3.15"W x 0.98"H)
Voltage	5V
Power Connector	4-Pin PWM
Maximum Rotational Speed	2200 RPM
Noise Level	17.7 dB(A)
MTTF (Mean Time To Failure)	>150,000 hours
Bearing Type	SSO2 (Self-Stabilizing Oil-Pressure Bearing)
Material	Fibre-glass reinforced PBT
Compatible Devices	Desktop (5V applications)

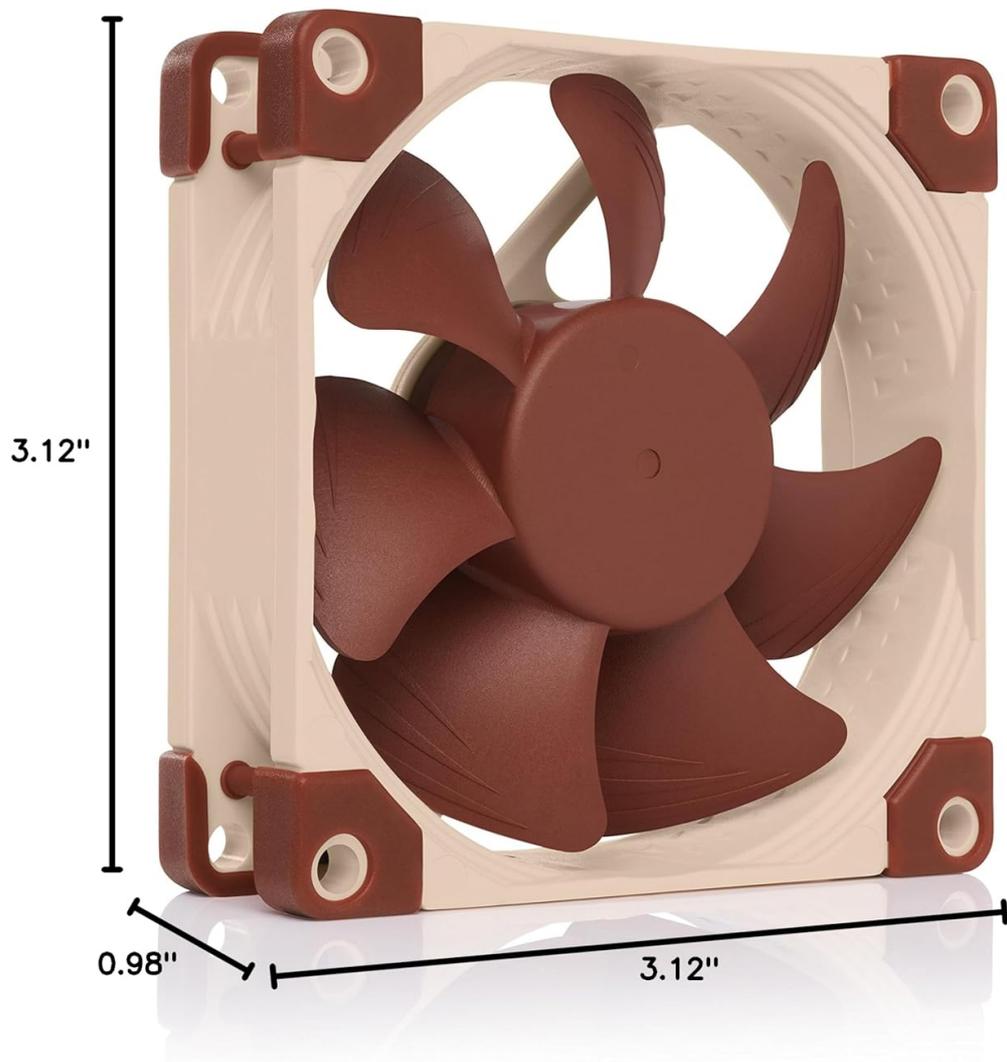


Figure 10: Dimensions of the NF-A8 5V PWM fan.

9. WARRANTY AND SUPPORT

Noctua products are manufactured to the highest quality standards. This product is covered by a 6-year manufacturer's warranty. For detailed warranty information, technical support, or to contact customer service, please visit the official Noctua website or refer to the warranty card included with your product.

Official Website: www.noctua.at