

Noctua NF-F12 PWM

Noctua NF-F12 PWM 120mm Premium Quiet Fan Instruction Manual

Model: NF-F12 PWM | Brand: Noctua

1. INTRODUCTION

The Noctua NF-F12 PWM is a premium-grade 120x120x25mm quiet fan designed for high static pressure applications, making it ideal for CPU heatsinks and water cooling radiators. Featuring a 4-pin PWM connection, it allows for automatic speed control, ensuring optimal balance between cooling performance and quiet operation. This manual provides detailed instructions for installation, operation, maintenance, and troubleshooting to help you get the most out of your Noctua NF-F12 PWM fan.

2. PRODUCT FEATURES

- **Premium Quiet Performance:** 120x120x25 mm, 12V, 4-pin PWM, max. 1500 RPM, max. 22.4 dB(A), >150,000 h MTTF.
- **Focused Flow Frame:** Award-winning design for high static pressure and superior quiet cooling performance.
- **Versatile Application:** Ideal for CPU heatsinks (e.g., Noctua NH-U12(S) series) and water cooling radiators, serving as a perfect replacement fan for loud all-in-one (AIO) coolers.
- **Automatic Speed Control:** 4-pin PWM version for automatic speed control via PWM fan headers, offering a broad 300-1500rpm speed range (1200rpm max. with supplied Low-Noise Adaptor).

3. WHAT'S IN THE BOX

Your Noctua NF-F12 PWM fan package includes the following components:

- Noctua NF-F12 PWM Fan
- Anti-vibration mounts
- Fan screws
- Low-Noise Adaptor (L.N.A.)
- 30cm Extension cable
- 4-pin Y-cable (for running two PWM fans on the same header)



Image: The Noctua NF-F12 PWM fan, along with its packaging, anti-vibration mounts, fan screws, Low-Noise Adaptor, extension cable, and Y-cable.

4. SETUP INSTRUCTIONS

4.1 Fan Installation

The Noctua NF-F12 PWM fan can be installed using either the provided anti-vibration mounts or standard fan screws. For optimal noise reduction, it is recommended to use the anti-vibration mounts.

1. Identify the desired mounting location for your fan (e.g., CPU heatsink, radiator, or PC case).
2. If using anti-vibration mounts, gently pull them through the fan's mounting holes and then through the corresponding holes on your heatsink, radiator, or case.
3. If using fan screws, align the fan with the mounting holes and secure it with the provided screws. Do not overtighten.



Image: Front view of the Noctua NF-F12 PWM fan, showing its unique blade design and brown/beige color scheme.

4.2 Cable Connection

Connect the fan's 4-pin PWM cable to an available 4-pin fan header on your motherboard. If you need to extend the cable, use the provided 30cm extension cable. For connecting two NF-F12 PWM fans to a single motherboard header, use the included 4-pin Y-cable.



Image: Close-up of the 4-pin PWM connector of the Noctua NF-F12 PWM fan.

4.3 Understanding Noctua Fan Lineup

Your browser does not support the video tag.

Video: An in-depth explanation of Noctua's fan lineup, including the NF-F12, NF-S12A, and NF-A12x25 models, detailing their specific applications and features. This video helps users understand which fan is best suited for their needs, covering aspects like static

pressure, airflow, and noise levels.

5. OPERATING INSTRUCTIONS

5.1 Automatic Speed Control (PWM)

The NF-F12 PWM fan supports automatic speed control via your motherboard's 4-pin PWM fan headers. The fan speed will automatically adjust based on your system's temperature, providing efficient cooling when needed and quiet operation during lighter loads. You can configure PWM settings through your motherboard's BIOS/UEFI or dedicated software utilities.

5.2 Using the Low-Noise Adaptor (L.N.A.)

For users who desire even quieter operation, the included Low-Noise Adaptor (L.N.A.) can be used. Connecting the L.N.A. between the fan and the motherboard's 4-pin PWM header will reduce the maximum fan speed from 1500 RPM to 1200 RPM, resulting in a lower noise level.

1. Disconnect the NF-F12 PWM fan from the motherboard.
2. Connect the L.N.A. to the fan's 4-pin PWM cable.
3. Connect the other end of the L.N.A. to the motherboard's 4-pin PWM header.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your Noctua NF-F12 PWM fan.

6.1 Cleaning

Dust accumulation can impede airflow and increase noise levels. Periodically clean your fan:

- Power off your system and disconnect the fan.
- Use a can of compressed air to blow away dust from the fan blades and frame. Hold the fan blades to prevent them from spinning rapidly during cleaning, which could damage the bearing.
- Alternatively, use a soft, dry cloth or a small brush to gently remove dust.

6.2 Bearing Care

The NF-F12 PWM features Noctua's SSO2 bearing, which is self-stabilizing and oil-pressure based, designed for long-term reliability and quiet operation. No user maintenance or lubrication is required for the bearing.

7. TROUBLESHOOTING

If you encounter issues with your Noctua NF-F12 PWM fan, refer to the following common troubleshooting steps:

- **Fan Not Spinning:**
 - Ensure the 4-pin PWM cable is securely connected to the motherboard header.
 - Check your motherboard's BIOS/UEFI settings to ensure the fan header is enabled and configured correctly.
 - Verify that your system is receiving power.
- **Excessive Noise:**
 - Ensure the fan is securely mounted and not vibrating against the case or other components.
 - Check for dust accumulation on the fan blades and clean if necessary.
 - If not already in use, try connecting the Low-Noise Adaptor (L.N.A.) to reduce the maximum fan speed.
 - Adjust fan speed curves in your motherboard's BIOS/UEFI or software to find a quieter operating point.
- **Poor Cooling Performance:**

- Ensure the fan is oriented correctly to push air in the desired direction (e.g., towards a heatsink or out of the case).
- Check for obstructions to airflow around the fan or within the case.
- Ensure the fan is running at an adequate speed. If using the L.N.A., consider removing it for higher performance.

8. SPECIFICATIONS

Feature	Value
Fan Size	120x120x25 mm
Bearing Type	SSO2-Bearing
Max. Rotational Speed (+/- 10%)	1500 RPM
Max. Rotational Speed with L.N.A. (+/- 10%)	1200 RPM
Min. Rotational Speed (PWM, +/- 20%)	300 RPM
Max. Airflow	93.4 m ³ /h (55 CFM)
Max. Airflow with L.N.A.	74.3 m ³ /h (43.7 CFM)
Max. Static Pressure	2.61 mm H ₂ O
Max. Static Pressure with L.N.A.	1.83 mm H ₂ O
Max. Noise Level	22.4 dB(A)
Max. Noise Level with L.N.A.	18.6 dB(A)
Input Power	0.6 W
Voltage	12 V
MTTF	>150,000 h
Connector	4-pin PWM
Material	Fibre-glass reinforced PBT

9. WARRANTY AND SUPPORT

9.1 Warranty Information

The Noctua NF-F12 PWM fan comes with a **6-year manufacturer's warranty**. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.

9.2 Customer Support

For further assistance, technical support, or warranty inquiries, please visit the official Noctua website or contact their customer support team. You can find detailed contact information and FAQs on their website.