

## Noctua NF-F12 industrialPPC-2000 IP67 PWM

# Noctua NF-F12 industrialPPC-2000 IP67 PWM Fan User Manual

Model: NF-F12 industrialPPC-2000 IP67 PWM

## 1. INTRODUCTION

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This manual provides essential information for the installation, operation, and maintenance of your Noctua NF-F12 industrialPPC-2000 IP67 PWM fan. Designed for demanding environments, this 120mm fan features a robust construction, IP67 dust and water protection, and Noctua's advanced SSO2 bearing technology for extended reliability.

The NF-F12 industrialPPC-2000 IP67 PWM fan is engineered to deliver superior airflow and static pressure, making it suitable for various applications requiring high performance and durability.

## 2. PRODUCT OVERVIEW

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The Noctua NF-F12 industrialPPC-2000 IP67 PWM fan is a high-performance cooling solution. Key features include:

- **120mm Fan Size:** Standard dimension for versatile compatibility.
- **IP67 Protection:** Certified for dust and water resistance, ensuring reliable operation in challenging conditions.
- **SSO2 Bearing:** Noctua's second-generation self-stabilising oil-pressure bearing for exceptional long-term stability and quiet operation.
- **PWM Control:** Allows for automatic speed control via your motherboard's 4-pin fan header, optimizing performance and noise levels.
- **High Airflow and Static Pressure:** Optimized for demanding applications such as radiators and heatsinks.



*Image 2.1: Angled view of the Noctua NF-F12 industrialPPC-2000 IP67 PWM fan, showcasing its robust design and brown anti-vibration pads.*



Image 2.2: Front view of the fan, highlighting the industrialPPC branding and specifications on the central hub.

### 3. SETUP AND INSTALLATION

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Follow these steps to properly install your Noctua NF-F12 industrialPPC-2000 IP67 PWM fan:

1. **Prepare your system:** Ensure your computer or device is powered off and disconnected from the main power supply before beginning installation.
2. **Identify mounting location:** Determine the appropriate location for the fan within your system (e.g., case fan mount, CPU cooler radiator, liquid cooling radiator).
3. **Mount the fan:** Secure the fan to the desired location using the provided mounting screws or anti-vibration mounts. Ensure the fan is oriented correctly for optimal airflow (typically, the side with the fan guard or label indicates exhaust).

4. **Connect the power cable:** Connect the fan's 4-pin PWM connector to an available 4-pin fan header on your motherboard or fan controller. This connection allows for automatic speed control.
5. **Verify connection:** Double-check all connections to ensure they are secure.
6. **Power on and test:** Reconnect power to your system and power it on. Verify that the fan is spinning and operating correctly. You may need to adjust fan settings in your system's BIOS/UEFI or fan control software.



*Image 3.1: The 4-pin PWM connector for connecting the fan to a motherboard or fan controller.*

## 4. OPERATING INSTRUCTIONS

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The Noctua NF-F12 industrialPPC-2000 IP67 PWM fan is designed for continuous operation. Its speed is controlled via a 4-pin Pulse Width Modulation (PWM) signal from your motherboard or a dedicated fan controller.

- **Automatic Speed Control:** When connected to a 4-pin PWM header, the fan speed will automatically adjust based on system temperature, providing optimal cooling performance while minimizing noise.
- **Manual Speed Control:** If your motherboard BIOS/UEFI or fan control software supports it, you can manually set custom fan curves or fixed speeds.
- **Voltage:** The fan operates at 12 Volts. Ensure your power source provides stable 12V power.

For optimal balance between cooling and acoustics, it is recommended to utilize the PWM functionality and allow your system to manage fan speeds dynamically.

## 5. MAINTENANCE

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The Noctua NF-F12 industrialPPC-2000 IP67 PWM fan requires minimal maintenance due to its durable design and IP67 protection. However, periodic cleaning can help maintain optimal performance and longevity.

- **Dust Removal:** Over time, dust may accumulate on the fan blades and frame. Use a soft brush, compressed air, or a damp cloth to gently clean the fan. Ensure the fan is powered off before cleaning.
- **IP67 Protection:** The fan's IP67 rating means it is protected against dust ingress and temporary immersion in water (up to 1 meter for 30 minutes). This makes it suitable for environments where exposure to dust or splashes is possible. However, avoid intentional submersion or high-pressure water jets.
- **Bearing Maintenance:** The SSO2 bearing is self-lubricating and requires no user maintenance or re-lubrication throughout its lifespan.



*Image 5.1: Demonstrates the fan's IP67 water resistance with water droplets on its surface.*

## 6. TROUBLESHOOTING

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If you encounter issues with your Noctua NF-F12 industrialPPC-2000 IP67 PWM fan, consider the following troubleshooting steps:

- **Fan Not Spinning:**
  - Ensure the 4-pin PWM connector is securely plugged into the motherboard or fan controller.
  - Check your motherboard's BIOS/UEFI settings to ensure the fan header is enabled and configured correctly.
  - Test the fan on a different fan header or with a known working power source if possible.
- **Excessive Noise:**
  - Verify that the fan is securely mounted and not vibrating against the case or other components.
  - Check for any cables or obstructions interfering with the fan blades.
  - Adjust fan speed settings in your BIOS/UEFI or fan control software. Higher RPMs naturally produce more airflow and thus more noise.

- While the SSO2 bearing is quiet, some users report a slight electrical noise at very low PWM speeds. This is generally within expected operational characteristics for industrial-grade fans.

- **Poor Cooling Performance:**

- Ensure the fan is oriented correctly to push or pull air in the desired direction.
- Clean any dust accumulation on the fan blades or connected heatsink/radiator fins.
- Check fan speed settings; ensure the fan is operating at an adequate RPM for your cooling needs.

## 7. SPECIFICATIONS

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Below are the technical specifications for the Noctua NF-F12 industrialPPC-2000 IP67 PWM fan:

Feature	Specification
Model	NF-F12 industrialPPC-2000 IP67 PWM
Dimensions (L x W x H)	120mm x 120mm x 25mm (4.72"L x 0.98"W x 4.72"H)
Rotational Speed (Max)	2000 RPM
Air Flow Capacity	121.8 m <sup>3</sup> /h
Noise Level (Max)	31.5 Decibels
Power Connector	4-Pin PWM
Voltage	12 Volts
Wattage	2.16 watts
Bearing Type	SSO2 Bearing
Material	Fibre-glass reinforced polyamide
IP Rating	IP67 (Dust and Water Protected)
MTBF	Over 150,000 hours
Item Weight	8.16 ounces

## 8. WARRANTY AND SUPPORT

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Noctua provides a **6-year manufacturer's warranty** for the NF-F12 industrialPPC-2000 IP67 PWM fan, ensuring long-term reliability and peace of mind.

For technical support, warranty claims, or further assistance, please visit the official Noctua website or contact their customer service department. Keep your proof of purchase for warranty purposes.

**Noctua Official Website:** [www.noctua.at](http://www.noctua.at)

