be quiet! BP027US

be quiet! Pure Power 13 M 850W Power Supply User Manual

Brand: be quiet! | Model: BP027US

1. Introduction

The be quiet! Pure Power 13 M 850W is a high-performance power supply unit designed for modern PC systems, including gaming and media creation PCs. It features 80 PLUS Gold certification for high efficiency, ATX 3.1 compliance with native 12V-2x6 connector for next-generation GPUs, and a semi-passive 120mm fan for quiet operation. Its modular cable design simplifies installation and cable management, contributing to better airflow within your system.

This manual provides essential information for the proper installation, operation, maintenance, and troubleshooting of your Pure Power 13 M 850W power supply.

2. Product Features

- **80 PLUS Gold Certified:** Achieves up to 94.4% efficiency, reducing power consumption, heat, and noise.
- **ATX 3.1 Compliance:** Features native 12V-2x6 connector for PCIe 5.1 GPUs and 4 PCIe 6+2-pin connectors for current-gen GPUs, ensuring future compatibility.
- **High Power Stability:** 850W continuous power with a single 12V rail, capable of handling power excursions up to double its rated power for reliable operation with demanding components.
- **Semi-Passive Zero-RPM Cooling:** The 120mm be quiet! fan stops completely under low load, providing exceptionally silent operation.
- **LLC Technology:** Provides best-in-class voltage regulation and stability.
- **Modular Cables:** Allows for easy cable management, reducing clutter and improving airflow within the PC

case.

Figure 2.1: Overview of the be quiet! Pure Power 13 M 850W Power Supply, highlighting its modular cable connections.

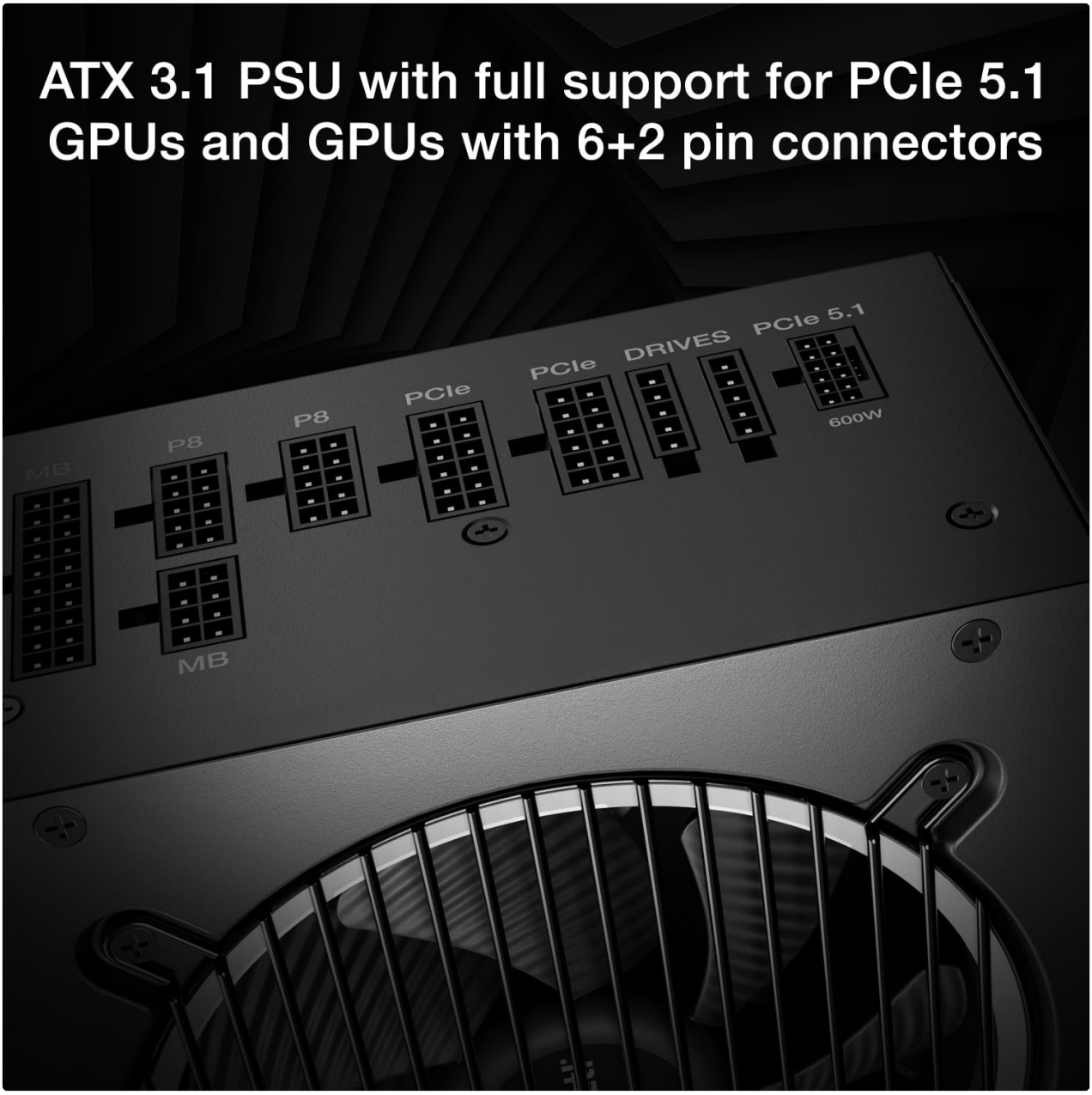

Figure 2.2: Detail of the ATX 3.1 PSU with full support for PCIe 5.1 GPUs and GPUs with 6+2 pin connectors.

Figure 2.3: The exceptionally silent semi-passive 120mm be quiet! fan, designed for optimal airflow and minimal noise.

Figure 2.4: The Pure Power 13 M installed in a system, demonstrating its compact form factor and the benefits of LLC technology for advanced stability and voltage regulation.

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Video 2.1: Official product video showcasing the high efficiency and low noise operation of the Pure Power 13 M series.

3. Setup

3.1 Physical Installation

1. **Prepare Your System:** Ensure your computer is powered off and unplugged from the wall outlet. Open your PC case to access the power supply mounting area.
2. **Remove Old PSU (if applicable):** Disconnect all cables from your old power supply and carefully remove it from the case.
3. **Mount the New PSU:** Position the Pure Power 13 M 850W into the designated power supply bay in your PC case. Secure it with the provided screws. Ensure the fan is oriented correctly for optimal airflow (typically

facing downwards if there's a bottom vent, or upwards if not).

4. **Connect Main Power Cables:** Connect the 24-pin ATX motherboard power cable and the 8-pin (or 4+4 pin) CPU power cable to their respective ports on your motherboard.
5. **Connect GPU Power Cables:** For modern graphics cards, use the native 12V-2x6 connector. For other GPUs, use the 6+2-pin PCIe power connectors. Connect these directly from the PSU to your graphics card(s).
6. **Connect Peripheral Cables:** Attach SATA power cables for SSDs/HDDs and Molex cables for other peripherals as needed. Only connect the cables you require to minimize clutter.

3.2 Cable Management

Utilize the modular design of the Pure Power 13 M to improve airflow and aesthetics within your PC case. Route cables behind the motherboard tray or through designated channels to keep them tidy and out of the way of fans and components. This helps in maintaining lower internal temperatures and reduces noise.

4. Operating Principles

The Pure Power 13 M 850W operates with high efficiency, converting AC power from your wall outlet into stable DC power for your computer components. Its 80 PLUS Gold certification signifies that it operates at very high efficiency levels (up to 94.4%), meaning less energy is wasted as heat, leading to lower electricity bills and a cooler system.

The semi-passive cooling feature ensures that the 120mm fan remains off during low system loads, providing silent operation. As the system load increases and more cooling is required, the fan will automatically activate and adjust its speed to maintain optimal temperatures. This intelligent fan control minimizes noise while ensuring effective cooling.

The ATX 3.1 standard and LLC (Resonant Converter) topology provide robust voltage regulation and stability, crucial for the reliable performance of high-end components, especially modern graphics cards with transient power demands.

5. Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your power supply and overall PC system.

- **Dust Cleaning:** Periodically (e.g., every 3-6 months), power off and unplug your PC. Use compressed air to gently clear dust from the power supply's fan and vents. Excessive dust can impede airflow and lead to overheating.
- **Cable Checks:** Ensure all modular cables are securely seated in both the PSU and the components. Loose connections can lead to instability or component damage.
- **Environmental Conditions:** Operate your PC in a well-ventilated area, away from direct sunlight, excessive heat sources, and high humidity.
- **Power Source:** Connect your PC to a reliable power outlet or a surge protector to protect against power fluctuations.

6. Troubleshooting

If you encounter issues with your power supply, refer to the following table for common problems and solutions.

Problem	Possible Cause	Solution
PC does not power on.	Power cable not connected; PSU switch off; Loose internal connections; Faulty component.	Ensure power cable is fully inserted. Check PSU ON/OFF switch. Verify all modular cables are securely connected to PSU and components. Test components individually if possible.
System crashes or reboots under load.	Insufficient power; Overheating; Unstable power delivery.	Ensure your system's power requirements do not exceed 850W. Check for proper ventilation and dust buildup. Verify PSU fan is operating when under load.
Loud fan noise from PSU.	Excessive dust buildup; High system load; Fan malfunction.	Clean dust from PSU fan and vents. Ensure system load is not consistently high. If noise persists at low loads, contact support.
Burning smell or smoke.	Serious internal component failure.	**Immediately unplug the PC from the wall outlet. Do not attempt to power it on again. Contact be quiet! support.**

7. Specifications

Feature	Value
Model Name	BP027US
Output Wattage	850 Watts
Efficiency Certification	80 PLUS Gold
ATX Version	ATX 3.1
PCIe 5.1 Connector	12V-2x6 (600W)
Fan Size	120mm
Power Supply Design	Full Modular
Product Dimensions (L x W x H)	5.12 x 7.87 x 12.99 inches

Feature	Value
Item Weight	6.89 pounds
Manufacturer	be quiet!

8. Warranty and Support

The be quiet! Pure Power 13 M 850W Power Supply typically comes with a 5-year manufacturer's warranty, covering defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.

For technical support, warranty inquiries, or further assistance, please visit the official be quiet! website or contact their customer service department. You can find detailed contact information and support resources on their website.

Additional protection plans may be available for purchase from retailers, offering extended coverage beyond the standard manufacturer's warranty. Please check with your point of purchase for details on these optional plans.