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› Thermaltake Smart 500W Power Supply User Manual

## Thermaltake PS-SPD-0500NPCWUS-W

# Thermaltake Smart 500W Power Supply User Manual

Model: PS-SPD-0500NPCWUS-W

## INTRODUCTION

This manual provides essential information for the installation, operation, and maintenance of your Thermaltake Smart 500W Power Supply Unit (PSU). Designed for mainstream PC builds, this PSU delivers stable and reliable power with high efficiency and quiet operation. Please read this manual thoroughly before installation to ensure proper setup and safe usage.

## KEY FEATURES

- Delivers 500 Watt Continuous output at +40 degrees Celsius.
- Compliance with Intel ATX 12 Volt 2.31 and EPS 12V 2.92 standards.
- 80 PLUS Certified, achieving 80% efficiency under typical load.
- Supports (2) PCI-E 6+2pin Connectors.
- Active PFC (Power Factor Correction) for improved efficiency.
- MTBF (Mean Time Between Failures) of 100,000 hours minimum.
- Industry Grade Protections: OPP (Over Power Protection), OVP (Over Voltage Protection), SCP (Short Circuit Protection).
- High Quality Components for stable and reliable performance.
- Equipped with a powerful +12 Volt rail for superior performance under all types of system loading.
- Features a 120mm ultra-quiet cooling fan for excellent airflow at low noise levels.

## SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your power supply. Always ensure your computer is powered off and unplugged from the wall outlet before beginning installation.

1. **Prepare Your System:** Ensure your computer case is open and accessible. Remove any old power supply if present.

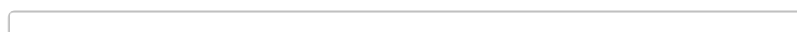


Image: Side view of the Thermaltake Smart 500W Power Supply, showing the fan grill and honeycomb ventilation on the side.

2. **Mount the PSU:** Carefully slide the Thermaltake Smart 500W PSU into the designated power supply bay in your computer

case. Align the screw holes on the PSU with those on the case. Secure the PSU using the provided screws.



Image: Rear view of the Thermaltake Smart 500W Power Supply, featuring the AC power input and the main on/off switch.

3. **Connect Main Power:** Connect the 24-pin ATX main power connector from the PSU to the corresponding port on your motherboard. Ensure it clicks securely into place.
4. **Connect CPU Power:** Connect the 4+4-pin (or 8-pin) EPS 12V CPU power connector to the CPU power socket on your motherboard.
5. **Connect Graphics Card Power (PCI-E):** If your graphics card requires external power, connect the 6+2-pin PCI-E power connectors from the PSU to your graphics card. This PSU provides two such connectors.
6. **Connect Peripherals (SATA/Molex):** Connect SATA power connectors to your storage drives (HDDs, SSDs) and optical drives. Use Molex connectors for other peripherals as needed.



Image: Angled view of the Thermaltake Smart 500W Power Supply, showcasing the permanently attached power cables.

7. **Cable Management:** Organize cables neatly within your case to improve airflow and aesthetics. Use cable ties if necessary.
8. **Final Check:** Double-check all connections to ensure they are firm and correctly seated. Close your computer case.
9. **Power On:** Connect the AC power cord (not included with this PSU) to the PSU and then to a wall outlet. Flip the power switch on the back of the PSU to the 'ON' position. You can now power on your computer.

For a visual guide on the PSU's features and design, please refer to the official product video:

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Video: An official overview of the Thermaltake Smart White PSU, highlighting its features and design. This video is provided by Thermaltake USA Direct.

## OPERATING INSTRUCTIONS

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Once installed, the Thermaltake Smart 500W Power Supply operates automatically, providing stable power to your system components. There are no user-adjustable settings for its core function.

- **Power On/Off:** Use the main power switch located on the back of the PSU to completely cut power to the unit. This is recommended when performing maintenance or when the system will be off for an extended period.
- **System Startup:** After connecting the PSU to the wall outlet and ensuring the PSU's main switch is ON, press the power button on your computer case to start the system.
- **Fan Operation:** The integrated 120mm fan will automatically adjust its speed based on the PSU's temperature and load to maintain optimal cooling and quiet operation.

## MAINTENANCE

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

- **Dust Cleaning:** Periodically clean dust from the PSU's fan and ventilation grilles. Use compressed air to gently blow dust out of the unit. Ensure the system is powered off and unplugged before cleaning.



Image: Top-down view of the Thermaltake Smart 500W Power Supply, showing the 120mm cooling fan.

- **Environmental Conditions:** Ensure the PSU operates within recommended temperature (5°C to +40°C) and humidity (20% to 85%, non-condensing) ranges. Avoid placing the computer in excessively dusty or humid environments.
- **Cable Inspection:** Occasionally inspect power cables for any signs of wear, fraying, or damage. Replace damaged cables immediately.

## TROUBLESHOOTING

If you encounter issues with your Thermaltake Smart 500W PSU, try the following troubleshooting steps:

Problem	Possible Cause	Solution
System does not power on.	PSU power switch is off. Power cord is loose or disconnected. Internal connections are loose. Faulty wall outlet.	Ensure PSU switch is ON. Check power cord connection to PSU and wall. Verify all internal PSU connections (24-pin, CPU, PCI-E, SATA). Try a different wall outlet.
System powers on but shuts down immediately.	Overload or short circuit. Overheating.	Disconnect non-essential components to check for overload. Ensure proper ventilation and clean PSU fan. Check for any loose screws or metal objects causing a short.
Loud fan noise from PSU.	Dust accumulation in fan. PSU under heavy load.	Clean the PSU fan and grilles. Ensure adequate case airflow.

If problems persist after attempting these solutions, please contact Thermaltake customer support.

## SPECIFICATIONS

Detailed technical specifications for the Thermaltake Smart 500W Power Supply.



Image: Product label displaying the electrical specifications, safety approvals, and contact information for the Thermaltake Smart 500W Power Supply.

Specification	Value
Model Number	PS-SPD-0500NPCWUS-W
Type	Intel ATX 12V 2.3
Max. Output Capacity	500W
Color	Black
Dimension (H x W x D)	86mm x 150mm x 140mm
PFC (Power Factor Correction)	Active PFC
Power Good Signal	100-500 msec
Hold Up Time	16msec (minimum) within 60% load
Input Current	8A max
Input Frequency Range	50 Hz - 60 Hz
Input Voltage	100Vac – 240Vac
Operating Temperature	5°C to +40°C

Specification	Value
Operating Humidity	20% to 85%, non-condensing
Storage Temperature	-40°C to +55°C
Storage Humidity	10% to 95%, non-condensing
Cooling System	120mm fan: 1800 R.P.M. ±10%
Efficiency	82-86% efficiency @ 20-100% load
MTBF	100,000 hrs minimum
Safety Approval	CE/CB/TUV/ UL/ FCC
PCI-E Connector	PCI-E 6+2pin x 2

## WARRANTY AND SUPPORT

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Thermaltake stands behind the quality of its products. The Thermaltake Smart 500W Power Supply comes with a **5-Year Warranty**.

For technical support, warranty claims, or any inquiries, please contact Thermaltake using the information below:

**Support Hotline:** 1-800-998-1088

**E-mail:** [ttsupport@thermaltakeusa.com](mailto:ttsupport@thermaltakeusa.com)

**Official User Guide (PDF):** [Download PDF](#)

Please have your product model number (PS-SPD-0500NPCWUS-W) and purchase information ready when contacting support.