Thermaltake PS-TPD-0850FNFAGU-L

Thermaltake Toughpower GF A3 850W ATX 3.0/PCIe 5.0 Power Supply User Manual

Model: PS-TPD-0850FNFAGU-L

1. Introduction

The Thermaltake Toughpower GF A3 850W is an 80 PLUS Gold certified, fully modular power supply designed to meet the demands of modern computing systems. It is fully compatible with Intel ATX 3.0 standards and features a native 16-pin (12VHPWR) PCIe Gen 5.0 connector, providing stable and efficient power for next-generation graphics cards.

This manual provides essential information for the proper installation, operation, maintenance, and troubleshooting of your power supply unit.



An overview image highlighting the 80 PLUS Gold certification and PCIe Gen 5 readiness of the Toughpower GF A3 series.

2. Safety Information

- Ensure the power supply is disconnected from the AC power outlet before installation or maintenance.
- Do not open the power supply casing. High voltages are present inside, and opening it will void the warranty.
- Install the power supply in a well-ventilated area to prevent overheating.

- Use only the modular cables provided with this power supply. Using incompatible cables may cause damage to the PSU or connected components.
- Avoid exposing the power supply to moisture or extreme temperatures.

3. Package Contents

- Thermaltake Toughpower GF A3 850W Power Supply Unit
- Modular Cable Set (including native 16-pin 12VHPWR cable)
- AC Power Cord
- Mounting Screws
- Cable Ties
- User Manual

4. Setup and Installation

4.1 Physical Installation

1. Ensure your computer case is compatible with ATX form factor power supplies.
2. Mount the power supply into the designated PSU bay in your computer case using the provided mounting screws. Ensure the fan is oriented correctly for optimal airflow (typically facing downwards or upwards depending on case design).

4.2 Cable Connections

The Toughpower GF A3 850W is a fully modular power supply, allowing you to connect only the cables necessary for your system, reducing clutter and improving airflow.



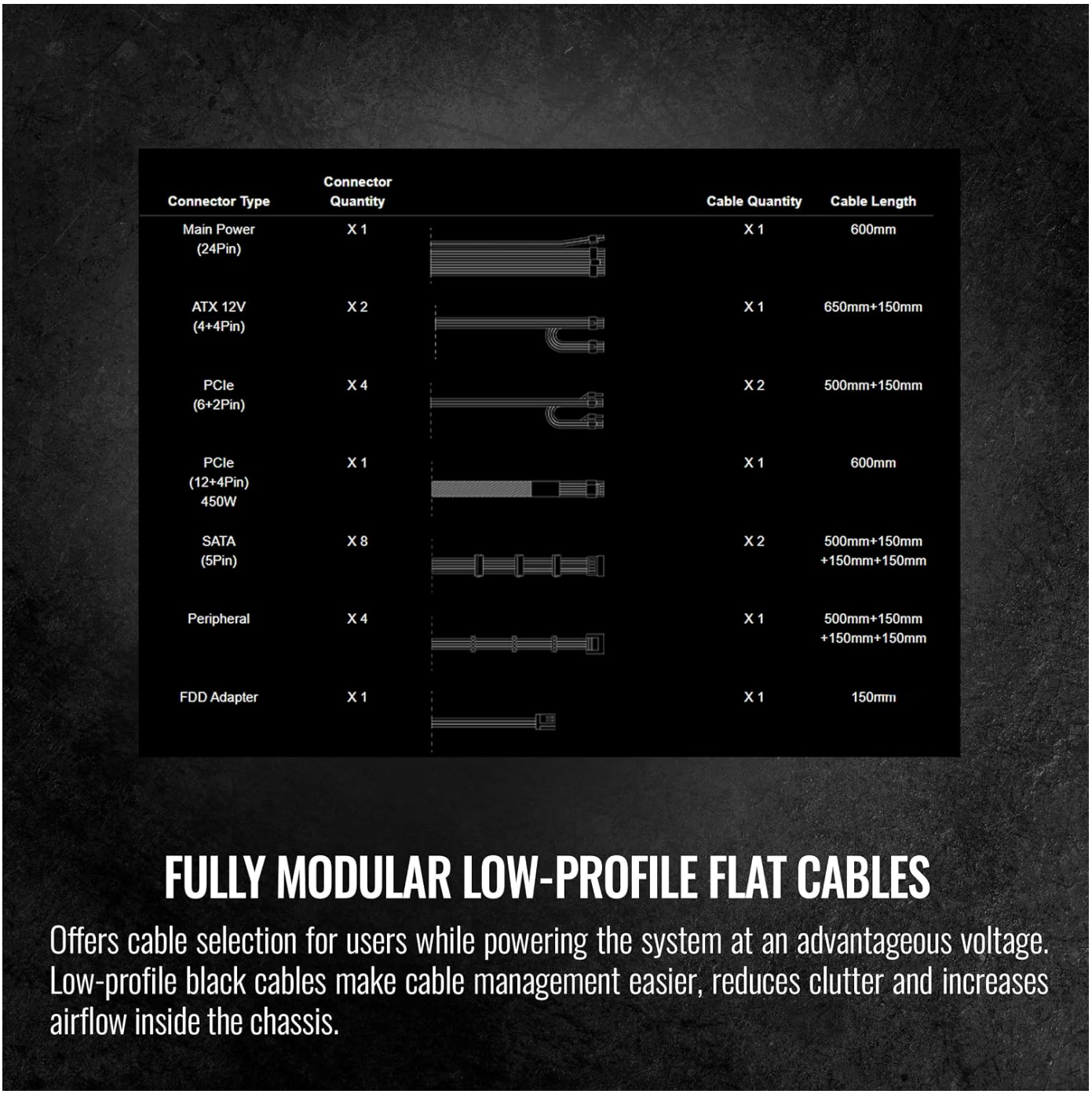
Side panel of the power supply with clearly labeled modular cable connection ports.

1. Connect the 24-pin ATX motherboard cable to the power supply and your motherboard.
2. Connect the CPU (4+4 pin or 8-pin) power cables to the power supply and your motherboard.
3. For graphics cards, use the appropriate PCIe cables. For NVIDIA RTX 40 Series GPUs, utilize the native 16-pin (12VHPWR) PCIe Gen 5.0 connector. This connector can deliver up to 450W for compatible graphics cards.
4. Connect SATA power cables to your storage drives (SSDs, HDDs) and peripheral cables to other components as needed.



Detail of the native 16-pin (12VHPWR) PCIe Gen 5.0 connector, designed for next-generation graphics cards.

Note: Always ensure all cable connections are secure and fully seated to prevent power delivery issues or damage.



A comprehensive table outlining the various modular cables included, their quantities, and lengths for easy system building.

5. Operating Instructions

5.1 Powering On Your System

After all connections are made, connect the AC power cord to the power supply and a wall outlet. Flip the main power switch on the back of the PSU to the 'ON' position. You can then power on your computer using the case's power button.

5.2 Smart Zero Fan Feature

The Toughpower GF A3 850W features a Smart Zero Fan mode. When enabled (via the switch on the rear of the PSU), the 120mm fluid bearing fan will not spin when the power supply is under low load (typically below 30% of its maximum capacity). This minimizes noise during light computing tasks. The fan will automatically activate when the load increases to maintain optimal temperatures.



Rear panel showing the power switch and the 'Smart Zero Fan' toggle switch for silent operation at low loads.



Visual explanation of the Smart Zero Fan feature, ensuring quiet operation at low loads.

6. Maintenance

- Keep the power supply's fan grille and ventilation openings clear of dust and obstructions. Regularly clean these areas using compressed air to ensure proper airflow and cooling.
- Ensure all modular cables remain securely connected. Periodically check connections for any looseness.
- Do not attempt to disassemble the power supply. There are no user-serviceable parts inside.

7. Troubleshooting

- **No Power:** Check if the AC power cord is securely connected to both the PSU and the wall outlet. Ensure the main power switch on the PSU is in the 'ON' position. Verify that the wall outlet is functioning.
- **System Instability/Crashes:** Ensure all modular cables are correctly and firmly connected to both the PSU and your components. Verify that your system's power requirements do not exceed the PSU's 850W capacity.
- **Fan Not Spinning:** If the Smart Zero Fan feature is enabled, the fan will not spin under low load. This is normal operation. If the system is under load and the fan is still not spinning, ensure the Smart Zero Fan switch is not set to 'OFF' (which forces silent operation at low loads) or try toggling it. If the issue persists, contact support.
- **Unusual Noises:** If you hear grinding or excessive fan noise, ensure no cables are obstructing the fan. If the noise persists, contact support.

8. Specifications

Feature	Specification
Brand	Thermaltake
Model Name	Toughpower GF A3 850W
Item Model Number	PS-TPD-0850FNFAGU-L
Output Wattage	850 Watts
80 PLUS Certification	Gold
ATX Standard	ATX 3.0
PCIe Connector	Native 16-pin (12VHPWR) PCIe Gen 5.0 (450W)
Form Factor	ATX
Cooling System	12cm FDB Fan with Smart Zero Fan mode
Input Voltage	100-240V~
Dimensions (W x H x D)	150mm x 86mm x 140mm (5.9 x 3.4 x 5.5 inches)
Item Weight	3.42 pounds
Safety Approval	FCC/ICES/CB/cTUVus
MTBF	100,000 hrs minimum

HIGH AMPERAGE SINGLE +12V RAIL & HIGH-CLASS TECHNOLOGIES

Powerful single +12V rail can properly deliver the power you need for the best compatibility. The use of LLC and DC to DC circuit design provides very stable operation and enhanced voltage regulation.

AC INPUT	Input Voltage: 100 - 240V~ Input Current: 15A - 8A Frequency: 50Hz / 60Hz				
DC OUTPUT	+3.3V	+5V	+12V	-12V	+5VSB
Max Output Current	20A	20A	70.8A	0.3A	3A
Max Output Power	100W		850W	3.6W	15W
Total Power	850W				

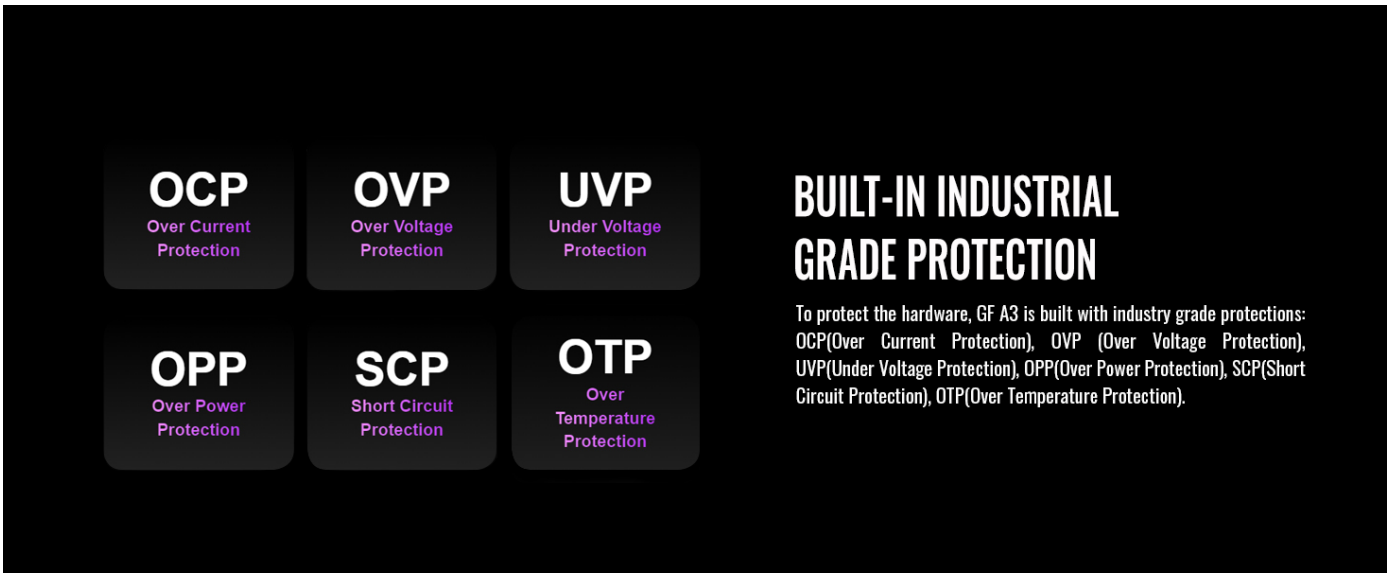
Details the high amperage single +12V rail and DC output specifications, ensuring stable power delivery.



HIGH QUALITY JAPANESE MAIN ELECTROLYTIC CAPACITOR

High quality Japanese main electrolytic capacitor greatly improves the power supplies durability and ensures the Toughpower GF A3 series is stability and reliability.

Highlights the use of high-quality Japanese main electrolytic capacitors for enhanced durability and reliability.



BUILT-IN INDUSTRIAL GRADE PROTECTION

To protect the hardware, GF A3 is built with industry grade protections: OCP(Over Current Protection), OVP (Over Voltage Protection), UVP(Under Voltage Protection), OPP(Over Power Protection), SCP(Short Circuit Protection), OTP(Over Temperature Protection).

Visual representation of the industrial-grade protection mechanisms (OCP, OVP, UVP, OPP, SCP, OTP) built into the PSU.



Certifications for 80 PLUS Gold efficiency and compatibility with Intel C6/C7 power states for energy saving.

9. Warranty and Support

The Thermaltake Toughpower GF A3 850W power supply comes with a**10-year warranty**, ensuring long-term reliability and peace of mind. For technical support, warranty claims, or further assistance, please visit the official Thermaltake website or contact their customer service department.

Online Resources:

- Thermaltake Official Website
- Thermaltake Amazon Store

10. Product Overview Video

Official product overview video demonstrating the key features and design of the Thermaltake Toughpower GF A3 series power supply.

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Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question