

HEATPIPE COOLED
750 WATT
MODULAR POWER SUPPLY

(English)

User's Manual
ZM750-HP



Please read this manual before installing

ZALMAN
COOL INNOVATIONS

1. Safety Precautions

- The following precautions and directions are measures against possible accidents and injuries. Please read them thoroughly before using this product.

Warning

Neglecting the following may cause serious injury or death.

- ▶ Opening the cover of the product while the power cord is plugged into an outlet may cause electrocution or critical damage to the product.
- ▶ Handling the power cord with wet hands may cause electrocution.
- ▶ Inserting fingers or metallic objects into the cooling fan may cause injury or electrocution.

Caution

Neglecting the following may cause minor injuries, degrade product conditions or cause malfunction.

- ▶ Operating the product in an extremely cold or hot environment can degrade product performance and lifespan.
- ▶ Liquids that enter the product may cause malfunction.
- ▶ Operating in a humid or non-ventilated environment may reduce product lifespan.

2. Components

- 1) One Power Supply Unit
- 2) One Cable for PCI-E2
- 3) Three Cables for ODD/HDD
- 4) Two Cables for S-ATA
- 5) One FDD Cable
- 6) One Fan Dual-Connector (ZM-DC1)
- 7) One Power Cord for AC Power Source (Not included in some countries)
- 8) Five Cable Ties
- 9) Four Power Supply Installation Bolts
- 10) One User's Manual

3. Notes on Installation

- ※ To ensure a safe and easy installation, please read the safety precautions above and the following notes.
- Plugging the main power connector P1 into the motherboard while the product is connected to the AC power source may cause damage to the motherboard.
 - Make sure that the connectors are connected to their designated locations, and that the connectors are not oriented in the wrong direction when connecting the DC output connectors.
 - If the Power ON LED fails to light up when the main power button is pressed after completing the installation procedure, some devices may be connected incorrectly or the motherboard may be defective.

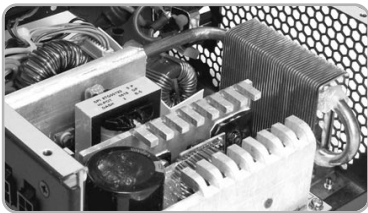
4. The Zalman Advantage

Zalman's CNPS products enable a noiseless computing environment, in accordance with our policy of developing people-friendly products. This ultra-quiet power supply complies with ATX12V Version 2.2, and supports the latest dual-core CPUs(Intel Core2 series/AMD Athlon64-X2 series), as well as the latest dual graphic card systems(SLI/CrossFire).

- ✱ CNPS (Computer Noise Prevention System) refers to a system that reduces a conventional computer's noise level (30dB or more) to an inaudible level (20dB or less). Zalman's noiseless solutions enable the user to build silent/ultra-quiet computers of the highest quality.

■ Heatpipe Installed for Maximum Cooling Performance and Ultra-Quiet Operation

A heatpipe with ultra-high cooling performance incorporated on the power supply's main rectifiers enables high load operation even at low RPM for a dramatic reduction in noise levels.



■ Improved Power Factor & Reduced Harmonics through Active PFC

By implementing Active PFC (Power Factor Correction), the Power Factor(PF) is improved up to 99% while harmful harmonic frequencies are reduced to meet the Line Harmonic Distortion Requirement of IEC61000-3-2 Class D.

■ High Efficiency Design and 80 PLUS Certified

This power supply is capable of reaching a maximum of 86% efficiency (230VAC, Typical Load) through its use of high switching frequency and low power-loss circuitry. This product has been certified with the 80 PLUS Power Supply Certification and guarantees a higher efficiency compared to uncertified products.

- * 80 PLUS is an innovative, electric utility-funded incentive program that strives to integrate more energy-efficient power supplies into desktop computers and servers.

■ ATX20+4 Pin Main Connector

ATX20+4 pin main connector broadens the range of motherboard compatibility.

■ Supports ATX12V CPU 4 Pin and EPS12V CPU 8 Pin

Two ATX12V CPU 2 × 2(4-Pin) power cables can be combined to form an EPS12V CPU 8 Pin power cable.

■ 6 Pin Power Connector for Two PCI Express Graphic Cards

Two independent 6-Pin power connectors fully support Nvidia's SLI and ATI's CrossFire.

■ Modular Cables

Modular cables provide organized cable management and improved air circulation inside the computer case.

■ Ultra Quiet 120mm Fan

The ultra quiet 2 ball-bearing 120mm fan maximizes the airflow and minimizes the noise level enabling a noiseless computing environment with optimized cooling.

■ Four Independent +12VDC Outputs

Four +12VDC rails supply power independently to the CPU, VGA, motherboard, and peripheral components for the highest level of stability and performance.

■ EZ Grip Connectors for ODDs & HDDs

EZ Grip Connectors for easy removal of the plugs from ODDs & HDDs.

■ Gold-Plated Terminals and 16AWG Wires

All connector terminals are gold-plated to minimize contact resistance and power loss. 16AWG (thicker than 18 AWG) wires are incorporated to minimize voltage drop during high load operation.

■ Sleeved Cables

All power cables are sleeved for easy cable management and improved air circulation inside the computer case.

■ Multiple Safety Features

Over-Voltage Protection, Over-Current Protection, Short-Circuit Protection, Under-Voltage Protection, and Over-Temperature Protection.

■ Internal Blue LED

Blue LEDs are installed inside the power supply for cool aesthetics.

■ WEEE & RoHS

Complies with WEEE & RoHS environmental directives of the European Union.

- WEEE (Waste Electrical and Electronic Equipment)
- RoHS (Restriction of Hazardous Substances)

■ International Safety and EMC Certifications

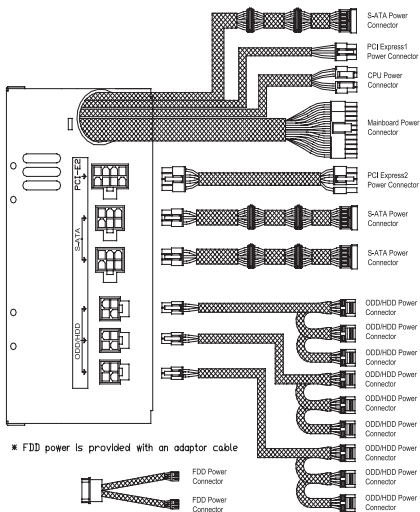


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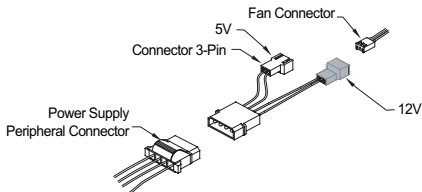
5. Specifications

■ Output Power Cable Specifications

Cable Types and Function



Using the Dual-Connector (ZM-DC1)



■ Electrical & Physical Specifications

AC Input Range	Voltage	100VAC ~ 240VAC ± 10%			DC Output				
	Frequency	47Hz ~ 63Hz			ZM750-HP				
AC Input Range (Rated)	115VAC	12A			Vout	Output Load Rating			Combined Power
	230VAC	5.5A				I _{min}	I _{max}	I _{peak}	
PFC Type	Active PFC			+3.3V	0.8A	30A		160W	
Power Factor	99% Maximum			+5V	0.5A	30A			
Inrush Current Limit (@ Cold start at 25 °C)	115VAC	60A			+12V1	0.5A	20A	720W	
	230VAC	100A			+12V2	0.5A	20A		
Efficiency	86% Max. @230VAC, Typical load			+12V3	0.5A	20A		750W	
DC Output Voltage Regulations	Vout	Regulation Range			+12V4	0.5A	20A		
	+3.3VDC	± 5%	+3.14V	~ +3.47V	-12V	0.0A	0.8A	22.1W	
	+5VDC	± 5%	+4.75V	~ +5.25V	Protection				
	+12V1DC	± 5%	+11.4V	~ +12.6V	Over-Voltage Protection (OVP)				
	+12V2DC	± 5%	+11.4V	~ +12.6V	Over-Current Protection (OCP)				
	+12V3DC	± 5%	+11.4V	~ +12.6V	Under-Voltage Protection (UVP)				
	+12V4DC	± 5%	+11.4V	~ +12.6V	Short Circuit Protection (SCP)				
	-12VDC	± 10%	-10.8V	~ -13.0V	Over - Temperature Protection (OTP)				
	+5VSB	± 5%	+4.75V	~ +5.25V	Ambient Temperature				
	DC Output Ripple & Noise	Vout	Specification			Operation		10 °C ~ +50 °C	
+3.3VDC		80mV			Stored		-20 °C ~ +80 °C		
+5VDC		80mV			Ambient Humidity				
+12V1DC		150mV			Operation		5%RH ~ 95%RH		
+12V2DC		150mV			Stored		5%RH ~ 95%RH		
+12V3DC		150mV			Dimensions				
+12V4DC		150mV			165mm(L) * 150mm(W) * 86mm(H)				
-12VDC		150mV			MTBF(25 °C)				
+5VSB		80mV			100,000 hours				

6. Zalman's CNPS (Computer Noise Prevention System) Products

For a stable and noiseless system of the highest quality, use Zalman's Ultra Quiet CPU Coolers, Ultra Quiet VGA Coolers, Heatpipe HDD Coolers, Fanless Northbridge Coolers, and Noiseless Case Fans.



Ultra Quiet CPU Cooler



Fanless VGA Cooler



Heatpipe HDD Cooler



Ultra Quiet CPU Cooler



Fanless Northbridge Cooler

7. Product Warranty (International)

Thank you for purchasing Zalman's product.

Warranty - If this product has any defects, Zalman guarantees that it can be exchanged within three (3) years from the time of purchase.

- * Product exchange is made with the reseller where the product was purchased. For further inquiries, contact Zalman Headquarters at www.zalman.co.kr or via e-mail to a representative.

There will be no exchanges in the following cases :

- A) Violation of the Safety Precautions and the Notes on Installation in this manual.
- B) Human fatality and/or property damage due to events of natural causes.
- C) External case damage, electrical problems, and damage to components caused by careless mishandling.

Disclaimer - Zalman Tech Co., Ltd. is not responsible for any damages due to external causes, including but not limited to, improper use, problems with electrical power, accident, neglect, alteration, repair, improper installation, or improper testing.

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Disposal of Old Electrical & Electronic Equipment
(Applicable in the European Union and other European countries with separate collection systems)