

DUAL HEATPIPE COOLED
1000 WATT
MODULAR POWER SUPPLY

(English)

User's Manual
ZM1000-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 the product in a humid or non-ventilated environment may reduce product lifespan.

2. Components

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

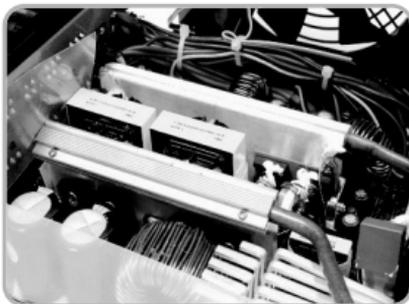
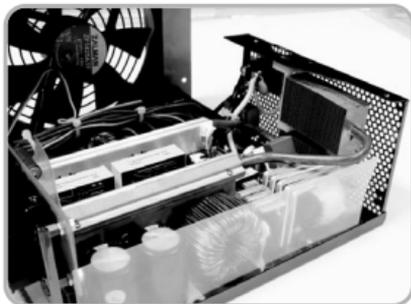
3. Notes on Installation

- ※ 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 faulty.

4. The Zalman Advantage

■ Dual Heatpipes Installed for Maximum Cooling Performance and Ultra-Quiet Operation

Dual heatpipes with ultra-high cooling performance incorporated on the main heat sources enable high load operation even at low fan RPM for a dramatic reduction in noise levels.



■ Modular Sleeved Cables

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

■ Ultra Quiet 140mm Fan

The ultra quiet 2 Ball-Bearing 140mm fan maximizes the airflow and minimizes the noise level enabling a noiseless computing environment with optimized cooling.

■ Standby Noise Filter Switch

The 5Vsb Noise Filter eliminates high frequency noise in standby mode.

* The Standby Noise Filter Switch is NOT a power switch. The AC Power Cord MUST be unplugged in order to turn the power supply OFF.

■ Six Independent +12VDC Outputs

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

■ Four PCI Express VGA Power 6-Pin & 6+2 Pin Connectors

Four independent 6-Pin Power Connectors (two 6-pin & two 6+2 pin) provides support for Nvidia's Quad SLI and ATI's CrossFire.

■ 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 Specification.

■ 80 PLUS Certified High Efficiency Design

This power supply is capable of reaching a maximum of 86% efficiency (230VAC, Full & 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 higher efficiency.

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

■ EZ Grip Connectors for ODDs & HDDs

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

■ Supports ATX12V CPU 4-Pin and EPS12V CPU 8-Pin

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

■ Gold-Plated Terminals & 16AWG Wires

All connector terminals are gold-plated to minimize contact resistance and power loss.

16AWG (thicker than 18AWG) wires are incorporated to minimize voltage drop during high load operation.

■ Multiple Safety Features

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

■ WEEE & RoHS

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

* WEEE (Waste Electrical and Electronic Equipment)

* RoHS (Restriction of Hazardous Substances)

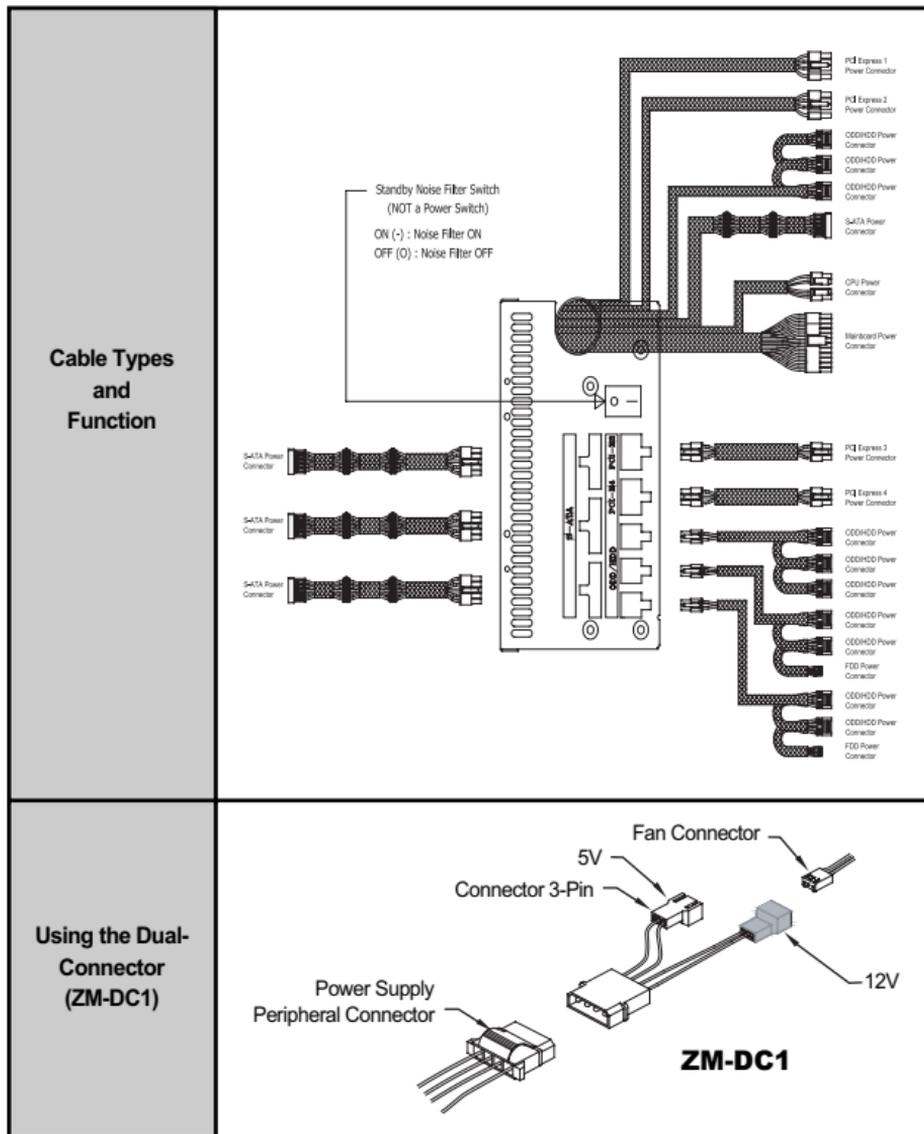
■ International Safety and EMC Certifications



ZMT-ZM1000-HP(B)

5. Specifications

Output Power Cable Specifications



Electrical & Physical Characteristics

AC Input Range	Voltage	115VAC ~ 240VAC \pm 10%		DC Output					
	Frequency	47Hz ~ 63Hz		ZM1000-HP					
AC Input Range (Rated)	115VAC	15A		Vout	Output Load Rating			Combined Power	
	230VAC	8A			I _{min}	I _{max}	I _{peak}		
PFC Type	Active PFC			+3.3V	0.8A	40A	45A	250W	
Power Factor	99% Maximum			+5V	0.5A	40A	45A		
Inrush Current Limit (@ Cold start at 25°C)	115VAC	80A		+12V1	0.5A	18A	22A	960W	
	230VAC	100A		+12V2	0.5A	18A	22A		
Efficiency	86% Max, @230VAC, Full & Typical load			+12V3	0.5A	28A	30A		1000W
DC Output Voltage Regulations	Vout		Regulation Range		+12V4	0.5A	28A	30A	
	+3.3VDC	\pm 5%	+3.14V	~	+3.47V	+12V5	0.5A	18A	22A
	+5VDC	\pm 5%	+4.75V	~	+5.25V	+12V6	0.5A	18A	22A
	+12V1DC	\pm 5%	+11.4V	~	+12.6V	-12V	0.0A	0.8A	27.1W
	+12V2DC	\pm 5%	+11.4V	~	+12.6V	+5VSB	0.1A	3.5A	
	+12V3DC	\pm 5%	+11.4V	~	+12.6V	Protection			
	+12V4DC	\pm 5%	+11.4V	~	+12.6V	Over-Voltage Protection (OVP)			
	+12V5DC	\pm 5%	+11.4V	~	+12.6V	Over-Current Protection (OCP)			
	+12V6DC	\pm 5%	+11.4V	~	+12.6V	Under-Voltage Protection (UVP)			
	-12VDC	\pm 10%	-10.8V	~	-13.0V	Short-Circuit Protection (SCP)			
	+5VSB	\pm 5%	+4.75V	~	+5.25V	Over-Temperature Protection (OTP)			
DC Output Ripple & Noise	Vout		Specification		Ambient Temperature				
	+3.3VDC		50mV		Operation	0°C ~ +45°C			
	+5VDC		50mV		Stored	-20°C ~ +60°C			
	+12V1&2DC		120mV		Ambient Humidity				
	+12V3&4DC		120mV		Operation	5%RH ~ 95%RH			
	+12V5&6DC		120mV		Stored	5%RH ~ 95%RH			
	-12VDC		120mV		Dimensions				
	+5VSB		50mV		210mm(L) * 150mm(W) * 86mm(H)				

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

For a stable and noiseless system of the highest quality, use Zalman's CPU Coolers, VGA Coolers, Heatpipe HDD Coolers, and Northbridge Coolers.



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.

A defective product can be exchanged through the retailer.

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 of 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.

For Inquiries

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