

A large graphic where the letters "RPM" are filled with a detailed image of a power supply's aluminum casing. The casing has a perforated front panel with a fan visible at the top. The word "COOLMAX" is printed in white on the lower part of the "R".

RPM
ALUMINUM POWER SUPPLY

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English Version

>>> Introduction

Thank you very much for choosing Coolmax product. This user manual includes a brief description of the specification and technical details of the power supplies which will give you a better idea of its performance characteristic. The mechanical drawing and connector instructions will help you know your power supply from its appearance. The installation instruction should help you install the unit into your case in an adequate way. The precaution will provide you with important information and state the safety requirement of this unit. Finally, Trouble shooting shall answer the questions you may have during the units operation.

If you have any suggestion or comments or if you want to know more about Coolmax products or the company, please access our web site www.coolmaxusa.com or send your e-mail to support@coolmaxusa.com. We appreciate your kind feedback and you will receive a prompt and satisfactory response from our customer service team.



>>> Features of RM SERIES

► Powerful & High-Efficiency Performance Advanced technology for maximum performance



Triple +12V Output Rails
Three independent +12V output rails ensure safe and stable system operation under heavy operation.



Active Power Factor Correction
Corrects power factor from typical 50% to theory-ideal 99%. Environment friendly technology reduces the loss of electricity and save your money on facility bill.



Super High Efficiency: Maximum 84%
Higher reliability, thermal control and environmental friendliness through increased efficiency. With advanced circuit design and well-chosen components, RM SERIES provide typical 80% efficiency which is much better than the average 70% in the market.

► Total Silent Solution Silent efforts from PSU to system



Ultimate balance between cooling and noise level
Extreme low noise level using Smart Fan Control Circuit based on our Automatic Temperature Sensor. Increased silence, extended fan life and more reliable performance by eliminating unnecessary high RPM.



Luxurious Aluminum Case
Stylish looks and enhanced thermal performance by Aluminum-Extrusion Enclosure.

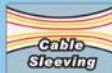


Honey Comb Structure with best ventilation
Optimum structure for best ventilation and maximum airflow to solve potential thermal and noise problems. Reduce the air resistance to a minimum.



120mm Fan design
Provides maximum air-flow at lower RPM, delivers extreme silence performance.

► Smart Cable Management Arrange the cables smart and neatly



All output cables with Nylon slewing
Cable slewing avoids cable clutter, allows neat and easy installation for an improved airflow.



Patented Easy Swap Connector
Quick and Easy installation.



Dual PCI-Express Power Connectors fully support SLI & Cross-Fire system
RM SERIES provide dual 6pin PCI-E power connector with sufficient and stable current to fully support SLI & Cross-Fire Systems.

>>> Precaution

- ▶ RM SERIES is designed with Free AC Input which enable it to be used in territories with different AC input voltages (115V~230V)
- ▶ Please do not remove the AC power line when the Power Supply is in use , even in a flash quick manner can cause damage to the components.
- ▶ Please do not store or use the switching Power Supply in high humid temperature places .
- ▶ When putting the switching Power Supply in testing condition (Log in alone/ not installed in a PC case),it must be connected to a "Load"(A hard Drive for instance), then the Switching Power Supply can be turned on(Fan start to rotate) and DC power output will be in operation.
- ▶ Unless authorized personnel, please do not unscrew the power case for any purpose.

>>> Installation

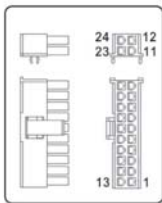
- ▶ Disconnect the power cord from your old power supply.
- ▶ Follow your computer case manual and disassemble the case.
- ▶ Disconnect all the power Connectors from the motherboard and from the peripheral devices such as case fans, hard drives, floppy drives. Etc.
- ▶ Remove the existing power supply from your computer case and replace it with the Coolmax power supply.
- ▶ Connect the power Connectors to the motherboard and peripheral drives .
- ▶ Close the computer case.
- ▶ Connect the power cord to the Coolmax power supply.

>>> Electric Specification

INPUT	Fan Type	12cm Fan	12cm Fan	12cm Fan
	Model	RM-750B	RM-850B	RM-1000B
	Voltage	115V~230V	115V~230V	115V~230V
	Frequency	47~63Hz	47~63Hz	47~63Hz
	Current	10A	10A	10A
OUTPUT	Efficiency	Typical 80%	Typical 80%	Typical 80%
	P.F.	Typical 0.99	Typical 0.99	Typical 0.99
	DC Voltage	DC Current (Min/Max)	DC Current (Min/Max)	DC Current (Min/Max)
	+5V	30A	30A	30A
	+3.3V	24A	24A	24A
	+12V1	16A	16A	16A
	+12V2	16A	16A	16A
	+12V3	15A	16A	16A
	+12V4	12A	18A	18A
	+12V5	-	-	18A
	-12V	0.5A	0.5A	0.5A
	+5vsb	3A	3A	3A
	+5V&+3.3V	180W	190W	190W
	Total Output	750W	850W	1000W

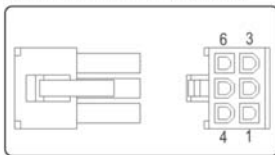
>>> Connectors Description and Illustration

Main Power Connector



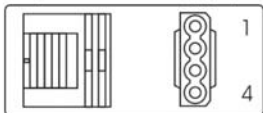
Voltage	Color			Color	Voltage
+3.3 V	Orange	1	13	Orange	+3.3 V
+3.3 V	Orange	2	14	Blue	-12 V
COM	Black	3	15	Black	COM
+5 V	Red	4	16	Green	PS_ON#
COM	Black	5	17	Black	COM
+5 V	Red	6	18	Black	COM
COM	Black	7	19	Black	COM
PWR_ON	Gray	8	20	N/C	N/C
+5 Vsb	Purple	9	21	Red	+5 V
+12 V ₁	Yellow	10	22	Red	+5 V
+12 V ₁	Yellow	11	23	Red	+5 V
+3.3 V	Orange	12	24	Black	COM

PCI Express Connector (6 pin)



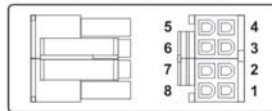
Color	Signal	Pin
Yellow	12VDC	1
Yellow	12VDC	2
Yellow	12VDC	3
Black	COM	4
Black	COM	5
Black	COM	6

Peripheral Connector (4 pin)



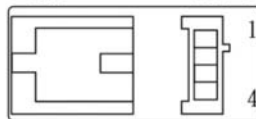
Color	Signal	Pin
Yellow	+12V ₃ DC	1
Black	COM	2
Black	COM	3
Red	+5VDC	4

+12V Connector (4+4 pin)



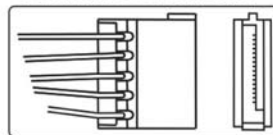
Color	Signal	Pin
Black	COM	1
Black	COM	2
Black	COM	3
Black	COM	4
Yellow	+12VDC	5
Yellow	+12VDC	6
Yellow	+12VDC	7
Yellow	+12VDC	8

Floppy Disk Connector (4 pin)



Color	Signal	Pin
Red	+5VDC	1
Black	COM	2
Black	COM	3
Yellow	+12V ₃ DC	4

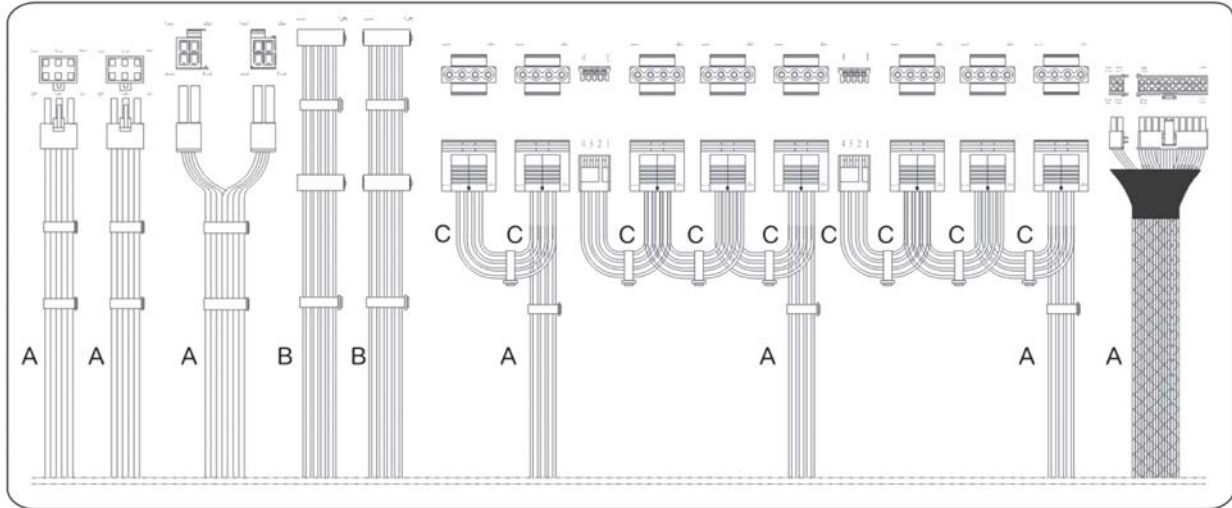
Serial ATA Power Connector



Color	Signal	Pin
Yellow	+12V ₃ DC	1
Black	COM	2
Red	+5VDC	3
Black	COM	4
Orange	+3.3 VDC	5

>>> Cable Illustration

Cable Length			
No.	A	B	C
(mm)	550	750	200



>>> Product -Related Specification

▶ Temperature

Storage ambient : 0°C~50°C

Operating ambient : -40°C~60°C

▶ Humidity

Storage : 20°C~90°C : Operation : 20%~95%

▶ Altitude

The power supply can operate normally at any altitude between 0~8000 ft

>>> Safety Approval

Coolmax switching power supply has been certified to comply with multiple safety and EMI standards.

▶ Safety



▶ EMI



▶ MTBF(Mean Time Between Failure)

The MTBF of the power supply is calculated by utilizing the quality factors listed in Part-Stress Analysis method of MIL-HDBK-217F

The calculated MTBF of Coolmax switching power supply is greater than 100,000 hours under the following conditions:

70% full loading, 220VAC/50Hz input, 25°C ambient.

>>> Protection function

All the Coolmax products are designed with comprehensive protection features to safeguard the power supply and system.

Notice:

If the power supply latches into shut down stage (when protection function is in effect as defined below), the power supply shall return to normal operation only after the fault has been removed and PS-on has been cycled off/on for a minimum of time for 1 second or remove AC power from the power supply then re-applied.

► Over/Under Voltage Protection(OVP/UVP)

When the output voltage exceeds the spec defined below, the power supply shall be latched into the status of shutdown.

DC OUTPUT	UVP (Min)	OVP(Max)
+5V	3.9V	7.0V
+3.3V	2.8V	4.3V
+12V	8.0V	15.6V

► Over Current Protection(OCP)

Overload current applied to each tested output rail will cause output trip before they reach or exceed 110% ~ 150% for testing purposes. Over load current shall be ramped at a minimum rate of 10A/s starting from full load.

▶ Short Circuit Protection

When any set of DC output is in short circuit, the power supply shall be latched into the status of shutdown in order to protect the circuits and components from being damaged.

▶ Over Load Protection

When the total output exceeds 130~150% of max load limit, the power supply shall be latched into the status of shutdown to prevent components from being damaged.

>>> Trouble Shooting

Condition 1: No DC output. The fan blade motionless.

Instruction:

- ▶ Please check if the AC inlet plug is firmly plugged in the INLET socket.
- ▶ Please confirm if the wall socket or extension power cord was in normal condition.
- ▶ Please check if the Main Board socket (20+4 pin) is firmly plug on.

Condition 2: The fan rotated but then stopped, The system hanged without function

- ▶ Please check if all peripheral connectors are firmly plugged on the devices, such as Hard disk, CD Rom
- ▶ If an-off set or revise plug happened, please un-

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