TR2 1000W

ATX 12V 2.2& EPS 12V 2.91 Version

Thermaltake
COOL YOUR LIFE

R43001 E190414 LVD N CE CB FC Tested to Comply With FCC Standards FOR HOME OR OFFICE USE

User's Manual >>

Thermaltake TR2 1000W Power Supply

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Thermaltake TR2 Power Supply

1. Introduction

We live up to the promise of Thermaltake logo in our unending quest for excellence.
Shall you have any suggestion or comments, please access our web site :
http://www.thermaltake.com
http://www.tr2tt.com
or e-mail to :
thermaltake@thermaltake.com
sales.tr@tr2tt.com
we appreciate your kindly feedback and you will receive the prompt response from our customer service team.

Thank you for choosing a quality Thermaltake TR2 1000W PC Power Supply. We trust that you will find it providing you with many years of service.

You can always find a Thermaltake TR2 1000W PC Power Supply that is suitable for all of your modern PC power needs.

Please take the time in familiarize yourself with the power supply, its connectors and the contents of this manual before proceeding with the installation of the power unit. You will need a Phillips crosshead screwdriver, perhaps your PC case manual and most certainly your motherboard manual.

2. Components Check

1 1000W power supply unit

7 One AC Input power cord

7 4 mounting screws

7 User manual

3 Installation

3.1 Warnings and Cautions

3.1.1 Do not pull the AC power cord when the power supply is in use or else damage to components will result.

3.1.2 Do not store the Power Supply in a high humidity and high temperature environment.

3.1.3 When using TR2 1000W power supply under testing conditions where the power supply unit is not installed in a PC with its components, please follow the steps below:

1)Please take a paper clip and untwist it.
2)Make sure the power supply unit is in the "OFF" position.
3)Locate the 20 or 24 pin motherboard connector from the power supply unit.
4)Plug one side of the paper clip into the green wire hole.
5)Plug the other side of the paper clip into any of the black wire holes.
6)Turn on the PSU to see if the power supply fans turn on.

3.1.4 High voltages exist in the power supply. Do not open the power supply case unless you are an authorized service technician or electrician.

3.1.5 All warrantees and guarantees shall be voided should there be a failure to comply with any of the warnings and cautions covered in this manual.

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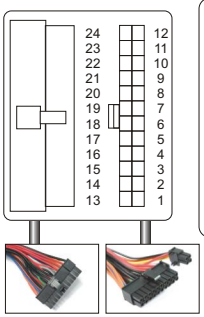
3.2 Installation Steps

3.2.1 Disconnect the power cord from your old power supply.
3.2.2 Follow your computer case manual and disassemble the case.
3.2.3 Disconnect all the power connectors from the motherboard and from the peripheral devices such as case fans, hard drives, floppy drives. etc.
3.2.4 Remove the existing power supply from your computer case and replace it with your new Thermaltake TR2 1000W PSU.
3.2.5 Connect the power connectors to the motherboard and peripheral devices (refer to the rest of this manual to match the various one-way key-locked connectors to the motherboard and accessories).
3.2.6 Connect the 6pin or 8pin PCI-E connector to PCI Express graphic card if you need.
Note: Please read the user manual supplied with your graphic card for detail usage instructions.
3.2.7 Close the computer case.
3.2.8 Make sure your power supply switch is on "OFF" position, and connect the supplied power cord to your Thermaltake TR2 1000W PSU.

4. Product Specification

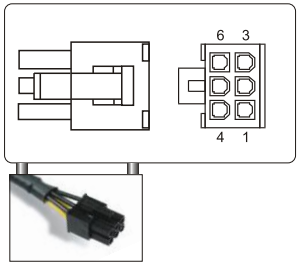
4.1 Output Specification

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	Yellow	10	22	Red	+5 V
+12 V	Yellow	11	23	Red	+5 V
+3.3 V	Orange	12	24	Black	COM

PCI-E Connector (6 pin)



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

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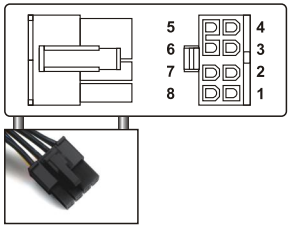
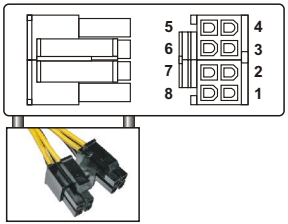
PCI-E Connector (8 pin)



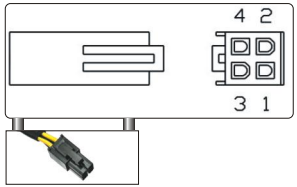
Color	Signal	Pin
Yellow	+12V	1
Yellow	+12V	2
Yellow	+12V	3
Black	COM	4
Black	COM	5
Black	COM	6
Black	COM	7
Black	COM	8

CPU Connector (4+4 pin)



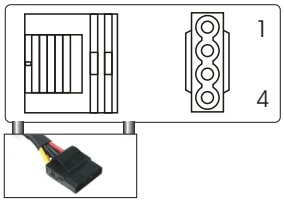
Color	Signal	Pin
Black	COM	1
Black	COM	2
Black	COM	3
Black	COM	4
Yellow	+12V	5
Yellow	+12V	6
Yellow	+12V	7
Yellow	+12V	8

CPU Connector (4 pin)



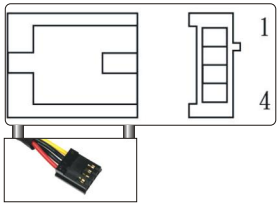
Color	Signal	Pin
Black	COM	1
Black	COM	2
Yellow	+12V	3
Yellow	+12V	4

Peripheral Connector (4 pin)



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

Floppy Disk Connector (4pin)



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

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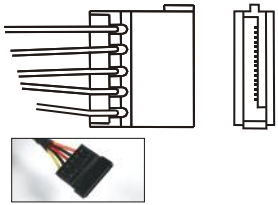
Serial ATA Power Connector



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

8 pin PCI-E to 6 pin PCI-E Converter

Enable 8pin PCI-E connectorconnect to the graphiccard that only has 6pinPCI-E socket.

+12V Rail Distribution

W0176 - 1000W PSU

Connector	+12V1	+12V2	+12V3	+12V4
20+4pin Main Power			○	
4+4pin CPU Power	○	○		
4 pin CPU Power	○			
Peripheral & Floppy			○	
S-ATA			○	
6 pin standard PCI-E		○		
6 pin standard PCI-E				○
8 pin standard PCI-E		○		
8 pin standard PCI-E				○

4.2 TR2 1000W PSU Specification

Model	W0176			
SPECIFICATION				
Power	1000W			
Dimension	140mm(L)x150mm(W)x86mm(H)			
Switches	ATX Logic on-off additional power rockerswitch			
PFC	Active PFC (PF >0.9)			
Cooling System	120mm ball-bearing Fan 3100 RPM ±10%			
Efficiency	Typical load of80% at 115V/ 230V input			
Hold-up Time	Typical Load 20ms			
INPUT				
Input Voltage	115 VAC- 230 VAC			
Input Frequency Range	47 ~ 63 Hz			
MTBF	100,000 hrs minimum at25°C			
Input Current	14.5A - 7.5A			
OUTPUT				
Voltage	Max/Min	Regulation	Ripple & Noise	Output
+3.3V	30A/0.8A	+5,-5%	75mV	175W
+5V	30A/0.5A	+5,-5%	75mV	
+12V1	20A/0.5A	+5,-5%	140mV	
+12V2	20A/0.5A	+5,-5%	140mV	975W
+12V3	20A/0.5A	+5,-5%	140mV	
+12V4	20A/0.5A	+5,-5%	140mV	
+5Vsb	1.0A/0.0A	+10,-10%	200mV	25W
-12V	3.0A/0.1A	+5,-5%	75mV	
Total Power	1000W			
Peak Power	1100W(3S)			
ENVIRONMENT				
Operating Temp.	10 ℃ to 50 ℃			
Storage Temp.	-20 ℃ to 80℃			
Operating Humidity	5% to 95%, non-condensing			
Storage Humidity	5% to 95%, non-condensing			
PROTECTION				
Items	DC rail		Trigger Point/Range	
Over Voltage Protection	+3.3V trip point		3.76V~4.8V	
	+5.0V trip point		5.6V~7.0V	
	+12.0V trip point		13.5V~16.5V	
Over Current Protection	+3.3V		60A Max.	
	+5.0V		48A Max.	
	+12V		30A Max.	
Short Protection	All output to GND			

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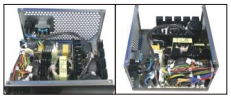
► Technology Features



- Four +12V Rails
- EPS Structure

Ten S-ATA Connectors

- Hi-Tech Black housing
- Intelligent temperature control 120mm Fan

► Total Output Connector

X1 — 24-pin Main Connector

X1 — 8-pin +12V Power Connector

X1 — 4-pin +12V Power Connector

X6 — 4-pin Peripheral Power Connector

X1 — 4-pin Floppy Drive Connector

X10 — 5-pin SATA Connector

X2 — 6-pin PCI Express Connector

X2 — 8-pin PCI Express Connector

X2 — 8-pinto 6-pin PCI Express Connector

► Performance

AC INPUT	110V-240V 13-6.5A 50-60Hz							
DC OUTPUT	+3.3V	+5V	+12V1	+12V2	+12V3	+12V4	-12V	+5VSB
Maximum Load	30A	30A	20A	20A	20A	20A	1A	3A
Minimum Load	0.8A	0.5A	0.5A	0.5A	0.5A	0.5A	0.0A	0.1A
Max Combined Wattage	175W		975W				25W	

The continuous total outputpower is 1000W, peak 1100W(3 sec.)
Total combined+12V output load shallbe 75A.

4.3 Other Specification

4.3.1 Inrush Current:
Maximum inrush current from power-on (with power on at any point on the AC sine) and including, but not limited to, three line cycles, shall be limited to a level below the surge rating of the input line cord, AC switch if present, bridge rectifier, fuse, and EMI filter components. Repetitive ON/OFF cycling of the AC input voltage should not damage the power supply or Cause the input fuse to blow.

4.3.2 Power Efficiency:

Loading	Full load	Typical load	Light load
115V Required Minimum Efficiency	76%	80%	80%
230V Required Minimum Efficiency	80%	80%	80%

4.3.3 Note:
The combined power of +5V and +3.3V is 175W max.
Add 0.1uF and 10uF capacitors across output terminal during ripple & noise test.

4.3.4 Hold-Up Time:
20mSec. minimum at typical load

4.3.5 Power Good Delay:
100-500 msec.

4.3.6 Power Fail Delay:
>1 msec.

4.3.7 Rise Time:
20ms max at full load.

4.3.8 MTBF at 25°C (demonstrated)
100KHrs minimum

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4.4 Protection:

If the power supply protection that latch off all main outputs. (when OCP, OVP or short protection is working). Reset by cycling remote on/off control or AC power.

4.4.1 Over Current Protection

Output Voltage	Trigger Point
+3.3V	60A Max.
+5.0V	48A Max.
+12V	30A Max.

4.4.2 Over Voltage Protection
+3.3V output 3.76V ~ 4.8V
+5.0V output 5.6V ~ 7.0V
+12.0V output 13.5V ~ 16.5V

4.4.3 Short Protection
All output to GND.

4.5 Environment:

4.5.1 Operating Temp. +10°C to +50°C
4.5.2 Storage Temp. -20°C to +80°C
4.5.3 Operating Humidity 5% to 95%, non-condensing
4.5.4 Storage Humidity 5% to 95%, non-condensing

4.6 EMI & Safety

4.6.1 EMI Regulatory
- FCC Part 15 Subpart J, class 'B'
- CISPR 22 Class 'B'

4.6.2 Safety
- NEMKO EN60950
- VDE EN60950
- CSA C22.2 NO.60950
- IEC 60950
- UL 60950
- CE

5. Trouble Shooting

Condition 1: No DC output. The fan or fans are motionless
Check:
1-1 Is the AC inlet plug firmly plugged into the PSU inlet socket?
1-2 Is the wall socket, extension power cord, power strip or surge protector in use, fully functional and wall power switch turned 'ON'?
1-3 Is the Main Board socket (24pin) plug fully and firmly inserted?

Condition 2: The fan or fans began rotating and then stopped. The system hangs without proceeding any further.
Check:
2-1 Are the peripheral connectors firmly plugged into accessory devices, such as the main hard drive, CD ROM , etc?
2-2 If a plug has been inadvertently connected in an off-set or reversed position, unplug the AC power source, reconnect the offending connectors and then wait for 30 seconds before replug in the AC power source and try again.

Note:
If the power supply is still unable to power up after following the above instruction, please send the unit back to your dealer or retailer for after sales service.

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Should you have any questions regarding the aforementioned steps, please contact Thermaltake directly. Failure to follow the proper procedures may cause severe bodily harm or PC component damage.

For Support or General Inquiries, please contact us at:

❶ Thermaltake Technology USA
Toll Free: (800)988-1088
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6.Cable Retail Package(Optional)

P/N:A2169 **PSU Adaptor Cable**

Specification

Model	(A)	(B)
Model	Adaptor Cable	Adaptor Cable
Dimension (mm)	193mm	198mm
Connector type	4pin - 8 pin	20pin - 24 pin
Cable sleeving color	Red	Black
Material	Plastic	Plastic
Weight	16g	58g
Voltage	12V	3.3V,5V, +12v,-12V

(A)4pin-8pin

(B)20pin-24pin

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