

THUNDER

500/550/600/650W
User Manual



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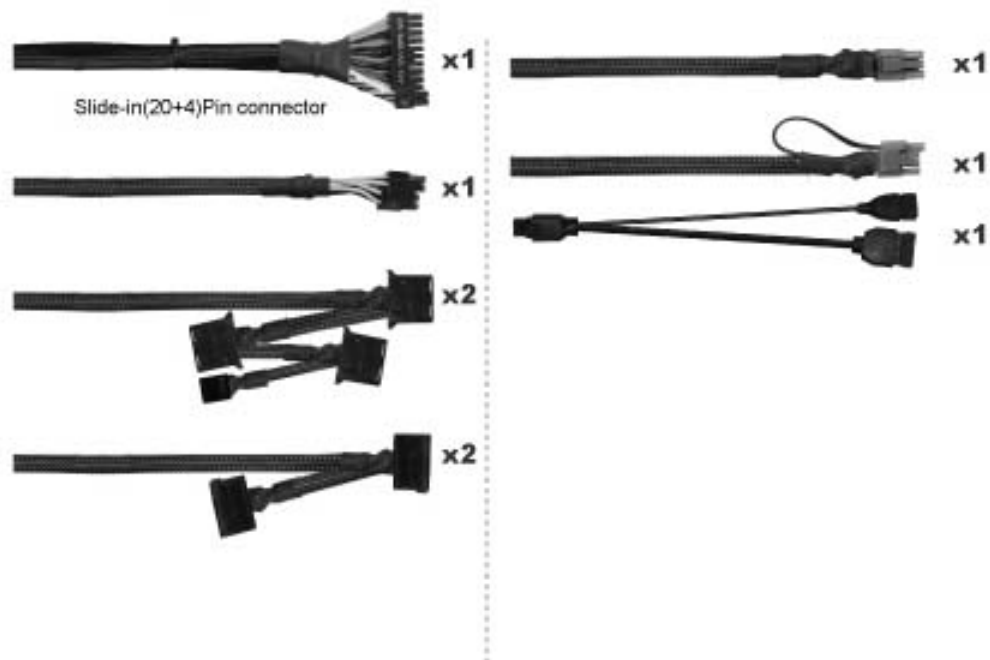
Introduction

Congratulations! You are now the proud owner of one of the most adaptable and exciting power supplies on the market.

The Thunder power supply combines true power with performance. This power supply is an ideal solution for Gamers, Modders and power users who demand the very best from their system.

Epower Thunder series redefine a modern PC power supply. It's not only a power supply for PC, but also a charger for USB devices and a SATA power for external SATA hard drives. We call it a 3 in 1 power supply.

Package Contents



Packabe Contents

- One Thunder Power Supply
- One AC power cord.
- One External USB+SATA Cable
- Five colour coded velcro tapes.
- Two Small cable ties for cable management.
- Five mounting Screw cone spare.
- Installation Guide.

Warning and Safety Precautions

Please take time and care to read all the information and details in this user's manual before attempting to install or operate your new power supply unit (PSU).

Warning

- Electronic shock! Do not open the PSU cover under any circumstance .
No user-serviceable components inside!
- High voltage hazard! Fatal injury can occur, especially if the power switch is turned on, and the power cord is plugged in.
- Do not handle the PSU or components with wet or damp hands, such connecting the power cords, etc.
- Do not insert any objects, especially metallic (screwdriver, wire, etc) into any of the cavities or into the fan windows of the PSU.
- Opening PSU will void warranty.

Caution

Malfunction or performance and life-span degradation can occur, if the PSU is operating

- In an extremely hot environment.
- In a non-ventilated environment.
- In a high humidity environment.
- If any liquids or small metallic parts get into the PSU.
- If any vent holes are covered.
- Please note: The PSU has been designed for indoor use only!

Warranty and Handling

Epower provides 36 months PSU limited warranty service starting on the original date of purchase. The limited Warranty only applies to the original purchaser. A dated sales receipt is the sole proof of purchase. The warranty is voided if you are unable to present the dated sales receipt.

If you are experiencing any technical difficulties or have any questions about the product, please contact our technical support personnel at

www.epowertec.com

Warranty will be void if:

- The cover has been opened or the warranty sticker on the PSU is damaged or removed.
- Any violation of the Warnings and Safety Precautions as covered in this manual.
- Any deliberate accidental or careless installation, mishandling, misuse of the PSU.
- Any damage as a result of natural disaster or catastrophe.

Product Description

The Thunder PSU makes use of innovative and exciting power supply technologies to deliver maximum reliability and stability. The whisper quiet power supply is ideal for gamers, PC enthusiasts, and power users. In addition.

Technology Briefs

The Thunder Cable Management technology allows you to truly customize your power system to utilize only the internal PC power cables you require. This results in reduced clutter and optimal airflow to ensure the coolest possible environment.

The PSU's high performance doesn't have to come with annoying fan noise. The 120mm fan used in the design reduces noise levels to the minimum, ensuring the quietest power supplies on the market!

Epower EPUS (Extend Power for Usb / Sata) technology converts a regular PC power supply to a multifunction power source.

Power Protection Functions

The power supply protection mode is automatically activated if over-current, over-voltage or short-circuit is detected. In this event the power supply will automatically switch off. The power supply will return to normal operation only after the fault has been removed and PSU power switch is reset for a minimum of 1 Second, or else by removing AC power cord and re-connecting it.

Over-Current Protection

The power supply DC outputs are protected from supplying output current above the maximum ratings and when output power is between 110% and 150%. With the exception of the 5VSB output, all DC outputs are cutoff in the event of an over-current event on any of the DC outputs. In the event of a short circuit on any output, except the 5VSB rail, all outputs are disabled and remain disabled until the power supply is powered off back on. The 5VSB rail will recover upon removal of the over-current condition.

Over-Voltage Protection

The power supply provides latch-mode over voltage protection defined as:

+5V output is between 5.8V to 6.3V

+12V output is between 14.0V to 17.0V

+3.3V output is between 3.6V to 4.2V

Short-Circuit Protection

The power supply DC outputs are protected from damage due to faults, when any output shorts to ground. In the event of a short circuit on any output, all outputs shall be disabled and remain disabled until the power supply is powered off and back on. The 5VSB rail will recover upon removal of the over current condition.

Power Specification

EP-500-TD2						
Input voltage : 85Vac~264Vac			Frequency : 47~63		Max. input current : 15A	
DC OUTPUT	+3.3V	+5V	+12V1	+12V2	-12V	+5VSB
Mainimum	24A	24A	20A	20A	0.8A	3A
Maximum	0.5A	1A	0.5A	0.5A	0.1A	0.1A
Combined Watt	150W		360W		20W	
Total Wattage	500W					

EP-650-TD1

Input voltage : 85Vac~264Vac			Frequency : 47~63			Max. input current : 15A		
DC OUTPUT	+3.3V	+5V	+12V ₁	+12V ₂	+12V ₃	+12V ₄	-12V	+5VSB
Mainimum	24A	24A	20A	20A	20A	20A	0.8A	3A
Maximum	0.5A	1A	0.5A	0.5A	0.5A	0.5A	0.1A	0.1A
Combined Watt	150W		420W				20W	
Total Wattage	650W							


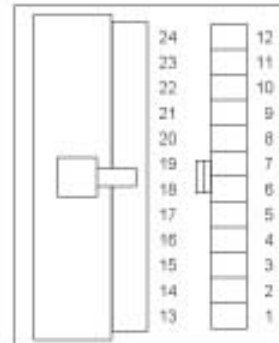
EP-600-TD2

Input voltage : 85Vac~264Vac			Frequency : 47~63		Max. input current : 15A	
DC OUTPUT	+3.3V	+5V	+12V1	+12V2	-12V	+5VSB
Mainimum	24A	24A	20A	20A	0.8A	3A
Maximum	0.5A	1A	0.5A	0.5A	0.1A	0.1A
Combined Watt	150W		480W		20W	
Total Wattage	600W					

EP-650-TD1

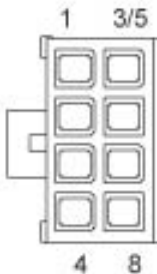
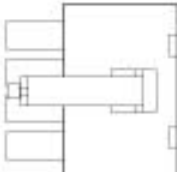

Input voltage : 85Vac~264Vac			Frequency : 47~63			Max. input current : 15A		
DC OUTPUT	+3.3V	+5V	+12V ₁	+12V ₂	+12V ₃	+12V ₄	-12V	+5VSB
Mainimum	24A	24A	20A	20A	20A	20A	0.8A	3A
Maximum	0.5A	1A	0.5A	0.5A	0.5A	0.5A	0.1A	0.1A
Combined Watt	150W		540W				20W	
Total Wattage	650W							

Motherboard 24 and 20-pin Connectors

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

EPS 12V 4+4-pin Connector

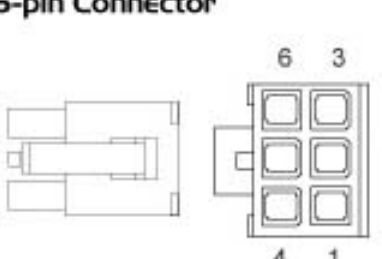

EPS 12V 4+4-pin Connector



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

PCI Express 6-pin Connector

PCI Express 6-pin Connector



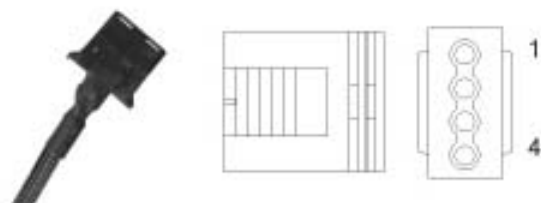
Colour	Signal	Pin
Yellow	12VDC	1
Yellow	12VDC	2
Yellow	12VDC	3
Black	COM	4
Black	COM	5
Black	COM	6

PCI-Express 12V(6+2)pin connector



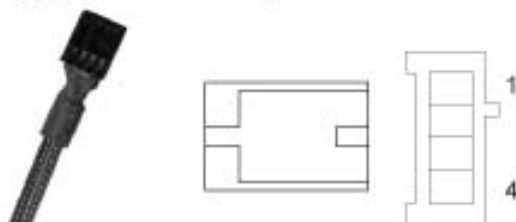
Colour	Signal	Pin
Yellow	+12VDC	1
Yellow	+12VDC	2
Yellow	+12VDC	3
Black	COM	4
Black	COM	5
Black	COM	6
Black	COM	7
Black	COM	8

Peripheral Molex 4-pin Connector



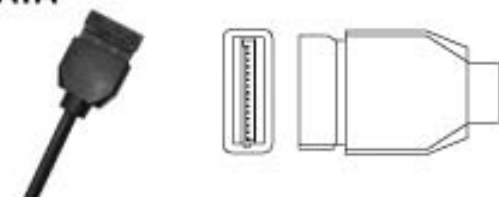
Colour	Signal	Pin
Yellow	+12VDC	1
Black	COM	2
Black	COM	3
Red	+5VDC	4

Floppy Disk Drive 4-pin Connector



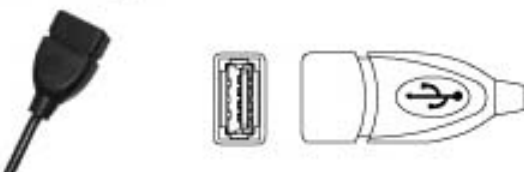
Colour	Signal	Pin
Red	+5VDC	1
Black	COM	2
Black	COM	3
Yellow	+12VDC	4

SATA



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

USB Charger



Signal	Pin
+5Vsb	1
Empty	2
Empty	3
Ground	4

Installation Steps

The Thunder PSU is designed for quick and easy installation.

We recommend an initial examination of the system prior to the physical installation of the PSU to determine the number and type of the internal power cables that will be required for the installation. Be aware that reducing the number of internal power cables will in turn reduce the clutter inside your case and improve airflow.

Before proceeding with the installation of your new Thunder Connector PSU, please familiarize yourself with the following installation steps:

STEP 1	Disconnect the power cord from your old power supply.
STEP 2	Follow your computer case manual and open the case.
STEP 3	Disconnect all the power connectors from the motherboard and from the peripheral devices such as case fans, hard drives, floppy drives, etc.
STEP 4	Remove the existing power supply from your computer case and replace it with new power supply.
STEP 5	Connect (20+4P) Main Connector to motherboard 24pin ATX/BTX/EPS socket, detach 4pin if motherboard has 20pin socket.
STEP 6	Connect ATX12V-4Pin (Detach 4Pin) to motherboard.
STEP 7	Connect EPS12V-8Pin (4+4pin) to motherboard, if any.

STEP 8	Connect the Molex 4-pin device connectors to your storage peripherals, such as HDD, CD-ROM or DVD-drive etc.
STEP 9	Connect the Floppy Disk Drive 4-pin device connectors to your 3 1/2" FDD, if any.
STEP 10	Connect the SATA 15-pin power connector to your Serial-ATA hard disc device, if any.
STEP 11	Connect 6-pin VGA power connector to your PCI Express VGA card, if any.
STEP 12	Connect (6+2)pin VGA power connector to your PCI Express VGA cards, if any.
STEP 13	Close the computer case.
STEP 14	Connect External USB+SATA cable to EPUS 6pin connector
STEP 15	Connect the power cord to the power supply.

Note:

1. USB charger is designed for USB devices (cell phone, MP3, digital camera, PDA ...) even when computer is OFF.
2. USB charger can not be used for data transfer.

Trouble Shooting

If there is no response from the system when the power supply is turned on, then please check for one of the following common problems:

1. The power supply has a built in "power protection switch". If a shut down occurs for any reason, the power protection switch resets itself after 30 seconds. Please wait at least 30 seconds before checking for common problems listed below.
2. Ensure that the power cord is inserted properly into the power supply.
3. Ensure that the power supply's "on/off" (O/I) switch is turned to the ON position (I).
4. Ensure that all the Series Connect™ cables are properly connected.
5. Check for any short-circuit problem or defective components by disconnecting all power to the components, and then reconnecting them one at a time.
6. Assemble your motherboard, video card and power supply outside the case on an anti-static surface to verify if the cause of any short/overload is related to the case, or the way the motherboard was mounted to the case.
7. If the power supply still does not work, please return it to your vendor or supplier for further analysis and repair.

Technical Support

Website : <http://www.epowertec.com>

E-mail : info@epowertec.com

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