

Thunder Shield Series

For PC server, security system, SME (small and medium enterprises), and SOHO members

TS400/ TS500/ TS500B/ TS650/ TS650B/ TS1000/ TS1000B/ TS1250/ TS1250B/ TS1700/ TS1700B/ TS2250/ TS2250B

- * Line interactive design
- * Boost and buck AVR (Auto Voltage Regulation)
- * Fully digitized microprocessor control
- * Energy saving function (UPS green mode)
- * 50 / 60 Hz frequency auto sensing and selection
- * Cold start function (DC power on)
- * Short circuit and overload protection
- * RS232 communication port"
- * Tel / Modem / LAN surge protection"
- * History record of power failure events"
- * Smart power management software"
- * Scheduled shutdown & reboot"
- (" Features of TSB models only)



* TS650B

* TS1250B

Voltage and frequency fluctuations, surges, sags and power cuts are likely to seriously damage your sensitive equipment. These problems occur every day all over the world and are more frequent in areas with overloaded power grid systems.

The TS Series are the ideal solution to protect your small office and home office systems (SOHO), as well as other electronic devices, which are needed for daily use. Not only is TS a great value for your money but also is the UPS that is extremely easy to handle. TS fulfills the requirements of many types of users.

With their built-in batteries, most UPS products can do their jobs. However, the batteries would soon deteriorate if used often. This is where the OPTI-UPS TS Series rise above the others. With there wide range AVR, battery usage is limited to very extreme conditions while normal voltage fluctuations are easily controlled by the UPS. When things get tough on the utility source, the TS Series product line is there to give the right amount of battery backup.

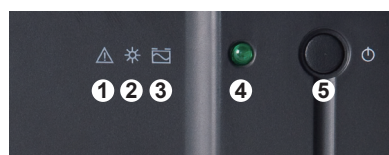
The TS Series product line is your insurance to continuous performance and peace of mind!

Backup Time (Typical)

TS400	1PC+1LCD	15 mins
TS500 / TS500B	1PC+1LCD	19 mins
TS650 / TS650B	1PC+1LCD	21 mins
TS1000 / TS1000B	1PC+1LCD	33 mins
TS1250 / TS1250B	1PC+1LCD	42 mins
TS1700 / TS1700B	1PC+1LCD	42 mins
TS2250 / TS2250B	1PC+1LCD	45 mins

Front Panel

TS400 / TS500 / TS500B / TS650 / TS650B / TS1000 / TS1000B / TS1250 / TS1250B / TS1700 / TS1700B / TS2250 / TS2250B



- 1 Fault (Continuous Red Light)
- 2 AC Mode (Continuous Green Light)
- 3 Battery Mode (Flashing Yellow Light)
- 4 LED
- 5 Power ON/ OFF

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TS1700B/ TS2250/ TS2250B

Rear Panel

TS400/ TS500/ TS650/ TS1000



110V
120V



220V
230V
240V

TS500B/ TS650B/ TS1000B



110V
120V



220V
230V
240V

- 1 Input
- 2 Fuse
- 3 UPS Output
- 4 Communication Port
- 5 Data Line Protection

TS1250



110V
120V



220V
230V
240V

TS1250B



110V
120V



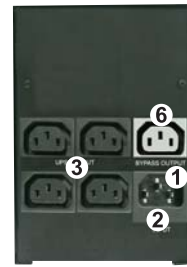
220V
230V
240V

- 1 Input
- 2 Fuse
- 3 UPS Output
- 4 Communication Port
- 5 Data Line Protection
- 6 Bypass Output
- 7 Circuit Breaker

TS1700/TS2250



110V
120V



220V
230V
240V

TS1700B/TS2250B IEC



110V
120V



220V
230V
240V

- 1 Input
- 2 Fuse
- 3 UPS Output
- 4 Communication Port
- 5 Data Line Protection
- 6 Bypass Output
(UPS Output for TS2250/ TS2250B)
- 7 Circuit Breaker

TS2250B US



110V
120V

- 1 Input
- 2 Fuse
- 3 UPS Output
- 4 Communication Port
- 5 Data Line Protection
- 6 Bypass Output
(UPS Output for TS2250/ TS2250B)
- 7 Circuit Breaker

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TS400/ TS500/ TS500B/ TS650/ TS650B

Specifications

Model Name	TS400		TS500 / TS500B		TS650 / TS650B	
Topology	Line-Interactive					
On-battery Output Waveform	Simulated Sine Wave					
Maximum Capacity (VA/W)	400VA / 240W		500VA / 300W		600VA / 360W	
INPUT						
Nominal Input Voltage	110/120 or 220/230/240Vac*					
Nominal Input Frequency	50Hz / 60Hz Auto Sensing					
Input Voltage Range	Rated Voltage +/- 25%					
Input Protection	Fuse; Circuit Breaker for TS1250 and TS1700 models with US outlets					
Input Inlet	IEC-320-C14					
OUTPUT						
Nominal Output Voltage	110/120 or 220/230/240Vac*					
Output Voltage Regulation	Rated Voltage +/- 5% (on battery)					
Transfer Time(Typical)	4 ms					
Start on Battery	Yes					
Auto Restart	Yes					
Automatic Voltage Regulation (AVR)	When the input voltage is 9 % to 25 % lower than the mains electricity, automatically raise the voltage by 15 % When the input voltage is 9 % to 25 % higher than the mains electricity, automatically lower the voltage by 13 %					
Number of Outlets	2 Battery backup outlets (IEC-320-C13) / 2 Battery backup outlets (NEMA 5-15R)					
PROTECTION						
Data Line Surge Protection	None		RJ11/RJ45 1)			
Surge Energy Rating	460 Joules(IEC outlets models) ; 265 Joules(NEMA outlets models)					
Overload Protection	UPS automatic power off if overload exceeds 110% of nominal at 60 seconds and 130% at 3 seconds.					
Short Circuit Protection	UPS output cut off immediately or input fuse protection					
Protection	Auto discharge protection					
BATTERY						
User Replaceable Battery	12V / 4.5Ah x 1		12V / 4.5Ah x 1			
Typical Backup Time**	15 min		19 min		21 min	
Recharge Time to 90% (Typical)	< 4 Hours					
ADVANCED WARNINGS / DIAGNOSTICS						
Front Panel LEDs	Power Status / AC mode / Battery Mode / Battery Fault / Overload					
Audible Alarms	Battery Mode / Battery Low /Overload					
COMMUNICATIONS INTERFACE						
Communication Port	None		RS232 2)			
ENVIRONMENTAL						
Operation Temperature	0~40°C / 32~104°F					
Storage Temperature	-20~60°C / -4~140°F					
Audible Noise	< 40 dBA					
PHYSICAL						
Dimensions (Physical/Packing)	(in)	10.2×3.8×5.3 / 11.8×5.5×8.6	12.5×3.8×5.3 / 14.3×5.5×8.7			
(L×W×H)	(mm)	260×97×135 / 299×139×218	320×97×135 / 364×139×220			
Weight (Net/Gross)	(lbs)	9.2/10.1	13.9 / 15.0		14.3 / 15.4	
	(kg)	4.2/4.6	6.3 / 6.8		6.5 / 7.0	
CONFORMANCE						
Approvals	UL / cUL(1X0V) ; CE , GOST-R(2X0V)					

Specifications are subject to change without notice.

1) TS-B models only.

2) TS-B models only. You can purchase RS232 to USB cable.

* Models of these nominal voltages are available, however each model is present to certain nominal voltage, which is not user-changeable.

** Typical backup time represents backup time for load equivalent to one PC and one 15" LCD monitor. Values here are for reference only.



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TS1000/ TS1000B/ TS1250/ TS1250B/ TS1700/ TS1700B/ TS2250/ TS2250B

Specifications

Model Name	TS1000 / TS1000B		TS1250 / TS1250B		TS1700 / TS1700B		TS2250 / TS2250B	
Topology	Line-Interactive							
On-battery Output Waveform	Simulated Sine Wave							
Maximum Capacity (VA/W)	800VA / 480W		1000VA / 600W		1500VA / 900W		2000VA / 1200W	
INPUT								
Nominal Input Voltage	110/120 or 220/230/240Vac*							
Nominal Input Frequency	50Hz / 60Hz Auto Sensing							
Input Voltage Range	Rated Voltage +/- 25%							
Input Protection	Fuse; Circuit Breaker for TS1250 and TS1700 models with US outlets							
Input Inlet	IEC-320-C14							
OUTPUT								
Nominal Output Voltage	110/120 or 220/230/240Vac*							
Output Voltage Regulation	Rated Voltage +/- 5% (on battery)							
Transfer Time(Typical)	4 ms							
Start on Battery	Yes							
Auto Restart	Yes							
Automatic Voltage Regulation (AVR)	When the input voltage is 9 % to 25 % lower than the mains electricity, automatically raise the voltage by 15 % When the input voltage is 9 % to 25 % higher than the mains electricity, automatically lower the voltage by 13 %							
Number of Outlets	2 Battery backup outlets (IEC-320-C13) 2 Battery backup outlets (NEMA 5-15R)		4 Battery backup outlets + 1 Bypass outlets (IEC-320-C13) 4 Battery backup outlets + 1 Bypass outlets (NEMA 5-15R)		4 Battery backup outlets + 1 Bypass outlets (IEC-320-C13) 5 Battery backup outlets (NEMA 5-15R)		5 Battery backup outlets (IEC-320-C13) 5 Battery backup outlets (NEMA 5-15R)	
PROTECTION								
Data Line Surge Protection	RJ11/RJ45 1)							
Surge Energy Rating	220/230/240Vac 460 Joules(IEC outlets models) ; 110/120 Vac TS1000/TS1000B 265 Joules(NEMA outlets models) TS1250/TS1250B, TS1700/TS1700B, TS2250/TS2250B 1185 Joules(NEMA outlets modules)							
Overload Protection	UPS automatic power off if overload exceeds 110% of nominal at 60 seconds and 130% at 3 seconds.							
Short Circuit Protection	UPS output cut off immediately or input fuse protection							
Auto discharge protection								
BATTERY								
User Replaceable Battery	12V / 34W x 1		12V / 7.2Ah x 2				12V / 34W x 2	
Typical Backup Time**	33 min		40 min		42 min		45 min	
Recharge Time to 90% (Typical)	< 4 Hours							
ADVANCED WARNINGS / DIAGNOSTICS								
Front Panel LEDs	Power Status / AC mode / Battery Mode / Battery Fault / Overload							
Audible Alarms	Battery Mode / Battery Low /Overload							
COMMUNICATIONS INTERFACE								
Communication Port	RS232 ²⁾						RS232 ²⁾ for 220/230/240V models USB ¹⁾ for 110/120V models	
ENVIRONMENTAL								
Operation Temperature	0~40°C / 32~104°F							
Storage Temperature	-20~60°C / -4~140°F							
Audible Noise	< 40 dBA							
PHYSICAL								
Dimensions (Physical/Packing)	(in)	12.5×3.8×5.3 / 14.3×5.5×8.7	15×5.1×7.5 / 19.1×9.6×12.2					
(L×W×H)	(mm)	320×97×135 / 364×139×220	382×130×192 / 485×244×310					
Weight (Net/Gross)	(lbs)	14.7 / 15.9	28.6 / 32.6		35.0 / 38.0			
	(kg)	6.7 / 7.2	13.4 / 14.8		15.9 / 17.3			
CONFORMANCE								
Approvals	UL / cUL(1X0V) ; CE , GOST-R(2X0V)							

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1) TS-B models only.

2) TS-B models only. You can purchase RS232 to USB cable.

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CS2308

