Thunder Shield Series

TS650B TS1250B

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

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!

Features

- 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
- Generator compatible (Features of TSB models only)

Windows Mac OS X Simulated Sine Wave

For Mac OS support please purchase the RS232 to USB cable.

Thunder Shield Series

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

Front Panel

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

1. Audible Alarm
   - Mains fault
   - Battery low
   - Overload
   - Battery fault
2. LED
   - AC mode (LED is on)
   - Battery mode (LED flashes slowly)
   - Battery fault (LED flashes rapidly)
   - Overload (LED flashes rapidly)
3. ON/OFF/Test/Mute button

Rear Panel

TS2250B US

110V
120V

- A Input
- B UPS Output
- C Communication Port
- D Data Line Protection
- E Circuit Breaker

Rear Panel

TS400 / TS500 / TS650 / TS1000

110V
120V

220V
230V
240V

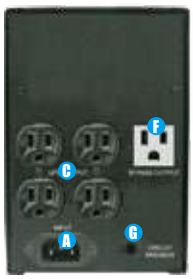
TS500B / TS650B / TS1000B

110V
120V

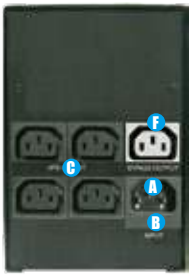
220V
230V
240V

- A Input
- B Fuse
- C UPS Output
- D Communication Port
- E Data Line Protection

TS1250



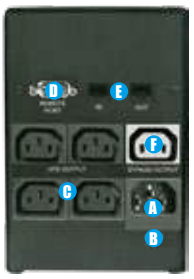
110V
120V



220V
230V
240V

TS1250B

110V
120V

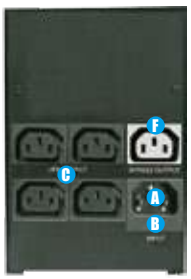


220V
230V
240V

- A Input
- B Fuse
- C UPS Output
- D Communication Port
- E Data Line Protection
- F Bypass Output
- G Circuit Breaker

TS1700 / TS2250

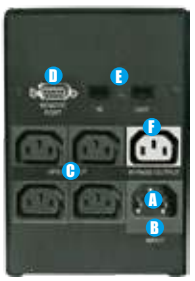
110V
120V



220V
230V
240V

TS1700B / TS2250B IEC

110V
120V



220V
230V
240V

- A Input
- B Fuse
- C UPS Output
- D Communication Port
- E Data Line Protection
- F Bypass Output (UPS Output for TS2250 / TS2250B)
- G Circuit Breaker

Thunder Shield Series

TS400 / TS500 / TS500B / TS650 / TS650B

Specifications

Model Name		TS400	TS500	TS500B	TS650	TS650B
Topology		Line-Interactive, Low Frequency				
On-battery Output Waveform		Simulated Sine Wave				
Maximum Capacity (VA / W)		400VA / 240W	500VA / 300W		600VA / 360W	
INPUT						
Nominal Input Voltage		110 / 120Vac or 220 / 230 / 240Vac(!!)				
Nominal Input Frequency		50Hz / 60Hz Auto Sensing				
Input Voltage Range		Rated Voltage ±25%				
OUTPUT						
Nominal Output Voltage		110 / 120Vac or 220 / 230 / 240Vac(!!)				
Output Voltage Regulation		Rated Voltage ±5% (on battery)				
Transfer Time(Typical)		2~4 ms				
Start on Battery		Yes				
Auto Restart		Yes				
Automatic Voltage Regulation (AVR)		AVR increases the output voltage by 15% while the input voltage decreases by 9 % to 25 % AVR decreases the output voltage by 13% while the input voltage increases by 9 % to 25 %				
Number of Outlets		2 Battery backup outlets (IEC 10A) 2 Battery backup outlets (NEMA 15A)				
PROTECTION						
Data Line Surge Protection		None	RJ11 / RJ45 *1			
Surge Energy Rating		460 Joules(IEC models), 265 Joules(NEMA models)				
Overload Protection		UPS shuts down at 110% load after 60 secs or 130% load after 3 secs				
Over Current Protection		Fuse				
Discharge Protection		Keylock				
BATTERY						
Configuration		12V (12V 4.5AH×1)	12V (12V 7.2AH×1)			
Typical Backup Time**		15 min	19 min		17 min	
Recharge Time to 90% (Typical)		< 4 Hours				
ADVANCED WARNINGS / DIAGNOSTICS						
Front Panel		AC Mode / Battery Mode / Battery Fault / Overload				
Audible Alarms		Battery Mode / Battery Low / Overload				
COMMUNICATION INTERFACE						
Communication Port		None	RS232 *2			
ENVIRONMENTAL						
Operation Temperature		0~40°C / 32~104°F				
Storage Temperature		-20~60°C / -4~140°F				
Relative Humidity		0~95% Non condensing				
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, CE, GOST-R				

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 preset to a certain nominal voltage, which is not user-changeable. E.g. a model with the factory setting for 230Vac can only work in the countries with 230Vac power and won't work in the countries with 110Vac power, and 110Vac model can only work in the countries with 110Vac power, not in the countries with 230Vac power.

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

Windows Mac OS X Simulated Sine Wave

For Mac OS support please purchase the RS232 to USB cable.

Thunder Shield Series

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

Specifications

Model Name		TS1000	TS1000B	TS1250	TS1250B	TS1700	TS1700B	TS2250	TS2250B
Topology		Line-Interactive, Low Frequency							
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%							
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)		AVR increases the output voltage by 15% while the input voltage decreases by 9 % to 25 % AVR decreases the output voltage by 13% while the input voltage increases by 9 % to 25 %							
Number of Outlets		2 Battery backup + 1 Bypass (IEC 10A) 2 Battery backup + 1 Bypass (NEMA 15A)		4 Battery backup + 1 Bypass (IEC 10A) 4 Battery backup + 1 Bypass (NEMA 15A)		4 Battery backup + 1 Bypass (IEC 10A) 5 Battery backup (NEMA 15A)		5 Battery backup (IEC 10A) 5 Battery backup (NEMA 15A)	
PROTECTION									
Data Line Surge Protection		RJ11 / RJ45 *1							
Surge Energy Rating		220 / 230 / 240Vac 460 Joules(IEC models), 110 / 120 Vac TS1000 / TS1000B 265 Joules (NEMA models) TS1250 / TS1250B, TS1700 / TS1700B, TS2250 / TS2250B 1185 Joules (NEMA modules)							
Overload Protection		UPS shuts down at 110% load ater 60 secs or 130% load after 3 secs							
Over Current Protection		Fuse (Circuit breakers for TS1250 / 1700 models with NEMA outlets)							
Discharge Protection		Keylock							
BATTERY									
Configuration		12V (12V 34W×1)		24V (12V 7.2AH×2)				24V (12V 34W×2)	
Typical Backup Time**		33 min		42 min				45 min	
Recharge Time to 90% (Typical)		< 4 Hours							
ADVANCED WARNINGS / DIAGNOSTICS									
Front Panel LEDs		AC Mode / Battery Mode / Battery Fault / Overload							
Audible Alarms		Battery Mode / Battery Low / Overload							
COMMUNICATION 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							
Relative Humidity		0~95% Non condensing							
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, CE							

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 preset to a certain nominal voltage, which is not user-changeable. E.g. a model with the factory setting for 230Vac can only work in the countries with 230Vac power and won't work in the countries with 110Vac power, and 110Vac model can only work in the countries with 110Vac power, not in the countries with 230Vac power.

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

Windows Mac OS X Simulated Sine Wave

For Mac OS support please purchase the RS232 to USB cable.