Manuals+ — User Manuals Simplified.

TRIPP LITE SMART1050SLT SmartPro SLT Intelligent Line-Interactive UPS Systems Owner's Manual

Contents

TRIPP LITE SMART1050SLT SmartPro SLT Intelligent Line-Interactive UPS Systems

Important Safety Instructions

SAVE THESE INSTRUCTIONS
This manual contains instructions and warnings that should be followed during the installation, operation and storage of all Tripp Lite UPS Systems. Failure to heed these warnings may affect your warranty.

UPS Location Warnings

- Install your UPS indoors, away from excess moisture or heat, conductive contaminants, dust or direct sunlight.
- For best performance, keep the indoor temperature between between 32º F and 104º F (0º C and 40º C).
- Leave adequate space around all sides of the UPS for proper ventilation.

UPS Connection Warnings

- Connect your UPS directly to a properly grounded AC power outlet. Do not plug the UPS into itself; this will damage the UPS.
- Be sure to use the proper overcurrent protection for the installation, in accordance with the plug/equipment rating.
- Do not modify the UPS's plug, and do not use an adapter that would eliminate the UPS's ground connection.
- Do not use extension cords to connect the UPS to an AC outlet.
- The electrical outlets supplying power to the equipment should be installed near the equipment and easily accessible.
- If the UPS receives power from a motor-powered AC generator, the generator must provide clean, filtered, computer-grade output.

Equipment Connection Warnings

- Use of this equipment in life support applications where failure of this equipment can reasonably be expected to cause the failure of the life support equipment or to significantly affect its safety or effectiveness is not recommended. Do not use this equipment in the presence of a flammable anesthetic mixture with air, oxygen

or nitrous oxide.

- Do not connect surge protectors or extension cords to the output of your UPS.This might damage the UPS and will void the surge suppressor and UPS warranties.

Battery Warnings

Batteries can present a risk of electrical shock and burn from high short-circuit current. Observe proper precautions. There are no user-serviceable parts inside the UPS. Do not open the UPS except to perform battery replacement. Do not open batteries. Do not short or bridge the battery terminals with any object. Unplug and turn off the UPS before performing battery replacement. Use tools with insulated handles. Battery replacement should be performed only by authorized service personnel using the same number and type of batteries (Sealed Lead-Acid). Do not dispose of the batteries in a fire. The batteries are recyclable. Refer to your local codes for disposal requirements or visit **tripplite.com/support/recycling**-program for recycling information. Tripp Lite offers a complete line of UPS System Replacement Battery Cartridges (R.B.C.).Visit Tripp Lite on the Web at **tripplite.com/support/battery/index**.cfm to locate the specific replacement battery for your UPS.

Quick Installation

1. With the UPS disconnected from utility power, use a small tool to set the Voltage Dip Switch to match your input voltage. (All models are preset to the 120V setting.)
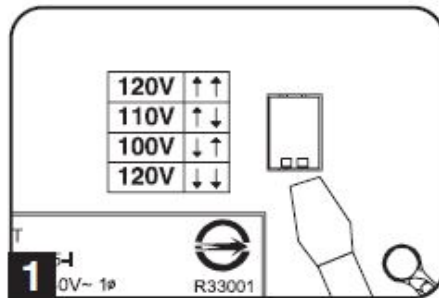
2. Plug the UPS into an outlet on a dedicated circuit.
   NOTE! after you plug the UPS into a live AC outlet, the UPS will automatically charge its batteries,* but will not supply power to its outlets until it is turned ON
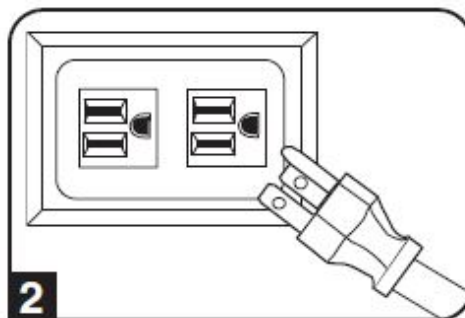

3. **Plug your equipment into the UPS.**
   All outlets provide battery backup and surge protection for computers, monitors and other critical devices. Do not plug high-draw equipment such as laser printers into the battery backup/ surge protection outlets.
   **Note:** Your UPS is designed to support electronic equipment only. You will overload the UPS if the total VA rating for all equipment connected through the battery backup/surge protection outlets exceeds the UPS's Output Capacity. To find your equipment's VA ratings, look on their nameplates. If the equipment is listed in amps, multiply the number of amps by 120 to determine VA.
   (Example: 1 amp × 120 = 120 VA). If you are unsure if you have overloaded the UPS's outlets, see "OUTPUT LOAD LEVEL" LED description.
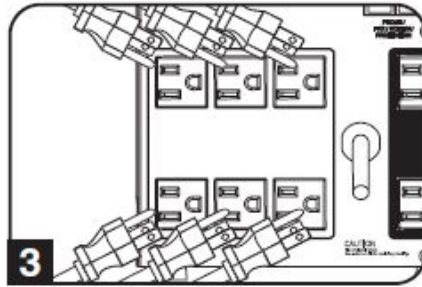
4. **Turn the UPS ON.**

Press and hold the "STANDBY" button for one second. The alarm will beep once briefly after one second has passed. Release the button.
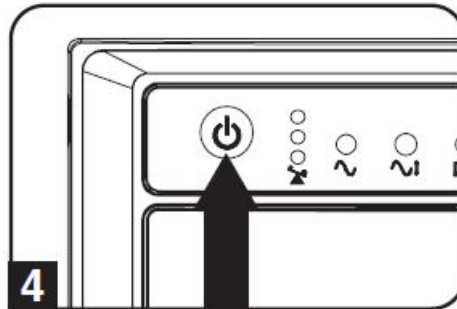

Optional Installation

1. **USB and RS-232 Serial Communications**

Use the included USB cable 1a and/or DB9 serial cable 1b to connect the communication port on your computer to the communication port of your UPS. Install on your computer the Tripp Lite PowerAlert Software appropriate to your computer's operating system. Consult your PowerAlert manual for more information.
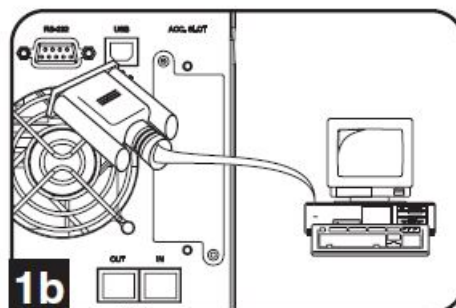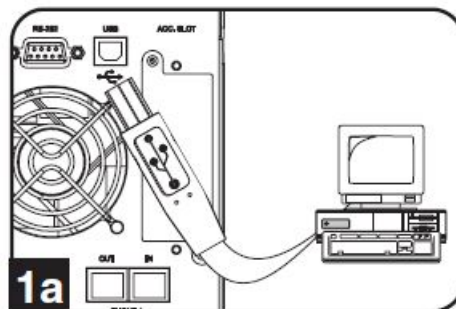
2. **Telephone/Network Protection Jacks**

Your UPS has jacks that protect against surges over a telephone line or a network dataline. Using telephone network data cables, connect your wall jack to the UPS jack marked "IN." Connect your equipment to the UPS jack marked "OUT." Make sure the equipment you connect to the UPS's jacks is also protected against surges on the AC line. Not compatible with PoE (Power Over Ethernet) applications.
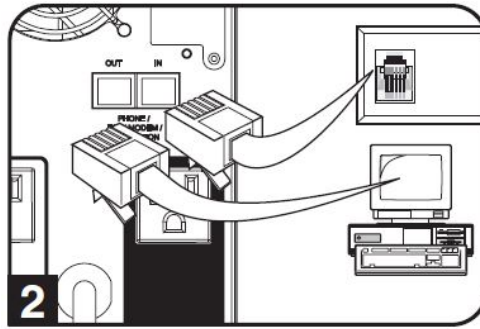
Basic Operation

Buttons
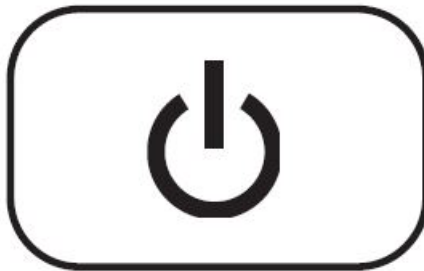
"STANDBY" Button

- To turn the UPS ON: with the UPS plugged into a live AC wall outlet,* press and hold the STANDBY button for about one second.** Release the button. If utility power is absent, you can "cold-start" the UPS (i.e.: turn it ON and supply power for a limited time from its batteries***) by pressing and holding the STANDBY button for about two seconds.**
- To turn the UPS OFF: with the UPS ON and receiving utility power, press and hold the STANDBY button for one second.** Then unplug the UPS from the wall outlet. The UPS will be completely OFF.
- After you plug the UPS into a live AC outlet, the UPS will automatically charge its batteries, but will not supply power to its outlets until it is turned ON. ** The alarm will beep once briefly after the indicated interval has passed. *** If fully charged.

"MUTE/TEST" Button

- To Silence (or "Mute") UPS Alarms: briefly press and release the MUTE/TEST button.*
  Note: continuous alarms (warning you to immediately shut down connected equipment) cannot be silenced.
- To Run a Self-Test: with your UPS plugged in and turned ON, press and hold the MUTE/TEST button for two

seconds.* Continue holding the button until the alarm beeps several times and the UPS performs a self test. See "Results of a Self-Test" below.

Note: you can leave connected equipment on during a self-test. Your UPS, however, will not perform a self-test if it is not turned ON (see "STANDBY" Button description).

CAUTION! Do not unplug your UPS to test its batteries. this will remove safe electrical grounding and may introduce a damaging surge into your network connections.

Results of a Self-Test: The test will last approximately 10 seconds as the UPS switches to battery to test its load capacity and battery charge. The "POWER" LED will be flashing and the "OUTPUT LOAD LEVEL" and "BATTERY CHARGE" LEDs will be lit and the UPS alarm will sound.

- If the "OUTPUT LOAD LEVEL" LED remains lit red and the alarm continues to sound after the test, the UPS's outlets are overloaded. To clear the overload, unplug some of your equipment and run the self test repeatedly until the "OUTPUT LOAD LEVEL" LED is no longer lit red and the alarm is no longer sounding.

  CAUTION! Any overload that is not corrected by the user immediately following a self-test may cause the UPS to shut down and cease supplying output power in the event of a blackout or severe brownout.

- If the "BATTERY WARNING" LED remains lit and the alarm continues to sound after the test, the UPS batteries need to be recharged or replaced. Allow the UPS to recharge continuously for 12 hours, and repeat the self-test. If the LED remains lit, contact Tripp Lite for service. If your UPS requires battery replacement, visit **tripplite.com/support/battery/index**.cfm to locate the specific Tripp Lite replacement battery for your UPS.

- The alarm will beep once briefly after the indicated interval has passed.

Indicator Lights

All Indicator Light descriptions apply when the UPS is plugged into a wall outlet and turned ON.
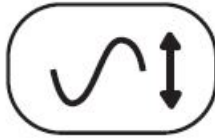
"POWER" LED: this green LED lights continuously when the UPS is ON and supplying connected equipment with AC power from a utility source. The LED flashes and an alarm sounds (4 short beeps followed by a pause) to indicate the UPS is operating from its internal batteries during a blackout or severe brownout. If the blackout or severe brownout is prolonged, you should save files and shut down your equipment since internal battery power will eventually be depleted. See "BATTERY CHARGE" LED description below.

"VOLTAGE CORRECTION" LED: this green LED lights continuously whenever the UPS is automatically correcting high or low AC voltage on the utility line without the assistance of battery power. The UPS will also emit a slight clicking noise. These are normal, automatic operations of the UPS, no action is required on your part.

"OUTPUT LOAD LEVEL" LEDs: These multicolored LEDs indicate the approximate electrical load of equipment connected to the UPS's AC outlets: green (light load), yellow (medium load) and red (overload). If the red LED is either illuminated continuously or flashing, clear the overload immediately by unplugging some of your equipment from the outlets until the yellow or green LED illuminates. CAUTION! Any overload that is not corrected by the user immediately may cause the UPS to shut down and cease supplying output power in the event of a blackout or severe brownout.

"BATTERY CHARGE" LEDs: When the UPS is operating from utility power, these LEDs indicates the approximate charge state of the UPS's internal batteries: red indicates the batteries are beginning to charge; yellow indicates the batteries are roughly midway through charging; and green indicates the batteries are fully charged. When the UPS is operating from battery power during a blackout or severe brownout, these multicolor LEDs indicate the approximate amount of energy (ultimately affecting runtime) that the UPS's batteries will provide: red indicates a low level of energy; yellow indicates a medium level of energy; and green indicates a high level of energy. Since the runtime performance of all UPS batteries will gradually deplete over time, it is recommended that you periodically perform a self-test (see "MUTE/TEST" Button description) to determine the energy level of your UPS batteries BEFORE a blackout or severe brownout occurs. During a prolonged blackout or severe brownout, you should save files and shut down your equipment since battery power will eventually be

depleted. When the red LED illuminates and an alarm sounds continuous, this indicates that the UPS's batteries are nearly out of power and UPS shutdown is imminent.
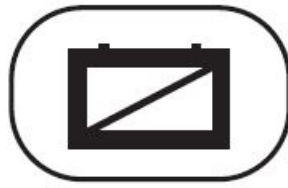

"BATTERY WARNING" LED: this LED lights yellow and an alarm sounds intermittent after you initiate a self test (See "MUTE/TEST" Button description) to indicate the UPS batteries need to be recharged or replaced. Allow the UPS to recharge continuously for 12 hours, and repeat the self-test. If the LED continues to light, contact Tripp Lite for service. If your UPS requires battery replacement, visit tripplite.com.

**"SITE WIRING FAULT" LED**: This yellow LED will be lit if the UPS detects a problem with the wiring of the AC outlet you connect it to. If this occurs, have the outlet inspected by a qualified electrician. Note that while the UPS will detect many common wiring faults, including a missing ground, reversed polarity and overloaded neutral circuits, it cannot detect every conceivable wiring problem.

Other UPS Features
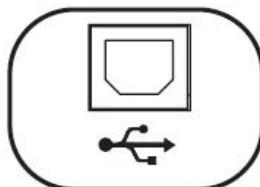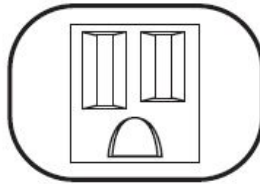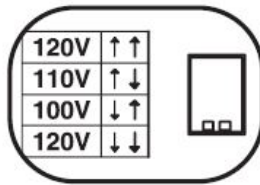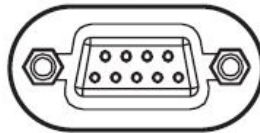
Voltage DIP Switch: This switch enables you to set the UPS to match actual input voltage. If the Voltage DIP Switch is set above or below input voltage, the UPS will treat the input as a continuous overvoltage or undervoltage condition, and will automatically adjust input voltage to match the Voltage Dip Switch setting. This will cause constant, unnecessary wear on the UPS system. Note: The Voltage DIP Switch must be set with the UPS turned OFF and disconnected from utility power. If the switch is set while the UPS is connected to utility power, the setting will not take effect.

AC Receptacles: These output receptacles provide your connected equipment with AC line power during normal operation and battery power during power outages. The UPS protects equipment connected to these receptacles against damaging surges and line noise. Select outlets provide both battery backup and surge protection for computers, monitors and other critical devices into these outlets. Select outlets provide surge protection only for printers and other non-essential devices that draw large amounts of power.

Communication Ports (USB and RS-232): These ports connect your UPS to any workstation or server. Use with Tripp Lite's PowerAlert Software and included cables to enable your computer to automatically save open files and shut down equipment during a blackout. Also use PowerAlert Software to monitor a wide variety of AC line power and UPS operating conditions. Consult your PowerAlert Software manual or contact Tripp Lite Customer Support for more information. See "USB Communications" and "RS-232 Serial Communications" in the "Optional Installation" section for installation instructions.
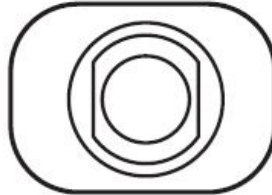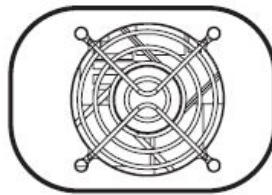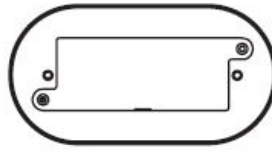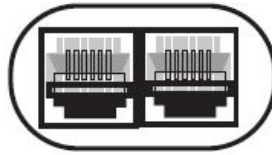
Telephone/Network Protection Jacks: These jacks protect your equipment against surges over a telephone/network data line. Connecting your equipment to these jacks is optional. Your UPS will work properly without this connection. Not compatible with PoE (Power Over Ethernet) applications.

Accessory Slot: Remove the small cover panel from this slot to install optional accessories to remotely monitor and control your UPS. Refer to your accessory's manual for installation instructions. Visit tripplite.com for more information, including a list of available SNMP, networking management and connectivity products.

Fan: The fan runs continuously to cool the UPS system's internal components. It will operate at a higher speed when the UPS is in battery backup mode, charge mode, carrying a heavy electrical load or an over-temperature condition.

Input Breaker: Protect your electrical equipment from overcurrent draw from the UPS load. If this breaker trips, remove some of the load, then reset it by pressing the breaker in.

Battery Replacement
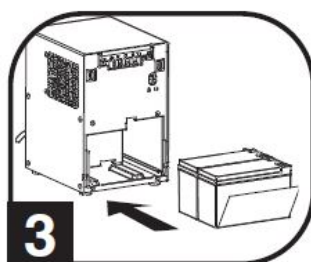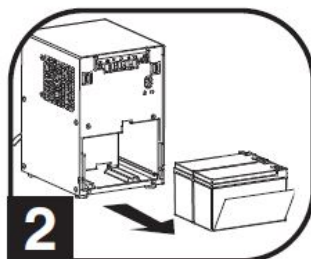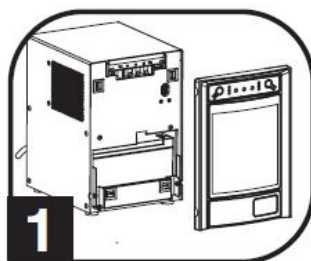
Battery Replacement Door: Under normal conditions, the original battery in your UPS will last several years. Battery replacement should be performed only by qualified service personnel. Refer to "Battery Warnings" in the Safety section. Should your UPS require battery replacement, visit Tripp Lite on the Web at tripplite.com/support/battery/index.cfm to locate the specific replacement battery for your UPS.

- **Carefully pull the front panel away from the UPS.**

  Place front panel on top of the unit. Remove the battery support bar.

- **Remove old batteries.**

  Carefully pull the batteries from the UPS and disconnect them.

- **Connect new batteries.**

  Connect the new batteries in exactly the same manner as the old ones: positive (red) connectors together and negative (black) connectors together. Carefully push batteries back into the UPS.

- **Reassemble UPS.**

  Reinstall the battery support bar and replace the front panel.

UPS and Battery Recycling
Please recycle Tripp Lite Products. The batteries used in Tripp Lite products are sealed Lead-Acid batteries. These batteries are highly recyclable. Please refer to your local codes for disposal requirements. You can call Tripp Lite for recycling info at 1-773-869-1234. You can go the Tripp Lite Website for up-to-date information on recycling the batteries or any Tripp Lite product. Please follow this link: **tripplite.com/support/recycling-program/**

Specifications

Model	SMART1050SLT	SMART1050SLTAA	SMART1500SLT

Nominal voltage and input range	120V~ 95-145V (default), 110V~, 100V~	120V~ 95-145V (default), 110V~, 100V~	120V~ 95-145V (default), 110V~, 100V~
Nominal input frequency and tolerance	50/60 Hz (+/-5%)	50/60 Hz (+/-5%)	50/60 Hz (+/-5%)
Nominal output voltage	120V~ Sinusoidal in Line Mode and 120V~ Sinusoidal in Battery Mode	120V~ Sinusoidal in Line Mode and 120V~ Sinusoidal in Battery Mode	120V~ Sinusoidal in Line Mode and 120V~ Sinusoidal in Battery Mode
Nominal Output Frequency	50/60 Hz (+/-0.5 Hz)	50/60 Hz (+/-0.5 Hz)	50/60 Hz (+/-0.5 Hz)
Output Voltage Regulation in Line Mode	120V~ (+15% / -13%)	120V~ (+15% / -13%)	120V~ (+15% / -13%)
Output Voltage Regulation in Battery Mode	120V~ (+/- 5%)	120V~ (+/- 5%)	120V~ (+/- 5%)
Nominal Output Power in W / VA	650W / 1050VA	650W / 1050VA	950W / 1500VA
Output Voltage Waveform	Sinusoidal in Line Mode and Sinusoidal in Battery Mode	Sinusoidal in Line Mode and Sinusoidal in Battery Mode	Sinusoidal in Line Mode and Sinusoidal in Battery Mode
Maximum Output Current @ Power Factor (P. F.)	5.4A @ 120V~ (default), 5.9A @ 110V~, 6.5A @ 100V~	5.4A @ 120V~ (default), 5.9A @ 110V~, 6.5A @ 100V~	7.5A @ 120V~ (default), 8.2A @ 110V~, 9A @ 100V~
	P.F. = 0.62	P.F. = 0.62	P.F. = 0.63
Maximum Harmonic Distortion of Output Voltage at Full Resistive Load	3%	3%	3%
Efficiency with Nominal Load	95%	95%	95%

Maximum Operating Altitude at 100% of Nominal Power	6562 ft. (2000 m)	6562 ft. (2000 m)	6562 ft. (2000 m)
Online Overload Capability	125% @ 10 minutes	125% @ 10 minutes	125% @ 10 minutes
Overload Capacity in Battery Mode	105% @ 0.5 Seconds	105% @ 0.5 Seconds	105% @ 0.5 Seconds
Current Limitation	–	–	Input 15A
Autonomy Time at Full Load	7 Minutes @ 650 W	7 Minutes @ 650 W	8 Minutes @ 900 W
Battery Recharge Time	6 Hours	6 Hours	6 Hours
Transfer Time	4 Milliseconds Typical (6 Milliseconds Max.)	4 Milliseconds Typical (6 Milliseconds Max.)	4 Milliseconds Typical (6 Milliseconds Max.)
Outlets	8 x 5-15R Outlets with Battery Backup, Regulation and Surge Protection	8 x 5-15R Outlets with Battery Backup, Regulation and Surge Protection	8 x 5-15R Outlets with Battery Backup, Regulation and Surge Protection
Maximum Input Current	6.1A / 6.6A / 7.2A	6.1A / 6.6A / 7.2A	8.6A / 9.3A / 10.1A

Storage & Service

Storage

CAUTION! Your UPS has an internal power source. Its outlets may still deliver current, even after the UPS is unplugged, until the UPS is completely turned OFF (deactivated). Before storing your UPS, turn it completely OFF: with the UPS ON and receiving utility power, press and hold the STANDBY button for one second (an alarm will beep once briefly after the interval has passed); then, unplug the UPS from the wall outlet. If you store your UPS for an extended period of time, recharge the UPS batteries once every three months: plug the UPS into a wall outlet; allow it to charge for 4 to 6 hours; and then unplug it and place it back in storage. Note: after you plug the UPS in, it will automatically begin charging its batteries; however, it will not supply power to its outlets (see Quick Installation section). If you leave your UPS batteries discharged for an extended period of time, they will suffer a permanent loss of capacity.

Service
A variety of Extended Warranty and On-Site Service Programs are also available from Tripp Lite. For more information on services, visit **tripplite.com/support**. Before returning your UPS for service, follow these steps:

1. Review the installation and operation instructions in this manual to ensure that the service problem does not originate from a misreading of the instructions.

2. If the problem continues, do not contact or return the UPS to the dealer. Instead, visit tripplite.com/support.

3. If the problem requires service, visit tripplite.com/support and click the Product Returns link. From here you can request a Returned Material Authorization (RMA) number, which is required for service. A simple on-line form will ask for your unit's model and serial numbers along with other general purchaser information. The RMA number, along with shipping instructions, will be emailed to you. Any damages (direct, indirect, special or consequential) to the product incurred during shipment to Tripp Lite or an authorized Tripp Lite service center are not covered under warranty. Products shipped to Tripp Lite or an authorized Tripp Lite service center must have transportation charges prepaid. Mark the RMA number on the outside of the package. If the product is within its warranty period, enclose a copy of your sales receipt. Return the product for service using an insured carrier to the address given to you when you request the RMA.

Product Registration

Visit **tripplite.com/warranty** today to register your new Tripp Lite product. You'll be automatically entered into a drawing for a chance to win a FREE Tripp Lite product! No purchase necessary. Void where prohibited. Some restrictions apply. See website for details.

FCC Part 68 Notice (United States Only)
If your Modem/Fax Protection causes harm to the telephone network, the telephone company may temporarily discontinue your service. If possible, they will notify you in advance. If advance notice isn't practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC. Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper operation of your equipment. If it does, you will be given advance notice to give you an opportunity to maintain uninterrupted service. If you experience trouble with this equipment's Modem/Fax Protection, please visit **tripplite.com/support** for repair/warranty information. The telephone company may ask you to disconnect this equipment from the network until the problem has been corrected or you are sure the equipment is not malfunctioning. There are no repairs that can be made by the customer to the Modem/Fax Protection. This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs. (Contact your state public utility commission or corporation commission for information.)
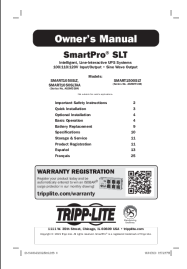
Regulatory Compliance Identification Numbers
For the purpose of regulatory compliance certifications and identification, your Tripp Lite product has been assigned a unique series number. The series number can be found on the product nameplate label, along with all required approval markings and information. When requesting compliance information for this product, always refer to the series number. The series number should not be confused with the marking name or model number of the product. Tripp Lite follows a policy of continuous improvement. Product specifications are subject to change without notice. Photos and illustrations may differ slightly from actual products.

Note on Labeling
Two symbols are used on the label. V~ : AC Voltage V : DC Voltage

Documents / Resources

TRIPP LITE SMART1050SLT SmartPro SLT Intelligent Line-Interactive UPS Systems [pdf]
Owner's Manual
SMART1050SLT, SMART1500SLT, SmartPro SLT Intelligent Line-Interactive UPS Systems

References

- **Eaton - Power and Connectivity Solutions**
- **Eaton - Power and Connectivity Solutions**
- **Help Center | Eaton**
- **Help Center | Tripp Lite**
- **Tripp Lite | Tripp Lite**
- **Tripp Lite - Power and Connectivity Solutions**
- **UPS & Battery Recycling | Eaton**
- **UPS & Battery Recycling | Eaton Tripp Lite**
- **Product Registration | Eaton**

Manuals+,