

Owner's Manual

SmartPro®

120V Input/Output, Line-Interactive UPS Systems



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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 will void 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 32° F and 104° F (0° C and 40° 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.
- 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. Your warranty will be voided if anything other than Tripp Lite surge suppressors are used to connect your UPS to an outlet.
- If the UPS receives power from a motor-powered AC generator, the generator must provide clean, filtered, computer-grade output.

Equipment Connection Warnings

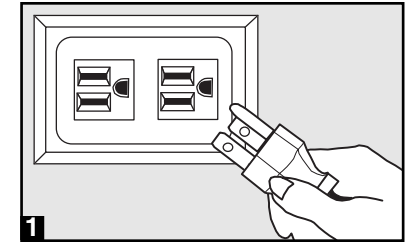
- Do not use Tripp Lite UPS Systems for life support appliances in which a malfunction or failure of a Tripp Lite UPS System could cause failure or significantly alter the performance of a life-support device.
- Do not connect surge suppressors or extension cords to the output of your UPS. This might damage the UPS and will void the surge suppressor and UPS warranties.

Battery Warnings

- Your UPS does not require routine maintenance. Do not open your UPS for any reason except battery replacement. There are no user-serviceable parts inside.
- Battery replacement must be performed by qualified service personnel. Because the batteries present a risk of electrical shock and burn from high short-circuit current, observe proper precautions. Unplug and turn off the UPS before performing battery replacement. Use tools with insulated handles, and replace the existing batteries with the same number and type of new batteries (Sealed Lead-Acid). Do not open the batteries. Do not short or bridge the battery terminals with any object.
- The UPS batteries are recyclable. Refer to local codes for disposal requirements, or in the USA only call 1-800-SAV-LEAD for recycling information. Do not dispose of the batteries in a fire.
- Only connect Tripp Lite battery packs of the appropriate type and correct voltage to the external battery connector.
- Do not connect or disconnect external batteries while the UPS is operating from battery.
- Do not attempt to connect external batteries to models without an external battery connector.

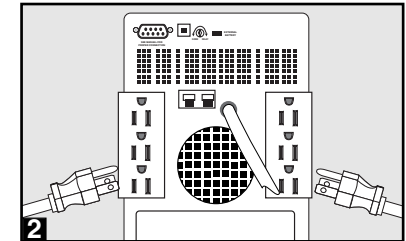
1 Connect your UPS to an electrical outlet.

Your UPS will run a self-test after it is plugged in. See Basic Operation to understand the results of its self-test.



2 Plug your computer, monitor and external modem into UPS/Surge outlets. Plug other equipment into Surge-only outlet(s).

Separate UPS/Surge and Surge-only outlet(s) are identified on the back of your UPS. Your UPS is designed to support only computer equipment. You will overload your UPS if you connect high power draw equipment such as household appliances, laser printers or surge suppressors to its UPS/Surge outlets.



3 Select UPS Operating Mode.*

Press the **ON/OFF** button to toggle your UPS between the **UPS** (“~” LED lit) and the **CHARGE ONLY** (“~” LED flashing) modes. Choose the operating mode based on your location:

USA, Canada & Western Europe:

- Leave the UPS in the **UPS** mode at all times.

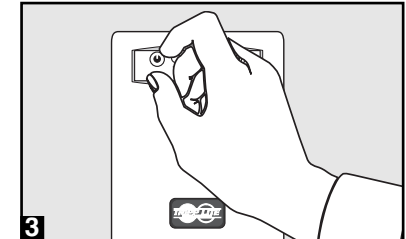
All Other Countries:

- Put the UPS in the **CHARGE ONLY** mode when you are not using connected equipment.

(WARNING! When set to “CHARGE ONLY,” the UPS will not provide battery backup during a blackout or brownout)

- Put the UPS in the **UPS** mode when you are using connected equipment.

**See Basic Operation section for a complete explanation of each mode.*

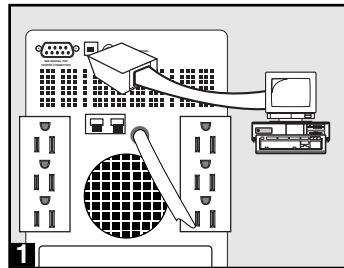


Quick Installation *optional*

These connections are optional. Your UPS will function properly without these connections.

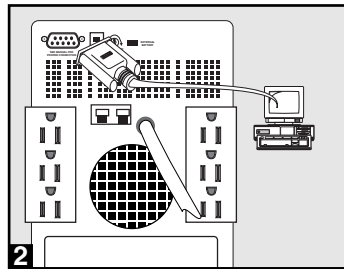
1 USB Communications

Use any USB cable to connect the USB port of your computer to the USB port of your UPS. Download the PowerAlert UPS monitoring software program appropriate for your operating system from www.tripplite.com and install it on your computer.



2 Serial Communications (Select Models Only)

Use the serial cable provided with your UPS to connect the DB9 port of your computer to the DB9 port of your UPS. Download the PowerAlert UPS monitoring software program appropriate for your operating system from www.tripplite.com and install it on your computer.

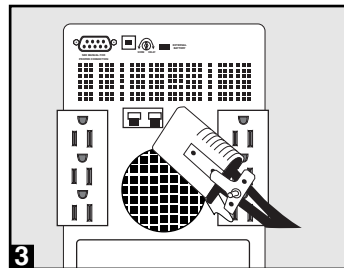


3 External Battery Connection (Select Models Only)

External batteries are only needed to extend runtime. Adding external batteries will increase recharge time as well as runtime.

The illustration shows the location of your UPS's External Battery Connector, where you will insert the battery pack cable. Complete installation and mounting instructions for your battery pack appear in the battery pack's owner's manual. Make sure that cables are fully inserted into their connectors. Small sparks may result during battery connection; this is normal.

If you connect more than one external battery, set the Charge Level switch to **EXTERNAL BATTERY**. Your UPS's charger will increase its output to handle the additional batteries.



Basic Operation

Buttons

Use the **ON/OFF** button to do three things:



Switch your UPS's Operating Mode: While your UPS is plugged into a live AC outlet, press the **ON/OFF** button and hold it until you hear a beep (about 2 seconds) to toggle between the following operating modes. Choose your UPS's operating mode based on the regional guidelines in Step 3 of the Quick Installation section.

- **UPS Mode:** ENABLES battery backup. **UPS Conditions:** The UPS charges its battery and supplies power at its receptacles when it is receiving utility line power. If utility power fails, the UPS provides power from its batteries. The “~” indicator light is lit. **Setting Advantages:** Provides battery backup during blackouts or brownouts.

- **CHARGE ONLY Mode:** DISABLES battery backup. **UPS Conditions:** The UPS charges its battery and supplies power at its receptacles when it is receiving utility line power. The “~” indicator light is flashing. **Setting Advantages:** Continues to charge the battery when power is present while turning OFF the inverter to prevent battery depletion during power outages when equipment is not in use.

Cold-Start Your UPS: You may “cold start” your UPS and use it as a stand-alone power source when utility power is not present, providing that the UPS battery is charged. To “cold start” your UPS, press and hold the **ON/OFF** button until you hear a beep (about 2 seconds), then release it. The “☐” indicator light will illuminate and AC power inverted from stored battery power will be provided at its receptacles.

Shut Down Your UPS: Press and hold the **ON/OFF** button when AC line power is absent (i.e. during a blackout, or when the UPS is unplugged) to deactivate your UPS.


Use the **MUTE/TEST** button to do two things:



Silence the UPS On-Battery Alarm: Press and hold this button to silence the UPS On-Battery alarm, a series of short beeps followed by a brief pause that is activated when the UPS is providing AC power from battery. Note: When the battery is nearly depleted, the Low Battery alarm—a continuous beep that cannot be silenced—will alert you to immediately shut down connected equipment.

Run a Self-Test: Your UPS performs a self-test whenever it is first plugged in. To have it run a self-test at another time, leave your connected equipment on. With your UPS plugged in and in the **UPS** mode, press and hold this button until you hear a beep (about 2 seconds) then release it.

Results of a Self-Test: All the LEDs will be lit and the UPS will emit several short beeps as it momentarily switches to battery to test its charge and load capacity. The test will last at most 10 seconds. If the inverter is overloaded, the “⚡” LED will stay lit and the UPS will continue to beep after the test; if this happens, remove some of the load

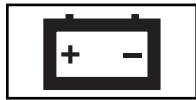
and run the self-test again. If the batteries seem weak, the “” LED will stay lit and the UPS will continue to beep after the test; if this happens, let UPS charge its batteries for 12 hours and repeat the test. If the condition persists, contact Tripp Lite for service. **CAUTION:** Do not unplug your UPS to test its batteries. This will remove safe electrical grounding and may introduce a damaging surge into your network connections.

Indicator Lights

All Indicator Light descriptions apply when the UPS is plugged into an AC outlet and turned on.



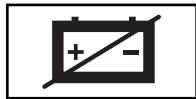
LINE POWER: This green light will turn ON whenever your UPS is receiving normal AC line power. It will flash while the UPS is in **CHARGE ONLY** mode to indicate that the UPS will not provide battery backup during a blackout or brownout.



BATTERY POWER: This light indicates battery charge level: Green means the batteries are fully charged or nearly so, yellow means the batteries are partially charged, and red means the batteries are nearly depleted.



VOLTAGE REGULATION: This light will turn ON when your UPS is automatically correcting high or low utility line voltage. The UPS will also click gently when this automatic voltage regulation is operating. These are both normal functions of your UPS, and no action is required on your part.

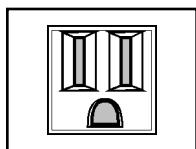


BATTERY CHARGE: This red light will turn ON continuously after the UPS runs a self-test to indicate that the UPS's battery is weakly charged. If it remains lit after you have allowed the UPS to charge for twelve hours and have run a second self-test, contact Tripp Lite for service.

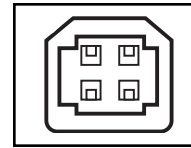


OVERLOAD: This light shows how heavy is the load on the UPS's inverter. Green indicates a light load, yellow indicates a medium load, and red indicates a heavy load (above 85% of the UPS's output capacity). If this light is flashing, the UPS is overloaded and will not be able to provide power to connected equipment during a power outage. Unplug equipment from the UPS until this LED stops flashing.

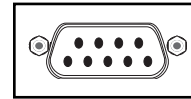
Other UPS Features



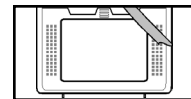
AC Receptacles: These output receptacles provide your connected equipment with AC line power during normal operation and battery power during power outages. The UPS protects equipment connected to these receptacles against damaging surges and line noise. If you have a USB or DB9 connection to your UPS, you can remotely reboot connected equipment by turning its receptacles OFF and ON using Tripp Lite software. Select models have a receptacle that may be remotely switched ON and OFF without interrupting power to



USB Port: The USB port connects your UPS to any USB workstation or server. Using this port, your UPS can communicate line-fail and low-battery status to your computer. Use with Tripp Lite software and any USB cable to automatically save open files and shut down equipment during a blackout. See PowerAlert manual.



DB9 Port (Select Models Only): The DB9 port connects your UPS to any workstation or server. Use with Tripp Lite's PowerAlert UPS monitoring software and a DB9 cable to enable your computer to automatically save open files and shut down equipment during a blackout. The UPS can also report power availability and UPS status, and select UPS models have other capabilities. See PowerAlert manual.



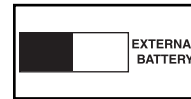
Battery Replacement Door: Under normal conditions, the original battery in your UPS will last several years. Battery replacement should be performed only by qualified service personnel. Refer to “Battery Warnings” in the Safety section on page 2.



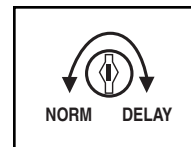
External Battery Connector (Select Models Only): Use to connect battery pack(s) for additional runtime. Refer to Specifications and/or the label next to the connector to determine the appropriate variety of battery pack to use. Refer to the battery pack instruction manual for complete installation information and important safety warnings.



Input Breaker: Prevents high input current from damaging the UPS or the attached load. If this breaker trips, make sure your UPS is connected to nominal 120V AC power before resetting the circuit breaker by pushing the breaker switch in to reset.



Charge Level Switch: This switch should be set to the left unless you have connected multiple external batteries, in which case you may set it to EXTERNAL BATTERY, increasing your charger's output so the additional batteries recharge faster.



Power Sensitivity Adjustment: This dial is normally set fully counter-clockwise, which enables the UPS to protect against waveform distortions in its AC input. When such distortion occurs, the UPS will normally switch to providing PWM sine wave power from its battery reserves for as long as the distortion is present. In areas with poor utility power or where the UPS's input power comes from a backup generator, chronic waveform distortion could cause the UPS to switch to battery too frequently, draining its battery reserves. You may be able to reduce how often your UPS switches to battery due to waveform distortion by experimenting with different settings for this dial. As the dial is turned clockwise, the UPS becomes more tolerant of variations in its input power's AC waveform. **NOTE:** The further the dial is adjusted clockwise, the greater the degree of waveform distortion the UPS will allow to pass to connected equipment. When experimenting with different settings for this dial, operate connected equipment in a safe test mode so that the effect on the equipment of any waveform distortions in the UPS's output can be evaluated without disrupting critical operations.

Storage & Service

Storage

All connected equipment should be turned off, then disconnected from the UPS to avoid battery drain. Unplug your UPS from its AC receptacle, then press and hold its ON/OFF button to deactivate it. Your UPS is now ready for storage. If you plan on storing your UPS for an extended period of time, fully recharge the UPS batteries once every three months by plugging the UPS into a live AC outlet and letting the UPS charge for 4 to 6 hours. If you leave your UPS batteries discharged for an extended period of time, they will suffer a permanent loss of capacity.

Service

If referring your UPS for service, contact your local Tripp Lite dealer or distributor. They will return you to a service center. Please carefully pack the UPS using the ORIGINAL PACKING MATERIAL that came with the unit. Enclose a letter describing the symptoms of the problem. If the UPS is within the warranty period, enclose a copy of your sales receipt.

Specifications

Tripp Lite has a policy of continuous improvement. Specifications are subject to change without notice.

Model:	SMART700	SMART750XL	SMART1050
Series:	AGSM1050PJR3	AGSM1500XPSR3	AGSM1050PJR3
Input Voltage/Frequency:	120V/60 Hz	120V/60 Hz	120V/60 Hz
Output Capacity (VA/Watts):	700/600	750/600	1050/800
Battery Runtime (Half Load/Full Load) Minutes:	20/6	42/18*	23/8
Battery Recharge Time:	2-4 hrs.	2-4 hrs.*	2-4 hrs.
Approvals:	UL, cUL, NOM, FCC B	UL, cUL, NOM, FCC A	UL, cUL, NOM, FCC B

Model:	SMART1050XL	SMART1500	SMART1500XL
Series:	AGSM1500XPSR3	AGSM1500XPSR3	AGSM1500XPSR3
Input Voltage/Frequency:	120V/60 Hz	120V/60 Hz	120V/60 Hz
Output Capacity (VA/Watts):	1050/800	1500/980	1500/980
Battery Runtime (Half Load/Full Load) Minutes:	26/6*	20/7	20/7*
Battery Recharge Time:	2-4 hrs.*	2-4 hrs.	2-4 hrs.*
Approvals:	UL, cUL, NOM, FCC A	UL, cUL, NOM, FCC A	UL, cUL, NOM, FCC A

*External battery packs can be connected to these models. External battery packs will increase both the battery runtime and the battery recharge time.

ALL UNITS:

Output Waveform Line Mode (filtered sine wave); Output Waveform Battery Mode (PWM sine wave); AC Surge Suppression (exceeds IEEE 587 Cat. A & B standards); AC Noise Attenuation (>40 dB at 1MHz); AC Protection Modes (H to N, H to G, N to G); Tripp Lite External Battery Model (BP36V27).

FCC CLASS A RADIO/TV INTERFERENCE NOTICE:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. Operation of this equipment is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. The user must use shielded cables and connectors with this product. Any changes or modifications to this product not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC CLASS B RADIO/TV INTERFERENCE NOTICE:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference using one or more of the following measures: reorient or relocate the receiving antenna; increase the separation between the equipment and the receiver; connect the equipment into an outlet on a circuit different from that which the receiver is connected; consult the dealer or an experienced radio/television technician for help. The user must use shielded cables and connectors with this product. Any changes or modifications to this product not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



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