

ErgonoFlex.

Operating Manual



Edition
2012 - 2013

www.ergonoflex-healthcare.be



Index



Mobile Technology Workstations – Powered

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PRELIMINARY



Summary of Warnings

- Please read all parts of this guide. When set-up is complete, do not discard guide. Please file guide in secure place for future reference.**
- Appropriate airflow is required for this unit to operate correctly under normal and fault conditions.
- Complies with requirements for outside the patient environment.
- Only authorized personnel, experienced in servicing electrical equipment should open the power system.
- DO NOT operate the power system without the covers completely installed and the connectors attached properly. The covers provide safety.
- Do not connect or disconnect the system while power is applied. Do not open or in any other manner change the access to the internal portion of the system while power is applied.
- Do not allow the system to come in contact with fluids. Do not operate the system if wet.
- The supplied coiled cord is rated for medical use. Connecting the cord to an outlet that is not medical grade (indicated with green dot) will not ensure grounding protection
- Coiled cord, power system and cart are for INDOOR use only. DO NOT OPERATE OUTDOORS.
- Inspect coiled cord before each use. DO NOT USE CORD IF DAMAGED.
- DO NOT plug more than the specified number of watts into coiled cord.
- DO NOT run coiled cord through doorways or across walls or floors.
- Fully insert coiled cord plug into outlet. DO NOT unplug by pulling on cord
- DO NOT remove, bend or modify any metal prongs or pins of coiled cord.
- DO NOT use excessive force to make connections.
- Keep coiled cord away from water. DO NOT PLUG CORD INTO OUTLET IF WET.
- Keep children away from coiled cord
- DO NOT ALLOW CORD TO OVERHEAT.
- DO NOT drive, drag or place objects over spiral cord. Do not stand or walk on coiled cord.
- Breaking the seal on the SLA battery to add water will damage the battery and could cause injury.
- Battery warranty is automatically void when a fully discharged battery is left in an unused state for more than three (3) consecutive days.
- The power system is designed for power cart mounted equipment only. DO NOT connect equipment that is not mounted on the cart into the power system outlets. DO NOT connect cart mounted equipment directly into a power source that is not mounted to the cart.



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Sealed Lead Acid Battery must be recycled

Lithium Iron Phosphate (LiFe) Battery Disposal
Battery recycling is encouraged. Dispose of in accordance with local, state and federal laws and regulations.

Transportation/Storage
Store this system within a temperature range of 0° C - 32° C; Pressure 500 hPa to 1060 hPa; Humidity 20% RH to 95% RH non-condensing.

Product Introduction

ErgonoFlex® eFlex deploys optimized mobility, adjustability, access to patient data, and documentation at the point of care—or anywhere.



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Standard Features:

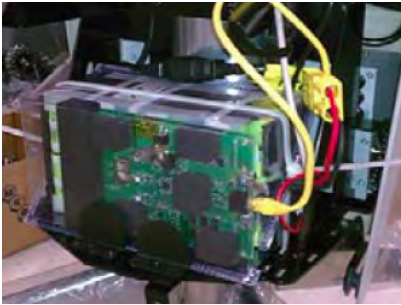
1. Height Adjustment Column
2. Highly Mobile 100mm Heavy Duty Casters
3. Swivel-out (Swing A Mouse) Mousing
4. Height Adjustment Hand Lever
5. Front Handle with Remote User Interface (RUI)
6. Thermofoil (3D Laminate) Worksurface with Integrated Black Vinyl Palm Support
7. Upper Worksurface with Integrated Keyed Security System
8. Flat Screen Monitor Arm
9. Power System & Battery Compartment
10. Internal Cord Tray
11. Cord Tray Cover (Clear Acrylic)
12. 3-Outlet Power Cord
13. Coiled Power Cord
14. Battery Access Panel (front)
15. Power System Access Panel (back)
16. Cable Management



Charging Your Cart

Once cart is fully set up with all electronic devices, it should be plugged into a medical grade outlet. The cart should fully charge before deploying (Note: All carts are shipped with a 30% charge. If storing in warehouse before deploying, charge fully).

While the cart is charging, the LED on the power system external user interface will flash until the battery is 100% full.



For LiFe Batteries: Allow up to 2 hours to fully charge.
For SLA Batteries: Allow up to 5 hours to fully charge

Testing Your Cart

To test your cart for power, the unit needs to be turned on. To do so, press and hold the power button on the power system user interface for approximately 2 seconds.



The power system will beep and the far left LED light will turn on. At this point, all powered devices connected to the outlet strip should receive power.

Note: Monitors, laptops and other devices will need to be manually turned on.



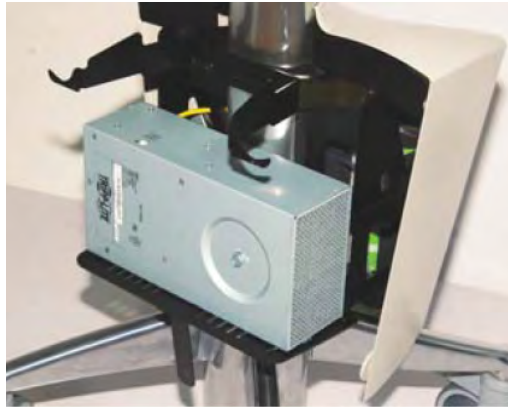
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Power System Overview

The base of the cart has an integrated power system and battery that supplies power to the cart. The Power System User Interface is located on the cart handle.



Power System Specifications

All components of the power system are contained within the base of the cart with the exception of the user interface and Power Alert software. Upon opening the enclosure, the power system is located in the rear half and the battery is located in the front half. The power system contains a True Sine Wave Inverter, Charger, Isolation Transformer, and Automatic Transfer Switch. A 3-Outlet Power Cord is connected to the power system for powering technology components.

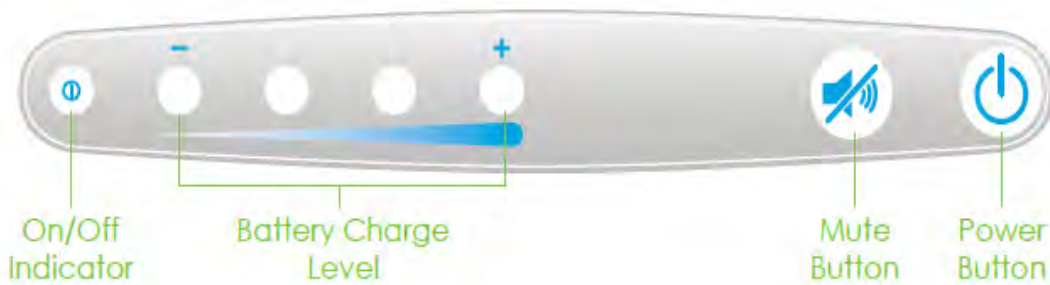
- **Charger** - The power system module includes a 2 stage, 12/20 amp charger that is designed to match the onboard battery. The upper voltage limits have been altered to maximize battery cycles. The system also monitors the battery voltage to prevent overcharging. The charger is designed to charge the battery to a maximum of 14.2 volts.
- **True Sine Wave Inverter** - Converts DC power to True Sine Wave 120 V AC Power, 150 Watt Output. Inverter ensures power factor corrected devices, like flat panel monitors operate properly.
- **Automatic Transfer Switch**: Enables full use of computer without interrupting battery charging by switching power draw from the battery to the wall outlet when the unit is plugged in.
- **Isolation Transfer** - Ensures full UL 60601-1 compliance by managing current leakage of connected equipment protected-sensitive equipment commonly found in a healthcare environment.
- **3-Outlet Power Cord** - One 3-outlet power cord is located within the cord tray. All 3 outlets are available for technology integration (NOTE: OUTLETS OF 3-OUTLET POWER CORD NOT INTENDED FOR VACUUMS OR OTHER NON-MEDICAL GRADE EQUIPMENT)
- **External Coiled Cord** - Hospital grade external coiled cord is 2.5 ft. in resting position and extendable to 8 ft. Overextending the cord may cause permanent damage and void warranty.
- **Battery** - 55 AMP HR Sealed Lead Acid (SLA) 12V. The battery does not contain a memory, and therefore can be charged regardless of the current state of charge.
It is recommended that the battery be charged whenever the unit is not in use as this will ensure that the unit is ready to use and will help extend the battery life.



Power System Overview Continued

eFlex External User Interface

The easy-to-read external user interface, which is located on the front surface of the cart handle, gives the user a real-time status of the battery. Each LED will illuminate in several sequences to indicate the approximate charge level of the battery. The first LED displays power on/off. LEDs two through five indicate charge level and correspond to a percent range.



- Power Button (last button on right) - To turn power on, press and hold for 2 seconds. indicator will beep and power on. To turn off power, press and hold for 1 second. Status Indicator will beep and power off.
- On/Off Indicator (first of five LED lights) - When lit indicates power system is on and technology component is receiving power from Willo Power System.
- Battery Level Indicator (Second through fifth LED Lights): Battery indicator will alarm at 20% (for SLA batteries, 5% for LiFe batteries) remaining life. Immediately plug in cart and alarm will stop. (Note: Battery indicator alarm can be set (reset) by an administrator).
- Power Alert Mute Button (second to last button on right) - If the battery level falls below set alarm level, the charge an alarm will sound. This button will mute the sound.

Using the Power System

Turning On System	Turning Off System	Mute Button Use
Press and hold power button for approximately 2 seconds	Press and hold power button for approximately 2 seconds	Press and hold until audible alarm discontinues
Fuel Gauge/Power System will beep. The LED on the left side turns green. All components will receive power.	Fuel Gauge/Power System will beep. LED on left side will turn off. If Power System is plugged in, the other LED lights will remain lit to show battery level. All components will NOT receive power.	Fuel Gauge/Power System will beep. Audible alarm will silence as long as battery level is above 5%. When at 5%, the alarm, even if muted, will resound every minute. Action to take is to charge the battery or shut down the unit.
Use this during: • Initial start-up • After replacing battery • If system has been shut down • If system has shut itself down after reaching low battery level	Use this during: • If cart will not be used or plugged in for an extended period of time • Before replacing battery • If Power System will be serviced	Use this during: • When the audible alarm first goes off at the 20% battery level remaining. When alarm sounds, plug in cart to avoid damage to battery.



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Power System Overview Continued

Using the Power System - LED Display Overview

LED Position 1 (Power On/Off)

Solid Green

- System is on and all components will receive power.



No Light

- System is turned off.

If cart is plugged in, unit can still be charged.

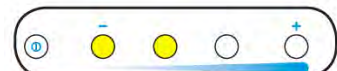


LED Position 2-5 (Charge Level)

Flashing Red - Less than 5/20% battery life remaining.
Plug in unit immediately (20% refers to SLA Batteries and 10% refers to LiFe batteries).



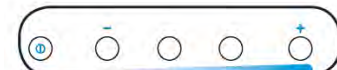
Solid Yellow - Less than 20% battery life remaining.
Plug in unit as soon as possible.



Solid Green - Battery is at least 90-100% charged.
Component should still be plugged in when possible to maximize battery life.



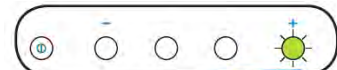
No Light - Power System is turned off or battery is not properly connected to the power system.



LED Position 5 (Charging Status when plugged into wall outlet)

Flashing Green

- Battery is charging



Solid Green

- Battery is full





Power System Overview Continued

Charge Level Indicator Summary (Discharging)

Approximate Battery Charge Level	 Indicates On/Off Only	-	○	○	○	+	Low Battery Alarm
							

90 - 100 %	Green	Green	Green	Green	OFF
50 - 89 %	Green	Green	Green	OFF	OFF
20 - 50 %	Yellow	Yellow	OFF	OFF	ON (SLA-20%)
<20 - 5 %	Flah Red	OFF	OFF	OFF	ON (Life-5%)



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Battery Removal and Replacement

- Only use batteries specified by ERGONOFLEX. Failure to do so will void the power system warranty. Call customer service for further details.
- Do not replace battery in oxygen rich environments — sparking may occur.
- Always unplug the power cord from the wall outlet when removing the battery.

Battery Removal

No Tools Needed!

Step 1: Power Down System

- A. Turn off any components plugged into cart
- B. Turn off Power System by Holding On/Off Button for 2 seconds

Step 2: Long-term Storage (more than 2 months)

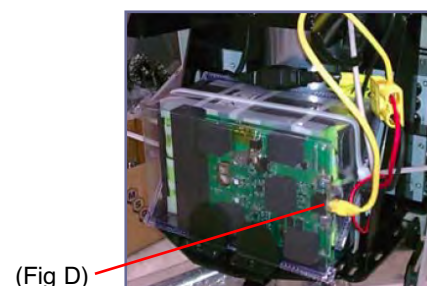
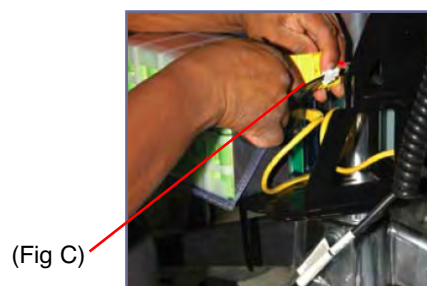
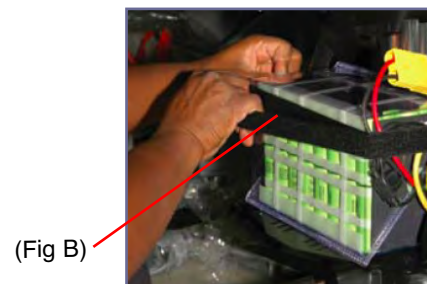
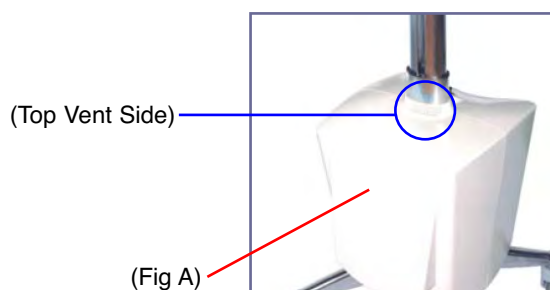
Warning: If cart will not be used for more than 2 months, turn off the cart by holding the ON/OFF Button. The battery will need to be fully recharged every 30 days to prevent damage.

Step 3: Remove front access panel (top vent side) by loosening and removing (3) thumb screws from the inside of panel (two are located on each side and the other is located on the front side). (See Fig

Step 4: Remove security strap from battery (See Fig B)

Step 5: Disconnect yellow battery harness (See Fig C)

Step 6: Disconnect yellow CAT 5 cable (See Fig D)





Power System Removal and Replacement

- Power System should only be accessed if approved by ErgonoFlex
- Always unplug the power cord from the wall outlet when removing the Power System.

Power System Removal

Phillips drive power drill or Phillips-type screw driver

Step 1: Power Down System

- A. Turn off any components plugged into cart
- B. Turn off Power System by Holding On/Off Button for 2 seconds

Step 2: Unplug Power Cord from Wall Outlet

Step 3: Remove front and back panels

- A. Loosen and remove (3) thumb screws (See Fig A)

Step 4: Disconnect Cables (5) from Power System

- A. Unplug Black and Grey CAT 5 cables from unit (See Fig C)
- B. Unplug USB cable from unit (See Fig B)
- C. Unplug Yellow cable from unit (See Fig C)
- D. Unplug AC Input Power cord. (See Fig D)

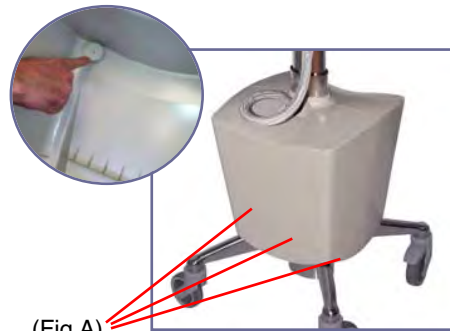
Step 5: Remove Power System

- A. Loosen and remove (4) screws from the underside of understructure bracket (See Fig E)
- B. Lift power system up from understructure bracket

Power System Installation

Repeat steps 1-4 in reverse.

Note: The eFlex Power System must be placed on the black understructure bracket with the vent side facing Right and the fan facing left (See Fig. B)

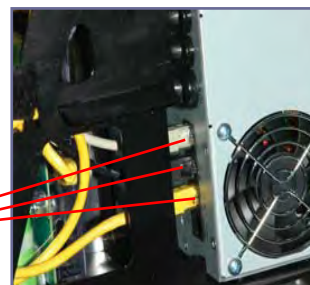


(Fig A)



(Fig B)

Vent Side



(Fig C)



(Fig D)



(Fig E)



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Troubleshooting

Cart will not power up:

- Plug power cord into a working hospital grade outlet. Note: Do not plug into a multi-outlet surge distribution strip.
- Check to make sure power cord is plugged securely (See Fig. A).
- Check to make sure the Power System is charging when plugged in (See Fig. B)
- If charge level is low (last one or two LED lights lit) let charge until full.
- Check to make sure all cables to the power system are secure (See Fig. C).



(Fig A)



(Fig B)



(Fig C)

Cart will not charge:

- Check to make sure the external coiled cord is secure within the cart.
- Ensure outlet is functionally operational
- Plug power cord into a working hospital grade outlet. Note: Do not plug into a multi-outlet surge distribution strip.
- Check and make sure the External User Interface (EUI) indicates the unit is charging when plugged in.
- If charge level is low (last one or two LED lights lit) let charge until full.
- If cart still does not charge, check to make sure all cables to the power system are secure.

Audible Alarm will NOT turn off:

- When the battery reaches approximately 5% (LiFe Battery)/ 20% (SLA Battery) of capacity remaining, the audible alarm will sound. The alarm may be muted for 1 minute. Until the cart is plugged in to charge the audible alarm will continue to sound every minute.
- If alarm fails to turn off after plugging in after several minutes, power unit down by holding the on/off button for 2 seconds.

What is the External User Interface (EUI)?

The External User Interface (EUI) has 5 LEDs: One On/Off LED on the far left (marked with a wave symbol) and four battery level LEDs, position 1 – 4 from left to right (marked with a battery symbol and indicating low to high from left to right).

What is the status of the power system when it is plugged in, on/off indicator is on, 4 Battery lights (solid green) are on?

With the LEDs in this configuration and the power system plugged in, it is indicated that the power system is on and that the battery is fully charged (90 – 100%). The power system will pass power to the connected equipment using utility power. Your power system is functioning properly.

What is the status of the power system when it is plugged in, on/off indicator is off and 4 Battery lights (solid green) are on?

With the LEDs in this configuration and the power system is unplugged it is indicated that the power system is off and that the battery is fully charged (90 – 100%). The power system will not pass power to the connected equipment using battery power. Your power system is functioning properly.



Troubleshooting

What is the status of the power system when it is plugged in, on/off indicator is off and 4 Battery lights (solid green) are on?

With the LEDs in this configuration and the power system is unplugged it is indicated that the power system is off and that the battery is fully charged (90 – 100%). The power system will not pass power to the connected equipment using battery power. Your power system is functioning properly.

What is the status of the power system when it is plugged in; on/off indicator is on, 3 Battery lights (solid green – position 1, 2 and 3) are on and the 4th position Battery light flashing?

With the LEDs in this configuration and the power system plugged in, it is indicated that the power system is on and that the battery is 60 – 89% charged. The power system is currently charging and will pass power to the connected equipment using utility power. Your power system is functioning properly.

What is the status of the power system when it is plugged in, on/off indicator is off and 3 Battery lights (solid green – position 1, 2 and 3) are on and the 4th position Battery light flashing?

With the LEDs in this configuration and the power system unplugged, it is indicated that the power system is off and that the battery is 60 – 89% charged. The power system will not pass power to the connected equipment using battery power. Your power system is functioning properly.

What is the status of the power system when the it is plugged in, on/off indicator is on and 2 Battery lights (solid green – position 1 and 2) are on?

With the LEDs in this configuration and the power system plugged in indicates that it is on and that the battery is 31 – 59% charged. The power system is currently charging and will pass power to the connected equipment using utility power. Your power system is functioning properly.

What is the status of the power system when the it is plugged in, the on/off indicator is off, 2 Battery lights (solid green – position 1 and 2) are on and the 4th position Battery light flashing?

With the LEDs in this configuration and the power system unplugged, it indicates that it is off and that the battery is 31 – 59% charged. The power system will not pass power to the connected equipment using battery power. Your power system is functioning properly.

What is the status of the power system when the it is plugged in, the on/off indicator on and 1 Battery light (solid green – position 1) is on?

With the LEDs in this configuration and the power system plugged in, it indicates that it is on and that the battery is equal to/less than 30% charged. The power system is currently charging and will pass power to the connected equipment using utility power. Your power system is functioning properly.

What is the status of the power system when the it is plugged in, the on/off indicator off, 1 Battery light (solid green – position 1) is on and the 4th position Battery light is flashing?

With the LEDs in this configuration and the power system unplugged, it indicates that the it is in standby mode and that the battery is equal to/less than 30% charged. The power system is charging but will not pass power to the connected equipment using battery power. To pass power to the connected equipment the power system must be turned on (Online mode). Your power system is functioning properly.

What does it mean when the power system is plugged in and there are no LEDs lit up on the RUI?

There are several possible causes for this issue. First and foremost, ensure that the outlet that the power system is plugged into is a working outlet. Take the power system to another outlet that has been verified as a working outlet. Another possible cause is the lack of communication cables, disconnected communication cables or crossed communication cables. The Cat-5 cables that connect the power module to the RUI must be present and connected properly for the RUI to function. Finally, the battery must be connected to the power module. If the battery is disconnected while the power system is plugged in, the LEDs will be lit. If the power system is unplugged, battery is disconnected and then the unit is plugged in, the LEDs will not light up.





Troubleshooting

What is the status of the power system when it is unplugged in, the on/off indicator is on, 4 Battery lights are on?

With the LEDs in this configuration and the power system unplugged, it indicates that it is on and that the battery is fully charged (90 – 100%). The power system will pass power to the connected equipment using battery power. Battery is not charging. Your power system is functioning properly.

What is the status of the power system when it is unplugged in, the on/off indicator is on and 3 Battery lights are on?

With the LEDs in this configuration and the power system unplugged, this indicates that the it is on, in on-battery mode and that the battery is 60 – 89% charged. The power system will pass power to the connected equipment using battery power. The battery is not charging. Your power system is functioning properly.

What is the status of the power system when it is unplugged, the on/off indicator on and 2 Battery lights (solid green – position 1 and 2) on?

With the LEDs in this configuration and the power system unplugged, this indicates that the unit is on, in on-battery mode and that the battery is 31 – 59% charged. The power system will pass power to the connected equipment using battery power. Your power system is functioning properly.

What is the status of the power system when it is unplugged, the on/off indicator is on and 2 Battery lights (both amber – position 1 and 2) are on?

With the LEDs in this configuration and the power system unplugged, this indicates that the it is on, in on-battery mode and that the battery is 31 – 59% charged. The power system will pass power to the connected equipment using battery power. Your power system is functioning properly.

What is the status of the power system when it is unplugged, the on/off indicator is on and 1 Battery light (amber – position 1) is on?

With the LEDs in this configuration and the power system unplugged, this indicates that the it is on, in on-battery mode and that the battery is equal to/less than 30% charged. The power system will pass power to the connected equipment using battery power for a brief period. The low battery audible alarm will begin to sound. Muting will silence the audible for 1 minute before alarming again. It is recommended that the power system be plugged in for charging. Your power system is functioning properly.

Power system unplugged and all LEDs are off. What is the status of the power system when it is unplugged and all LEDs are off?

With the LEDs in this configuration and the power system unplugged, this indicates one of two things. First, the power system is turned off. The second is, that the it has reached the end of available battery charge (power system will shut down when battery level falls below 10%). It is recommended that the power system be plugged in for charging. Your power system is functioning properly.

Why won't my power module turn on when the power button is pressed?

The power button must be held until the unit begins to beep. Once the beeping starts, let go of the power button. Are the communication cables missing, disconnected or crossed? The Cat-5 cables that connect the power module to the EUI must be present and connected properly for the EUI to function. Allow the power system to be charged. The battery must have a charge in order for the power system to start. The battery must also be connected regardless of whether the power system is plugged into AC or not.

Why does the connected equipment shutdown when the power module is on battery?

The most likely cause is that the battery has dropped below 10% of capacity. The power module is designed to power down when battery capacity reaches 10%. Another possible cause is the lack of communication cables, disconnected communication cables or crossed communication cables. The Cat-5 cables that connect the power module to the EUI must be present and connected properly for the power system to provide power. Finally, the battery pack must be connected to the power module (yellow cable). If the battery is disconnected equipment will not receive required voltage to operate. Overload is another possibility.



Troubleshooting

Why does the connected equipment shutdown when the power module is on utility power?

Ensure that there is no surge suppressor in between the connected equipment and the power module. Connected equipment should be plugged directly into the power module or provided 3-outlet cable. Another possible cause is the lack of communication cables, disconnected or crossed communication cables. The Cat-5 cables that connect the power module to the EUI must be present and connected properly for the power system to provide power. Overload is another possibility.

Why does the connected equipment shutdown during a power outage when the power module is on utility power (Why doesn't the unit go to battery during a power outage)?

The most likely cause is that the battery has dropped below 10% of capacity. The power module is designed to power down when battery capacity reaches 10%. Ensure that there is no surge suppressor in between the connected equipment and the power module. Connected equipment should be plugged directly into the power module or provide 3-outlet cable. Another possible cause is the lack of communication cables, disconnected or crossed communication cables. The Cat-5 cables that connect the power module to the EUI must be present and connected properly for the power system to provide power. Finally, the battery pack must be connected to the power module (yellow cable). If the battery is disconnected equipment will not receive required voltage to operate. Overload is another possibility.

Why does my power module emit a buzzing sound?

The unit will emit some buzzing or humming due to a transformer or a fan in the unit. (The buzzing or humming might be around 48-52 Db.) This is a normal operation for the power system.

Why does my power module emit a clicking sound?

Whenever the power module goes to battery mode or AC mode or is turned on or off, the power module will emit a clicking sound. This is caused by a relay action internally. The sound is part of the normal operation of the power module. Your power system is working properly. If the clicking sound is constant, try resetting the power system (power off, disconnect battery, turn off for 10 to 15 minutes).

What should I do if I discover that the Internal batteries are swollen or the battery housing is bulging?

Immediately power down the power module and contact our customer service department.

What should I do if my power module is stuck in battery mode?

This is an indication that your current AC is not within the realms of nominal 120V service. Please have your internal utility service checked and adjusted accordingly.

Why is my power module hot to the touch?

“Contact ErgonoFlex customer service with the following information: Total power draw of the application, How the application was installed Any recent power problems Environmental information Problem history If any Tripp Lite software is being used What type of communication cable (if any) is being used with the UPS Any equipment damage that may have occurred How long ago the problem started exact date if possible.

My power module is showing only the battery LEDs lit (at least 2 positions) and unit will not pass power. Why?

In order to pass power, the power module must be turned on. Press and hold the On/Off button until the unit begins to beep. Let go of the button and the on/off indicator should now be lit.

Why has the runtime on my power module dramatically decreased?

The battery will run for a specific amount of time depending upon the size of the load that is connected to the power module and the charge level of the battery. Over time, the battery will have diminished capacity and will eventually need to be replaced. Under normal conditions, the LiFe battery will have a lifespan of at least 3 years (A SLA battery will have a life span of approximately 3-6 months). Allowing the batteries to fully drain before charging or additional charge sessions may decrease this lifespan.





Troubleshooting

Why isn't the fan on my power module running?

The fan(s) on the power module run when it is charging. The fan is regulated by a thermo device and the fanspeed will increase or decrease as needed to keep the power module at the optimum temperature.



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Warranty

ERGONOFLEX Five (5) Year Warranty - November 2012

ERGONOFLEX warrants all Mobile and Wall-Mounted Technology Workstation products to be free from defects in workmanship and materials under normal use for five (5) years.

Exceptions to this warranty include:

- Two (2) year warranty on all power supply components by ErgonoFlex.
- Lithium Iron Phosphate (LiFe) Battery carries a Three (3) year warranty.
- Sealed Lead Acid (SLA) Battery carries a Ninety (90) day warranty
- OEM products resold by Altus are warranted by the respective manufacturer.
- Custom Product carries a limited 12 month warranty.

ERGONOFLEX' warranty obligation is limited to the replacement or repair, at ERGONOFLEX' option, of defective products which have been reported by the purchaser to be defective in workmanship or material and which are found to be so by ERGONOFLEX upon inspection. Defective products must be returned at the discretion of the factory and all returns must be authorized in advance. ERGONOFLEX will assume no responsibility for any labor charges unless agreed to in writing by ERGONOFLEX' corporate office.

The customer shall be responsible for all maintenance service consisting of lubricating and cleaning of the product, minor assembly and adjustment and performing operating checks.

ERGONOFLEX will have no warranty obligation if the product is subjected to abuse, alteration, misuse, negligence, or accident or if the customer fails to perform the maintenance service referred to above. The warranty printed above is the only warranty applicable to this product. All other warranties, express or implied, including but not limited to the implied warranties of merchantability and fitness, for a particular purpose are disclaimed.

All terms and conditions are subject to change without prior notice. Extended Warranty: An Extended Warranty may be available for this product. Should you wish to purchase an extended warranty, please contact an ERGONOFLEX Customer Service Representative.



Mobile Technology Workstations — Powered

Battery System Enclosure Removal and Attachment

Step 1: Remove Three (3) thumb screws from the Front and Sides of Enclosure Panels (located on the insides of enclosure walls) - See Below



Step 1

Remove thumb Screw from right side of pan



Step 2

Remove thumb Screw from left side of panel



Step 3

Remove thumb Screw from front panel

Step 4: Remove Front Panel by lifting up and then out (See below). To reattach, simply put cover back on (pucks will hang securely on hooks).

To Remove Front Panel:



lift up



lift out

To Reattach:



Pucks (2)



Hooks (2)

Mobile Technology Workstations – Powered





Troubleshooting

Make sure the the Yellow (LiFe) RJ45 cable ends are secured/snapped into place. First end location is in the LiFe Battery (see fi g. 1). Second end location is in the power controller (see fi g. 2)

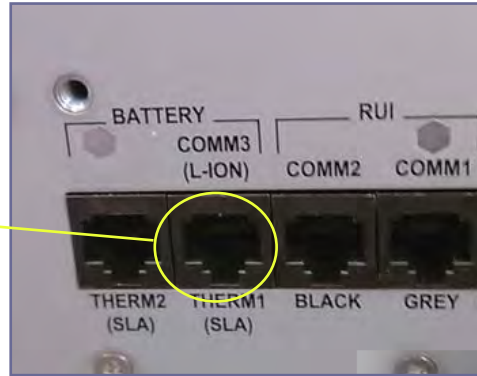


Fig. 1



Fig. 2

(LiFe Battery - Front side) (Power Controller - Back side)



Make sure Power connection from the power controller is secure.



Mobile Technology Workstations – Powered

Quick Start Guide “ Tripp.Lite PowerAlert Software”

Quick Start Guide

PowerAlert Software

Versions 12.04.0048 / 12.04.0049 / 12.04.0051

Note: PowerAlert is not required to operate your UPS system.
For additional instructions, see the PowerAlert User's Guide (CD-ROM).

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Mobile Technology Workstations – Powered





Quick Start Guide “ Tripp.Lite PowerAlert Software”

1. Pre-Installation Instructions

Tripp Lite's PowerAlert software family is separated into three distinct editions. **Do not install more than one edition on a single computer.** Before installing PowerAlert, decide which edition is best for your needs.

• **PowerAlert Local:** This edition is best for typical home and small business users. PowerAlert Local allows your computer to communicate with your UPS system through a serial or USB cable connection (or a RS232 cable for LINUX). You can use it to monitor power conditions, control your UPS system and enable automatic computer shutdown during power failures. PowerAlert Local also allows your UPS system to appear as an SNMP-manageable device on your network, enabling remote monitoring and control via PowerAlert Network Management System software or a third-party Network Management System. If you have two UPS systems connected to your computer to provide redundant backup power, PowerAlert Local can manage both UPS systems. PowerAlert Local requires the free Java Runtime Environment.

• **PowerAlert Network Shutdown Agent:** This edition is best for computers that can't access your UPS system's communication port(s) directly, such as multiple computers supported by a single UPS system. It's also useful for users who cannot install Java because of computer resource limitations or IT department restrictions. PowerAlert Network Shutdown Agent monitors an SNMP-enabled device over your network and shuts down your computer when it detects a signal (typically an “on battery” event) from the monitored device. You can monitor several types of Tripp Lite devices, including UPS systems with an SNMPWEB-CARD*, UPS systems that appear on the network via PowerAlert Local (or previous versions of PowerAlert*) and network-enabled PDUs*.

• **PowerAlert Network Management System:** This edition should be installed by advanced users only. PowerAlert Network Management System can monitor and control up to 250 SNMP-enabled devices, including UPS systems with an SNMPWEBCARD**, UPS systems that appear on the network via PowerAlert Local (or previous versions of PowerAlert**) and network-enabled PDUs**. All the functions available through PowerAlert Local will be available for the remote devices and also for the host computer, including monitoring and controlling UPS systems connected to the host computer via local USB and/or serial connections. PowerAlert Network Management System requires the free Java Runtime Environment.

Warning: Only one copy of PowerAlert Network Management System can be used per IP network subnet. Obtain the approval of your network administrator before installation.

* Software or firmware version 12.04.0045 and above.

** Software or firmware version 12.04.0019 and above (for LINUX: 12.04.0040 and above).

2. System Requirements

2.1 PowerAlert Local

For Windows (XP, Server 2003, Vista, Server 2008, Windows 7—Versions 12.04.0048 / 12.04.0049):

- Pentium 4 CPU
- 256 MB RAM
- Java Runtime Environment 1.6.0_3 or above
- Available USB or serial port
- TCP/IP network connection (required if you want your UPS system to appear on the local network as an SNMP-manageable device)

For LINUX—Versions 12.04.0048 / 12.04.0049:

- Fedora 8 or OpenSUSE 11
- Java Runtime Environment 1.6.0_3 or above
- Available USB or serial port
- Available TTY port
- Open 3664 and 3665 ports (any firewall)
- Root user (required for installations)



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Quick Start Guide “ Tripp.Lite PowerAlert Software”

2. System Requirements (continued)

For Mac OS—Version 12.04.0051 (First Release):

- Mac OS X 10.5.8 or 10.6.2
- 64-bit Intel processor
- Available USB Port
- HID-compliant UPS

2.2 PowerAlert Network Shutdown Agent

For Windows (XP, Server 2003 R2, Vista (Business or Enterprise), Server 2008, Windows 7—Versions 12.04.0048 / 12.04.0049):

- Pentium 4 CPU
- 256 MB RAM
- Open 3664, 3665, 161 and 162 ports (any firewall)
- TCP/IP network connection.

For LINUX—Versions 12.04.0048 / 12.04.0049:

- Fedora 8 or OpenSUSE 11
- Tripp Lite SNMPWEBCARD or supported PowerAlert Local system (12.04.0040 and above)
- Available TTY port
- Open 3664 and 162 ports (any firewall)
- Root user (required for installation)

For Mac OS—Version 12.04.0051 (First Release):

- Same as PowerAlert Local except no USB port required; open 3664, 3665, 161 and 162 ports (any firewall)

2.3 PowerAlert Network Management System

For Windows (XP, Server 2003 R2, Vista (Business or Enterprise), Server 2008, Windows 7—Versions 12.04.0048 / 12.04.0049):

- Pentium 4 CPU
- 256 MB RAM
- Java Runtime Environment 1.6.0_4 or above
- TCP/IP (IPv4) network connection
- Open 3664, 161 and 162 ports (any firewall)
- Available USB or serial port (optional)

For LINUX—Versions 12.04.0048 / 12.04.0049:

- Fedora 8 or OpenSUSE 11
- Tripp Lite SNMPWEBCARD or supported PowerAlert Local system (12.04.0040 and above)
- Open 3664, 3665, 161 and 162 ports (any firewall)
- Root user (required for installation)
- Supported local UPS with an RS232 interface (optional)

Not Available for Mac OS

If your operating system is not listed, go to www.tripplite.com/software for the latest updates. Your operating system may also be supported by a previous version of PowerAlert.



Quick Start Guide “ Tripp.Lite PowerAlert Software”

3. PowerAlert Software Installation

3.1 Windows Installation

Step 1 Cable Connection

If you will be installing PowerAlert Local, connect a communication port of the UPS system to a corresponding communication port of the computer using a USB or serial (DB9) cable. The UPS system may include the appropriate cable. If not, you must supply it. If your computer will be backed up by redundant UPS systems, repeat the cable connection for the second UPS system. Note: The cable connection is optional if you will be installing PowerAlert Network Management System; it is not required if you will be installing PowerAlert Network Shutdown Agent.

Step 2 Java Software Installation

If you will be installing PowerAlert Local or PowerAlert Network Management System, you must install Java Runtime Environment 1.6.0_3 or above for any version before 12.04.0045. A Java software installer is included on the PowerAlert CD-ROM (bundled with select UPS systems); the latest version and installation instructions are available at www.java.com. Java is not required for PowerAlert Network Shutdown Agent.

Step 3 Network Shutdown Agent Pre-Configuration

If you will be installing PowerAlert Network Shutdown Agent, open UDP ports 161, 162, 3664 and 3665 on your computer’s firewall software and disable the Windows SNMP trap service. The host computer for the device that PowerAlert Network Shutdown Agent will be monitoring must also have UDP ports 161, 162, 3664 and 3665 open on its firewall software. If PowerAlert Network Shutdown Agent will be configured to monitor an SNMPWEBCARD, enable the card’s SNMP access with read/write permission and define a read/write community string. (The default community string for firmware version 12.04.0040 and above is “tripplite.” For prior versions, enable read/write SNMP access.) Note: The computer that PowerAlert Network Shutdown Agent is installed on should have a static IP address; if the address is dynamic, PowerAlert Network Shutdown Agent must be reconfigured each time it changes.

Step 4 CD-ROM Insertion or Installer Download

If your UPS system includes a PowerAlert CD-ROM, insert the CD-ROM into your computer’s compatible optical drive. If you do not have a PowerAlert CD-ROM, download the latest PowerAlert installer from www.tripplite.com/software/. Downloading the PowerAlert installer guarantees that you have the newest available version of PowerAlert, which may be newer than the version on the CD-ROM.

Step 5 PowerAlert Software Installation

The PowerAlert installer setup menu will launch automatically after you insert the PowerAlert CD- ROM. (If AutoPlay is disabled, double-click the CD-ROM icon.) Follow the on-screen prompts to install the Java Runtime Environment (not required for PowerAlert Network Shutdown Agent) and the edition of PowerAlert you selected after reading the Pre-Installation Instructions. If you downloaded PowerAlert, first install the Java Runtime Environment (not required for PowerAlert Network Shutdown Agent), then double-click the PowerAlert installer and follow the on-screen prompts. The PowerAlert installer will attempt to uninstall previous versions of PowerAlert, but Tripp Lite recommends uninstalling previous versions manually prior to installation.

Warning: Do not install more than one edition of PowerAlert on a single computer. Do not install PowerAlert Network Management System without first obtaining the approval of your network administrator.



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Quick Start Guide “ Tripp.Lite PowerAlert Software”

3. PowerAlert Software Installation (Continued)

3.2 LINUX Installation

Step 1 File Installation

Copy the appropriate software file to your local machine and enter the following as its root: `rpm -i <rpm-file-name> [--nodeps]`. Use the RPM main page to help you through any installation issues. Note: OpenSUSE users will receive the following error message: “Error: failed to stat /home/tripp/.gvfs: Permission denied.” This error message will not affect installation, so please disregard it.

Step 2 Daemon/Service Installation

PowerAlert will install to the directory `/var/triplite/poweralert`, and will locate the daemon/service process for each software version within `/var/triplite/poweralert/engine`:

Software Version	Daemon/Service Name
PowerAlert Local	pal
PowerAlert Network Shutdown Agent	pasdad
PowerAlert Network Management System	panmsd

To control the status parameters and actions of each daemon/service, type `./[DAEMON/SERVICE NAME]` from the `/etc/init.d` directory.

Step 3 Java Console Installation

The Java consoles for PowerAlert Local and PowerAlert Network Management System will be located in `/var/triplite/poweralert/console` as `PAL_console.sh` and `PANMS_console.sh` respectively. To launch a console, type `./[PAL_console.sh]` or `./[PANMS_console.sh]` into the `/var/triplite/poweralert` directory.

Step 4 Uninstalling Software (Optional)

Note: Uninstalling software requires root access.

- To uninstall any application using Fedora, enter `-e pal`, `-e panms` or `-e pasda` into RPM.
- To uninstall any application using OpenSUSE, enter `-e opensuse-pal`, `-e opensuse-panms` or `-e opensuse-pasda` into RPM.

3.3 Mac Installation

Step 1 Cable Connection

If you will be installing PowerAlert Local, connect a USB port of the UPS system to a corresponding communication port of the computer. The UPS system may include the appropriate cable. If not, you must supply it. If your computer will be backed up by redundant UPS systems, repeat the cable connection for the second UPS system. Note: The cable connection is optional if you will be installing PowerAlert Network Management System; it is not required if you will be installing PowerAlert Network Shutdown Agent.

Step 2 Java Software Installation

If you will be installing PowerAlert Local or PowerAlert Network Management System, you must install the Java Update for your 64-bit Intel Mac. If desired, use `Java Preferences.app` to make sure Java SE 6 is installed and enabled. A Java software installer is included on the PowerAlert CD-ROM (bundled with select UPS systems); the latest version and installation instructions are available at www.java.com. Java is not required for PowerAlert Network Shutdown Agent.



Quick Start Guide “ Tripp.Lite PowerAlert Software”

3. PowerAlert Software Installation (Continued)

Step 3 Installation

Mount the disk image if it did not mount automatically. For console installation, drag and drop the PowerAlert console application to the location of your choice.

Step 4 Daemon Installation

Double-click on the package to run the installer. (This installer will also work from the command line—used by network administrators for mass software deployment.)

Step 5 Documentation

Manually save a copies of the ReadMe file, license and other documentation as desired. (Note: These items are not installed automatically.)

Step 6 Uninstalling Software

To Delete PowerAlert Local:

- Delete the PowerAlert Console from your disk.
- Stop and disable the PowerAlert Engine using the terminal:
\$> sudo launchctl unload -w /Library/LaunchDaemons/com.triplite.poweralert.PowerAlertEngineL.plist
- Stop and disable the PowerAlertUserNotifyAgent using the terminal:
\$> launchctl unload -w /Library/LaunchAgents/com.triplite.poweralert.PowerAlertUserNotifyAgent.plist
- Stop and disable the PowerAlertUserNotify daemon using the terminal:
\$> sudo launchctl unload -w /Library/LaunchDaemons/com.triplite.poweralert.PowerAlertUserNotify.plist
- Delete the PowerAlert Engine launchd Configuration:
\$> sudo rm /Library/LaunchDaemons/com.triplite.poweralert.PowerAlertEngineL.plist
- Delete the PowerAlertUserNotify launchd Configuration:
\$> sudo rm /Library/LaunchDaemons/com.triplite.poweralert.PowerAlertUserNotify.plist
- Delete the PowerAlertUserNotifyAgent launched Configuration:
\$> sudo rm /Library/LaunchAgents/com.triplite.poweralert.PowerAlertUserNotifyAgent.plist
- Delete the PowerAlert Engine: \$> sudo rm -rf “/Library/Application Support/PowerAlertEngine”

To Delete PowerAlert Network Shutdown Agent:

- Delete the Shutdown Agent Console from your disk.
- Stop and disable the PowerAlert Shutdown Agent Engine using the terminal:
\$> sudo launchctl unload -w /Library/LaunchDaemons/com.triplite.poweralert.PowerAlertEngineSA.plist
- Stop and disable the PowerAlertUserNotifyAgent using the terminal:
\$> launchctl unload -w /Library/LaunchAgents/com.triplite.poweralert.PowerAlertUserNotifyAgent.plist
- Stop and disable the PowerAlertUserNotify daemon using the terminal:
\$> sudo launchctl unload -w /Library/LaunchDaemons/com.triplite.poweralert.PowerAlertUserNotify.plist
- Delete the Shutdown Agent launchd Configuration:
\$> sudo rm /Library/LaunchDaemons/com.triplite.poweralert.PowerAlertEngineSA.plist
- Delete the PowerAlertUserNotify launchd Configuration:
\$> sudo rm /Library/LaunchDaemons/com.triplite.poweralert.PowerAlertUserNotify.plist
- Delete the PowerAlertUserNotifyAgent launchd Configuration:
\$> sudo rm /Library/LaunchAgents/com.triplite.poweralert.PowerAlertUserNotifyAgent.plist
- Delete the Shutdown Agent Engine: \$> sudo rm -rf “/Library/Application Support/PowerAlertEngine”



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Quick Start Guide “ Tripp.Lite PowerAlert Software”

4. Initial Configuration

4.1 PowerAlert Local

After installation, PowerAlert Local will detect your UPS system automatically. Notable default settings for PowerAlert Local are shown below. If you want to change any of these default settings, refer to the indicated section for configuration instructions.

Setting	Default Value	Configuration Instructions
On Battery Event	Not Configured	4.11 Settings > Events
Low Battery Event	Shut Down Computer 15 Seconds After Event	
	Shut Down UPS System 2 Minutes After Event	4.11 Settings > Events
E-mail Notification Settings	Not Configured	4.12 Settings > Contacts
SNMP Trap Settings	Not Configured	4.12 Settings > Contacts
User Level (Scheme)	Depends on UPS System Detected	4.14 Settings > Schemes
Ramp/Shed	Remain Off/Remain On	4.10 Load Ramping and Shedding
SYSLOG	Not Configured	4.13 Settings > System

4.2 PowerAlert Network Shutdown Agent

For Windows and LINUX:

Note: PowerAlert Network Shutdown Agent requires pre-installation configuration of firewall software settings and/or SNMPWEBCARD settings.

- You should open UDP ports 161, 162, 3664 and 3665 on your computer’s firewall software and disable the Windows SNMP trap service.
- The host computer for the device that PowerAlert Network Shutdown Agent will be monitoring must also have UDP ports 161, 162, 3664 and 3665 open on its firewall software.
- If PowerAlert Network Shutdown Agent will be configured to monitor an SNMPWEBCARD, enable the card’s SNMP access and define a read/write community string. (The default community string for firmware version 12.04.0040 and above is “tripplite.” For prior versions, enable read/write SNMP access.)
- The computer that PowerAlert Network Shutdown Agent is installed on should have a static IP address; if the address is dynamic, PowerAlert Network Shutdown Agent must be reconfigured each time it changes.

For LINUX:

Configuring PANSAs Through Configuration File

1. Copy the **sample_paconfig.ini** file in the /var/tripplite/poweralert/engine directory and rename as **paconfig.ini**.
2. Edit paconfig.ini and modify the following:
 - a. **[PA_Remote]**
 - i. Server = IP address of remote system
 - ii. SNMPCommunity = tripplite (This default may only be changed if the same R/W community has been defined on the remote SNMPWEBCARD. Remote PowerAlert Local systems require a tripplite community.)
 - iii. SNMPPort = 3664 (Change to 161 if connecting to SNMPWEBCARD)
 - b. **[RemoteEvent]**
 - i. ShutdownEvents = On Battery (Default) (If you want the PowerAlert Network Shutdown Agent to shut down during a different event, replace this default with a new event, i.e. Battery Low/Other Event. To add additional shutdown events, type in all applicable events and separate each with a comma.) Note: Event names must match exactly as listed in the Supported Events list.
 - ii. ShutdownDelay = 15 (seconds before operating system shutdown)



Quick Start Guide “ Tripp.Lite PowerAlert Software”

4. Initial Configuration (continued)

3. Save these new settings and either start the daemon/service manually or restart the system. Note: To make changes after initial configuration: 1) stop the daemon/service, 2) delete all files in the / var/triplite/poweralert/data directory, 3) edit the paconfig.ini file, 4) restart the daemon/service.
4. To verify your configuration, access the remote agent (Web or Java console) and go to Settings>Contacts>SNMP. Make sure that the IP address matches the name PowerAlert Network Shutdown Agent.

Configuring PANSA Using the Java Console

1. Requirements: Java 1.6
2. Change to the /var/triplite/poweralert/console directory
3. Launching to Local or Remote ID:
Connect to **Local**: ./sdaconsole.jar
Connect to **Remote**: /var/TrippLite/PowerAlert/console./sdaconsole.jar -ax.x.x.x.x
(Note: x.x.x.x = IP address of remote PANSA Engine.)

For Mac OS

If not using use a configuration file with Mac OS, PowerAlert Network Shutdown Agent requires the Java runtime environment.

- For Mac OS, ensure that “Block all incoming connections” is not checked in the Firewall’s Advanced Preferences, and that PowerAlertEngineSA, PowerAlertEngineL or PowerAlertEngineNMS can accept incoming connections.
- For Mac OS, configuration file is still applicable. Copy from “/Library/Application Support/PowerAlertEngine/sample_paconfig.ini” to “/Library/Application Support/PowerAlertEngine/paconfig.ini”
- Configuration using Java Console is primary. Launch PowerAlert SA Console.app or PowerAlert Console.app (for PAL/PANSA) to run the console.

4.3 PowerAlert Network Management System

After installation, PowerAlert Network Management System will initiate a discovery process to search the local subnet for manageable devices. It will also search your computer's local USB and serial ports for devices that are connected directly. Manageable devices will be shown in the device table on the PowerAlert Network Management System's main page, along with status information. Each device in the table can be double-clicked to open a console window that includes all the functionality of the PowerAlert Local Console for that device. If the device is an SNMPWEBCARD or network-enabled PDU, a Web browser window will be launched to connect to the card. Adjust the default shutdown and other settings for each device as desired.

5. Additional Instructions

For detailed operating instructions on all three editions of PowerAlert, refer to the PowerAlert Software Version 12.04.0050 User's Guide. You can find the PDF on the PowerAlert CD-ROM, or you can download it from www.tripplite.com/software.

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



Mobile Technology Workstations – Powered

Operating Manual



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