



Metro™ Series Mobile Computing Workstations MPS-4007 Lithium Ion Nano-Phosphate Power Supply



Operations Manual Supplement

L01-505 RevA

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Contact Information:

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Wilkes-Barre, PA 18705
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FCC Information:

This device complies with FCC Rules, part 15. Operation is subject to the following conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference that may be received, including interference that may cause undesired operation.

Notice: 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 the equipment is 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 harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user's expense.

Warning: Changes or modifications to this device not expressly approved by InterMetro Industries Corporation could void the user's authority to operate this equipment.

Shielded cables must be used with this unit to ensure compliance with the FCC Class A limits.

Industry Canada:

This class A digital apparatus meets all requirements of the Canadian Interface Causing Equipment Regulations. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Regulatory Compliance

This system was tested and complies with UL 60601-1, CAN/CSA C22.22 No.601.1 and IEC/EN 60601-1-1 medical safety standards.

Symbol Explanations



The product is TÜV certified with respect to electrical shock, fire and mechanical hazards only in accordance with UL 60601-1, CAN/CSA 22.2 No. 601.1 and IEC/EN 60601-1-1 as Type B Patient Care Medical Equipment suitable for use in patient vicinity.



Attention, consult accompanying documents

Important Safety Instructions

This document contains important safety and operating instructions for the MPS-4007 Power Supply. Please read all instructions and cautionary markings before putting it into service on a Mobile Computing Workstation.



Caution:

User maintenance consists of cleaning, periodic tightening of fasteners and the like. For safety purposes, any and all servicing other than the procedures detailed in the Maintenance section of this manual must be performed by qualified service personnel only. For all service items, please contact InterMetro Customer Service.



Caution:

Do not operate an MPS-4007 Power Supply or associated Metro™ Series Mobile Computing Workstation if either has received a severe impact, been knocked over, fallen down stairs, or otherwise been physically damaged. Please have a qualified service person inspect both the Mobile Computing Workstation and the Power Supply for any performance or safety hazard prior to putting it back into service.



Caution:

Ensure that the AC power supply cord is located and secured so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress. Please secure the AC power cord plug in the retaining clips provided on the Mobile Computing Workstation when it is unplugged from the AC outlet in order to prevent accidental tripping and physical damage to the cord plug or electrical insulation.

To prevent damage to any cords or connectors when disconnecting, always grasp and pull by the connector and not the cord.

Do not operate the Power Supply or Mobile Computing Workstation with damaged cords or connectors. Please replace the damaged component immediately. Contact InterMetro Customer Service for replacement parts and service.



Caution:

To reduce the risk of electric shock, unplug the Power Supply AC cord from an AC outlet and switch the ON/Extended Storage Switch to the Extended Storage (OFF) position before attempting any maintenance or cleaning. Turning off computers or disconnecting the AC power cord alone will not reduce the risk of electric shock because the Power Supply is internally powered by a battery.



Warning: Risk of Electric Shock

The AC power cord is the only means to disconnect the Power Supply and Metro™ Series Mobile Computing Workstation from the AC power grid (mains). The ON/Extended Storage Switch on the Power Supply does not disconnect from main power.

On the other side, the Power Supply employs a Lithium-Ion Nano Phosphate (LiFePO₄) battery to provide mobile DC output power. Low voltage (10-16 VDC) DC power is available from the Power Supply even when the AC cord is disconnected from an AC outlet. To remove DC power, put the ON/Extended Storage Switch in the Extended Storage (OFF) position.



DANGER: Risk of Explosion

The Mobile Computing Workstation and the Power Supply are not for use in hazardous (classified) locations. Do not use the Mobile Computing Workstation, nor recharge the Power Supply battery, in oxygen enriched areas; areas where flammable anesthetics are used or stored; or any other hazardous, classified location.

**Caution (USA 240 V):**

If an MPS-4007 Power Supply is connected to a 240 V supply system in the United States of America (USA), it shall be a center tapped single phase supply circuit.

Electromagnetic Interference (EMI) Recommendations

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does not cause harmful interference to other devices, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving device.
- Increase the separation between the equipment.
- Connect the equipment to an outlet on a circuit different from that to which the other device(s) are connected.
- Consult the manufacturer or field service technician for help.

Revision History

REV/ Issue	Revision Description	Date	Approved
A	Initial Release	10/29/2009	V. Bowman
B	1. Change in company contact information 2. Update in cart label graphic	10/18/2010	V. Bowman
L01-505, RevA	1) As per Metro Standards this Operations Manual is assigned with new Commodity Code L01-505 with Initial Release as RevA with effective from 01/09/2013. 2) Previous nomenclature of this document is 402546 Rev B MPS4007 Li-Nano PS Operations Manual 3) Updated references in Page 9. 4) All above revisions remain valid in L01-505 RevA.	01/09/2013	Paul Prickett

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References

Document Number	Title
L01-502	Metro™ 1700 Series Mobile Computing Workstation Operations Manual
L01-503	Metro™ 1800 Series Mobile Computing Workstation Operations Manual

Introduction

Mobile Rechargeable Power Supply

The Metro™ MPS-4007 Lithium Ion Nano-Phosphate (Li-Nano or LiFePO₄) Power Supply is a rechargeable power source for the Metro™ Series Mobile Computing Workstations. The Metro™ Li-Nano Power Supply is a fully automatic power supply charger system with a nominal DC output voltage of 12 Volts (V) and a battery capacity of 420 Watt-hours (Wh). When plugged into an AC outlet, it supplies the Mobile Computing Workstation system equipment while also charging the Li-Nano cells. When unplugged from the outlet, the power supply switches automatically to supply the workstation equipment from the internal Li-Nano rechargeable battery cells. The power supply is designed for continuous operation and service is not interrupted by plugging in or unplugging the power supply.



MPS-4007

Power Supply Status

The status of the MPS-4007 Power Supply is displayed by a remote Fuel Gauge display and optionally on the workstation monitor by the Metro BatteryPro400 software.

Remote Fuel Gauge Display

The remote Fuel Gauge is embedded in the Metro™ Series Mobile Computing Workstation monitor mount at eye level height and is connected to the power supply. It displays the battery charge level and state with a series of LED indicators.



Remote Fuel Gauge Display

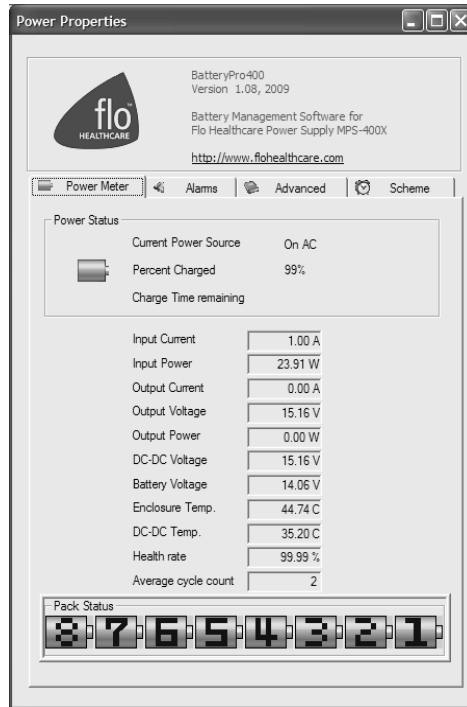
BatteryPro400 Mobile Computing Workstation Power Supply Management Software

In a manner similar to notebook computer battery monitors, BatteryPro400 Mobile Computing Workstation Power Supply Management Software displays the MPS-4007 Power Supply status, battery level as a percentage, and calculated remaining run time. The status is displayed on the Workstation display monitor using the Windows task bar and control panels. BatteryPro400 also alerts the user when the power supply batteries are reaching the end of the discharge cycle so that the user can perform any one of three actions:

1. Save any work and shut down the system.
2. Allow the computer to shut down in an orderly manner with all data quickly stored onto the hard drive for Hibernation.
3. Plug the power supply into a wall outlet to start charging the unit.

BatteryPro400 requires a USB connection from the USB port on the Power Supply to the Metro™ Series Mobile Computing Workstation computer.

The BatteryPro400 application features a status icon on the Windows taskbar and a status window. A Power Properties dialog (see below) can be opened to configure the power scheme and notifications and view more detail status of the power supply system. A diagnostic tool can also be accessed through the Power Properties dialog.



Metro BatteryPro400 Power Properties Dialog

Features

The Metro™ MPS-4007 Li-Nano Power Supply features:

- Rugged steel construction – built to last.
- Remote Fuel Gauge at the user's eye level.
- LiFePO₄, 420 Wh maximum capacity rechargeable batteries.
- Fits conveniently in the base of the Metro™ Series Mobile Computing Workstations.
- Software application Metro BatteryPro400 provides the power supply status on the Metro™ Series Mobile Computing Workstations monitor display.
 - Status icon on Windows taskbar
 - Desktop status window
 - Power Properties dialog to configure settings and view diagnostic data.
- Compatible with Metro™ 1700 and 1800 series Mobile Computing Workstations.
- Standard Human Interface Device (HID) USB connection between MPS-4007 Power Supply and workstation computer.
- User manual supplement included.

Equipment Classification

The Metro™ MPS-4007 Li-Nano Power Supply is TÜV certified with respect to electric shock, fire and mechanical hazards only in accordance with UL 60601-1, CAN/CSA 22.2 No. 601.1 and IEC/EN 60601-1-1 as Type B Patient Care Medical Equipment suitable for use in patient vicinities.

The MPS-4007 Li-Nano Power Supply is a Class I Equipment that is also internally powered.

According to the degree of protection against electric shock, it is a Type B applied part.

According to the degree of protection against ingress of water the MPS-4007 Li-Nano Power Supply is considered ordinary.



Warning: Risk of Explosion

The MPS-4007 Li-Nano Power Supply is not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.

The MPS-4007 Li-Nano Power Supply is suitable for continuous operation.

Important Product Notices

The MPS-4007 Li-Nano Power Supply is a subsystem component of the Metro™ 1700 and 1800 Series Mobile Computing Workstations. Please refer to the respective User Guide for the Mobile Computing Workstation to which the Power Supply is attached for additional information.

The MPS-4007 Li-Nano Power Supply is only TÜV certified if the equipment is left in its original configuration as shipped from InterMetro Industries Corporation. If the user alters the power supply by changing components on or adding components to the power supply, this will void the TÜV certification of the power supply and the CSA certification of the Mobile Computing Workstation and is expressly prohibited by InterMetro Industries Corporation.

The Power Supply used is provided with a “Hospital Grade” or “Hospital Only” attachment plug for connection to the AC supply circuit.

To ensure equipment grounding reliability, the Power Supply should only be connected to AC outlet receptacles which are marked “Hospital Grade” or “Hospital Only”. Where the integrity of the external protective earth connector arrangement is in doubt, equipment shall be operated from its internal electrical power source.

Disposal

Steel sections of the power supply and LiFePO₄ batteries can be disposed of or recycled.

Electronic components or printed circuit boards, etc., shall be disposed of in accordance with local, state and federal regulations.

For further information call InterMetro Customer Service.

Getting Started

Installation

In general, the Metro™ MPS-4007 Li-Nano Power Supply System is provided already installed on a Metro™ Mobile Computing Workstation and is ready for use after preparing and fully charging the batteries.

The MPS-4007 Li-Nano Power Supply System can be retrofitted or installed new on a Metro™ Mobile Computing Workstation. The power supply is self-contained and is attached using the correct mounts on the bottom of the Metro™ Mobile Computing Workstation base. BatteryPro400 is ready to install on the workstation computer. Instructions for installing an MPS-4007 Power Supply and BatteryPro400 are provided in “MPS-4007 Power Supply System Installation” below.

Unpacking	If ordered separately, the MPS-4007 Li-Nano Power Supply will arrive fully assembled at the customer's site in a cardboard box. After cutting open the box, lift the MPS-4007 out of the box.
Inspection	After the MPS-4007 Li-Nano Power Supply has been unpacked, the user should inspect the unit for any shipping damage. If there is any damage, please contact InterMetro Customer Service immediately.

Battery Preparation



Caution:

Before placing the MPS-4007 Li-Nano Power Supply into service on a Metro™ Series Mobile Computing Workstation, the Li-Nano cells must be connected. They are not connected during shipment due to USDOT and IATA regulations. Please see “Connecting the Power Supply Batteries” in “Maintenance and Storage” below.

Charging the Power Supply Battery

Before placing a Metro™ Series Mobile Computing Workstation into service for the first time with the MPS-4007 Li-Nano Power Supply, the power supply battery should be initially charged for a full 24 hours. To charge the battery, plug the coiled AC power cord into an AC outlet and put the ON/Extended Storage Switch into the “ON” position (see “Powering Up the MPS-4007 Li-Nano Power Supply” below). For further information on the charge indicator lights of the Remote Fuel Gauge, please refer to the “Remote Fuel Gauge” section below.

After the initial charge, the charge time from a completely discharged battery is typically four hours.

Powering Up the MPS-4007 Li-Nano Power Supply

The MPS-4007 Li-Nano Power Supply is controlled by the “ON/Extended Storage” Switch located on the side of the unit.

ON/Extended Storage Switch

In the “ON” position, the power supply provides power to the Metro™ Series Mobile Computing Workstation systems. If the workstation is not used for an extended period of time, the ON/Extended Storage Switch should be put in the “Extended Storage” (OFF) position. The switch position disconnects the battery from any internal or external equipment and avoids deep discharges of the battery, which can cause damage to the battery.

Notice:

If the MPS-4007 Li-Nano Power Supply has been switched to “Extended Storage” for more than 1 week, connect the workstation to AC to wake up the power supply before switching it to “ON.”



ON/Extended Storage Switch



Warning: Risk of Electric Shock

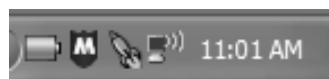
The Power Supply employs a Lithium Ion Nano-Phosphate (Li-Nano) battery to provide mobile DC output power. Low voltage (11-16 VDC) DC power is available from the Power Supply even when the AC cord is disconnected from an AC outlet. To remove DC power, put the ON/Extended Storage Switch in the “Extended Storage” position.

Starting BatteryPro400

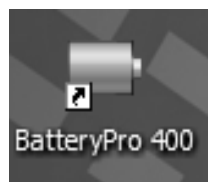
BatteryPro400 Mobile Computing Workstation Power Supply Management Software is an optional application for monitoring the status of the MPS-4007 Li-Nano Power Supply. When installed, BatteryPro400 is typically configured to start automatically when the host computer starts up. No additional user action is required.

Notice: BatteryPro400 requires the workstation computer to be connected via USB to the MPS-4007 USB-B port. The connection is already made if the workstation is delivered with the MPS-4007 and BatteryPro400 installed.

If BatteryPro400 is not running as indicated by the status tray icon shown below, it can be started by double-clicking on the Green Battery icon shortcut provided on the desktop by the software installation.

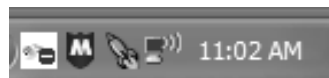


Battery shape indicates BatteryPro400 is running (example shown is fully charged state).



If BatteryPro400 is not running, double-click on the desktop shortcut to start BatteryPro400.

Notice: BatteryPro400 shortcut is also available from the Windows Start All Programs menu.

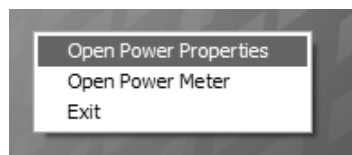


White box with red symbol may appear very briefly when BatteryPro400 has just started while the power supply and computer establish USB communications. The status should change to the battery shape above: if it does not, the USB connection between the computer and power supply has a problem. See “Troubleshooting” below.

Notice: The first time BatteryPro400 is launched, the Windows Firewall may ask you if you want to continue to block BatteryPro400. If this happens, click the “Unblock” button.

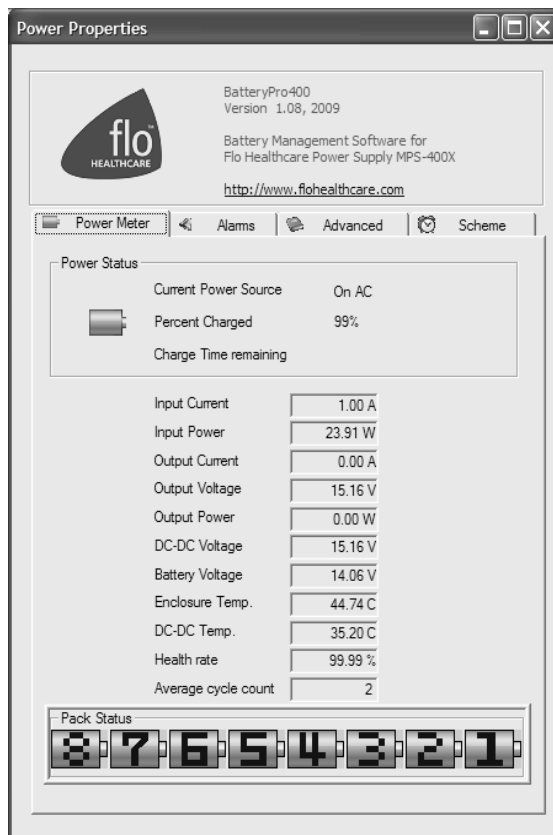
BatteryPro400 Settings

BatteryPro400 settings are configured through the BatteryPro400 Power Properties dialog. The Power Properties dialog is entered by right-clicking on the BatteryPro400 status tray icon, highlighting (with the mouse pointer) and selecting “Open Power Properties” with a left click.



Right click on BatteryPro400 status tray icon and select and left click on “Open Power Properties” to enter BatteryPro400 Power Properties configuration dialog.

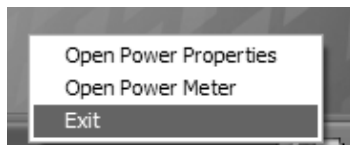
The tabs in the Power Properties dialog shown below may be selected to view and configure the BatteryPro400 settings. See the section “BatteryPro400 Configuration and Status” below.



Metro BatteryPro400 Power Properties Dialog

Terminating BatteryPro400

BatteryPro400 can be stopped by right-clicking on the BatteryPro400 status tray icon, highlighting (with the mouse pointer) and selecting “Exit” with a left click.



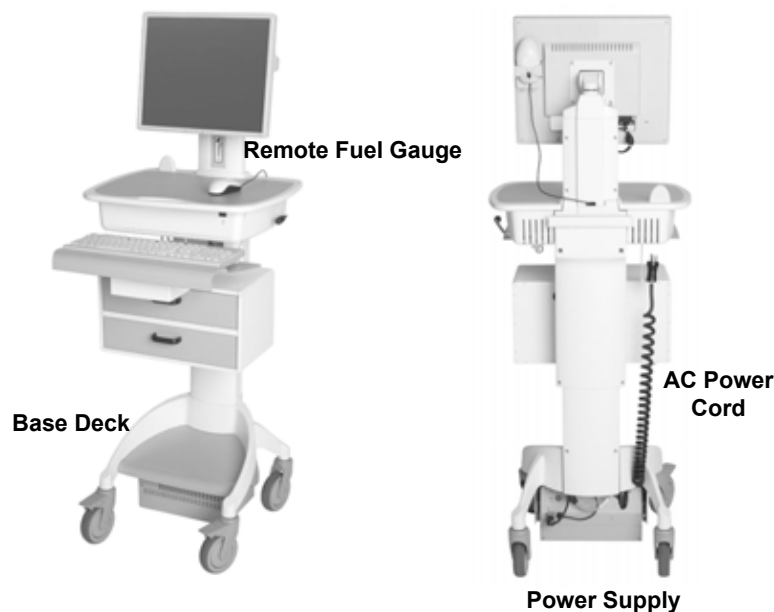
Right click on BatteryPro400 status tray icon and select and left click on “Exit” to stop BatteryPro400.

Operation

The following section describes the basic function and operation of the MPS-4007 Lithium Ion Nano-Phosphate (Li-Nano) Power Supply System.

Power Supply Location on the Metro™ Series Mobile Computing Workstation

The MPS-4007 Li-Nano Power Supply is located in the bottom of the Metro™ Series Mobile Computing Workstation under the Base Deck. The Remote Fuel Gauge located on the monitor stalk and the AC Power Cord associated with the Power Supply are also indicated.



Metro™ 1700 Series Base Showing Location of Power Supply

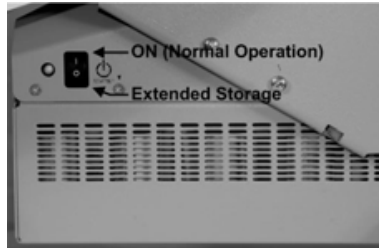


Caution:

Before using the equipment for the first time, the Li-Nano cells must be connected. They are not connected during shipment due to USDOT and IATA regulations. See “Connecting the Power Supply Batteries” in “Maintenance and Storage” below.

Powering Up the MPS-4007 Li-Nano Power Supply

To turn on the Power Supply, flip the ON (Normal Operation)/Extended Storage switch located on the side of the power supply to the “ON” (up) position.



Metro™ MPS-4007 Li-Nano Power Supply “ON/Extended Storage” Switch

Important Notice:

If the MPS-4007 Li-Nano Power Supply has been switched to “Extended Storage” for more than 1 week, connect the workstation to AC to wake up the power supply before switching it to “ON.”

Remote Fuel Gauge

To display the charge level of the Li-Nano cells when operating on DC power, a Remote Fuel Gauge is connected to the power supply. The embedded Remote Fuel Gauge is located just below the monitor in the stalk and gives the user the current battery status at eye level height.



Remote Fuel Gauge

If the battery is fully charged, all five (5) amber LEDs are illuminated. The LEDs always display the battery charge level whether the computer is operating or not. As the battery loses charge, the LEDs gradually turn off, one at a time. Once the top four LEDs are off and only the amber LED marked “LOW” is illuminated and flashing, it is recommended to plug the AC cord into an AC outlet as soon as possible to charge the battery.







Notice:

Once the amber LED marked “LOW” starts to flash, plug the power supply into an AC outlet to avoid loss of system power, which may cause loss of data.

Notice:

Once the Li-Nano Power Supply has been plugged into an AC outlet, the Remote Fuel Gauge two green LEDs marked “AC” and “CH” turn on.

Charge Status Seven (7) multi color LEDs (green, amber) located on the Remote Fuel Gauge display the charging status of the Li-Nano power supply.

Fuel Gauge	Status
	<p>Battery is discharging under normal, mobile operation. Example shown is down to about 50% charge remaining.</p>
	<p>Low battery LED flashing: plug power supply into AC immediately.</p>
	<p>AC indicates the power supply is plugged into the wall AC. CH indicates the battery is charging. The amber LEDs will turn on in sequence to indicate the charging status. Example shown is up to about 50% charged.</p>
	<p>AC indicates the power supply is plugged into the wall AC. The Amber LEDs indicate the battery is fully charged. Note that the CH LED is not lit because the battery is not being charged since the cycle is complete.</p>

Flashing LEDs Additional patterns with flashing of the LEDs indicate a problem with the MPS-4007 Power Supply. Please see “Troubleshooting” in “Maintenance and Storage” below for additional information.

Charge Time Charge time for fully depleted batteries depends on the amount of load connected to the power supply.

Typically it takes about 4 hours to fully charge a completely depleted battery, if the load of cart electronics is less than 30 Watts. For a greater load, charging will take longer:

Examples:

1. Workstation electronics load is in a range greater than 30 Watts. The power supply can only charge 7 of 8 battery packs in 4 hours. After 4 hours, the charged indication will be 85%. The remaining battery pack will charge fully in 4 more hours for a total charge time of 8 hours.
2. Workstation electronics load is in a range greater than 110 Watts. The power supply can only charge 4 of 8 battery packs in 4 hours. After 4 hours, the charged indication will be 50%. The remaining 4 battery packs will charge fully in 4 more hours for a total charge time of 8 hours.

Upon completion of the charge cycle, all 5 amber LEDs will be illuminated and the green CH (charge) LED will turn off, indicating that the batteries of the power supply are fully charged.

Notice:
Extended Storage If the Mobile Computing Workstation will not be used for an extended period of time, ensure the ON/Extended Storage Switch is set to the “Extended Storage” (OFF) position. If the power supply is left in the “ON” position, the workstation equipment will continue to draw power and deep discharge the battery.

Notice:
Long Term Storage (Longer than one week) If the Mobile Computing Workstation is to be placed in long term storage (longer than one week), the Power Supply should be fully charged before placing the “ON/Extended Storage” switch in the “Extended Storage” (OFF) position.

Notice: MPS-4007 Li-Nano Power Supply enters sleep mode after one week in Extended Storage.

If the MPS-4007 Li-Nano Power Supply has been switched to “Extended Storage” (OFF) for more than 1 week, connect the workstation to AC to wake up the power supply before switching it to “ON.”



Warning: Risk of Electric Shock

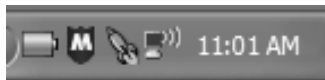
The Power Supply employs a Li-Nano battery to provide mobile DC output power. Low voltage (10-16 VDC) DC power is available from the Power Supply even when the AC cord is disconnected from an AC outlet. To remove DC power, put the ON/Extended Storage Switch in the “Extended Storage” (OFF) position.

Starting BatteryPro400 Application

When installed, BatteryPro400 is typically configured to start automatically when the host computer starts up. No additional user action is required.

Notice: BatteryPro400 requires the workstation computer to be connected via USB to the MPS-4007 USB-B port. The connection is already made if the workstation is delivered with the MPS-4007 and BatteryPro400 installed.

If BatteryPro400 is not running as indicated by the status tray icon shown below, it can be started by double-clicking on the Green Battery icon shortcut provided on the desktop by the software installation.



Battery shape indicates BatteryPro400 is running (example shown is fully charged state).



If BatteryPro400 is not running, double-click on the desktop shortcut to start BatteryPro400.

Notice: BatteryPro400 shortcut is also available from the Windows Start All Programs menu.

Notice: The first time BatteryPro400 is launched, the Windows Firewall may ask you if you want to continue to block BatteryPro400. If this happens, click the “Unblock” button.



If Windows Firewall pops up the Security Alert shown the first time BatteryPro400 is launched, click the “Unblock” button.

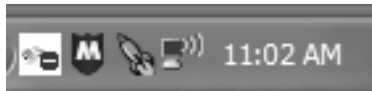
BatteryPro400 Status Indications

BatteryPro400 has two ways of showing the status of the workstation power supply. Both are shown in the lower right-hand side of the computer display, in and above the status tray.

1. An icon in the status tray shows the state of the power supply batteries.
2. The Desktop Status Window, that can be hidden or moved anywhere on the workstation monitor display, provides brief information of the state of the power supply batteries.

Status Icon

The Status Icon in the status tray shows the charge status of the workstation power supply batteries.



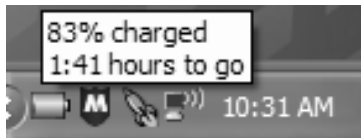
Communications: Standby. Power supply and workstation computer communications interrupted.

Symbol may appear very briefly when BatteryPro400 has just started while the power supply and computer establish USB communications. The status should change to a battery shape below: if it does not, the USB connection between the computer and power supply has a problem. See "Troubleshooting" below.



Charging. Power supply is plugged into AC power source and is charging the batteries.

Green will scroll across the battery icon indicating that it is charging.



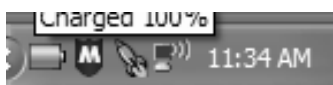
Placing the mouse pointer over the icon will reveal the charging status: the percentage of charge in the batteries and remaining charge time to full charge.



Fully Charged or Discharging, Full Level.

1. Power supply is plugged into AC power source and the batteries are fully charged, or
2. Power supply is not plugged into AC power source and is running on nearly fully charged batteries.

Battery icon is a steady green. Placing the mouse pointer over the icon will reveal the charge status.



Discharging. Power supply is not plugged into AC power and is running on batteries.

Battery icon is steady green to the battery charge level.



Discharging, Low Level. Power supply is not plugged into AC power and is running on batteries. Battery charge has dropped below threshold set for “Low Battery Alert” (see “Alarms” below).

Battery icon is steady yellow to the battery charge level.

Notice: A “Low Battery Alert” message may be displayed.



Discharging, Critical Level. Power supply is not plugged into AC power and is running on nearly discharged batteries. Battery charge has dropped below threshold set for “Critical Battery Alert” (see “Alarms” below).

Battery icon is steady red to the battery charge level.

Notice: A “Critical Battery Alert” message may be displayed.

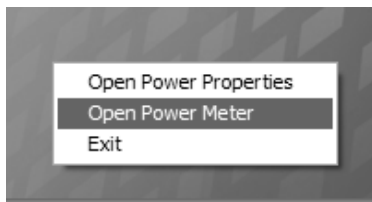
Desktop Status Window

The BatteryPro400 Desktop Status Window normally appears above the status tray icon. It provides descriptive information of the charge status of the workstation power supply batteries, including estimated times to complete charging or until fully discharged. The Status Window will appear when BatteryPro400 is started if the “Always Display Battery Status” box is checked in the Scheme tab of the BatteryPro400 Power Properties dialog (see “Scheme” under “BatteryPro400 Configuration and Status” below).

Displaying the Desktop Status Window

The Desktop Status Window is enabled for display in two ways:

1. Right click on BatteryPro400 status tray icon and select and left click on “Open Power Meter” to display the Desktop Status Window.
2. Open the BatteryPro400 Power Properties dialog, select the “Scheme” tab and left click on (to check) the “Always Display Battery Status” box (see also “Scheme” under “BatteryPro400 Configuration and Status” below).



Right click on BatteryPro400 status tray icon and select and left click on “Open Power Meter” to display the Desktop Status Window.

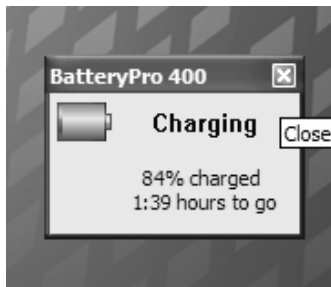
Moving the Desktop Status Window

You may move the Desktop Status Window by clicking on it and holding down the left mouse button, and then dragging it to any part of the monitor display.

Hiding the Desktop Status Window

The Desktop Status Window is hidden (disabled from display) in two ways:

1. Click on the “X” to hide the Desktop Status Window (minimizes to the BatteryPro400 status tray icon).
2. Open the BatteryPro400 Power Properties dialog, select the “Scheme” tab and left click on (to clear) the “Always Display Battery Status” box (see also “Scheme” under “BatteryPro400 Configuration and Status” below).



Click on the “X” to hide the Desktop Status Window (minimize to the BatteryPro400 status Tray icon).

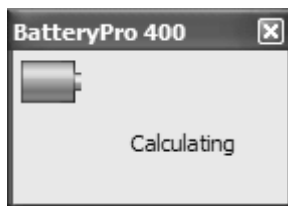
Desktop Status Window Indications

Following are the indications and meanings of the Desktop Status Window.



Communications: Standby. Power supply and workstation computer communications interrupted.

Symbol may appear very briefly when BatteryPro400 has just started while the power supply and computer establish USB communications. The status should change to next state below: if it does not, the USB connection between the computer and power supply has a problem. See “Troubleshooting” below.



Calculating. Power supply data loading.

When BatteryPro400 has just started it loads the data from the power supply. The status should change to one of the states shown following.



Charging. Power supply is plugged into AC power source and is charging the batteries.

Green will scroll across the battery icon indicating that it is charging.

Battery charge level is displayed as a percentage and, based on the current equipment load, the calculated remaining charge time.



Charged. Power supply is plugged into AC power source and the batteries are fully charged.

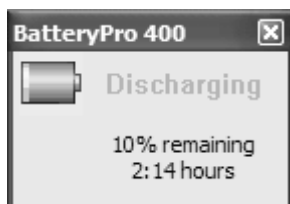
Battery icon is a steady green.



Discharging. Power supply is not plugged into AC power and is running on batteries.

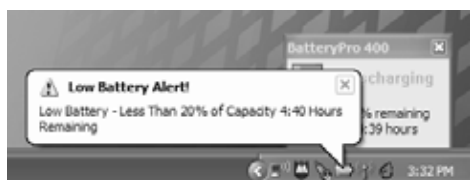
Battery icon is steady green to the battery charge level.

Battery charge level is displayed as a percentage and, based on the current equipment load, the calculated remaining run time.

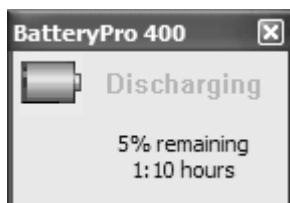


Discharging, Low Level. Power supply is not plugged into AC power and is running on batteries.

Battery charge has dropped below threshold set for “Low Battery Alert” (see “Alarms” below). Battery icon is steady yellow to the battery charge level.

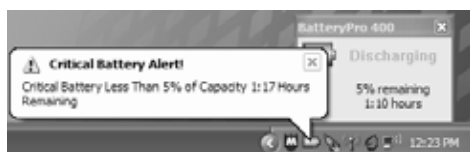


Notice: A “Low Battery Alert” message may be displayed if “Display Message” box is checked for the Notification action. See “Alarm Notification and Action Settings” in “Alarms” below.

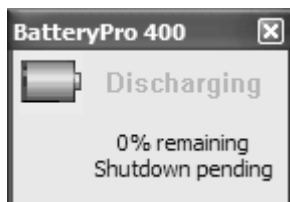


Discharging, Critical Level. Power supply is not plugged into AC power and is running on nearly discharged batteries.

Battery charge has dropped below threshold set for “Critical Battery Alert” (see “Alarms” below). Battery icon is steady red to the battery charge level.



Notice: A “Critical Battery Alert” message may be displayed if “Display Message” box is checked for the Notification action. See “Alarm Notification and Action Settings” in “Alarms” below.



Discharging, Shutdown Pending. Power supply is not plugged into AC power and is running on nearly discharged batteries.

Battery charge has dropped to near zero and power supply is about to turn off. Battery icon is steady red to the battery charge level.

It is recommended that the power supply be plugged into AC power immediately.

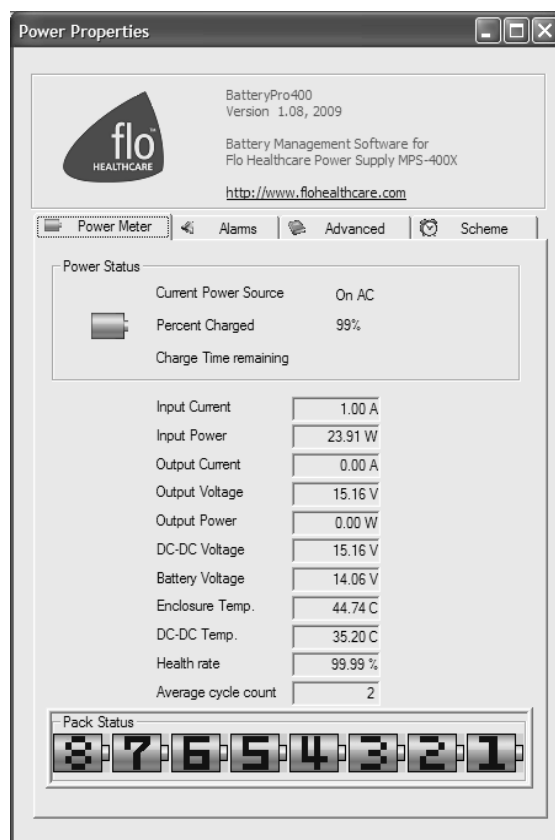
Notice: A “Critical Battery Alert” message may be displayed based on the actions set for the Alarms (see “Alarms” below).

BatteryPro400 Configuration and Status

BatteryPro400 settings are configured through the BatteryPro400 Power Properties dialog. The Power Properties dialog also displays more detailed status and diagnostic information. The tabs in the Power Properties dialog may be selected to configure and view the various BatteryPro400 settings and status:

- **Power Meter:** Displays the current summary information about the power source and batteries.
- **Alarms:** Displays and allows changes to low and critical battery alert levels and actions settings.
- **Advanced:** Displays power supply configuration information and workstation computer disk requirements for hibernation.
- **Scheme:** Displays and allows changes to BatteryPro400 Power Scheme settings and to reveal or hide the display of the Desktop Status Window.
- **Diagnosis:** Hidden tab: when revealed, displays power supply and individual battery data for troubleshooting purposes.

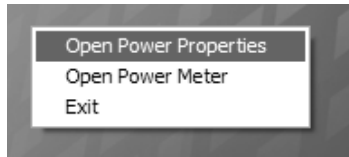
The following sections detail the functions of the tabs in the Power Properties dialog.



Default Metro BatteryPro400 Power Properties Dialog

Opening the BatteryPro400 Power Properties Dialog Window

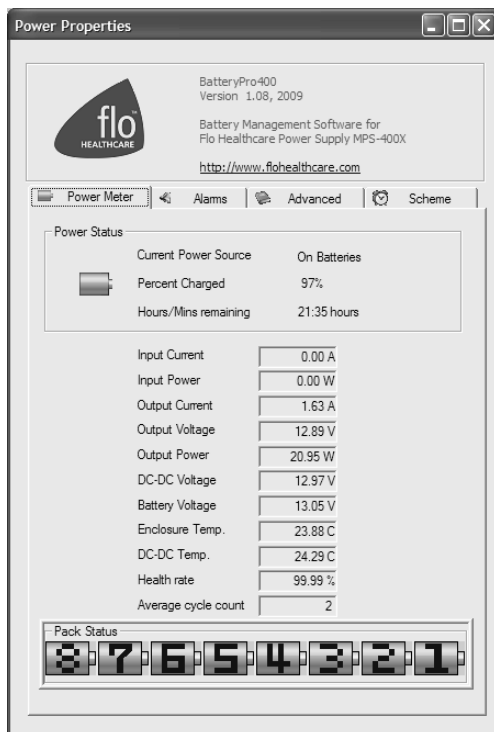
The Power Properties dialog is entered by right-clicking on the BatteryPro400 status tray icon, highlighting (with the mouse pointer) and selecting “Open Power Properties” with a left click.



Right click on BatteryPro400 status tray icon and select and left click on “Open Power Properties” to enter BatteryPro400 Power Properties configuration dialog.

Power Meter

The “Power Meter” tab is the default display when the BatteryPro400 Power Properties dialog is first displayed. The “Power Meter” tab displays the current summary information about the power source and batteries.



Power Meter Tab Display: On Batteries

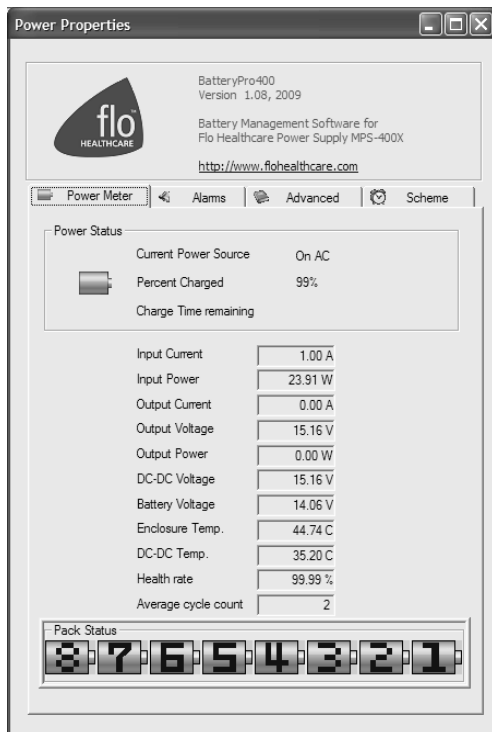
Select “Power Meter” tab in BatteryPro400 Power Properties dialog (appears first when Power Properties dialog is first opened).

Shown at left is indication of running off battery.

Display includes battery specifications, percent capacity of charge and calculated run time remaining.

Click on “X” to minimize the dialog back to the status tray icon.

Click on another tab to view or edit other settings.



Power Meter Tab Display: On AC

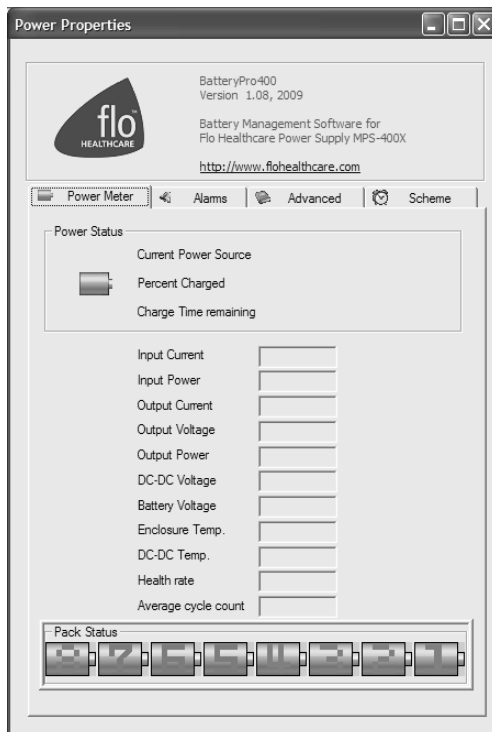
Select "Power Meter" tab in BatteryPro400 Power Properties dialog (appears first when Power Properties dialog is first opened).

Shown at left is indication of plugged in and running off AC and charging.

Display includes battery specifications, percent of capacity charged and time remaining until fully charged.

Click on "X" to minimize the dialog back to the status tray icon.

Click on another tab to view or edit other settings.



Power Meter Tab Display: No Communication

Select "Power Meter" tab in BatteryPro400 Power Properties dialog (appears first when Power Properties dialog is first opened).

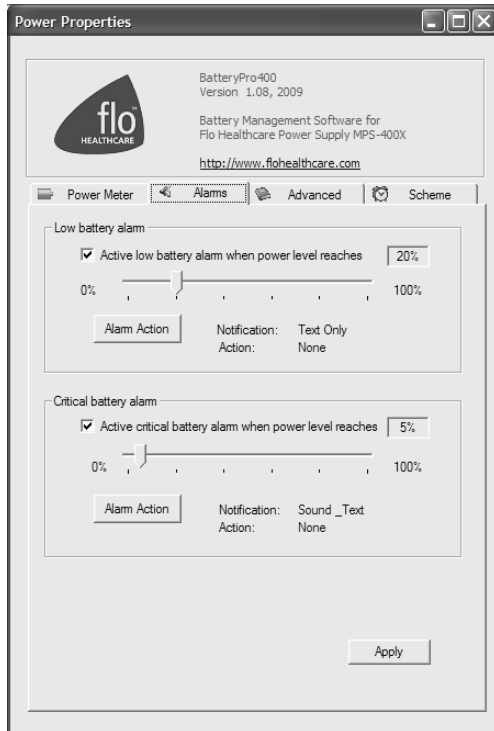
Shown at left is the blank dialog that occurs if the power supply and workstation computer communications are interrupted and the status tray icon and Desktop Status Window display "Communications: Standby."

Click on "X" to minimize the dialog back to the status tray icon.

Click on another tab to view or edit other settings.

Alarms

Click on the “Alarms” tab to view or change low and critical battery alert levels and actions settings. Clicking on the “Alarm Action” buttons displays additional options for setting the messages and actions to be taken by BatteryPro400 when the alarms occur.



Alarms Tab Display

Select “Alarms” tab in BatteryPro400 Power Properties dialog.

Set Low Battery and Critical Battery Alarm threshold levels by:

1. Click check box to activate alarm.
2. Click on and while holding down mouse button, drag pointer on threshold slide bar. Percentage is battery discharge level when the alarm will activate Notification and perform the Action shown.
3. Click on “Alarm Action” button to set Alarm actions. New dialog will pop up (see below).

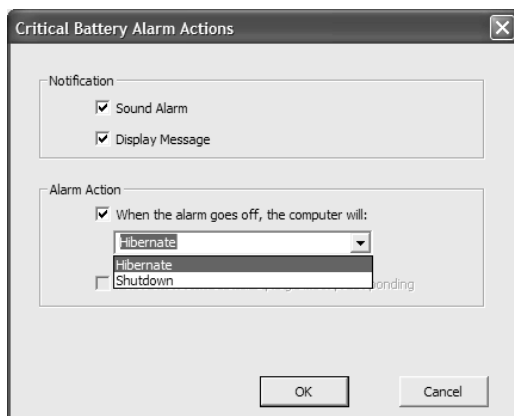
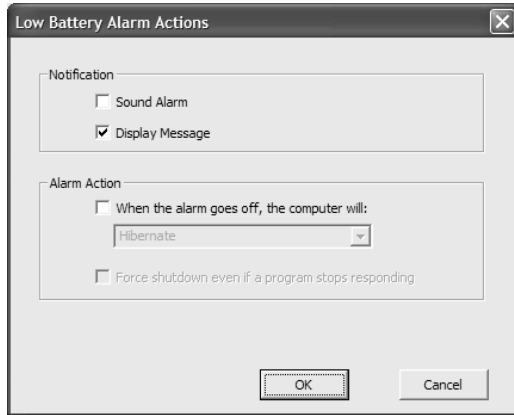
Click on “Apply” button to apply new values.

Click on “X” to minimize the dialog back to the status tray icon.

Click on another tab to view or edit other settings.

Alarm Notification and Action Settings:

Click on “Alarm Action” button to set Alarm actions. There are separate settings for the Low Battery and Critical Battery Alarms.



Notification settings:

Click check boxes to set type of Notification desired. Two types are available in any combination:

1. Sound Alarm: a Windows Default Critical Error Program Error sound that runs one time only.
2. Display Message: a pop-up warning message will appear on the screen. See “Desktop Status Window” above.

Click on “OK” button to apply new value and exit the dialog.

Click on “Cancel” button or “X” to exit dialog without saving change to settings.

Alarm Action setting:

Click check box to enable an Alarm action to be performed when the alarm occurs.

Click on down arrow at right of setting to open drop down list.

Click on desired action: Hibernate or Shutdown. If enabled by the checkbox, the workstation computer will perform the selected action when the alarm level is reached.

Click on “OK” button to apply new value and exit the dialog.

Click on “Cancel” button or “X” to exit dialog without saving change to settings.

Advanced

Click on the “Advanced” tab to display configuration information about the power supply and disk space requirements and availability for workstation computer hibernation.



Advanced Tab Display

Select “Advanced” tab in BatteryPro400 Power Properties dialog.

Display includes:

1. Power supply configuration information.
2. Available disk space and required disk space for hibernation.

Click on “X” to minimize the dialog back to the status tray icon.

Click on another tab to view or edit other settings.

Scheme

Click on the “Scheme” tab to set the BatteryPro400 Power Scheme and to set whether the Desktop Status Window will always be displayed (see “Desktop Status Window” above).



Scheme Tab Display

Select “Scheme” tab in BatteryPro400 Power Properties dialog.

Set the following:

1. Power Scheme Settings.
2. Always Display Battery Status

Click on “Apply” button to apply new values.

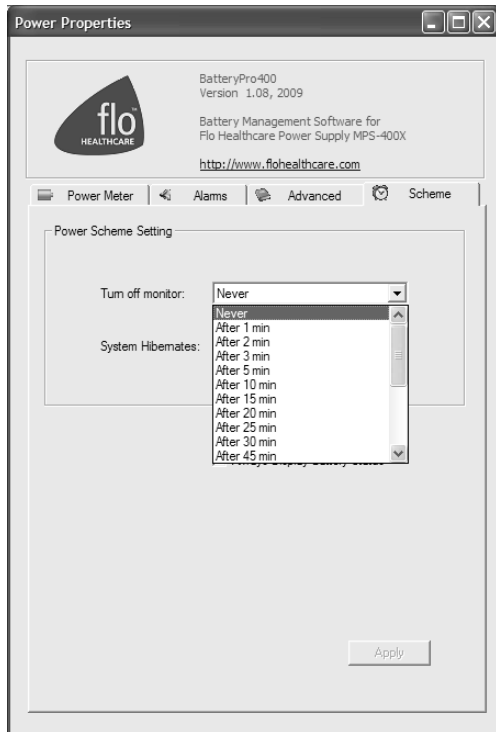
Click on “X” to minimize the dialog back to the status tray icon.

Click on another tab to view or edit other settings.

Power Scheme Setting:

The Power Scheme Setting sets two delays for when the workstation is not actively being used:

1. “Turn off monitor”: delay until the system turns off the workstation display monitor.
2. “System Hibernates”: delay until the computer enters hibernation.



Power Scheme Setting:

Click on down arrow at right of setting to open drop down list.

Click on desired time delay value – use right side bar to scroll down for more values.

Click on “Apply” button to apply new values.

Click on “X” to minimize the dialog back to the status tray icon.

Click on another tab to view or edit other settings.

Always Display Battery Status checkbox:

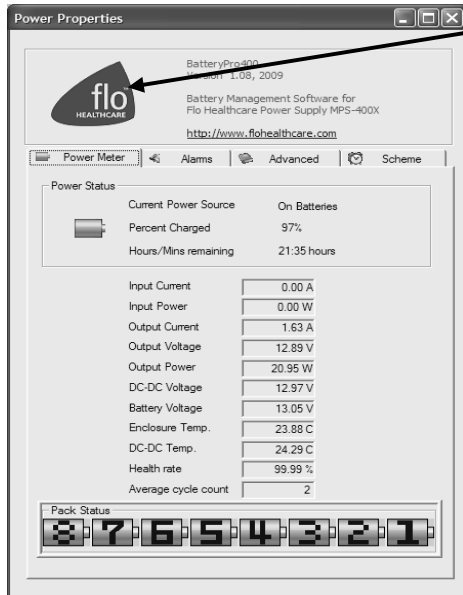
The “Always Display Battery Status” checkbox controls the display of the Desktop Status Window:

- The Desktop Status Window is enabled to view immediately by left clicking on to check the box on the Scheme tab. This performs the same function as the procedure in “Displaying the Desktop Status Window” above.
- The Desktop Status Window is disabled and hidden from view immediately by left clicking on to un-check or clear the box on the Scheme tab. This performs the same function as the procedure in “Hiding the Desktop Status Window” above.

Diagnosis

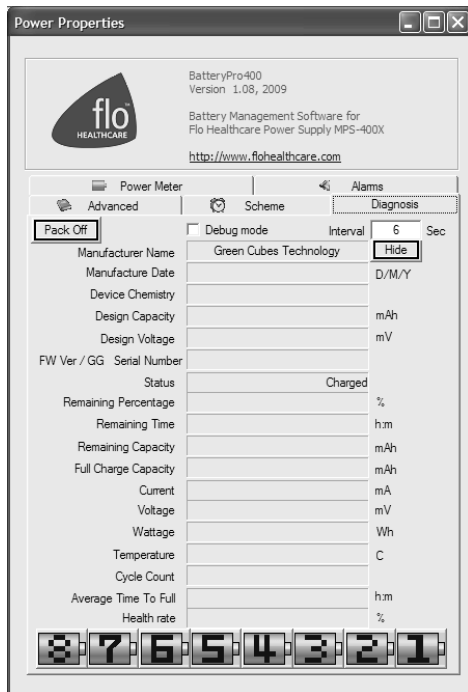
When revealed, clicking on the “Diagnosis” tab provides a running list of power supply and battery data for troubleshooting purposes.

Notice: The hidden BatteryPro400 “Diagnosis” tab is revealed by holding down the “Ctrl” key and clicking on the “flo Healthcare” icon in the BatteryPro400 dialog display.



Reveal Diagnosis Tab

While holding down “Ctrl” key, click on blue flo™ Healthcare icon in upper left of dialog to reveal hidden “Diagnosis” tab.



Diagnosis Tab Display

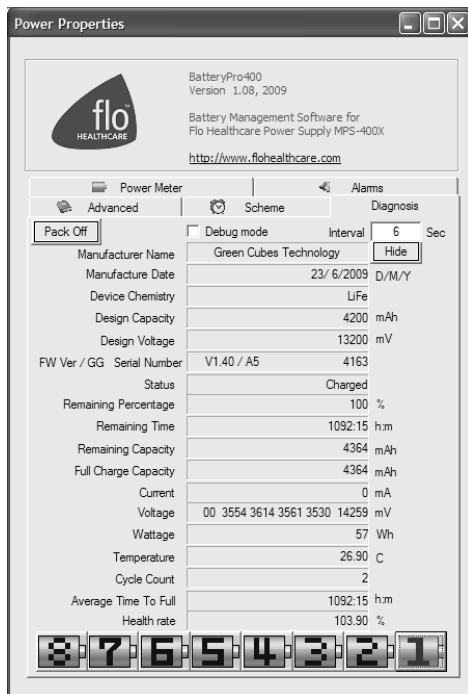
When the “Diagnosis” tab is first revealed, the BatteryPro400 Power Properties dialog defaults to its display.

When available, select “Diagnosis” tab in BatteryPro400 Power Properties dialog.

In this display each battery pack may be individually monitored. The “Hide” button hides the “Diagnosis” tab again.

Click on “X” to minimize the dialog back to the status tray icon.

Click on another tab to view or edit other settings.



Battery Pack Diagnostic Display

Click on a number at the bottom of the dialog to display the data for that battery pack.

Selected battery number will turn red from blue.

Click on another number to display another battery pack data.

Click on “X” to minimize the dialog back to the status tray icon.

Click on another tab to view or edit other settings.

Hide Diagnosis Tab:

Click the “Hide” button to hide the “Diagnosis” tab again.

Debug Mode Checkbox:

Click the “Debug mode” checkbox to enable debug mode. Enabling the Debug mode will cause battery data to be written to a log file “x:\Documents and Settings\All Users\Application Data\BatteryPro400\Debug_BatteryInfo.log” at a time interval set by the “Interval” field.

Data Save Interval:

Enter the time, in seconds, into the “Interval” field, for the desired time interval to save data to the log file when the debug mode is enabled (see “Debug Mode Checkbox” above).

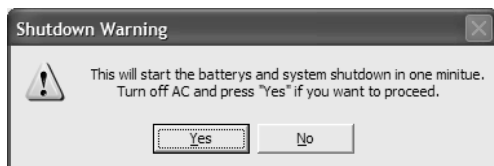
Turn Off Battery Packs:

Clicking on the “Pack Off” button will start a battery pack shutdown process. It is not recommended to proceed with turning off the battery packs.



Caution: Shutdown of Battery Packs.

Do not proceed with battery pack shutdown.



If you click on the “Pack Off” button in the “Diagnosis” dialog above, the “Shutdown Warning” will appear. Do not proceed with shutdown. Click “No” button to abort the shutdown.

Notice: If you click the “Yes” button, connect the workstation to AC to wake up the batteries.

MPS-4007 Power Supply System Installation

In general, the Metro™ MPS-4007 Li-Nano Power Supply is provided already installed on a Metro™ Mobile Computing Workstation and is ready for use.

The MPS-4007 Li-Nano Power Supply can be retrofitted, replaced or installed new on a Metro™ Mobile Computing Workstation. The power supply is self-contained and is attached using the correct mounting hardware and cables on the bottom of the Metro™ Mobile Computing Workstation base.

For additional help, contact InterMetro Customer Service.

Hardware Installation

Mounting the MPS-4007 Power Supply



Caution:

For safety, only qualified service personnel should perform the following procedure to mount the MPS-4007 Power Supply on the Metro™ Mobile Computing Workstations.

To mount the MPS-4007 Power Supply to the workstation base as a new or replacement to an existing power supply, perform the following steps:

Notice: All handle brackets, screws and other hardware used in this procedure are usually taken from a previous power supply mounted on the workstation. If replacement hardware is needed, please contact InterMetro Customer Service.

1. Attach two handle brackets, one on each side of the power supply using three 8-32 pan head screws. Be sure to put the right-hand bracket on the right side and left-hand on the left side (the ramp tabs should be at the low end of the slant and to the outside).
2. Facing the back of the workstation, align the handle brackets inside the power supply mounts on the bottom of the workstation base. Lift the power supply up and move toward the front of the workstation, sliding the handle brackets up the ramp of the mounts, until the tabs on lower ends of the brackets drop and catch in the slots on the mounts.
3. Secure each side with two 8-32 pan head screws.
4. Ensure that the batteries are connected. See “Connecting the Power Supply Batteries” below.
5. Connect all cables: DC Power connector, RJ45 cable to the Gauge port, USB to the USB-B port (If provided. **Notice:** USB connection is required for use with BatteryPro400) and AC cable. Secure the AC cable with the clamp to the ground stud on the back of the power supply.

Removing the MPS-4007 Power Supply



Caution:

For safety, only qualified service personnel should perform the following procedure to remove the MPS-4007 Power Supply from the Metro™ Mobile Computing Workstations.

To remove the MPS-4007 Power Supply from the workstation base for replacement, perform the following steps:

Notice: Save all handle brackets, screws and other hardware that are removed by this procedure for the replacement power supply to be mounted on the workstation. If replacement hardware is needed, please contact InterMetro Customer Service.

1. Disconnect all cables: DC Power connector, RJ45 cable from the Gauge port, USB from the USB-B port and AC cable. Remove the AC cable clamp from the ground stud on the back of the power supply.
2. Disconnect the batteries when shipping the power supply. See “Disconnecting the Power Supply Batteries for Shipment” below.
3. Remove the two 8-32 pan head screws from the workstation power supply mounts on each side.
4. Facing the back of the workstation, lift the power supply up to free the tabs from the slots on the mounts on the bottom of the workstation base. Slide the handle brackets down the ramp of the mounts and lift out the power supply.
5. Remove the three 8-32 pan head screws from each of the two handle brackets on each side of the power supply.

Notice: The handle bracket hardware must be removed and the batteries must be disconnected before returning the power supply to InterMetro Industries Corporation.

Software Installation

The BatteryPro400 software application installation file contains all drivers and applications for BatteryPro400 operation.

Notice: Typically, the BatteryPro400 Mobile Computing Workstation Power Supply Management software and drivers are installed at the factory and no additional installation is required.

Notice: The software package should already be installed on the workstation computer before plugging in the USB cable.

BatteryPro400 software packaged with the electronic version of this manual is available for download from www.metro.com. Contact InterMetro Customer Service for additional details.

Application Installation

Run "Setup_BatteryPro400_Vxxx.exe" from the installation disk supplied or from the downloaded file from www.metro.com. "xxx" in the file name is the release version number. "Setup_BatteryPro400_Vxxx.exe" will automatically install the BatteryPro400 application.

USB HID Driver Installation

Plug in the USB cable to complete the installation of the required USB Human Interface Device (HID) driver. Windows will detect the new device on the USB port and automatically perform the "Found New Hardware" utility as shown below. Installation of the driver is automatic and requires no user intervention. For additional details, contact InterMetro Customer Service.



USB HID Driver Installation

Windows will detect the new device on the USB port and automatically perform the "Found New Hardware" utility. No user actions should be required.

Maintenance and Storage

Cleaning

Use Metro Cleaner (foaming aerosol available from InterMetro Customer Service), or an equivalent mild hospital disinfectant, to clean the exposed surfaces of the Power Supply on a regular basis. Metro Cleaner is compatible with all of the components of the Metro™ Series Mobile Computing Workstation.

- Dampen a soft cloth with Metro Cleaner or equivalent cleaner.
- Wipe surfaces until clean.
- Do not spray Metro Cleaner into any openings (like air vents or fan on power supply) of the Power Supply.
- Do not use Metro Cleaner for medical devices used for patient contact (EKG contacts, etc.).

Connecting the Power Supply Batteries

Notice:

The following procedure for Connecting the Power Supply Batteries applies only to Metro™ Series Mobile Computing Workstation equipped with the Li-Nano Power Supply (MPS-4007). The battery cells are not connected during shipment due to USDOT and IATA regulations. The procedure is required immediately after unpacking before powering up and using the workstation for the first time.

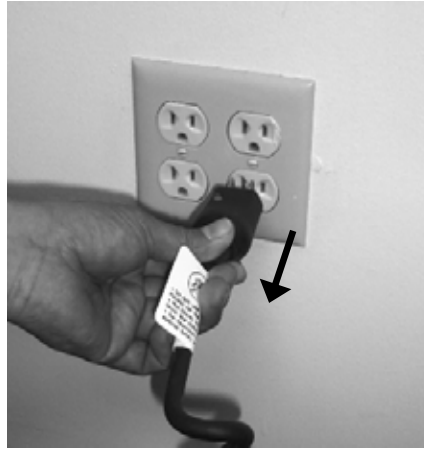


Caution:

Only qualified service personnel should perform the following procedure for Connecting the Power Supply Batteries.

Ensure Power
Supply is off

- Ensure the AC cable is disconnected from the wall outlet.



- Ensure Normal Operation/Extended Storage switch of the Power Supply is in the Extended Storage (Standby: down) position.



Power Supply switch down to Standby

Open the Battery
Connector Access
Panel

Notice: On some models Metro™ Series Mobile Computing Workstation it may be necessary to access the Power Supply on the back by opening a cover door at the bottom of the cart.



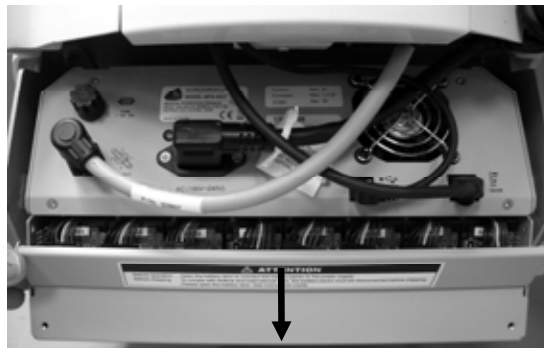
Open Power Supply Cover Door As Required

- Remove screws on sides of power supply that hold the Battery Connector Access Panel.



Power Supply Rear View

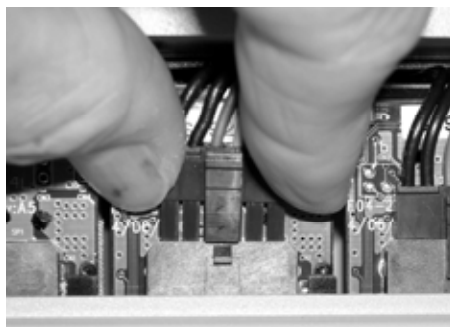
- Rotate the Battery Connector Access Panel down by gripping the tab on either side with the thumb and index finger of your hand.



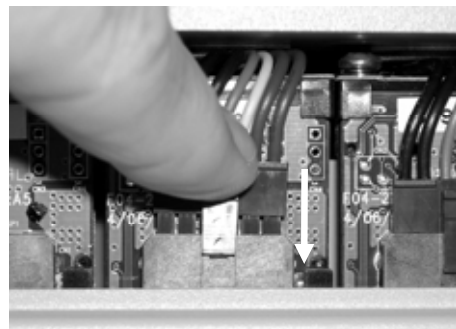
Rotate the Battery Connector Access Panel down to open

Connect the Battery Cells.

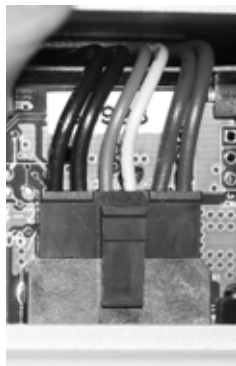
- At each connector, firmly grip the cable plug between thumb and index finger. Line up the plug with the socket below it and insert it downward all the way until the latch locks completely. The latch should click into place.



Line up Cable Plug with Socket



Press Cable Plug firmly into Socket until clip locks



Properly seated connection

Notice: Instructions for disconnecting the batteries are also printed on a label inside the Battery Connector Access Panel.

- Check that all connections have been made and properly seated with latches locked. There are up to of 8 battery pack connectors in an MPS-4007 Li-Nano power supply.



Properly seated connections

Close the Battery Connector Access Panel

- Rotate the Battery Connector Access Panel back up, pushing until the top is firmly seated against the case.



Rotate the Battery Connector Access Panel up to close

- Re-install the screws on sides of power supply that hold the Battery Connector Access Panel.

Disconnecting the Power Supply Batteries for Shipment

Notice:

The following procedure for Disconnecting the Power Supply Batteries applies only to Metro™ Series Mobile Computing Workstation equipped with the Li-Nano Power Supply (MPS-4007). The battery cells must not be connected during shipment due to USDOT AND IATA regulations. The procedure is required when preparing to ship an MPS-4007 Power Supply or a Metro™ Series Mobile Computing Workstation equipped with the Power Supply.



Caution:

Only qualified service personnel should perform the following procedure for Disconnecting the Power Supply Batteries.

Ensure Power Supply is off

- Ensure the AC cable is disconnected from the wall outlet and Normal Operation/Extended Storage switch of the Power Supply is in the Extended Storage (Standby: down) position (see procedure above in “Connecting the Power Supply Batteries”).

Open the Battery Connector Access Panel

- Open the Battery Connector Access Panel as detailed above in “Connecting the Power Supply Batteries.”

Disconnect the Battery Cells.

- At each connector, slip a large flat head screwdriver under the latch of the connector offset to the left as shown below.



Slip a large flat head screwdriver under connector latch

- While pressing with the thumb to release the latch, rotate the screwdriver up and left to lift the connector up out of the socket.

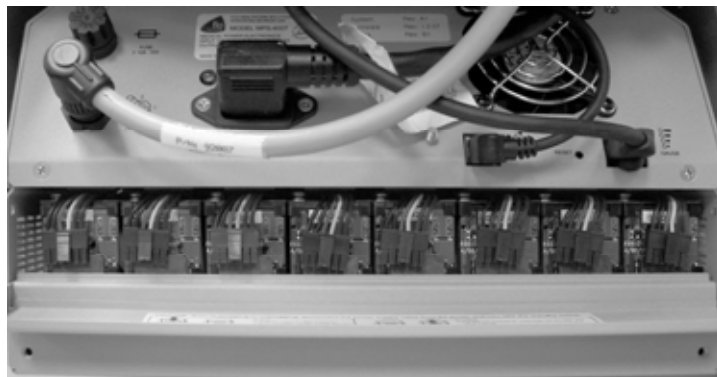


While pressing the latch, push up by rotating the screwdriver left

Notice:

Instructions for disconnecting the batteries are also printed on a label inside the Battery Connector Access Panel.

- Check that all connections have all been properly disconnected. There are up to of 8 battery pack connectors in an MPS-4007 Li-Nano power supply.



All battery cable plugs disconnected

Close the Battery Connector Access Panel

- Close the Battery Connector Access Panel as detailed above in “Connecting the Power Supply Batteries.”

Fuse Replacement



Caution:

For continued protection against risk of fire, replace only with the same type and rating of fuse

AC input: No fuse

DC output: F 12 A 32 V (Fast acting 12 A 32 V fuse ¼ x 1¼ in, glass)

Storage and Transport Conditions

Environmental conditions for shipping and storage are:

- Ambient temperature range of -40°C to +70°C (-40°F to 160°F).
- Relative humidity range of 10% to 100%.
- Atmospheric pressure range of 14.76 in. Hg to 31.29 in. Hg.

Troubleshooting

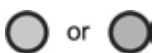
General Tips

- If a problem occurs while you're working, stop immediately. If you continue, you may lose data and destroy problem-related information.
- Observe what is happening. Write down what the power supply, workstation computer and other devices are doing as well as what actions you took immediately before the problem occurred.
- What appears on the workstation monitor? Record or capture a screen image of any messages that occur.
- Carefully read popup messages, especially if you are also using BatteryPro400: they generally contain information that gives a solution to the problem that occurs. Please refer also to the BatteryPro400 Users Manual if it is in use.
- What programs and/or optional devices are you using on the workstation?
- See if you can cause the problem to occur again. This may help you understand the source of the problem and will help you describe the problem if you must call InterMetro Customer Service for technical assistance.
- What LEDs on the Fuel Gauge are illuminated or flashing? See also the "Fuel Gauge Warnings" below.
- Do you hear any beeps? How many? Are they long or short?
- Check the power supply fuse. Is it intact?

Fuel Gauge Warnings

The Power Supply Fuel Gauge flashes LEDs to indicate a detected problem.

Fuel Gauge warning LED indication legend:



Yellow or Green: flashing LED



Grey: LED off



White: On or Off: the state does not matter: ignore the LED



LOW LED flashing: Battery nearing end of charge

- Plug power supply into AC immediately.



Warning 1: Power supply overheating, AC-DC module

- Air flow in the power supply may be restricted due to cooling fan not working properly, fan blocked, or clogged ventilation slots around the power supply case.
- Turn off computer equipment and then the power supply.
- Check that the fan is not blocked. Check the ventilation slots around the power supply case for dust build-up and clean.
- Turn on the power supply and restart the computer equipment.
- If this problem continues, contact InterMetro Customer Service.



Warning 2: Power supply overheating, DC-DC module

- Air flow in the power supply may be restricted due to cooling fan not working properly, fan blocked, or clogged ventilation slots around the power supply case.
- Turn off computer equipment and then the power supply.
- Check that the fan is not blocked. Check the ventilation slots around the power supply case for dust build-up and clean.
- Turn on the power supply and restart the computer equipment.
- If this problem continues, contact InterMetro Customer Service.



Warning 3: Battery pack overheating

- Turn off computer equipment and then the power supply.
- Let cool for 2 hours.
- Turn on the power supply and restart the computer equipment.
- If this problem continues, contact InterMetro Customer Service.



Warning 4: Battery pack overheating, critical

- System will shut down in 2 minutes.
- Immediately turn off computer equipment and then the power supply.
- Let cool for 2 hours.
- Turn on the power supply and restart the computer equipment.
- If this problem continues, contact InterMetro Customer Service.



Warning 5: Power Supply Low temperature

- System temperature below 0 °C (32 °F) has been detected. Ambient temperature is below operating range, temperature sensor has failed or has become disconnected.
- If power supply or its workstation are in an area where the temperature is below 0 °C (32 °F - freezing), move to an area of ambient temperature above 0 °C (32 °F - freezing), otherwise,
- Turn off computer equipment and then the power supply.
- Turn on the power supply and restart the computer equipment.
- If this problem continues, contact InterMetro Customer Service.



No Battery Warning

- No battery packs are detected in the power supply. Battery packs most likely were not connected before the power supply was placed into service.

Notice: The battery cells are not connected during shipment due to USDOT AND IATA regulations.

- Turn off computer equipment and then the power supply.
- Make sure battery packs are connected by performing procedure in “Connecting the Power Supply Batteries” above.
- Turn on the power supply and restart the computer equipment.
- If this problem continues, contact InterMetro Customer Service.



Warning 6: Battery Pack Low temperature

- Pack temperature below 0 °C (32 °F) has been detected. Ambient temperature is below operating range, temperature sensor has failed or has become disconnected.
- If power supply or its workstation are in an area where the temperature is below 0 °C (32 °F - freezing), move to an area of ambient temperature above 0 °C (32 °F - freezing), otherwise,
- Turn off computer equipment and then the power supply.
- Turn on the power supply and restart the computer equipment.
- If this problem continues, contact InterMetro Customer Service.



Warning 7: Output fuse blown

- The DC output fuse is blown.
- Immediately turn off the power supply.
- Check your workstation cart for a possible short.
- Replace the fuse as specified in “Fuse replacement” above.
- Turn on the power supply and restart the computer equipment.
- If this problem continues, contact InterMetro Customer Service.

Technical Specifications

Input Voltage	100 - 240 VAC, 50/60 Hz, 2.5 to 1.5 A
Output Voltage	11 – 16 V
Maximum Output Power	120 W
Battery Type	Li-Nano (Lithium-Ion Nano Phosphate, LiFePO ₄)
Short Circuit Protection	12 A fuse at the output
Battery Capacity	420 Wh (full load of 8 battery packs)
Charging Time	4 hours for < 30 W load
Operating Temperature	10 °C to 30 °C (50 °F to 86 °F)
Charge Status Indicator	LED on remote fuel gauge
Outlet rating	Charge 10 carts per 20 A circuit
Weight	21 lbs.
Approvals	FCC Part 15 Subpart B, Class A, Industry Canada Class A UL60601-1 and CSA C22.2 No. 601.1 IEC/EN 60601-1-1 (Safety, Medical Equipment) IEC/EN 60601-1-2 (EMC, Medical Equipment) RoHS compliant (RoHS Directive 2002/95/EC)

Contacting InterMetro Industries Corporation

InterMetro Industries Corporation Contact Information

InterMetro Industries Corporation

651 North Washington Street

Wilkes-Barre, PA 18705

Phone: 1-800-992-1776

<http://www.metro.com/support>

InterMetro Customer Service

For all customer service related issues, or if you need technical assistance, please call our customer service department at:

1-800-992-1776	Americas
905 676 9890	Canada
+31 76 58 77550	Europe
+9714 811 8286	Middle East
+65 6550 1291	Asia-Pacific

Repair

Power Supply:

P/N : 402198

P/S : MMDDYY-XXXXX

Workstation:

METRO INTERMETRO INDUSTRIES
WILKES-BARRE, PA USA

FLO 1760 MOBILE
COMPUTING WORK STATION

MODEL: FLA-1595

SERIAL: L091130083

US PATENTS: 6,493,220 & 6,721,178

INPUT 100-240 V~, 50-60Hz, 5 A

 **MEDICAL
EQUIPMENT** 
C US CERTIFIED TO UL 60601-1
230691 CAN/CSA C22.2 NO. 601.1
FCC ID# 

THIS DEVICE COMPLIES WITH PART 15 OF FCC
RULES. OPERATION IS SUBJECT TO THE
FOLLOWING TWO CONDITIONS: (1) THIS
DEVICE MAY NOT CAUSE HARMFUL
INTERFERENCE, AND (2) THIS DEVICE MUST
ACCEPT ANY INTERFERENCE RECEIVED,
INCLUDING INTERFERENCE THAT MAY CAUSE
UNDESIRABLE OPERATION.
ASSEMBLED IN USA www.metro.com/support

To return equipment for repair:

- Have model and serial numbers ready: obtain either the Power Supply information from its label or the Workstation information from its label as shown at left.
- Contact InterMetro Customer Service at the contact number given above to obtain a RMA number.
- Please write the RMA number on the air bill in the reference section on the outside of the package.
- Return the equipment to:

InterMetro Industries Corporation

3263 Elam Farms Pkwy

Murfreesboro, TN 37127