Metro™ Series
Mobile Computing Workstations
MPS-3111 Series
Sealed Lead Acid
Power Supply

Operations Manual Supplement

L01-506 RevA

www.metro.com

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Notice:

InterMetro Industries Corporation reserves the right to make improvements or changes in the products described in this manual at any time without notice.

While reasonable efforts have been made in the preparation of this document to assure its accuracy, InterMetro Industries Corporation assumes no liability resulting from any errors or omissions in this document, or from the use of the information contained herein.

Copyright Notice:

Contact Information:

InterMetro Industries Corporation
North Washington Street
Wilkes-Barre, PA 18705
Phone: 1-800-992-1776
http://www.metro.com/support

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:

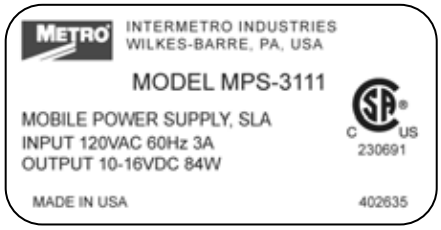
This class A digital apparatus meets all requirements of the Canadian Interface Causing Equipment Regulations. Operation is subject to the following two conditions:

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 CSA certified with respect to electrical shock, fire and mechanical hazards only in accordance with UL 60601-1, CAN/CSA C22.22 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-3111 series 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-3111 series 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 Sealed Lead Acid (SLA) 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 and unplug the Power Supply from the AC outlet.

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.

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	6/4/2010	V. Bowman
L01-506, RevA	1) As per Metro Standards this Operations Manual is assigned with new Commodity Code **L01-506** with Initial Release as **RevA** with effective from 01/09/2013. 2) Previous nomenclature of this document is **402547 Rev A MPS 3111 SLA PS Operations Manual** 3) Updated references in Page 9. 4) All above revisions remain valid in L01-506 RevA.	01/09/2013	Paul Prickett

Table of Contents

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-3111 Sealed Lead Acid (SLA) Power Supply is a rechargeable power source for the Metro™ Series Mobile Computing Workstations. The Metro™ SLA 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 26 Amp-hours (Ah). When it is plugged into an AC outlet, it supplies the Mobile Computing Workstation system equipment while also charging the sealed lead acid battery. When unplugged from the outlet, the power supply switches automatically to supply the workstation equipment from the internal SLA rechargeable battery. The power supply is designed for continuous operation and service is not interrupted by plugging in or unplugging the power supply

MPS-3111 Sealed Lead Acid Power Supply

Power Supply Status

The status of the MPS-3111 series Power Supply is displayed by a remote Fuel Gauge display.

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

Features

The Metro™ MPS-3111 SLA Power Supply features:

- Rugged, steel construction – built to last.
- Remote Fuel Gauge at the user's eye level.
- SLA, 26 Ah capacity rechargeable battery.
- Fits conveniently in the base of the Metro™ Series Mobile Computing Workstations.
- Compatible with Metro™ 1700 and 1800 series Mobile Computing Workstations.
- User manual supplement included.

Equipment Classification

The Metro™ MPS-3111 Series SLA Power Supply is CSA 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-3111 Series SLA 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-3111 Series SLA Power Supply is considered ordinary.

Warning: Risk of Explosion

The MPS-3111 Series SLA 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-3111 Series SLA Power Supply is suitable for continuous operation.

Important Product Notices

The MPS-3111 Series SLA 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 Metro™ MPS-3111 Series SLA Power Supply is only CSA 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 CSA certification of the power supply and 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 can be disposed of or recycled.

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

Sealed Lead Acid Battery:

The SLA Power Supply contains a sealed lead acid battery. This battery must be recycled. Disposal of this battery must be in accordance with local, state, and federal regulations. In Canada, disposal must be in compliance with Canadian environmental protection laws.

For further information call InterMetro Customer Service.

Getting Started

Installation

In general, the Metro™ MPS-3111 Series SLA Power Supply is provided already installed on a Metro™ Mobile Computing Workstation and is ready for use after fully charging the batteries.

The MPS-3111 Series SLA 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. Instructions for installing MPS-3111 Series Power Supply are provided in "MPS-3111 Power Supply System Installation" below.

Unpacking — If ordered separately, the MPS-3111 Series SLA Power Supply will arrive fully assembled and fully functional at the customer's site in a cardboard box. After cutting open the box, lift the MPS-3111 out of the box.

Inspection — After the MPS-3111 Series SLA 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.

Charging the Power Supply Battery

Before placing a Metro™ Series Mobile Computing Workstation into service for the first time with the MPS-3111 Series SLA 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-3111 SLA 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, a completely discharged battery charges in 4 to 6 hours.

Powering Up the MPS-3111 SLA Power Supply

The MPS-3111 Series SLA Power Supply is controlled in two different modes:

- When the Power Supply is plugged into AC mains, it always provides DC power output to the Metro™ Series Mobile Computing Workstation systems.

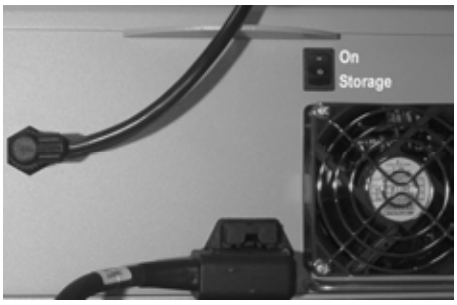
- When the Power Supply is unplugged from AC mains, the "ON/Extended Storage" Switch located on the back of the unit controls the DC power output to the Metro™ Series Mobile Computing Workstation systems.

ON/Extended Storage Switch

In the "ON" position, the SLA battery is connected to the power supply and either:

- The battery provides DC power to the Metro™ Series Mobile Computing Workstation systems when the power supply is unplugged from AC mains, or,
- The power supply charges the battery when the power supply is plugged into AC mains.

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.



ON/Extended Storage Switch

Warning: Risk of Electric Shock

The AC power cord is the only means to disconnect the MPS-3111 Series SLA Power Supply from the AC power grid (mains). The ON/Extended Storage Switch on the power supply does not disconnect from main power.

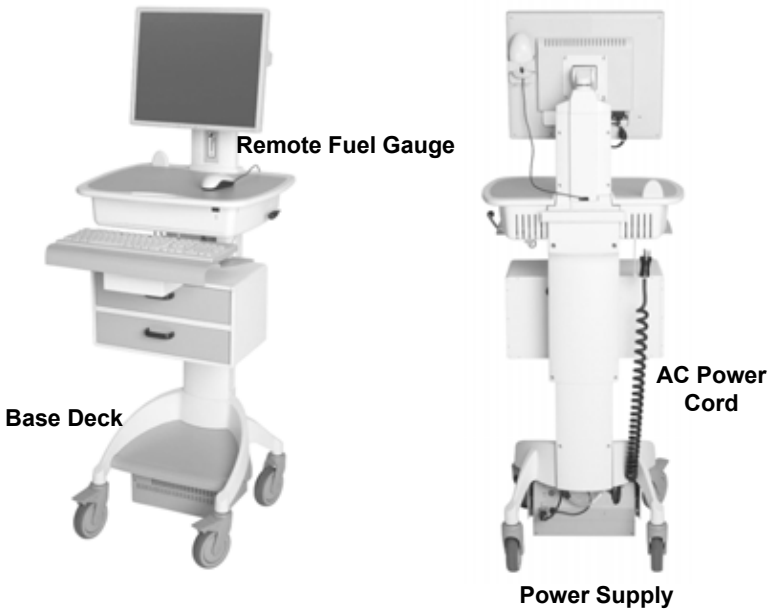
On the other side, the power supply employs a sealed lead acid battery to provide mobile DC output power. Low voltage (10-16 VDC) DC power is available from the power supply, even when the AC cord is disconnected from an AC outlet. To remove DC power, put the ON/Extended Storage Switch in the Extended Storage (OFF) position **and** unplug the power supply from the AC outlet.

Operation

The following section describes the basic function and operation of the MPS-3111 Series Sealed Lead Acid (SLA) Power Supply System.

Power Supply Location on the Metro™ Series Mobile Computing Workstation

The MPS-3111 Series SLA 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.



Mobile Computing Workstation Base Showing Location of Power Supply

Powering Up the MPS-3111 SLA Power Supply

The MPS-3111 Series SLA Power Supply supplies DC output power to the Metro™ Series Mobile Computing Workstation systems in two different modes:

- AC Mains
- DC battery power (Mobile DC Power)

Applying Power from AC Mains

To turn on the MPS-3111 Series SLA Power Supply, it only needs to be plugged into an AC outlet.

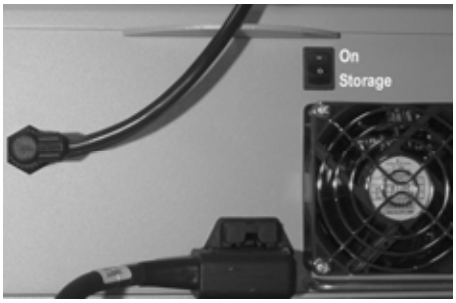
Applying Mobile DC Power

To turn on the MPS-3111 Series SLA Power Supply when it is not plugged into an AC outlet, place the ON/Extended Storage Switch located on the back of the power supply in the “ON” position to connect the battery to the power supply. Mobile DC power is available from battery only if it has enough charge.

> **Notice:**
> If placing the ON/Extended Storage Switch in the “ON” position does not turn on power supply or workstation systems, the battery may not have enough charge. See “Charging the Battery” below.

Charging the Battery

To charge the SLA battery, the ON/Extended Storage switch must be in the "ON" position and the power supply must be plugged into an AC outlet. Once the power supply is operating, you may elect to keep it plugged in to charge the battery or unplug it to run the Metro™ Series Mobile Computing Workstation systems off battery power.



SLA Power Supply

In order to determine the charge level of the SLA battery when operating on battery 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.

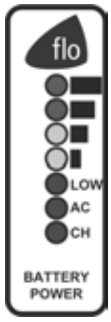
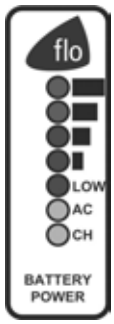
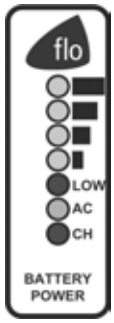
Remote Fuel Gauge

If the battery is fully charged, the top four (4) amber LEDs are illuminated. The LEDs always display the battery charge level whether the computer is operating or not. As the battery looses charge, the LEDs gradually turn off, one at a time.

Notice:
Once all 4 amber LEDs are OFF, the amber LOW LED starts flashing. Plug the power supply into an AC outlet immediately in order to avoid loss of system power, which may cause loss of data.

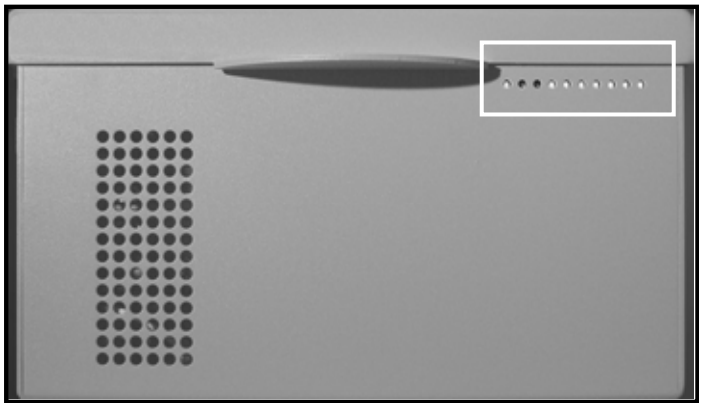
Notice:
If the power supply is plugged into an outlet and charging, the green AC and CH LEDs are illuminated. Once the charge cycle is complete, the green CH LED goes off and the 4 top amber LEDs come on to indicate a fully charged battery.

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

Fuel Gauge	Status
	Battery is discharging under normal, mobile operation. Example shown is down to about 50% charge remaining.
	Low battery LED flashing: plug power supply into AC immediately.
	AC indicates the power supply is plugged into the wall AC. CH indicates the battery is charging. The top 4 amber LEDs will turn on and the green CH LED will turn off when charging is complete.
	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.

Power Supply Fuel Gauge

The sealed lead acid power supply also features a fuel gauge on the Power Supply:



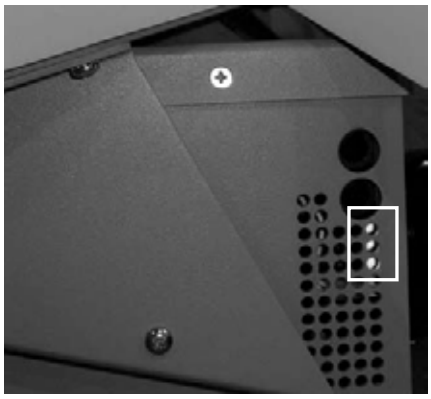
SLA Power Supply Fuel Gauge

Indicator Light (from left to right)	**Description**
Green Power Light	Indicates that the power supply is plugged into an AC outlet.
Green Charging Light	Indicates that the battery is charging.
Low Battery Indicator	Off as long as battery charge is greater than 12% or when the AC cord is plugged in. Flashes when the battery charge drops below 12%. Will resume flashing if AC cord is disconnected and the charge is still less than 12%.
7 Amber Lights Low High Fully Charged	Indicates the full charge level of the battery. When the battery is finished charging, all the amber lights are lit and the green charging light turns off. The green power LED stays on, unless the power supply is unplugged.
Low High Nearly Discharged	As the battery discharges, the lights go out from right to left.

Charge Controller Status:

Three LEDs on the side of the MSLA provide operational status of the MSLA charge controller board. The controller board LEDs are defined as follows:"

Older Versions	Newer Versions	Definition
Amber	Amber	Digital 5VDC is active.
Red	Amber	DC output is active.
Green	Green	AC mains mode is active.



Charge Controller Status LEDs

Charging — Once the AC power cord is plugged into an AC outlet, the sealed lead acid power supply starts charging.

Notice:
It is highly recommended to keep the SLA power supply plugged into an AC outlet whenever possible. Continuously allowing the battery to discharge to low levels shortens the overall life of the battery.

Charge Time — Before using the equipment for the first time, the SLA battery should receive a full charge of 24 hours.

In order to fully charge a completely depleted battery, the power supply requires a quick charge of about 4 to 6 hours.

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, workstation equipment will continue to draw power and deep discharge the battery.

Notice: Long Term Storage (Longer than one week) — If the Mobile 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.

Warning: Risk of Electric Shock

The AC power cord is the only means to disconnect the MPS-3111 Series SLA Power Supply 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 sealed lead acid 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 **and** unplug the power supply from the AC outlet.

MPS-3111 Power Supply System Installation

In general, the Metro™ MPS-3111 Series SLA Power Supply is provided already installed on a Metro™ Mobile Computing Workstation and is ready for use.

The MPS-3111 Series SLA 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

Notice: The following mounting and removal procedures apply to the most recent version of the MPS-3111 Series Power Supply for the Metro™ Mobile Computing Workstations. Older versions employ stud mounting slots on the top of the unit instead of the bracket system described below. For additional information and help, please contact InterMetro Customer Service.

Mounting the MPS-3111 Power Supply

Caution:

For safety, only qualified service personnel should perform the following procedure to mount the MPS-3111 Series Power Supply on the Metro™ Mobile Computing Workstations.

To mount the MPS-3111 Series 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. Connect all cables: DC Power connector, RJ45 cable to the RJ45 port, and AC cable. Secure the AC cable with the clamp to the ground stud on the back of the power supply.

Removing the MPS-3111 Power Supply

Caution:

For safety, only qualified service personnel should perform the following procedure to remove the MPS-3111 Series Power Supply from the Metro™ Mobile Computing Workstations.

To remove the MPS-3111 Series 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 RJ45 port, and AC cable. Remove the AC cable clamp from the ground stud on the back of the power supply.
2. Remove the two 8-32 pan head screws from the workstation power supply mounts on each side.
3. 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.
4. 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.

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 workstation 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, etc.) of the Power Supply.
- Do not use Metro Cleaner for medical devices used for patient contact (EKG contacts, etc.).

Use a vacuum cleaner to directly remove dust buildup around the fan intake. Hold the vacuum nozzle at the fan intake to PULL dust out of the unit rather than blowing dust into the unit.

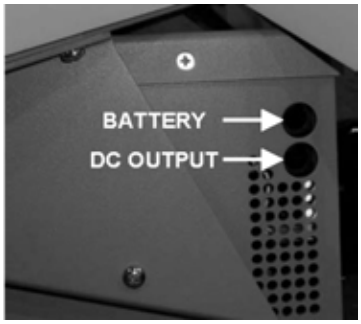
- When replacing the battery (see "SLA Battery Replacement" below), Use a vacuum cleaner to remove any dust or debris buildup inside the power supply around the SLA battery and power electronics.

Fuse Replacement

Caution:

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

AC input:	2x F 6.3 A 250 V (Fast acting 6.3 A 250 V fuse 5 x 20 mm)
DC output:	F 10 A 250 V (Fast acting 10 A 250 V fuse 5 x 20 mm)
Battery input:	F 10 A 250 V (Fast acting 10 A 250 V fuse 5 x 20 mm)



Location of DC Output and Battery Input Fuses

SLA Battery Replacement

Periodically the SLA battery in the MPS-3111 Series SLA Power Supply will no longer hold a charge and must be replaced with a new battery.

Keep a record, tracking by department, of SLA battery replacement: high use departments will need more frequent battery replacement than low use departments.

Caution:

For safety, only qualified service personnel should perform the following procedure to replace the MPS-3111 Series Power Supply battery.

Notice:

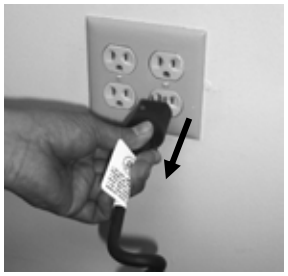
New SLA batteries in storage must be maintained by periodically taking them out and fully charging. Unused SLA batteries in storage will lose charge over time and if allowed to discharge too completely they will be damaged and unable to hold a charge. For further information call InterMetro Customer Service.

The following tools are required to replace the MPS-3111 Series Power Supply SLA battery:

- #2 Phillips screwdriver
- ¼" nut driver (long shaft or shaft extension recommended)
- ¼" box wrench (optional)

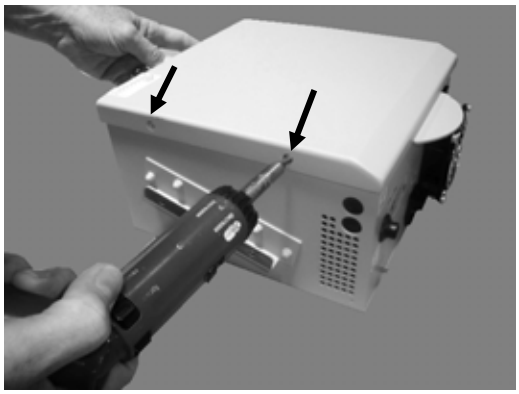
To replace the MPS-3111 Series Power Supply SLA battery, perform the following steps:

1. Ensure the ON/Extended Storage switch is set to the “Extended Storage” (OFF) position and unplug the AC cord.



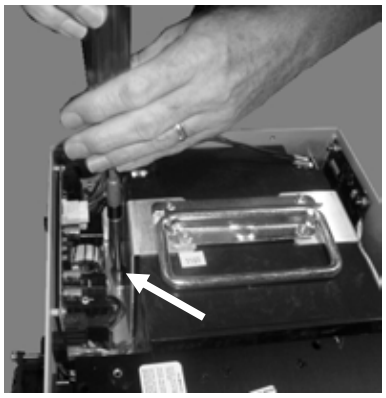
2. Remove the Power Supply from the workstation base. (See “Removing the MPS-3111 Power Supply” above).

3. With the Power Supply away from the workstation, remove the top cover by removing the two Phillips screws on either side near the top of the case.



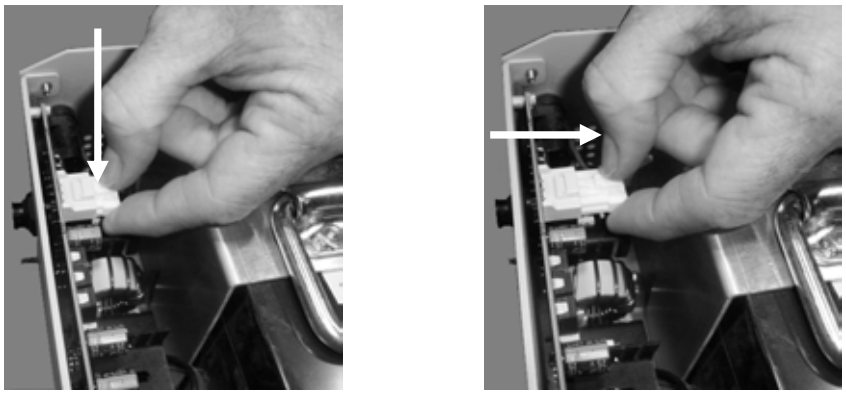
Remove Screws from Top Cover

4. Inside the case, locate the two retaining nuts on the sides of the SLA battery. Using the nut driver, remove the nuts from the screw posts.



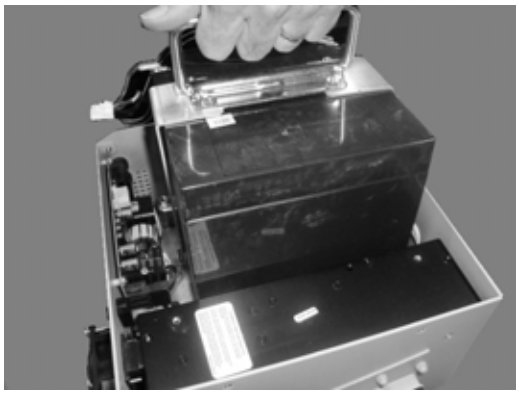
Remove Nuts Holding SLA Battery

5. Unplug the battery harness, push down on connector as shown and pull away from the logic board.



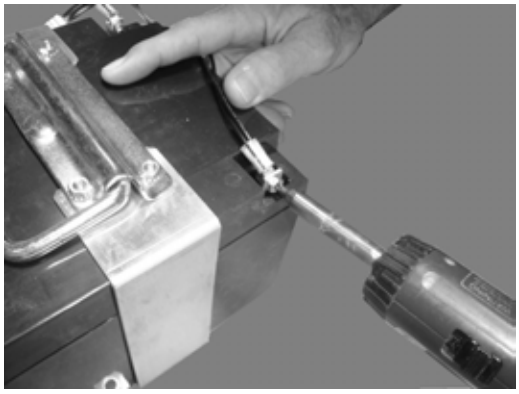
Unplug Battery Harness

6. Lift the battery out of the MSLA Power Supply case.



Lift the SLA Battery Up and Out (Using handle - if attached)

7. Using the screwdriver and ¼" box wrench if necessary, remove the wiring harness from the battery.



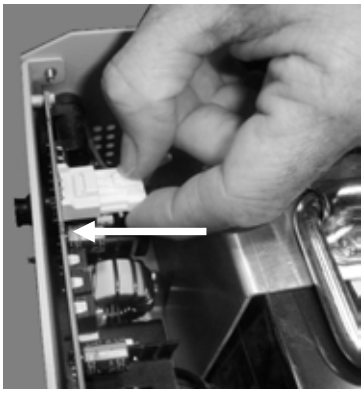
Disconnect the Harness from the SLA Battery Terminals

8. If the battery has a metal carrying handle, remove the four ¼" nuts on the top and remove the battery from the carrying handle.

Remove Nuts to Remove Handle (if present)

9. Place the new battery in the carrying handle, and replace the four nuts removed in step 8 above.
10. Re-install the wiring harness on the new battery removed in step 7 above.

11. Place the new battery inside the MSLA power system. Make sure to line up the holes on the carrying handle with the screw posts on the bottom of the power supply case.
12. Plug the wiring harness into the logic board.



Plug the Battery Harness In

13. Replace the nuts that were removed in step 4, being careful not to damage any of the circuit boards.
14. Replace the top cover that was removed in step 3. Make sure all four screws are started before tightening down and, paying attention to the handles and fuel gauge label, ensure the cover is placed in the direction shown below.

Placement of the Lid Cover on the Power Supply Case

15. Install the Power Supply back onto the workstation base: (See "Mounting the MPS-3111 Power Supply" above).
16. Charge the new battery fully before placing back in service: (See "Charging the Power Supply Battery" under "Getting Started" above).

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.

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: they generally contain information that gives a solution to the problem that occurs. • 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? • Do you hear any beeps? How many? Are they long or short? • Check the power supply fuses. Are they intact?

Problem	**Checks**
The power supply switch is in the "Extended Storage" position, but the mobile workstation is still powered up when I plug into AC.	• The power supply switch is not an ON/OFF switch. For normal operation, turn the switch to the "ON" position. For long-term storage, unplug the power supply from AC **and** put the switch in the "Extended Storage" (OFF) position.
Low battery LED ("LOW") is flashing.	• Battery charge is very low. Plug power supply into AC immediately to charge the battery.
The top four LEDs and AC LED are on but the CH LED is off.	• The battery is fully charged. No further action required. The unit workstation may be unplugged and run normally on battery power.

Problem	Checks
The power supply is fully charged, but when it is immediately plugged back into AC, the LEDs indicate a full charge cycle is needed.	• Unplug the power supply from AC and check the gas gauge indicator on the neck beneath the LCD monitor—it should show a full charge. • The charge controller is very sensitive to the load changes in the battery and it may interpret an immediate unplug-plug in action as a battery slightly less than full. The situation is normal and should indicate a full charge in a few minutes after plugging into AC.
The power supply makes a “clicking” noise when plugged into AC.	• Have qualified electrical personnel check the voltage at the DC output connector (it should be 16VDC when plugged into AC). • If this problem continues, contact InterMetro Customer Service.
The power supply appears fully charged, but the workstation equipment shuts down immediately after unplugging from AC.	• Check that the power supply switch is in the “ON” position. • With the power supply plugged in, check the charge status indicators to see if the unit appears to be charging normally (see “Remote Fuel Gauge” section above). • If this problem continues, contact InterMetro Customer Service.
The entire mobile workstation shuts down within a few minutes after unplugging from the wall. Appears the battery is not charging or holding a charge.	• Unplug the unit from AC mains and check the charge level on the Remote Fuel Gauge: the battery may simply require a charge cycle. • With the power supply plugged in, check the charge status indicators to see if the unit appears to be charging normally (see “Remote Fuel Gauge” section above). • Check that the power supply switch is in the “ON” position. • Check the Battery fuse to ensure it has not blown and replace if necessary. • Check that the AC power cable is working properly (switch out with a known good one to verify). • Check the AC outlet to ensure it is live. Please check it with another piece of equipment or contact your facilities engineering dept.

Problem	Checks

	• Replace the battery:
	  ○ If the battery has been in service for a long period of time or been subjected to a significant number of discharge cycles, it may not be capable of holding a charge.
	  ○ If the battery has experienced a significant deep discharge, such as leaving the power supply switch “ON” when not used for a long period of time (see “Extended Storage” above), it may be damaged.
	• If this problem continues, contact InterMetro Customer Service.

Operation on battery is unexpectedly short.	• Unplug the unit from AC mains and check the charge level on the Remote Fuel Gauge: the battery may simply require a full charge cycle.
	• With the power supply plugged in, check the charge status indicators to see if the unit appears to be charging normally (see “Remote Fuel Gauge” section above).
	• Replace the battery:
	  ○ If the battery has been in service for a long period of time or been subjected to a significant number of discharge cycles, it may not be capable of holding a charge. Typical battery manufacturer manuals recommend replacing battery when can only get approximately 80% of rated life from it.
	  ○ If the battery has experienced a significant deep discharge, such as leaving the power supply switch “ON” when not used for a long period of time (see “Extended Storage” above), it may be damaged.
	• Has any equipment been added to or changed on the workstation?
	  ○ Additional equipment increases power draw from the battery and shorter life.
	  ○ If workstation settings have changed (such as monitor brightness) from recommended specifications, battery life may be shortened.
	• If this problem continues, contact InterMetro Customer Service.

Problem	Checks
The workstation equipment does not work either on battery or when plugged into AC. The mobile workstation appears “dead”.	• Check both the Battery and the DC output fuses to ensure they have not blown; replace if necessary. • Plug in the power supply and verify the power supply fan turns on; if not, contact InterMetro Customer Service. • With the power supply plugged in, check the charge status indicators to see if the unit appears to be charging normally (see “Remote Fuel Gauge” section above). • Check that the power supply switch is in the “ON” position. • Unplug the power supply from AC and check the gas gauge indicator on the neck beneath the LCD monitor; does the gas gauge show a charge level or indicate a low battery (flashing “LOW” LED)? • Check that the AC power cable is working properly (switch with a known good one to verify). • Check the AC outlet to ensure it is live. Please check it with another piece of equipment or contact your facilities engineering dept. • Have qualified electrical personnel check the voltage at the DC output connector (it should be 16VDC when plugged into AC). • If this problem continues, contact InterMetro Customer Service.
A new battery does not appear work: The entire mobile workstation shuts down within a few minutes after unplugging from the wall.	• Be sure to give a new battery a full charge when first installed: see “Charging the Power Supply Battery” section above. • New SLA batteries in storage must be maintained by periodically taking them out and fully charging. Unused SLA batteries in storage will lose charge over time and if allowed to discharge too completely they will be damaged and unable to hold a charge. For further information call InterMetro Customer Service. • Check that the power supply switch is in the “ON” position. • Check both the Battery and the DC output fuses to ensure they have not blown; replace if necessary.

Problem	Checks
	• With the power supply plugged in, check the charge status indicators to see if the unit appears to be charging normally (see “Remote Fuel Gauge” section above). • Check that the AC power cable is working properly (switch with a known good one to verify). • Check the AC outlet to ensure it is live. Please check it with another piece of equipment or contact your facilities engineering dept. • Have qualified electrical personnel check the voltage at the DC output connector (it should be 16VDC when plugged into AC). • If this problem continues, contact InterMetro Customer Service.

Technical Specifications

Input Voltage	100 - 240 VAC, 50/60 Hz, 5 A (max)
Output Voltage	10 – 16 V (12 VDC nominal)
Maximum Output Power	84 W
Battery Type	Sealed Lead Acid (SLA)
Short Circuit Protection	6.3 A AC input, 10 A DC output
Battery Capacity	26 Ah
Charging Time	4 to 6 hours, max
Operating Temperature	10 °C to 30 °C (50 °F to 86 °F)
Charge Status Indicator	LED on power supply and LED on remote fuel gauge
Outlet rating	Charge 9 carts per 20 A circuit
Weight	38 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)

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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:

Workstation:

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