FLEXLINE MOBILE POWER CART

INSTRUCTIONS FOR USE

THIS MANUAL COVERS CARTS WITH ELECTRICAL RATINGS OF: 12V, 19V & 24V

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Metro Mobile Power Carts are for Health Care applications only
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SAFETY INFORMATION

This section contains important safety and operating instructions for Flexline mobile power cart. Please read all instructions on the cart before putting into service.

CAUTION: User maintenance consists solely of cleaning and minor external adjustments. For safety purposes, all servicing must be performed by qualified service personnel only. For all service items, please contact InterMetro Customer Service.

CAUTION: Do not operate the Flexline cart, if it has received a severe impact or has been otherwise physically damaged. Please have a qualified service person inspect both the Flexline cart in conjunction with its power supply for any performance or safety hazard prior to putting back into service.

CAUTION: 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 Flexline cart with damaged cords or connectors. Please replace the damaged component immediately. Contact InterMetro Customer Service for replacement parts and service.

DANGER: Flexline cart and the power supply are not for use in hazardous (classified) locations. Do not use nor recharge the power supply battery, in oxygen enriched areas; areas where flammable anesthetics are used or stored; or any other hazardous, classified location.

DANGER: The maximum design load (safe working load limit) for the Flexline cart is 300 lbs.(136.1kg.).

NOTICE

THE RECEIVER OF THIS PRODUCT IS RESPONSIBLE FOR FREIGHT DAMAGE CLAIMS.

- This equipment must be opened immediately for inspection.
- All visible damages must be reported to freight co. within 48 hours, and must be noted on freight bill at time of delivery.
- Concealed damage is your responsibility - you must advice carrier of any loss or damage within 15 days after receipt of material.
- If there is damage, retain original packaging for inspectors.
INTRODUCTION
This document gives detail description of Flexline Mobile Power Cart Operation, Maintenance and Troubleshooting.

Cart Overview and Features
Flexline Mobile Power Cart provides a complete management of power which is supplied to the cart and its accessories.

- The power supply is a rechargeable power source which is located in the bottom of the cart. The electrical cables and connectors from power supply pass through guided path inside the cart body and up to the All-in-one computer/monitor.
- Internal/external wire management protects cords from snags and damage.
- Overbridge keeps supplies and equipment readily accessible.
- Monitor rail and bracket are assembled to overbridge for mounting various All-In-One computer/monitor.
- For a greater range of movement, Articulating Arm is installed on monitor pole.
- The fuel gauge is mounted at the back top of cart, which is used to monitor the condition of the power supply batteries.

![Diagram of Flexline Mobile Power Cart]

Figure 1: Features of Flexline Mobile Power Cart
GETTING STARTED WITH CART

Unpacking
The Flexline Mobile Power cart will arrive fully assembled and fully functional at the customer’s site (most accessories do not ship assembled to the cart. After cutting the strapping bands, lift the top of the box over the cart. In order to avoid any injury, two (2) people should lift the cart from the padding blocks.

Power Supply Preparation
CAUTION: Before placing the Li-Nano Power Supply into service on a Flexline cart, the Li-Nano batteries must be connected. These batteries have been disconnected prior to shipment due to USDOT and IATA regulations.

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

1. The AC cable must be disconnected from the wall outlet as shown in Figure 2.

2. The Normal Operation/OFF switch of the Power Supply must be in the Standby (down) position as shown in Figure 3.

3. Remove screw from each side of power supply that hold the battery connector access panel as shown in Figure 4.

4. Rotate the battery connector access panel down by gripping the tab on either side as shown in Figure 5.
5. 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 as shown in Figure 6.

![LINE UP CABLE PLUG WITH SOCKET](image1)

![PRESS CABLE PLUG FIRMLY INTO SOCKET UNTIL CLIP LOCKS](image2)

**PROPERLY SEATED CONNECTION**

**Figure 6: Cable Plug and Socket**

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

6. Check that all connections have been made and properly seated with latches locked. There are up to of 8 battery pack connectors in an Li-Nano power supply as shown in Figure 7.

![Figure 7: Properly Seated Connections](image3)

7. Rotate the Battery Connector Access Panel back up, pushing until the top is firmly seated against the case as shown in Figure 8. Re-install the screws on sides of power supply that hold the Battery Connector Access Panel.

![Figure 8: Battery Connector Access Panel - Close](image4)
**Charging Power Supply Battery**

**NOTE:** The cart’s electrical connections to the monitor, keyboard and fuel gauge must be made as per Wiring Diagram Section in Page 15.

Before placing a Flexline Mobile Power Cart into service for the first time with the 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 into the "ON" position which is located on the side of power supply as shown in Figure 9.

In the "ON" position, the power supply provides power to the Flexline Mobile Power Cart. If the cart is not being used for an extended period of time, the ON should be put in the 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.

**NOTE:** After the initial charge, the charge time for a completely discharged battery is typically **4 hours**.

**NOTE:** If the Li-Nano Power Supply has been switched to “OFF” for more than **1 week**, connect the cart to AC to wake up the power supply before switching it to “ON.”

**WARNING:** Risk of Electric Shock - The Power Supply employs a Lithium Iron Nano-Phosphate (Li-Nano) battery to provide mobile DC output power. Low voltage (12V, 19V, 24V) 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/OFF Switch in the “OFF” position.

Refer to power supply Operations Manual Supplement “402546 Rev B MPS4007 Li-Nano” for more information.

![Figure 9: Location of ON/OFF Switch](image)
OPERATION OF MOBILE POWER CART

Description of Major Components

Depending on your order, your Flexline Mobile Power Cart will be delivered in a specific configuration. The configuration may employ the following major components:

- Power Supply
- Lockalert Touchpad
- Fuel Gauge
- BatteryPro Software
- Keyboard Tray
- Monitor and its Mounting
- Power Cord

**Power Supply**

- The Lithium Iron Nano-Phosphate (Li-Nano) Power Supply is a rechargeable power source for the Flexline Mobile Power Carts.
- This Power Supply is a fully automatic power supply charger system with a nominal DC output voltage of 12-24Volts (V) and a battery capacity of 420 Watt-hours (Wh) (35Ah).
- When plugged into an AC outlet, it supplies power to the equipment while also charging the Li-Nano cells.
- When unplugged from the outlet, the power supply switches automatically to supply the 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.

**Lockalert Touchpad**

- Touchpad (See Figure11) is powered by Li-Nano battery supply (separate charging for the touchpad is unnecessary). Touchpad cable passes through the inside of cart body to the PCB main control board and then to power supply.
- Refer to user manual L01-460 for programming and touchpad maintenance.

**Fuel Gauge**

- To monitor the charge level of the power supply battery cells when operating on mobile power, a remote fuel gauge is connected to the power supply. See Figure 12.
- The remote fuel gauge is located at the back of cart and just below the monitor mounting. It gives the user the current battery status at eye level.
- Fuel gauge cable is connected to the power supply by a connector and a cable from power supply.
Seven (7) multi color LEDs (green, amber) located on the fuel gauge display the charging status of the power supply as described below:

<table>
<thead>
<tr>
<th>Fuel Gauge</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Fuel Gauge Icon" /></td>
<td>Battery is fully charged, all five right LEDs are illuminated.</td>
</tr>
<tr>
<td><img src="image2" alt="Fuel Gauge Icon" /></td>
<td>Battery is discharging under normal, mobile operation. Example shown is about 50% charge remaining.</td>
</tr>
<tr>
<td><img src="image3" alt="Fuel Gauge Icon" /></td>
<td>Low battery LED flashing: plug power supply into AC immediately.</td>
</tr>
<tr>
<td><img src="image4" alt="Fuel Gauge Icon" /></td>
<td>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.</td>
</tr>
</tbody>
</table>

**Keyboard**

- A keyboard is situated underneath cart work surface and can be accessed by pulling out keyboard tray. Keyboard is powered from power supply through USB hub. The maximum size of keyboard the keyboard tray holds is 20”.

**FIGURE 13: KEYBOARD**

**All-In-One Computer/Monitor Mounting**

- Depending on the accessory ordered, your monitor can be either mounted on the overbridge or on a post mounted articulating arm as shown in Figure 10 and 11.
- When mounted on the overbridge, a monitor rail and monitor bracket are used. The post mounted articulating arm is mounted at the left hand rear corner of cart.
- Maximum load that overbridge can carry is 100lbs (45.4kg).
  - Monitor rail can carry load upto 50lbs (22.7kg).
- Minimum and maximum range of weight the articulating arm can carry is 6lbs (2.7kg) to 26lbs (11.7kg).
- Vesa mounted plate is used to fix All-In-One computer on overbridge and articulating arm.
- Overbridge can be mounted at two different heights on the cart i.e. 18.6” (474.7mm) and 24.6” (627.1mm) as shown in Figure 12.
- Monitor rail can be mounted at any two consecutive holes on overbridge which make up the seven different mounting locations for All-In-One computer/monitors. Refer to Figure 12.

**Powering Up the Monitor**: The Flexline Cart power supply must be turned ON first before turning ON the monitor. The ON/OFF switch for monitor is located at the back of monitor and can be turned ON/OFF as required.

**Adjusting the Display Position**: To adjust the monitor position to tilt up or down, grab the top and bottom in each hand and move to the position desired. To adjust the monitor position left or right, grab the sides with each hand and move to the position desired.

- In order to avoid damaging the display’s screen, do not press the screen with your fingers. A soft, clean, lint-free cloth or a lens brush of camel hair should be used to clean the screen. Never pour or spray any type of liquid onto the display. Additional information about the operation of the display can be found in the operating manual from the original manufacturer.
Figure 14: Monitor Mounted on Overbridge

Figure 15: Monitor Mounted on Articulating Arm
**Power Cord**

**A**

1. Unplug power cord from power supply.
2. Loosen and remove screw from clamp.
3. Remove power cord from power supply.

**B**

1. Transfer clamp to new power cord.
2. Fix and tighten retained screw to clamp it to base of mobile power cart.
3. Plug new power cord to power supply.

Note: Disconnect power cord from AC power source before disassembly of power cord from power supply.

---

**Figure 16: Overbridge and Monitor Mount Heights**

<table>
<thead>
<tr>
<th>CATALOG NO.</th>
<th>DIM. “A”</th>
<th>DIM. “B”</th>
<th>DIM. “C”</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL27K-KL</td>
<td>41.88 (1063.6mm)</td>
<td>66.56 (1690.7mm)</td>
<td>60.96 (1546.3mm)</td>
</tr>
<tr>
<td>FL30K-KL</td>
<td>45.25 (1150.4mm)</td>
<td>69.94 (1776.4mm)</td>
<td>63.94 (1624.1mm)</td>
</tr>
</tbody>
</table>
MAINTENANCE & REPLACEMENT PARTS LISTS

Cleaning Instructions
Use 70 percent isopropyl alcohol (IPA) diluted with water for cleaning power supply. You may also use one of these products to clean the power supply:

- Cidex
- Clorox Clean-Up
- “Green soap” United States Pharmacopoeia (USP)
- Formula 409
- Sani-Cloth. Plus
- Virustat TBQ

NOTE: Do not use these products on the All-in-one computer/monitor.

Ensure that power supply is off and unplugged. Apply 70 percent isopropyl alcohol to a clean nonabrasive cloth and then wipe the power supply enclosure. Cleaners applied directly to the power supply enclosure could leak inside and cause damage. Be careful not to splash solvents on power supply enclosure.

Disassembly of Power Supply from Cart

WARNING: Before disassembly power cord must be disconnected from the wall outlet.

NOTE: Disconnect all wire harness and electrical cords from power supply.
## Replacement Parts List

Certain replacement parts are based on voltage or monitor/computer type. Please confirm desired voltage and monitor/computer type when ordering parts.

<table>
<thead>
<tr>
<th>ITEM#</th>
<th>PART</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RPFL402198</td>
<td>Power Supply</td>
</tr>
<tr>
<td>2</td>
<td>RPFLC13-750</td>
<td>DC Power Battery Cable x 36° LG (914mm)</td>
</tr>
<tr>
<td>3</td>
<td>RPFL401128-1</td>
<td>Power Conxall Cable x 10° LG (254mm)</td>
</tr>
<tr>
<td>4*</td>
<td>RPFLCONVR-12V</td>
<td>Converter Assembly -12V Output</td>
</tr>
<tr>
<td>5**</td>
<td>RPFLC13-743</td>
<td>DC Power Cable, 5.5mm x 2.5mm x 42° LG (1067mm)</td>
</tr>
<tr>
<td></td>
<td>RPFLC13-744</td>
<td>DC Power Cable, 5.5mm x 2.1mm x 42° LG (1067mm)</td>
</tr>
<tr>
<td></td>
<td>RPFLC13-745</td>
<td>DC Power Cable, 5.5mm x 1.65mm x 42° LG (1067mm)</td>
</tr>
<tr>
<td></td>
<td>RPFLC13-746</td>
<td>DC Power Cable, 4.65mm x 1.65mm x 42° LG (1067mm)</td>
</tr>
<tr>
<td></td>
<td>RPFLC13-747</td>
<td>DC Power Cable, 7.4mm x 5mm x 42° LG (1067mm)</td>
</tr>
<tr>
<td></td>
<td>RPFLC13-748</td>
<td>DC Power Cable, 7.9mm x 5.4mm x 42° LG (1067mm)</td>
</tr>
<tr>
<td>6***</td>
<td>RPC13-677</td>
<td>US AC Power Cord x 144° LG (3658mm)</td>
</tr>
<tr>
<td></td>
<td>RPSXRC13-656</td>
<td>CTL EURO AC Coil Power Cord x 96° LG (2438mm)</td>
</tr>
<tr>
<td></td>
<td>RPSXRC13-657</td>
<td>UK AC Coil Power Cord x 96° LG (2438mm)</td>
</tr>
<tr>
<td></td>
<td>RPSXRC13-658</td>
<td>SWISS AC Coil Power Cord x 96° LG (2438mm)</td>
</tr>
<tr>
<td>7</td>
<td>RPFL607734-5</td>
<td>Ethernet Cable x 60° LG (1524mm)</td>
</tr>
<tr>
<td>8</td>
<td>RPFL402659</td>
<td>USB Extension Cable x 60° LG (1524mm)</td>
</tr>
<tr>
<td>9</td>
<td>RPFLC13-749</td>
<td>DC Power Cable x 60°LG (1524mm)</td>
</tr>
<tr>
<td>10</td>
<td>RPFLMP-6000</td>
<td>Fuel Gauge/Cord Holder Assembly</td>
</tr>
<tr>
<td>11</td>
<td>RPFL607734-2</td>
<td>Ethernet Cable x 24° LG (610mm)</td>
</tr>
<tr>
<td>12</td>
<td>RPFL608855-1</td>
<td>Female to Female RJ45 Connector</td>
</tr>
<tr>
<td>13</td>
<td>RPFL401293</td>
<td>Hub, 4 Port</td>
</tr>
<tr>
<td>14</td>
<td>RPFL92122</td>
<td>Ground Strap</td>
</tr>
<tr>
<td>15</td>
<td>RPC06-951</td>
<td>1-1/2 Dia (38mm) Split Bushing</td>
</tr>
<tr>
<td>16</td>
<td>RPC06-864</td>
<td>1/2 Dia (13mm) Black Hole Plug</td>
</tr>
<tr>
<td>17</td>
<td>RPFL402659</td>
<td>USB Cable Extension</td>
</tr>
<tr>
<td>18</td>
<td>RPFL401495</td>
<td>Optical USB Mouse (Not Shown)</td>
</tr>
<tr>
<td>19</td>
<td>RPFLC13-702</td>
<td>Slim Line Keyboard (Not Shown)</td>
</tr>
<tr>
<td>20</td>
<td>RPFLC13-703</td>
<td>Keyboard Cover (Not Shown)</td>
</tr>
</tbody>
</table>

* Converter replacement part number based on output voltage.
** Cable replacement part number based on the monitor/computer model.
*** Power cord replacement number based on type of plug.

### DC Power Cable Identification

![Diagram of DC Power Cable Identification](image)

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EXPLODED VIEW OF POWER SUPPLY CABLES

FIGURE 18: REPLACEMENT PARTS (SHEET 2 OF 2)
ALL IN ONE COMPUTER

PERIPHERAL DC POWER

PC DC POWER

PC-DC POWER CORD REFERENCE SPECIFIED ON ORDER BASE ON PLUG TYPE REQUIRED.

CONVERTER ASSY

RED
BLACK
BLACK MARKED "V IN"

POWER CORD

POWER SUPPLY

USB CABLE SUPPLIED WITH HUB

USB HUB

KEYBOARD TRAY

KEYBOARD

MOUSE

FUEL GAUGE

CORD HOLDER

LAS MAIN CONTROL PCB

NOTE: BATTERIES MUST BE DISCONNECTED BEFORE SHIPMENT.
BASIC TROUBLESHOOTING

Power Supply Overheating, AC-DC Module / 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.
- If this problem continues, contact InterMetro Customer Service.

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.

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.

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

NOTE: 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 Section "Connecting the Power Supply Batteries" above.
- Turn on the power supply and restart the computer equipment.
- If this problem continues, contact InterMetro Customer Service.

Power Supply / Battery Pack 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.

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" below.
- Turn on the power supply and restart the computer equipment.
- If this problem continues, contact InterMetro Customer Service.

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)