



MADE IN THE US
from imported parts

ellipse

UPS 300 - 1200 VA

User's Manual



M G E

UPS SYSTEMS

www.mgeups.com

1660 Scenic Avenue
Costa Mesa, CA 92626

Compact UPS
for Home or Small Office Use

M G E

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Important Safety Instructions. Save These Instructions.

This manual contains important instructions for Ellipse that should be followed during installation and maintenance of the UPS and batteries.

- ▶ This equipment can be operated by an individual, with no previous training.
- ▶ All repairs should be performed by qualified personnel.
- ▶ The UPS contains voltages which are potentially hazardous.



CAUTION: Risk of electric shock, even with unit disconnected from AC power source. Hazardous voltage still may be present through operation from battery. The battery should be disconnected at the plus (+) and minus (-) terminals using the fast-on connectors of the battery when maintenance or service work inside the UPS is necessary.

- ▶ Do not place Ellipse near water or in environments of excessive humidity.
- ▶ Do not allow liquids or any foreign objects to get inside Ellipse.
- ▶ Do not block air vents in front, in the back or on the sides of Ellipse.
- ▶ Do not plug household appliances such as hair dryers to Ellipse receptacles.
- ▶ Do not place Ellipse under direct sunlight or close to heat-emitting sources.
- ▶ The AC power receptacle shall be near the equipment and easily accessible. To isolate Ellipse from AC input, remove the input power cord from the AC power receptacle.
- ▶ If Ellipse is to be stored, it is recommended to recharge the batteries (by connecting AC power source to Ellipse, switch "ON" or "OFF"), once every 6 months for 8 hours to avoid a full battery discharge.
- ▶ Ellipse contains batteries that should be disposed of or recycled in accordance with local laws.
- ▶ Prior to installation, store Ellipse in a dry location.

- ▶ Maximum ambient temperature for operation is between 32°F (0°C) and +96°F (+35°C).
- ▶ Storage temperatures must be between 32°F (0°C) and +122°F (+50°C).
- ▶ Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.
- ▶ When replacing the batteries, use MGE P/N 3088201000 batteries (12V-5Ah lead acid), use of any other battery may present a risk of fire or explosion.
- ▶ ~ : Alternating current supply symbol.

CAUTION: Do not dispose of battery or batteries in a fire. The battery may explode. Do not open or willfully damage the battery or batteries, since the released electrolyte is harmful to the skin and eyes. It may be toxic. A battery can present a risk of high short circuit current.

The following precautions should be observed when working with batteries for disposal or replacement:

- Switch off the UPS (on/off switch) and disconnect it from utility power;
- Remove watches, rings or other metal objects,
- Use tools with insulated handles.

Federal Communication Commission (FCC) Statement

Note: This equipment has been tested and found to comply with Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when equipment is operated in a residential 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. Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits.

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Product Features & Benefits

Feature	Benefit
• High frequency technology	Reduces heat and interaction with monitor
• UPS and surge outlets	Protects critical loads from outages and peripherals from surges
• Flat rotating input plug	Improves flexibility in locating UPS by reducing space for plug
• Overload circuit breaker	Provides overload protection
• Status LEDs	Provides status of UPS and of faulty wiring
• Battery door on UPS	Provides convenient battery replacement (exc. 1200)
• USB and RS232 availability with free downloadable software	Provides automatic shutdown of critical load and monitoring of UPS by PC

Introduction

Thank you for your purchase of the Ellipse "UPS" from MGE. The Ellipse "UPS" will provide many years of accurate, trouble-free power protection for your PC and/or other device(s). Please read this manual fully, to familiarize yourself with the safety and many other features of the Ellipse product.

MGE UPS Systems

MGE, one of the largest UPS manufacturers in the world, has a power protection solution for every power problem. Our product range includes UPSs 220 VA to over 4.5 MVA in single and three phase configurations. Other products include Power Management Software, DC to AC inverters, line conditioners and isolation transformers. Contact your sales representative today for additional information about MGE's other fine products. Our web address is: www.mgeups.com

Why the Need for Uninterruptible Power?

PCs and other electronic devices, due to their design, are subject to the effects of power outages or short interruptions. They do not store sufficient energy to overcome outages or short interruptions and these events occur on a daily basis. Any interruption of the utility power will stop the operation of a computer and cause loss of data, potential hardware damage and inconvenience.

A "UPS" is an uninterruptible power supply. The UPS has an internal battery to provide power back-up when the utility power is lost or a short outage occurs. In addition, the Ellipse UPS provides surge protection from indirect lightning strikes, power surges and short high voltage transients (spikes) created by machinery or common office equipment. A fax/modem (with cable) or network suppressor is provided with every MGE Ellipse UPS to also protect the incoming data line to the PC.

Theory of Operation


Ellipse is an off-line or stand-by UPS which normally operates in the bypass mode.

Surge suppression and filtering are also provided in this mode.

The UPS transfers the load quickly to the battery when a power failure occurs. If the power returns before the battery is exhausted, the operation returns to normal and the battery is recharged.

The Ellipse UPS is comprised of three major systems: the inverter, the battery charger/battery and the bypass.


All logic and supervision in the UPS are provided by a state-of-the-art micro-controller.

Inverter 

The inverter is the heart of the UPS and inverts direct current (DC) from the battery into alternating current (AC) at 120 volts. The DC voltage from the batteries is switched on and off at a high frequency and transformed to a higher voltage (DC to DC conversion). After conversion, the high voltage is converted into a pseudo-sine wave by a pulse width modulated (PWM) inverter to 120 volts AC RMS. This unique MGE technique, eliminates all bulky 60 HZ components and reduces size, heat, and greatly enhances reliability.

Battery Charger/Battery 

The battery charger maintains the battery and the battery provides the source of back-up energy when a power failure occurs. The battery charger converts 120 volt AC utility power to filtered and regulated DC specific for battery charging. The battery is a recombinant, sealed, lead acid-type which provides the high current required for UPS use and long life. It requires no additions of water during its life.

Bypass 

The bypass is the electro-mechanical hardware providing a transfer to or from the inverter. This is done rapidly and synchronized to the utility power sine wave in order to provide continuity to the PC and not cause a re-boot.

Instructions for Operation

CAUTION: Always turn off all power to computer prior to making any Ellipse connections.

See Quick Start Guide for connection details.

Set Up



1. Unpack UPS and accessories from shipping carton.
2. Connect input cord to a properly sized AC outlet.
3. Connect critical devices (computer, monitor, modem) on battery-backed up outlets keeping load within UPS VA indicated rear label limits.
4. Peripherals can be plugged into surge filtered outlets or programmable outlets if you have the Ellipse 1200. See PowerShare programmable outlets instructions in Solution Pac.
5. Connect the fax modem or network surge suppressor and USB or RS232 cable (supplied).
6. Switch on the UPS and allow to recharge for 8 hours for full battery capacity.



Software









Download Solution Pac software from the internet at: www.mgeups.com, "download area", or request software through mail by checking the "request software" box on the warranty card. You may register your new UPS with MGE while on-line or mail in the warranty card.

Operating Systems Supported

Windows 3.1, 95, 98, 2000, NT, Netware, OS/2, SCO Unix, Sun solaris, HP/UX, IBM AIX, DEC Unix, Linux, Mac/OS and others, SNMP agents

LED and Audible Alarm Operation Table

LED Status	UPS Status	Comment	Audible Alarm
 Green ON (on/off switch)	Normal operation UPS on		None
 Red ON	Internal failure	Restart UPS. If red LED reappears, call for assistance.	1 beep/ 30 seconds
 Green ON	UPS on battery power	Utility power failure	1 beep/ 10 seconds
 Green ON	UPS on battery power low battery	Utility power failure	1 beep/ 3 seconds
 Red ON	Overloaded UPS	Reduce load and restart.	1 beep/ 30 seconds
 Green and Red FLASHING	Faulty battery	Recharge battery. If fault reappears, replace battery.	None

Notes:

1. You do not have to switch on the UPS for the batteries to remain charged.
2. If the utility power failure exceeds the battery back-up time, Pulsar Ellipse shuts off to prevent excessive battery discharge and will re-start as soon as power returns.
3. The overload breaker (see **Quick Start Guide**) trips off during a severe overload. If this occurs, unplug excess loads and reset circuit breaker by pressing its reset button.
4. **Do not connect non-computer type loads or laser printers to battery backed up outlets.**

Battery Replacement



Getting Maximum Battery Life

1. Prior to use, charge the Ellipse battery for 8 hours by connecting to utility power. This conditions the battery for long life.
2. After an outage, a few hours are required to reach a full recharge.

Notes:

1. Ellipse is equipped with a lead-acid battery(s), which must be disposed of in accordance with local regulations. MGE will accept UPS and/or batteries for recycling free of charge. Contact us at the phone number shown in the recycling section of this manual.
2. Battery life is cut in half for every 15 degrees above 75°F. Plug in and recharge the UPS at least every six months if the UPS is taken out of service.

Battery Replacement for 300/500/650/800 Models

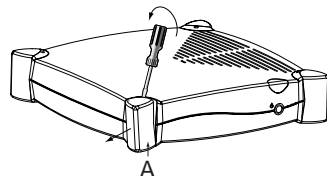


CAUTION: Read and follow safety instructions before removing batteries. This must be done by qualified personnel due to risk of high energy.

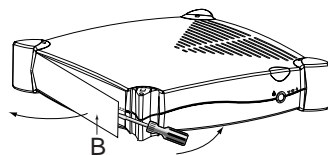
- Switch off the UPS (on/off switch) and disconnect it from utility power and critical loads.
 - Remove watches, rings or other metal objects.
 - Use tools with insulated handles.
1. In accordance with local regulations and proper disposal of Ellipse battery(s), it is necessary to remove them from UPS chassis.

This requires opening the trap door located on the side of the UPS (except Ellipse 1200).

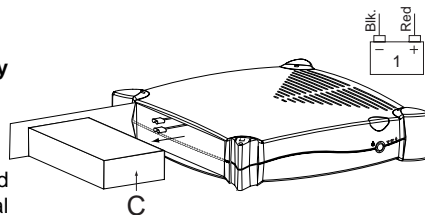
2. Observe and note battery connections prior to removal. Follow operations pictured, take off the foot (A), open the door (B), remove and unplug the battery for recycling (C). Install new battery, reattach wires observing polarity (red to "+" terminal, black to "-" terminal). For Models 650/800, be sure to reconnect



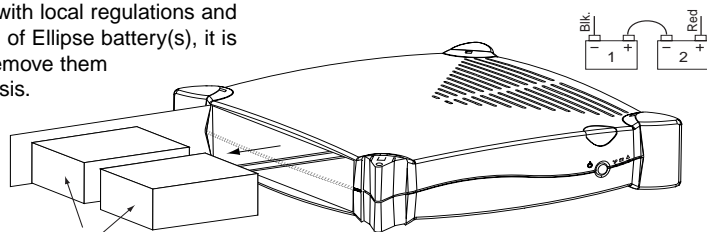
Model 300/500/650/800



Model 300/500/650/800



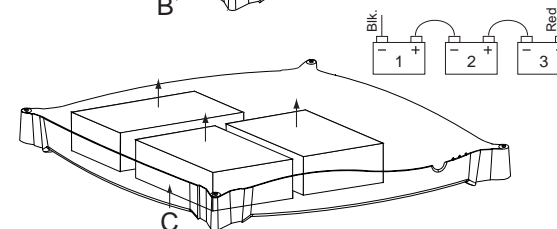
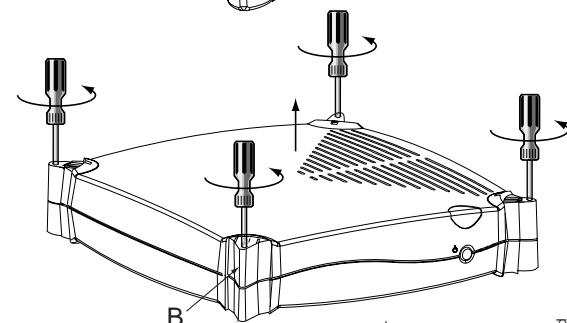
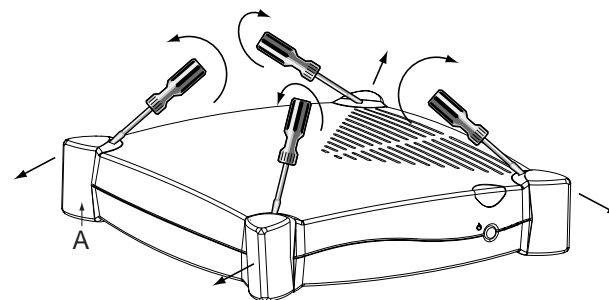
Model 300/500



Model 650/800

the jumper cable between the "+" of battery one to the "-" of the second battery. It is normal for a small spark to occur upon connection. Close door and reinstall foot. Reconnect input cord and critical loads. Restart UPS.

Battery Replacement



Model 1200

Battery Replacement for Ellipse Model 1200



CAUTION: Read and follow safety instructions before removing batteries. This must be done by a qualified technician due to risk of high voltage and high energy.

- Switch off the UPS (on/off switch) and disconnect it from utility power and critical loads.
 - Remove watches, rings or other metal objects.
 - Use tools with insulated handles.
1. In accordance with local regulations and proper disposal of Ellipse battery(s), it is necessary to remove them from UPS chassis. This requires removing the top half of the UPS.
 2. Observe and note battery connections prior to removal. Follow operations pictured, to take off the feet (A), remove the 4 screws and top with a phillips screwdriver (B), remove, and unplug the batteries for recycling (C). Install new batteries and observe polarity (red to "+" terminal, black to "-" terminal). Be sure to first reconnect the jumper cables between the "+" of battery one to the "-" of the second and third batteries (see diagram above). It is normal for a small spark to occur upon connection. Replace top, screws, and feet. Reconnect input cord and critical loads. Restart UPS.

Performance & Product Specifications

Run Time Chart for Various Loads

	25% Load	50% Load	75% Load	100% Load
Model				
300	50	19	12	6
500	35	15	8	4
650	45	19	12	7
800	35	16	8	4
1200	35	15	8	4

Product Specifications

	300 / 500	650 / 800	1200
UPS VA rating:	300 / 480 (2.3 / 4 A)	650 / 800 (5.7 / 6.7 A)	1200 (10 A) (10 A)
UPS W rating:	180 / 285	420 / 520	780
Surge suppressor VA rating:	900 / 720 (7.5 A / 6 A)	550 / 400 (4.6 A / 3.3 A)	
Input/Output voltage:	106/120/127 VAC* 50/60 Hz	106/120/127 VAC* 50/60 Hz	106/120/127 VAC* 50/60 Hz
Deep discharge protection:	4 hrs. max run time	4 hrs. max run time	4 hrs. max run time
UPS back-up time:	6/4 minutes	7/4 minutes	4 minutes
UPS output wave shape:	Modified sine	Modified sine	Modified sine
Load shedding receptacles:			3 grouped
Surge suppressor joule rating:	185	185	185
Input cord:	6 foot with rotating NEMA 5-15 plug	6 foot with rotating NEMA 5-15 plug	6 foot with rotating NEMA 5-15 plug
Circuit breaker:	10 amp	10 amp	10 amp
Agency approvals:	UL, cUL, FCC	UL, cUL, FCC	UL, cUL, FCC
Recharge time:	8 hours	8 hours	8 hours
Battery:	1 each 12 volt, 5 Ah	2 each 12 volt, 5 Ah	3 each 12 volt, 5 Ah
Battery life:	3 years	3 years	3 years
UPS current limit:	>100% Load	>100% Load	>100% Load
Operating temperature:	0-35 C/32-96 F	0-35 C/32-96 F	0-35 C/32-96 F
Storage temperature:	0-50 C/32-122 F	0-50 C/32-122 F	0-50 C/32-122 F
Size:	10" X 10" X 3.2"	12" X 12" X 3.2"	14" X 14" X 3.2"
Weight:	9 lbs.	13 lbs.	18 lbs.
Warranty:	2 years parts and labor	2 years parts and labor	2 years parts and labor
Accessories:	6' fax/modem cable, communication cable (RS232 or USB)	6' fax/modem cable, communication cable (RS232 or USB)	6' fax/modem cable, communication cable (RS232 or USB)

* Input voltage and transfer voltage to battery is user selectable. Go to UPS Manager/UPS Driver in Solution Pac software to adjust.

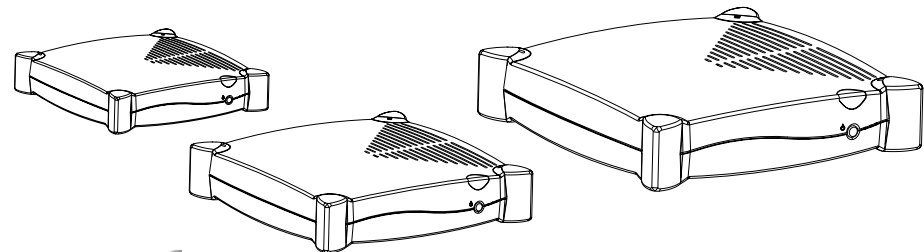
Troubleshooting

Condition	Item(s) to Check
LED " " (green) is off, UPS has no output	Check that UPS is plugged in, AC power is "on" to UPS and UPS is turned "on".
UPS has little or no back-up time	Charge UPS overnight and retry. After 3-5 years, consider replacing batteries if back-up time is short (MGE P/N 3088201000).
LED " " flashes (green) audible alarm beeps often (UPS transfers to battery)	Many low voltage events or poor voltage and regulation at receptacle. Try another receptacle.
LED " " (red), beeping audible alarm	Potential internal failure. Restart UPS. Call for assistance If red LED reappears.
LED " " (green), 1 beep every 10 seconds	UPS operation on battery due to utility power failure
LED " " (green), 1 beep every 3 seconds	UPS operation on battery and battery near exhaustion
LED " " (red), with beeping audible alarm	UPS lightly or heavily overloaded. Reset circuit breaker on UPS if necessary. Reduce load and restart UPS
LED " " (green) and LED " " (red)	Faulty battery. Recharge battery. Replace battery if fault reappears.

MGE maintains a toll-free number for technical support for US and Canadian customers. Call for assistance as shown in the "Service and Parts" section of this manual or visit our web site at: www.mgeups.com

Model Identification

Ellipse Model	Communications	Fax, Modem/Network Protection	MGE Part Number	UPC Codes
300 VA	USB	✓	89301	635760893014
300 VA	—	Fax Modem	89303	635760893038
500 VA	USB	✓	89304	635760893045
500 VA	RS232	✓	89305	635760893052
500 VA	—	Fax Modem	89306	635760893069
650 VA	RS232	✓	89308	635760893083
800 VA	USB	✓	89310	635760893106
1200 VA	RS232	✓	89314	635760893144



Novell.



MGE GREEN SWEEP
Call MGE to return your UPS for free.
Recycling by a UL EEP certified recycling center and help protect our environment.



Service & Maintenance

Service and Parts

For USA or Canada, call 800-438-7373 or 714-557-1636 x1107, M - F, 6:00 A.M. to 5:00 P.M. PST. For service and parts outside USA or Canada, call your local distributor.

UPS Recycling (for USA and Canada only)

For USA or Canada, call 1-714-557-1636 x1107, M - F, 6:00 A.M. to 5:00 P.M. PST. Ask for a return goods authorization for free UPS or battery recycling. MGE does not cover return freight charges for recycling and will not accept items without a return goods authorization number.

US and Canada Domestic Warranty

See separate circular for details. Call your local distributor for warranty information outside USA or Canada.

Maintenance

Clean the UPS with a dry cloth after turning off all power to the UPS and switching off the power switch. The UPS performs weekly automatic battery tests. However, it is recommended that 6 month tests be performed on the UPS for battery condition. Perform all tests off peak hours with applications shut down.

- 1. Turn off power to the UPS via the circuit breaker to the UPS. It is not recommended to disconnect the plug from the UPS to the utility power due to disconnection of the safety ground.
- 2. Allow UPS to run on battery power for 1 minute. Monitor the UPS for any fault LEDs and if none are observed, return power to UPS and log results below in the maintenance log.

Maintenance Log

UPS serial number		Date of installation	Location	Notes
Date	Check		Comments	
6th month				
12th month				
18th month				
24th month				
30th month				
36th month				
42nd month				
48th month				
54th month				
60th month				

Other Fine MGE Products



Eclipse Surge Suppressors



Eclipse Plus 250 UPS
250 VA



ESV+ UPS
780-2200 VA



ESV+ Rack UPS
780-2200 VA



EX UPS
700-3000 VA



EX Rack UPS
1000-3000 VA

Call MGE for many more power solutions:
(800) 523-0142
(714) 557-1636