

ups

LEVEL 1

PATRON UNINTERRUPTIBLE POWER SUPPLY

LINE-INTERACTIVE TECHNOLOGY

600VA



USER'S MANUAL

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Revision 5

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Introduction

Save these instructions

Please read and save this manual

Thank you for selecting this uninterruptible power supply (UPS). The manual is a guide to the correct installation and use of the UPS system. It includes important safety instructions for the operation and correct installation of the UPS. If you should have any problems with the UPS, please refer to this manual before calling the Powertecnique customer service department for further assistance.

Please save or recycle the packaging materials

The UPS's shipping materials have been designed with great care to provide protection whilst in transit. As these materials will be invaluable should you ever have to return the UPS for service, we would recommend that they be kept in a safe place for future use.

Intelligent microprocessor control

The Patron series is a line interactive UPS, based on a dual-microprocessor control system. This system has been designed utilising the newest technology providing high performance and powerful functions.

The Patron series provides reliable AC power to the critical loads - protecting them from utility power blackout, swells, sags, surges and interference.

Advanced battery management

The visual and audible indications provided by the Patron UPS present the battery's status. The Patron UPS is fitted with a self-test function, which will indicate any failures within the battery source requiring remedial works. The Patron UPS will perform a self-test during initial start up procedures and can also be manually conducted via the ON/TEST switch at any time.

Interference

There is no guarantee that interference to radio/TV will not occur in a particular installation. If this UPS causes interference to radio or television reception, which can be determined by turning the UPS off and on, the user is encouraged to try to correct the interference by one or more of following measures:

- Connect the equipment to an outlet at a circuit different from the connected radio/TV.
- Increase the separation between the equipment and the receiver.

1. Important Safety Instructions

CAUTION: (UPS contains internal batteries):

Risk of electric shock - Hazardous live parts exist within this unit, which are energised from the battery supply even when the input AC power is disconnected.

CAUTION: (No user serviceable parts):

Risk of electric shock - do not remove cover. No user serviceable parts inside. Refer servicing to approved, qualified service personnel only.

WARNING (Fuses):

To reduce the risk of fire, replace only with the same type and rating of fuse.

WARNING:

Installation is intended within a controlled environment.

CAUTION:

Do not dispose of the batteries in a fire, as they are liable to explode.

CAUTION:

Do not open or tamper with the battery, as released electrolyte can be harmful to the skin and eyes.

CAUTION:

A battery can present a risk of electric shock and high short circuit current. The following precautions should be observed when working on batteries:

- Remove watches, rings or other metal objects.
- Use insulated tools
- Wear rubber gloves and boots.
- Do not lay tools or metal parts on top of batteries.

Disconnect charging source prior to connecting or disconnecting battery terminals

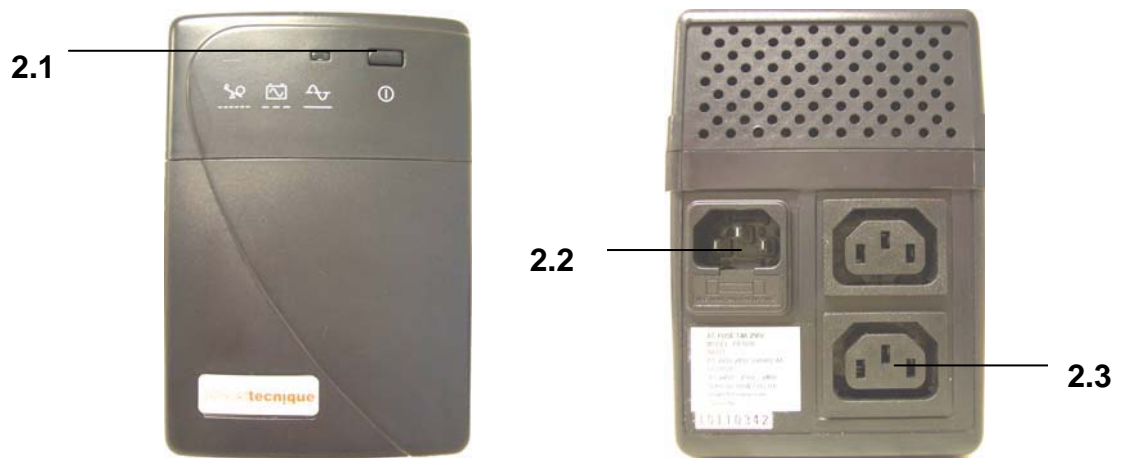
Servicing of the batteries should be performed by trained engineers only.

The correct procedure to de-energise the UPS system in an emergency is to press the OFF button until the UPS switches off and disconnect the input power from the mains supply.

2. Presentation

The Patron is a standby uninterruptible power supply (UPS). When utility input is normal, the UPS provides surge protection and energy to charge the internal battery. If the utility input fails, the UPS supplies AC power to the load immediately.

- Utilises microprocessor based controls, minimising dependency on hardware. Maximises system flexibility and optimises reliability.
- Automatic frequency selection to match with utility power.
- High level battery charger to prolong battery's life and fully charge the battery.
- Overload protection both in line and battery mode.



2.1 POWER SWITCH

2.2 AC INPUT POWER SOCKET

2.3 UPS OUTPUT SOCKETS

3. Installation

Please inspect the UPS upon receipt. The packaging is recyclable and should be kept for future use or disposed of properly.

3.1 Positioning of the UPS

Install the UPS in a protected environment. It must be free of excessive dust and have adequate airflow. Do not operate the UPS where the temperature and humidity is outside the specified limits.

3.2 Battery Charging

The UPS charges its battery whenever it is connected to utility power. For best results, charge the battery for 6 hours prior to use.

3.3 Connect to utility

Check that the UPS input voltage is 230v. The power cable supplied should be plugged into the AC input power socket and into a 13-amp socket.

3.4 Connect the loads

Loads should be plugged into the sockets at the rear of the UPS.

***Caution:** It is recommended that laser printers and plotters are not connected to the UPS system as they can periodically draw significantly more power during start up which may cause an overload condition.

4. Operation

4.1 Check the power requirement of your equipment

4.1.1 Make sure the total power of your equipment does not exceed the rating capacity.

4.1.2 Check that the equipment plugged into the battery power-supplied outlet does not require total power exceeding the capacity of the UPS. You can convert Watts (W) or Amps (A) into VA by doing the following calculations.

220-240V model __Watt (W) x 1.67 = __ VA, or __ Amps (A) x 230 = __ VA

4.2 Switch on

With the utility input power connected to the UPS, press the ON button, keeping it pressed for more than 1 second. After which, loads can be connected to the UPS.

Attention: Press for 1 second for normal power on.
 Press for more than 3 seconds until double beep sound to disable the NO LOAD SHUTDOWN function and turn on the UPS.

Attention: During power failure, the UPS will turn off automatically if none of the connected loads are operating, NO LOAD SHUTDOWN function.

Attention: If the utility power is unavailable, the UPS system can be cold started, using its internal battery. To cold start the system, press and hold the ON button for more than 3 seconds.

4.3 Simple test

It is recommended that the user perform a simulation test when using the UPS for the first time or adding an additional piece of equipment. To conduct a simulation-test: first, switch on the UPS and wait for the power indicator to light up, then simply unplug the UPS to simulate the event of a power failure.

4.4 Switch off

By pressing the power switch for more than 3 seconds.

4.5 Self test function

Activate by pressing the TEST button for 1 second.

5. Alarms

5.1 BACKUP (slow alarm)

When the UPS is working in BACKUP mode, the UPS will emit an audible alarm. The alarm stops when the UPS is returned to LINE mode operation.

Attention: The BACKUP audible alarm will sound every two seconds (Slow-speed beep).

Attention: The UPS system provides a mute function for this condition. When the beeping sound occurs, pressing ON will silence the alarm; pressing ON again will once again sound the alarm.

5.2 LOW BATTERY (rapid alarm)

If the battery capacity should become too low (about 20% - 30%) whilst in BACKUP mode the UPS system will emit an audible alarm. When the battery has discharged to a preset level the UPS system will automatically shutdown.

Attention: The LOW BATTERY alarm will sound every second(Fast-speed beep).

Attention: The LOW BATTERY alarm cannot be silenced.

5.3 OVERLOAD (continuous alarm)

When the connected load exceeds the maximum rated capacity, the UPS will emit a continuous alarm to warn of an overload condition. In order to protect the unit and the loads, the UPS will automatically turn off. To eliminate the overload alarm, disconnect non-essential devices from UPS.

6. Maintenance & Storage

6.1 Maintenance

- 6.1.1 The unit should be kept clean.
- 6.1.2 The unit should be wiped clean with a soft damp cloth.
- 6.1.3 The UPS connections should be regularly inspected.
- 6.1.4 The UPS should not be used on uneven surfaces.
- 6.1.5 The UPS system should be positioned with at least 10cm of clearance between the rear panel and the wall. The ventilation intake areas should be clear at all times.
- 6.1.6 Avoid direct sunlight, rain and high humidity.
- 6.1.7 The UPS unit should be positioned away from open fires and extremely hot environments.
- 6.1.8 Materials should not be stacked on top of the UPS unit.
- 6.1.9 The unit should not be exposed to corrosive air.
- 6.1.10 The normal operating temperature of the UPS unit is between 0-40°C.

6.2 Storage conditions

The UPS system should be stored upright in a cool and dry location, with its battery fully charged. Before storing the battery should be charged for at least 4 hours.

6.3 To extend the storage

Where the ambient temperature of the environment is between -15 to +30°C the batteries should be charged every 6 months.

Where the ambient temperature of the environment is between +30 to +45°C the batteries should be charged every 3 months.

7. Warranty

All Powertecnicque UPS systems have been designed and manufactured to the highest standards. Each unit and all its components have been extensively tested and Powertecnicque guarantees that your UPS is free from manufacturing defects for a period of 24 months as of purchase.

The Powertecnicque warranty covers the replacement or the repair of components where a manufacturing defect has occurred. To benefit from the repair warranty, the fault should be reported to our Powertecnicque customer service department.

When reporting a fault, please include the following information:

- Original order number
- Date of purchase
- Name and address of installation
- Contact name, address and telephone number
- Model of the faulty UPS
- VA rating
- Serial number
- Fault symptoms

Once this information has been provided you will be allocated a call log number. Shortly afterwards you will be contacted by one of our service engineers, who will then provide the necessary support.

The warranty does not apply:

- to products which have been misused; mishandled; modified; damaged by act of God or any other sources external to the product; repaired by others or whose serial number has been removed or altered.
- to replacement or extension of warranty when assistance has previously been given.
- to claims for damages whether direct or indirect of any nature whatsoever to persons, animals and things during the use or non-use of the equipment.

Contact details

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	Email	international@powertecnicque.com

Appendix A Troubleshooting

The UPS has a self-protect feature that prevents the UPS from being damaged as a result of overheating. If the temperature is higher than 55°C, wait for a while and let the UPS cool down

Problems	Possible reasons	Solutions
UPS will not operate after pressing On/Off switches No lights on, no warning sounds	Incorrect input power supply	Check input power supply
	Battery voltage is less than 10V	Recharge the UPS for a minimum of 6 hours
	Time of pressing the ON/OFF/TEST/SILENCE button is too short	Press and hold the ON button for more than 1 second
	The load is less than 15W during power failure	Normal condition No load shutdown function is active (see 4.1).
	PCB failure	Contact the Powertecnique service department for assistance
UPS always at back-up mode	Power cable loose	Ensure power cable is plugged in correctly
	AC fuse blown	Replace the AC fuse in the plug
	Line voltage too high, too low or black out	Normal condition
	PCB failure	Contact the Powertecnique service department for assistance
Audible alarm continues to sound	Overload	Remove non essential output equipment
Battery autonomy is too short	Batteries haven't been charged	Keep the UPS connected to the utility power for over 6 hours to ensure that the batteries are fully charged. Check that the UPS system is not overloaded and remove any non essential equipment, if necessary
	UPS overload	
	Batteries require investigation	
	The charger is faulty	Contact the Powertecnique service department for assistance

Appendix B Specifications

Model		PAT600
Capacity	Power rating VA / W	600VA/360W
	Power factor 100% load	0.6 (360W)
	Power factor 50% load	0.6 (180W)
Input	Voltage	100V,110V,115V,120V,220V,230V,240V, +/-25% at line input
	Frequency	50 or 60Hz +/-10% (auto sensing)
Output	Voltage (on battery)	Simulated sine wave 230V, +/-5%
	Frequency (on battery)	50 or 60Hz +/-1Hz
	Auto voltage regulation (AVR Function)	AVR automatically increase output voltage 15% above input voltage if -9% to-25% of nominal. AVR decrease output voltage 13% below input voltage if +9% to +25% of nominal
	Transfer time	2/4 milliseconds, including detection time
Protection and Filtering	Efficiency	> 96%
	Spike protection	320 joules, 2ms
	Overload protection	UPS automatic shutdown if overload exceeds 110% of nominal for 60 seconds and 130% for 3 seconds
	Unit input	Fuse for overload & short circuit protection
	Short circuit	UPS output shuts off immediately or input fuse ruptures
Battery	Type	Sealed, maintenance-free lead acid
	Typical recharge time	6 hours (to 90% of full capacity)
	Backup time (PC with 15" monitor)	15-25 minutes
Physical	Net weight Kg (lbs)	6.1(13.4)
	Shipping weight Kg (lbs)	6.6(14.5)
	Dimension(mm) WxDxH	97x320x135
	Input socket	IEC 320 power inlet
	Output socket	IEC320 female appliance coupler(220V)
Alarm	Battery backup	Slow beeping sound (once per 2 seconds)
	Battery low	Rapid beeping sound (once per 0.5 second)
	Overload	Continuous beeping sound
Environment	Ambient operation	3,500 metres max. elevation, 0-95% humidity non-condensing, 0-40°C
	Audible noise	<40dBA(1 metre from surface)
	Storage condition	15,000 metres max.