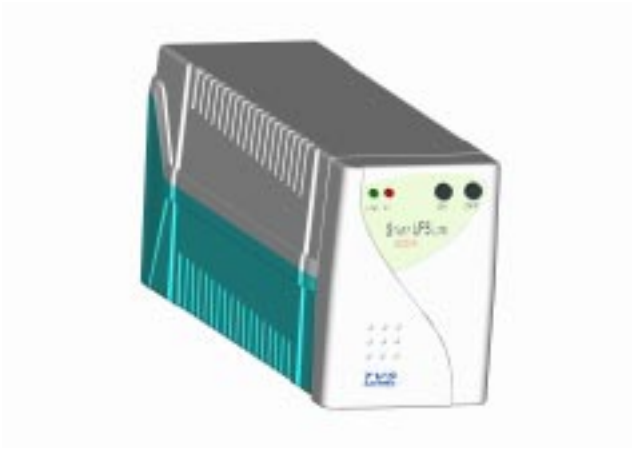
EXHIBIT C

User Manual

UNINTERRUPTIBLE POWER SUPPLY

USER MANUAL STARTUPS LITE 500



REV 1.0

User Manual Power UPS 500

Dear Customer,

Congratulations on having made an intelligent choice. This product is designed and manufactured with utmost care to give you high quality trouble-free performance in the years to come. Please register your product by filling the enclosed Business Reply Card and Mailing it to us. This will enable you to avail free warranty services, in the unlikely requirement of any service assistance. This registration will also entitle you to receive free mailers on product upgrades, service campaigns, etc. in case you do not find the Business Reply Card in this manual, please write to us for a new registration card:

Customer support,
TVS Electronics Limited,
No. 34, Developed plots, South Phase,
Industrial Estate, Guindy,
Chennai 600 032.

Please note that it is mandatory to register your product with us. The warranty applicable for this product is likely to be rejected in case of non-registration of your product with us.

For any queries on our product and/or services you can contact either our branch office or our authorised service provider. List of service providers are available in this CD.

For any on-line support, please contact your nearest call center, an exclusive Tele-solution desk available for all TVS-E customers. The contact details are:

E-Mail: careline @esa.tvse.co.in
Carecentre-Chennai :9622012012
Carecentre-Bangalore :6565010/6561679
Carecentre-Mumbai :7905717/7668496
Carefax (Fax on demand):+91-44-2327588
Website :www.tvse.com

OR

TVS Electronics Limited.
No.35:Developed plots, South phase
Guindy industrial Estate
Guindy
Chennai - 600 032.

TVS ELECTRONICS LIMITED HARDWARE WARRANTY

What the warranty covers

TVS Electronics Limited, warrants the buyer, that its hardware product sold is free from defective workmanship or material under normal use and service. If a product proves to be defective in material or workmanship during the warranty period, we will at our sole option repair or replace the product with a like product.

How long is the warranty

Power UPS 500 is warranted for 3 years without battery for all manufacturing defects. The battery is warranted for 1 year. During the warranty TVSE will repair or replace the unit and return to the Dealer/Distributor/Customer.

Whom the Warranty protects

This warranty is only valid for the first consumer/purchaser.

What the warranty does not cover:

1. Any product on which the serial number has been defaced, modified or removed.

2. Damage, deterioration or malfunction resulting from:
   a) Accident, misuse, neglect, fire, water, lightning or other acts of nature. Unauthorised product modification or failure to follow instruction supplied with the product.
   b) Repair or attempted repair by anyone not authorised by TVSE.
   c) Repair or attempted repair using components not specified/recommended.
   d) Damage due to unauthorised shipment.
   e) Removal or installation of the product by unauthorised personnel.
   f) Operation not maintained with TVSE specification.
   g) Causes external to the product, such as electric power fluctuation or failure, improper earthing.
   h) Use of suppliers or products not meeting our specification.
   i) Normal wear and tear due to usage.
   j) Any other cause that does not relate to product defects.

3. Reinstallation and Preparation of site for installing the UPS.

User Manual Power UPS

We thank you for selecting a TVSE Uninterruptible Power Supply (UPS) and recommend that you read these instructions carefully before installation and start-up of the Power UPS 500.

Please keep this manual in a safe place for future reference.

Contents

1 Introduction

The **Power UPS** will help you to protect your sensitive equipment like computers and telecommunication installations against malfunctioning due to non-reliable or distorted mains/ utility/line - voltage

This modern, microprocessor controlled UPS protects the connected equipment against Surges, Sags, Spikes, etc. by means of an internal filter that works all the time.

During electrical power failures, the unit employs its internal maintenance-free battery to supply back-up power without any interruption. The UPS is equipped with many features that will make your equipment to operate more reliable.

The packing kit contains UPS Power UPS 500VA, Output power cable and CD-ROM.

Built-in-Automatic Voltage Regulator: Provides regulated output voltage even under worst power conditions.

Wide Input voltage range : Minimises calls on battery. Prolongs battery life.

No load shutdown: Avoids unnecessary draining of batteries and increases the battery life.

User friendly output socket: 3 Indian and 1 European sockets eliminate the need of an additional power strip.

Surge protected Cyber jack: Protects Modem / Telephone / Network nodes from Lightning (High voltage) surges.

Short circuit protection: Protects connected loads from damages due to short circuits

Cold start: Makes it possible to start the UPS and use battery power in the absence of power.

2 Safety

This UPS can be operated by anyone, without any special training, after reading this manual

WARNING: RISK OF ELECTRICAL SHOCK:
HIGH-VOLTAGE AND HIGH-CURRENT CIRCUITS INSIDE, even if disconnected from the mains voltage

Do not remove cover, no user serviceable parts inside

Refer servicing to qualified service personnel

CAUTION: THIS EQUIPMENT MUST BE EARTHED AT ALL TIMES WHILST IN USE

Replace batteries only with the same type and rating

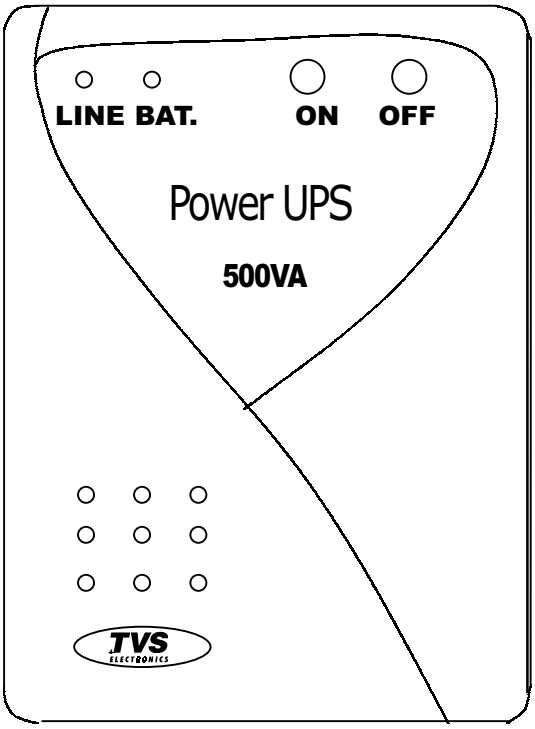
Disconnect batteries during maintenance

Do not dispose the batteries in fire. They will explode. Do not open or mutilate the battery. The content is toxic and harmful to skin and eyes.

Proper disposal or recycling of the battery is required. Refer to the local codes

3. Outlook And Function

3.1 Front panel

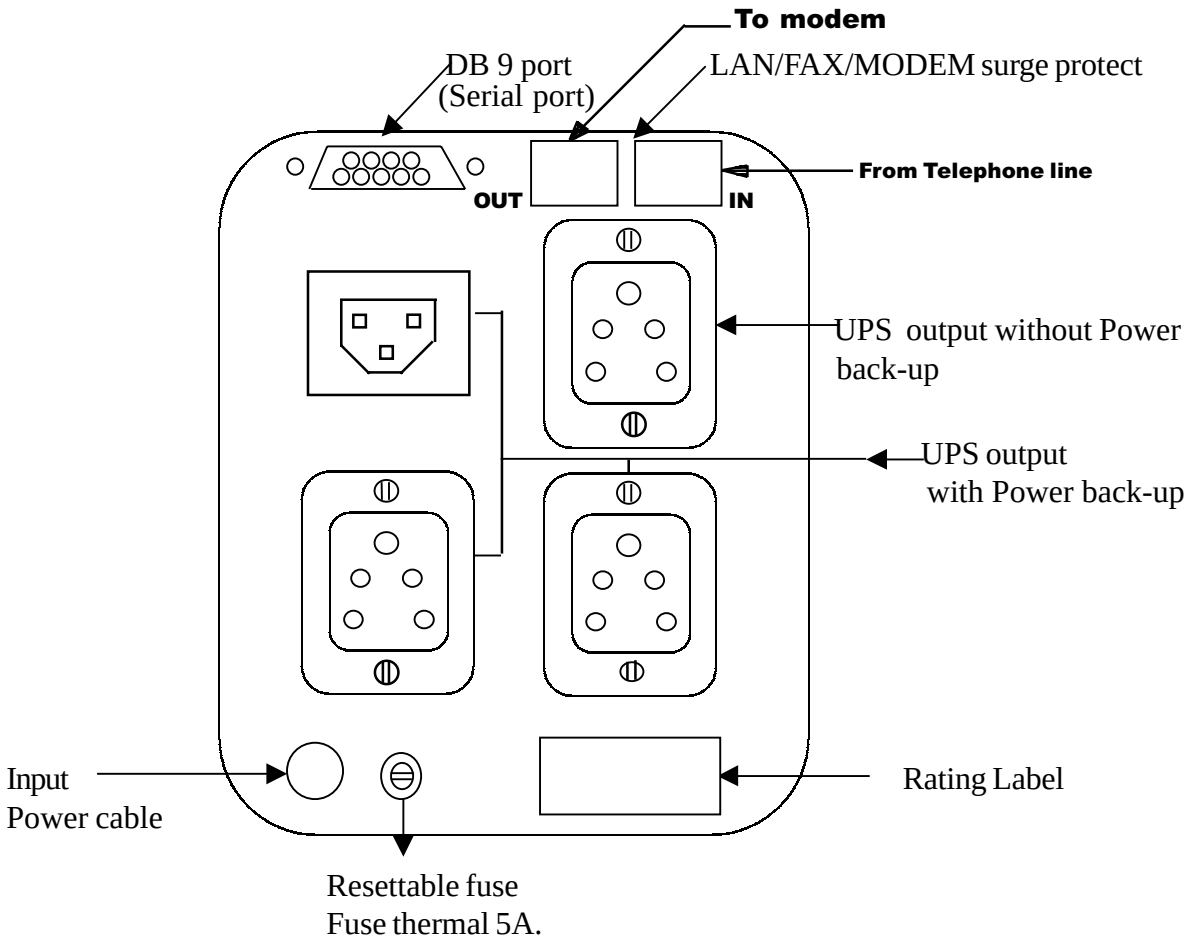


Event	Status Condition	RED/GREEN-(LED1)	RED /YELLOW (LED2)	Buzzer	Reset Buzzer
UPS on mains	Battery fully charged Mains as well as output is available	Green ON Continuos	-	-	-
Over load mains	Output power>105% of the rated capacity	Red continuos	-	Buzzer continuos	Not possible
Battery charging output ON	Mains and output ON and Battery not fully charged	Green ON continuos	Yellow blinking 1x4 secs	-	-
Battery charging output off	Mains ON and Battery not fully charged	Green blinking 1x4 secs	Yellow Blinking 1x4 secs	-	-
Abnormal output Voltage		Red ON	Red ON	Continuos	Not possible

Status Event	Condition	Red/Green LED1	Red/Yellow LED2	Buzzer	Reset Buzzer
UPS ON Battery	-	-	Yellow ON continuous	Beeps 1x4 Sec.	Pressing ON button
Battery low	Alarm starts when battery voltage is 10.5V DC and the unit shall trip at 10V DC. The UPS should not get ON when the Battery voltage is less than 10V	-	Yellow ON continuos	Beeps 1x2 Sec.	Not possible
Self test	After 2 seconds press of ON switch, Unit shall go to inverter state for 6 Sec. to check the Battery condition and come back to mains	Green ON	Yellow ON	OFF	--
Overload inverter	Output power >105% of the rated Capacity. The unit shall trip if output power >150% of rated capacity for more than 500ms	-	Red Continuos	Beep Continuos	Not possible
Replace Battery	UPS fails to pass the self test	Green ON	RED Blinks 1x15 secs	Beeps 1x15 secs	Not possible
Standby	Battery fully charged output OFF	Green Blinking 1x4 secs	Off	-	--

After 'End Autonomy' automatic restart possible during 8 hours. After 8 hours restart must be done manually: press button 'ON'

3.2 Rear Panel



StartUPS LITE

Fuse used is a resettable 5A. Reset the fuse in case it is open.

4. Installation

4.1 Inspection

Inspect the UPS upon receipt. Notify the carrier and dealer if there is damage. The packaging is recyclable; save it for re-use or dispose of it properly.

4.2 Placement

Install the UPS in a protected area with adequate air flow and free of excessive dust. Do not operate the UPS if the temperature and humidity are not within the specified limits. In colder territories allow the UPS to come to room temperature before operating.

4.3 Connect to Utility

Plug the UPS into a two-pole, three-wire, grounded receptacle only. Avoid using extension cords and adapter plugs.(Ensure proper grounding if you are using extension cords).

4.4 Connect the Loads

Plug the loads into the output connectors of the UPS. To use the UPS as a master on-off switch, make sure that all of the loads are switched on.

4.5 Mains connection

UPS can be always connected to the mains, which will allow UPS batteries charging and this will not damage the UPS. Even when the output is switched off, the input to the UPS should be ON.

4.6 Charging the Battery

The UPS charges its battery whenever it is connected to utility power. For best results, charge the battery for **8 hours** before use. It is acceptable to use the UPS without first charging the battery, but run time may be reduced.

4.7 RJ 45 Connection

Connect the telephone line to RJ 45 connector of UPS-IN and UPS-OUT RJ 45 is connected to the modem input. It protects from Lightning surges.

CAUTION:

1. *The UPS output can be used only for electronic loads such as computers and telecom munications equipment. Please donot connect laser printer to the power backed up output. It can be connected to the surge protected socket. A laser printer periodically draws significantly more power than when idle, and will overload the UPS*
2. *Please ensure more than 5% of the rated total load is connected.*

5. Operation

5.1 To reset the UPS microprocessor, in case of an unknown situation:

With the UPS unplugged from the wall outlet, press the OFF button for 2 sec. This will reset the internal microprocessor.

5.2 Turn off UPS Output Power

To turn off the UPS's output power, press the OFF button longer than 2 sec.

5.3 Turn on UPS Output Power

Press the ON button 2 sec to switch the UPS on and to supply power to the loads.

NOTE: The UPS is always on (CPU is operating) whenever it is plugged in and mains is present. Even when the UPS is off it maintains the battery and will respond to commands received through the computer interface port.

5.4 UPS Self-test

Use the self-test to verify both the operation of the UPS and the condition of the battery. With the UPS plugged in to normal mains voltage, activate the self-test by pressing the ON button.

5.5 Auto Voltage Regulation

The UPS automatically corrects high and low utility voltages so that the loads receive voltage within the normal range.

5.6 DC (Cold) Start

When the UPS is off and there is no utility power, use the cold start feature to apply power to the loads from the UPS's battery. Press the ON button until the red BAT-Led illuminates. Release the button when the loads are powered within 4 seconds.

5.7 Shutdown Mode on 500VA model

In the shutdown mode the UPS stops supplying power to the load, waiting for the return of mains voltage. If there is no mains voltage present, external devices (e.g. servers) connected to the computer interface can command the UPS to shut down. This is normally done to preserve battery capacity after the controlled shutdown of protected servers. The UPS will flash the front panel **BAT LED** in shutdown mode.

6. Alarms

6.1 On Battery

During on-battery operation, the on-BAT Led comes on and the UPS gives an audible alarm consisting of one beep every 4 seconds. The alarm stops when the UPS returns to on-line operation.

Press the ON button during on-battery operation to stop the beeping. This mutes the current alarm only, the next on-battery alarm will be audible. Shutting off the audible alarm in this way does not affect the computer interface alarm.

6.2 Overload

When the UPS is overloaded (when the connected loads exceed maximum load) the UPS gives a continuous audible alarm (beep). The alarm remains on until the overload is removed. Disconnect nonessential load equipment from the UPS to eliminate the overload.

6.3 Weak Battery

The UPS beeps for 1x30 Sec. and the BAT Led flashes every 30 seconds, if the battery fails the self-test. The UPS repeats the alarm every 30 sec. Perform the self-test procedure again to confirm the replace battery condition. The alarm stops when the battery passes the self-test.

7. Specifications

Input frequency	:	50 ±5 Hz
Input voltage window	:	140-300V AC
Output frequency	:	50Hz ± 0.1 Hz in battery mode
Output voltage mains mode	:	190-255V
Output voltage inverter mode	:	230V±5% output load variation of 0-100%
Wave form	:	Quasi sine wave
Transfer time	:	4msec typical
Power factor	:	0.6
Battery type	:	Maintenance-free lead acid (12V-7Ah)
Recharge time	:	8 hours typical from total discharge (UPS may be used immediately after discharge, but will Provide shorter backup time.
Temperature	:	-10 to 40 °C: operating -20 to 55 °C: transport/storage for limited time
Relative humidity	:	0 to 95%, non-condensing

Mechanical:

Model	Dimension (h x w x d in mm)	Weight (kg)	
		Net	Gross
Power UPS LITE 500VA	150 x 103 x 295	7.5	8

8. On-Battery Run Time Table

Typical battery backup time:

run time (in minutes) as a function of load

Load VA/Watts	Back up time
Typical UPS load (75%)	7
100/60	33
300/180	10
500/300	4.5

After ‘End Autonomy’ automatic restart possible during 8 hours. After 8 hours restart must be done manually: press button ‘ON’

9. Trouble shooting

Problem	Possible Cause	Solution
UPS will not turn on. UPS will not turn on And BAT LED flashes	The ON button was not pressed	Press the ON button to power the UPS and the load
	UPS input circuit fuse open	Reduce the load on the UPS by unplugging equipment and replace the fuse by one of the same type and rating
	UPS is in programmed shut-down mode	Normal situation
UPS will not turn ON or OFF.	Computer interface problem	Disconnect the computer interface. If the UPS now works normally. Check the interface cable and the attacehed computer.
UPS can not trun ON BAT LED and LINE LED are flashing.	Software configuration error	Disconnect the mains, press the OFF button for 4 seconds. This will reset the internal processor.
UPS operates on battery even though line voltage exists.	Very high, low or distorted line voltage	Test if the input voltage is too high or low or has too much distortion.
UPS beeps occasionally.	Normal UPS operation, but no mains voltage present	None. The UPS is protecting the load.

Problem	Possible Cause	Solution
UPS buzzer has constant tone, and mains voltage is present	UPS overloaded	Remove the excessive load
UPS buzzer has constant tone, and mains voltage is not present	UPS overloaded or short circuit in battery mode	Remove mains power cord Push 'OFF' button for 2 sec.
UPS does not provide expected back up time	The UPS's battery is weak due to recent outage and a short recharge time or its life-time is ending	Charge the battery. The UPS's battery requires recharging after an extened outage. Batteries wear out faster when they areused often and/or when operated at high temperatures. If the battery is near the end of its service life and the backuptimeis insufficient, consider replacing the battery even if the replace battery indicator is not yet active
The Battery low Led flashes	Weak battery	Allow the battery to recharge for at least ten hours. If the problem persists after recharging, replace the battery.

10 About the Battery

1. Life of the battery depends on operating temperature and on the number of discharge cycles.

2. "WHEN DOES THE BATTERY NEED REPLACING?"
If the BAT Led on the front of the UPS flashes 1x30sec and buzzer sounds, it implies that the battery will no longer hold a full charge. Under this circumstances, if a power failure occurs, the UPS runs less than half its normal length of time when compared to a good battery. Perform the following steps to make sure the battery needs replacing:

1) make sure the UPS is plugged into a live wall outlet
2) charge the UPS for at least **8 hours**
3) turn the UPS off and then back on
4) press ON switch to force a self-test

After step 4, if the BAT Led still flashes, there might be something wrong with the battery. Since the battery will eventually wear out and needs to be replaced, please contact your local dealer and ask for the battery replacement services

3. Extendability of battery is not possible in this UPS. Please do not add external battery to the UPS. This will void the Warranty.

12 Storage

Store the UPS covered and placed upright in a cool place, with its battery fully charged. Before storing charge the batteries for at least 24 hours. Disconnect any cables connected to the computer interface port to avoid unnecessarily draining the battery.
Make sure that the UPS is switched off.

Storing the unit for longer than 3 months can reduce the life of the batteries. To maintain the normal life expectancy, recharge the battery. For chargeing the battery refer section 4.7.

13 Communications Port

The UPS to send information concerning power levels and UPS condition to the computer

The Software can monitor the following.

1. Mains Input voltage
2. Mains Input frequency
3. UPS Output voltage
4. UPS Output frequency
5. UPS Load %
6. Battery voltage
7. Backup time
8. Alarms

In the event of batteries near exhaustion, the UPS can send commands for unattended controlled shutdown of computer systems. UPS can also receive shutdown command from the computer. All these functions can be realised using host software such as “Safeware”/ ”Rakshak” available from TVSE.

Safeware can be installed in IBM PC compatible and works in Windows platform. The safeware can be down loaded from www.tvse.com

UPS should be connected to the host only through cables supplied by TVS-E. In the cable,the label indicates which side requires to be connected to the UPS and which one to the PC.The cable should be connected to the UPS DB9 port and PC comport.

Caution: Do not use any other serial interface cable, other than the one supplied along with the UPS.

SafeWare Program:

Each time the Windows 95 program is started , SafeWare for windows 95 will automatically start and run unless the user deletes the SafeWare Icon from the Windows 95 Startup folder. By default, SafeWare will start in “Minimized” mode.

Once the SafeWare application has been closed, clicking on the SafeWare icon in either the SafeWare folder or the Startup folder will once again start SafeWare.

Main SafeWare Screen

The safeWare screen makes a variety of AI-UPS status and control information available to the user. The left portion of the SafeWare screen displays six large gauges that are labeled:

Input Voltage	**Output voltage**
Input Frequency	**Output Frequency**
Battery Level	**Load Level.**

These gauges are similar in appearance to automative gauges and graphically indicate the current values of the specific labeled AI-UPS categories. A text box below each gauge also shows the exact value or percentage of the specific category.

The top right hand portion of the SafeWare screen has indicators for the input power and AI-UPS status. The indicators will turn on, off or flash to indicate the current input Power and AI-UPS condition. they include:

Power Normal	**Battery Low**	**UPS Fault**
Power Failure	**Battery Weak**	**UPS Overload**

Just below the Power and AI-UPS Status indicators is the Countdown Time display box. This box will indicate the countdown time that has been entered by the user in the SafeWare Settings. In case of a loss of utility power, the value in the box will decrease until it reaches zero at which time SafeWare will cause the Windows 95 save/exit routine to begin. At any time during the countdown, the user may click on the box to the left of the Abort Countdown box at which time the countdown will resume, or 2) the AI-UPS reaches a battery low condition. If a battery low condition occurs, SafeWare will override the abort command and automatically run the Windows 95 safe/exit routine and cause the computer system and AI-UPS to shutdown.

The lower right hand portion of the SafeWare screen displays the Waveform chart which is a graphical waveform representation of the AI-UPS operational parameters. there are three AI-UPS categories that can be displayed on the Waveform chart:Input/Output Voltage Waveform, Input/Output Frequency Waveform, and Battery/Load Level Waveform. By clicking on the Toggle Waveform button user can display the different waveforms.

The Waveform chart displays information in a time based format. Time markings below the chart will inform the user of the time that a power event occurred. Buttons to the right

of the chart can be used to view different time periods. They include:Current View, Previous View, Previous Page, Next Page, Scan Left and Scan right. The waveform information can be viewed at any time and will continue to be updated as long as SafeWare is running. however, if the user terminates the SafeWare program, all waveform information will be erased unless the user has recorded the information using the Recode button located under the Toggle Waveform button. If the waveform information is recorded, it is saved in a DAT file that can later be accessed and viewed using the SafeWare UPSWave program in the SafeWare folder. The Min/Max levels of the selected waveform are also shown in boxes under the chart.

The SafeWare screen also has several elements that the user can use to facilitate AI-UPS operation, control and diagnosis:

Menu Bat - Allows access to File, Diagnostic, Option, View, and Help topics.

Toolbar- Allows direct access to all diagnostic and Option topics without using the Menu

Status Bar- Displays current date, time and Next scheduled shutdown information.

13. Frequently asked questions:

Q:What is the warranty of the UPS?
A: One year on the Battery, Three years on the unit, against registration of the unit.

Q:Where can I get UPS serviced?
A:UPS required to be carry-in to the nearest TVS-E Authorised Service Provider for serviceing.

Q:What is the life of the battery?
A:Battery life is 3-5 years depending on the usuage.It depends on the operating temperature and number of discharge cycles.

Q:What is the use of cyber jack?
A:Protects Modem/Telephone/Network nodes from lighting (High voltage)surges.

Q:Can an any RS232 cable be connected?
A:You are required to connect the TVS-E supplied RS232 cable

Q:Can a laser printer be connected to the backed up socket?
A:No. You are required to coneected to the surge protected socket.

Q:Can I keep the mains input switch always ON?
A:Yes. You can keep the input switch always ON. This will enable the UPS to charge the battery if required. More ever if the mains fails the UPS will automatically shut down.

Q:How much time the battery needs to be charged?
A:It depends on the charge level of the battery. If it is fully discharged, it required around 6 hours to charge to 90% level.

Q:What is no load shutdown?
A:Conditions for no load shutdown.

a) Less than 5% of the rated load.
b) No mains available.

Then UPS will shutdown itself, there by protecting the battery life.

How to get Service

As soon as the installation is completed, you are requested to fill up the Warranty Registration Card. to get your name registered with us. To avail warranty service, please contact the nearest TVS-E Authorised Dealer/Authorised service centre/Regional office. While registering your call, please mention/produce (a) Serial no. of the unit (b) date of purchase as mentioned in the invoice of the product. (c) The problem you are facing with the unit d) Your Tel. no./FAX no./Postal Address/ E-mail address for contact (e) Model name of the product.

Limitation of Implied Warranties.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Exclusion of Damages

Our liability is limited to the cost of repair or replacement of the product. Wherein TVSE may use reconditioned parts/units or new parts/units. We shall not be liable for:

1. Damage to other products caused by any defects in the product, damages based upon inconvenience, loss of business opportunity, loss of goodwill, loss of data, loss of software, cost of substitute equipment, interference with business relationship, claims by third parties or other commercial loss, even if advised of the possibility of such damages.

2. Any other damages whether incidental, consequential or otherwise.

3. Any claim against the customer by any other party.

Life support

We do not recommend the use of our UPS products for life support equipment or direct care where failure of UPS product could cause failure of or diminished effectiveness of the life support equipment or the patient care.

Information on this manual is subject to change without notice. This product could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein. These changes may be included in the new editions of this product.

TVS ELECTRONICS LIMITED
Plot No.34. Developed plots, South phase, Industrial estate
Guindy Chennai-600 032.
Visit us at www.tvse.com

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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 radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, 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 measure:

- Reorient or relocated the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into a different outlet circuit from than the receiver.
- Consult an experienced radio/TV technician for help.

CAUTION: Any changes of modifications not expressly approved by the grantee of this device could void the users authority to operate the equipment.