User's Guide

VALUE SERIES

Models 350VS / 500VS

For your records

The serial number of your UPS is on the rear panel. You should note the serial number in the space provided below. Retain this booklet as a permanent record of your purchase to aid in identification in the event of theft or loss.

Model No:

Serial No.:

Purchase Date:

LIMITED WARRANTY

What the warranty covers:

We warrant this product to be free from defects in material and workmanship during the warranty period. 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 the warranty is effective:

Our UPS products which are purchased and installed in the contiguous United States or Canada are warranted for three (3) years for parts, two (2) years for labor and two (2) years for the batteries from the date of the first consumer purchase. For UPS products which are located outside of the contiguous United States or Canada, contact your dealer for warranty information.

Who the warranty protects:

This warranty is valid only 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, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
    b) Repair or attempted repair by anyone not authorized.
    c) Any damage of the product due to shipment.
    d) Removal or installation of the product.
    e) Causes external to the product.
    f) Use of supplies or parts not meeting our specifications.
    g) Normal wear and tear.
    h) Any other cause which does not relate to a product defect.
3. Removal, installation and set-up service charges.

Limitation of implied warranties:

THERE ARE NO WARRANTIES, EXPRESS 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. WE SHALL NOT BE LIABLE FOR:

1. DAMAGE TO OTHER PROPERTY CAUSED BY ANY DEFECTS IN THE PRODUCT*, DAMAGES BASED UPON INCONVENIENCE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, LOSS OF PROFITS, LOSS OF BUSINESS OPPORTUNITY, LOSS OF GOODWILL, LOSS OF DATA, LOSS OF SOFTWARE, COSTS OF SUBSTITUTE EQUIPMENT, INTERFERENCE WITH BUSINESS RELATIONSHIPS, 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.

Effect of state law:

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow limitations on implied warranties and/or do not allow the exclusion of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

Life Support:

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

*Except as expressly provided for by the UPS “Equipment Protection Policy”

EFFECTIVE October 1, 1997

TABLE OF CONTENTS

IMPORTANT SAFETY INSTRUCTIONS 

THIS MANUAL CONTAINS IMPORTANT SAFETY INSTRUCTIONS.
KEEP THIS MANUAL HANDY FOR REFERENCE.

- CAUTION: A BATTERY CAN PRESENT A RISK OF ELECTRICAL SHOCK, BURNS FROM HIGH SHORT-CIRCUIT CURRENT, FIRE OR EXPLOSION FROM VENTED GASES. OBSERVE PROPER PRECAUTIONS.
- WHEN REPLACING BATTERIES, USE THE SAME NUMBER AND THE FOLLOWING TYPE BATTERIES: SEALED LEAD-ACID MAINTENANCE FREE (350VS: 1X 7AH/12V) (500VS: 1X 7AH/12V)
- PROPER DISPOSAL OF BATTERIES IS REQUIRED. REFER TO YOUR LOCAL CODES FOR DISPOSAL REQUIREMENTS.

INSTRUCTIONS IMPORTANTES CONCERNANT LA SÉCURITE

- CONSERVER CES INSTRUCTIONS. CETTE NOTICE CONTIENT DES INSTRUCTIONS IMPORTANTES CONCERNANT LA SÉCURITE.
- ATTENTION: UNE BATTERIE PEUT PRÉSENTER UN RISQUE DE CHOC ÉLECTRIQUE, DE BRULURE PAR TRANSFERT D'ÉNERGIE, D'INCENDIE OU D'EXPLOSION DES GAZ DÉGAGÉS. SUIVRE LES PRÉCAUTIONS QUI S'IMPOSENT.
- POUR LE REMPLACEMENT UTILISER LE MÊME NOMBRE DE BATTERIES DU MODÉLE SUIVANT: (350VS: 1X 7AH/12V) (500VS: 1X 7AH/12V)
- L'ÉLIMINATION DES BATTERIES EST RÈGLEMENTÉE. CONSULTER LES CODES LOCAUX À CET EFFET.

DIESE ANLEITUNG ENTHÄLT WICHTIGE SICHERHEITSANWEISUNGEN.
DIESE ANLEITUNG ZUR WEITERLEITUNG GRIFFBEREIT BEHALTEN.

- VORSICHT: EINE BATTERIE KANN EINEN ELEKTRISCHEN SCHLAG, BRANDWUNDEN VON HOHEM KURZSCHLIEßENDEN STROM, ODER FEUER ODER EXPLOSION VON ENTLÜFTETEN GASEN VERURSACHEN. AUF DIE VORSICHTSMAßNAHMEN ACHTEN.
- BEIM AUSTAUSCHEN DER BATTERIEN DIESELBE NUMMER UND FOLGENDES BATTERIENTYP BENUTZEN: BLEI-SÄURE WARTUNGSFREI (350VS: 1X 7AH/12V) (500VS: 1X 7AH/12V)
- RICHTIGE VERÄUßERUNG DER BATTERIEN IST ERFORDERLICH. IN DEN LOKALKODIZES UM DIE VERÄUßERUNGSERFORDERNISSE NACHSCHAUEN.

CAUTION: 

THE UPS CONTAINS VOLTAGES WHICH ARE POTENTIALLY HAZARDOUS. ALL REPAIRS SHOULD BE PERFORMED BY QUALIFIED SERVICE PERSONNEL.

THE UPS HAS ITS OWN INTERNAL ENERGY SOURCE (BATTERY). THE OUTPUT RECEPTACLES MAY BE ALIVE EVEN WHEN THE UPS IS NOT CONNECTED TO AN AC SUPPLY.

Safe and continuous operation of the UPS depends partially on the care taken by users. Please observe the following precautions.

- Do not disassemble the UPS.
- Do not attempt to power the UPS from any receptacle except a 2-pole 3-wire grounded receptacle.
- Do not place the UPS near water or in environments of excessive humidity.
- Do not allow liquid or any foreign objects to get inside the UPS.
- Do not block air vents on the side of the UPS.
- Do not plug appliances, such as hair dryers, into the UPS receptacles.
- Do not place the UPS under direct sunshine or close to heat-emitting sources.
- The power socket should be installed near the equipment. It should be easily accessible to isolate it from AC input. To disconnect, pull the plug from the receptacle.

VORSICHT: 

DIE UPS* ENTHÄLT SPANNUNGEN, DIE MÖGLICHERWEISE GEFÄHRLICH SIND. ALLE REPARATUREN SOLLTEN VON QUALIFIZIERTEN MONTEUREN DURCHGEFÜHRT WERDEN.

DIE UPS HAT EINE EIGENE INNERE STROMVERSORGUNG (BATTERIE). DIE AUSGANGSANSCHLÜSSE KÖNNEN ALSO UNTER STROM STEHEN, SELBST DANN, WENN DIE UPS NICHT AN EINEN WECHSELSTROMKREIS ANGESCHLOSSEN IST.

Um die UPS auf Dauer sicher bedienen zu können, sollte der Benutzer auf folgende Vorsichtsmaßnahmen genau achten:

- Die UPS nicht auseinandernehmen.
- Die Stromversorgung sollte nur durch einen 2-poligen, dreiadrigen, geerdeten Anschluß erfolgen.
- Die UPS nicht in der Nähe von Wasser oder in Umgebungen übermäßiger Feuchtigkeit aufstellen.
- Flüssigkeiten oder Fremdobjekte dürfen nicht in das Innere der UPS dringen.
- Lufteinfuhr an der Vorderseite und Luftaustritt an der Rückseite sollten nicht behindert sein.
- Elektrogeräte, wie z. B. Haartrockner u.a. sollten nicht an die UPS angeschlossen werden.
- Die UPS nicht direkter Sonnenbestrahlung oder Heizgeräten aussetzen.
- Die Steckdose sollte nahe dem Gerät installiert und gut zugänglich sein, um sie vom Wechselstromeingang zu isolieren. Zur Trennung vom Wechselstromkreis den Stecker aus der Steckdose ziehen.

*UPS (Uninterrupted Power Supply) = Unterbrechungsfreie Stromversorgung

FEDERAL COMMUNICATIONS COMMISSION (FCC)

WARNING:

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 measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CANADIAN DEPARTMENT OF COMMUNICATIONS (DOC)

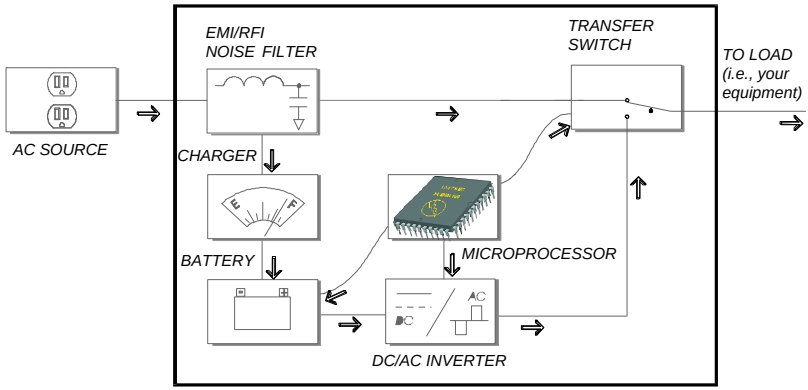
This equipment does not exceed Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications. Operation in a residential area may cause Unacceptable interference to radio and TV reception requiring the owner or operator to take whatever steps are necessary to correct the interference.

Cet équipement ne dépasse pas limites de Classe B d'émission de bruits radioélectriques pour les appareils numériques, telles que prescrites par le Réglement sur le brouillage radioélectrique établi par le Ministère des Communications du Canada. L'exploitation faite en milieu résidentiel peut entrainer le brouillage des réceptions radio et télé, ce qui obligerait le propriétaire ou l'opérateur à prendre les dispositions nécessaires pour en éliminer les causes.

1. INTRODUCTION

1.1 Overview

The Value Series of Uninterruptible Power Systems (UPS) was designed to prevent spikes, surges, sags, transients and blackouts from reaching your sensitive equipment. Your equipment may include such items as computers and computerized instruments to telecommunication systems. When AC power is present, the UPS filters the power continuously. When AC power fails, the unit employs its internal maintenance-free battery to supply back-up power without interruption.



Value Series Features

1.2 Frequency Auto-Selection

The VS models can operate in either a 50 or 60 Hz environment. When you plug the UPS into an AC outlet and turn it on, it will automatically detect the incoming line frequency and configure itself to match that frequency.

1.3 User Replaceable Battery Design

The battery is the most critical part in a UPS. The average lifetime of a battery is between 3 and 5 years. The special user-replaceable battery design of this UPS provides significant savings and gives the UPS an almost unlimited Life. You can replace the battery very easily, and without turning off your UPS or the equipment it is protecting (*see Chapter 6*).

1.4 Communication with Computer (500VS Only)

The communication port on the rear panel provides contact closure signals to perform unattended shutdown when used with the optional OPTI-SAFE UPS communication software. Contact your local dealer for details.

1.5 Site Wiring Fault Indication (for 1X0V versions only)

The red Site Wiring Fault LED Indicator on the rear panel lights up if your UPS is plugged into an improperly wired AC power outlet. This feature warns you if the ground wire is missing, if the input line and neutral wires are reversed, or if the neutral wire is overloaded. This alerts you to potential safety problems.

*Note: Many older homes do not have grounded power and this will cause the Site Wiring Fault LED on the UPS to light.

1.6 Over Voltage and Under Voltage Protection

The UPS will switch to backup mode and provide the power from its internal battery when the input line voltage is too low or too high.

1.7 Overload Protection and Alarm

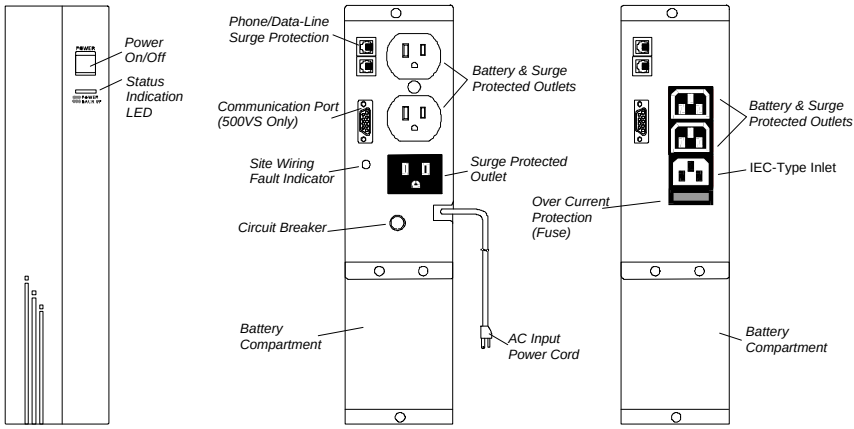
If an overload condition is sensed, the UPS will send a constant tone. If the UPS is on backup during overload, it will turn the computer off to protect the UPS.

1.8 Data-Line Surge Protection

The built-in data-line surge suppression on the rear panel completes your system protection. It provides an easy way to protect a network (*RJ45*) or modem (single line phone) connection from hazardous spikes.

2. UPS CONTROLS

2.1 External Views



Front View 1X0V Rear View 2X0V Rear View

2.2 Power On/Off Switch

Turn on the UPS by pressing the power button on the front panel while the UPS is plugged into an AC outlet. If the UPS is already on, pressing the power button again will turn off the UPS and connected computer.

*Note the power button has no effect on the surge protected outlet. This outlet will remain powered whenever the UPS is plugged in and AC power is available.

2.3 Status Indicators

LED Indication:

AC normal	Green *(continuous)*
Battery discharge	Green (flash every second)

Audible Alarm:

Battery discharge at power failure	Beep every 5 seconds
Battery approaches final discharge	Beep every second
Overload	Continuous buzzer

2.4 Site Wiring Fault Detection

The red Site Wiring Fault LED Indicator on the rear panel lights up if your UPS is plugged into an improperly wired AC power outlet. The Indicator warns you if the ground wire is missing, if the input line and neutral wires are reversed, or if the neutral wire is overloaded. Faulty wiring prevents the safety features and surge protection circuits built into the UPS from operating properly. If the red LED is lit, call a qualified electrician.

Note:

1. Do not leave the UPS ungrounded by using a 3-pin to 2-pin plug adapter.
2. The site wiring fault indicator is not available for the 230V model.

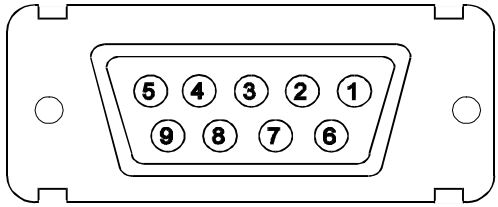
2.5 Communication Port and Pin Assignments (500VS Only)

This port allows for a computer to monitor the status and control the operation of the UPS. Its functions include the following:

- To broadcast a warning when power fails.
- To close any open files before the battery reserves are exhausted.
- To turn off the UPS.

You may need optional UPS monitoring software such as OPTI-SAFE to use this function. Contact OPTI-UPS for details on all the various interface kits.

Pin Assignment:



PIN2 UPS simulates a relay closing between pin 2 and pin 4 when input power fails.

PIN4 Common for pin 2 and pin 5.

PIN5 UPS simulates a relay closing between pin 5 and pin 4 when the battery inside the UPS has less than 2 minutes backup time left.

PIN6 User sends a RS232 high voltage (5-15V) for 3 secs. This signal will turn off the UPS until proper input voltage returns. It can operate only if UPS is in battery mode.

PIN1, 3, 7, 8, 9 (reserved)

Note:

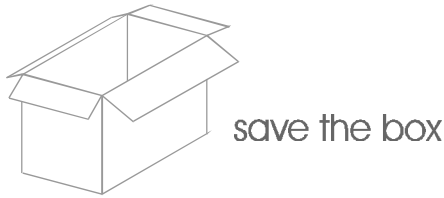
1. Pin 2 and pin 5 are open collector outputs which must be pulled up to a common referenced supply, switch rating: +40V, 0.15A non-inductive.
2. Pin 4 should *only* be connected to ground.

3. INSTALLATION AND OPERATION

Before installation, please read and understand the following instructions:

3.1 Unpacking and Inspection

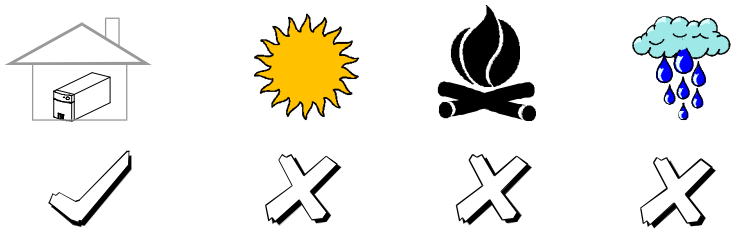
Examine the packing carton for damage. Notify the carrier immediately if damage is observed.



3.2 Placement

1) This unit is intended for indoor use only. Although your UPS is very rugged, its internal components are not sealed from the environment.

2) The UPS must be installed in a protected environment away from heat-emitting appliances such as a radiator or heat register. Do not install this product where excessive moisture is present.



3) The location should provide adequate air flow around the UPS with one inch minimum clearance on all sides for proper ventilation.

3.3 Determining How Much Equipment You Can Connect to Your UPS

1. Make a list of all equipment that requires protection.
2. Each piece of equipment has voltage and current (*VA*) ratings printed on the back label (*see examples below*). Your equipment may have a voltage rating such as 88-264V. Since the standard voltage in the United States is 120V, you should use 120V in your calculations.

ViewSonic 15GS
100V -240V 1.0A
50 / 60 Hz
SN: E170135535

Computer Co
Pentium Pro 200MHz
120V 1.5A
50/60 Hz
SN: 123456

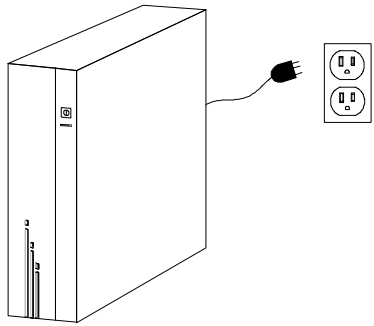
3. Multiply the voltage and current of each piece of equipment (*VA requirements*). For example, 120V x 1.0A = 120VA, 120V x 1.5A = 180VA.

   Add up the VA requirements for each device; for example, 120VA + 180VA = 300VA.

4. Make sure that your UPS has at least as much VA capacity as your equipment requires.

3.4 Powering Up Your UPS

1) For 100/120V versions, connect the power cord to a verified grounded 3-wire receptacle. For 2X0V versions, please refer to Sec 3.5 .

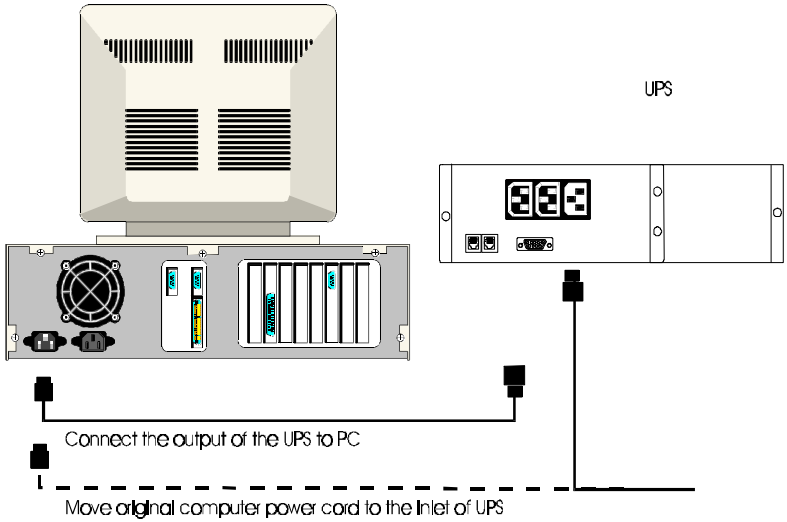


2) Power up the UPS by pressing the power button on the front panel.
3) Charge the battery for six (6) hours before use. The UPS will recharge the battery automatically whenever AC power is available. You may use the UPS immediately without recharging, but the backup time may be less than the rating.

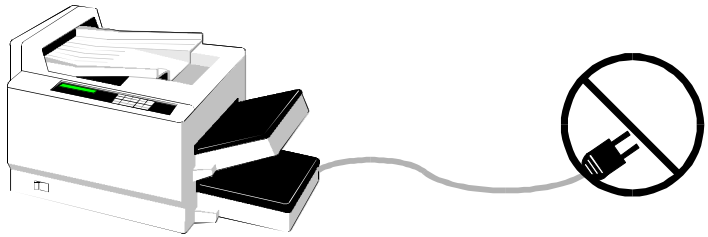
3.5 Connecting Your Equipment to the UPS

1) Connect the power cord of your computer equipment to the output receptacles of the UPS. Turn on the computer equipment.

2) 2X0V versions: Swap the input power cord of the equipment to the inlet of the UPS. Use the power cord supplied with the UPS to connect from the outlet of the UPS to your equipment.



3) ***DO NOT PLUG LASER PRINTERS INTO THE UPS BECAUSE THEY TYPICALLY DRAW TOO MUCH POWER***



3.6 Operation and Function Test

1) Turn on the UPS by pressing the front panel power button. The UPS will beep and the front panel LED will flash 3 times and then remain on.

2) If the LED is constant green and the buzzer sounds continuously, the UPS may be overloaded. Unplug the least critical devices, such as a printer, etc. If the LED is flashing green and the buzzer sounds continuously, the battery or UPS may be faulty. Contact OPTI-UPS for service.

Note: Backup all unsaved files before you perform the functional test.

3) To test the backup function, you may unplug the power cord of the UPS. The UPS will beep once every 5 seconds and the LED will flash.

4) If the UPS is left to run continuously, it is a good idea to perform a periodic function test (at least once a week) on the unit since the self-diagnostics test is only performed when the UPS is first turned on. To perform this test unplug the power cord to the UPS to simulate a utility blackout.

   Observe that your equipment operates properly and uninterrupted during this period. Plug the power cord back in.

3.7 Storage Instructions

For extended storage in moderate climates, the battery should be charged for 12 hours every 3 months by plugging the power cord into the wall receptacle and turning on the main switch. Repeat it every 2 months in high temperature locations.

4. SPECIFICATIONS

4.1 Electrical Specifications

		Output	
Product Name	**Frequency (Hz)**	**Voltage (V)**	**Current (I)**
350VS	50/60	100 / 110 / 120	3.5 / 3.2 / 2.9
	50/60	220 / 230 / 240	1.6 / 1.5 / 1.5
500VS	50/60	100 / 110 / 120	5.0 / 4.5 / 4.2
	50/60	220 / 230 / 240	2.3 / 2.2 / 2.1

Input/output voltage:

AC Line Voltage		
Version	**Lower Limit**	**Upper Limit**
100/110/120V	82 / 90 / 98	118 / 129 / 141
220/230/240V	180 / 188 / 196	259 / 271 / 283

Output voltage regulation: ± 10% (*Backup Mode*), ± 18% (*AC Mode*)

Input/output frequency range:

Input	47 Hz ~ 53 Hz / 57 Hz ~ 63 Hz
Output (*Inverter mode*)	50 Hz / 60 Hz → 50 Hz / 60 Hz ± 0.1 Hz

Wave form :

AC Mode	sine wave
Back-Up Mode	step-sine wave

Transfer time:

Power failure	**AC -> inverter**	4ms (typical)
Power recovery	**inverter -> AC**	4ms (typical)

Spike/surge protection:

Version	**Continuous Voltage Vrms**	**Single pulse 8/20us**	
		Imax	**Joules**
1X0V	150V	6500A	270
2X0V	300V	6500A	90

Data-line surge suppression:

Telephone Line Surge Protection	+/- 6KV Peak (1.2μS/50 Waveform)
10 Base-T Protection Let Through Rating	<1% (From 6KV/125A Normal Mode Surge)

Battery Specifications:

	350VS	**500VS**
DC voltage	12V	12V
Type	12V 7AH	12V 7AH
Quantity	1	1
Recharge time	6 hours	

Battery type: Maintenance-free sealed-lead acid recharge time 6 hours typical from total discharge. (*UPS may be used immediately after discharge but will provide shorter backup time*)

4.2 Mechanical Specifications:

Product Name	**Dimensions**	**Weight (Kg)**	
	W × D × H (mm)	**Net**	**Gross**
350VS / 500VS	297X215X73	4	4.7

4.3 Environmental Specifications:

	Operating	**Storage and Shipment**
Temperature	0 ~ 40°C (*32° ~ 104°F*)	-20° ~ +60°C (*-4° ~ +140°F*)
Humidity	5 ~ 90% (*non-condensing*)	5 ~ 90% (*non-condensing*)
Altitude	3,000 m (*10,000 ft*) (*Max*.)	12,000 m (*40,000 ft*) (*Max*.)

5. TROUBLESHOOTING

5.1 Troubleshooting Chart

Problem	Possible Cause	Corrective Action
UPS can not turn on and has no audible alarm	UPS power button is off.	Press the front panel power button.
	UPS input power cord is not plugged in.	Plug in the UPS power cord into a working AC outlet.
	Rear panel circuit breaker is tripped.	Reduce the load and reset the circuit breaker.
UPS has a flashing LED and no alarm and no output.	No incoming line or very low or very high line voltage.	Check the wall socket and test the input line voltage.
UPS has a green LED & continuous beeping alarm.	UPS is overloaded.	Remove the least critical devices from the load.
UPS has continuous beeping alarm and then shuts down.	The output is short circuited.	Remove all the devices and check.
UPS has a green LED and beeps every 10 secs.	The battery is bad.	Change battery. (see *Chapter 6*)
Site Wiring Fault LED is on.	Site wiring problem	Call an electrician to check your wiring.
Back-up time is less than the rating.	Battery is not fully charged or the battery is dead.	Plug the UPS into an AC outlet and recharge the battery for 12 hours. If the problem remains, replace the battery.
UPS appears to be functioning normally but the computer won't turn on.	Computer input power cord is loose or not connected.	Check the computer input power cord.
Software communication not working	Wrong interface cable.	Purchase the correct one from your distributor.
	The serial port of the computer has not been configured properly.	Check to see that the serial port is enabled in the CMOS settings. Also check for IRQ conflicts and make sure the settings match those of *OPTI-SAFE*™+.
	The I/O card is defective	Replace I/O card.

6. USER REPLACEABLE BATTERY

The Batteries inside your UPS should last for 3 to 5 years. If you suspect that the batteries are weak, allow the UPS to charge the batteries for at least six hours and then test the backup time. If the UPS still does not provide adequate backup time, follow the procedures below to replace the batteries. Please read section 6.1 before performing the procedure in section 6.2.

6.1 WARNING

Servicing of batteries should always be performed or supervised by personnel knowledgeable of batteries and required precautions. Please read the following cautions before replacing the batteries. Keep unknowledgeable (i.e., unauthorized) personnel away from the batteries.

CAUTION: Except for the battery, the unit contains no user serviceable parts. Repairs should be performed only by factory trained service personnel.

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

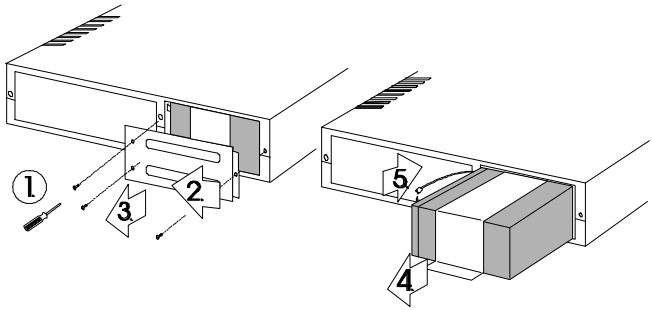
(1) Remove watches, rings, or other metal objects.
(2) Use tools with insulated handles.

CAUTION: Do not dispose of batteries in a fire. The batteries may explode.

CAUTION: Do not open or mutilate batteries. They contain an electrolyte which is toxic and harmful to the skin and eyes.

CAUTION: When replacing batteries, use the same number and the following type batteries: sealed Lead-Acid Maintenance Free (*7AH/12V x1)*

6.2 Battery Replacement Procedure for 350VS / 500VS



Changing the batteries in your UPS is a safe and easy procedure. **Since the battery is not isolated from the AC input, you should turn off the UPS and unplug the ac power line during the following procedure.** Please note that if you do choose to leave the UPS on, battery replacement must be performed by a trained technician and it will not be able to power your load during a power failure should one occur while the battery is disconnected.

1. Remove the three small screws from the rear panel battery retaining plate.
2. Remove the battery retaining plate.
4. Gently pull out the battery.
5. Disconnect the two wires connecting the battery to the UPS.
6. Connect the wires to the new battery (**the red wire is +, the black wire is -**)
7. Push the new battery into place.
8. Slide the battery retaining plate back into place.
10. Tighten the three small screws on the rear panel battery retaining plate**.**