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I. Introduction

(1) System instructions

IUPS (Internal Uninterruptible Power Supply) series is an internal UPS with 5.25" disk size. It employs high frequency PWM technical design, and is the latest model of the simulated pseudo sinewave uninterrupted system. The object of the design of this product is to restrain power surge, spikes, sags, blackouts, and other negative power situations that may affect the communication system and the control devices of the computer. Under normal alternating current (AC), IUPS can filter out the negative phenomena of AC power. After power shortage, one can use the batteries as back-up power source to ensure that the power will not be interrupted. This IUPS product possesses various qualities; it can raise loading equipment and the degree of UPS operation stability.

Upgrade function :

IUPS 300VA can be upgrade to 500VA just need to connect with 2 pcs of 12V/2.2AH batteries.

Automatic On / Off function :

When IUPS is turned on, it will automatically engage in loading tests. Under situations where there is no alternating current(AC), and the IUPS sensor there was no load. IUPS will undergo auto shutdown in 3 seconds. When the AC power is restored, UPS will turn on automatically. The object of this function is to ensure that when power outage arises, IUPS can undergo auto shutdown under experiencing no(zero) load so as to extend the life of the batteries.

Protection against Overload :

Under normal operation, IUPS will constantly inspect the current loading status and initiate commands to prevent power failures arising from overloading when IUPS is changing to back-up power supply mode.

Protection against Overheat :

IUPS will constantly inspect the current temperature to prevent overheat when the temperature is over 105°C ,the "Overheat" LED will light on and the buzzer will beeping.

Test key :

When IUPS is under alternating current (AC) , the pressing of this key can initiate simulated AC power failure to test whether the operation of the IUPS is normal.

(2) Product specifications

1. Input

Voltage Stabilizing Degree: +/- 15%

Frequency Rate : +/- 5%

Voltage Hz	Start-On Conditions During Voltage Input		Power Shortage Point During Voltage Input
	Lower Limit	Upper Limit	
100V 50Hz	85.0	115.0	85.0
110V 60Hz	93.5	126.5	93.5
120V 60Hz	102.0	138.0	102.0
220V 50Hz	187.0	253.0	187.0
230V 50Hz	195.5	264.5	195.5
240V 50Hz	204.0	276.0	204.0

2. Output (under battery power source status)

Voltage Stabilizing Degree : +/-5 %

Frequency Rate : +/- 1 Hz

Wave Type : Simulated Pseudo Sinewave

Battery Specifications : 300VA : 6V/3.3AH (2 PCS)

500VA : 6V/3.3AH (2 PCS) +12V/2.2AH (2 PCS)

Recharge Time : 6 - 8 hours

Equipment Specifications :

IUPS 301	Size (mm) W × D × H	Weight (kg)	
		Net	Gross
Main body	248 × 146 × 41.5	2.75	

IUPS 501	Size (mm) W × D × H	Weight (kg)	
		Net	Gross
Main body	248 × 146 × 41.5	2.75	
Battery Package	203 × 146 × 38	2.55	

3. Operation environment

Temperature : 0 - 40°C

Relative Humidity : 0 - 90% (Non-Condensing)

(3) Safety

When using this equipment, please follow the installation procedures and maintenance of this user manual.

Items of Notice :

The power source included in the IUPS possesses potential danger. Maintenance must be executed by qualified technical personnel.

1. IUPS is an internal equipment. When installing this equipment, please remove the AC power source.
2. Please follow the steps for installation of IUPS when installing this equipment.
3. Other accessories are strictly prohibited from nearing the back of IUPS.
4. Battery cable set is strictly prohibited from connecting with other accessories.
5. The connector of EXT. BATT +, - are forbid to touch with any other accessories, except the correct battery package.
6. EXT. BATT is forbid to connect to other model battery. Except the correct one.
7. Don't touch the AC port for high voltage.
8. Please ensure the stabilization of the main body of IUPS and the battery box when installing this equipment.
9. The change of battery set must be executed by qualified professional personnel.
10. The used battery set must be replaced by batteries of the same model.

(4) Item of notice

1. Carton Opening and Inspection :

Check to make sure if the carton is damaged. If damages are discovered, please keep the carton and notify the supplier immediately.

Accessories :

- (1) IUPS Main Body
- (2) Battery Package (Option for 500VA)
- (3) IUPS Special Cable
- (4) dB 9 Extension Cable
- (5) User Manual
- (6) Power Cable

Please examine carefully if the above accessories are inside the carton.

2. Items of Notice for Storage

Under normal temperature, if the IUPS battery package is not to be used for a long time, please first recharge the IUPS battery package for a minimum of 8 hours prior to the completion of installation to ensure the normal function of the IUPS when experiencing power shortage.

3. The Management of Abnormal Phenomena

If after installation, the IUPS experiences abnormal phenomena, please make the following inspections :

- a. Was installation done correctly?
- b. Is the voltage of the AC power within the designated range?
- c. Is the fuse loose?

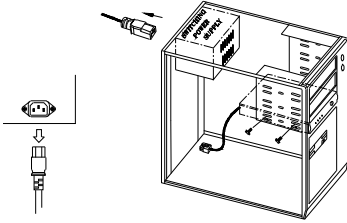
Please also provide the following information when contacting the service center :

- a. Model number and product serial number.
- b. Date of malfunction.
- c. Detailed explanations of the abnormal situations.

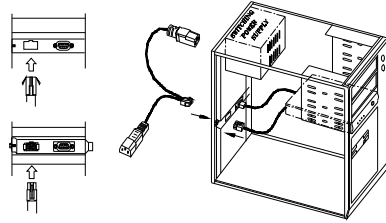
II.

Installation and operation

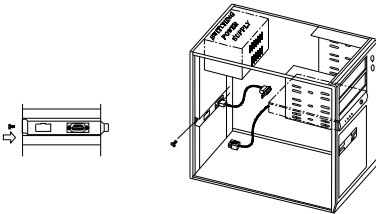
(I) Installation procedures



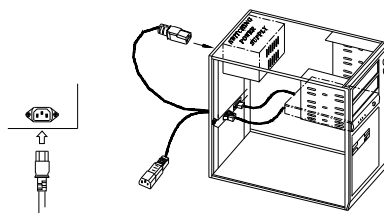
1. Unplug the AC power cord.



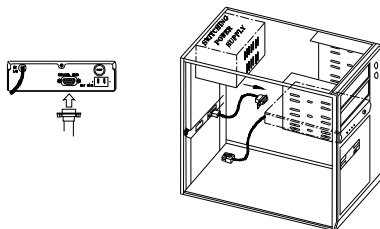
4. Plug in the IUPS POWER cable & IUPS special cable.



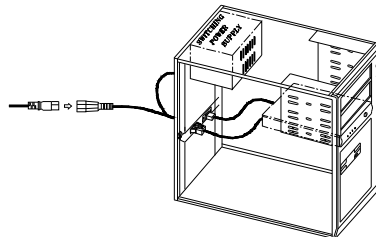
2. Fix the db9 extension cable on the ac slot.



5. Connect the IUPS power cable to the Switch power supply.



3. Plug in the db9 extension cable to the control port.



6. Connect the AC power cord to The IUPS power cable.

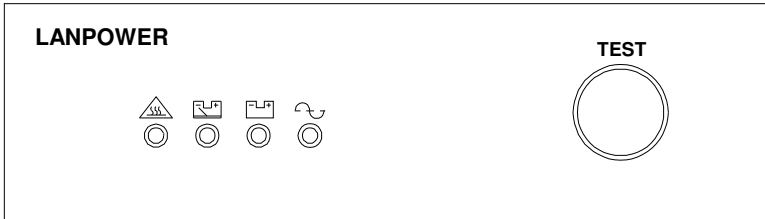
(1) Installation procedures

*** Step 3,4 are for 500VA only**

1. This IUPS Special Cable is to connect : AC PORT : at the back of the IUPS.
2. The dB-9 Extension Cable is to connect : CONTROL PORT : at the Back of IUPS.
3. The Battery Pack Cable (Red: + , Black: -) is to connect : EXT. BATT : at the back of IUPS.
4. Fix the IUPS main body,Battery Pack and the IUPS Special Cable.
5. Connect the Power Cable to the connector of IUPS Special Cable.
6. Plug the AC OUT Cable into the power supply.
7. Plug the AC IN Cable into the AC power source.
8. The Green LED will light on if the AC main power is normal.If Green LED are failure, check the AC fuse on the rear of IUPS to determine if it is not right position or burst.
9. If all the above installation steps executed are correct then switch on your computer and peripherals.
10. Keep the IUPS on. The AC power will run through the UPS system and charge the batteries all the time.

(2) Operation and display

IUPS front panel overview



"On Line" LED : This indicator will be on when the power supply of AC power is under normal condition. A flashing LED indicates battery charging.



"On Battery" LED : This indicator will be on when the AC power is experiencing power shortage and the IUPS has changed to battery power source. The alarm will sound every 5 seconds.



"Battery Low" LED : This indicator will be flash once every second. The alarm will also sound once every second when the battery is weak.



"Overheat" LED : This indicator will be on when the IUPS sensor the temperature is higher than 105°C. The alarm will also continued sound.

"Test "Switch : When connected to alternating current (AC), after pressing this switch, the operator can change IUPS to battery power source to test whether the IUPS operation is normal.

(3) LAN interface

The communication port on the back of the IUPS may be connected to a computer. This port allows the computer to monitor the status of the IUPS and control the operation of the IUPS in some cases. Its major functions normally include all of the following (depending on the UPS control software that you used) :

1. To broadcast a warning when AC power failure.
2. To close open files before the battery reserve is exhausted.
3. To turn off the IUPS and the computer.

Power failure ---2,4 pin closed generated from IUPS.
Battery low ---5,4 pin closed generated from IUPS.
Shutdown IUPS --- a voltage drop between 6,7 pin generated from computer.

Pin 1 : NC

Pin 2 : IUPS simulates a relay closing between pin 2 and pin 4 when input line fails.

Pin 3 : NC

Pin 4 : Common for pin 2,5,6.

Pin 5 : IUPS simulates a relay closing when the battery inside the IUPS has less than 2 minutes backup time left.

Pin 6 : User sends a RS232 high level (5-12V) for ≥ 1.5 ms. This signal will turn off the IUPS until proper input line returns.

Pin 7 : Common for pin 6, and pin 4 connect.

Pin 8 : NC

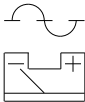

Pin 9 : NC


NOTE:

1. Current rating + 40V, 0.15A (Non-inductive)
2. PIN 4 should be connected to ground only.

III. Trouble shooting

Explanation Chart for the Management of Abnormal Phenomena

Extraordinary Phenomena	Possible Reasons	Methods of Resolutions
When the machine is turned on, IUPS has no function or alarm sound.	The installation of IUPS is connected incorrectly.	1. First remove the AC power. 2. Inspect the installation if the installation procedures are as installation procedure II.(1)
No indicator is on.	1. No AC power input. 2. Fuse is loose.	1. Check AC power source. 2. Check fuse.
 <p>and are on simultaneously.</p>	<p>1. Voltage of the AC power is too low or does not meet specifications of the IUPS voltage.</p> <p>2. IUPS malfunctions.</p> <p>3. Insufficient recharge of the battery.</p> <p>4. Battery malfunctions or recharge device malfunctions.</p>	<p>1. Inspect voltage specifications.</p> <p>2. Notify service center.</p> <p>3. After recharging for 4 hours, then test battery backup time</p> <p>4. Notify service center.</p>
	Overheat.	Restart the IUPS when the temperature is

indicator continues to be on, alarm sounds continued.		down.
 indicator on, alarm sound to be continued.	Abnormal voltage.	Press TEST key to disconnect AC power. If problems remain, disconnect the AC power cord and reconnect it to see if normal. If problems still persist, please notify the service center.