

UPS 425 / 625 Energy Protector

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ENGLISH

# UPS 425 / 625 Energy Protector

**User's Manual**

Version 1.31

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## Preface

This manual describes the installation and operation of the UPS 425 / 625 Energy Protector.

The Energy Protector protects your equipment from irregularities in mains voltage, such as voltage peaks and lows, permanently insufficient or excessive voltage (varying from 75% to 125%), network pollution and even the total failure of the mains supply. This system is known as AVR (**A**utomatic **V**oltage **R**egulation). An added feature is the filtering out of dangerous voltage peaks and high-frequency pollution from the telephone line connected to the system.

To improve readability, the following layout has been used:

<b>&lt;key&gt;</b>	Here you should press the key which is indicated between brackets.
<b>'System'</b>	This is a specific term from a program, such as Windows.
<b>[DIR]</b>	Type in the text shown in that letter type.

Extra information is shown as follows:

### Tips

**Note:** *Do not format the disk.*

### Warnings

**Caution:** *This is dangerous!*

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## 1. Introduction

The Energy Protector is used to correct any irregularities in the electricity network. In the event of a power breakdown, the UPS provides enough temporary power to switch off the PC properly.

The software supplied provides you with an overview of the load and the state of the electricity network.

The Energy Protector is suitable for use in an office environment.

### **System requirements (for the software supplied):**

- MS-DOS 3.3 or higher, or Windows 3.1x / 95 / NT;
- Disk drive;
- Hard disk with at least 4 MB of space available.

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## 2. Safety

Read the following instructions carefully.

1. Pull the plugs out of the mains before you clean the unit. Use no liquid cleaning agents or spray cans. Wipe off the unit with a damp cloth.
2. Do not use this equipment in or around damp areas such as bathrooms, damp cellars, swimming pools, etc.
3. Be sure the UPS rests on a solid surface such as the floor or your desk.
4. Be sure that nothing rests on the unit's flex. Avoid putting the equipment where the flex can become worn or damaged by being walked on.
5. Never insert objects into the slots on the outside of the equipment. You may come in contact with live parts and thereby cause a fire or receive an electric shock.
6. Do not attempt to repair the equipment yourself. If you open or remove the housing, you may accidentally touch parts which are live. Other risks are involved as well. The unit should be serviced only by specially trained personnel.
7. The outlets of the equipment may be live, even when the equipment is switched off.
8. Replace a burned out fuse only with a fuse of the same type or the same value. This precaution prevents the likelihood of damage.
9. In the following situations the plug should be pulled out of the mains and the unit repaired by specially trained personnel:
  - the flex or plug is damaged or worn;
  - liquid has penetrated the unit;
  - the unit has come in contact with (rain)water;
  - the unit is no longer working normally;
  - the equipment has fallen or its housing is damaged;
  - the performance of the equipment has clearly deteriorated.

### **Battery**

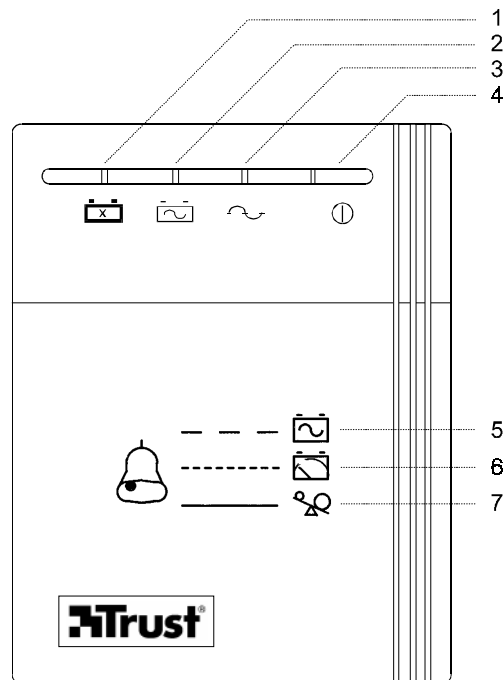
The battery should be replaced only by trained personnel.

The battery should not be opened or damaged, in which case electrolyt can escape which is harmful to skin, eyes as well as the environment.

To prevent an explosion, do not expose the battery to fire.

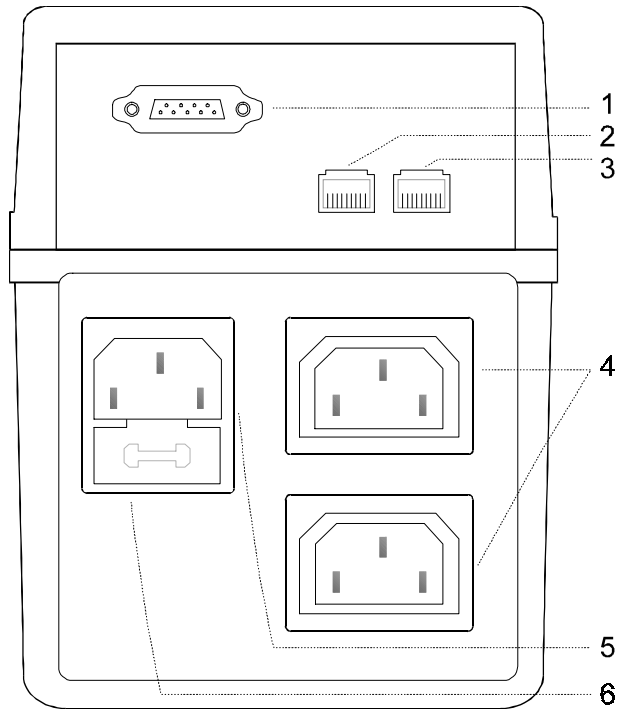
**Caution:** *Be sure that the UPS is not overloaded. Bear in mind the maximum power that can be connected (425 / 625VA), as well as the power of the equipment which is to be connected to the unit.*

### 3. Control Buttons



**Figure 1: Front of UPS 425 / 625 Energy Protector**

- 1 Pilot lamp 'Replace battery' (red);
- 2 Pilot lamp 'Battery power' (yellow);
- 3 Pilot lamp 'Normal use' (green);
- 4 On/Off/Test/Stop button;
- 5 Backup mode (slow alarm signal)  
**Note:** in combination with the yellow pilot lamp;
- 6 Alarm for weak battery (rapid alarm signal)  
**Note:** in combination with the yellow pilot lamp;
- 7 Overload (continuous alarm signal).



**Figure 2: Back of UPS 425/625 Energy Protector**

- 1 Computer interface outlet;
- 2 Telephone/modem connection (inlet);
- 3 Telephone/modem connection (outlet);
- 4 Power outlet for equipment;
- 5 Power inlet for mains supply;
- 6 Fuse holder.

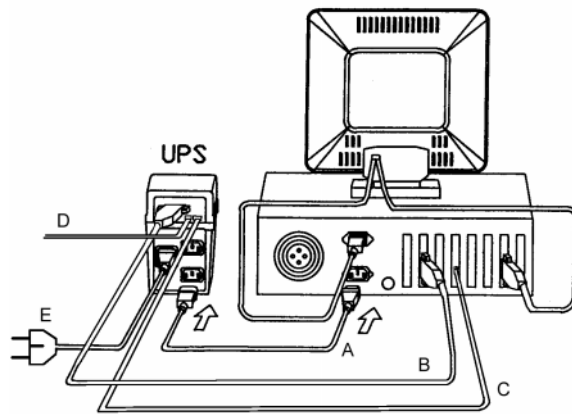
## 4. Installation and operation of the UPS

Carefully remove the UPS from its box, which contains the following items:

- Energy Protector;
- Disk with software;
- Serial interface cable;
- Mains flex;
- Through-loop/mains cable;
- Telephone cable;
- This user manual.

If anything is missing, contact your supplier. Keep the UPS box in case you need it later for reasons of transportation.

## 4.1 Connecting Hardware



**Figure 3: Connecting hardware**

### Explanation of Figure 3

1. Through-loop/mains cable A connects the UPS to your computer.
2. Serial interface cable B connects the UPS to the serial port of your PC or with a Novell UPS monitor board (available from other suppliers).
3. Telephone/modem cable C connects your telephone and/or modem to the UPS.
4. Telephone line D (not supplied) connects the UPS to the telephone wall outlet.
5. Mains flex E connects the UPS to the mains outlet.

### **Location**

Position the UPS in a protected and dust-free room with sufficient air circulation near the computer.

### **Computer connection**

If you want to use the software for DOS / Windows, connect the serial interface cable to the computer connection of the UPS and the serial communications port (COM1 or COM2) of your computer.

**Note:** *Connection to the computer is not necessary. The UPS also works without this connection.*

### **Connecting equipment**

Use the supplied through-loop/mains cable to connect your computer and/or monitor to the UPS.

### **Connecting the UPS to the mains outlet**

Use the mains flex supplied to connect the UPS to the mains outlet.

### **Charging battery**

The UPS charges the battery as soon as the plug has been inserted into the mains outlet. Before using the functions of the UPS, charge it for 4 hours.

### **Connecting the telephone line**

The UPS absorbs voltage peaks in the telephone network so that the equipment connected to it, such as a modem, is not damaged.

## **4.2 Installation of the software**

Once you have connected the serial interface cable to the COM1 or COM 2 port of your computer, you can install the software supplied.

The READ.ME files of the diskette give information on installation.

### **4.2.1 Installation in MS-DOS**

To instal the UPS software in MS-DOS, you need a 3.3 version of MS-DOS or higher.

1. Insert the diskette in disk drive A.

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2. Type [A:] and press **<Enter>**.
3. Type [INSTALL] and press **<Enter>**.



**Figure 4: Installation in MS-DOS**

4. Enter the number of your serial port. Type 1 if you have connected the interface cable to COM1; type 2 if you have connected the interface cable to COM2. Then press **<Enter>**.
5. After your selection, the words "Start to install program (Y/N)" appear. Press **<Y>** to continue. Installation now begins. This may take a while. When the installation is complete, you will see the window shown in Figure 5.





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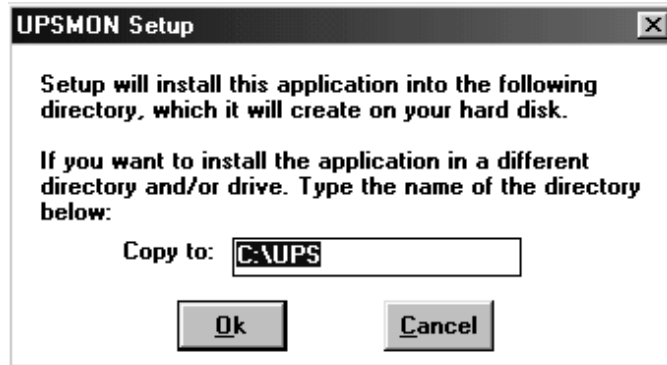
**Figure 5: Installation complete**

6. Press <R> to re-start the computer.

#### 4.2.2 Installation in Windows

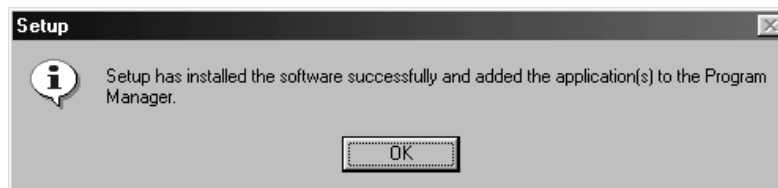
To use the UPS software in Windows, you need version 3.1x or higher

1. Insert the diskette in disk drive A.
2. **for Windows 3.1x:** In 'Program Manager', select the menu 'File' and then 'Start' (continue with point 3).
- for Windows 95 / NT:** Click the mouse on the button 'Start' and then on the option 'RUN'.
3. Type [A:\SETUP] and press <Enter>. You now see Figure 6 on the screen.



**Figure 6: Installation of UPSMON in Windows**

4. Click on 'OK' to continue the installation. After completion of the installation, you will see the equivalent of Figure 7 on your monitor.



**Figure 7: Installation complete**

5. Click on 'OK' to end the installation.
6. Click on the 'UPSMON' icon in the 'Energy Protector' group to start UPSMON.

### **4.3 Operating the UPS**

1. **Switching on**  
Press the On/Off/Test/Stop button for more than 3 seconds, until the signal lamp for normal use lights up. An auto-test is conducted every time you switch on the UPS.
2. **Switching off**  
Press the On/Off/Test/Stop button for more than 3, until the

green signal lamp goes off. For normal use, you should leave the UPS on and switch the PC on and off. In this way the state of the UPS is continually kept track of.

3. **Auto-test**  
Use the auto-test function to test the operation of the UPS as well as the condition of the battery. When the UPS is on, press the On/Off/Test/Stop button for a moment (but not longer than 1 second). The UPS will start the auto-test immediately. During the auto-test the UPS works in the backup mode. The UPS returns to a normal mode as soon as the auto-test is concluded.
4. **Stop**  
Use this function to shut off the alarm. When the UPS is in the backup mode, press the On/Off/Test/Stop button for a moment (but not longer than 1 second).

**Note:** *The stop function does not work in the case of overload or when the battery of the UPS is almost drained.*

#### 4.4 Maintenance

The device was designed so that you can enjoy years of trouble-free pleasure. Excessive time for maintenance is therefore unnecessary. The following directions, however, should be followed:

- Switch off the UPS before cleaning it.
- Use no liquids or spray cans but a moist cloth to clean the outside of the UPS.
- Regularly remove any dust near the ventilation openings.
- Refer to the section on safety.

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## 5. Description of the Software

### 5.1 UPSMON for MS-DOS

After you have installed UPSMON for DOS and restarted your computer, you can start UPSMON.

Operation of the program is rather simple, but adjustment of the 'switch-off delay' requires a brief explanation.

1. Type [CD\UPS] followed by <Enter>.
2. Type [UPSMON] followed by <Enter>. The screen shown in Figure 8 then appears.

```

UPSMON V3.2                               Thu Aug 07 09:39:08 1997
      AVR MODE : COM2
CURRENT POWER STATUS : No Communication

UPS LOAD: _____
BATT LEVEL: _____

      0%      50%      100%      150%
      00      60      120      180      240      300

INPUT VOLTS: _____
OUTPUT VOLTS: _____

O/P CURRENT: 0.0A      BATT CURRENT: 0.0A      I/P CURRENT: 0.0A
O/P VOLTS : 0.0VAC      I/P VOLTS : 0.0VAC
O/P FREQ : 0.0Hz      I/P FREQ : 0.0Hz

<ESC>=Quit <F1>=COM <F2>=Remote <F3>=History <F4>=Time <F5>=Schedule

```

Figure 8: UPSMON for MS-DOS

3. Press <F4> to retrieve the timetable.

```

Shutdown time setup
Function is Enable
Line failed shutdown time : 300 SEC
Low battery shutdown time : 60 SEC

Enter a choose: Enable/Disable/Next

```

Figure 9: Switch-off delay

4. Press **<N>** to continue.

```
Shutdown time setup
Function is Enable
Line failed shutdown time : 300 SEC
Low battery shutdown time : 60 SEC
Do you want to modify time <Y/N>?_
```

**Figure 10: Changing switch-off delay**

5. Press **<Y>** to change the time.
6. Now type 'Line failed time (1-36000 sec)' in, followed by **<Enter>**. This is the interval in seconds between the failure of the power and the switching off of the UPS.
7. You can then type in the 'Low battery time (1-36000sec)'. Again press **<Enter>**.

```
Shutdown time setup
Enter Line failed time 1-36000 SEC:
300
Enter low battery time 1-36000 SEC:
60
Save to file <Y/N> ?_
```

**Figure 11: Setting switch-off delay**

8. Press **<Y>** to store the parameters.
9. The parameters are now stored and you can switch off UPSMON by pressing **<Esc>**.

## 5.2 UPSMON for Windows 95/NT

The monitor software for the UPS is started up as follows:

1. Click the mouse on 'Start'.
2. Click the mouse to select the option 'Programs'.
3. Click the mouse to select the option 'Energy Protector'.
4. Click the mouse to select the option 'UPSMON'. The program is then started up.

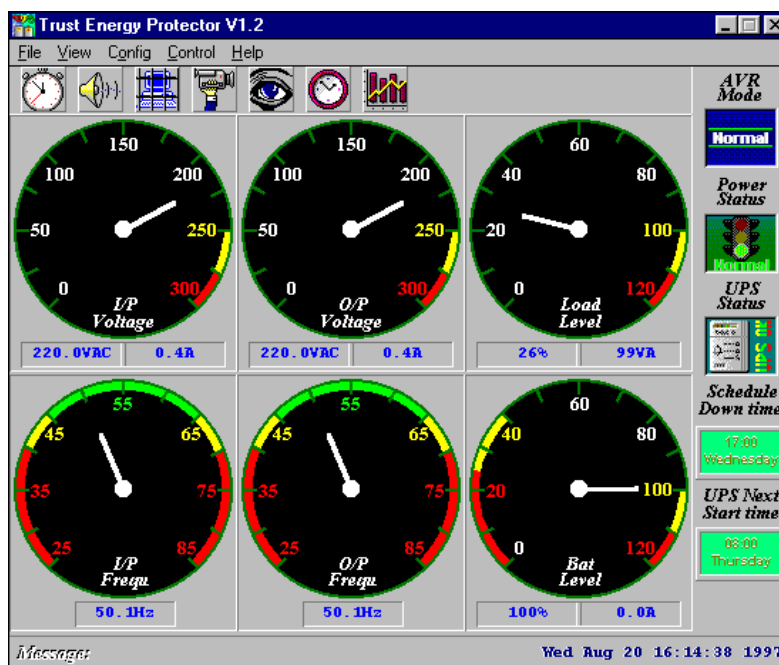
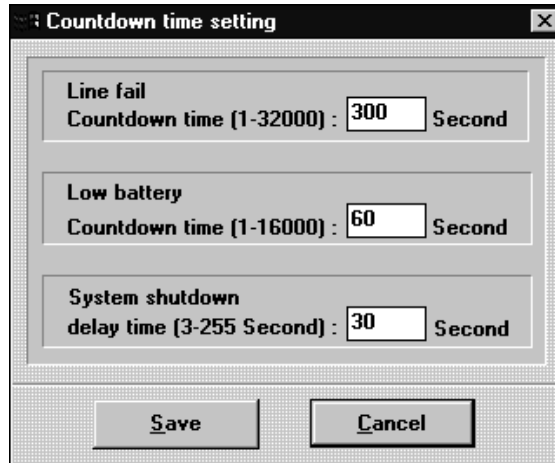


Figure 12: UPSMON software

5. Press <F4> or click on 'Config' and then on 'Countdown Time'. You now see the following window on your screen:



**Figure 13: Countdown time Setting**

6. In the 'Countdown time setting' window you set the desired time between the failure of the mains power and the switching off of your computer. When the time of 'Line Fail' or 'Low battery' has elapsed, Windows is closed and the UPS switches off. The computer then switches off automatically. Be sure that you adjust the 'System Shutdown' time correctly, otherwise the PC will switch off before Windows closes. The premature closure of Windows can lead to the malfunction of Windows or even to loss of data.
7. Click the mouse on 'Save' to store the parameters.



## 6. Switching off the UPS

1. Switch off your PC.
2. Use the On/Off switch to switch off your UPS.

When you do not use the UPS for longer periods, ensure that the battery is fully charged. This is better for the battery in the long term.

After disconnecting, ensure that the UPS is no longer switched on with the On/Off switch, which can shorten the life of the battery.

Should the UPS, after long service, reach the end of its working life, bear in mind that the UPS contains a lead battery which is filled with acid. Enquire with the appropriate authorities where the UPS can be discarded for the correct processing of its battery and other parts.

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## 7. Troubleshooting

If your UPS fails to work properly, first check the problems and solutions below. If you have run through all the solutions and the UPS still fails to function, take the unit to your dealer for repair. Pack the UPS in its original box when you take it in for repairs.

Problem	Probable Cause	Solution
The UPS is not on, the pilot lamp is not on.	<ul style="list-style-type: none"> <li>• On/Off/Test/Stop button has not been pressed (long enough).</li> <li>• Battery voltage is too low.</li> </ul>	<ul style="list-style-type: none"> <li>• Press the On/Off/Test/Stop button longer than 1 second.</li> <li>• Recharge the UPS for at least 4 hours.</li> </ul>
UPS remains in battery mode.	<ul style="list-style-type: none"> <li>• Mains flex is loose.</li> <li>• Fuse has blown</li> <li>• Power is excessive, insufficient or has failed.</li> </ul>	<ul style="list-style-type: none"> <li>• Connect your mains flex securely.</li> <li>• Replace the fuse.</li> <li>• This is normal.</li> <li>• If it takes longer contact your electricity company.</li> </ul>
Backup time is too short.	Battery charged insufficiently.	Recharge the UPS for at least 4 hours.
Continuous peeping signal.	Overloading.	Disconnect the less important equipment.
Red pilot lamp is on.	Battery is dead.	Charge the UPS for at least 8 hours. If this does not help, replace battery.

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## Appendix A: Specifications

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TYPE Energy Protector		425 (UPS+AVR)	625 (UPS+AVR)
Power rating (UP outlet):		425 VA	625 VA
Inlet:	Voltage:	75% to 125% of 220V, 230V, 240V	
	Frequency:	50Hz, 60Hz	
Outlet (signal converter)	Voltage AVR frequency stability wave form	230V, +- 3%, 1000 PPM pulse-width modulation (PWM)	
Backup time:		10 to 30 min. (depending on the equipment connected)	
Transfer:	line to signal converter	<ul style="list-style-type: none"> <li>■ Over-voltage transfer at 125% nominal</li> <li>■ Under-voltage transfer at 75% nominal</li> </ul>	
	signal converter to line	<ul style="list-style-type: none"> <li>■ Over-voltage re-transfer at 121% nominal</li> <li>■ Under-voltage re-transfer at 79% nominal</li> </ul>	
	transfer time	<ul style="list-style-type: none"> <li>■ 0.3 ms signal converter to line</li> <li>■ 2 ms line to signal converter</li> </ul>	
AVR (Automatic Voltage Regulation) (on-line-modus)	raise on-line voltage	AVR automatically raises output voltage by 15% above the input voltage for -9% to -25% of the nominal voltage	
	lower on-line voltage	AVR automatically lowers the output voltage by 15% below de input voltage at +9% to +25% of the nominal voltage	

UPS 425 / 625 Energy Protector

<b>TYPE</b> Energy Protector		<b>425</b> (UPS+AVR)	<b>625</b> (UPS+AVR)
Protection:	UPS inlet:	Overload fuse.	
	UPS outlet:	Electronic protection	
	Overload	Full switching off of the UPS at an overload exceeding 130%	
	Short circuit, UPS output:	UPS output immediately switched off.	
Alarm:	Battery Back-up	Slow peeping signal (about 1 peep per 2 seconds (0.47Hz))	
	Weak battery	Peeping signal (every 0.6 seconds) (1.825Hz)	
	Overload	Continuous signal	
Filter:	EMI / RFI filter	10 dB at 0.15MHz 50 dB at 30MHz	
Peak protection	110 / 120V type	max. energy 320J/2ms; blocking voltage: 360/50A	
	220 / 240 V type	max. Energy 320J/2ms; blocking voltage 765/50A	
Interface:	D-Type 9-pin connector	For an RS232 connection and the transmission of signals and information about many functions such as power failure, weak battery, disconnection of UPS, etc.	
Dimensions:	W x L x H [mm]	97 x 260 x 135	97 x 320 x 135
Weight:	Net [Kg]	5.8	6.5