

NETYS PE

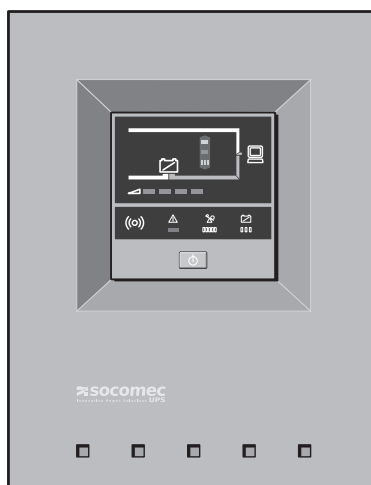
400-1400 VA

INSTALLATION AND OPERATING MANUAL

NETYS

NETYS PE

400-1400 VA



Thank you for choosing NETYS, a SOCOMEC UPS product.

You have purchased a high professional UPS to provide you protection against black-outs and electrical impurities. The NETYS range has been designed specifically for the protection of critical electronics and I.T. consumers such as servers, UNIX workstations or networking peripherals which could suffer hardware damage and data losses as a result of the disturbance deriving from the electrical mains.

For correct use and to obtain the best performance from this product, please read and follow carefully the instructions contained within.

Keep this manual at hand for rapid and easy consultation.

Reproduction of any part of this manual is forbidden without the manufacturer's consent. The information and drawings contained herein may be changed without prior notice and are not binding upon the manufacturer.

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This SOCOMEC UPS uninterruptible power system is guaranteed against manufacturing and material defects, for a period of 24 months from the date of purchase and not however more than 27 months from the date of shipment by SOCOMEC UPS.

The warranty is 'carry-in' type: free supply of parts and labour for repairs, with return of a product to be replaced to SOCOMEC UPS, or authorized centres, at the customer's cost and risk.

In order to use the warranty service, the user must respect the following rules:

- The product must be returned exclusively in its original packaging. Any damage caused during shipping in packaging other than the original is not covered by the warranty;
- The product must be accompanied by proof of purchase: a document (bill, invoice, receipt) showing the date of purchase and the information necessary to identify the product (model, serial number). The number of the authorization for return for repairs must also be attached, with a detailed description of the defect found in the product. If any of these elements is missing, the warranty is invalid. The return authorization number is issued by the service centres by telephone on receiving notification of the malfunction;

The warranty is recognised within Italian territory. If the UPS is exported outside Italian territory, the warranty shall be limited to the cover of the parts used to repair the fault.

The warranty shall not apply in the following cases:

- Failures due to fortuitous circumstances or force majeure (lightning, floods, etc.);
- Failures due to negligence or improper use (use outside tolerance limits: temperature, humidity, ventilation, electric power supply, applied load, batteries);
- Insufficient or inadequate maintenance;
- Attempted maintenance, repairs or modifications not carried out by SOCOMEC UPS personnel or personnel from a support centre authorised by SOCOMEC UPS.
- If the battery has not been recharged in accordance with the terms indicated on the packaging and in the manual, in cases of extended storage or UPS inactivity.

SOCOMEC UPS may, at its own discretion, opt for the repair of the product or for the replacement of the faulty or defective parts with new parts or with used parts that are equivalent to new parts with regard to functions and performance.

Defective or faulty parts replaced free of charge are to be put at the disposal of SOCOMEC UPS that becomes the sole owner.

Replacements or repairs of parts and any modifications to the product during the warranty period shall not extend the duration of the warranty.

In no case will SOCOMEC UPS be responsible for damages (including, without limitations, damage for loss of earnings, interruption of activity, loss of information or other economic losses) deriving from the use of the product.

The present conditions are subject to Italian law. Any dispute falls under the province of the Court of Vicenza.

This manual must be kept next to the UPS, so that the operator may consult it at any time for clarification on the correct use of the UPS. Read the manual carefully before connecting the unit to the mains power supply and to the devices to be powered. Before switching on the UPS (Uninterruptible Power Supply), the operator must be fully aware of the functions and positions of all the controls and of the technical and functional characteristics of the system, in order to avoid any risk to persons and to the equipment.

- Before starting, the unit must have an equipotential connection as established by the safety standards in force. The earth cable of the UPS must be connected to an efficient earth point.
- If the unit is not earthed, all devices connected to the UPS will not have an equipotential connection. In this case the manufacturer declines all responsibility for damage or accidents caused by non-observance of the aforementioned standards.
- This is a pluggable type A equipment with battery already installed by the supplier, it's operator installable and may be operated by layman.
- In case of power failure (UPS in back up mode), do not disconnect the input cable from the mains so as to ensure earth connection to the powered loads.
- All subsequent maintenance operations must be carried out solely and exclusively by authorized personnel. Inside the system high electric voltages are generated which may endanger maintenance personnel who are not sufficiently prepared and trained for such tasks.
- If at any time a hazard condition is created during use, disconnect the mains power supply (if possible through the control panel upstream of the unit) and shutdown the UPS completely following the appropriate procedure.
- When assembling and replacing the battery, the UPS should always be switched off and disconnected from the mains power supply. Do not dispose of batteries in a fire, the battery may explode.



CAUTION.

A battery can present a risk of electric shock and high short circuit current.

The following precaution should be observed when working on batteries: remove watches, rings or other metal objects and use tools with insulated handles.

- The batteries constitute an internal power source for the UPS and mean that the system output may be powered even when the UPS is not connected to the mains power supply.
- Do not force, break or try to open the batteries. They are sealed and do not require any maintenance. They contain substances that are toxic to health and that pollute the atmosphere. Do not switch the UPS on if any leakage of liquid or white powder residue is noted.
- Replace batteries with the same number and type of batteries as originally installed in the equipment.
- Replace the fuses ONLY with other fuses of the same type.
- As the mains cable of the UPS is considered a disconnecting device, the mains socket to which the UPS is connected and/or the rear of the UPS must be accessible and easy to disconnect.
- Avoid contact of the UPS unit with water or liquids in general. Do not introduce foreign bodies.
- If the unit needs to be scrapped, it must be handed over solely and exclusively to specialist disposal companies. These companies are obliged to break up and dispose of the various components in accordance with the national legal provisions in force.

- The UPS generates a leakage current of about 1.5 mA. To guarantee the maximum limit leakage current of 3.5 mA, make sure that the maximum leakage current of the load is 2 mA. If the load current exceeds this value, have qualified personnel connect the UPS to an industrial type, IEC 309 compliant power supply mains, with a current of correct dimensions for the UPS power rating.
- Netys UPS is intended for commercial and industrial use; it is not recommended for use in medical applications that are essential to the survival of the patient.
- Use the UPS in accordance with the technical specifications given in the User Manual.

The main purpose of the UPS is to protect sensitive and critical equipment from electrical disturbances that can compromise operation. Black-outs, brown-outs, variations in voltage and frequency, lightning, electrostatic discharges and rapid over voltages are phenomena found in all office and industrial environments and which cause damage to the hardware and loss of data.

Netys is an Uninterruptible Power Supply designed to power computers and connected peripherals, with the exception of any other electrical device (such as household appliances, television sets, stereo systems and video recorders).

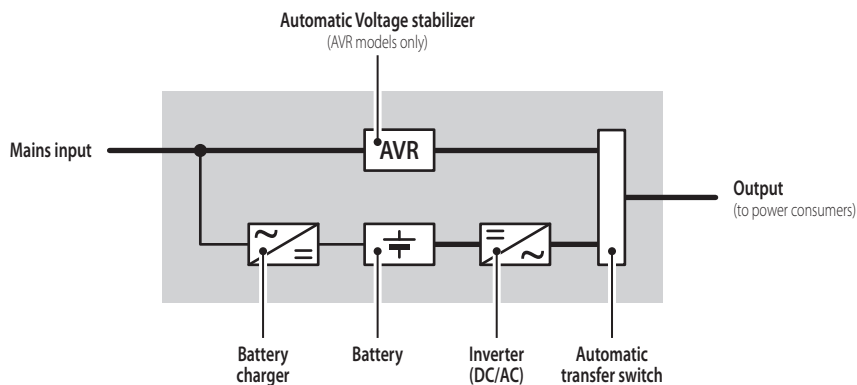
3.1 INTRODUCTION.

The characteristic feature of these UPS is the constant monitoring of the power supply which, duly filtered and stabilised (on models with AVR) and if considered suitable, is used to supply consumers. In cases of a mains failure or if the mains is considered to be outside limits accepted by the load, the inverter (the heart of the UPS) is activated immediately. Drawing on the power stored in the batteries, the inverter generates a voltage that instantly takes over from the mains without any disruption to the equipment connected.

During operation under emergency conditions, the internal batteries discharge but are recharged again automatically when mains power returns.

Being hermetically sealed, the batteries do not require maintenance of any kind at any stage of their working life.

3.1-1 Block diagram.



4.1 UNPACKING.

Remove the UPS and all the accessories that come with it (cables, CD-ROMs, etc) from its packing case.

It is always advisable to keep the original packaging that has been specially designed for safe transport, in case the unit has to be moved again.

4.2 ENVIRONMENTAL REQUIREMENTS FOR INSTALLATION.



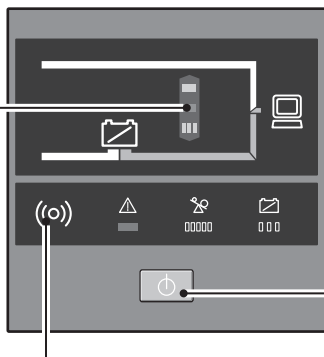
Please check what follows before installing the UPS.

- Netys has been designed for use in closed environments.
- Place the UPS on a flat and stable surface, in a ventilated environment away from heat sources and exposure to direct sunlight.
- Keep ambient temperature between 0 °C and 40 °C and humidity less than 90% (non-condensing); the best temperature to guarantee the longest battery life is 15-20 °C.
- Ensure that the environment where the UPS will be installed is not dusty, and leave a space of at least 20 cm around it to allow for adequate ventilation and access to the rear panel.
- Make sure not to place the UPS or any other heavy object on the cables.
- Check that the voltage and frequency preset for operation is right for your electrical power supply looking the data can be found on the data plate.
- Use only the manufacturer-supplied or recommended cables and accessories for connections to the RS232/USB serial interface.

It is recommended to charge the batteries for 8 hours the first time the unit is used.

Operating mode indication.

- LED lit: NORMAL MODE (mains OK)
- LED flashing: BATTERY MODE (mains absent or abnormal).



**400 VA
600 VA
800 VA**

ON/OFF switch.

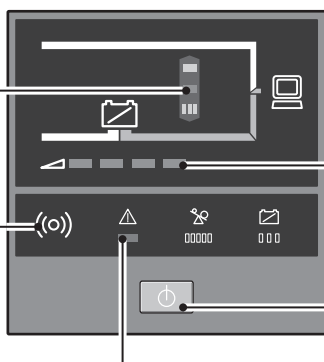
Turns the UPS ON and OFF.

Acoustic alarm.

- Intermittent every 10 seconds: BATTERY MODE.
- Intermittent every second: battery low.
- Intermittent every 0.5 second: overload.
- Intermittent every 2 seconds: battery needs replacing.
- Continuous: UPS failure.

Operating mode indication.

- LED lit: NORMAL MODE (mains OK)
- LED flashing: BATTERY MODE (mains absent or abnormal).



**1000 VA
1400 VA**

LED bar.

- NORMAL MODE: load level (power %) 25% steps.
- BATTERY MODE: battery level (capacity %) 25% steps

ON/OFF switch.

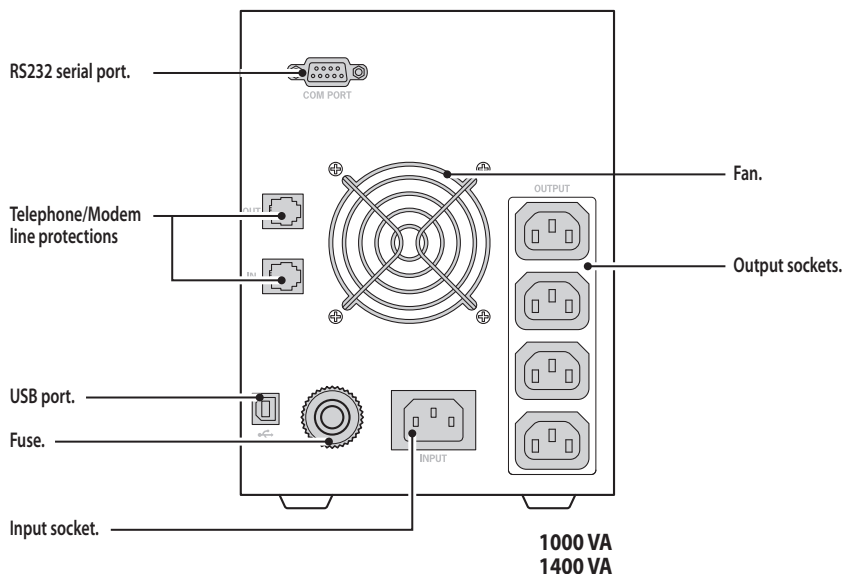
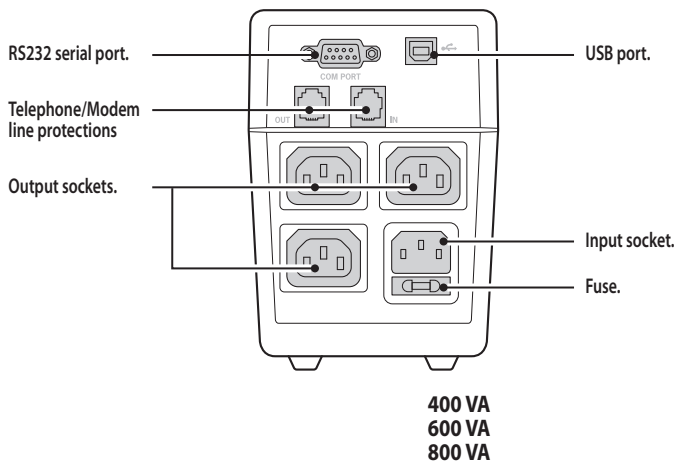
Turns the UPS ON and OFF.

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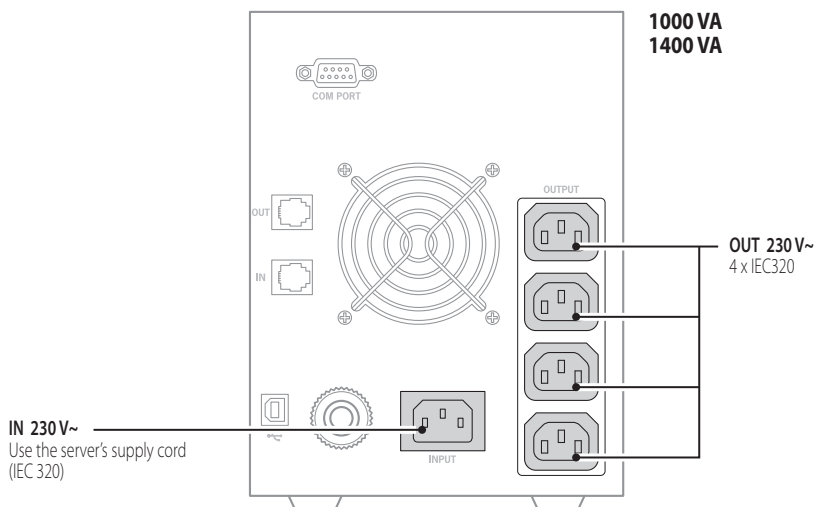
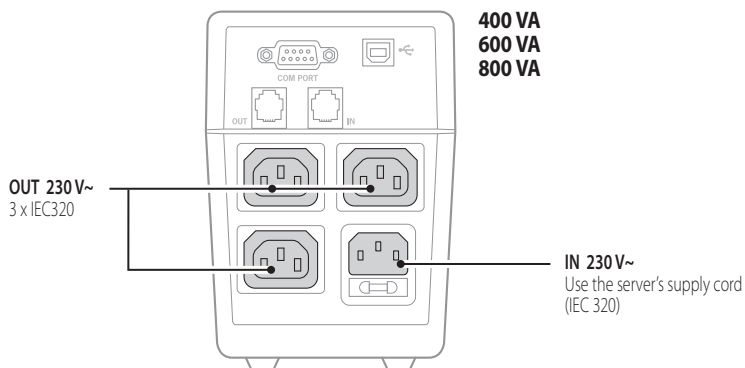
Red LED.

UPS failure.





Cables with the appropriate cross-section and conforming to the safety standards in force should be used for connection to the mains and connection of the loads.



8.1 SWITCHING THE UPS ON.

Switch the UPS on by pressing the **ON/OFF button** on the front panel.

The **Normal Mode LED** will light up; allow ten seconds for the self-teach procedures to run.

8.2 SWITCHING THE UPS OFF.



WARNING!

This UPS has been designed to control and maintain the battery charge; therefore only in exceptional circumstances are you advised to switch it off completely.

To shutdown the UPS completely, press and hold down the **ON/OFF button**. The UPS switches off all the LEDs and is then fully deactivated. If the mains cable is not disconnected, the battery-charger remains active.

8.3 NORMAL MODE.

When mains power is available and the voltage falls within the acceptable range, the **Normal Mode LED** on the front panel remains on permanently. The loads are powered from the mains power supply either directly or through the AVR stabiliser which intervenes in cases of voltage peaks, the batteries are constantly recharged.

8.4 BATTERY MODE.

The UPS switches automatically to this operating mode when mains power fails (spikes or lengthy black-outs) or if the mains is at a value considered to be dangerous; the consumers are powered using the energy stored in the batteries converted to AC voltage through the inverter.


In this mode, a slow intermittent acoustic alarm sounds, while the **Battery Mode LED** on the front panel flashes.

In cases of prolonged mains failure, the UPS powers the consumers until it shuts down when the batteries are fully depleted (see the chapter "COMMUNICATION" for orderly shutdown via software).

Just before shutdown, when the battery charge runs out fully, low battery charge is signalled via a rapid intermittent acoustic alarm.

The UPS automatically returns to normal operating mode about two seconds after the mains power is restored. The time taken to transfer from normal to battery mode and vice-versa is imperceptible to the load.

8.5 OVERLOAD.

The UPS can power loads up to the power rating declared on the machine's data plate; once this limit is exceeded, the machine goes into overload condition. Overloads are signalled by a rapid sounding acoustic alarm .



WARNING!

Significant overloads could cause permanent damage to the UPS!

Avoid connecting laser printers that generate absorption peaks liable to cause overloads on the UPS.

The UPS provides excellent protection against interruptions or imperfections in the mains power supply. In these cases the computer (load) is powered by the UPS using battery power until this runs out.

Various software applications and communication options are available to optimise operation of the UPS and to correctly manage shutdown when back-up power ends. The status of the UPS can be monitored, keeping track of all the mains failures and battery discharges so as to activate an automatic and orderly procedure to close the programs and shutdown the system. When mains power returns the system will restart automatically.

All Netys models are equipped with RS232 and USB communication interface (not available on the Netys PE 400 model).

9.1 COMMUNICATION SOLUTIONS.

Uni Vision local management software (RS232 interface) for local shutdown of Windows™ & Linux systems. Free on www.socomec.com

9.2 RS232/USB INTERFACE.

Communication with the server can take place directly via the RS232/USB interface.

In addition to local or networked shutdown it is possible to perform full monitoring of the electrical parameters regarding battery status and the automatic programming of the UPS start-up and shutdown procedures.

For a complete description of the software features, refer to the UniVision documentation.

Optimal operation of the unit is obtained by keeping it constantly powered (24 hours a day). This guarantees correct maintenance of the battery charge.

**WARNING!**

THE UPS INTERNALLY GENERATES HAZARDOUS ELECTRICAL VOLTAGES.

ALL MAINTENANCE MUST BE PERFORMED SOLELY AND EXCLUSIVELY BY AUTHORIZED PERSONNEL.

If you have difficulty in getting the UPS to work, the reason may be among those listed below. For any other problem, you are advised to get in touch with your dealer or service organisation directly.

For quick and effective action, when you call it is important to give precise details of the defect, the model number and the manufacturing serial number that can be found on the conformance and inspection certificate or on the data plate on the bottom of the UPS.

Troubleshooting for minor problems

Problem	Possible cause	Solution
The UPS works in battery mode even if mains power is available.	Poor connection to the input mains.	Check the connection of the cable to the UPS and to the mains outlet.
	The mains voltage is out of range.	No solution because mode of operation is correct.
	Input protection triggered (blown fuse or automatic switch).	Replace the input fuse with another of the same type or reset the automatic switch.
Back-up time shorter than expected.	Batteries not fully charged.	Leave the batteries to charge for 8 hours consecutively.
	Batteries not working properly.	Have the batteries replaced by authorised personnel.
The UPS stalls/goes into overload alarm.	Overload on the load line.	Check that the load applied is not greater than the maximum permitted or reduce the load power requirement.



IF THE EQUIPMENT IS TO BE LEFT IDLE FOR A LONG PERIOD, WAIT FOR THE BATTERIES TO CHARGE FULLY BEFORE SWITCHING OFF. WHILE THE UPS IS LEFT IDLE, MAKE SURE THAT THE BATTERIES ARE RECHARGED FOR 24 HOURS AT LEAST ONCE EVERY 4 WEEKS.

Models

	PE 400	PE 600	PE 800	PE 1000	PE 1400
Power (VA)	400	600	800	1000	1400
Power (W)	240	360	480	600	840
Technology	Line Interactive Step Wave with AVR voltage stabilizer				

Electrical specifications - Input

	PE 400	PE 600	PE 800	PE 1000	PE 1400
Mains voltage			170-280 V		
Frequency (nominal)			50/60 Hz with automatic selection		
Mains connection			IEC320 socket		

Electrical specifications - Output

	PE 400	PE 600	PE 800	PE 1000	PE 1400
Voltage (Normal Mode with AVR)		The AVR increases (boosts) the output voltage by 18% when the input voltage drops below 90% of the nominal value. The AVR decreases (bucks) the output voltage by 15% when the input voltage rises above 110% of the nominal value.			
Voltage (in Battery Mode)			230 V \pm 10%		
Frequency			50/60 Hz		
Wave form			Stepwave		
Transfer time			2÷6 milliseconds (typical)		
Protection			Overload, deep discharge and short circuit		
Load connection socket IEC320	3 (C13)	3 (C13)	3 (C13)	4 (C13)	4 (C13)

Battery

	PE 400	PE 600	PE 800	PE 1000	PE 1400
Typical back-up time (PC+15" LCD monitor)	8 min	15 min	20 min	45 min	55 min
Battery recharge	Under permanent charge even when the UPS is off (mains present)				

Reporting and Communication

	PE 400	PE 600	PE 800	PE 1000	PE 1400
Communication interface	-	RS232/USB	RS232/USB	RS232/USB	RS232/USB
Local communication software	-	UPS Management software – Windows™ & Linux (free download)			
Telephone protection	-	Telephone line/modem/ADSL suppressor: RJ11			

Environment

	PE 400	PE 600	PE 800	PE 1000	PE 1400
Noise level at 1 meter			<45 dBA		
Temperature		0÷35 °C (15÷25 °C for optimum battery life)			
Environment		Altitude: 2000 m, humidity: 90% non-condensing			
Reference standards		EN62040-1-2 (EMC), EN62040-1-1 (safety)			

Mechanical characteristics

	PE 400	PE 600	PE 800	PE 1000	PE 1400
Dimensions (WxDxH mm)	99x334x143	99x334x143	140x370x180	140x370x180	140x370x180
Net weight (kg)	5.0	6.1	6.6	13.6	14.6

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