

Online UPS · Smart 19" Series

Online double-conversion UPS in 19" rack format, with pure sine wave output, a dual row of IEC socket-outlets (critical and non-critical) and management via USB, RS232 or optional SNMP/HTTP. Available in 1000, 2000 and 3000 VA.

PRODUCT SUMMARY	
References	PH 8310 (1000 VA) · PH 8320 (2000 VA) · PH 8330 (3000 VA)
EAN	PH 8310 · 0745604518666 PH 8320 · 0745604518659 PH 8330 · 0745604518642
Type	Online double-conversion UPS · 19" rack format
Output	208/220/230/240 Vac (configurable) · 50/60 Hz · pure sine wave · PF 1.0
Output socket-outlets	8×IEC in 2 rows (top row = non-critical load NCL, switchable)
Battery	PH 8310 · 24 V PH 8320 · 48 V PH 8330 · 72 V (12 V/9 Ah cells)
Dimensions / weight	PH 8310 / PH 8320 · 88×438×430 mm · 10.56 / 17.32 kg PH 8330 · 88×438×610 mm · 27.34 kg

1 · Important safety instructions

Keep this manual. It contains instructions that must be followed during installation and operation of the UPS. Read it in full before unpacking, installing or operating the unit.

Hazardous voltage

The UPS must be connected to an earthed AC socket-outlet protected by a fuse or circuit breaker; do not connect it to an unearthed socket-outlet. The battery can power hazardous components inside the unit even when the AC input is disconnected, and the output socket-outlets may remain live even when the unit is not plugged into the mains, as long as the UPS is switched on.

- Connect the UPS to a branch circuit with maximum overcurrent protection of 10 A (1000/2000 VA models) or 16 A (3000 VA model), in accordance with CE requirements. The socket-outlet must be near the unit and easily accessible.
- Use only VDE-tested, CE-marked mains and equipment cables. An incorrect cable cross-section may damage the equipment or create a fire hazard.
- Install the UPS indoors, in a temperature- and humidity-controlled area, free of conductive contaminants (see the technical specifications section for the acceptable range).
- Do not remove the cover: risk of electric shock. There are no user-serviceable parts inside; servicing must be carried out by qualified personnel.
- The battery circuit is not isolated from the mains: hazardous voltage may exist between the battery terminals and earth. Always test before touching.
- Connect the protective earth (PE) conductor first, before any other input or output cable.
- Check that the sum of the leakage currents of the UPS and the connected equipment does not exceed 3.5 mA.
- Do not unplug the unit from the mains during normal operation: this would invalidate the protective earth insulation. Fixed input/output wiring must be carried out by qualified personnel, with the unit switched off and unplugged.
- Do not use this equipment with medical or life-support equipment, or with or near aquariums: condensation may cause short circuits.

- Do not dispose of batteries in fire (risk of explosion) or open or damage them; the electrolyte is harmful to skin and eyes. When handling batteries, remove watches, rings or other metal objects and use tools with insulated handles.
- Replace fuses only with the same type and rating.
- Do not install the equipment in direct sunlight or near heat sources, and do not block the ventilation openings.
- Battery servicing must be carried out or supervised by personnel with knowledge of batteries and the required precautions. Keep unauthorised personnel away.
- Before any maintenance, repair or shipment of the equipment, switch it off and fully disconnect it from the mains and the battery.

2 · Installation

2.1 · Unpacking

The box contains: UPS unit (×1), user manual (×1), rackmount ears (×2), input power cord (×1), mounting screws (flat head M4×8L ×8, pan head M5×12L ×4) and screw hole dust covers (×8). Check that the contents are complete and free of visible damage before installing the equipment.

2.2 · Management software

PowerMaster software allows you to monitor the UPS status (input, output, battery and events) and manage the safe shutdown of connected equipment in the event of a power failure. Download it from <https://phasak.com/software-de-gestion-powermaster/> and install it following the wizard. The UPS has a USB port and a serial port (RS232) for connection to a PC or server; it also accepts an optional SNMP/HTTP card for remote management over the network.

2.3 · Hardware installation

Secure the UPS to the rack using the mounting ears and the supplied screws, making sure it is properly supported. Before first use, connect the UPS to the mains and let it charge for at least 4 hours; charging is automatic, even with the unit switched off.

Note

Fixed input and output wiring must be carried out with the UPS switched off and disconnected from the mains, and always by qualified personnel. Connect the earth first.

Switch the unit on by pressing the ON button. If an overload is detected, an alarm will sound; reduce the connected load until it is within the acceptable range. To preserve the battery, keep the UPS plugged into the mains whenever possible; if you are going to store it, cover it and recharge the battery every three months.

3 · Basic operation

3.1 · Front and rear panel

The front panel (common to all three ratings) incorporates the multifunction LCD display and the control buttons. The rear panel varies according to the rating: PH 8310 and PH 8320 share the same chassis and socket-outlet layout; PH 8330 uses a deeper chassis with the same connection scheme.

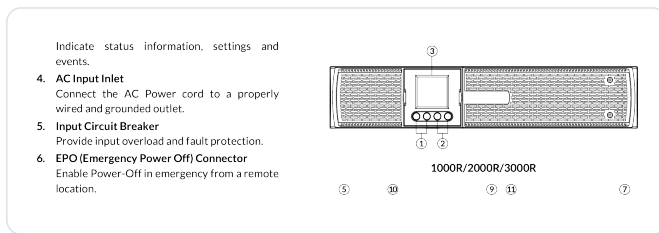
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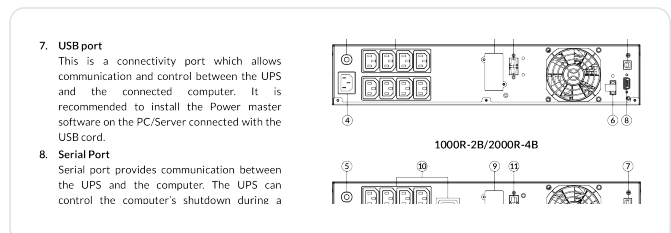
POWER MODULE FRONT/REAR PANEL DESCRIPTION

1. **Power On/Off Button**
Master ON/OFF for the UPS.
2. **Function Buttons**
Scroll up, scroll down, select and cancel LCD menu.
3. **Multifunction LCD Readout**
10. **Battery Backup & Surge Protected Outlets**
Provide battery backup and surge protection. They ensure power is provided to connected equipment over a period of time during a power failure.
11. **Extended Runtime Battery Module Connector**
Connect to additional external battery modules.

Front panel · common to PH 8310 / PH 8320 / PH 8330. Manufacturer technical reference drawing.



Rear panel · PH 8310 (1000 VA) and PH 8320 (2000 VA)



Rear panel · PH 8330 (3000 VA)

- 1 • Master ON/OFF button for the UPS.
- 2 • Function buttons: scroll, select and cancel in the LCD menu.
- 3 • Multifunction LCD display: status, settings and events.
- 4 • AC input inlet (IEC): connection to a properly wired and earthed socket-outlet.
- 5 • Input circuit breaker: overload and input fault protection.
- 6 • EPO connector (remote emergency power off).
- 7 • USB port: communication and control with the PC/ server (recommended with PowerMaster).
- 8 • RS232 serial port: alternative communication with the PC/server.
- 9 • SNMP/HTTP network slot: houses the optional remote management card.
- 10 • Output socket-outlets with battery backup and surge protection, in two rows: the top row is the non-critical load (NCL), configurable to disconnect before the critical row and thus extend runtime for priority equipment.
- 11 • Connector for the extended runtime external battery module: PH 8321 (for PH 8320) and PH 8331 (for PH 8330), optional accessories.

3.2 • Operating modes

Mode	Description
Line	The mains powers the loads and charges the battery simultaneously.
ECO	If the input voltage is within the regulation range, the UPS bypasses the mains directly to the output to maximise efficiency.
Converter	With an input frequency between 40 and 70 Hz, the UPS fixes the output frequency at 50 or 60 Hz; the acceptable load is derated by 40 %.
Battery	The UPS powers the output from the battery in the event of a mains failure.
Bypass	If the input voltage is within the bypass range, the UPS routes the mains directly to the output without passing through the inverter.

Mode	Description
Standby	The mains charges the battery, but there is no output voltage until the UPS is switched on.
Warning / Fault	The UPS signals an overload (warning) or a short circuit at the output (fault).

3.3 · Buttons and audible alarm

Button	Function
ON	Switches the UPS on. Held for 5 s in line, ECO or converter mode, starts a battery test.
OFF	Switches the UPS off.
ENTER	Held for 5 s in bypass or standby, enters setup mode. Within the menu, confirms the selection or, held, saves changes and exits. Also used to scroll up in the menu.
ESC	Within the menu, moves to the next option or, held, exits without saving. Held for 5 s outside the menu, enables or disables the audible alarm. Also used to scroll down.
ENTER + ESC	With the mains in a normal state, held together for 5 s, force a switch to bypass mode.

4 · Setup from the LCD panel

The UPS allows 10 parameters to be adjusted from the panel itself. Setup mode can only be activated with the unit in bypass or standby: hold ENTER for 5 seconds to enter, use ENTER to navigate between parameters and values, and ESC (held) to exit without saving or ENTER (held) to save and exit.

Param.	Setting	Available values	Default
001	Output voltage	208 / 220 / 230 / 240 V	230 V
002	Output frequency	50 / 60 Hz	50 Hz
003	ECO mode	0 % (disabled) / 10 % / 15 %	0 %
004	Bypass mode	Disabled / Enabled	Enabled
005	Converter mode	Disabled / Enabled	Disabled
006	EPO / ROO	EPO / ROO (remote on-off)	EPO
007	Number of external battery modules (EBM)	0 to 10 modules	0
008	Bypass with UPS off	Disabled / Enabled	Disabled
009	Audible alarm	Disabled / Enabled	Enabled
010	Non-critical load (NCL)	Disabled / Enabled	Enabled

About the non-critical load (NCL)

This corresponds to the top row of socket-outlets on the rear panel. With parameter 010 enabled and the battery threshold and delay configured in PowerMaster, this row disconnects in battery mode to extend runtime for critical loads. When disabled, it remains powered at all times.

5 · Maintenance

For long-term storage, cover the unit and store it with the battery fully charged, recharging it every three months to preserve its service life.

To replace the battery, always use the model indicated on the unit itself and contact your distributor to obtain it. Batteries are hazardous waste: dispose of them at an authorised collection point and never in fire.

Battery replacement

With the UPS switched off and disconnected, remove the front panel and the battery bracket screws, disconnect the connectors and withdraw the tray. Fit the new tray, reconnect the connectors, secure the bracket and the front panel. This operation must be carried out by qualified personnel.

6 · Technical specifications

MODEL			
Reference	PH 8310	PH 8320	PH 8330
Capacity	1000 VA / 1000 W	2000 VA / 2000 W	3000 VA / 3000 W
Format	19" rack		
INPUT			
Voltage range	80–300 Vac at 0–30 % load · 120–300 Vac (140–300 on 3000 VA) at 30–60 % load · 140–300 Vac (160–300 on 3000 VA) at 60–80 % load · 160–300 Vac (190–300 on 3000 VA) at 80–100 % load		
Frequency range	40–70 Hz		
Power factor	0.99		
Cold start	Yes		
OUTPUT			
Voltage	208/220/230/240 Vac ±1 %		
Waveform	Pure sine wave		
Frequency	50/60 Hz (auto or configurable) ±0.5 Hz		
Transfer time	0 ms (typical)		
Rated power factor	1.0		
Total harmonic distortion (THD)	<3 % linear load · <5 % non-linear load		
Crest factor	3:1		
Output socket-outlets	8×IEC in 2 rows (top = NCL, switchable)		
BATTERY			
Configuration	24 V	48 V	72 V
Cell type	Valve-regulated lead-acid, 12 V / 9 Ah		
Recharge time	4 h (typical, internal batteries)		
External battery module (EBM)	—	PH 8321	PH 8331
ENVIRONMENT			
Operating temperature	0 – 40 °C		
Relative humidity	20 – 90 % non-condensing		
MANAGEMENT AND CONNECTIVITY			
Built-in functions	Self-test, auto-charge, auto-restart, automatic overload recovery		
Ports	1×RS232, 1×USB, optional SNMP/HTTP slot, EPO connector		
Software	PowerMaster		
PHYSICAL			
Dimensions (H×W×D)	88×438×430 mm		88×438×610 mm
Net weight	10.56 kg	17.32 kg	27.34 kg
EAN			
Code	0745604518666	0745604518659	0745604518642