USER MANUAL

Online UPS · Smart Pro Series

Double-conversion online UPS, tower form factor, with pure sine wave output.
European version (Schuko outlets), available in 1000, 2000 and 3000 VA.

PRODUCT SUMMARY	
References	PH 9210 (1000 VA) · PH 9220 (2000 VA) · PH 9230 (3000 VA)
EAN	PH 9210 · 5605922026913 | PH 9220 · 5605922026999 | PH 9230 · 5605922026920
Type	Double-conversion online UPS · tower form factor
Output	230 Vac (208/220/230/240 configurable) · 50/60 Hz · pure sine wave · PF 1
Output sockets	Schuko (European)
Connectivity	RS232 · USB · SNMP/HTTP slot (optional card)

1 Important Safety Instructions

This manual contains important instructions. Read and follow all instructions during installation and operation. Read the manual in full before unpacking, installing or operating the UPS. **Save these instructions.**

> **Hazardous voltage.** The UPS must be connected to an **earthed** AC outlet protected by a fuse or circuit breaker; do not connect it to an outlet without earth. The batteries can power hazardous components inside **even when the AC input is disconnected**. Even when unplugged, the outlets may carry hazardous voltage if the UPS is on.

- Connect the UPS to a branch circuit with over-current protection of **max. 10 A (1000/2000 VA)** or **16 A (3000 VA)**, in accordance with CE. The outlet must be near the unit and easily accessible.
- Use only mains and equipment cables that are **VDE-tested and CE-marked**.
- To prevent fire or electric shock, install indoors, in a temperature- and humidity-controlled area free of conductive contaminants.
- **Do not remove the cover:** risk of electric shock; there are no user-serviceable parts inside. Servicing is carried out by qualified personnel.
- **Non-isolated battery circuit:** hazardous voltage may exist between the battery terminals and earth; test before touching.
- Connect the protective earth (PE) conductor **before** any other cable.
- Make sure the sum of the leakage currents of the UPS and the connected equipment does not exceed **3.5 mA**.
- Do not disconnect the unit from the mains during operation: it would invalidate the protective earth insulation. Fixed wiring is carried out by qualified personnel.
- **Do not** use for medical or life-support equipment, nor with/near aquariums.
- Do not dispose of batteries in fire (risk of explosion) or open them (the electrolyte harms skin and eyes). When working on batteries, remove watches, rings or metal objects and use tools with insulated handles.
- Replace fuses only with the same type and rating.
- Do not install the UPS in direct sunlight or near heat sources. Do not block the ventilation openings. Do not connect domestic appliances (hair dryers, etc.) to the outlets.
- Battery servicing is performed or supervised by personnel with knowledge of batteries and the required precautions. Keep unauthorised personnel away from the batteries.
- Before any maintenance, repair or transport, turn off and disconnect everything completely.

2 Installation

2.1 · Unpacking

The package contains: UPS (×1), user manual (×1), input power cord (×1) and battery cable (×1, long-run models only).

2.2 · Management software

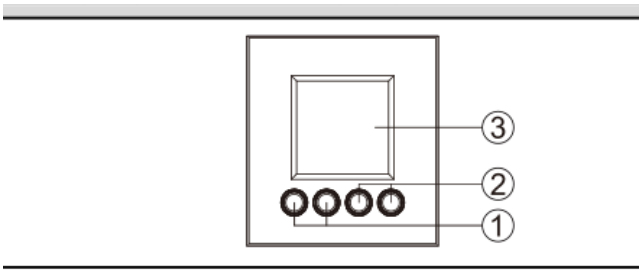
The **PowerMaster** software provides an interface to monitor the UPS (input/output status, battery and events) and manage the safe shutdown of the equipment during an outage. Download it from **https://phasak.com/software-de-gestion-powermaster/** and install it following the wizard. The UPS has one **USB** port (default) and one **serial (RS232)** port; only one can be used at a time.

2.3 · Hardware installation

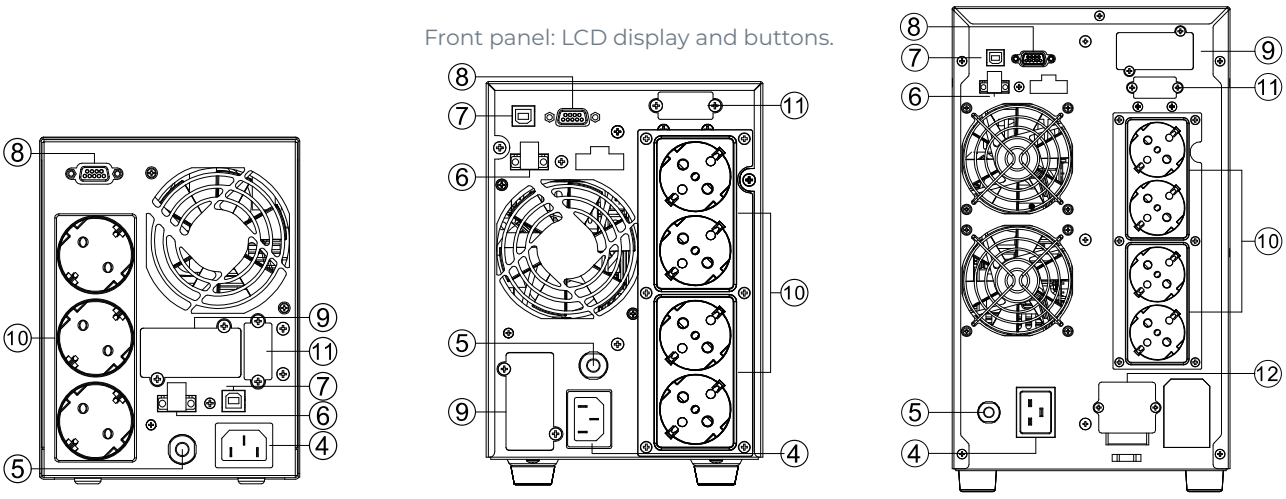
- Before first use, **charge the batteries for 4 hours** by plugging the UPS into the mains (charging is automatic, even with the unit off).
- Connect equipment to the outlets **only with the UPS off and unplugged**. Do not connect high-demand loads (laser printers, copiers, heaters, vacuum cleaners, shredders...): they may overload and damage the unit.
- Press **ON** to switch on. If there is an overload, an alarm will sound (one beep per second); disconnect part of the load to bring it within the safe range.
- For safe software shutdown, connect the UPS to the computer by USB or serial and use PowerMaster.
- Before any fixed input/output wiring, **turn off and disconnect** the UPS from the mains. The input/output cable must be earthed.
- To preserve the battery, keep the UPS plugged into the mains. If storing it, turn it off, cover it and recharge the batteries **every 3 months**.

3 Basic operation

3.1 · Front and rear panel description



Front panel: LCD display and buttons.

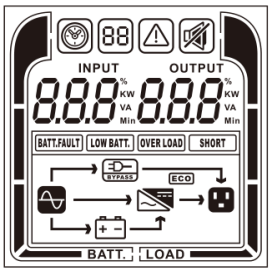


Rear panels (Schuko) by series format.

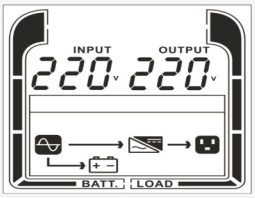
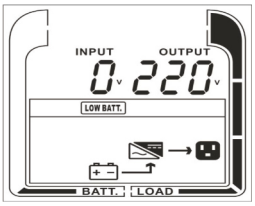
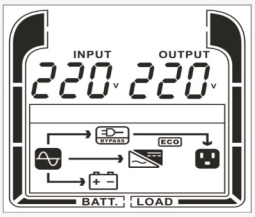
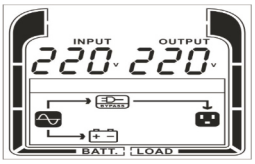
1. **On/Off button.** Master ON/OFF for the UPS.
2. **Function buttons.** Scroll, select and cancel in the LCD menu.
3. **Multifunction LCD display.** Status, settings and events.

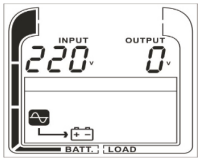
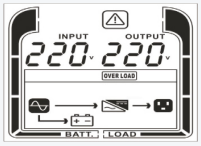
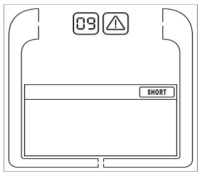
4. **AC input inlet.** Connect the power cord to an earthed outlet.
5. **Input circuit breaker.** Overload and fault protection.
6. **EPO connector.** Emergency power-off from a remote location.
7. **USB port.** Communication with the computer (install PowerMaster).
8. **Serial port (RS232).** Communication and parameter setting.
9. **SNMP/HTTP slot.** Optional card for network management and monitoring.
10. **Schuko outlets** with battery backup and surge protection.
11. **Battery module connector** for extended runtime (long-run models only).
12. **Output terminal block.** Connection of equipment.

3.2 · LCD display and operating modes



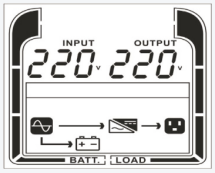
Multifunction LCD display.

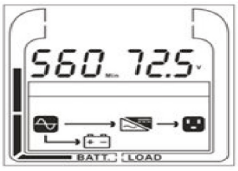
Mode	Description	LCD display
Line	Mains powers the load and charges the battery at the same time.	
Battery	The unit powers the output from the battery.	
ECO	When the input voltage is within the regulation range, the UPS passes the voltage to the output to save energy.	
Bypass	When the input voltage is within the bypass range, the UPS passes the voltage to the output.	

Converter	When the input frequency is 40–70 Hz, the output is fixed at a constant 50 or 60 Hz.	
Standby	The mains charges the battery and there is no output voltage until the UPS is switched on.	
Warning	The UPS warns of an overload.	
Fault	The UPS enters fault mode due to an output short circuit.	

3.3 · LCD pages

The display shows **6 pages**, scrolled with the function buttons:

Page	Left	Right	LCD display
1	Input voltage (V)	Output voltage (V)	
2	Input frequency (Hz)	Output frequency (Hz)	
3	Load in W (%)	Output power (W)	
4	Load in VA (%)	Output power (VA)	

5	Battery capacity (%)	Battery voltage (V)	
6	Backup time (min)	Battery voltage (V)	

3.4 · Button operation

Button	Function
ON	Switches on the UPS. In line, ECO or converter mode, hold ON for 5 s to start the battery test.
OFF	Switches off the UPS.
ENTER	In bypass or standby, hold it for 5 s to enter setting mode. Inside, it confirms the selection; holding it, it exits saving. It also scrolls up in the menu.
ESC	In setting mode, shows the next option; holding it, exits without saving. Hold it for 5 s to enable/disable the audible alarm. It also scrolls down.
ENTER + ESC	With the mains normal, press both for 5 s to switch to bypass mode.

4 Maintenance

4.1 · LCD configuration

There are **9** configurable settings. Hold **ENTER** for 5 s to enter setting mode (only with the UPS in **bypass or standby**). Use **ESC** to scroll through the options and **ENTER** to select; hold ENTER 5 s to save and exit, or ESC 5 s to exit without saving.

#	Setting	Options	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	DIS / ENA	ENA
005	Converter mode	DIS / ENA	DIS
006	EPO / ROO	EPO / ROO	EPO
007	Number of battery modules (EBM)	0bP … AbP	0 (standard) / 4 (long-run)

008	Bypass when UPS is off	DIS / ENA	DIS
009	Buzzer	DIS / ENA	ENA

> In Converter mode, ECO is forced to 0 % and the UPS has no bypass.

4.2 · Event identifiers

ID	Cause
01	Bus start failure: DC-DC converter or bus sensing circuit.
02 / 03 / 04	Bus voltage high / low / unbalanced: DC-DC converter failure.
06 / 07	Inverter start failure / inverter voltage high.
08	Inverter voltage low: excessive load or inverter failure.
09	Inverter short circuit.
11	Battery voltage high: incorrect external module connection or charger failure.
12	Battery voltage low: batteries exhausted.
14 / 64	Overload / overload warning.
18	Fan failure: grille covered or fan stopped.
19 / 68	Over-temperature / high temperature (68 shown only at start-up).
62	Low battery.
66	EPO active: EPO connection missing.

4.3 · Storage, batteries and disposal

- **Storage:** turn off and cover the UPS with the batteries charged; recharge every 3 months to preserve their life.
- **Replacement batteries:** check the model on the UPS label; obtain them through your distributor.
- **Disposal:** batteries are hazardous waste; take them to an authorised recycling point. Do not dispose of them in fire.

5 Technical specifications

Parameter	PH 9210	PH 9220	PH 9230
General			
Capacity	1000 VA / 1000 W	2000 VA / 2000 W	3000 VA / 3000 W
Form factor	Tower		
Energy-saving technology	ECO mode · efficiency ≥ 97 %		

Input			
Voltage range	80–300 Vac ±5 % (depending on load)		
Frequency	40–70 Hz		
Power factor	0.99		
Cold start	Yes		
Output			
Voltage	208 / 220 / 230 / 240 Vac ±1 % (230 V default)		
Waveform	Pure sine wave		
Frequency	50 / 60 Hz ±0.5 Hz (auto-sensing or configurable)		
Transfer time	0 ms		
Power factor	1		
Harmonic distortion (THD)	< 3 % (linear load)		
Battery			
Battery voltage	36 V	48 V	72 V
Battery type	12 V / 9 Ah · sealed maintenance-free		
Recharge time (typical)	4 hours		
Indicators and management			
Display	Graphic LCD		
Connectivity	RS232 · USB · SNMP/HTTP slot (optional card)		
Functions	Self-test · auto-charge · auto-restart · automatic overload recovery		
Environment			
Operating temperature	0 °C – 40 °C		
Relative humidity	20–90 % non-condensing		

6 Troubleshooting

Problem	Possible cause	Solution
Warning		
Output overload	The equipment demands more power than the UPS can deliver. In line mode it transfers to bypass; in battery mode it shuts down.	Switch off non-essential equipment; once resolved, the UPS returns to normal operation.
Battery mode	The UPS is running on battery.	Save your data and perform a controlled shutdown.

Low battery	Running on battery and will shut down soon due to very low voltage.	It will restart automatically when the mains returns.
EPO OFF	EPO connection missing.	Check the EPO connection.
Fault		
Over-temperature	High ambient temperature.	Switch off the UPS; check the fan and that the grilles are not obstructed. If it persists, contact your distributor.
Output short circuit	Short circuit at the output.	Switch off the UPS; check the connected equipment before switching on again.
Bus fault	DC bus voltage too high or too low.	Switch off the UPS and contact your distributor.