USER MANUAL

Battery bank · PH 8321 / PH 8331



PH 8321 · 48 V · for UPS PH 8320 · **PH 8331** · 72 V · for UPS PH 8330

External battery module for the Smart 19" Series online UPS: PH 8321 (48 V) for the PH 8320 and PH 8331 (72 V) for the PH 8330. 19" rack 2U or tower format, daisy-chainable, with a 40 A battery connector and a protection fuse accessible from the rear panel. Supplied without batteries.

PRODUCT SUMMARY	
References	PH 8321 (48 V) · PH 8331 (72 V)
EAN	PH 8321 · 0745604518086 | PH 8331 · 0745604518079
Compatible UPS	PH 8321 → UPS PH 8320 (2000 VA) | PH 8331 → UPS PH 8330 (3000 VA)
Batteries (not included)	PH 8321 · 8 × 12 V / 9 Ah | PH 8331 · 12 × 12 V / 9 Ah · compatible with PHASAK PHB 1209
Connection	Battery cable with GPS40 connectors (40 A) and earth cable, included
Dimensions (H × W × D)	PH 8321 · 88 × 438 × 430 mm | PH 8331 · 88 × 438 × 610 mm
Weight without batteries	PH 8321 · 6.2 kg | PH 8331 · 8.3 kg
Warranty	3 years

1 · Important safety instructions

Keep this manual. It contains instructions that must be followed during the installation and use of the battery module. Read it completely before unpacking, installing or putting the equipment into service.

⚠ Hazardous voltage

The battery circuit is not isolated from the AC mains: hazardous voltage may exist between the battery terminals and earth. Always test before touching. A battery can cause electric shock and very high short-circuit currents. All wiring must be carried out by qualified personnel.

- Install the module indoors, in an area with controlled temperature and humidity and free of conductive contaminants (permitted range in section 6). Otherwise there is a risk of fire or electric shock.
- Do not install the unit in direct sunlight or near strong heat sources.
- Do not remove the cover: risk of electric shock. There are no user-serviceable parts inside; servicing must be carried out by qualified personnel.
- Connect the protective earth (PE) conductor before any other cable.
- Do not use the module with or near aquariums: condensation can reach the metal contacts and cause a short circuit.
- When working on batteries, remove watches, rings and other metal objects and use tools with insulated handles.
- Do not dispose of batteries in fire: they may explode. Do not open or damage them: the electrolyte is harmful to skin and eyes.
- Battery servicing must be performed or supervised by personnel knowledgeable about batteries and the required precautions. Keep unauthorised personnel away.
- Before any maintenance, repair or transport, make sure the UPS and the module are switched off and completely disconnected.
- The rear-panel fuse may only be replaced by qualified personnel, with one of the same type and rating.
- Use only 12 V / 9 Ah batteries, all of the same type, brand and state of charge.

2 · Description

2.1 · Package contents

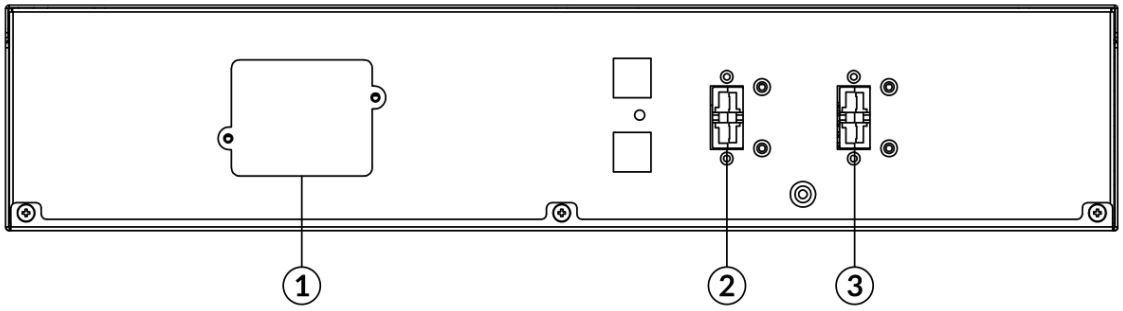
Check that the contents are complete and free of visible damage before installing the unit. **Batteries are not included.**

Item		Qty
	Battery module	1
	User manual	1
	Battery cable (GPS40 – GPS40)	1
	Rack-mount ears	2
	Flat-head screws M4×8L	8
	Pan-head screws M5×12L	4
	Screw-hole dust covers	8
	Earth cable	1



Front panel · ventilation grille

2.2 · Front and rear panel



Rear panel · common to PH 8321 and PH 8331

① **Fuse cover** · The replaceable overload-protection fuse is accessible from the rear panel. Replacement is reserved for qualified personnel.

② **Battery output connector** · Connects the module to the UPS or to the previous battery module in the chain.

③ **Input connector** · Used to daisy-chain the next battery module. Remove the connector cover for access.

⏚ **Earth terminal** · Fixing point for the earth cable linking the module to the UPS.

3 · Installation

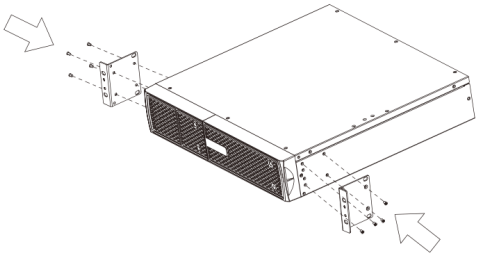
3.1 · Before you start

- The module can be mounted in a 19" rack (2U) or upright, as a tower. Fit the batteries (section 4) before mounting and connecting it.
- With batteries fitted the module weighs about 24.6 kg (PH 8321) or 36.0 kg (PH 8331): handle it with two people and, in a rack, support it on rails.
- To prevent the risk of fire or electric shock, use only the supplied hardware to attach the mounting ears.

3.2 · 19" rack installation

Step 1 · Mounting ears

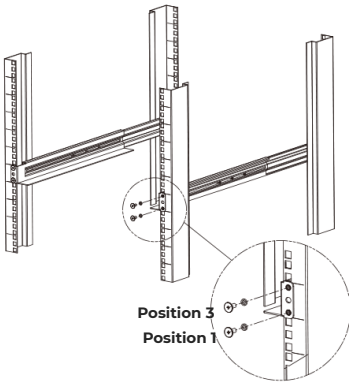
Attach the two ears to the module with the eight M4×8L flat-head screws supplied.



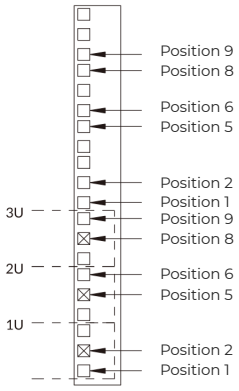
Attaching the ears

Step 2 · Rails

The module must rest on rack rails (optional PHASAK PH 9112 kit, adjustable to cabinets from 464 to 738.6 mm deep). Select the rack holes: the module takes positions 1 to 6 of the two units. Attach the front of each rail to the rack with two M5×12L screws and two plastic washers at positions 1 and 6, without tightening. Adjust the rail length to the cabinet depth and secure the rear with two more M5×12L screws and washers. Tighten all screws and repeat for the other rail.



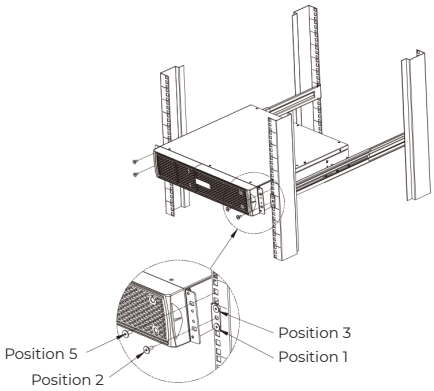
Attaching the rails (positions 1 and 6)



Rack positions: the module takes 2U (positions 1 to 6)

Step 3 · Fitting the module

Place the module on a flat, stable surface with the front facing you, slide it onto the rails and secure it to the front of the rack with the four M5×12L screws supplied (positions 2 and 5).

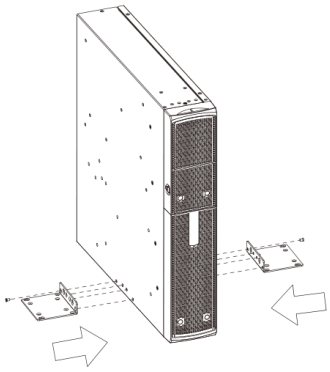


Securing the module at the front (positions 2 and 5)

3.3 · Tower installation

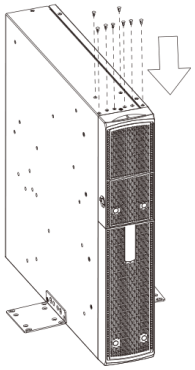
Step 1 · Base stands

The mounting ears serve as base stands: screw them to the bottom of the module with the M4×8L screws (× 8).



Step 2 · Dust covers

Insert the dust covers into the screw holes that are not used.

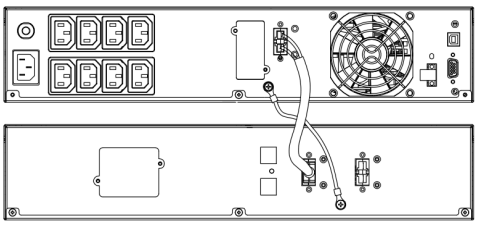


3.4 · Connection to the UPS

> **⚠ Check the voltage before connecting**
> PH 8321 (48 V) connects only to the UPS PH 8320; PH 8331 (72 V) only to the UPS PH 8330. Never connect a module whose voltage differs from that of the UPS. Make the connections with the UPS switched off and disconnected from the mains.

Connection A · UPS with one module

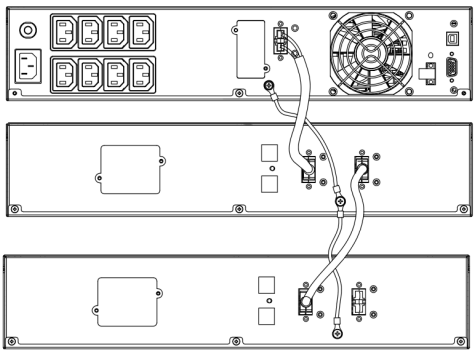
1. Connect the battery cable between the module output connector (2) and the external battery connector of the UPS.
2. Secure the earth cable between the module and the UPS with the screws.



UPS + one battery module

Connection B · UPS with several modules

1. Connect the first module to the UPS with its battery cable.
2. Connect the second module to the first: from the output connector (2) of the second to the input connector (3) of the first, removing the connector cover first. Repeat for the next modules.
3. Secure the earth cable of each module with the screws.



UPS + several modules in cascade

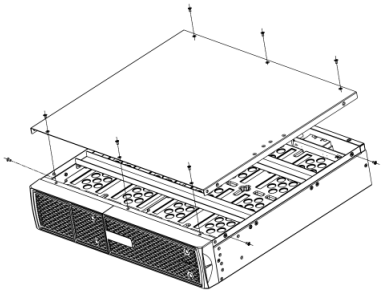
4 · Battery installation and replacement

⚠ Before you start

The module is supplied empty. Fit 8 × 12 V / 9 Ah batteries in the PH 8321 and 12 in the PH 8331 (for example PHASAK PHB 1209), all of the same type, brand and state of charge, following the wiring of the pack (two strings of 4 or 6 batteries). Qualified personnel only, with the module disconnected from the UPS and from any other module.

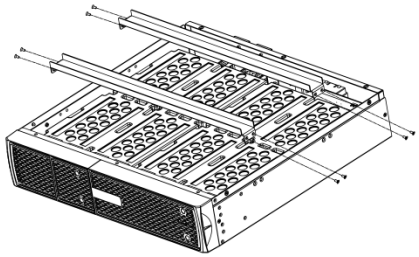
Step 1

Remove the screws and the top cover of the module.



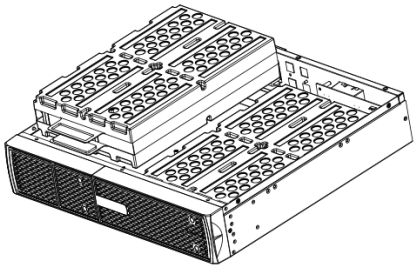
Step 2

Loosen the screws of the steel straps and remove them.



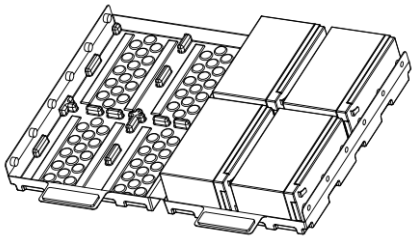
Step 3

Remove the battery pack from the module.



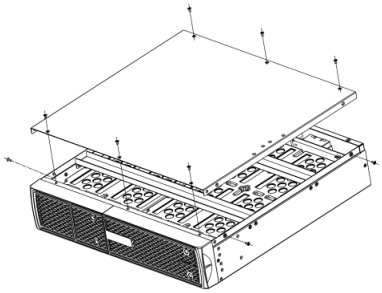
Step 4

Open the pack and fit (or replace) the batteries, observing the polarity of the pack wiring.



Step 5

Close the lower cover of the pack, slide it into the module and refit the straps and the top cover with their screws.



Always replace the complete set with batteries of the same type. Used batteries are hazardous waste: take them to an authorised collection point and never dispose of them in fire.

5 · Operation and maintenance

Charging	The UPS charges the module batteries through the battery cable. Indicative recharge time to 90 %: 8 hours, with the UPS powered from the mains.
Storage	If the module is to be stored with batteries fitted, store it with the batteries fully charged and recharge them every three months to preserve their service life.
Fuse	Overload protection is a replaceable fuse located behind cover (1) on the rear panel. It may only be replaced by qualified personnel, with the module disconnected, with a fuse of the same type and rating.
Cleaning	Keep the front grille clear. Clean the outside with a dry cloth, with the module disconnected.

6 · Technical specifications

Technical specifications	PH 8321	PH 8331
GENERAL		
Type	External battery module for online UPS	
Compatible UPS	PH 8320 · 2000 VA	PH 8330 · 3000 VA
Format	19" rack 2U · tower installation possible	
Warranty	3 years	
BATTERIES		
Nominal battery voltage	48 V DC	72 V DC
Batteries accepted	8 × 12 V / 9 Ah (2 strings of 4)	12 × 12 V / 9 Ah (2 strings of 6)
Battery type	Valve-regulated lead-acid (VRLA) 12 V / 9 Ah · compatible with PHASAK PHB 1209	
Batteries included	No · removable pack held by steel straps	
Recharge time	8 h to 90 % (through the UPS, indicative)	
CONNECTION AND PROTECTION		
Battery connector	GPS40 · 40 A	
Battery cable	GPS40 – GPS40, black · included	GPS40 – GPS40, red · included
Daisy-chaining	Covered input connector for additional modules	
Overload protection	Replaceable fuse, accessible from the rear panel	
Earth	Earth cable included · terminal on the rear panel	
PHYSICAL AND ENVIRONMENT		
Dimensions (H × W × D)	88 × 438 × 430 mm	88 × 438 × 610 mm
Weight without batteries	6.2 kg	8.3 kg
Weight with batteries (indicative)	≈ 24.6 kg	≈ 36.0 kg
Operating temperature	0 – 40 °C	
Relative humidity	0 – 90 % non-condensing	
EAN	0745604518086	0745604518079
CONTENTS AND ACCESSORIES		
Package contents	Module · battery cable · earth cable · 2 rack ears · 8 M4×8L screws · 4 M5×12L screws · 8 hole covers · user manual	
Compatible batteries	PHASAK PHB 1209 · 12 V / 9 Ah · 8 pcs (PH 8321) · 12 pcs (PH 8331)	
Optional accessory	PHASAK PH 9112 adjustable rail kit · depth 464 – 738.6 mm · EAN 0745604517836	

Weight with 8 / 12 × 12 V / 9 Ah batteries fitted. Batteries are not included.