

Powerhub-6D-PAB

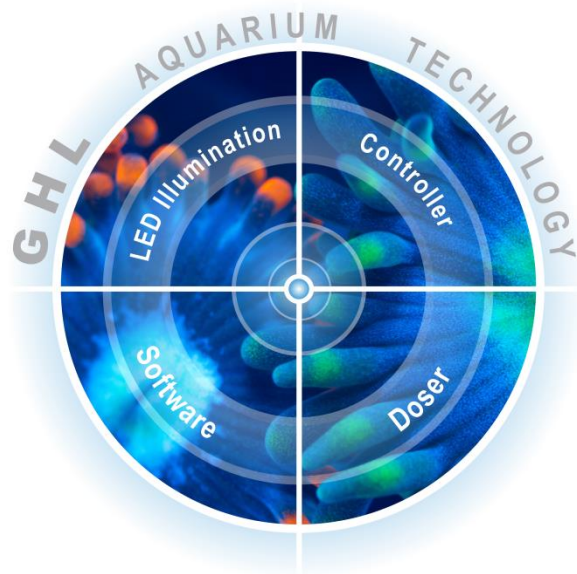
Instruction Manual



As of 2019-02-02

Table of Contents

GET THE MOST OUT OF YOUR GHL PRODUCT	4
1 SAFETY INSTRUCTIONS	4
1.1 SAFETY OF CHILDREN AND VULNERABLE PERSONS.....	5
1.2 INTENDED USE	5
2 GENERAL	6
2.1 ABOUT THIS MANUAL	6
2.2 FEATURES	6
2.3 SCOPE OF DELIVERY	7
2.4 IMPORTANT OPERATING INSTRUCTIONS	7
3 CONNECTIONS OF THE POWERHUB-6D-PAB	7
3.1 GENERAL	7
3.2 CONNECTION OVERVIEW	8
3.2.1 PAB Ports	8
3.2.2 Relays	8
3.2.3 Mains voltage connection	9
4 INSTALLING THE POWERHUB-6D-PAB.....	9
4.1 INSTALLATION	9
4.2 IMPORTANT OPERATING INSTRUCTIONS.....	9
4.3 CONNECT AND ASSIGN TO PAB	11
4.4 CONNECTION TO THE POWER SUPPLY.....	12
4.5 STATUS INDICATORS OF THE POWERHUB-6D-PAB	12
5 WARRANTY/LIABILITY	13
6 ADDITIONAL INFORMATION	13
6.1 HELP AND INFORMATION	13
7 TECHNICAL DATA.....	13



- ✓ Maximum Quality
- ✓ Maximum Performance
- ✓ Maximum Safety

FOCUSSED ON SUCCESSFUL FISHKEEPING

Congratulations on your Purchase

Thank you for purchasing our product and allowing us to help support your path to successful fishkeeping!

We are confident that our product will help make your hobby more efficient, safe, and ultimately help you spend more time enjoying your aquarium or terrarium.

Enjoy Your Passion!

GHL Takes Care of the Rest

Get the Most out of your GHL Product

GHL products are well-equipped with simple and intuitive features. In order to get the most out of our products, we recommend you read our Programming Guide for ProfiLux and this Instruction Manual together. Doing so will provide you with the most profound details for using our product. These and other helpful documents can be downloaded from our website's download area (*Support->Downloads*). Visit our homepage at www.aquariumcomputer.com, our Knowledge Base or our Support Forum or meet us on Facebook to become a GHL-Product expert and fully utilize the full range of functions offered from your device!

1 Safety Instructions

Please read these instructions carefully before operating the *Powerhub-6D-PAB*.

GHL products are built with maximum security and safety in mind. However, product safety for this device can only be guaranteed if you follow these guidelines.

Anyone who uses this device must become familiar with the following safety instructions and the operation of the device.

Failure to follow these instructions will void any warranty claims.

Be sure to read over the safety instructions provided by this manual; including the respective manuals of other equipment manufacturers.

In this manual, the following symbols are used:



TIP

General note, tip or advice.



WARNING

Important note for operation, to avoid damage to the equipment, and for your safety.

**DANGER**

Warning that non-compliance can result in injury or damage to the device.

1.1 Safety of Children and Vulnerable Persons

**WARNING**

This equipment must not be used:

- By small children and vulnerable persons with limited physical, sensory or mental capabilities.
- By people who are unfamiliar with the functions of this product.

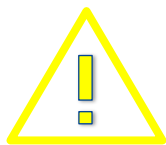
1.2 Intended Use

The digital switching module *Power Hub-6D-PAB* is addressed to professional users and primarily designed for use in control cabinets. The module is intended exclusively for use in the domestic area.

The *Power Hub-6D-PAB* is designed for DIN rail mounting and offers screw terminals for the power supply (90 – 240 V, 50/60 Hz) and for relay connections.

It may only be operated with GHL accessories.

Make sure to place the module away from splashing water, moisture or other liquids.

**WARNING**

Moisture indicators are placed inside the unit and will change color when exposed to excessive moisture.

Removing these indicators will void all warranty claims.

**DANGER**

- Protect the cables and wires from damage (For example, twisting, kinking, clamping). Please also pay attention to the connections to the device.

- Never attempt to disassemble, repair or alter the equipment by yourself.
- Do not insert sharp objects into the electrical contacts and ports.



DANGER

- If the unit falls into the aquarium or has been exposed to moisture or humidity, first turn off the power to the device via the fuse or circuit breaker, then pull the power cord.
- Never touch the power plug with wet hands.
- If the device has become wet or dirty, thoroughly clean and dry it with a dry cloth.



DANGER

- The module may not be operated if it has been damaged in any way (e.g. damaged power cord or plug, liquids or objects have gotten into the interior, device has been exposed to excessive moisture, the normal operation is disturbed, or the device has been dropped.)

For your own safety, please look at the hazard prevention and safety instructions in the chapters that follow.

2 General

2.1 About this Manual

These instructions apply to the digital switching module *Powerhub-6D-PAB*.

2.2 Features

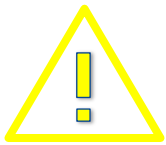
- 6 independently switchable relays (1x closing contact each)
- Each relay is fused separately
- All channels are electrically isolated and switch up to 10 A / 240 VAC
- Drawn power of each switch channel is measured individually.
- Freely programmable initial state for the relays after 30 seconds without communication
- Several switching modules can be operated independently from each other at the same time

2.3 Scope of Delivery

Please check the contents of this box. The following items should be included:

- Switching module *Powerhub-6D-PAB*
- Supplementary sheet

Please check to make sure all items are in perfect condition. In case of damage, immediately contact the dealer from whom you purchased the *Powerhub-6D-PAB*.



WARNING

Damaged *Powerhub-6D-PAB* switching modules or components may not be put into operation under any circumstances.

2.4 Important Operating Instructions



WARNING

To ensure safe operation, the following guidelines must be followed. Disregarding these safety guidelines, will result in voiding your warranty. In which case, the manufacturer rejects any responsibility or liability for damage!

3 Connections of the Powerhub-6D-PAB

3.1 General

Applies to all connections:



WARNING

- Connect only original accessories from GHL.
- This fixture is intended exclusively for use in the domestic area. The use of attachments not recommended or sold by the appliance manufacturer may cause an unsafe condition.

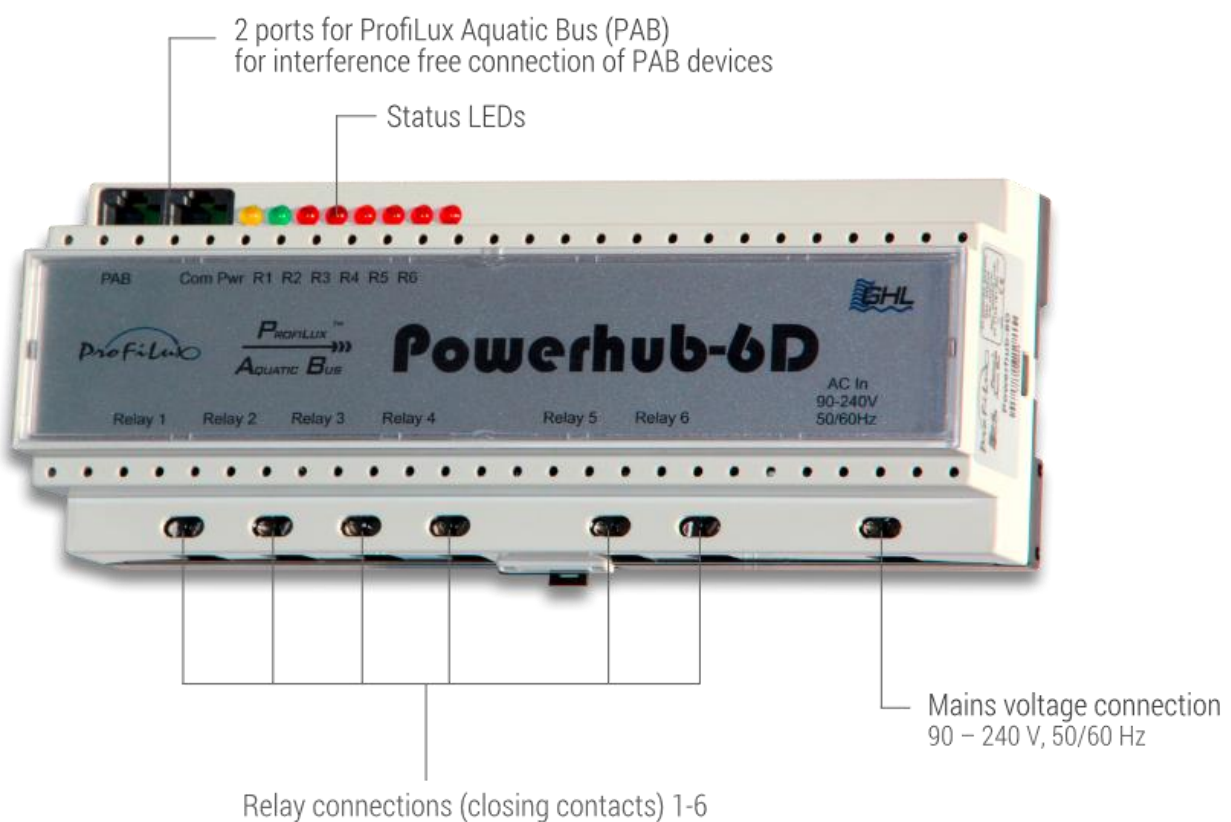


DANGER

- Incorrect connection can lead to damaging the *Powerhub-6D-PAB*!
- A repair caused by this, is not covered under warranty and will therefore incur repair charges.

3.2 Connection Overview

The *Powerhub-6D-PAB* switching module includes the following connection ports:



3.2.1 PAB Ports

Connect here PAB-ports of other PAB-Devices. Any PAB-device can be connected to this port. For more information, please refer to the "*Connection to PAB*" section.

3.2.2 Relays

6 circuits can be switched independently, all channels are electrically isolated and switch up to 10 A / 240 VAC.

Each switch channel (relay) is protected by its own fuse. The fuses are located inside the module. If there is need to replace a fuse, the housing must be opened.

A defective fuse can be replaced through a suitable replacement fuse with identical values (can be ordered as spare part). Other fuses are not permitted and void the warranty.



WARNING

Only replace fuses if the device is completely disconnected from the mains voltage! Only the prescribed fuses may be used!

3.2.3 Mains voltage connection

Screw terminal for mains voltage connection.

4 Installing the Powerhub-6D-PAB

The device is designed for cabinet installation and is suitable for DIN rail mounting.

4.1 Installation

The unit must be protected from water at all times!

Mount the device in a water-protected area. The *Powerhub-6D-PAB* is prepared for DIN rail mounting. It can easily be mounted to the rail with the attached rail clips.

Make sure that the unit cannot fall into the water during assembly or normal use.

If the device is placed inside an aquarium cabinet, make sure that it is placed in an area free from splashing water; moisture or liquids that can penetrate.

Every installation position is permitted in principle however, care should be taken that the connections are easily accessible and the display LEDs are visible. Ensure sufficient air circulation.

4.2 Important Operating Instructions

***Powerhub-6D-PAB* as well as connected accessories will be destroyed by excess moisture or too high humidity - Please observe the technical data and notes below!**

To ensure safety and safe operation, the following regulations must be followed! In the case of non-compliance, warranty claims expire, the manufacturer also rejects any responsibility or liability for damage!



DANGER

- Never leave your aquarium or terrarium unsupervised for an extended amount of time.
- The maximum amount of time without personal view depends on how long your aquarium, terrarium, or pond can survive without significant damage, even when errors occur.
- Always remember that each technology can fail and malfunctions can never be ruled out!
Power failures, incorrect settings, damage (For example, by water or overvoltage) or simply an unexpected operating situation can lead to fatal damage.
- The manufacturer disclaims any liability for (consequential) damages or losses which might arise in connection with the use of the *ProfiLux System* extent legally permissible.

Powered equipment and water can become a dangerous combination if precautions are not taken. It is therefore essential to supply power to all mains-operated devices which are operated in the aquarium or in the vicinity of the device via a residual current circuit breaker!

The *Powerhub-6D-PAB* is operated with mains voltage and is not waterproof. This means that the module must be protected against moisture and splashing water! Please take note of this when choosing the installation location.

In order to avoid any danger, all mains-operated devices must be disconnected from the mains; all plugs must be disconnected! When working in the basin. It can never be ruled out that a heating element, a pump, or a luminaire is defective.



DANGER

On all cables and lines leading out of the aquarium water can run downwards. Therefore, they must be routed in a way that no water can enter electrical or electronic parts! This could be accomplished by arranging so called drip loops at all cables and lines.

**TIP**

- Please ensure good access to the connections of the device
- Please consider the maximum cable lengths of the connected *PAB* cables etc. when selecting the installation site.
- Additional *PAB* cables are available in different lengths to fit your needs. They are available online in our *GHL Store (For US customers, GHL USA Store)*.

**WARNING**

- To ensure proper operation, the connection cables should never be kinked, crimped, or positioned in an unsuitable way.

**DANGER**

Products that are already powered should never be pulled by the cable. This may cause malfunction or damage the connected products and the *Powerhub-6D-PAB*. They should only be pulled by the plug.

Powerhub-6D-PAB and its accessories are destroyed by moisture or excessive humidity.

4.3 Connect and assign to PAB

The *Powerhub-6D-PAB* includes two *PAB*-ports for connecting *ProfiLux Aquatic Bus* compatible devices.

After adding new *PAB*-devices to your system these devices need to be assigned. To do this, click on *System* in the *GCC* menu and select the menu item *Assign devices*.

PAB cables are not included and must be purchased separately.

**TIP**

- Be sure to obtain suitable *PAB* cables in the appropriate lengths to meet your needs.
- *PAB*-cables are available in different lengths from 0.5 m up to 50 m.



DANGER

- *PAB* devices must always be linearly connected to each other.
- The last device on the *PAB* must always provide a free *PAB* port.
- Never connect the last two *PAB* devices through an additional *PAB* connection cable.
- Such a ring connection leads to malfunctioning and is not allowed.

4.4 Connection to the Power Supply

Supply the device with a power supply voltage between 90 und 240 V (50/60Hz) via the screw-type terminals (9). It doesn't matter where live (L) and neutral (N) are connected to both screw terminals.



DANGER

- Ensure that the mains voltage matches the voltage specified on the identification plate located on the bottom of the device.

4.5 Status Indicators of the Powerhub-6D-PAB

The *Powerhub-6D-PAB* module includes 8 status indicator lights to show the operating and switching states of the device. They are located on the top of the housing cover.

The green LED indicates the operating status, the yellow LED indicates the communication status of the device. The red LEDs indicate the switching state of the respective relays.

Status	Meaning
Green LED flashes fast	Device is started, Firmware-Update
Green LED is ON	Device is ready
Green LED flashes fast	The device has not received any <i>PAB</i> commands from ProfiLux for more than 30 seconds

Yellow LED flashes

Device receives PAB commands

Both LEDs are OFF

Device has no power supply

Relay 1 ... Relay 6

Shows the current switch state of the respective relay

5 Warranty/Liability

You have a 2-year warranty beginning from invoice date. This applies to material and manufacturing defects.

We guarantee that the supplied products correspond to the specifications and that the products do not have material resp. manufacturing defects. For the accuracy of the manuals, we do not guarantee damages of any kind which result from improper operation or from an unsuitable environment. Furthermore, we do not take over warranty for damages that are caused by a false connection or excessive humidity. We assume no liability for direct damages, indirect damages, consequential damages and third party damages as far as it is legally permitted. We do not take over guarantee that our product package corresponds to the requirements of the buyer. Our warranty expires if the delivered original product is damaged or modified.

6 Additional Information

6.1 Help and Information

For help or further information, please visit our *Support Forum* or our *Knowledge Base* at www.aquariumcomputer.com or contact your retailer.

7 Technical Data

The device and its accessories may only be used indoors. Moisture or excessive humidity can lead to malfunctions or damage.

Input voltage	90 – 240 VAC (50/60 Hz)
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Environmental conditions	Operating temperature: 0°C - 40°C / 32°F - 104°F Humidity: Max 80% rel. Humidity <u>non-condensing</u>
Current consumption	depending on connected loads
Fuses	time lag 10 A / 250 V
PAB ports	2
Dimensions	240 mm (9.45") x 92 mm (3.62") x 60 mm (2.36")

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