KH Director®

Instruction Manual

Valid from Firmware -Version 1.00

As of 2019-10-24

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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! With a *KH Director* you now own a highly professional piece of equipment that is more than capable of assisting you in your daily monitoring and maintenance routines.

Please note that the *KH Director* does not have an internal controller and therefore requires for operation a *ProfiLux 3* Aquarium controller with latest firmware (6.32 or newer), a *ProfiLux 4* (7.10 or newer), a *GHL Doser 2 (2.1) Stand Alone* or *GHL Doser Maxi Stand Alone* both with firmware 1.27 or higher.

For transporting liquids to and from the *KH Director* a *GHL Doser 2/2.1* (Stand Alone or Slave) with at least 3 free pumps is required.

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 this Instruction Manual and the Instruction Manual of the respective Controller (*ProfiLux*, *GHL Doser 2/2.1 Stand Alone* or *GHL Doser Maxi Stand Alone*) together. Doing so will provide you with the most profound details for using our product. These and other helpful documents can be download area (*Support->Downloads*). Visit our homepage at www.aquariumcomputer.com, 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 *KH Director*.

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.

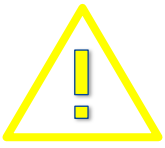
Failure to follow these instructions will void any warranty claims.

Be sure to read over the safety instructions provided by this ProfiLux 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 *KH Director* is intended exclusively for use in the domestic area. *KH Director* may only be operated with GHL accessories.

The *KH Director* may only be used to determine the KH value of aquarium water or pond water.

Make sure to place the device 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

- Make sure that the power cord is plugged into a grounded outlet; otherwise you could get an electric shock or cause a fire.
- Protect the power cable from damage (For example, twisting, kinking, clamping). Please also pay attention to the joints and connections to the device.
- Disconnect the power plug by pulling the plug, not the cable.

- 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 device 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 *KH Director.*

2.2 Features

- 1 x *pH Electrode port* , BNC-socket
- 2 x *ProfiLux Aquatic Bus* (PAB Western sockets)
- 1 x AUX port
- 4 x Tube connectors (Water sample , Reagent, Waste water , Vent connector)
- 1 x Connection for power supply (24V DC hollow socket)

2.3 Scope of Delivery

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

- *KH Director*
- Power supply splitter -cable
- KHD pH-Electrode
- Calibration fluids pH 4 and pH 7
- KHD Reagent
- Flex PVC tube 0.7 m (0.28 in) for reagent fluid
- Silicone tube 5.0 m (1.97 in) for sample and waste wate
- Inline water -filter
- Insert

PAB connection cables are not included with the *KH Director*-only. The *KHD-Sets* do however, include a *PAB-Cable* for connecting the KHD to the included Doser.

Please check to make sure all items are in perfect condition . In case of damage , immediately contact the dealer from whom you purchased the *KH Director*.

WARNING

A damaged *KH Director* 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 warr anty. In which case, the manufacturer rejects any responsibility or liability for damage !

3 Connections of the KH Director

3.1 General

Applies to all connections :

WARNING

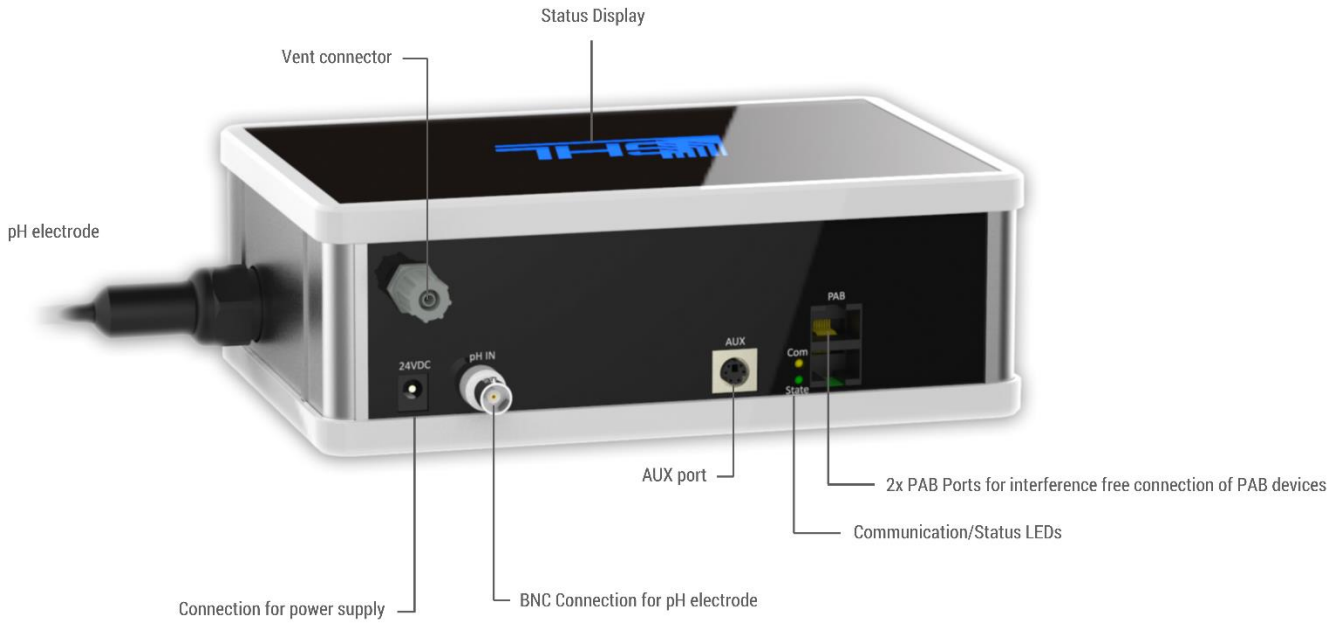
- Connect only original accessories from GHL.
- Do not use excessive force when plugging -in connectors . If a plug contact does not fit , it is imperative to check that you have chosen the correct socket .

DANGER

- Incorrect connection (For example inserting a USB connector into a *PAB*connector) can lead to damaging the *KH Director.*
- A repair caused by this, is not covered under warranty and will therefore incur repair charges .

3.2 Connection Overview

The *KH Director* includes the following connection ports and displays :



3.2.1 pH Sensor Connection

The white BNC socket is where the supplied pH-Electrode is connected.