

Instruction Manual

HBMD-PH and HBMD-L



Introduction and Design

HBMD-PH and HBMD-L are similar products with different software settings.

HBMD-PH work together with the pH sensor HBPH mk2 and is designed to display the pH level directly. The calibration is done in the display box and a linear pH output is passed on 4mA for pH =0 and 20 mA for PH=14.

HBMD-L work together with any 4-20 mA analog output for example a level sensor and provide a 0-100% display the same as shown on a level sensor. The display can be placed where you need it connected in between the sensor and the PLC using M12 connectors.

The M12 plug at the end of the black box is the sensor input and the plug on the blue surface is the plug connected to the PLC.

Power supply is made via the M12 connector

The display will be 3 digits 0-100 when working as level sensor and be 2 digits including 1 decimal when showing pH value



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Safety Instructions

CAUTION! Always read the instruction manual before commencing work! Heed all warnings. Installation and use of the controller may only be carried out by adequately qualified individuals. The operator must be aware of the consequences of setting up the controller incorrectly. Factory settings do not guarantee safe operation since the configuration parameters depend on the type of system.

If changes are made to type-approved equipment, this type approval becomes void. The equipment’s inputs and outputs as well as its accessories may only be connected as shown in this guide. HB Products assumes no responsibility for damages that result from failing to abide by the above.

Intended use and terms of use: HBMD is designed to continuously display of pH value or any 4-20 mA in percentage according to the specifications shown on the product web page. It can be used in refrigeration plants or similar installations. If you want to use HBMD for a different purpose, then prior permission must be obtained from the manufacturer.

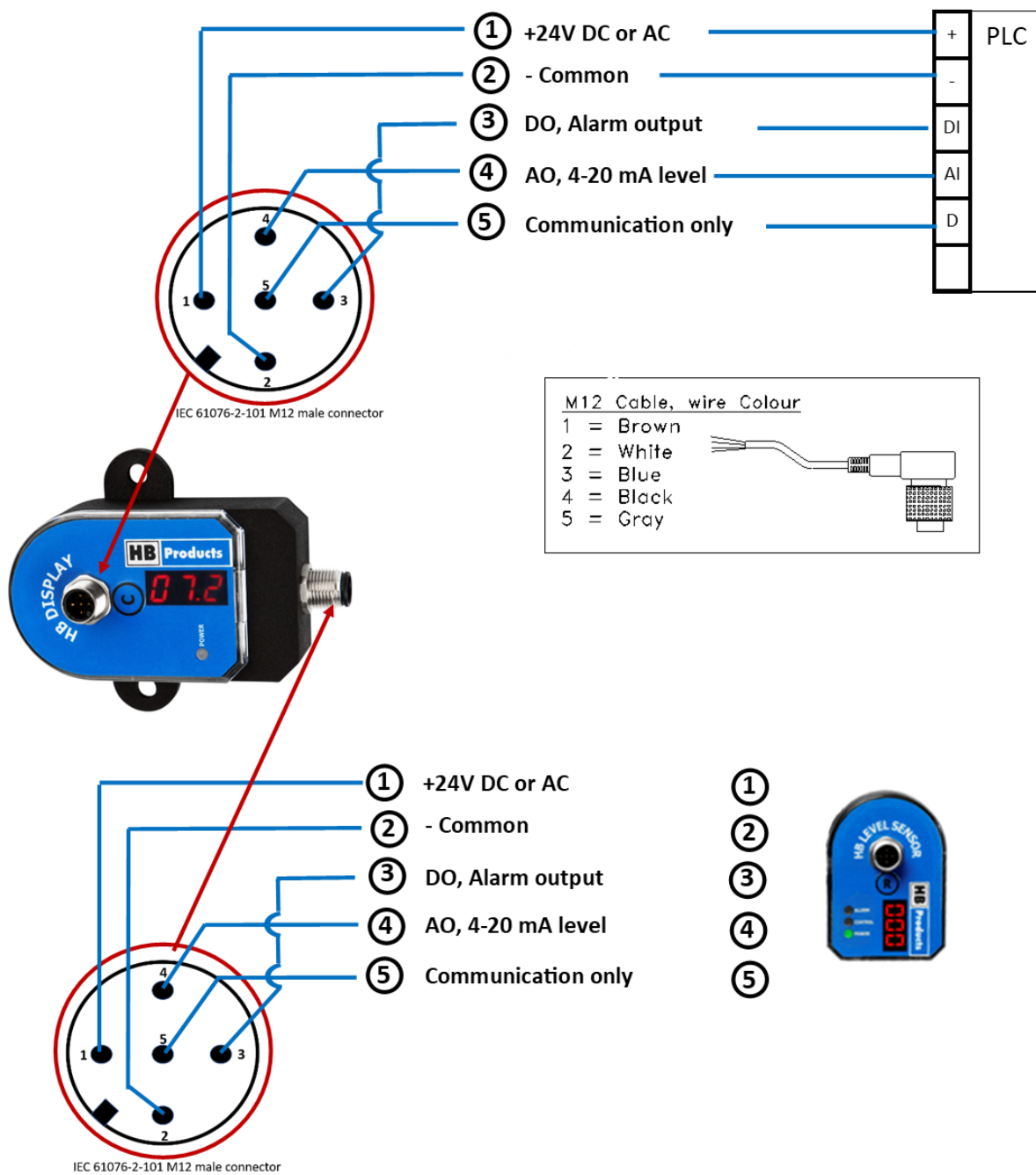
Prevention of collateral damage: Make sure that faults are assessed, and relevant precautions are formulated by qualified personnel. In this way, you will prevent collateral damage from the HBMD, which would result in damages to persons and materials.

Environmentally correct behaviour and disposal instructions: HBMD is also built according to environmentally correct behaviour. The modules can easily be disassembled to allow sorting and are sent for recycling after sorting.

Electrical connections

Connection diagram for HBMD –L

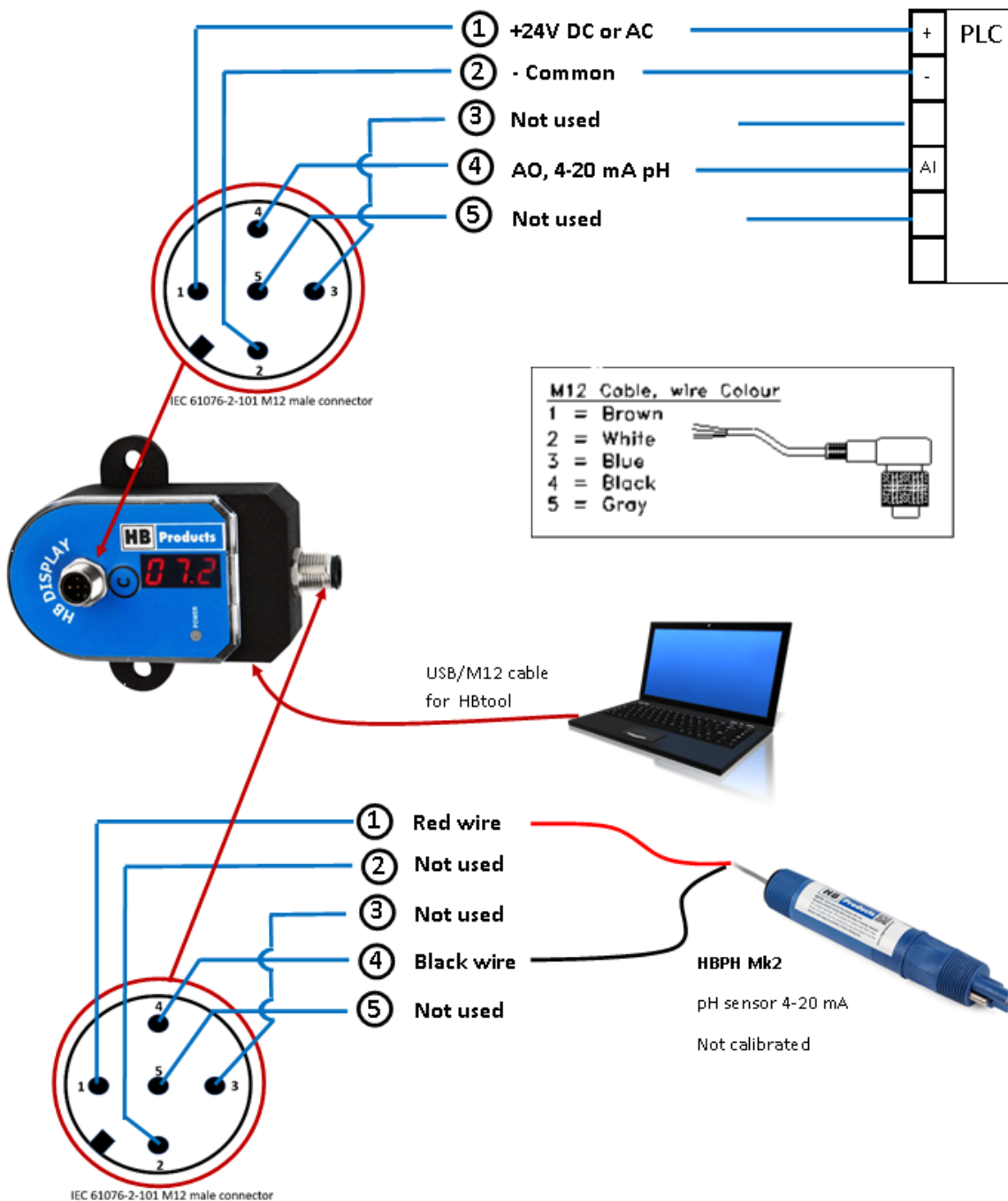
The display is just connected between the sensor and the PLC



Connection diagram for HBMD –PH

The display is connected between the sensor and the PLC.

Setup and calibration is done with a PC



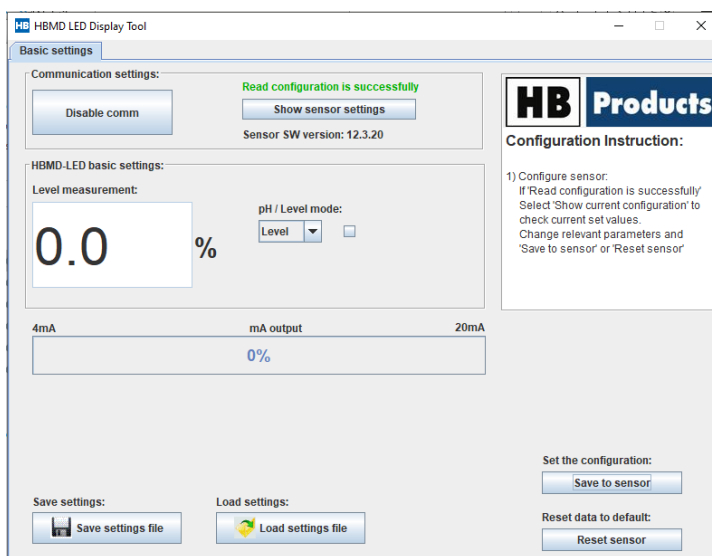
Installation Instructions

- 1) The display can be mounted on walls and similar if protection class IP65 is respected
- 2) If EMC from other sources of noise is greater than described in EN 6100-6-2, an insulated cable must be used.

Setup

Level sensor display

When used as level sensor display there is no need for setup. The only possibility is changing the sensor to pH mode



Setup

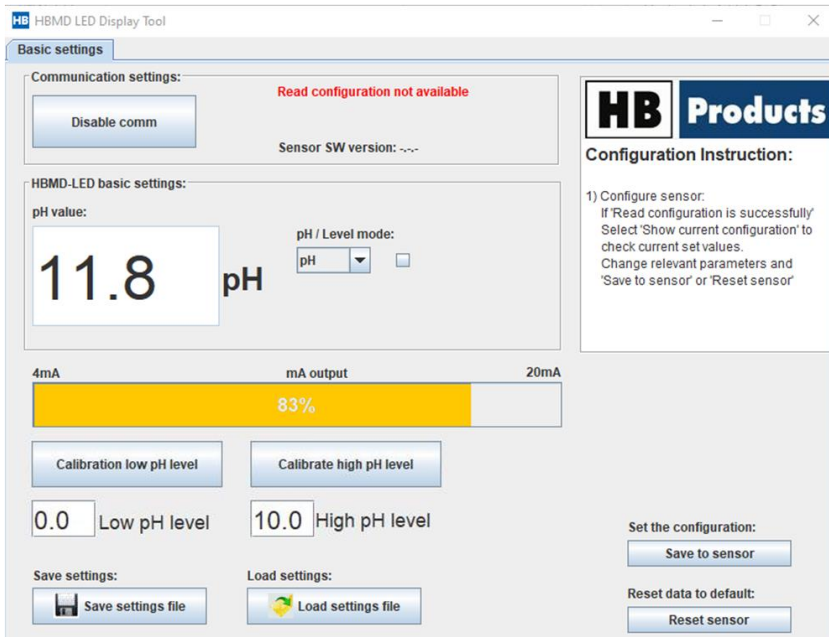
pH sensor display

When used as pH sensor there is an opportunity to calibrate the sensor using the HB-tool.

How to calibrate the pH-sensor and typing it into the display box HBMD-PH

1. Connect the pH sensor to the display box according to the electrical connection drawing instead of a multi meter
2. Connect a 24V power supply according to the electrical connection drawing
3. Put the pH sensor into the low pH buffer solution. Type in the pH value and click "calibration low pH value"
4. Put the pH sensor into the high pH buffer solution. Type in the pH value and click "calibration high pH value"

5. The sensor is now calibrated and the box will show the actual pH value and send a linearized analog output 4-20 mA on to a PLC on pin4 (4mA for pH=0, 12 mA for pH=7 and 20 mA for pH=14)



Repairing the Controller:

If repairs are required, the following procedure must be followed:

Go to www.hbproducts.dk and access the menu called “servicering af produkter” (servicing products). Input all the information into the RMA form and receive an RMA-number. Print out the form and send it in together with the sensor. Following this procedure ensures quick processing.

Please fill out one form per product type. Return the product to the nearest agent. The addresses of our agents can be found on our website.

Further Information

For further information please visit our website www.hbproducts.dk or send an email to support@hbproducts.dk

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