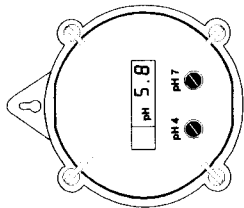


Instruction Manual

PHH-720 On-line, Waterproof pH meter with Alarm



These instruments are in compliance with the CE directives

Dear Customer,

Thank you for choosing an Omega Engineering product. This manual will provide you with the necessary information for the correct operation of the meter. Please read it carefully before using the meter.

These instruments are in compliance with the CE directives EN 50081-1 and EN 50082-1.

PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it carefully. If any damage has occurred during shipment, immediately notify Omega Engineering Customer Service.

The meter is supplied with:

- PHE-700 electrode
- Calibration screwdriver
- 12 VDC power adapter

Note: Conserve all packing material until the instrument has been observed to function correctly. Any defective item must be returned in its original packing.

GENERAL DESCRIPTION

PHH-720 pH meter is specially designed to meet the needs of simple continuous monitoring of pH.

The housing has been completely sealed against vapors and humidity with IP54 rating.

You can simply hang the meter right above the sample to be tested for continuous measurement.

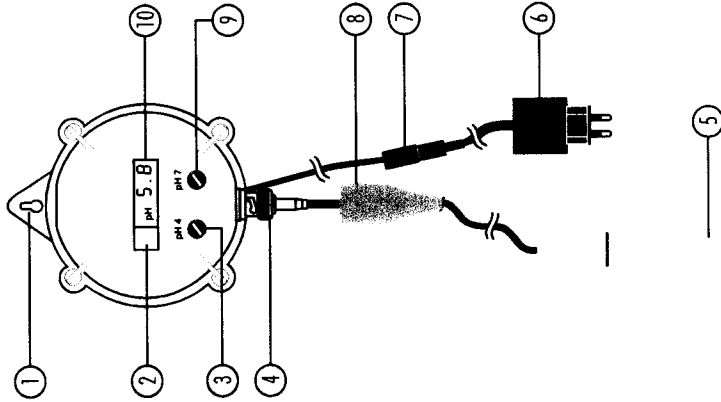
The PHE-720 gel-filled pH electrode & BNC connector are protected behind a waterproof sheath. The unique design of the electrode provides longer life even in aggressive solutions.

You can even select your own setpoint and be alerted of an abnormal situation with a flashing LED alarm.

Measurements are highly accurate and the meter can be calibrated at one or two points.

You no longer need to worry about battery changes either: the unit runs without interruption on 12 VDC power supply.

FUNCTIONAL DESCRIPTION



1. Molded eye
2. Alarm LED
3. pH 4.0 calibration trimmer
4. BNC connector
5. PHE-720 pH electrode
6. 12 VDC power adapter
7. Power supply connector
8. Protective sheath
9. pH 7.0 calibration trimmer
10. Liquid Crystal Display

SPECIFICATIONS

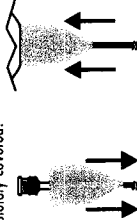
Electrode	PHE-720 interchangeable pH electrode
Setpoint	3.0 to 11.0 pH
Hysteresis	±0.5 pH around setpoint
Alarm	LED blinks when pH is outside hysteresis range
SPECIFICATIONS	
Range	0.0 to 14.0 pH
Resolution	0.1 pH
Accuracy (@ 25°C/77°F)	±0.2 pH
Typical EMC Deviation	±0.2 pH
Calibration	Manual with two trimmers for offset and slope
Casing	IP54
Power supply	External 12 VDC (included)
Dimensions	86 x 94 x 33 mm (3.4 x 3.7 x 1.3")
Weight	150 g (5.3 oz.)

OPERATIONAL GUIDE

pH ELECTRODE CONNECTION & MAINTENANCE

In order to protect the instrument against vapors and humidity, the BNC connector is shielded behind a waterproof sheath.

- Slide the protective sheath down. Connect the pH electrode to the BNC connector and then slide the protective sheath back up all the way up to the casing. Since the protective sheath is rubberized to ensure maximum waterproof protection, make sure the connector is completely covered.



- Do not be alarmed if white crystals appear around the electrode protective cap. This is normal with pH electrodes and they dissolve when rinsed with water.
- When not in use, rinse the electrode with water to minimize contamination and store it with a few drops of storage or pH 7 solution in the protective cap. Always replace the protective cap after use.

DO NOT USE DISTILLED OR DEIONIZED WATER FOR STORAGE PURPOSES.

- If the electrode has been left dry, soak the tip in a storage or pH 7 solution for at least one hour to reactivate it.
- To minimize clogging and provide longer life for the pH electrode, it is recommended to clean it monthly. Immerse the tip of the electrode in cleaning solution for one hour and then rinse it with tap water.

TAKING pH MEASUREMENTS

- Turn the meter on by connecting the 12 VDC power adapter to the meter and to the mains.
- Remove the protective cap from the pH electrode and immerse the tip (4 cm/1½") of pH electrode in the sample.



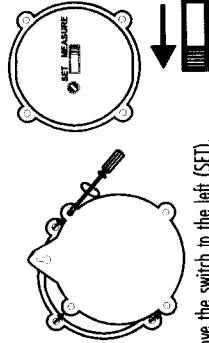
- The LCD will show the pH value. Allow the reading to stabilize and the instrument will start continuous monitoring.

Note: to prevent damages to the electrode, remove the pH electrode from the sample before turning the meter off.

ADJUSTING THE SETPOINT

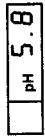
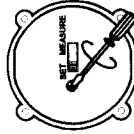
You can select your own setpoint and be alerted with a visual LED alarm when an abnormal situation arises.

- Unscrew and remove the rear panel and gasket seal to access the MEASURE/SET switch and the setpoint adjustment trimmer.

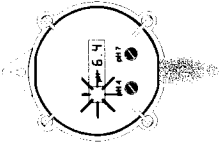


- Move the switch to the left (SET).

- With a small screwdriver adjust the setpoint trimmer to display the desired value in the range 3 to 11 pH.



- Make sure the switch is moved back to the right (MEASURE Mode).
- Replace the rear panel and the gasket, ensuring the unit is properly closed.
- Whenever the pH reading varies by more than ±0.5 pH from the setpoint, the red alarm LED blinks to warn the user.



CALIBRATION

For the greatest accuracy, frequent calibration of the instrument is recommended. In addition, the instrument must be recalibrated whenever:

- The pH electrode is replaced.
- After testing aggressive chemicals.
- Where extreme accuracy is required.
- At least once a month

PREPARATION

Pour small quantities of pH 7.0 and pH 4.0 solution into two clean beakers. For accurate calibration use two beakers for each buffer solution, the first one for rinsing the tip of the electrode and the second one for calibration. This way, contamination of the buffers is minimized.

pH 4.0 (HI 7004) is recommended for measuring acidic

RINSE CALIBRATION



samples. Use pH 10.0 (HI 7010) if subsequent samples are alkaline.

CALIBRATION PROCEDURE

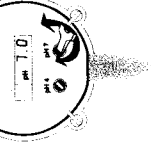
- Turn the meter on and make sure that the MEASURE/SET switch is on the MEASURE mode.
- Remove the protective cap from the electrode, rinse and immerse it in a pH 7.0 buffer. Stir gently and then wait a couple of minutes for the reading to stabilize.



Note: the electrode should be submerged approximately 4 cm (1½") in the solution.



- Adjust the right hand trimmer with the calibration screwdriver until the LCD shows pH 7.0.



- Rinse and immerse the pH electrode in pH 4.0 (or pH 10.0) buffer and stir gently.



- Wait a couple of minutes and then adjust the left hand trimmer until the LCD shows the value of the second buffer.



The pH calibration is now complete.

WARRANTY

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA'S WARRANTY adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA'S WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mislabeling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY IS VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion, or current, heat, moisture or vibration, improper specification, misapplication, misuse or other operating conditions outside of OMEGA'S control. Components which wear are not warranted, including but not limited to contact points, bases, and traces.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by it will be as specified and that OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, EXCEPT THAT OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC) used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our back, WARRANTY/DISCLAIMER language and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:

- Purchase Order number under which the product was PURCHASED;
- Model and serial number of the product under warranty; and
- Repair instructions and/or specific problems relative to the product.

FOR NON-WARRANTY REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

- Purchase Order number to cover the cost of the repair;
- Model and serial number of the product and
- Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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