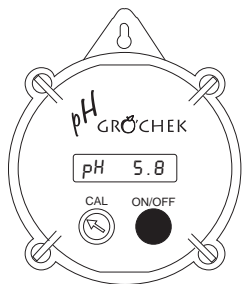


Instruction Manual

pH GRÖCHEK
(HI 981408)

pH Tester for Fertigation Solutions



HANNA
instruments®
www.hannainst.com

WARRANTY

This meter is warranted for two years against defects in workmanship and materials when used for its intended purpose and maintained according to instructions. **The electrode is warranted for a period of six months.**

This warranty is limited to repair or replacement free of charge. Damages due to accident, misuse, tampering or lack of prescribed maintenance are not covered.

If service is required, contact the dealer from whom you purchased the instrument. If under warranty, report the model number, date of purchase, serial number and the nature of the failure. If the repair is not covered by the warranty, you will be notified of the charges incurred. If the instrument is to be returned to Hanna Instruments, first obtain a Returned Goods Authorization Number from the Customer Service department and then send it with shipment costs prepaid. When shipping any instrument, make sure it is properly packaged for complete protection.

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Hanna Instruments reserves the right to modify the design, construction and appearance of its products without advance notice.

Dear Customer,

Thank you for choosing a Hanna product.

This manual will provide you with the necessary information for a correct operation. Please read it carefully before using the meter. If you need additional technical information, do not hesitate to e-mail us at tech@hannainst.com.

This instrument is in compliance with the **CE** directives.

PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it carefully. If any damage has occurred during shipment, immediately notify your Dealer or the nearest Hanna Customer Service Center.

The meter is supplied complete with:

- **HI 1219** pH electrode
- pH 7.01 buffer solution, 20 mL sachet
- batteries (2x1.5 V AA), already installed

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

pH GRÖCHEK is a pH meter specially designed to meet the needs of operators in hydroponics and greenhouses.

The housing has been completely sealed against vapors and humidity. It also floats so that it can be quickly retrieved if accidentally dropped in the tank.

The **HI 1219** rugged pH electrode supplied with the meter, is constructed using the latest double junction technology and the **HANNA** instruments® exclusive replenishable fiber junction. The electrode can be easily replaced by the user, and the rubber sleeve protects the connector against humidity and spills.

Measurements are highly accurate and the meter can be calibrated at one point.

- Ideal for hydroponics and greenhouses
- Waterproof housing floats for quick retrieval
- Manual one point calibration
- Renewable, pull-out junction
- Long battery life (up to 2000 hours)

FUNCTIONAL DESCRIPTION

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, 1 point
Electrode	HI 1219 pH electrode, 240 mm (9.4") long, with double junction and DIN connector
Battery Type / Life	2 x 1.5V AA / approx. 2000 hours of continuous use
Dimensions (meter only)	86 x 94 x 33 mm (3.4x3.7x1.3")
Weight (meter only)	150 g (5.3 oz.)

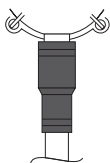
ACCESSORIES

HI 1219	Spare pH electrode with DIN connector
HI 70004P	pH 4.01 solution, 20 mL sachet (25 pcs)
HI 70007P	pH 7.01 solution, 20 mL sachet (25 pcs)
HI 70010P	pH 10.01 solution, 20 mL sachet (25 pcs)
HI 7004M	pH 4.01 solution, 230 mL bottle
HI 7007M	pH 7.01 solution, 230 mL bottle
HI 7010M	pH 10.01 solution, 230 mL bottle
HI 70300M	Electrode storage solution, 230 mL bottle
HI 7061M	Electrode cleaning solution, 230 mL bottle

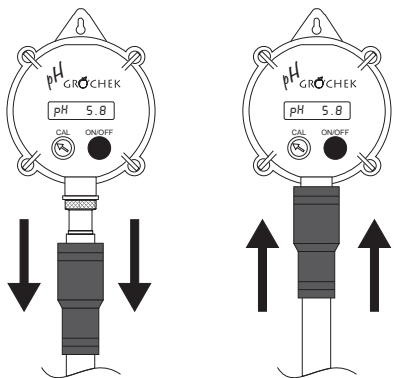
OPERATIONAL GUIDE

pH ELECTRODE CONNECTION & MAINTENANCE

In order to protect the DIN connector of the electrode against vapors and humidity, the instrument is provided with a waterproof sheath.



- Slide the protective sheath down, connect the **HI 1219** pH electrode to the DIN connector, and then slide the protective sheath back up. To ensure maximum protection, make sure the connector is completely covered.

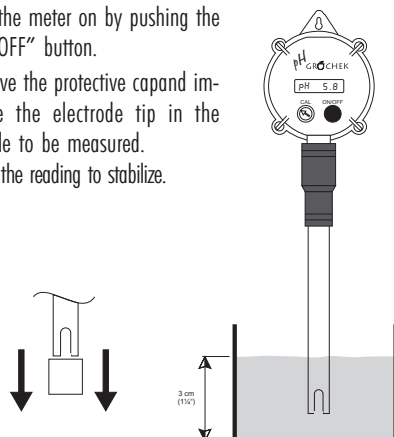


- Do not be alarmed if white crystals appear around the electrode protective cap. This is normal with pH electrodes and they dissolve when rinsed with water.
 - When not in use, rinse the electrode with water and store it with a few drops of storage (**HI 70300**) or pH 7 (**HI 7007**) solution in the protective cap. Always replace the protective cap after use.
- NEVER USE DISTILLED OR DEIONIZED WATER FOR STORAGE PURPOSES.

- If the electrode has been left dry, soak the tip in a storage (**HI 70300**) or pH 7 (**HI 7007**) solution for at least one hour to reactivate it.
- To minimize clogging and provide longer life to the pH electrode, it is recommended to clean it at least once a month. Immerse the tip of the electrode in **HI 7061** cleaning solution for 30 minutes, then rinse it with tap water and recalibrate the meter.

TAKING pH MEASUREMENTS

- Turn the meter on by pushing the "ON/OFF" button.
- Remove the protective cap and immerse the electrode tip in the sample to be measured.
- Allow the reading to stabilize.



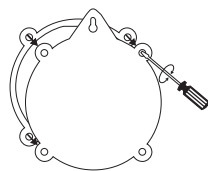
Note: The electrode should be submerged at least 3 cm (1 1/4") in the solution.

BATTERY REPLACEMENT

When the batteries are weak, the display fades, the meter does not switch on or can not be calibrated.

To replace the batteries, remove the rear panel with and replace both batteries, while paying attention to the correct polarity.

Batteries should only be replaced in a safe area and using 1.5V AA alkaline batteries.



Note: Once the batteries have been replaced, recalibrate the meter.

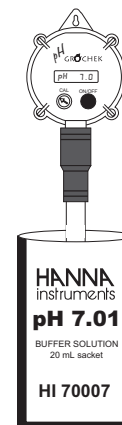
CALIBRATION

For better accuracy, frequent calibration of the instrument is recommended. In addition, the meter should be recalibrated:

- whenever the pH electrode is replaced
- after testing aggressive chemicals
- where high accuracy is required
- at least once a month

CALIBRATION PROCEDURE

- Turn the meter on.
- Remove the protective cap from the electrode, rinse the tip and immerse it in the pH 7.01 buffer solution.
- Stir gently and wait for the reading to stabilize.
- Adjust the "CAL" dial until the LCD shows "pH 7.0".



The pH calibration is now complete.

Note: The meter can also be calibrated with pH 4 or pH 10 buffer, if closer to the working range.

CE DECLARATION OF CONFORMITY



DECLARATION OF CONFORMITY

We

Hanna Instruments Srl
Via E.Fermi, 10
35030 Sarmeola di Rubano (PD)
ITALY

herewith certify that the pH meter

HI 981408

has been tested and found to be in compliance with the following regulations:

IEC 801-2	Electrostatic Discharge
IEC 801-3	RF Radiated
IEC 801-4	Fast Transient
EN 55022	Radiated, Class B
EN 61010-1	Electrical Safety

Date of Issue: 26-10-1999

D. Volpato - Engineering Manager
On behalf of
Hanna Instruments S.r.l.

Recommendations for Users

Before using this product, make sure that it is entirely suitable for the environment in which it is used. Operation of this instrument in residential areas could cause unacceptable interference to radio and TV equipment.

The glass bulb at the end of the electrode is sensitive to electrostatic discharges. Avoid touching this glass bulb at all times. During operation, ESD wrist straps should be worn to avoid possible damage to the electrode by electrostatic discharges.

Any variation introduced by the user to the supplied equipment may degrade the instrument's EMC performance.

To avoid electrical shock, do not use this instrument when voltage at the measurement surface exceeds 24 Vac or 60 Vdc.

To avoid damage or burn, do not perform any measurement in microwave ovens.