

## Care and Maintenance

To obtain the highest accuracy for measurements it is important to follow these tips:

- Calibration is only as good as the buffer being used. The pH buffer values change over time once the sachets are opened. Fresh buffer should be used for each calibration.
- The probe should be rinsed with purified water each time before placing in buffer or sample to be tested.
- When the meter is not in use it is important to add several drops of storage solution to the protective cap to keep the probe hydrated. If storage solution is not available, pH 4.01 or pH 7.01 buffer can be used.
- For improved accuracy it is recommended to calibrate to a minimum of two points. It is important to use buffers that bracket the expected value of the sample to be tested. For example, if the expected value is pH 8, the meter should be calibrated using pH 7.01 and pH 10.01 buffers.
- It is important to calibrate and measure samples at the same temperature. A dramatic change in temperature between buffer solutions and samples to be tested will give inaccurate readings.

## Warranty

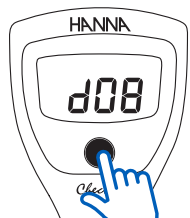
The meter is warranted for a period of one year against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. The electrode is warranted for a period of six months. This warranty is limited to repair or replacement free of charge. Damage due to accidents, misuse, tampering or lack of prescribed maintenance is not covered. If service is required, contact your local Hanna Instruments Office. If under warranty, report the model number, date of purchase, serial number and the nature of the problem. 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 (RGA) number from the Technical Service department and then send it with shipping costs prepaid. When shipping any instrument, make sure it is properly packaged for complete protection.

## Recommendations for Users

Before using Hanna Instruments products, make sure that they are entirely suitable for your specific application and for the environment in which they are used. Operation of these instruments may cause unacceptable interferences to other electronic equipment, thus requiring the operator to take all necessary steps to correct such interferences. Any variation introduced by the user to the supplied equipment may degrade the instrument's EMC performance. To avoid damages or burns, do not put the instrument in microwave oven. For yours and the instrument safety do not use or store the instrument in hazardous environments.

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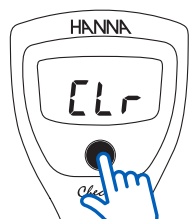
## Auto-off



From measurement mode, press and hold the ON/OFF button. The meter will cycle through "OFF," "CAL," then current auto-off setting.

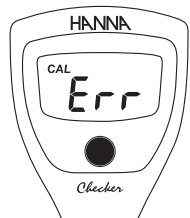
The default setting is 8 minutes ("d08"). Press ON/OFF button to change. "d60" is auto-off after 60 minutes, and "d--" disables the auto-off feature. Press and hold the button to exit the menu.

## Clear Calibration



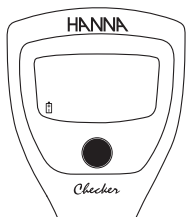
Place meter in calibration mode. Press and hold ON/OFF until "CLr" is displayed. The meter will now be at default calibration. No tags will be shown in measurement mode until calibration is performed.

## "Err" Message



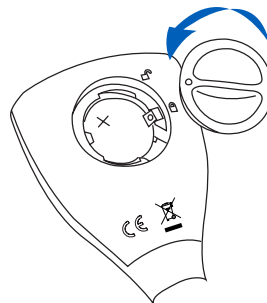
In calibration mode, if the meter displays an "Err" message when in the correct fresh buffer solution then the probe should be cleaned. Place the probe in the HI700601 cleaning solution for 15 minutes. Rinse with purified water and place in storage solution for 1 hour before calibrating. If the "Err" message persists then the HI1271 probe should be replaced.

## Battery Indicator



The Checker® features a low battery indicator. When the battery is running low, the tag will blink on screen. When the battery has been depleted, "Errb" will appear on screen and the meter will turn off.

## Battery Replacement



To change the CR2032 Li-ion battery, turn the battery cover located on the back of the meter counterclockwise to unlock. Remove cover and replace with + side facing up.

Note: Batteries should only be replaced in a safe area using the battery type specified in this instruction manual. Old batteries should be disposed in accordance with local regulations.

## Accessories

### Electrode

| Code   | Description              |
|--------|--------------------------|
| HI1271 | pH electrode for Checker |

### pH Buffer Solution

| Code      | Description                                                     |
|-----------|-----------------------------------------------------------------|
| HI70004P  | pH 4.01 buffer solution, 20 mL sachets (25 pcs.)                |
| HI70007P  | pH 7.01 buffer solution, 20 mL sachets (25 pcs.)                |
| HI70010P  | pH 10.01 buffer solution, 20 mL sachets (25 pcs.)               |
| HI77400P  | pH 4.01 & 7.01 buffer solution, 20 mL sachets (10 pcs., 5 ea.)  |
| HI770710P | pH 10.01 & 7.01 buffer solution, 20 mL sachets (10 pcs., 5 ea.) |

### Electrode Cleaning Solution

| Code      | Description                                                |
|-----------|------------------------------------------------------------|
| HI700601P | general purpose cleaning solution, 20 mL sachets (25 pcs.) |

### Electrode Storage Solution

| Code     | Description                               |
|----------|-------------------------------------------|
| HI70300L | electrode storage solution, 500 mL bottle |
| HI70300M | electrode storage solution, 230 mL bottle |

## INSTRUCTION MANUAL

# Checker®

## HI98103 pH Tester

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instruments®

# Thank You

Thank you for choosing a Hanna Instruments product. Please read this instruction manual carefully before using the instrument.

For more information about Hanna Instruments and our products, visit [www.hannainst.com](http://www.hannainst.com).

For technical support, contact your local Hanna Instruments Office or email us at [tech@hannainst.com](mailto:tech@hannainst.com)

Find your local Hanna Instruments Office on [www.hannainst.com](http://www.hannainst.com)

## Preliminary Examination

Remove the meter from the packing material and examine it carefully to make sure that no damage has occurred during shipment. If noticeable damage is evident, contact your local Hanna Instruments Office. Each meter is supplied with:

- pH 4.01 Buffer Solution Liquid Sachet (2 pcs.)
- pH 7.01 Buffer Solution Liquid Sachet (2 pcs.)
- General purpose cleaning solution (2 pcs.)
- Instruction manual
- Quality Certificate

*Note: Save all packing material until you are sure that the instrument functions correctly. All defective items must be returned in the original packaging with the supplied accessories.*

## Meter Overview

### Preparation:

The pH electrode is shipped dry. Before using the Checker®, remove the protective cap and condition the electrode by soaking the tip (bottom 4 cm (1.5")) in pH 7.01 buffer solution for several hours. Then follow the calibration procedure.

- Do not be alarmed if white crystals appear around the cap. This is normal with pH electrodes and they dissolve when rinsed with water.
- Connect the electrode to the meter.
- Turn the Checker® on by pressing ON/OFF button.
- Remove the protective cap and immerse the tip of the electrode in the sample to be tested.
- Stir gently and wait for a stable reading.

NEVER IMMERSE THE ELECTRODE OVER THE MAXIMUM IMMERSION LEVEL. THE CONNECTOR MUST ALWAYS BE CLEAN AND DRY.

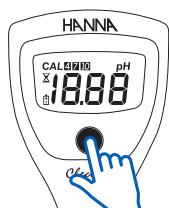
- After use, rinse the electrode with water and store it with a few drops of HI70300 storage solution in the protective cap.
- Replace protective cap after each use.

DO NOT USE DISTILLED OR DEIONIZED WATER FOR STORAGE PURPOSES.

## Specifications

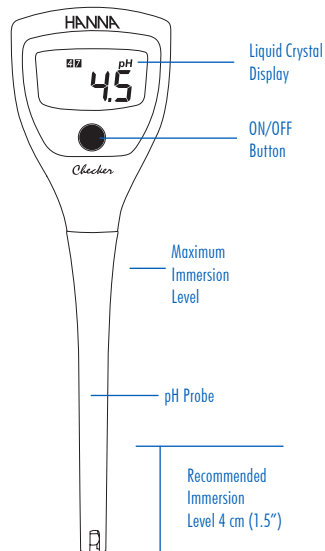
|                            |                                            |
|----------------------------|--------------------------------------------|
| Range                      | 0.0 to 14.0 pH                             |
| Resolution                 | 0.1 pH                                     |
| Accuracy<br>(@25 °C/77 °F) | ±0.2 pH                                    |
| Calibration                | automatic, one or two-point                |
| Electrode                  | HI1271 (included)                          |
| Battery Type               | CR2032 Li-ion                              |
| Battery Life               | approximately 1000 hours of continuous use |
| Auto-off                   | 8 minutes, 60 minutes or can be disabled   |
| Environment                | 0 to 50 °C (32 to 122 °F); RH 95% max      |
| Dimensions                 | 50 x 174 x 21 mm (2 x 6.8 x 0.9")          |
| Weight                     | 50 g (1.8 oz.)                             |

## Operation



Press the ON/OFF button to turn the meter on. All tags will be displayed.

The meter will go into measurement mode: current reading and calibrated buffers are displayed.



## Meter Calibration



From measurement mode, press and hold the ON/OFF button until "CAL" is displayed.



When "7.01" blinks on the display, place the tip of the probe into a pH 4.01, 7.01, or 10.01 buffer solution.

**A**

For one or two-point calibration using pH 7.01 buffer go to procedure A

**B**

For one-point calibration using pH 4.01 or pH 10.01 buffer go to procedure B

**A**

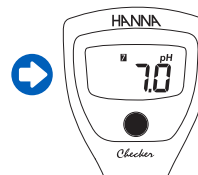
### One or Two-Point Calibration with pH 7.01



One-Point



pH 4.01 will then blink on the display.



Meter will exit to measurement mode and the calibration tag will be displayed.

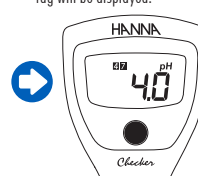
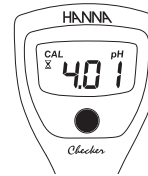
If pH 7.01 buffer solution is used as the first point the buffer is recognized with the blinking stability indicator.

When the reading is stable, the stability indicator will disappear and pH 7.01 will be calibrated.

If pH 7.01 is the only calibration point, finish one-point procedure at right.

If using pH 4.01 or pH 10.01 as a second point, continue two-point procedure at right.

Two-Point



Use pH 4.01 or pH 10.01 to perform a two-point calibration. The value is automatically recognized and displayed with the blinking stability indicator.

When the reading is stable, the stability indicator will disappear. "Sto" will be displayed when the calibration is saved.

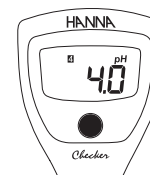
Meter will exit to measurement mode and the calibration tags will be displayed.

**B**

### One-Point Calibration with pH 4.01 or pH 10.01



One-Point



If pH 4.01 or pH 10.01 buffer solution is used as the first point the value of the buffer is recognized and displayed with the blinking stability indicator.

When the reading is stable, the stability indicator will disappear. "Sto" will be displayed when the calibration is saved.

Meter will exit to measurement mode and the calibration tag will be displayed.