Waterproof pH Testing Pen

Specifications - Installation and Operating Instructions

1-17/32
[39.00]

LCD SCREEN

6-59/64
[176.00]

PROBE
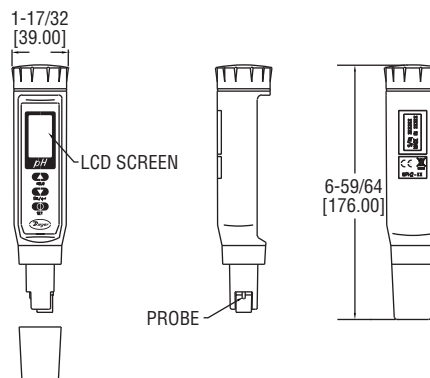
The Series WPH2 pH Testing Pen accurately monitors pH and temperature levels in a variety of applications. This pocket-sized tester is ideal for pH level measurements in lab environments, industrial plants, or field environmental testing. It features an easy to replace electrode and automatically recognizes up to 3 calibration buffer solution ranges. Both pH and temperature, in both English and Metric units, appear on the large dual display. Both the electrode and battery compartment caps are sealed to provide an IP65 weatherproof rating.

OPERATING INSTRUCTIONS
Please read the manual completely before using this meter. Filing and keeping the manual for future reference is recommended. It is also recommended to soak the electrode for at least 30 min before using the meter to clear anything affecting the probe.

Power Supply
The meter is powered by 4 LR44 button cell batteries. Check the batteries if it is your first time use, if the battery symbol appears on the LCD, or if the meter cannot power on.

To install the batteries:
1. Turn off the meter.
2. Loosen the battery cover in the counterclockwise direction (DO NOT discard the black washer!).
3. Replace the old batteries with four new button cell LR44 batteries.
4. Make sure the batteries are in place and the polarity is correct.
5. Put the battery cover back and turn it tightly in the clockwise direction.
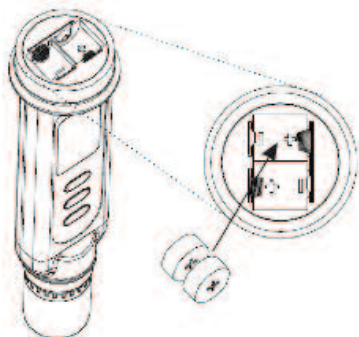
NOTICE	It is suggested to re-calibrate the meters after changing the batteries.

NOTICE	Remove the batteries from instruments that you don't plan to use for a month or more. Do not leave the batteries in the

instrument.

LCD Display

SPECIFICATIONS
Range: pH: 0 to 14; Temperature: 32 to 122 F (0 to 50 C).
Accuracy: WPH2-10: ±0.2 pH, ±1°C, WHP2-20: ±0.05 pH, ±0.5°C.
Display: 30 mm H x 18 mm LCD dual display.
Resolution: WPH2-10: 0.1 pH, 0.1°C/°F, WPH2-20: 0.01 pH, 0.1°C/°F.
Operating Temperature Limits: 32 to 122°F (0 to 50°C).
Storage Temperature Limits: 32 to 140°F (0 to 60°C).
Humidity Limits: <90%.
Power Requirements: (4) 1.5 V LR44 alkaline batteries, included, user replaceable.
Calibration: One touch auto-calibration up to 3 points.
Enclosure Rating: IP65.
Electrode: Detachable single junction, KCl filled glass.
Weight: 3.9 oz (110 g).
Agency Approval: CE.

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- The first display shows the measured pH reading.
- The second display shows the temperature reading (Degree C or F).
- CAL = Calibration mode
- HLD = Data hold
- Battery icon indicates low power
- uS/ppt/ppm/mS/mV are units not used for this pen. Only pH will be used

Keypad

- Press to power on/off the meter.
- Press >2 seconds to enter setting mode before power on.
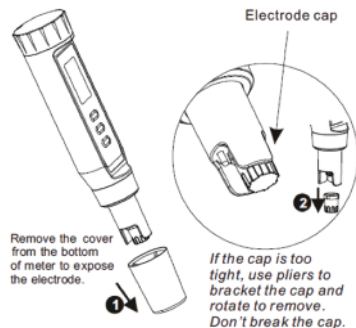- Press with "HOLD" key to disable auto sleep function before power on.

- Press to enter calibration mode.
- Press to save and enter next step while in setting mode.
- Press to adjust while in calibration mode.

- Press to freeze the current reading.
- Press again to release hold.
- Press to adjust while in setting or calibration mode.

Operation
1. Remove the probe cover from the meter.
2. Rotate the transparent cap to expose the electrode (see diagram below).

Electrode cap

Remove the cover from the bottom of meter to expose the electrode.

If the cap is too tight, use pliers to bracket the cap and rotate to remove. Don't break the cap.

3. Dip the electrode into the test solution. Press ⏻ to power on the meter and stir it to get a stable reading.
4. "pH" flashes while the meter is in measurement mode. The LCD shows the measured pH and temperature. "pH" stops flashing when the reading is stable.
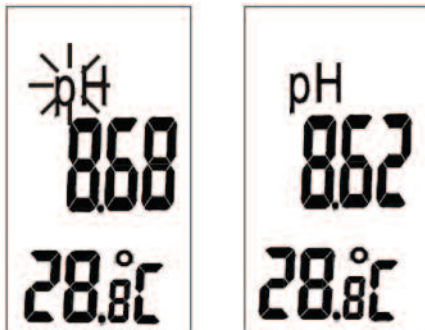
5. Press ▲ key to freeze current reading. "HLD" appears on the LCD. Press ▲ key again to release.
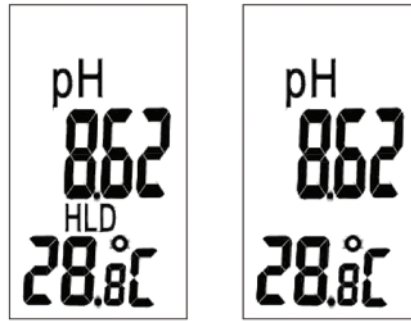
6. Turn off the meter by pressing the ⏻ button.
7. Once finished with the measurement, clean the electrode. Put the transparent electrode cap and meter cover back on.

⚠ **WARNING** For pH meters, please always make the electrode wet to keep the electrode in a good storage condition.

Auto Power Off (Sleep Function)
This meter will shut off automatically after 20 minutes of inactivity. For a longer operating time, you can disable sleep mode.

To disable the auto power off:
Before powering on, press ⏻ and ▲ simultaneously until an "n" appears on the screen. Then release the keys to return to normal mode.

NOTICE The disable sleep mode will be invalid after every power off.

Program Settings
Parameters setting function could help you to check or program your meter.
When the meter is off, press ⏻ key >1 second to enter setting mode.

Probe slope and offset value
After re-calibration, checking probe slope and offset value could help to confirm the necessity to replace the probe.

While doing 3 points calibration, there are two available slope values and one offset point:
　　　Range 1 (SL1): 0.00 to 2nd point
　　　Range 2 (SL2): 2nd point to 14.00 pH. Offset point is at pH7.

While doing 1 or 2 points calibration, the slope value SL1 equals that of SL2. The offset point is still at pH7.

NOTICE Change the probe while the slope value is <75 or >115 %. Also, change the probe if the offset value is not between -60 to 60 mV.

When the meter is off, press ⏻ for >1 second to enter setting mode. The SL1 value will appear on the LCD. Press ▼ to view the SL2 value. Press ▼ to view the offset value. See diagram below.
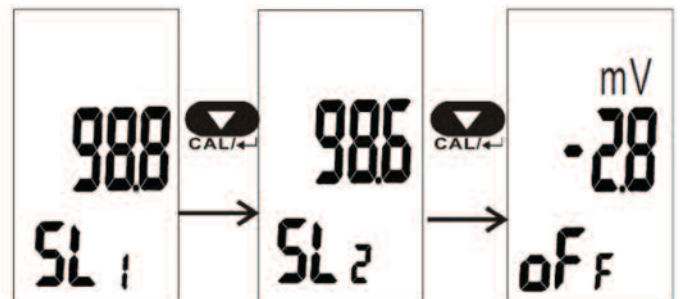
Temperature Unit Setting
To select the temperature unit (°F or °C) enter the setting mode first. Press ▼ to select the unit setting. The default unit will flash on the LCD. Press ▲ to change and press ▼ to confirm.
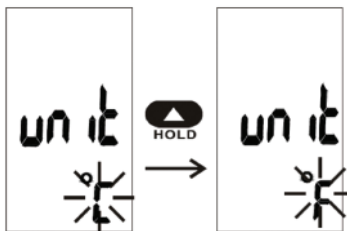
Reset to Default Setting
To reset the meter to default setting, enter the setting mode first. Press ▼ to select reset. The default "no" will flash on the LCD. Press ▲ to change and press ▼ to confirm. See diagram below.
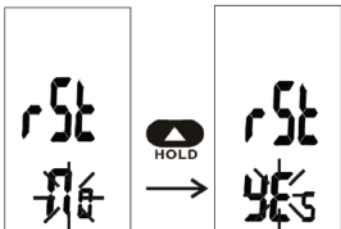
NOTICE	Before calibration, it is recommended that you RESET the meter to delete all the old calibration information.

Calibration Mode (CAL)
Calibration is necessary and should be done regularly. It is recommended that calibration is done every day if the meter is used often. The unique calibration design of the meter features automatic buffer recognition to avoid errors.
1. Rinse the probe thoroughly with de-ionized water or rinse solution. Do not wipe the probe as this will cause a build-up of electrostatic charge on the glass surface.
2. Power on the meter.
3. Dip the probe into the standard calibration buffer. The end of the probe must be completely immersed into the sample. Stir the probe gently to create a homogenous sample. It is recommended to calibrate pH7 first and then 4 or 10 pH for a better accuracy.
4. Press ▼ for >1 second to enter calibration mode. The "CAL" icon, auto recognized buffer value (see table below) and "pH" will all flash on the primary LCD.

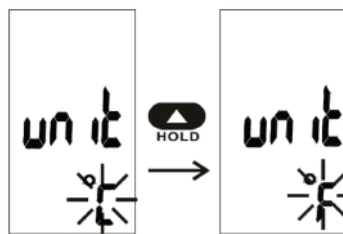|	NIST		
Temp (°C)	pH4.01	pH6.86	pH9.18
0	4.01	6.98	9.47
5	4.01	6.95	9.38
10	4.00	6.92	9.32
15	4.00	6.90	9.27
20	4.00	6.88	9.22
25	4.01	6.86	9.18
30	4.01	6.85	9.14
35	4.02	6.84	9.10
40	4.03	6.84	9.07
45	4.04	6.83	9.04
50	4.06	6.83	9.01

5. If the probe is damaged or the buffer is not specified as following, the primary LCD will keep flashing unless you escape by turning off the meter.
The acceptable pH buffer range:
  - pH3.00 to 5.00
  - pH6.00 to 8.00
  - pH8.50 to 10.50

6. If the probe successfully recognizes the buffer, the buffer pH value and "CAL" will stop flashing.

7. If your calibration buffer is not NIST, press ▲ or ▼ to adjust the calibrating point to the corresponding buffer value of specific temperature. The adjustable range is: 3.00 to 5.00, 6.00 to 8.00, and 8.50 to 10.50.
8. Wait for 30 seconds. If the reading is stable enough, the meter will complete the calibration automatically.
9. Rinse the probe with de-ionized water or a rinse solution after calibration, Repeat steps 3 to 8 to do multiple point calibration or exit by turning the meter off.

Probe Change
It is suggested that the probe be changed when:
1. Slow response
2. Unstable reading
3. Slope value is <75%, >115%, or the offset value is not between –60 to 60 mV.

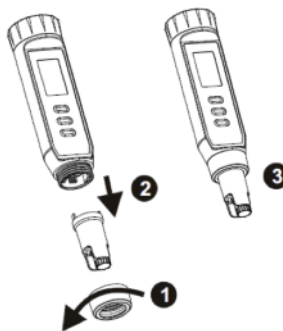Part number for the replacement electrode probe is WPH2-RS.

There are three steps to changing the probe:
1. Loosen the washer
2. Unplug the probe
3. Reverse the steps to install the new probe

NOTICE	Be sure to calibrate the meter after changing the probe.

Troubleshooting

Symptom	Action
Power on but no display	1. Make sure the time of pressing the power key is more than .3 seconds. 2. Check that the batteries are in place and make good contact, minding polarities. 3. Replace new batteries. 4. Move the battery away for one minute and then put back in.
Slow response	1. Clean probe by immersing the electrode in tap water for 10 to 15 min. Rinse thoroughly with distilled water or use a general purpose electrode cleaner. 2. Replace with a new probe.

Error Code	Meaning	Solution
E02	The value is below the lower limit.	Re-calibrate or replace a new probe or replace calibration buffer.
E03	The value is over the upper limit.	Re-calibrate or replace a new probe or replace calibration buffer.
E04	Temperature measuring error.	Remove batteries for one minute then replace and power on or replace probe.
E13	Slope or offset value of pH probe is out of range.	Re-calibrate or replace a new probe or replace calibration buffer.
E31	Measuring circuit failure.	Power meter on and off. If error still appears, send back for repair.
E32	Memory saving/reading failure.	Power meter on and off. If error still appears, send back for repair.
E33	Reference voltage failure.	Power meter on and off. If error still appears, send back for repair.

MAINTENANCE/REPAIR

Upon final installation of the Series WPH2, no routine maintenance is required. The Series WPH2 is not field serviceable and should be returned if repair is needed. Field repair should not be attempted and may void warranty.

WARRANTY/RETURN

Refer to "Terms and Conditions of Sales" in our catalog and on our website. Contact customer service to receive a Return Goods Authorization number before shipping the product back for repair. Be sure to include a brief description of the problem plus any additional application notes.

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