

Operating Temperature
 pH & Temperature basic test parameters and freshwater as common.
 A healthy, requires a water to its native environment thrive, farmers will mimic the parameters to maximize yield and production.
 At the right water condition, fish and crustaceans will be more healthy and resistant to sickness. Temperature is most critical in crustacean growth rate and speed up size to market.
 Ornamental fish exporters adjust pH to cause fish to bloom in full colors before export.
 The Eco pH Duo+ tester takes out the chore of tedious chemical drop tests or color matching while the dual function keeps track of temperature at the same time. The meter can store 10 data of both pH and temperature in its memory for reviewing at a later time.

TRANS INSTRUMENTS
 www.transinstruments.com
 ISO 9001 Certified Firm

Water resistant - floats on water - drop shock - simple to use



TRANS INSTRUMENTS Eco pH Duo+ (Aquaria)

for Aquaculture, Hatchery, Monitoring of CO₂ in enclosed tanks

pH & Temperature dual function - Auto End-point - One-Touch cal - 10 Data memory

Water resistant - floats on water - drop shock - simple to use

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Product Feature

FEATURE

Battery Cap Installation

INSTALLATION BATTERY CAP

This unit is shipped with the battery cap open. Close the battery cap by pressing the cap on the rear surface using the latch clicks, indicating a secure lock.

REPLACING BATTERIES

1. Lift the latch with a pen or screwdriver. **DO NOT PULL** the latch out completely.
2. Use the thumb to push the cap forward.
3. Hold the battery cap and separate it from the meter.
4. Replace all batteries according to polarity.

Precautions In Handling

Do not touch, rub or scratch the sensor. It is very delicate and might break or lose its sensitivity.

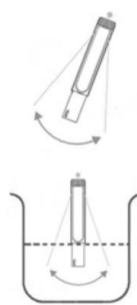
Do not submerge the unit underwater. Although the unit is water resistant, it cannot come under high pressure underwater. If it is dropped into water, retrieve it immediately and wipe dry with a cloth.

Do not store the unit without the protective cap on under high temperature and direct sunlight. This will shorten the life span of the meter and cause premature expiry of the sensor.

Do not clean the unit with thinner or solvents. This will damage the unit. Use only mild detergent on steamy cloth to clean and rinse unit if needed.

MAKING MEASUREMENT

1. Remove the protective cap and press the **READ** button once to switch on.
2. The display will appear blinking. Random readings or displayed are normal when sensor is not in contact with liquid.
3. Rinse the sensor area with water and shake the tester in the same way you would use a mercury thermometer, every time before each measurement.
4. Dip the sensor into liquid, shake to remove bubbles. Keep still and wait for the auto-lock feature to sense a stable endpoint reading.
5. When an endpoint reading is established, the display will stop with a beep and alternate display between pH and temperature. You can take meters out and record readings and record readings.
6. Press the **READ** button to make another auto-lock measurement.
7. If the glass sensor is dry, a slow response will result with 2 to 3 blinks off on repeated measurement. Dip the sensor in a cup of water for 30 to 60 minutes will restore speed.
8. To switch off the tester, hold down the **READ** button for 3 seconds.
9. Always rinse, shake dry sensor and replace with protective cap before storing.



In the presence of certain radio transmitters, this product may produce erroneous readings. If this occurs then the measurements should be repeated at another location.

AQUARIA CONTROL

pH control

Maintaining correct water chemistry is important for all aquariums. Too high or too low a pH causes stress to marine habitat. Taking into account other parameters like the softness and hardness of water, when the pH is right, the fish will glow in full colors and even spawn.

A general recommended range is as follows: **Saltwater**

aquarium: 8.0 to 8.2 pH Eat 10 fish or plant

Fresh water aquarium: 7.0 to 7.4 pH

Species has its desired pH preference. Seek advice from preference books or your supplier to establish the ideal pHs or range for the species you are keeping. pH is also an indicator of CO₂ accumulation. When CO₂ increases, pH will be lowered.

When CO₂ increase, pH will be lowered.

NOTES ON PH ADJUSTMENT

While testing and adjusting the pH value, take care not to overload the buffering capacity of the aquarium. Make adjustments in small increments over a period of time with pH adjusters and test it each time with the ECO pH Duo test.

Regular checks with your ECO pH Duo tester will help you maintain the water condition: checks and prevent in stress and sickness to your fish.

Temperature control

Temperature is critical in the growth of crustaceans; in shrimp aquaculture, higher temperatures encourage feeding and faster growth. Species like the black tiger prawn will not feed at below 25°C and thus stop growing. prawn will not feed at below 25°C and thus stop growing.

At 23-35°C green algae will grow well and above 35°C blue-green algae will bloom. algae will bloom.

In fish aquaculture, higher temperature reduces the holding capacity of oxygen in water, fishes will increase respiration, thus speed up aging and excretion; proliferate disease and outbreaks.

DATA MEMORY

STORING DATA TO MEMORY

1. This meter is capable of storing up to 10 data memories of pH and temperature.
2. After an auto-lock reading is established, press the **MODE** button once to store. Display will show 01 blink briefly indicating readings are stored to counter 01. One data is stored each time after auto-lock is completed.
3. When data storage is full, Full will flash shortly. Press the **MODE** button again while Full is blinking will override counter 01. From now on, each data stored will override subsequent counters.

RECALL DATA FROM MEMORY

1. To enter RECALL mode, press and hold down both **READ** and **MODE** buttons. Display will show 01 then pH, then pH, temperature reading in a cycle. Press the **MODE** button once to scroll up and review 02 data and again the next counter and a cyclical sequence counter in a cyclical sequence.
2. To erase or clear all data memory, while in recall mode press and hold down both **READ** and **MODE** button. Link Err appears flashing until it stops; all data are erased.
3. To exit recall mode, press the **READ** button once and display will resume measurement mode.

CALIBRATION

NOTE: Regular calibration is necessary to maintain its accuracy. Depending on usage, perform a check once a week, if it is used once daily; check or recalibrate once a month if it is used once weekly. If multiple uses are required daily, then daily checks or calibration before series of tests will ensure its accuracy.

This tester is factory calibrated. But due to prolonged storage, the unit must be re-calibrated before use. Soak the sensor in tap water for 10 minutes prior to calibration. water for 10 minutes prior to calibration..

Calibration should be performed at room temperature of about 25°C or 77°F about 25°C or 77°F.

At any time, pressing the **READ** button a few times will cancel and exit the calibration mode.

1. Use only pH 7.00 buffer solution for calibration. The attached Satchel is for single use only. is for single use only.

Box of 10 Satchel Buffer Solution: pH 7.00 One Satchel SP03 P19 015

2. Remove protective cap. Always rinse the sensor area with water, shake the tester in the same way you would use a mercury thermometer before each and every test.
3. Cut open the shorter side of the pH 7 Satchel and slide the sensor area until it is fully immersed in the liquid. Tap or jiggle gently to remove bubbles.
4. Press and hold down the **MODE** button until CAL appears. After 7.0 will display in a blinking mode indicating the correct buffer is recognized and calibration is in progress.
5. Wait until the display stops with a beep. Calibration is completed.
6. Rinse the sensor area thoroughly with water before continuing testing.

ERROR CODE & MAINTENANCE

When Err appears during measurement or calibration, it means a stable reading cannot be established. This could be due to a dry sensor. Try soaking the sensor in a cup of water for 1 hour and re-test. When Err appears during calibration, it could mean a wrong standard solution is used. Otherwise, the sensor could be damaged or expired. Alternate at the right side of the display, it means the temperature sensor is expired.

- If L and A alternate at the right side of display, it means the temperature sensor is malfunction or damaged. Send back to the dealer for investigation.

If the unit is stored for a long period of time, the sensor will become dry. A slow response to a stable reading result. Soaking the sensor in a cup of tap water or preferably pH 7 solution for 15 to 60 minutes will restore sensitivity to the sensor. Never soak the sensor in water overnight as this will cause premature expiry of the sensor.

When the low battery symbol continuously appears on the display, it indicates a battery life of less than 2 hours. Promptly replace all four batteries according to instructions overleaf.

Note that the sensor is electro-chemistry type that will degrade over time. Although the pH sensor has a life span of more than 365 tests, it could be limited to 1 year or less if it is heavily used or not maintained and stored properly.

Never soak the sensor in water overnight or store without the protective cap. When the unit fails to calibrate or responds slowly, it means that the meter should be replaced. It is not possible to repair a broken or an expired sensor.