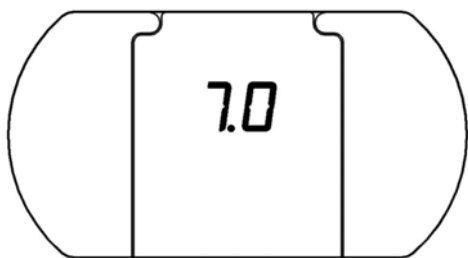
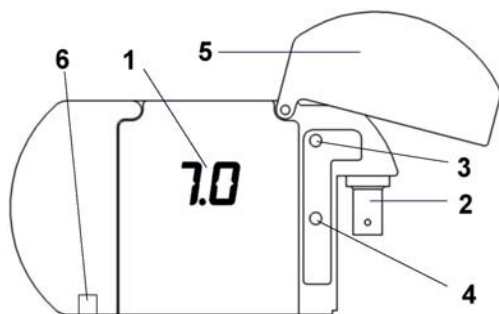


OPERATION MANUAL DIGITAL pH TESTER

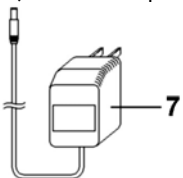


Please read the instructions carefully before use.

TESTER DESCRIPTION



- 1) Display
- 2) pH electrode BNC input terminal
- 3) pH7 calibrate adjustment knob
- 4) pH4 calibrate adjustment knob
- 5) Waterproof cover
- 6) DC power socket
- 7) Power adaptor



OPERATING (CALIBRATION)

- 1) Connecting DC 9V power supply.
- 2) Connecting the pH electrode to the input BNC terminal.
- 3) Take away pH electrode from the buffer solution, and clean with fresh water, put the pH electrode into the standard buffer solution pH7.0. Waiting for a few seconds for a stable reading and adjust the "pH7" knob (use attached adjustment stick) until the display reading exact 7.0
- 4) Take away the pH electrode from the pH7.0 buffer solution, and clean with fresh water. Then put the pH electrode into the standard buffer solution pH4.0. Waiting for a few seconds for a stable reading and adjust the "pH4" knob until the display reading exact 4.0. Take away the pH electrode from the buffer solution, and clean with fresh water, then you can put the pH electrode into the water what you want to measurement.

REMARK (INSTRUCTION FOR CLEANING AND MAINTENANCE)

- 1) It must pull out the power plug (turn off) when cleaning the tester.
- 2) The immersed level for electrode should not be higher than the electrode cap. (When use the refillable electrode, the level should be lower than filling open to avoid the water entering into the open and cause damage.) It had better cleaning the pH electrode sensor with soft brush and calibrate the pH electrode during 2-3 weeks to keep the test accuracy. Please keep the electrode in the storage bottle with 3M KCL buffer (or standard buffer solution pH4.0) to

storage, the crystallization is normal for the keeping.

- 3) pH electrode is accurate glass product, please do not knock it, and do not use finger, cloth and alcohol to clean it to avoid the damage.
- 4) Indoor uses only.

GENERAL SPECIFICATION

Power Supply : DC9V. (Power Adaptor AC100 – 240V)

Power Consumption : Approx. 2 watts.

Display : 0.56" LED.

Measurement : 0 to 9.9 pH (not show "10" digit when above pH9.9, for example "0.0." is pH10.0, "1.2." is pH11.2).

Resolution : 0.1 pH.

Accuracy at 25°C : $\pm(0.1\% + 2 \text{ digits})$ after calibrating.

Impedance : 10^{12} ohms.

Calibration Knob : External pH7 (CAL.) pH4 (Slope)

Operating Temperature : 0 to 50°C (32 to 122°F).

Operating Humidity : Max. 90% RH.

Dimension : 130 x 70 x 20 mm (5.1 x 2.7 x 0.8 inch).

Standard Accessories : Instruction manual, Adjustment sticker, Electrode Holder, Instrument Holder, DC Power Adaptor, pH4 and pH7 calibration buffer each one.



pH electrode input BNC terminal can only connect with pH electrode, it is not allowed to connect with any other electrode.



Please use this tester away from the electronic ballast.

WHY SHOULD WE KNOW pH RANGE

pH value shows the acid or alkaline state of water (pH value equals 7 is neutral, it is alkaline as pH value is greater than 7, and acid as pH value is less than 7), most of the fish can adapt to life in water around pH =7, but many species have special water preferences.

Such as:

species of pH < 7: Discus, Amazon cardinals, preferences for pH=6.0 to 6.5

species of pH > 7 : Marine fish preferences for pH8.4 and African cichlids preferences for pH7.5 to 8.0

※ THE RIGHT pH RANGE KEEP THE FISH RIGHT !

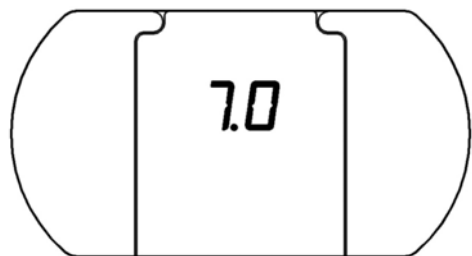
WHAT TO DO AS pH RANGE IS TOO LOW

The pH range of water should be shifted up, the methods of adjustment you can take: Use coral gravels substrate, anion exchange resin, add additives of powder, solution or tablets which can shift pH、KH and GH range up.

WHAT TO DO AS pH RANGE IS TOO HIGH

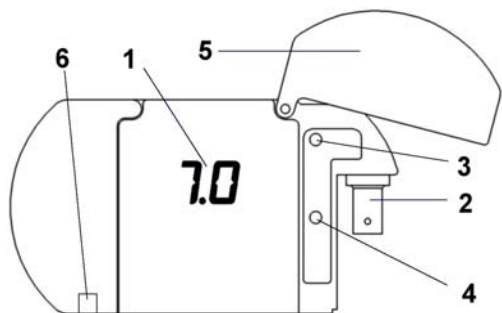
The pH range in water should be shifted down, the methods of adjustment you can take: Use weak-acid gravels substrate, cation exchange resin and higher portion of reverse osmosis water. Add additives of powder or solution which can shift pH range down.

pH 測試器使用說明書

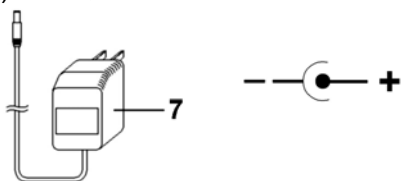


使用 pH 測試器前，請詳細閱讀說明書以確保測試的準確度

測試器名稱說明



- 1) 顯示器
- 2) pH電極BNC接頭
- 3) pH7外部校正鈕
- 4) pH4外部校正鈕
- 5) 防塵防潑水蓋
- 6) DC電源插座
- 7) 電源轉換器



使用方法

- 1) 接上 DC9V 電源。
- 2) 將 pH 電極裝入 pH 輸入端 (BNC接頭插入後，右轉到底)。
- 3) 將 pH 電極以蒸餾水稍作清洗擦乾後放入 pH7 校正液中，等數秒鐘顯示值穩定後，用所附小型起子調整 "pH7" 旋鈕；使顯示的值为 7.0。
- 4) 將 pH 電極從 pH7 校正液中取出以蒸餾水稍作清洗擦乾後，將 pH 電極放入 pH4 校正液中，等數秒鐘顯示值穩定後，用所附小型起子調整 "pH4" 旋鈕；使顯示的值为 4.0 完成校正。將 pH 電極取出以蒸餾水清洗擦乾後，放入所要測試的水中即可開始測量 pH 值。

備註：(清潔及保養)

- 1) 在清潔電極或儀器外觀時，請將 DC 電源插頭拔出，關閉電源。
- 2) pH 電極置於水中不可超過電極帽高度，(如為可填充式電極，置於水中不可超過填充孔高度，以免水進入電極內而損壞)且定期(2~ 3星期)以軟毛牙刷輕刷清洗感應頭所附著之藻類或雜質，且作校正，以確保測量的準確性。不用時，電極請置於有 3M KCL 保存液 (pH4 校正液也可) 之封套內，若有結晶乃屬正常現象。
- 3) pH 電極為一精密之玻璃製品，請勿敲擊。電極請勿用手及布類及酒精擦拭電極前端玻璃球，以免玻璃球破裂損壞。
- 4) 本儀器僅供室內使用。

電器規格

電源規格：DC9V。(電源轉換器規格 AC100~240V)

消耗功率：大約 2 瓦。

顯示器：0.56吋大型 LED 顯示器。

pH 測量範圍：pH 0 ~ pH9.9。
(pH10以上不顯示十位數，且亮燈指示，例如 "0.0." 代表 pH10.0, "1.2." 為 pH11.2)。

pH 解析度(讀值)：0.1 pH。

pH 精確度(誤差)：±(0.1%+2 digits)
(25°C 環境下校正後)。

輸入阻抗：10¹² 歐姆。

外部校正：外部 pH7 (CAL.)，
pH4 (Slope)。

使用溫度限制：攝氏 0° ~ 50°。

使用濕度限制：低於 90% RH。

外觀尺寸：外觀 130 x 70 x 20 mm。
(5.1 x 2.7 x 0.8 inch)。

pH 電極：任何使用 BNC 接頭的
pH 電極均可使用。

標準附件：說明書、調整起子、電極
支架、儀器掛架、電源轉換器 pH4、
pH7 校正液各一。



電極輸入插座除了 pH 電極外，不可插入其它插頭。



控制器使用時請盡量遠離電子式安定器電燈，及不要使用同一電源插座，避免干擾本儀器。

為什麼要測 pH 值

pH 值代表水質呈現酸或鹼性的狀態 (pH 值等於 7 為中性，pH 值大於 7 為鹼性，pH 值小於 7 為酸性)，大部分的觀賞魚都能適應生活在 pH 值 = 7 左右的中性水質，但許多魚種有特別的水質偏好。

例如：

pH < 7 的魚種：七彩神仙，亞馬遜燈科魚等，喜好 pH = 6.0 到 6.5 的水質。

pH > 7 的魚種：海水魚喜好 pH = 8.4，非洲慈鯛喜好 pH 7.5 到 8.0 的水質。

※ 所以對的 pH 值，才能把魚養對！

水質過酸時怎麼辦

應該調升水中的 pH 值，常見調整方法可以採用：

使用珊瑚砂底床，添加 pH 或 KH、GH 調高液(粉)劑或錠片，使用陰離子交換樹脂等方法。

水質過鹼時怎麼辦

應該調降水中的 pH 值，常見調整方法可以採用：

使用弱酸性底土底床，增加 RO(逆滲透)水使用比例，使用陽離子交換樹脂，添加 pH 調低液(粉)等方法。