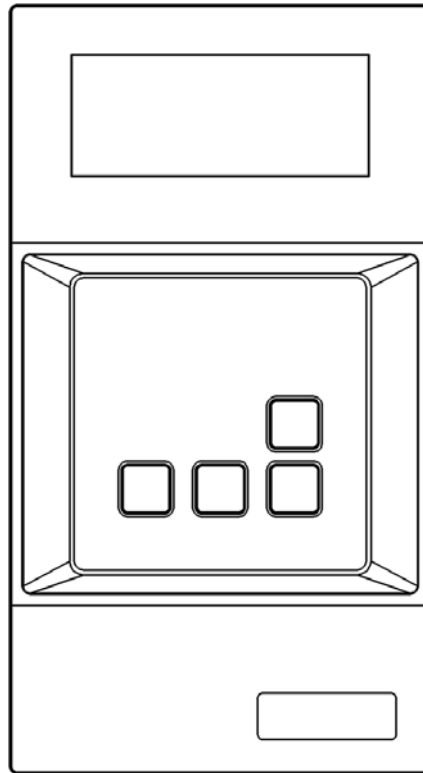


# OPERATION MANUAL

## *MASTER CONTROLLER*



Before putting the Master Controller to use, please read the following instructions carefully.

Made in Taiwan

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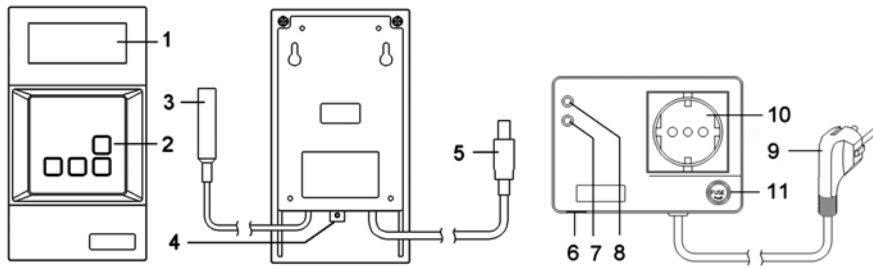


This appliance is not intended for use by persons (including children) with reduced physical , sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.



Children should be supervised to ensure that they do not play with the appliance.

## CONTROLLER DESCRIPTION



- |                                      |                                 |
|--------------------------------------|---------------------------------|
| 1) 2 colors back light Display       | 7) Power indicator lamp         |
| 2) Operation push button             | 8) Output active indicator lamp |
| 3) Temperature Sensor                | 9) Power plug                   |
| 4) electrode input BNC terminal      | 10) Control output power socket |
| 5) Power and signal cable connector  | 11) Fuse (5A)                   |
| 6) Power and signal socket connector |                                 |

## REMARK

LCD in blue color back light : operating when output control "OFF".

LCD in red color back light : operating when output control "ON".



Input BNC terminal should plug in pH or ORP electrode only.



Please use this controller away from electronic ballast.

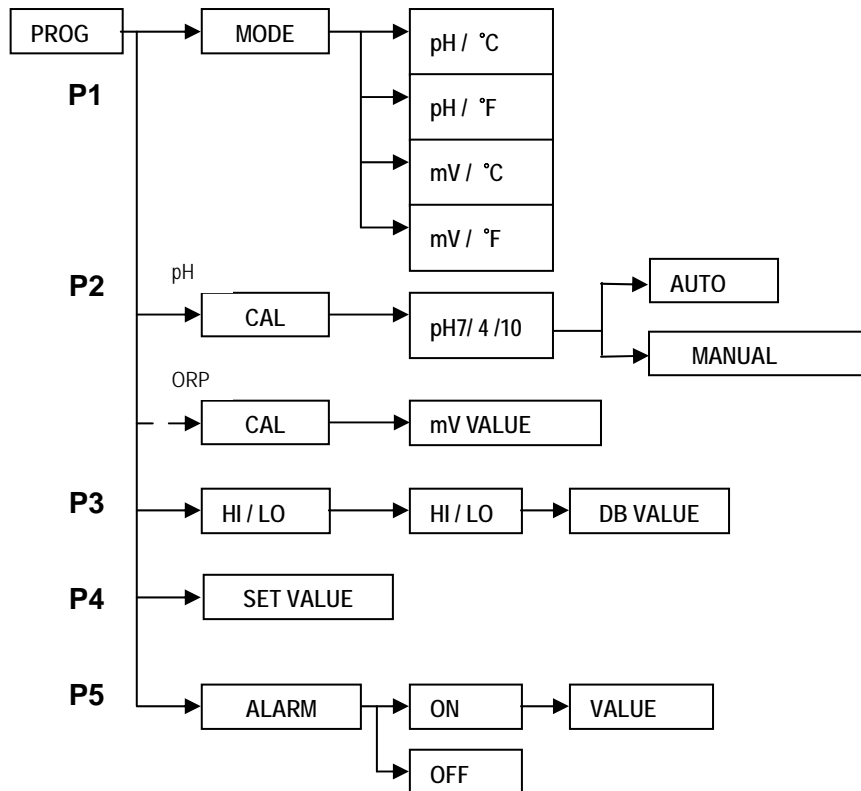


Please do not immerse the electrode cap in water.



In door use only.

## KEYBOARD FUNCTION FLOW



## REMARK

- 1) Press "PROG" key during the operating the keyboard for setting, it will quit the setting and not memory the changes.
- 2) Light press the "PROG" key, it will show the Set value, Dead band value and Alarm value 2 times then quit automatically.

### **OPERATING (P2 - pH MODE, CALIBRATING)**

- 1) Connecting AC power supply (Make sure the correct voltage.), and signal cable "Fig. 5" to socket "Fig. 6", then put the temperature sensor (Fig. 3) into water, and connecting the pH electrode into the BNC input terminal.
- 2) Put the pH electrode into the standard buffer solution pH7.00. Waiting for a few seconds when the value is stable then press the "PROG" button more than 2 seconds. The display will flash, please press the "+" or "-" key select the operating to "P2 - cal." function, then press "ENT" selected. The display will show 7.\_\_\_\_, please choose which buffer solution that you want to calibrating. Press the "+" or "-" to select pH7, pH4 or pH10 buffer solution. Press "ENT" selected. Example choose pH7.00, the display show "7.00", it will auto calibrated after 3 seconds when did not press "+" or "-" to change the value before 3 seconds from pH7.00. If your buffer solution is pH7.01, then you should press the key "+" or "-" within 2 seconds, then change the value to "7.01" and press "ENT". It will auto calibrated pH7.01.
- 3) Take away the pH electrode from buffer solution, and clean the electrode with fresh water. Then put the pH electrode into the standard buffer solution pH4 or pH10. Waiting for a few seconds when the value is stable and according to the step 2 to calibrating the pH4 or pH10. *(Make sure doing the step 2 to 3 for calibrating a new pH electrode.)* It will show the pH electrode class "C-1", "C-2" or "C-3" when finished the pH4 or pH10 calibrating. "C-1" means pH electrode in good condition, "C-2" means in usable condition, "C-3" means electrode should change a new one. If it is in "C-3" class, then the display will show bad electrode signal until next calibrating in "C-1" or "C-2" class.

### **OPERATING (P2 - ORP MODE, CALIBRATING)**

- 1) Connecting AC power supply. (Make sure the correct voltage.)
- 2) Connecting the ORP electrode into the BNC input terminal, then press the "PROG" button more than 2 seconds for select to ORP (mV) mode.
- 3) Put the ORP electrode into the standard buffer solution. Waiting for a few seconds when the value is stable then press the "PROG" button more than 2 seconds to select "CAL" mode. The display will flash, please press the "+" or "-" key to change the value to the standard buffer value, then press "ENT" to calibrated.
- 4) It will detect the ORP electrode condition automatically when finished the ORP calibrating. If it is difference between measure value and calibrating value more than 100 digits, it means electrode should change a new one and the display will show bad electrode signal until next calibrating in usable condition.  
**(No suggest to calibrate the ORP value.)**

### **OPERATING (P3 - HI / LO ACTIVE)**

- 1) Press the "PROG" button more than 2 seconds for function "P3", press "+" or "-" and "ENT" to select "Hi" or "Lo" active. We usually set the "Hi" active and use the CO2 for lower the pH value in water plants tank. We usually set the "Lo" active and use the O3 for increase the ORP value in salt water tank.
- 2) After setting the Hi or Lo active then setting the "DB" value. Press the "+" or "-" to change the value that you want. The initial value is 5 digits. There is a "DB" (dead band) for delay output in action. When set "HI/LO" function in "HI", the control output in action when the pH measuring value goes above the set value 5 digits (initial). The control output off when the pH measuring value goes below the set value. (If necessary you can adjust the dead band from 0 to 100 digits.)

### **OPERATING (P4 - SET)**

- 1) 1) Press the "PROG" button more than 2 seconds for function "P4" to select "SET", press "ENT" to selected, then press "+" or "-" to change the value until the display reading exact your requirement. Press the "ENT" button for set done.

### **OPERATING (P5 - ALARM SET)**

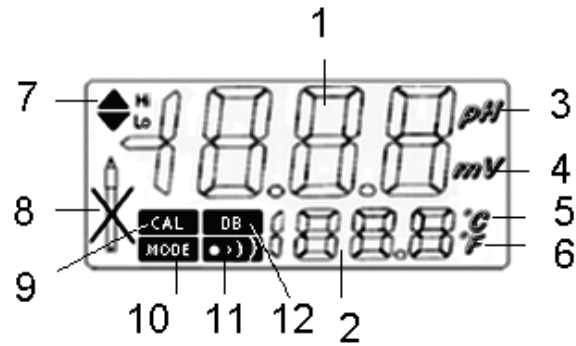
- 1) Press the "PROG" button more than 2 seconds for function "P5" to select "ALARM", press "ENT" to selected, then press "+" or "-" to change the value until the display reading exact your requirement. Press the "ENT" button for set done. The initial value is  $\pm 30$  digits.
- 2) 2) For example, if you set the alarm value is 30 digits, set value is pH7.00, Hi active, DB is 5 digits. Then the output in active when measure value is above pH7.05. The alarm function in active when measure value is above pH7.35 or below pH6.70. For example ORP set value is 400 mV, Lo active. Then output is active when measure value is below 395 mV, alarm in active when measure value is below 365 or above 430 mV.

### **CLEANING AND MAINTENANCE**

- 1) 1) It must to pull out the power plug (turn off) when cleaning the controller.
- 2) 2) Wipe the housing with drying when cleaning, do not wipe with wetting.
- 3) 3) It had better cleaning the pH and ORP electrode sensor with soft brush and calibrating the pH and ORP electrode during 2-3 weeks to make sure the reading within accuracy when measuring in a long time.

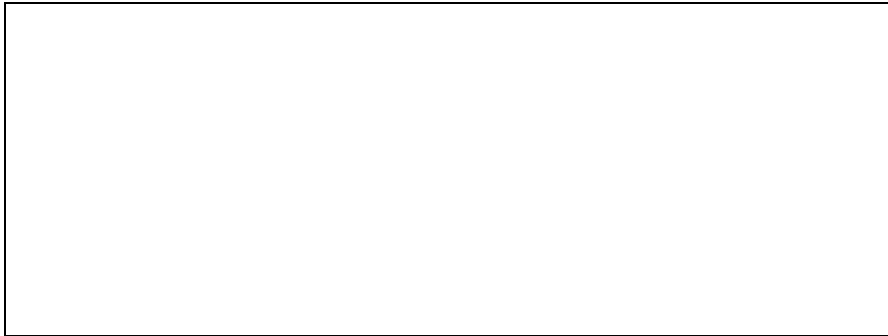


## LCD DISPLAY DESCRIPTION



- |                       |                                      |
|-----------------------|--------------------------------------|
| 1. pH / ORP value     | 7. Hi / Lo active indicator          |
| 2. Temperature value  | 8. pH electrode status indicator     |
| 3. pH mode indicator  | 9. Calibrating function mode         |
| 4. ORP mode indicator | 10. pH / ORP / °C / °F mode select   |
| 5. Temperature°C mode | 11. Alarm ON / OFF and value setting |
| 6. Temperature°F mode | 12. Dead band value setting          |

## THE ADDRESS OF AFTER SERVICE CENTER



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