

## CT-6020A/CT-6020AL

# Pen pH Meter Instruction Manual

### Caution

- Please read the manual carefully before using the meter.
- The glass electrode at the bottom of the pen is fragile, please use it carefully after taking off the protection cap. Any damage may cause the invalid of the electrode.
- The duration period of the glass electrode is one year from the date of purchase whether you use it or not, please change the electrode in time.
- The electrode can not be used under the dry condition, always soak the electrode into the distilled water or purified water for 10 – 30 minutes to activate before use.
- The meter is ready to be used after the model shows on the screen.

### FEATURES

* Range: 0.00 to 14.00 pH	* LCD indicates both pH & Temp.
* Pen type digital pH meter, all in one, pH electrode is included, easy to use	* Data hold function for freezing the desired value
* Water proof and protection	* Auto power off without any operations after 10 mins
* Supplied with a set of pH 4.01, pH 7.00, pH 10.01 buffers	* Microcomputer circuit, intelligent function, high accuracy
* Easy to change the pH electrode	* Compact size, light weight
* Options temperature measurement, °C or °F	* Power supply by DC 1.5 V battery (LR44, BAT ) x 4 PCs
* Build in temperature sensor, ATC (auto temperature compensation)	* Available for wide applications, such as aquarium, beverage, fish hatcheries, food processing, photography, laboratory, quality control, school & colleges, swimming pools, water conditions
* Auto calibration for pH 4.01, pH 7.00 and pH 10.01	
* Intelligent backlight for CT-6020AL– Sensing technology automatically turn on or turn off LED screen backlighting to react to ambient light levels.	

### SPECIFICATIONS

<b>Display</b>	LCD, size : 20 mm x 27 mm. Consumption	
<b>Measurement Range</b>	pH	0.00 to 14.00 pH
	Temp.	0 to 50 °C ( 32 to 122 °F )
<b>Resolution</b>	pH	0.01 pH



	Temp.	0.1 °C, 1 °F
<b>Accuracy</b>	pH	± 0.02 pH * After calibration
	Temp.	± 1 °C, ± 2 °F
<b>pH Calibration</b>	pH 7.00, pH 4.01 or pH 10.01, 3 points calibration	
<b>Operating Humidity</b>	Less than 80% RH	
<b>Dimension</b>	188 x 38 (electrode included).	
<b>Weight</b>	136 g (electrode included).	

## OPERATING INSTRUCTION

**Do not screw the probe cap at the bottom of the pH meter, pull it out directly!**

### 1. Restore factory defaults

- (1). Press the "ON / OFF" key to start . (If it is switched on, you can omit this step)
- (2). Hold down the "HOLD" key until the display shows the **CLR** symbol, then release the key And then re-calibration can be used.

### 2. Temperature Measurement °C or °F

The default temperature measurement is °C. While the meter is off, press CAL and ON/OFF at the same time until the '°C' or '°F' appears on the LCD. Press HOLD to select the preferred unit and then press CAL to save. 'SA' will appear on the LCD for one second and then back to normal.

### 3. Automatic Temperature Compensation (ATC)

The product is capable of measuring the temperature and making compensation automatically, 'ATC' shows at the left corner of the screen.

### 4. Calibration

**The device is calibrating when "cal" flag at the lower right is flashing, don't put the device outside from the calibrating buffer.**

- (1). Prepare 4.01, 7.00 and 10.01 pH buffers, Use 7.00 pH buffer for the mid-range buffer first. The pH values for the buffers are given for 25 °C. If the sample temperature is not 25 °C, the pH values displayed for the buffers will reflect the correct pH value for the sample temperature. If the electrode is dry, submerge it in distilled water for 10 minutes before calibration. Ensure that the calibrating buffers are fresh.
- (2). Press ON/OFF key to turn the meter on, submerge the probe in the buffer while stir gently. Then keep it still until a stable reading is reached. Press CAL for 3 seconds until the Text 'CAL' appears. Then release CAL, the meter will identify the current buffer value automatically, and display 7.00 in the LCD. The result will be saved while the text 'SA' displayed after 2 seconds. The meter will back to measuring mode after 1 second while text 'End' showed.
- (3). If text 'End' is showed after press CAL, it means the calibration buffer is not fresh or the probe is aging.

- (4). Do not take out the probe from the buffer until text 'End' is showed in the LCD.
- (5). Same steps as calibrating for pH 4.01 and 10.01.

## 5. Hold Feature

Turn on by press ON/OFF key, a flashing dot will appear in measuring mode. Press HOLD to freeze the current reading.

The dot stops flashing. Press HOLD again to release the hold mode.

## 6. Out of the Range

- (1). If the pH value is lower than 0 or higher than 14, '--- --' will be displayed.
- (2). When the temperature is too low or too high, 'L' or 'H' will be displayed.

## 7. Low Power Indication

Change batteries if the text in the LCD fades and flashes. Don't mix old battery with new one.

## MAINTENANC

Please always keep the ph glass bulb capped for protecting when storing. Always rinse the ph electrode in distilled water before use. Never touch or rub glass bulb for it may reduce the life of the electrode.

## WARRANTY

The meter is warranted to be free from defects in material and workmanship for one year from the date of purchase. This warranty does not cover battery, misuse, abuse, alteration, tampering, neglect, improper maintenance or damage resulting from leaking batteries. Proof of purchase is required for warranty repairs. Warranty is void if the meter has been taken apart.

## TIPS

- (1). The pH meter is a professional instrument. Non-professionals should operate under the guidance of professionals to avoid instrument failure.
- (2) Before using for the first time, soak the pH meter glass electrode with distilled water or pure water for about 10 minutes.
- (3) Please make sure that the buffer solution is made under the right step, incorrect calibration will increase the measurement error. Do not press "CAL" key unless the pH meter is under calibration status, otherwise it will cause the instrument to be calibrated incorrectly, which will cause the instrument to not work properly or the measurement error to be seriously exceeded.
- (4) The pH buffer powder can be used after fully dissolved with 250 ML of distilled water or purified water.
- (5) Do not insert the pH meter into the liquid when it is used, as long as the liquid can pass the electrode. Before use, pay

special attention to whether the instrument electrode fixing ring is loose. If the instrument electrode fixing ring is loose, the liquid tested during the use of the instrument may enter the instrument and cause a failure.

## How to prepare the buffer solution

Solid material for pH4.01, pH7.00, pH10.01 buffer solution are provided in a set of sachets. Glass jars or beakers are recommended as the solution containers.

### Take making the 250ml buffer solution of pH 7.00 as an example:

- (1). Put the pH 7.00 buffer material (in the green sachet) in a jar (the volume should be no less than 250ml).
  - (2). Fill the jar with 250ml distill water.
  - (3). Place a glass stick in the solution, swirling it until the white powder dissolved.
  - (4). Store the buffer solution in the cool and dry place. Attach a label on it for further use.
  - (5). For the further calibration, Ensure that there is a constant supply of fresh buffer solution in contact with the probe.
- Discard the solution after use.