

Thank you for selecting twinno products.
Before using the tester, relevant person must read and understand the contents of this operation manual. Operation Manual should be kept accessible within the person who use the testers.

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twinno

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1. Product Overview

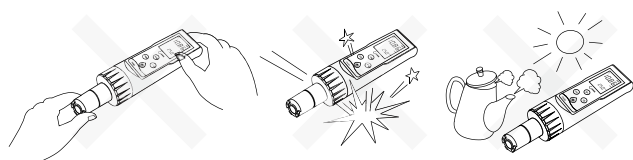
Precise, simple and quick, with temperature compensation.
Not affected by low temperature, turbidity and color of samples.
Precise and easy operation, Comfortable holding, All functions operated in one hand.
Large LCD with backlight, Multi-line display for easy reading
1*1.5V AAA long battery life, User replaceable battery and high-impedance plane electrode.
Field throw measurement(Auto Lock Function)



2. Specifications

Range	0.500-100.0 mg/L
Resolution	0.01-0.1 mg/L
Temp. Range	5-40 °C
Working Temperature	Yes
Sample demand	50 ml
Sample treatment	pH 4.8~5.2
Applications	aquaculture, aquarium, food, beverage, drinking water, surface water, sewage, waste water
LCD	20*30 mm multi-line crystal display with backlight
Protection	IP67
Auto backlight off	1 minutes
Power	1x1.5V AAA battery
Dimensions	(H×W×D) 185×40×48 mm
Weight	95g

3. Precautions



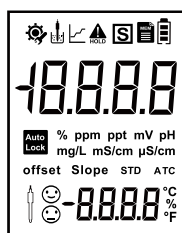
Please wipe up the electrode with clean tissue or cloth before using.

Do not throw or beat, squash or twist the tester deliberately.

Do not expose to the direct sunlight or put in high humidity or high temperature environment .

4. Configuration and LCD Introduction

- Set up
- Data stabilized
- Calibration Mode
- Low battery indicator
- Measurement mode
- Auto Lock function
- Auto Lock after data stabilized
- In calibration



5. Key panel

Key instruction

Short press: Short press means release the key once after pressing.

(If there is no mark out below, default it as Short press)

Long press: Long press means press the key for 3 seconds and then release it

Hold: Hold means not release the key and accelerate after a certain time. Not release the key until the value is set as needed.

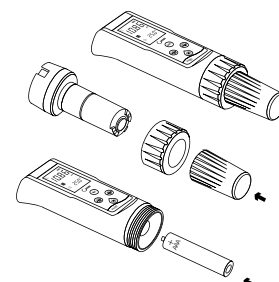
	Long press to Power ON/OFF Short press to ON/OFF backlight Escape key when in calibration mode and setting up
	Calibration key when in measurement mode Long press to enter into internal value & parameter browsing Increment values or scroll through the next options available
	Data setting Decrement values or scroll through the next options available
	Confirm key Press to unlock in Auto lock mode

6. Battery and Electrode Installation

Unscrew the screw cap by following the arrow direction, slightly unplug the electrode, install the battery (pay attention to the anode and cathode of the electrode).

Then install back the electrode and the screw cap.

Low battery prompt is at the top of the screen when battery power is low. (You can refer to the LCD INTRODUCTION). Please change the same model battery.



Standard Solution



No.1 Sample pretreatment solution - (CO230-S1)
 NO.2 Electrode electrolyte - (CO230-S2)
 NO.3 Standard solution - Offset

7.Before measurement



- Unscrew the membrane cap to confirm that the metal part of the electrode is brown. If it's silver white, just replace a new electrode.
- Confirm that there is no stain or breakage on the surface of the electrode diaphragm.
- Enough electrolyte in the membrane cap.
- Screw up the membrane cap, one minute later, you can start the measurement.

Please replace the electrolyte once every three months.

Pour NO.2
Electrode electrolyte

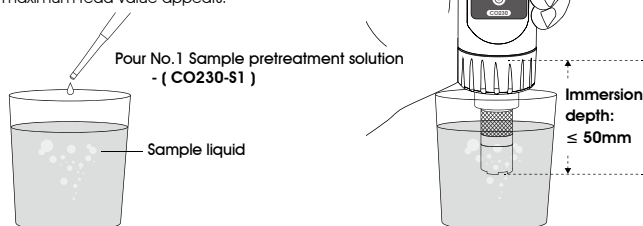
Membrane cap

the metal part of
the electrode is brown.

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8.Sample measurement

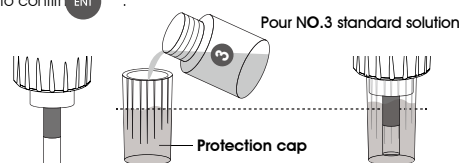
Take 50ml sample liquid with the sample cup.
 Suck the **NO.1** adjusting fluid with the suction tube and slowly dripping **2~3 drops (about 0.06~0.1ml)** to complete the sample adjustment.
 Put the tester into the sample cup with a depth of no more than 5cm.
 Stir slowly to complete the measurement when the maximum read value appears.



9.Sensor Offset Calibration

Pour 6ml **"NO.3** standard solution" into the protection cap, (The height of the liquid reaches the internal scale of the protection cap).
 Unscrew the membrane cap and put on the protection cap (with **"NO.3** standard solution" in it).
 After a minute, shortly press the **CAL** button and wait for the read value to be stable.
 The standard value of the offset of the electrode is **-78mV**.
 For example, If your reading value is **-68mV**, you need to do adjustment.
 The zero offset adjustment value: **-78mV - (the read value: -68mV) = -10mV**

Please press **SET** **CAL** button to adjust the value to **-10mV** directly, then press the **ENT** button to confirm.

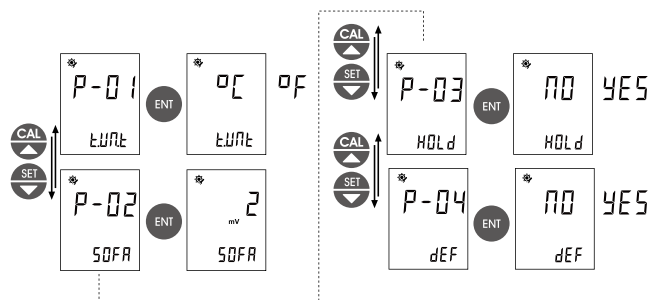


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10.Set up

In measurement mode, press **SET** to enter SET UP. Corresponding icons will be displayed. You can press **SET** and **CAL** to select the menu and then press **ENT** to confirm. Press **SET** or **CAL** to set up and confirm by press **ENT**. You can also press **ENT** to back to measurement mode.

The Set up menu as follow:



P01: Unit of the temperature. You can select between °C and °F.

P02: Zero Offset Adjustment.

P03: Auto Lock. You can select "ON" or "OFF" to auto lock the data once stabilized.

P04: Factory defaults. You can select to revert to factory defaults.

11.Package

Size: L*W*H 210*100*65mm
 Weight: 350g

CO230 tester body
 Electrode
 1.5VAAA battery *1

No.1 Sample pretreatment solution - (CO230-S1)
 NO.2 Electrode electrolyte - (CO230-S2)
 NO.3 Standard solution - Offset
 150mL Plastic measuring cup
 Replacement membrane cap * 2

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11. Error

When ERR occurs, you can check the electrode and the standard solution.

12. General Information

Warranty

We warrants this product to be free from significant deviations in material and workmanship for a period of one year from the date of purchase. If repair is necessary and has not been the result of abuse or misuse within the warranty period, please return to CLEAN Instruments and amendment will be made without any charge. We Customer Service Center will determine if product problem is due to deviations or customer abuse. Out of warranty products will be repaired on a charge basis.

Return Of Malfunction Instruments

Authorization must be obtained from We Customer Service Center to issue a RIR number before returning items for any reason. When applying for authorization, please include date requiring the reason of return. Instruments must be carefully packed to prevent damage in shipment and insured against possible damage or loss. We will not be responsible for any damage resulting from careless or insufficient packing.

Warning: Damage as a result of inadequate packaging is the User / distributor's responsibility.

Please follow the guidelines below before transporting.

Guidelines Or Returning Unit For Repair

Use the original packaging material if possible, when transporting back the unit for repair. Otherwise wrap it with bubble pack and use a corrugated box for better protection. Include a brief description of any faults suspected for the convenience of Customer Service Center, if possible. If there are any questions, feel free to contact our Customer Service Center or distributors.