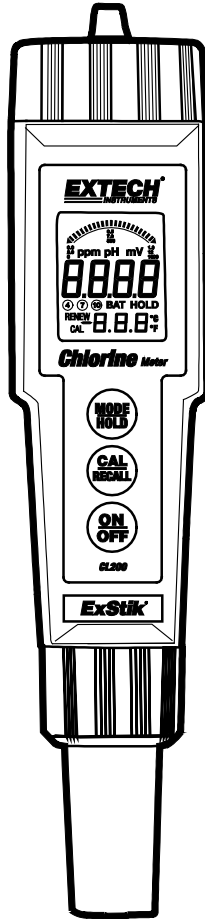


ExStik[®] CL200

Waterproof Total Residual Chlorine Tester

Patent Pending



Additional User Manual Translations available at www.extech.com

Introduction

Congratulations on your purchase of the ExStik CL200 chlorine tester. The CL200 is a revolutionary measurement device that offers direct reading of Total Chlorine from 0.01 to 10.00 ppm. The electrode method employed by the ExStik is approved by the U.S. Environmental Protection Agency (EPA) as an acceptable method for wastewater compliance monitoring of total chlorine.

A reagent tablet* (supplied) must be added to the measurement solution before testing. The CL200 is easy to use and maintain and offers high accuracy and fast response. CL200 features include simultaneous chlorine and temperature displays and a 15-reading memory. Careful use and maintenance will provide years of reliable service.

****Reagent Tablet Safety***

WARNING: Reagents marked with an * are potential health hazards. To view a Safety Data Sheet (SDS) for these reagents visit www.lamotte.com. Search for the four-digit reagent code number listed on the reagent label, in the contents list or in the test procedures. Omit any letter that follows or precedes the four-digit number. For example, if the code is 4450WT-H, search 4450. To obtain a printed copy, contact LaMotte.

Emergency information for all reagents manufactured for Extech by LaMotte is available from Chem-Tel: US, 1-800-255-3924; International, 813-248-0585.

Applications

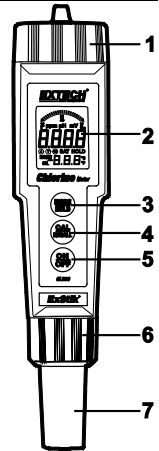
The CL200 can be used wherever a measurement of the total chlorine in water is needed (also known as total residual chlorine). The CL200 measures the total chlorine present in all forms, including dissolved free chlorine, chloramines, hypochlorous acid and hypochlorite ion. Typical applications include measurements of discharge water from water treatment plants, public drinking water supplies and cooling towers, and measurement of disinfectant properties in swimming pools and cooling water applications.

Meter Description

Front Panel

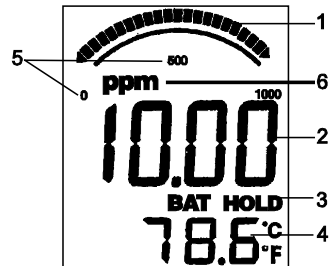
ExStik button operations depend on the attached electrode (pH, ORP, or chlorine). Button descriptions, below, apply to a chlorine electrode.

1. Battery compartment
 2. LCD
 3. MODE/HOLD button (also used to store data)
 4. CAL/RECALL button (calibrate, change temperature units, recall stored readings); calibration is required for chlorine electrodes
 5. Power button
 6. Electrode collar
 7. Electrode
- (Note: The electrode cap is not shown)



Display

1. Bar graph display
2. Digital display
3. BAT (low battery) and HOLD (data hold) indicators
4. Temperature display
5. Bar graph scale
6. Unit of measure



Getting Started

Equipment Required

A chlorine test requires a 20ml sample cup, a reagent tablet, and the CL200 with a chlorine electrode attached. Refer to the 'Reagent Tablet Safety' section for important safety information.

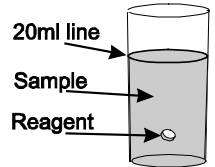
Battery Activation

An insulating tab is in the battery compartment and prevents battery drain during storage. It must be removed before use. Refer to the 'Maintenance' section for more information.

Operation

Calibration

Calibration of the CL200 is required to ensure measurement accuracy. Refer to the Calibration section.

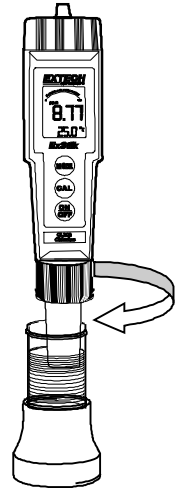


Sample Preparation

1. Put the test sample in the sample cup. Fill to the 20mL line.
2. Add one reagent tablet to the sample, wait 10 seconds, and shake or stir vigorously until the tablet is dissolved.

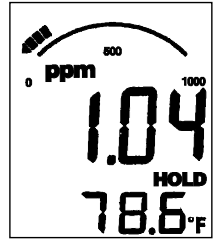
Measurement

1. Put the electrode in the sample and press the ON button.
2. Stir the sample with the electrode for 5 to 10 seconds. The **HOLD** indicator will appear after 120 seconds.
3. If the meter reads **-1**, the amount of chlorine in the sample is too low to detect.



Displayed Reading

The display reading is the total chlorine (ppm). After testing, wipe the entire electrode with a clean and dry towel.



Storing Readings

1. Press the MODE button to store a reading. The display will show the storage location number, followed by the stored reading and the **HOLD** indicator.
2. Only one reading can be stored during the 120 second measurement cycle.
3. Press the MODE button again to return to normal operation.
4. After storing 15 readings, the CL200 will overwrite previously stored readings (starting with location number 1).

Recalling Stored Readings

1. Press the CAL button and then press the MODE button immediately after **CAL** is displayed; the location number (1 ~ 15) will flash.
2. The last stored reading will be displayed first. To scroll through the stored readings, press the MODE button. The location number is displayed first, followed by the reading.
3. To exit the storage mode, press the CAL button.

Note: If the batteries are removed all stored readings will be cleared.

Changing the Temperature Units

Press the CAL button for approx. 3 seconds to change the temperature units.

Auto-Power OFF (APO)

The instrument switches OFF automatically after 10 minutes of inactivity.

Low Battery Indication

When battery voltage is low, the **BAT** icon will appear. Refer to the 'Maintenance' section for battery replacement information.

Calibration Procedure

For best accuracy, the CL200 requires periodic calibration.

1. Using a chlorine standard, of known concentration (CL207), perform a normal sampling procedure with 20 ml of solution and a reagent tablet. Wait for the display icon **HOLD** (approx. 2-minute sampling time).
2. With the meter still in the solution, long press the Mode/Hold button for approximately 5 seconds, until **CO** appears.
3. The displayed concentration value can now be adjusted to match the actual concentration of the solution.
4. Press the MODE/HOLD key to increase the value or press the CAL/RECALL button to decrease the value.
5. After the adjustment, press the ON/OFF button, **SA** will appear, followed by **END**. This confirms that the adjustment was saved.
6. Switch OFF the meter.

Measurement Considerations

1. If the meter is new, or has not been used for several weeks, at least two tests should be made to condition the electrode.
2. To avoid contamination, do not touch the reagent tablets. See the earlier section 'Reagent Tablet Safety' for important safety information.
3. If the electrode has not been used for 24 hours, wipe the tip with a clean/dry towel.
4. Before use, wash the sample cups and the caps, rinsing them completely.
5. The CL200 should not be left in a solution while switched OFF, otherwise readings may require additional time to stabilize.
6. Do not touch the sensor surface except with a clean/dry towel.
7. When measuring solutions of varying chlorine concentrations, i.e. 0.1 ppm and 5.0 ppm, use separate sample cups.
8. Discard the sample cup when it exhibits a change in color.
9. Preserve the electrode by completely wiping it dry and replacing the electrode cover immediately after testing. The electrode should always be stored in the dry cap.
10. Cover the connector with the clear cover whenever the electrode is removed from the meter.
11. Gently stirring the probe in the solution for 10 seconds, within the first minute of operation, will yield quick and accurate readings. Do not stir after 10 seconds.

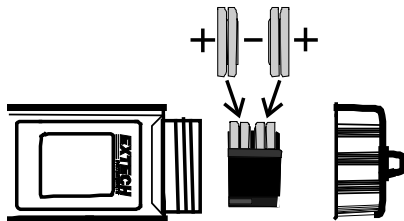
Troubleshooting

1. If the unit appears locked, the Data Hold mode may have been inadvertently accessed. If the **HOLD** icon is displayed, press the MODE button, or turn the meter off and restart.
2. If the meter continues to appear locked, remove the batteries and press the power button for 10 seconds. Install the batteries and try again. When the batteries are removed, stored readings are cleared.
3. If the meter displays **-1**, in a known level of chlorine, the meter or electrode may be defective.

Maintenance

Battery Replacement

1. Remove the battery cap by turning it counterclockwise while applying downward pressure.
2. Replace the four (4) CR2032 batteries observing correct polarity.
3. Secure the battery compartment cap before use.






Never dispose of used batteries or rechargeable batteries in household waste. As consumers, users are legally required to take used batteries to appropriate collection sites, the retail store where the batteries were purchased, or wherever batteries are sold.

Disposal: Do not dispose of this instrument in household waste. The user is obligated to take end-of-life devices to a designated collection point for the disposal of electrical and electronic equipment.

Battery Safety

- Remove and immediately recycle or dispose of used batteries according to local regulations, keeping the batteries away from children. Do NOT dispose of batteries in household trash or incinerate.
- Used batteries can cause severe injury or death.
- Call a local poison control center for treatment information.
- This unit contains four (4) CR2032, 3.0 V, lithium batteries.
- Non-rechargeable batteries are not to be recharged.
- Do not force discharge, recharge, disassemble, heat above 50°C (122°F), or incinerate. Doing so may result in injury due to venting, leakage, or explosion resulting in chemical burns.
- Ensure that the batteries are installed correctly according to correct polarity (+ and -).
- Do not mix old and new batteries, different brands or types of batteries, such as Alkaline, carbon-zinc, or rechargeable batteries.
- Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, keeping the batteries away from children.

| | |
|---|--|
|  WARNING | |
| <ul style="list-style-type: none">• INGESTION HAZARD : This product contains a button cell or coin battery.• DEATH or serious injury can occur if ingested.• A swallowed button cell or coin battery can cause Internal Chemical Burns in as little as 2 hours.• KEEP new and used batteries OUT OF REACH of CHILDREN.• Seek immediate medical attention if a battery is suspected to be swallowed or inserted inside any part of the body. |   |

Cleaning and Maintaining the Electrode

The chlorine electrode arrives in factory-cleaned condition and is ready for use. The electrode will perform best after 2 or 3 tests. Before and after testing, firmly wipe the electrode tip with a clean, dry towel to remove accumulating compounds. When not in use, the CL200 should be stored with the electrode cap in place.

Electrode Replacement

The CL200 is shipped with an electrode attached. If the electrode must be replaced, or if a pH or ORP electrode is to be installed, perform these steps:

1. Switch OFF the unit.
2. To remove an electrode, unscrew and remove the electrode collar (turning the collar counter-clockwise).
3. Gently rock the electrode from side to side, pulling it downwards, until it disconnects from the meter.
4. To attach an electrode, align the slots and carefully plug the electrode into the meter socket.
5. Tighten the electrode collar firmly enough to make a good seal (a rubber gasket seals the electrode with the meter).

Specifications

| | |
|---|---|
| Display | Multifunction LCD with bar graph |
| Operating conditions | 0 to 50°C (32 to 122°F) and < 80% RH |
| Chlorine range | 0.01 to 10.00 ppm (Total Chlorine) |
| Chlorine accuracy | 0.05 to 5.00ppm; ± (10% reading + 0.01ppm) 5.00 to 10.00ppm; ± (15% reading + 0.05ppm) |
| Temperature measurement range: | -5 to 90°C (23 to 194°F) |
| Temperature range for chlorine measurement: | 0 to 50°C (32 to 122°F) |
| Temperature resolution | 0.1° up to 99.9 then 1° |
| Temperature accuracy | ± 1.0°C (1.8°F) from -5 to 50°C (23 to 122°F) ± 3.0°C (5.4°F) from 50 to 90°C (122 to 194°F) |
| Measurement storage | 15 readings can be stored and recalled |
| Low battery indication | 'BAT' appears |
| Power | Four (4) CR2032 button batteries |
| Dimensions | 35.6 x 172.7 x 40.6 mm (1.4 x 6.8 x 1.6 in.) |
| Weight | 110 g (3.85 oz.) |
| Auto power off (APO) | Device automatically switches OFF after 10 minutes of inactivity |

Two-year Warranty

*Teledyne FLIR warrants this Extech brand instrument to be free of defects in parts and workmanship for **two years** from date of shipment. To view the full warranty text please visit: <https://www.flir.com/support-center/warranty/instruments/extech-product-warranty/>*

Calibration and Repair Services

Teledyne FLIR offers calibration and repair services for the Extech brand products we sell. We offer NIST traceable calibration for most of our products.

Customer Support

Local Telephone Support List: <https://support.flir.com/contact>

Return Material Authorization (RMA): <https://customer.flir.com/Home>

Customer Service: <https://support.flir.com/ContactService>

Technical Support: <https://support.flir.com>

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