

CL140

Total Residual Chlorine Tester/Meter



Introduction:

Welcome, and congratulations on your purchase of the Triplet CL140

Total Residual Chlorine Pen-Style Meter. The CL140 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.

What's in the box:

- CL140 Meter
- Batteries
- Reagent Kit
- User Manual

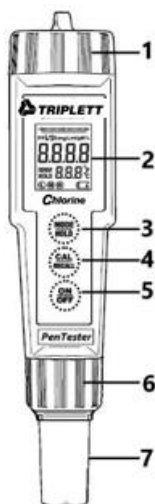
Stay updated:

For the most recent version of the user manual, always visit the official Triplet website: **www.triplett.com** and search for **CL140**.

Description

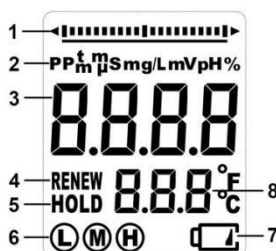
Meter Description

1. Battery Compartment Cap
2. LCD Display
3. MODE / HOLD Button
4. CAL / RECALL Button
5. ON/OFF Button
6. Electrode Collar
7. Chlorine Electrode



LCD Display

1. Bar Graph Reading
2. Measurement Units
3. Main Display
4. RENEW Indicator
5. HOLD Indicator
6. RANGE Calibration Indicator
7. Low Battery Indicator
8. Temperature Display



Operation

Powering ON/OFF the meter

If the batteries are low, the battery indicator  will appear on the LCD. Press the ON/OFF button to turn the DO60 meter on or off. The auto power-off feature automatically shuts off the DO60 meter after 10 minutes of inactivity to conserve battery life.

Auto Power OFF Disable

To disable the Auto Power Off feature:

1. Turn the unit on.
2. Quickly press the CAL/RECALL button once.
3. Immediately and simultaneously press the MODE/HOLD and ON/OFF buttons for approximately 2 seconds, until 'OFF' is briefly displayed.

To re-engage this feature, turn the meter off using the ON/OFF button. The next time the meter is powered on, the Auto Power Off mode will be activated again.

Changing the Displayed Temperature Unit

To change the temperature units displayed (°C or °F):

1. With the meter turned off, press and hold the CAL/RECALL button.
2. While holding down the CAL/RECALL button, briefly press the ON/OFF button. When 'SELF CAL' appears on the display, release the CAL/RECALL button. The meter will power on, displaying the temperature in the new unit.

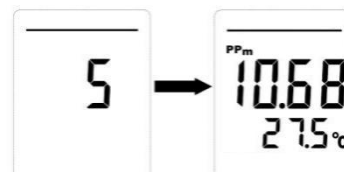
Storing Readings into Memory

1. Press the MODE/HOLD button to store a reading. The storage location number will appear on the lower display, while the main display shows the stored reading. The meter will enter HOLD mode, and the 'HOLD' indicator will be displayed.
2. Press the MODE/HOLD button again to exit HOLD mode and return to normal operation.
3. If more than 25 readings are stored, earlier readings (starting with number 1) will be overwritten.



Recalling Stored Readings

1. Press the CAL/RECALL button, then press the MODE/HOLD button. A location number (1 through 25) will briefly appear, followed by the value stored in that location. The displayed units will flash, indicating that the storage recall mode is active.



2. The last stored reading will be displayed first. Pressing and releasing the MODE/HOLD button will scroll through the stored readings one at a time. The location number will be shown first, followed by the reading stored in that location.
3. To exit storage mode, press the CAL/RECALL button, and the meter will return to normal operation after displaying 'End'.

Clear Stored Memory

With the meter powered on, press and hold the ON/OFF button for 4 seconds. 'CLr' will be briefly displayed to indicate that the memory has been cleared.

Low Battery Indication

When the batteries become  weak the icon will appear in the display. Check the Maintenance section for battery replacement information.

Calibration (L Range)

The CL140 can be calibrated at 2 calibration points. The L range is 0.10 to 1.00ppm, and the H range is 1.00 to 10.00ppm. The following calibration procedure provides the 1 ppm calibration point procedure.

1. Add 20 mls of the 1ppm Chlorine standard and one Reagent into a sample cup.
2. Turn on the CL140, and place the meter into the prepared 1 ppm standard.
3. The meter will enter HOLD mode in about 60 seconds when stabilized in the 1 ppm standard solution.
4. Press and hold the CAL/RECALL button, CAL will appear in the display .
5. Adjust the display value to 1.00ppm using the MODE/HOLD and ON/OFF buttons. Press the MODE/HOLD button for increase and the ON/OFF button for decrease.
6. Press the CAL/RECALL button to enter the calibration mode.
7. When the calibration is completed, 'SA' then 'End' will appear, and the meter will return to the normal measurement mode. The L icon will be displayed

Slope Adjustment (H Range, Optional)

The Chlorine standard for slope adjustment depends on the standard used in the L range calibration. If the L range standard is 1ppm (etc. 0.3ppm), the H range standard will be 10ppm (etc. 3ppm). The following procedure provides the 10 ppm calibration point procedure.

1. Add 20 mls of the 10ppm Chlorine standard and one Reagent into a sample cup.
2. Place the CL140 into the prepared 10 ppm standard. If the meter is in HOLD mode, press the MODE/HOLD button to return to normal measurement mode.
3. The meter will enter HOLD mode in about 60 seconds when stabilized in the 10 ppm standard solution.
4. Press and hold the CAL/RECALL button, CAL will appear in the display .
5. Press the CAL/RECALL button again to enter the calibration mode.
6. When the calibration is completed, 'SA' then 'End' will appear, and the meter will return to the normal measurement mode. The H icon will be displayed

Reset Calibration Data

Follow this procedure to clear all calibration data from the meter. Resetting the calibration data may be necessary when new calibration solutions are used or when the accuracy of measurements is in question.

1. Turn off the meter.
2. Press and hold the CAL/RECALL and MODE/HOLD buttons simultaneously.
3. Momentarily press the ON/OFF button. As soon as the display turns on, release all three buttons.
4. The display will show 'dFLt rSt' (default reset), indicating that all calibration data has been erased.

Renew Display

A flashing 'RENEW' warning signifies that the probe is not functioning according to expected specifications. If the RENEW icon does not disappear after cleaning and re-calibration, it is necessary to replace the CL140 probe.

Low Battery Indication

When the batteries become weak the icon  will appear in the display. Check the Maintenance section for battery replacement information.

Cleaning and Maintaining the Electrode

1. The chlorine electrode arrives in factory-cleaned condition and is ready for use. The electrode will perform best after 2 or 3 tests.
2. For the translucent black and metal area on the tip side of the electrode, DO NOT touch by finger, and any grease is not allowed. Any contamination and grease (even touched by finger) may affect the accuracy. When the contamination can be observed by eyes, clean the electrode with the following steps:
 - A. Use the cotton (cotton swab) with absolute alcohol to wipe the translucent black and metal area until the contamination is removed completely.
 - B. Use the electrode cap to cover the tip tightly.
 - C. Wait at least 1 hour before using.
3. After using, clean the electrode with the following steps:
 - A. Clean the electrode by Deionized water.
 - B. Use SOFT and CLEAN kitchen paper towel to wipe the translucent black and metal area.
 - C. Use electrode cap to cover the electrode tightly because the sensor needs to be sealed and avoid the light.
4. After the electrode is removed from the meter, the electrode tip side needs to be covered by electrode cap tightly because the sensor needs to be sealed and avoid the light. Also, the connection side needs to be covered by translucent white cap to avoid contamination.

Electrode Replacement

1. To remove the electrode, switch OFF the meter and remove the electrode retaining collar by unscrewing counterclockwise.
2. Gently rock the electrode from side to side, pulling it away from the meter until it disconnects.
3. To attach an electrode, and then carefully push the electrode into the meter socket until it is fully seated.
4. Tighten the electrode by retaining collar sufficiently to seal the electrode with the meter.

Measurement

1. Do not touch the Reagent. Touching can cause contamination.
2. If the CL140 has not been used for 1 day, wipe the electrode tip with a SOFT, CLEAN, and DRY kitchen paper towel before use.
3. Do not touch the electrode surface except with a SOFT, CLEAN and DRY kitchen paper towel.
4. The CL140 should not be left in a solution while switched OFF, otherwise readings may take longer to stabilize.
5. Add 20 mls of the test solution and one Reagent into a sample cup.
6. Turn on the CL140, and place the meter into the prepared unknown sample. Gently stirring the meter in the solution for 15 seconds. If the meter is in HOLD mode, press the MOLD/HOLD button to unlock hold.
7. After about 60 seconds, the meter will display the unknown concentration value and the enter the HOLD mode.

Auto Temp. Compensation (ATC) Feature

The ATC function is default 'OFF'. To enable the ATC feature:

1. Turn the unit on.
2. Quickly press the CAL/RECALL button twice. The display will show 'oFF AtC'.
3. Press the MODE/HOLD button to change the ATC function ON or OFF.
4. Press the CAL/RECALL button to save the changed

Maintenance

Battery Replacement

1. Unscrew the battery compartment cap.
2. Replace the four (4) CR2032 batteries, ensuring correct  polarity.
3. Reattach the battery compartment cap.



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 specifically for the disposal of electrical and electronic equipment.

Battery Safety

**WARNING**

- **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.



WARNING

a) Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.

b) Even used batteries may cause severe injury or death.

c) Call a local poison control center for treatment information.

d) The compatible battery type: CR2032.

e) The nominal battery voltage: 3.0V DC.

f) Non-rechargeable batteries are not to be recharged.

g) Do not force discharge, recharge, disassemble, heat above (manufacturer's specified temperature rating) or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.

h) Ensure the batteries are installed correctly according to polarity (+ and -). Do not mix old and new batteries, different brands or types of batteries, such as alkaline, carbon-zinc, or rechargeable batteries.

i) Remove and immediately recycle or dispose of batteries from equipment not used for an extended period of time according to local regulations.

k) Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, and keep them away from children.

Specifications

Display	2000 count LCD with bar graph
Operating Conditions	32 to 122°F (0 to 50°C) / < 80% RH
Range and Accuracy	0.01 to 10.00ppm ± 3% of rdg or +/-0.03ppm
Temp. Compensation	Automatic from 32 to 194°F (0 to 90°C)
Temp. Range	32.0 to 99.0, 100 to 194°F (0 to 90°C)
Temperature Resolution	0.1 up to 99.9 °C/°F then 1 °C/°F thereafter
Temperature Accuracy	± 1.0°C/1.8°F
Measurement storage	25 tagged (numbered) readings
Power	Four (4) CR2032 button batteries
Low battery indication	 appears on the LCD
Auto power off	After 10 minutes of inactivity
Dimensions	1.5 x 7.8 x 1.5" (38 x 198 x 38 mm)
Weight	3.5 oz (100 g)

Warranty Statement

Triplett Test Equipment offers a one-year warranty to the original purchaser of its products. We guarantee that our products will be free from defects in workmanship and materials for two (2) years from the purchase date.

This warranty does not cover:

- Products purchased from unauthorized distributors.
- Items that have been repaired or altered by unauthorized individuals.
- Damage from misuse, abuse, misapplication, negligence, or accidents.
- Products with altered, defaced, or removed serial numbers.
- Accessories, including batteries.

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