CHAUVIN ARNOUX

EN - User's manual

C.A 10001

Waterproof pH / T° tester

Measure up

Thank you for purchasing this **waterproof C.A 10001 pH/ T° tester**.

For best results from your instrument:
- **read** these operating instructions carefully,
- **comply** with the precautions for use.

Information or useful tip.

CE

The CE marking certifies the product's compliance with the European Low Voltage Directive (2014/35/EU), Electromagnetic Compatibility Directive (2014/30/EU), and Restriction of Hazardous Substances Directive (RoHS, 2011/65/EU and 2015/863/EU)..

The rubbish bin with a line through it indicates that, in the European Union, the product must undergo selective disposal in compliance with Directive WEEE 2012/19/EU. This equipment must not be treated as household waste.

PRECAUTIONS FOR USE

- The operator and/or the responsible authority must carefully read and clearly understand the various precautions to be taken in use.
- Observe the conditions of use, namely the temperature and humidity.
- Do not use the instrument if it seems to be damaged, incomplete, or poorly closed.
- All troubleshooting and metrological checks must be done by competent accredited personnel.
- If the electrode is dry, soak it for at least 30 minutes in a storage solution before using it.

CONTENTS

1. FIRST USE

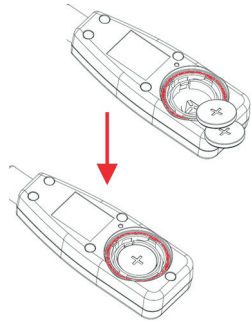
1.1. DELIVERY CONDITION

C.A 10001 waterproof pH/T° tester
Delivered in a cardboard box with:
- two CR2032 3V lithium coin batteries,
- one storage bottle for the electrode,
- one multilingual quick start guide,
- one verification certificate.

For the pH buffer solutions and the maintenance solutions, visit our web site: www.chauvin-arnoux.com

1.2. INSERTING THE BATTERIES

- Turn the instrument over.
- Use a coin to unlatch the battery compartment cover (twist clockwise). Leave the red seal in place.
- Place the batteries in the compartment with the polarities as indicated.
- Put the battery compartment cover back on. Make sure that it is completely and correctly closed then twist to latch (counter-clockwise).



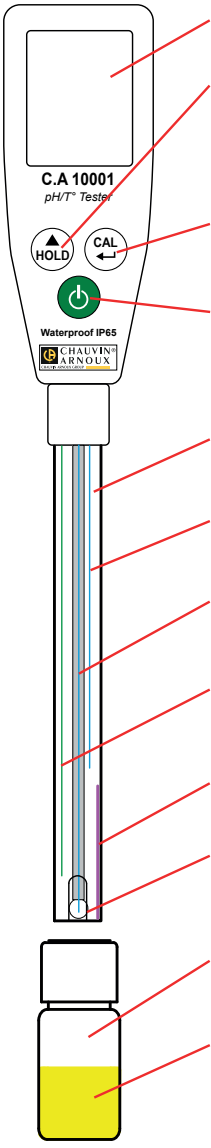
2. PRESENTATION

2.1. FUNCTIONS

The C.A 10001 is used to measure the pH of solutions, and their temperature.

- It is easy to use and small enough to slip into a pocket.
- Its housing is waterproof.
- It is calibrated by a single key press.
- The temperature can be displayed in °C or in °F.
- The pH reading is automatically temperature-compensated (ATC).
- The measurement can be frozen by pressing the **HOLD** key.

2.2. C.A 10001



Display LCD.

HOLD key to freeze the measurement, choose the temperature unit, or select the pH of the buffer solution.

CAL key to start the calibration.

On/Off key.

Reference electrolyte.

Reference electrode.

pH measurement electrode.

Temperature probe.

Reference junction (cloth).

pH-sensitive glass membrane.

Storage bottle.

Sponge soaked in storage solution.

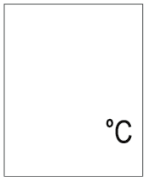
3. USE

Keep your electrode in an electrolytic solution in its bottle. Never keep the electrode in distilled water or de-ionized water.

3.1. CHOOSING THE TEMPERATURE UNIT

The instrument must be off.

- Press the ⏻ and **CAL** keys simultaneously for more than 2 seconds.
- Choose the temperature unit by pressing the **HOLD** key.
- Save your choice by pressing **CAL**.



3.2. CALIBRATION

The C.A 10001 must be calibrated regularly. Every day if it is used a lot.

- Press the ⏻ key to switch the instrument on.
- Withdraw the storage bottle by unscrewing it.
- Soak the electrode in the first buffer solution. Completely immerse the glass ball. For greater accuracy, start the calibration with the pH 7 buffer solution.
- Press the **CAL key**.

- After a few seconds, the instrument detects the buffer solution.
  If the pH of the buffer solution is not exactly 7.00, you can change it by a long press on the **HOLD** key. The pH will change to 7.01, then 7.02, etc.
  After 7.50, the pH changes to 6.50, then 6.51, etc.
- When the instrument has determined the first calibration point, it saves it and exits from calibration mode.

The calibration ranges are:
from 3.50 to 4.50 for a pH 4.00 buffer solution
from 6.50 to 7.50 for a pH 7.00 buffer solution
from 9.50 to 10.50 for a pH 10.00 buffer solution

If the measurement is outside of these limits, or the buffer solution is not detected by the instrument, or the electrode is damaged, the instrument waits 10 seconds, then aborts the calibration and displays **End**.

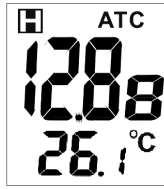
- Rinse the electrode in de-ionized water.

For a calibration at 2 or 3 points, repeat the above calibration procedure with a pH 4 buffer solution, then with a pH 10 buffer solution.

3.3. PH MEASUREMENT

- Withdraw the storage bottle by unscrewing it.
- Immerse the electrode in the solution to be measured.
- Press the ⏻ key and agitate the electrode to obtain a stable measurement.
- The temperature is displayed and the central point on the display unit blinks while the instrument makes the measurement.

- The measurement is displayed.
  The **ATC** symbol indicates that the pH reading is temperature-compensated.
- To freeze the measurement, press the **HOLD** key. Press **HOLD** again to return to the real-time measurement.



- At the end of the measurements, switch off the instrument by pressing the ⏻ key. Clean the electrode with de-ionized water and put it back in its storage bottle.

3.4. AUTO OFF

The instrument switches itself off automatically at the end of 20 minutes of inactivity.

To disable auto off, switch the instrument on by pressing the ⏻ and **HOLD** keys simultaneously. The instrument displays **n**. Release the keys.

Auto off is restored the next time the instrument is switched on.

3.5. ERRORS

The instrument displays - - -
The pH is outside the measurement range. The solution is too alkaline or too acid.

The instrument displays H or L
The temperature is outside the measurement range. The solution is too cold or too hot.

4. TECHNICAL CHARACTERISTICS

4.1. REFERENCE CONDITIONS

Quantity of influence	Reference values
Temperature	23 ±5°C
Relative humidity	30 to 80%RH
Supply voltage	6 ± 0.2V

4.2. CHARACTERISTICS

pH measurement range: 0.00 to 14.00
Resolution: 0.01 pH
Intrinsic error: ± 0.1 pH
Automatic temperature compensation from 0 to 60°C or 32 to 140°F.

Temperature measurement range: 0.0 to 60.0°C or 32.0 to 140.0°F.
Resolution: 0.1°C or 0.1°F
Intrinsic error: ±1°C or ±2°Fà 140,0°F.

4.3. ENVIRONMENTAL CONDITIONS

Range of operation:
0 to 50°C (32 to 122°F)
0 to 80%HR

4.4. POWER SUPPLY

the C.A 10001 is powered by two CR2032 3V lithium coin batteries.

The life between charges is 100h of continuous use.

Batteries mass: about 6 g including 0.2 g of lithium.

During periods of non-use or of storage, remove the batteries from the housing.

4.5. MECHANICAL CHARACTERISTICS

Dimensions (L x l x P)	227 x 36 x 20mm
Weight	approximately 65g
Ingress protection	IP 65 per IEC 60529

4.6. ELECTROMAGNETIC COMPATIBILITY

Emission and immunity in an industrial environment per IEC/EN 61326-1.

5. MAINTENANCE

⚠ **Except for the batteries, the instrument contains no parts likely to be replaced by personnel who are not specially trained and accredited.**

5.1. REPLACEMENT OF THE BATTERIES

If the  indicator lights, you must replace both batteries. See the procedure in §1.2.

Spent batteries must not be treated as ordinary household waste. Take them to the appropriate recycling collection point.

5.2. CLEANING

5.2.1. HOUSING

Since the C.A 10001 is waterproof, you can wash the housing with soap and water. Do not use alcohol, solvents, or hydrocarbons.

5.2.2. ELECTRODE

The presence of white deposits on the electrode is due to the evaporation of the storage solution. To eliminate them, rinse with water.

Do not use aggressive and/or abrasive products and do not scratch the glass ball. Rinse the surface of the glass and the external part of the junction with de-ionized water.

If rinsing is not enough, use cleaning solutions suited to the type of contamination. Silver sulphide deposits are washed with a solution of thiourea in 0.1mol/L hydrochloric acid. Clogging by silver chloride can be eliminated with a concentrated ammonia solution. Proteins are cleaned using an acid pepsin solution.

5.3. MAINTENANCE

Keep your electrode in an electrolytic solution in its bottle or in another ion-rich aqueous solution in order to ensure uninterrupted hydration of the membrane.

Do not keep the electrode dry or in distilled or de-ionized water, since this could affect the membrane and shorten the life of the electrode.

Use fresh buffer solutions for each calibration.

Rinse the electrode in de-ionized water after each measurement.

5.4. TROUBLESHOOTING

The instrument fails to switch on when the ⏻ key is pressed.

- Check that the batteries are in place and that the polarities are correct.
- Replace the batteries and try again.
- Remove the batteries for one minute, then put them back in place and try again.

The instrument responds slowly
Clean the electrode. Refer to §5.2.2.

The measurement fluctuates rapidly
The electrode is not immersed far enough in the solution or the junction is fouled. In this case, refer to §5.2.2. for the cleaning procedure.

6. WARRANTY

The life of your instrument depends on how you use it and how you maintain it.

Except as otherwise stated, our warranty is valid for **12 months** starting from the date on which the equipment was sold. The extract from our General Conditions of Sale is available on our website.
www.chauvin-arnoux.com/en/general-terms-of-sale

The warranty does not cover:
- traces of clogging substances (glue, paint, resin, etc.) on the body, the glass ball, or the junction;
- breakage of the glass;
- damage to the body of the electrode (deformation, discoloration).

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