



## ***ST20M Pen Meter Instruction Manual***

Welcome to OHAUS!

After more than a century of perfecting the art of measurement through our durable weighing products, OHAUS precision is now available in a line of portable electrochemistry products that provides accurate measurement of pH, ORP, conductivity, TDS and salinity.

ST series pen meters are the economical option when you are simply looking for meters that are easy to use and provide accurate measurements.

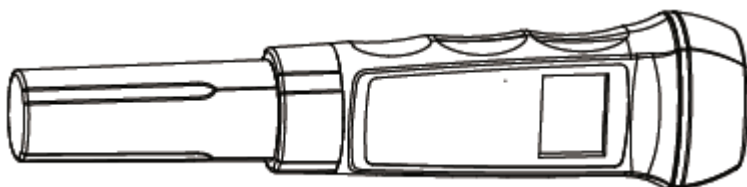
The pen meters should not be used by Children of age 12 or younger.

This product conforms to the RoHS Directive 2011/65/EU and the EMC Directive 2014/30/EU.

### ***ST20M pen meter Instruction Manual***

Thank you for choosing OHAUS waterproof pen meters. Please read the manual completely before use. This manual serves the following models:

- ST20M-B (pen pH and Conductivity meter)
- ST20M-C (pen pH and Conductivity meter)



### ***First Usage***

pH: Condition the pH electrode by immersing it in pH electrode storage solution (3M KCl solution) for 1 hour before using. If the pH electrode protective cap is dry (may cause white crystals), add storage solution in the cap and soak the pH electrode for 1 hour.

Conductivity: Rinse the conductivity electrode with pure water (distilled water) before using.

### ***Accuracy***

pH: ST20M has a 0.01 pH resolution and 0.05 pH accuracy and is factory calibrated.

You may need to calibrate the ST20M regularly to ensure the pH accuracy.

Conductivity: ST20M pen meter is factory calibrated, and requires calibration every week for both pH and conductivity.

## **pH Measurement**

Remove the protective cap, rinse the pH electrode glass bulb with pure water (distilled water) and wipe clean. (Glass bulb is fragile, be careful not to scratch it.)

Press the On/Off button to turn on the meter.

Dip the electrode about 2 to 3 cm into the test solution (at least 20 ml). Stir several seconds, then stop and wait until the reading stabilizes.

Clean the electrode with pure water (distilled water) after measurement. Press the Mode button to enter into pH mode.

While measuring, you can press and hold the Mode button to freeze the reading. Press and hold the Mode button again to release measurement.

Press and hold the On/Off button to turn off the meter.

## **Conductivity Measurement**

Remove the protective cap, rinse the conductivity electrode with pure water (distilled water) and wipe clean.

Press the On/Off button to turn on the meter. Press the Mode button to switch to conductivity mode.

Dip the electrode about 2 to 3 cm into the test solution (at least 20 ml). Wait until the reading stabilizes.

Clean the electrode with pure water (distilled water) after each measurement.

## **pH Calibration**

Press the On/Off button to turn on the meter, and then press the Mode button to enter into pH mode, dip the electrode into pH 7.0 buffer.

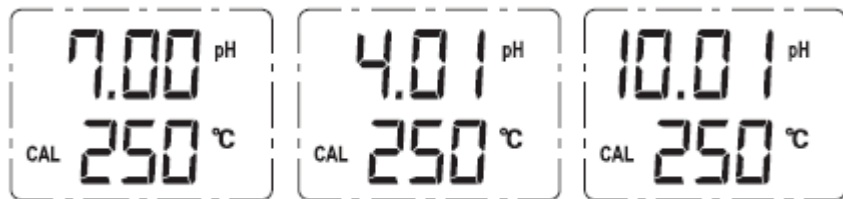
Press the CAL button to enter into calibration mode, the "CAL 7.00" will be shown, "CAL" is blinking. The meter will determine if the signal is stable automatically, it will take a few seconds, then the meter displays "CAL 4.01".

When the display reads "CAL 4.01", "CAL" is blinking, it indicates pH 7.00 calibration has been finished. Rinse the electrode with pure water (distilled water) and dip it into pH 4.01 buffer.

The meter will determine if the signal is stable automatically; it will take a few seconds, then the meter displays "CAL 10.01". If the number, such as "4.01" is blinking, it indicates the calibration point can't pass. You may need to check if the buffer is right.

When the display reads "CAL 10.01", it indicates pH 4.01 calibration has been finished. Rinse the electrode with pure water (distilled water) and dip it into pH 10.01 buffer.

The "CAL" will disappear after finishing 3-point calibration and go back to measurement mode.



## Conductivity Calibration

ST20M pen meter is factory calibrated, and requires calibration every week for both pH and conductivity.

Be caution when using this function if you are not familiar with the conductivity pen meter.

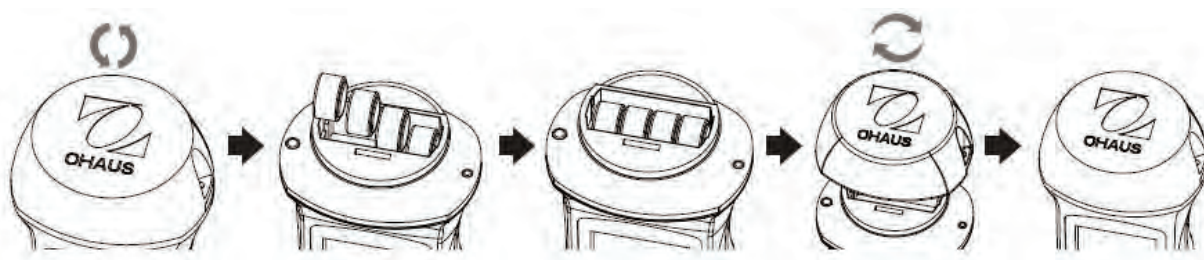
- Press the On/Off button to turn on the meter, and then press the Mode button to switch to conductivity mode. Press the CAL button to enter into calibration mode, the “CAL 1413/12.88” will be shown, and “CAL” is blinking.
- Rinse the electrode with pure water (distilled water) and dip it into 1413  $\mu\text{S}/\text{cm}$  or 12.88  $\text{ms}/\text{cm}$  buffer.
- When the “CAL” disappears, this indicates that the calibration is finished and the pen meter goes into measurement mode.

## Maintenance

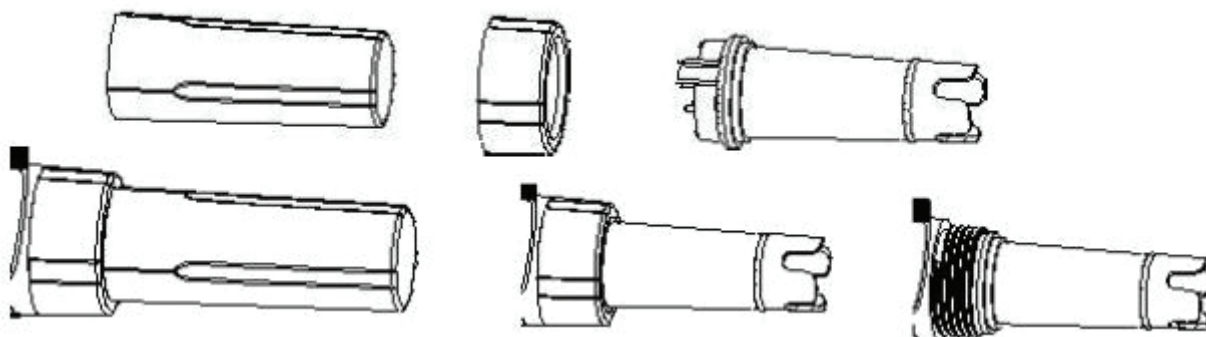
Clean the electrode and cover with the protective cap after each use. Be sure storage solution is not dry in the cap.

Harsh samples such as sticky, dirty or oily liquids may shorten the life time of the pen meter.

The meter uses 4 (1.5V AA) button batteries. Replace all batteries when the display fades or does not turn on.



The electrode is replaceable.



## Order Information

| Model   | Content                                                                               | Item No. |
|---------|---------------------------------------------------------------------------------------|----------|
| ST20M-B | ST20M-B pen meter (electrode included),<br>pH buffer powder pH4.01 / pH7.00 / pH10.01 | 30393199 |
| ST20M-C | ST20M-C pen meter (electrode included),<br>pH buffer powder pH4.01 / pH7.00 / pH10.01 | 30393200 |

## Accessory

| Description       | Item No. |
|-------------------|----------|
| ST20M-B Electrode | 30393203 |
| ST20M-C Electrode | 30393204 |

## Specifications

| Waterproof Pen Meters   | ST20M-B                  | ST20M-C                  |
|-------------------------|--------------------------|--------------------------|
| pH Range                | 0.00 – 14.00 pH          | 0.00 – 14.00 pH          |
| Conductivity Range      | 0-1999 $\mu$ S/cm        | 0-19.99 mS/cm            |
| pH Resolution           | 0.01 pH                  | 0.01 pH                  |
| Conductivity Resolution | 1 $\mu$ S/cm             | 10 $\mu$ S/cm            |
| pH Accuracy             | $\pm 0.05$ pH            | $\pm 0.05$ pH            |
| Conductivity Accuracy   | $\pm 2\%$ FS             | $\pm 2\%$ FS             |
| Battery                 | 4 x 1.5V                 | 4 x 1.5V                 |
| Dimension               | 185 x 42 x 37 mm         | 185 x 42 x 37 mm         |
| Weight                  | 105 g                    | 105 g                    |
| Auto-off                | After 6 min no operation | After 6 min no operation |
| Ambient Temperature     | 0~50 °C (32-122 °F)      | 0~50 °C (32-122 °F)      |

|           |     |     |
|-----------|-----|-----|
| Materials | ABS | ABS |
|-----------|-----|-----|

In conformance with the European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements. Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment. If you have any questions, please contact the responsible authority or the distributor from which you purchased this device. Should this device be passed on to other parties (for private or professional use), the content of this regulation must also be related. Disposal instructions in Europe are available online. Thank you for your contribution to environmental protection.

FCC Notice: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Reorient or relocate the receiving antenna, increase the separation between the equipment and receiver or consult the dealer or an experienced radio/TV technician for help.

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



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Model No. : \_\_\_\_\_ Serial No. (if applicable): \_\_\_\_\_

Purchase Date : \_\_\_\_\_ Purchased From: \_\_\_\_\_

Notes: \_\_\_\_\_