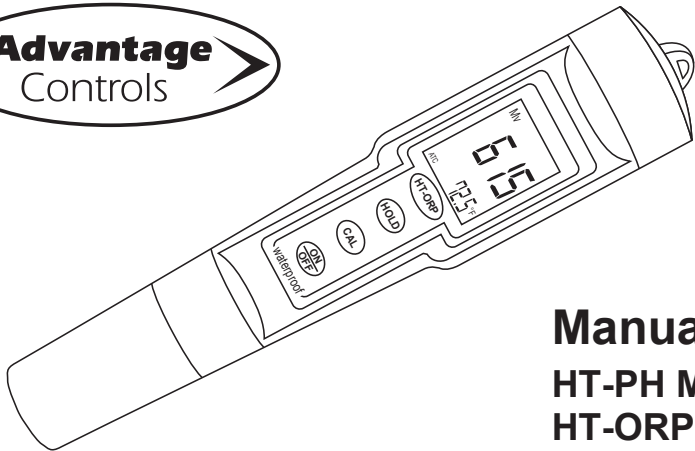# Manual
## HT-PH Meter
## HT-ORP Meter

Thank you for choosing our products.  Please read the manual carefully before using the meter.
Keep this manual in a safe place for future reference.

**Always rinse the electrode in distilled water for 10 minutes.**

**Manufacturer's Product Warranty**

Advantage Controls warrants units of its manufacture to be free of defects in material or workmanship. Liability under this policy extends for 24 months from date of installation.  Liability is limited to repair or replacement of any failed equipment or part proven defective in material or workmanship upon manufacturer's examination.  Removal and installation costs are not included under this warranty. Manufacturer's liability shall never exceed the selling price of equipment or part in question.

Advantage disclaims all liability for damage caused by its products by improper installation, maintenance, use or attempts to operate products beyond their intended  functionality, intentionally or otherwise, or any unauthorized repair.  Advantage is not  responsible for damages, injuries or expense incurred through the use of its products.  The above warranty is in lieu of other warranties, either expressed or implied.  No agent of ours is authorized to provide any warranty other than the above.

**30 Day Billing Memo Policy**

Advantage Controls maintains a unique factory exchange program to ensure uninterrupted service with minimum downtime.  If your unit malfunctions, call 1-800-743-7431, and provide our technician with Model and Serial Number information.  If we are  unable to diagnose and solve your problem over the phone, a fully warranted replacement unit will be shipped, usually within 48 hours, on a 30 Day Billing Memo.

This service requires a purchase order and the replacement unit is billed to your regular account for payment.

The replacement unit will be billed at current list price for that model less any applicable resale discount. Upon return of your old unit, credit will be issued to your account if the unit is in warranty.  If the unit is out of warranty or the damage not covered, a partial credit will be applied based upon a prorated replacement price schedule dependent on the age of the unit.  Any exchange covers only the pen tester electronics.  Electrode tips are consumable and are not included under the factory warranty.

# HT-PH Pen Meter Instruction Manual

## FEATURES

| | |
|---|---|
| 0 to 14.00 pH | LCD indicates both pH & temperature |
| Pen type digital pH meter | Data hold function for freezing the desired value |
| Waterproof | Auto power off without operation in 10 minutes |
| Supplied with a set of pH 4.01, pH 6.86, pH 9.18 buffers | Auto calibration for pH 4.01, pH 6.86 and pH 9.18 |
| Easy to change the pH electrode | Compact size, light weight |
| Temperature measurement, °C or °F | Power supply by DC 1.5 V battery (LR44) x 4 pcs |
| Built in temperature sensor, ATC (auto temperature compensation) | Available for a wide variety of applications |

**SPECIFICATIONS**

| Display | LCD, size: 20 mm x 27 mm. | |
|---|---|---|
| **Measurement Range** | pH | 0 to 14.00 pH |
| | Temp. | 0 to 50 °C ( 32 to 122°F ) |
| **Resolution** | pH | 0.01 pH |
| | Temp. | 0.1°C / 0.1°F |
| **Accuracy** | pH | ± 0.02 pH   * After calibration |
| | Temp. | ± 1°C / ± 2°F ) |
| **pH Calibration** | pH 4.01, pH 6.86 and pH 9.18, 3 points calibration | |
| **Operating Humidity** | Less than 80% RH | |
| **Dimension** | 188 x 38 mm (electrode included). | |
| **Weight** | 82 g (electrode included). | |

# HT-ORP Meter Instruction Manual

## FEATURES

| | |
|---|---|
| Range: ±1200mV | LCD displays both mV value and temperature |
| Waterproof | Data hold function for freezing the desired value |
| | Auto power off without operation in 10 minutes |
| Easy to change the electrode | Compact size, light weight |
| Temperature measurement, °C or °F | Power supply by DC 1.5 V battery (LR44) x 4 pcs |
| Built in temperature sensor, ATC (auto temperature compensation) | Available for a wide variety of applications |

**SPECIFICATIONS**

| Display | LCD, size: 20 mm x 27 mm. |
|---|---|
| Measurement Range | ± 1200mV |
| Resolution | 1 mV |
| Temp. Display | 1°C / 2°F |
| Accuracy | ± 2mV |
| Temp. Range | 0 ~ 50°C ( 32~122°F ) |
| Operating Humidity | Less than 80% RH |
| Dimension | 188 x 38 mm (electrode included). |
| Weight | 82 g (electrode included). |

**OPERATING INSTRUCTIONS**

Do not screw the probe cap at the bottom of the pH meter, pull it out directly!

1. **Temperature Measurement** °C **or** °F
   The default temperature measurement is °F. While the meter is off, press **CAL** and **ON/OFF** at the same time until the **°C** or **°F** appears on the LCD. Press **CAL** to select the preferred unit and then press **HOLD** to save. **SA** will appear on the LCD for one second and then back to normal.

2. **Automatic Temperature Compensation (ATC)**
   The product is capable of measuring the temperature and making compensation automatically, **ATC** shows at the left corner of the screen.

3. **Calibration**
   (1). Prepare 4.01, 6.86 and 9.18 pH buffers. Use 6.86 pH buffer for the mid-range buffer first. The pH values for the buffers are given for 25°C, the pH values displayed for the buffers will reflect the correct pH value for the sample temperature. If the electrode is dry, submerge it in distilled water for 10 minutes before calibration. Ensure that the calibration buffers are fresh.

(2). Submerge the probe in the buffer, press **ON/OFF** key to turn the meter on, and stir gently. Then keep it still until a stable reading is reached. Press **CAL** for 3 seconds until the text **CAL** appears. Then release **CAL**. The meter will identify the current buffer value automatically and display 6.86 in the LCD. The result will be saved while the text **SA** displayed after 2 seconds. The meter will return to measuring mode after 1 second while text **END** showed.

(3). If text **END** is showed after pressing **CAL**, it means the calibration buffer is not fresh or the probe is aging.

(4). Do not take out the probe from the buffer until text **END** is showing on the LCD.

(5). Repeat steps 1-4 for calibrating to 4.01 and 9.18 pH buffer solutions.

**4. Hold Feature**

While measuring pH, press **HOLD** to freeze the current reading. A flashing **HOLD** will appear. Press **HOLD** again to release the hold mode.

**5. Out of the Range**

**HT-PH:** If the pH value is lower than 0 or higher than 14, '**-- -- --**' will be displayed. When the temperature is too low or too high, **L** or **H** will be displayed.

**HT-ORP:** If the potential is out of ±1200mV, '**-- -- --**' will be displayed. When the temperature is too low or too high, **L** or **H** will be displayed.

**6.    Low Power Indicator**
   Change batteries if battery symbol appears.  Don't mix old batteries with new ones.


**MAINTENANCE**

Please always keep the pH glass bulb caped for protecting when storing.  Always rinse the pH electrode with tap water before use.  Never touch or rub glass bulb for it may reduce the life of the electrode.


**How to prepare the buffer solution**

Solid material for pH 4.01, pH 6.86 and pH 9.18 buffer solution are provided in a set of sachets.  Glass jars or beakers are recommended as solution containers.  Take making the 250ml buffer solution of pH 6.86 as an example:
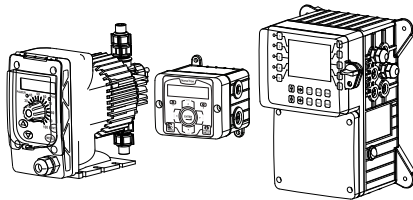(1).  Put the pH 6.86 buffer material (in the green sachet) in a jar (the volume should be no less than 250ml).
(2).  Fill the jar with 250ml distilled water.
(3).  Place a glass stick in the solution, swirling it until the white powder dissolves.
(4).  Store the buffer solution in a dry place with the temperature of 20-25°C.  Attach a label on it for

further use.

(5). For the further calibration, ensure that there is a constant supply of fresh buffer solution in contact with the probe.

Discard the solution after use.

Advantage Controls offers a complete line of water treatment controls and feed equipment. We look forward to helping you *Get the Advantage* on all of your water treatment equipment needs.