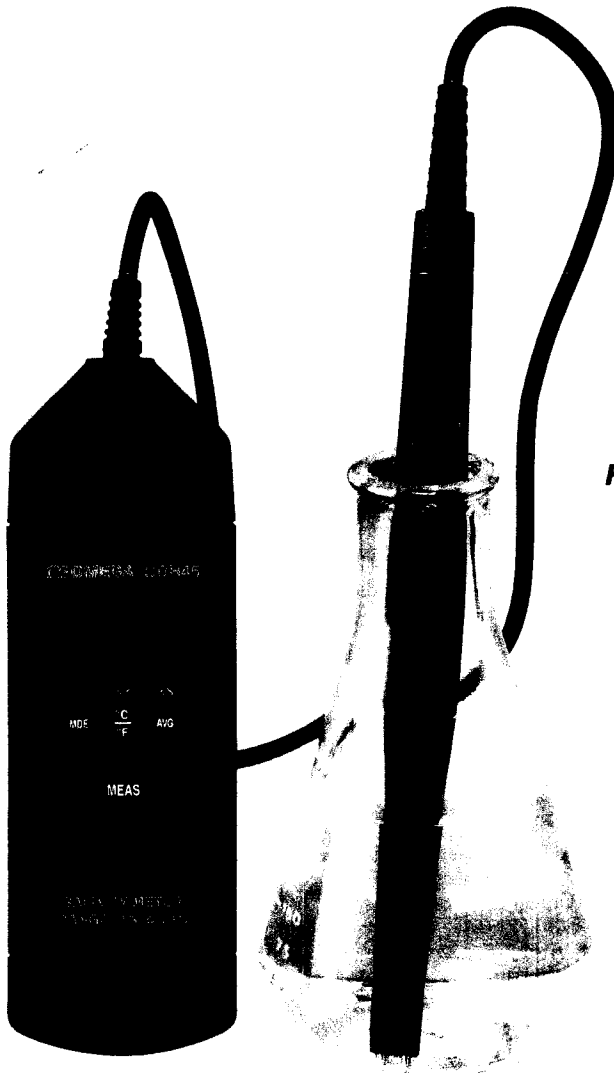




# User's Guide



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## **CDH45 Salinity Meter**

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The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

**WARNING:** These products are not designed for use in, and should not be used for, human applications.



## Important Note:

Turn on the meter before putting the probe into the salt solution. Do not turn on the meter while the probe is in the salt solution.

The meter is a digital salinity meter, with a precision thermometer to measure the salinity and temperature of solution at same time.

If the probe did not use for some time, please wash first with clean water and then measure.

## Salinity Measurement Specifications:

**Range:** 0.1% to 10.0%.

**Temperature compensation:** -5°C to 60°C, Automatic

**Accuracy:**

0% to 0.9%    (± 0.1)

1.0% to 1.9%    (± 0.2)

2.0% to 2.9%    (± 0.3)

3.0% to 4.9%    (± 0.5)

5.0% to 7.9%    (± 1.0)

8.0% to 10.0%    (± 1.5, depend on the way of measuring)

## Temperature Measurement Specifications:

**Sensor:** Thermistor temperature sensor.

**Range:** -20°C to 60°C or -4°F to 140°F.

**Resolution:** 0.1°C / 0.1°F

**Accuracy:**

±0.5°C    in 0°C to 45°C

±1°C    in -20°C to 0°C and 45°C to 60°C

±1°F    in 32°F to 113°F

±2°F    in -4°F to 32°F and 113°F to 140°F



## Other Specifications:

### Operating environment:

0°C to 50°C (32°F to 122°F) at < 70% R.H.

### Storage environment:

-20°C to 60°C (-4°F to 140°F) at < 80% R.H. with battery removed from meter.

### Accuracy:

Stated accuracy at 23°C ± 5°C, <75%R.H.

**Temperature Coefficient:** 0.1 times the applicable accuracy per °C from 0°C to 18°C and 28°C to 50°C (32°F to 64°F and 82°F to 122°F)

**Battery:** 3 pcs 1.5V (AAA size UM-4 R03).

**Battery life:** 100 hours typical with carbon zinc battery.

**Low battery indication:** The "⏻" is displayed when the battery voltage drops below the operating level.

**Dimensions:** 151mm(H) x 48mm(W) x 26mm(D)

**Weight:** 135g including batteries.

## Push Buttons:

### "MEAS" button:

Press "MEAS" key to turn on the meter. Press "MEAS" key again to turn off the meter.

### In Manual Mode, press and release "RED" button:

There are 2 measuring modes in salinity meter, namely "Manual Mode" and "Timer Mode".

In Manual Mode, press and release the "RED" key to take one measurement.

In Timer Mode, press and release the "RED" key to start measuring, the meter will take measurement once per set time interval. To stop measuring press and release the "RED" key again. Once measuring stops the indicator "⏻" shows at the display panel, indicating the last reading is being held.

### "MODE", "▲" and "▼" buttons:

#### 1. Select the measuring mode and set timer:

- 1.1 Press "MODE" key to enter setup function, the indicator "SET" shows the display panel. And at the middle of lower part of display panel shows "SEC" or "CC".
- 1.2 Press "MODE" key to switch between "SEC" or "CC" or exit MODE function. Set the indicator at "SEC".
- 1.3 To change the main display from "001" second to "60" seconds (every 1 second) to "60.0" minutes (every 0.1 minute) with the keys "▲" and "▼".
- 1.4 Set the number at "001" second to select the "Manual Mode". (see "RED" button) Set the number other than 001 second to select the "Timer Mode" and the number is the interval. (see "RED" button)
- 1.5 Press the "MODE" key to confirm your selection and return to the measuring function. The indicator "SET" disappears.



## 2. Set the volume of solution and show the measurement with weight of salt:

- 2.1 Press "MODE" key to enter setup function, the indicator "SET" shows the display panel. And at the middle of lower part of display panel shows "SEC" or "CC".
- 2.2 Press "MODE" key to switch between "SEC" or "CC" or exit MODE function. Set the indicator at "CC".
- 2.3 To change the main display from "10" CC with the keys "▲" and "▼".
- 2.4 Press the "MODE" key to confirm your selection and return to the measuring function. The indicator "SET" disappears.
- 2.5 Hold down the "°C/°F" key for 2 seconds to switch between "%" and "g"(grams). Default unit is "%".
- 2.6 Active salinity unit indicates at upper-right corner of display panel.

### "AVG" and "▲" button:

#### AVG function:

Can store up to 9 records to calculate average value.  
 Press "AVG" key to get the average value, of previous measurements readings, with "AVG" indication shown in the LCD. Average data only appear when more than 2 reading are taken  
 The value that appears in lower LCD is the number of readings recorded.

#### APO function:

Hold down the "AVG" key for 2 seconds to turn on and off the APO function.  
 APO = Auto Power Off. If no operation for 30 seconds.

### "°C/°F" and "▼" button:

#### Select Temperature Units:

When the power is on, press the "°C/°F" key to switch between °C and °F. Active temperature unit indicates at lower-right corner of display panel.

#### Select Salinity Unit:

Hold down the "°C/°F" key for 2 seconds to switch between "%" and "g"(grams).  
 Default unit is "%".

$$\text{Salinity (\%)} = (\text{Weight of Salt}) \div (\text{Weight of Solution}) \times 100\%$$

$$\text{Weight of Salt (g)} = \text{Salinity (\%)} \times (\text{Weight of Solution})$$

Active salinity unit indicates at upper-right corner of display panel.




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## After-Use-Maintenance

After use, immediately and thoroughly, wash away the remaining solution on the probe with tap water, shake out the tap water and let the probe dry in the air. Do not let the probe dry up after use without washing, as the remaining solution forms a conductive film between the sensing electrodes, which will affect next measurement. When measurement finished, cover the probe with protective cover after cleaning and drying.

## Battery replacement

Power is supplied by three 1.5V(AAA size UM-4 R03) batteries. The “” appears on the LCD display when replacement is needed.

To replace the Battery, remove the two screws from the back of the meter and lift off the battery cover. Remove the battery from battery contacts.



## WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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## RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. **BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS).** The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED.
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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