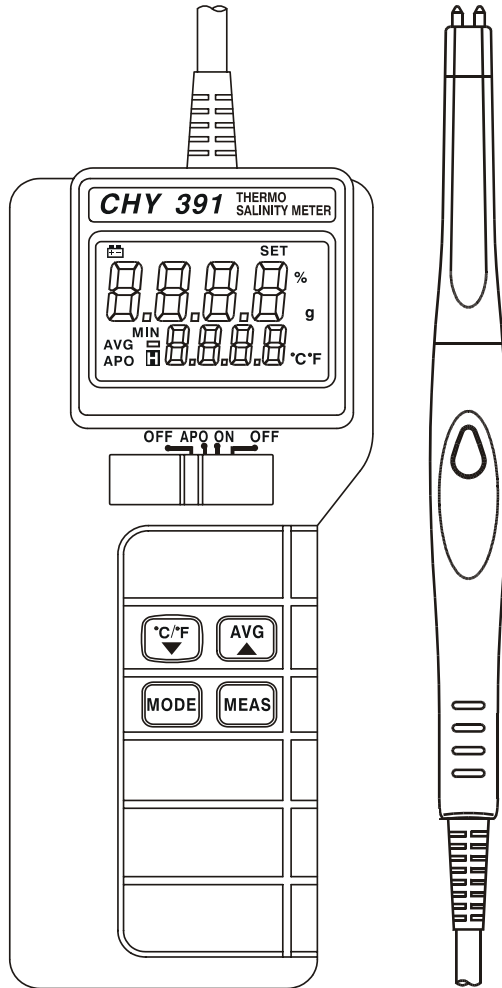


OPERATING INSTRUCTIONS MODEL 391 CE



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 5.9% (± 0.7)
- 6.0% 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)

EMC-instrument unspecified for use in EMC field >0.5V/m.

Battery: Standard 9V battery.

(NEDA 1604, IEC 6F22 006P)

Battery life: 100 hours typical with carbon zinc battery.

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

Dimensions: 178mm(H) x 65.5mm(W) x 35mm(D)

Weight: 220 g including battery.

SLIDE SWITCH

OFF: Put the sliding switch at position "OFF" to turn the power off.

ON: Put the sliding switch at position "ON" to turn the power on.

APO: Moving the sliding switch at position "APO" also turns on the power, with indicator "APO" shown at the display panel.

APO=Auto Power Off, if no operation for 5 minutes, the power will be turned off automatically. To resume the power by sliding switch to "Off" position. Press any rubber keys to resume counting the auto-power off time.

PUSH BUTTONS

1. "MEAS" button:

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

In Manual Mode, press and release the "MEAS" key to take one measurement, and emit a beep per second at the same time.

In Timer Mode, press and release the "MEAS" key to start measuring, and automatically emit a beep per second at the same time. The meter will take measurement once per set time interval. To stop measuring, press and release the "MEAS" key again. Once measuring stops the indicator "SET" shows at the display panel, indicating the last reading is being held.

The red button on the probe is same as "MEAS".

2. "MODE", "▲" and "▼" buttons:

2.1. Select the measuring mode and set timer:

2.1.1 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".

2.1.2 Press "MEAS" key to switch between "SEC" and "cc". Set the indicator at "SEC".

2.1.3 To change the main display from "01" second to "60" seconds (every 1 second) to "60.0" minutes (every 0.1 minute) with the keys "▲" and "▼".

2.1.4 Set the number at "01" second to select the "Manual Mode". (see "MEAS" button)
Set the number other than 01 second to select the "Timer Mode" and the number is the interval. (see "MEAS" button).

2.1.5 Press the "MODE" key to confirm your selection and return to the measuring function. The indicator "SET" disappears.

2.2 Set the volume of solution and show the measurement with weight of salt:

2.2.1 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".

2.2.2 Press "MEAS" key to switch between "SEC" and "cc". Set the indicator at "cc".

2.2.3 To change the main display from "10"cc with the keys "▲" and "▼", "10"cc is a factory-default of the measuring solution. User can adjust this value to the desired measuring solution by using the up and down arrow key.

2.2.4 Press the "MODE" key to confirm your selection and return to the measuring function. The indicator "SET" disappears.

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

3. "AVG" and "▲" button:

AVG function:

Salinity meter 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.

Backlight function:

Hold down the "AVG" key for 2 seconds to turn on and press again for two second to exit the backlight function.

"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 "%".

Salinity(%)=(Weight of Salt)/(Weight of Solution) × 100%

Weight of Salt (g) = Salinity (%) × (Weight of Solution)

Assume the density of salinity = 1g/cc

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 a 9 volt "transistor" battery. (NEDA1604, IEC6F22). The "SET" 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.