Instruction Manual
BTR-1000(SALT), RSM-1000

1. Precautions

1) Keep the product in a dry and shaded environment.

2) Do not use organic solvents to clean the product.
   (acetone, benzene, thinners for paints, gasoline, etc)

3) Remove the sample solution from the Sample surface and wipe with a soft dry cloth after use.
   Do not use steel wool and harsh scrub pads to wipe the Sample surface / Prism.
   Do not use metal or sharp objects (eg. Spoons, needles) to place a sample on the Sample surface.

4) Do not submerge or drench the unit completely in water.

5) Dropping the unit or subjecting it to strong impact may cause the unit to malfunction. Do not dismantle or attempt to fix the device. Any unauthorized repair and modification attempts will result in forfeiture of warranty service of the device.

2. Specifications

Model Name	BTR-1000 (SALT) / RSM-1000
Measurement Units	% (Salinity,) °C (Temperature)
Measurement Ranges	Salinity(%): 0.0%~28.0% Temp: 0.0~70.0°C
Resolution	Salinity(%): 0.1% Temp: 0.1°C
Accuracy	Salinity(%): ±0.2% Temp: ±1.0°C

Temperature Compensation	ATC (10~60°C)
Backlight	Automatic Brightness Control (BTR: 60 sec/ RSM: 20 sec)
Auto Shut-Off	BTR: After 5 minutes RSM: After 2 minutes
Measurement Time	Within 5 seconds
Idle Sample Volume	Volume 0.5ml

Data Store	Up to 20
Usage Enviroment	10~40°C (50~104°F)
Power Source	1.5V x 2(AAA Alkaline)
Size	58(W)X 36(D) X 122(H)mm
Weight	149 gram (Including Batteries & detachable cover)

3. Error Messages

Problem	Error Message	Reason(s) and/or Potential Solution(s)
The meter will not power ON		• Change the batteries. • Double-check the polarity of the batteries.
Not enough sample placed	AIr	• Make sure at least 0.5ml of sample is on the sample surface.
Out of Range / Above observable range	HI	• Sample must be used within the specified range limits • Calibrate using distilled water.
Out of Range / Below observable range	Lo	• Sample must be used within the specified range limits • Calibrate using distilled water.
Low battery	Lob	• Change the batteries
Ambient light intensity is too strong	--- ---	• Re-measure the sample while covering the sensor with hands to create shade. • Wait for the sample's temperature to stabilize
Zero correction failure	Er2	• Re-check the quality and quantity of the distilled water
Temperature Error	Er3	• If Er3 is diplaying after stabilizing, contact the product service.

4. Inserting and Replacing Batteries

If " ⬚ " sign is displayed on the LCD screen, we advise you to replace the batteries. If left unchanged, "Lob" sign will be displayed and measurements cannot be taken.

− Anode
+ Cathode

CLOSE   OPEN
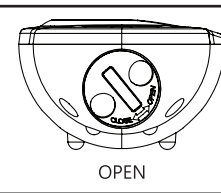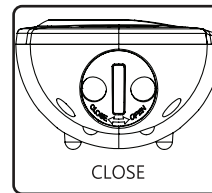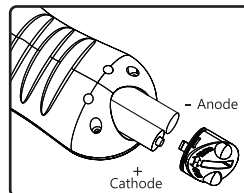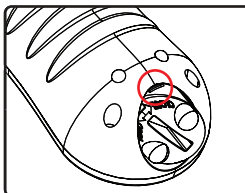
⚠ Please turn it left as the directional sign indicates "OPEN" until the groove (as shown) is aligned in the middle. Pull the groove to reveal the battery slot. To put it back, insert the cover as the groove is aligned in the middle like before and turn it right to close the cover.

5. Function and Parts

▶ Prism
Optical glass sensor

▶ LCD Display
Large, easy-to-read screen Backlight goes on automatically

▶ STORE / RECALL
Store and read the measured values

▶ Battery cover

▶ Sample Surface
Place 0.5 ml sample here

▶ Detachable cover
Protects the device and provides a firm grip Remove to reveal battery cover

▶ START
Press to measure sample

▶ ZERO
Drop 0.5 ml distilled water on clean sample surface and press [ZERO] to calibrate

▶ Supplement parts
1) Instruction manual.
2) Eye Dropper(Spoid): To place sample solution on the sample surface.
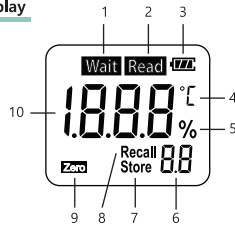3) Product warranty

6. Display and Buttons

Display

1. "Measurement Indicator" Icon
2. "Measurement complete" Icon
3. Battery Life Indicator
4. Temperature Unit
5. Percentage Unit (Salinity)
6. Store Number Indicator
7. "Store" Icon
8. "Recall Mode" Icon
9. "Zero Correction Mode" Icon
10. Measured Value Display

Buttons

Start button
• Press to turn ON the device or to measure the sample.
• Press for 2 seconds to turn OFF.

ST/RE button
• Store and read the measured value

Zero button
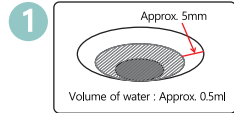• Calibration function.
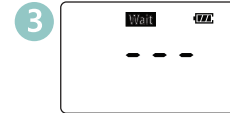• Select through recalls in recall mode.

Start button + Zero button
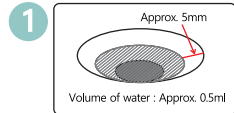• Press the combination of buttons to show temperature.

7. Using Refractometer

1 Approx. 5mm / Volume of water : Approx. 0.5ml
Put approximately 0.5ml of measuring sample on the prism.

2 When pressing [START] button, power comes on and the measurement starts instantly.

3 Please wait while the measurement is being taken place indicated by "Wait" icon.

4 23.8% When "Read" icon is displayed on the screen, the measurement is complete.

8. Calibration

1 Approx. 5mm / Volume of water : Approx. 0.5ml
Clean the prism surface and drop 0.5ml of distilled water.

2 Press [ZERO] button to calibrate.

3 00.0% Wait while the measurement is taking place indicated by "Wait" icon.

4 0.0% Calibration is completed after "000" sign flashes twice.
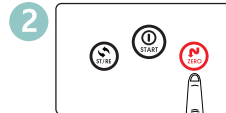
ref. If the measurement of distilled water is zero. The device does not need a calibration.

9. Temperature Display

The function is to check the temperature after the measurement or during zero calibration.
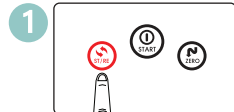
1 Press and hold the [START]+[ZERO] buttons simultaneously for 2 seconds.

2 23.0℃ The temperature is displayed on the screen only when the buttons are held pressed.

3 13.2% When buttons are released, the display returns to the original screen.

10. Store and Recall measurements

Store Measurements ☞ Once 20 measurements are stored, it overwrites from "01".

1 Press the [STORE/RECALL] button after measurement reading is complete.

2 23.8% Store 01 ← Store Number
"Store" icon with Store number will be displayed indicating that saving is completed.

Recall/Delete Measurements

1 In measurement mode, press and HOLD [STORE/RECALL] button for 2 seconds.

2 23.8% ← Stored Value / Recall 12 ← Store Number
"Recall" icon with latest stored value will be displayed.

3 To clear all saved data, in RECALL mode, press [STORE/RECALL] &[ZERO] button together for 2 seconds.

4 CLr Recall 01
"CLr" sign will flash on the screen when data initialization was successful.