Kalstein

YR01815 Pocket Salinity Tester

USER MANUAL

Thank you very much for purchasing our YR01815 Pocket Salinity Tester.

Please read the "Operating Instructions" and "Warranty" before operating this unit to assure proper operation. After reading these documents, be sure to store them securely together with the "Warranty" at a hand place for future reference.

Warning: Before operating the unit, be sure to read carefully and fully understand important warnings in the operating instructions.

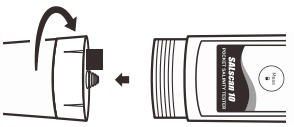
CE

Overview

Thank you for selecting the YR series pocket salinity tester. This user manual provides a step-by-step guide to help you operate the tester, please carefully read the following instructions before use.

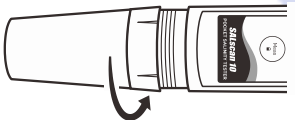
Installing the Batteries

1. Twist the electrode collar counter clockwise, pull the electrode away from the tester.



2. Insert two AAA alkaline batteries into the battery compartment, note polarity.

3. Push the electrode into the tester and twist the electrode collar clockwise until tight.



Keypad

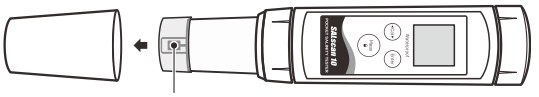
Key	Function
Meas	• Switch the tester on or off • Lock or unlock measurement • Exit the calibration, settings and return to the salinity measurement
◂ Cal ▸	• Start calibration • Press and hold the key to enter the setup menu • Select an option
Enter	• Confirm the calibration, settings or displayed option • Toggle between salinity and conductivity measurement modes

Display

Icon	Description
	When the battery voltage falls below the minimum power requirements, the icon automatically disappears
MEAS	Indicates that the tester is in the measurement mode
CAL	Indicates that the tester is in the calibration mode
SETUP	Indicates that the tester is in the setup mode
ATC	Indicates that the automatic temperature compensation is enabled

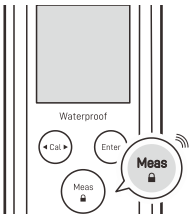
Prior to Use

Remove the protective cap and translucent cover from the bottom of the tester. If the platinum sensor has dried out, soak the electrode for about 10 minutes in tap water.



Switching the Tester On and Off

- Press and hold the **Meas** key for about 5 seconds to switch on the tester.
- Press and hold the **Meas** key to switch off the tester.



If you do not press any key within 8 minutes, the tester will switch off automatically to conserve energy.

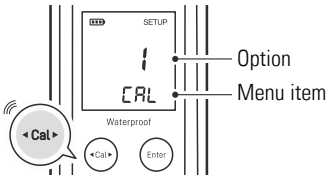
Setup Menu

The YR series tester contains 6 menu items in the setup menu, the following table describes the functions of each option.

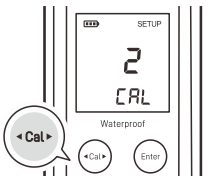
Menu Item	Option and Description	
CAL	**Calibration Points** Set the number of calibration points.	
	1	1 point (default)
	2	2 points
	3	3 points
UNIt	**Measurement Unit** Set the default temperature unit.	
	°C	Degrees Celsius (default)
	°F	Degrees Fahrenheit
CAL	**Temperature Calibration** Refer to page 3.	
	°C	Reading ±10°C
	°F	Reading ±10°F
HOLd	**Auto-Hold** If enabled, the tester will automatically sense and lock the measurement endpoint.	
	YES	Enable
	nO	Disable (default)
OFF	**Auto-Power Off** If enabled, the tester will automatically switch off if no key is pressed within 8 minutes.	
	YES	Enable (default)
	nO	Disable
rSt	**Factory Reset** If enabled, all of the calibration values and current settings will be deleted or reset to the factory defaults, the tester must be recalibrated.	
	YES	Enable
	nO	Disable (default)

Setting the Default Option

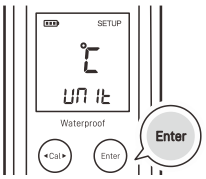
1. In the measurement mode, press and hold the **Cal** key to enter the setup menu.



2. If necessary, press the **Cal** key again to select an option.



3. Press the **Enter** key, the tester saves the current option and moves to the next menu item.



4. Repeat steps above until the tester returns to the measurement mode.

- During the setting process, if you do not need to calibrate the temperature, press the **Enter** key to skip the °C/CAL or °F/CAL option.
- To exit the setup menu, press the **Meas** key.

Conductivity Calibration

The YR series tester allows up to 3 points calibration. For better accuracy, we recommend that you perform 3 points calibration or select a standard solution closest to the sample conductivity you are measuring. The tester will automatically detect the calibration standard and prompt the user to perform the calibration. When the calibration is completed, all new calibration values will override existing data.The following table shows acceptable standard solutions for each tester.

YR01815

Measurement Range	Standard Solution Range	Default
0 to 200 µS/cm	70 to 170 µS/cm	84 µS/cm
200 to 2000 µS/cm	700 to 1700 µS/cm	1413 µS/cm
2 to 20 mS/cm	7 to 17 mS/cm	12.88 mS/cm

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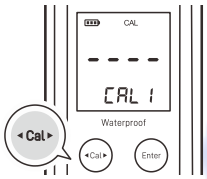
Measurement Range	Standard Solution Range	Default
200 to 2000 µS/cm	700 to 1700 µS/cm	1413 µS/cm
2 to 20 mS/cm	7 to 17 mS/cm	12.88 mS/cm
20 to 200 mS/cm	70 to 170 mS/cm	111.8 mS/cm

Make sure that using the fresh standard solution during the calibration. DO NOT reuse the standard solution after calibration, contaminants in solution will affect the calibration and eventually the accuracy of the measurement.

Single Point Calibration

Ensure that you have selected 1 point calibration in the setup menu.

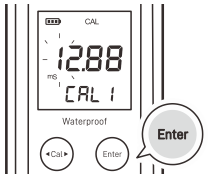
1.1 Press the **Cal** key, the tester shows ----/CAL 1.



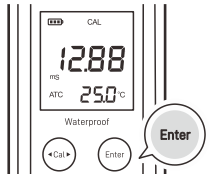
1.2 Rinse the electrode with distilled water and place into the standard solution. Stir tester gently to remove air bubbles trapped in the slot of the sensor. The tester will automatically recognize the standard solution and show the calibration value.

1.3 Press the **Enter** key, the default calibration value begins flashing.

1.4 If necessary, press the **Cal** key to modify the calibration value, press the **Enter** key to confirm and move to the next digit. When the setting is completed, make sure that the displayed value matches the calibration standard.



1.5 Press the **Enter** key, the tester begins the calibration. When the reading has stabilized, the display will show End. Calibration is completed.



Multipoint Calibration

Ensure that you have selected 2 or 3 points calibration in the setup menu.

2.1 Repeat steps 1.1 through 1.5 above. When the first calibration point is completed, the display will show ----/CAL 2, the tester prompts you to continue with second point calibration.

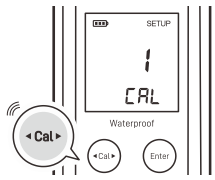
2.2 Repeat steps 1.2 through 1.5 above until the display shows End. Calibration is completed.

- Performing the conductivity calibration will simultaneously calibrate the corresponding salinity value.
- To exit the calibration without saving calibrated values, press the **Meas** key.

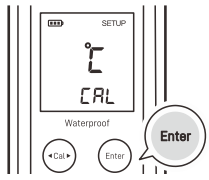
Temperature Calibration

The YR series tester is installed with a built-in temperature sensor for automatic temperature compensation. During the measurement, if the measured temperature reading differs from that of an accurate thermometer, the tester needs to be calibrated.

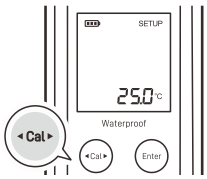
1. Press and hold the **Cal** key to enter the setup menu.



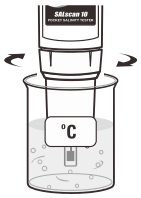
2. Press the **Enter** key until the display shows °C/CAL or °F/CAL.



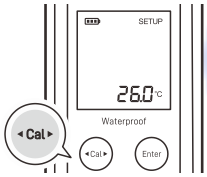
3. Press the **Cal** key, the tester enters the temperature calibration mode.



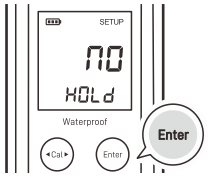
4. Place the electrode into a solution with a known accurate temperature and wait for the measurement to stabilize.



5. Press the **Cal** key to modify the temperature value.



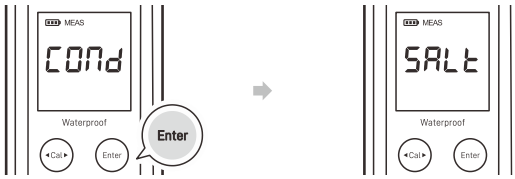
6. Press the **Enter** key to save and press the **Meas** key to return to the measurement mode.



Measurement

Switching the Measurement Mode

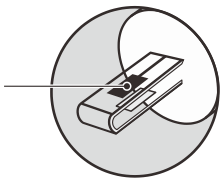
Press the **Enter** key, the tester will show CONd (conductivity), SALt (salinity) and switch to the corresponding measurement mode automatically.



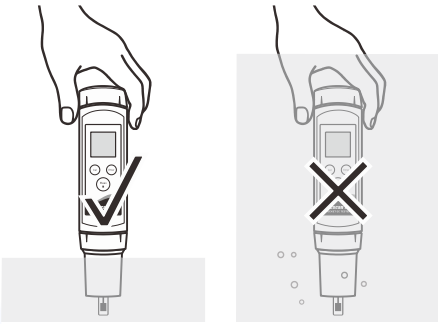
Measuring the Sample

Rinse the electrode with distilled water, place the electrode into the sample solution and stir gently, make sure that no air bubbles on the sensor surface. Wait for the measurement to stabilize and record the reading.

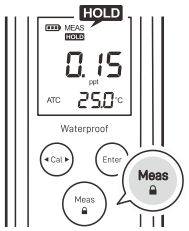
Platinum sensor



- During the measurement, DO NOT completely immerse the tester in water.



- If the display shows ---- indicating the measurement exceeds the range, remove the tester from the sample immediately.
- If the HOLd option is enabled in the setup menu, the tester will automatically lock the measurement endpoint and show HOLD icon. Press the **Meas** key to resume measuring.



Electrode Maintenance and Replacement

- Rinse the electrode thoroughly with distilled water after use.
- Do not touch the platinum black coating on the sensor surface and always keep it clean.
- If there is a build-up of solids inside the sensor, remove carefully, then recalibrate the tester.
- If you do not use the tester for long periods, store the electrode with tap water.

Replacing the Electrode

If the tester fails to calibrate or gives fluctuating readings, you should consider replacing the electrode.

1. Twist the electrode collar counter clockwise, pull the electrode away from the tester.

2. Align the slot on the new electrode, gently push the electrode into the tester.

3. Twist the electrode collar clockwise until tight.

Appendix

Preparation of Conductivity Standard Solutions

Place the analytical grade potassium chloride (KCl) in a beaker and dry in an oven for about 3 hours at 105°C (221°F), then cool to room temperature. Add the reagent to a 1 liter volumetric flask according to the instructions in table below.

Conductivity Standard	Reagent	Weight
84 µS/cm	KCl	42.35 mg
1413 µS/cm	KCl	745.5 mg
12.88 mS/cm	KCl	7.45 g
111.8 mS/cm	KCl	74.5 g

Fill the distilled water to the mark, mix the solution until the reagent is completely dissolved.

Optional Accessories

Order Code	Description
E-ECscan-C1-10K	For YR01815 tester, cell constant K=1, measuring range 10 µS/cm to 20 mS/cm
E-ECscan-C10-10K	For YR01815-1 tester, cell constant K=10, measuring range 0.1 to 200 mS/cm
ECCS-84	Standard solution 84 µS/cm, 480 ml
ECCS-1413	Standard solution 1413 µS/cm, 480 ml
ECCS-1288	Standard solution 12.88 mS/cm, 480 ml
ECCS-50	Standard solution 50 mS/cm, 480 ml
ECCS-1118	Standard solution 111.8 mS/cm, 480 ml

Tester Specifications

Model	YR01815	YR01815-1
Conductivity		
Range	0 to 20 mS/cm	0 to 200 mS/cm
Resolution	0.01, 0.1, 1	
Accuracy	±1% F.S.	
Calibration Points	1 to 3 points	
Calibration Solutions	84 µS/cm 1413 µS/cm 12.88 mS/cm	1413 µS/cm 12.88 mS/cm 111.8 mS/cm
Salinity		
Range	0 to 10 ppt	0 to 80 ppt
Resolution	0.01	
Accuracy	±1% F.S.	
Temperature		
Range	0 to 60°C (32 to 140°F)	
Resolution	0.1°C (0.1°F)	
Accuracy	±1°C (±1.8°F)	
Calibration Point	1 point	
Calibration Range	Reading ±10°C/°F	
Other Specifications		
Temperature Compensation	0 to 60°C (32 to 140°F), automatic	
Temperature Coefficient	2%/°C	
Reference Temperature	25°C	
Cell Constant	K=1	K=10
Operating Temperature	0 to 50°C (32 to 122°F)	
Storage Temperature	0 to 60°C (32 to 140°F)	
Relative Humidity	< 80% (non-condensing)	
IP Rating	IP54	
Display	LCD, 21 × 21 mm (0.82 × 0.82 in.)	
Power Requirements	2 × 1.5V AAA alkaline batteries	
Auto-Off	8 minutes after last key pressed	
Dimensions	185 (L) × 40 (Ø) mm (7.28 × 1.57 in.)	
Weight	100g (3.5 oz.)	

Disposal

This product is required to comply with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC and may not be disposed of in domestic waste. Please dispose of product in accordance with local regulations at the collecting point specified for electrical and electronic equipment.

Warranty

The warranty period for tester is one year from the date of shipment.
Above warranty does not cover the electrode and standard solutions.
Out of warranty products will be repaired on a charged basis.
The warranty on your tester shall not apply to defects resulting from:

- Improper or inadequate maintenance by customer
- Unauthorized modification or misuse
- Operation outside of the environment specifications of the products

For more information, please contact the supplier.