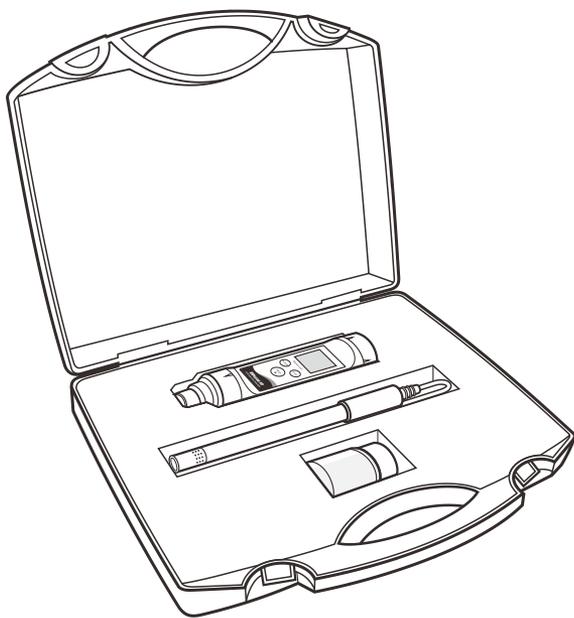


DOscan10 Pocket Dissolved Oxygen Tester

USER MANUAL

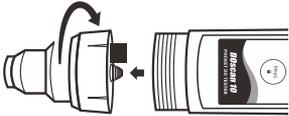


Overview

Thank you for selecting the DOscan10 pocket dissolved oxygen 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

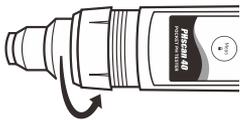
1. Twist the connector collar counter clockwise, pull the connector away from the tester.



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



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



Keypad

Key	Function
	<ul style="list-style-type: none"> • Press and hold the key to switch the tester on or off • Lock or unlock measurement • Exit the calibration, settings and return to the dissolved oxygen measurement
	<ul style="list-style-type: none"> • Start calibration • Press and hold the key to enter the setup menu • Select an option
	<ul style="list-style-type: none"> • Confirm the calibration, settings or displayed option

Display

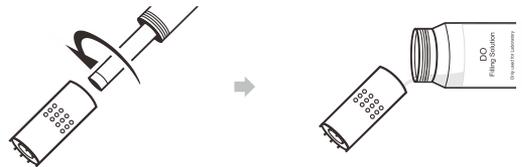
Icon	Description
	When the battery voltage falls below the minimum power requirements, the icon automatically disappears

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 temperature compensation is enabled

Prior to Use

Filling the Electrolyte Solution

- 1.1 Take out the dissolved oxygen electrode from the carrying case. Unscrew the membrane cap from the bottom of the electrode, rinse the inside and outside with distilled water and blot dry.
- 1.2 Fill the membrane cap halfway with electrolyte solution.

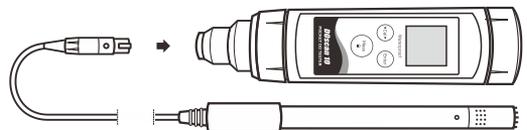


- 1.3 Screw membrane cap back onto the electrode. Some electrolyte solution will overflow during this process.
- 1.4 Check the electrode, ensure that no air bubbles are trapped in the electrolyte solution and membrane is not creased or damaged.

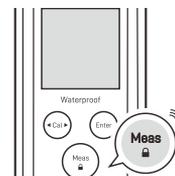


Polarizing the Electrode

- 2.1 Insert the electrode connector into the connector socket on tester, ensure that the connector is fully seated.



- 2.2 Press and hold the **Meas** key to switch on the tester and wait 10 minutes for the electrode to polarize.



Setup Menu

The DOscan10 tester contains 8 menu items in the setup menu, the following table describes the functions of each option.

Menu Item	Option and Description
Salinity Coefficient	
SRLt	Set the salinity compensation coefficient of sample.
	00 0 to 35 g/L (default 0 g/L)
Pressure Coefficient	
PRES	Set the barometric pressure coefficient according to the local altitude (refer to page 3).
	760 450 to 850 mmHg (default 760 mmHg)
Calibration Points	
CAL	Set the number of calibration points.
	1 1 point (default)
	2 2 points
Measurement Unit	
UNIT	Set the default measurement unit.
	mg/L Milligrams per liter (default)
	ppm Parts per million
	% Percentage saturation
	°C Degrees Celsius (default)
°F Degrees Fahrenheit	
Temperature Calibration	
CAL	Refer to page 4.
	°C Reading ±10°C
	°F Reading ±10°F
Auto-Hold	
HOLD	If enabled, the tester will automatically sense and lock the measurement endpoint.
	YES Enable
	NO Disable (default)
Auto-Power Off	
OFF	If enabled, the tester will automatically switch off if no key is pressed within 8 minutes.
	YES Enable
	NO Disable (default)

Factory Reset

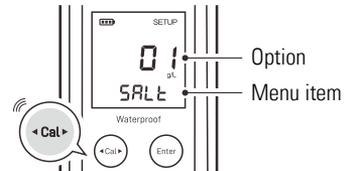
If enabled, all of the calibration values and current settings will be deleted or reset to the factory defaults, the tester must be recalibrated.

r 5t

YES	Enable
NO	Disable (default)

Setting the Default Option

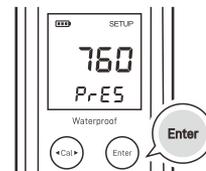
- In the measurement mode, press and hold the **Cal** key to enter the setup menu.



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



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



- 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.
- The table below describes the relationship between the altitude and barometric pressure, make sure to set a compatible parameter before the calibration or measurement.

Table 1. Altitude and Barometric Pressure

Altitude (m)	kPa	mmHg
0	101.3	760
100	100.1	750
200	98.8	741
300	97.6	732
400	96.4	723
500	95.2	714
600	94.0	705
700	92.8	696
800	91.7	688
900	90.5	679
1000	89.4	671
1100	88.3	662
1200	87.2	654
1300	86.1	646
1400	85.0	638
1500	84.0	630
1600	82.9	622
1700	81.9	614
1800	80.9	607
1900	79.9	599
2000	78.9	592
2100	77.9	584
2200	76.9	577
2300	76.0	570
2400	75.0	563
2500	74.1	556
2600	73.2	549
2700	72.3	542
2800	71.4	536
2900	70.5	529
3000	69.6	522
3100	68.7	515
3200	67.9	509
3300	67.0	502
3400	66.2	496
3500	65.4	490
3600	64.6	484

Dissolved Oxygen Calibration

The DOscan10 tester allows 1 or 2 points dissolved oxygen calibration. If you have selected the single point calibration in the setup menu, we recommend that you perform a 100% saturation calibration in the air-saturated water. If the 2 points calibration is selected, the zero oxygen solution needs to be used.



During the calibration and measurement, the temperature sensor on electrode must be immersed in the sample solution completely, the solution should keep 0.3 m/s of minimum flow rate to avoid oxygen starvation at the membrane.



Temperature sensor

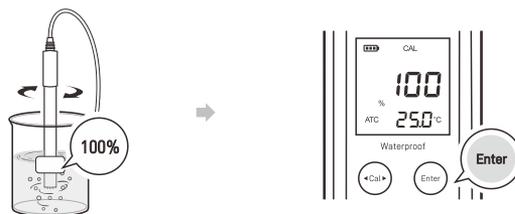
Single Point Calibration - 100% Saturation

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

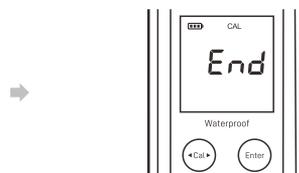
1.1 Press the **Cal** key, the display shows 100%/CAL1.



1.2 Hold the dissolved oxygen electrode in the air at 100% relative humidity or place the electrode into the air-saturated water for about 10 minutes. Press the **Enter** key to begin the calibration.



1.3 When the reading has stabilized, the tester will show **End** and return to the measurement mode.



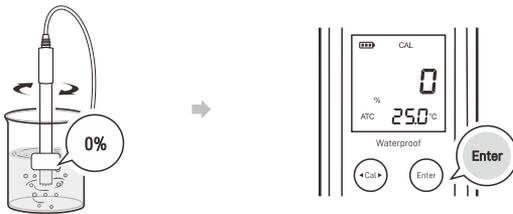
2 Point Calibration

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

2.1 Repeat steps 1.1 and 1.2 above. When the first calibration point is completed, the display will show 0%/CAL2, the tester prompts you to continue with second point calibration.

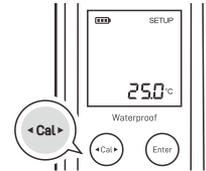


2.2 Place the dissolved oxygen electrode into the zero oxygen solution for about 10 minutes, press the **Enter** key to begin the calibration. When the reading has stabilized, the tester will show *End*. Calibration is completed.



- Performing a percentage saturation calibration will calibrate the corresponding mg/L or ppm concentration value simultaneously.
- To exit the calibration without saving calibrated values, press the **Meas** key.

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.

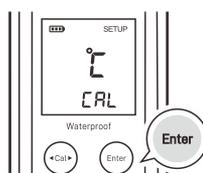


Temperature Calibration

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.



Measurement

The DOscan10 tester can be used to measure the water, wastewater, brine and other liquids. If your sample is seawater or water containing large amounts of salt, make sure to set the salinity coefficient before measurement. Some gas and steam such as chloride, sulfur dioxide, sulfured hydrogen and carbon dioxide can permeate the membrane via diffusion. Their existence will influence the measurements. If the sample contains solvent, grease, sulfide and alga, the membrane will be damaged or eroded.

1. Set the barometric pressure and salinity coefficient in the setup menu.
2. Rinse the electrode with distilled water.
3. Place the electrode into the sample solution and stir gently. Wait for the measurement to stabilize and record the reading.

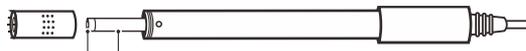


- During the measurement, if the display shows ---- indicating the measurement exceeds the range, remove the electrode from the sample solution immediately.
- If the **HOLD** option is enabled in the setup menu, the tester will automatically lock the measurement endpoint and show HOLD icon. Press the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



Electrode Maintenance

- Rinse the electrode thoroughly with distilled water after use.
- Do not touch the membrane and always keep it clean and wet.
- If you do not use the electrode for long periods, screw off the membrane cap, rinse the electrode anode, cathode, membrane cap with distilled water and blot dry. Install the electrode and store dry.



Cathode Anode

Appendix

Optional Accessories

Order Code	Description
DO100	Dissolved oxygen electrode, range: 0 to 20 mg/L
DO-MEM	Membrane cap, 2 PCS/set
DO-ES	Electrolyte solution, 30 ml

Preparation of Air-Saturated Water

Use an air-pump to blow air into distilled water at least 1 hour, while stirring the solution.

Preparation of Zero Oxygen Solution

Dissolve 500 mg of the sodium sulfate (Na_2SO_3) reagent and a small amount of cobalt (II) chloride hexahydrate ($\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$) in the 250 ml distilled water, mix the solution until reagent is completely dissolved.

Tester Specifications

Model	DOscan10
Dissolved Oxygen	
Range	0.0 to 20.0 mg/L
Resolution	0.1 mg/L
Accuracy	± 0.5 mg/L
% Saturation	
Range	0.0 to 200.0%
Resolution	0.1%
Accuracy	± 2.0 %
Other Specifications	
Calibration Point	1 or 2 points
Temperature Compensation	0 to 40°C (32 to 104°F), automatic
Barometric Pressure Correction	450 to 850 mmHg, manual
Salinity Correction	0 to 35 g/L, manual
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	175 (L) × 40 (Ø) mm (6.89 × 1.57 in.)
Weight	100g (3.5 oz.)

Troubleshooting

Fault	Cause and Corrective Action
Screen shows - - - -	Dissolved oxygen electrode does not connect to the tester or measured value is out of range.
Drifting erratic readings	Check whether the membrane cap is contaminated or the electrolyte solution is depleted.
Screen shows E r r	Electrode is broken. Replace the dissolved oxygen electrode.

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 electrolyte solution.

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.



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