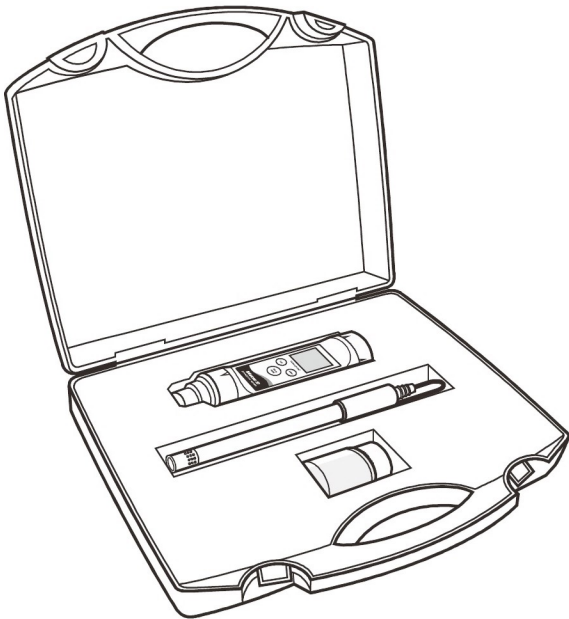


DOScan10 Pocket Dissolved Oxygen Tester

Instruction Manual



CE

Overview




Thank you for selecting the DOscan10 dissolved oxygen tester. This manual provides a step-by-step guide to help you operate the instrument, please carefully read the following instructions before use.

Installing the Batteries


1. Twist the connector collar counter clockwise, pull the 6-pin connector away from the tester.
2. Insert the two AAA batteries into the battery compartment, note polarity.
3. Push the 6-pin connector into the tester and twist the connector collar clockwise until tight.



Keypad

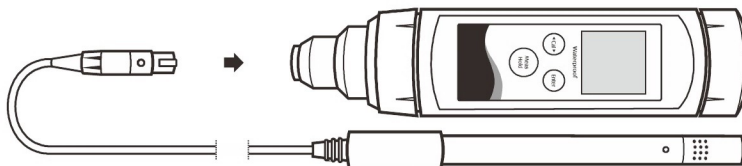
Key	Function
	<ul style="list-style-type: none"> • Switch the tester on or off • Lock the reading, press the key again to resume measurement • Exit the calibration, setting and return to the measurement mode
	<ul style="list-style-type: none"> • Start calibration • Press and hold the key to enter the setup menu • Select an option
	<ul style="list-style-type: none"> • Confirm the calibration, setting 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

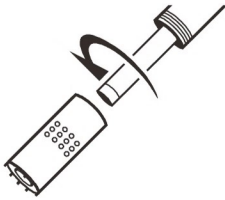
Take out the dissolved oxygen electrode from carrying case. Insert the 6-pin connector into the connector socket on tester, make sure that the connector is fully seated.



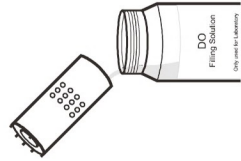
Filling the Electrolyte Solution

1. Unscrew the membrane cap from the bottom of the electrode, rinse the inside and outside with deionized water and blot dry.
2. Fill the membrane cap halfway with electrolyte solution.
3. Screw the membrane cap back onto the electrode. Some electrolyte solution will overflow during this process.
4. Check the electrode, make sure that no air bubbles are trapped in the electrolyte solution and the membrane is not creased or damaged.

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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.

Polarizing the Electrode

Connect the electrode to tester, 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	Description	Options	Description	Default
<i>SALt</i>	Set the salinity compensation coefficient of sample	00	Range: 0 to 35 g/L	0 g/L
<i>PR ES</i>	Set the barometric pressure coefficient according to the local altitude	760	Range: 450 to 850 mmHg	760 mmHg
<i>CAL</i>	Set the number of calibration points	1 2	1 or 2 points	1 point
<i>UN IT</i>	Set the measurement unit	mg/L ppm %	Milligrams per liter Parts per million Percentage saturation	mg/L
		°C °F	Degrees Celsius Degrees Fahrenheit	°C
<i>CAL</i>	Calibrate the temperature	°C °F	Reading ±10°C/°F	---
<i>HOLD</i>	When the option is enabled, the tester will automatically sense a stable reading and lock the measurement	YES NO	Enable Disable	Disable
<i>OFF</i>	When the option is enabled, the tester will automatically switch off if no key is pressed within 8 minutes	YES NO	Enable Disable	Disable
<i>rst</i>	Reset the tester to factory default settings	YES NO	Enable Disable	Disable

Setting the Default Option

1. In the measurement mode, press and hold the **Cal** key for 5 seconds 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 the steps above until the tester returns to the measurement mode.

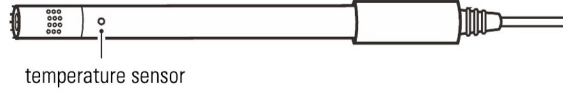


- i** During the setting process, press the **Meas** key, the tester will exit the setup menu and return to the measurement mode.
- If you do not need to calibrate the temperature, press the **Enter** key to skip the $^{\circ}\text{C}/\text{CAL}$ or $^{\circ}\text{F}/\text{CAL}$ option.
- The **SEt** option is used to restore the tester back to the factory default settings. If enabled, all of the calibration data and user-specific settings will be deleted or reset, the tester must be recalibrated.
- The following table describes the relationship between the altitude and barometric pressure. Make sure to set the compatible parameter before the calibration and measurement.

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

Dissolved Oxygen Calibration

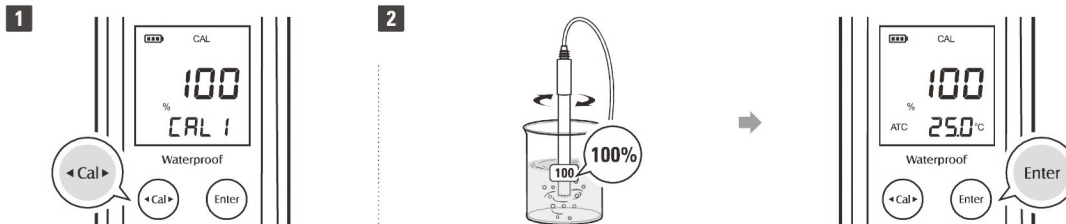
The DOscan10 tester allows 1 or 2 points calibration. If you have selected the single point calibration in the setup menu, we recommend that you perform a 100% saturation calibration in the air-saturated water. If the 2 points calibration is selected, the zero oxygen solution needs to be used. During the calibration and measurement, the temperature sensor on electrode must be immersed in solution completely, the solution keeps 0.3 m/s of minimum flow rate to avoid oxygen starvation at the membrane.



Single Point Calibration - 100% Saturation

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

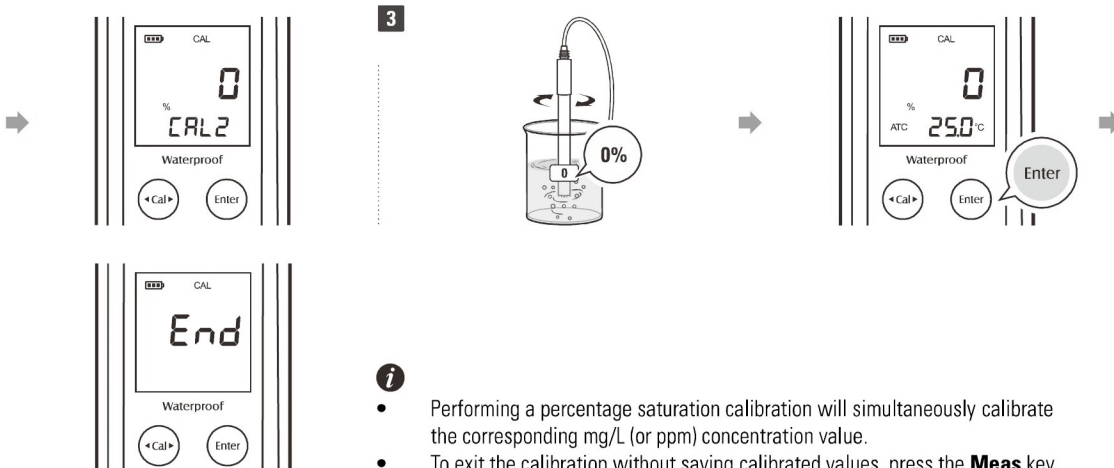
- 1.1 Press the **Cal** key, the display shows "100% / CAL1".
- 1.2 Hold the dissolved oxygen electrode in the air at 100% relative humidity or place the electrode into the air-saturated water for about 10 minutes. Press the **Enter** key to begin the calibration.
- 1.3 When the reading has stabilized, the tester will show "End" and return to the measurement mode.



2 Point Calibration

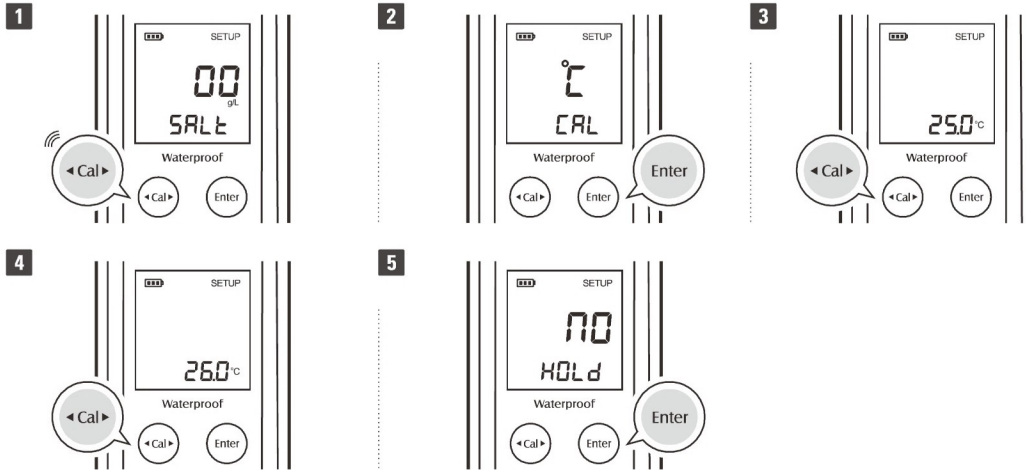
Make sure that you have selected 2 points calibration in the setup menu.

- 2.1 Repeat steps 1.1 through 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.
- 2.3 When the reading has stabilized, the tester will show "End". Calibration is completed.



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/FAL.
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 measurement is stable.
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

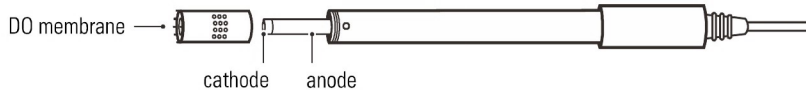
The DOscan10 tester can be used to measure the water, wastewater, brine and other liquids. If your sample is seawater or water containing large amounts of salt, make sure to set the salinity coefficient before measurement. Some gas and steam such as chloride, sulfur dioxide, sulfureted hydrogen and carbon 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. Rinse the electrode with deionized water.
2. Place the electrode into the sample solution and stir gently. Wait for the measurement to stabilize and record the reading.

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

Electrode Maintenance

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



Appendix

Preparation of Zero Oxygen Solution

Dissolve 500 mg of 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 deionized water, mix the solution until reagent is completely dissolved.

Preparation of Air-Saturated Water

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

Optional Accessories

Order Code	Description
DO100	Polarographic dissolved oxygen electrode, 12 mm (0.47") diameter
DO-MEM	Membrane cap, 2 PCS/set
DO-ES	Electrolyte solution, 480 ml

Specifications

Dissolved Oxygen	Model	DOscan10
	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	-5 to 60°C (23 to 140°F)
	Relative Humidity	< 80% (non-condensing)
	IP Rating	IP54
	Display	Dual-line LCD, 21 × 21 mm (0.82 × 0.82")
	Power Requirements	2 × 1.5V AAA alkaline batteries
	Auto-Off	8 minutes after last key pressed
	Dimensions	175 (L) × 40 (Dia.) mm (6.89 × 1.57")
Weight	100 g (3.5 oz.)	

Disposal

This tester 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 this 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 membrane cap. 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.
