

User's Guide

Dissolved Oxygen/Temp. Meter

PDO-408



CE

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Introduction:

We thank you for having purchased PDO-408 Dissolved Oxygen meter.

Before using the instrument, please note that the operation instructions should be read carefully, which will help you to operate and maintain the instrument, as well as to avoid trouble caused by unsuitable operation and maintenance.

PDO-408 DO/Temp. meter employs leading edge technology with integrated microprocessor, which is suitable for measurement in water solutions for institutes, industrial labs and production fields.

The information presented in this manual is subject to change without notice as improvements are made.

Features:

1. Microprocessor based design with large LCD displays DO and Temperature simultaneously.
2. Rugged design with splash proof housing for handheld or bench top use, neck-strap for hands-free operation.
3. Automatic Temperature Compensation (ATC), Manual Salinity (MSC) and Altitude (MAC) Compensation.
4. Memory function stores and recalls up to 150 points. MAX/MIN and data lock. Degree °C/°F are available.
5. Low battery indicator. Auto shut off after 10 minutes of non use.

Specifications:

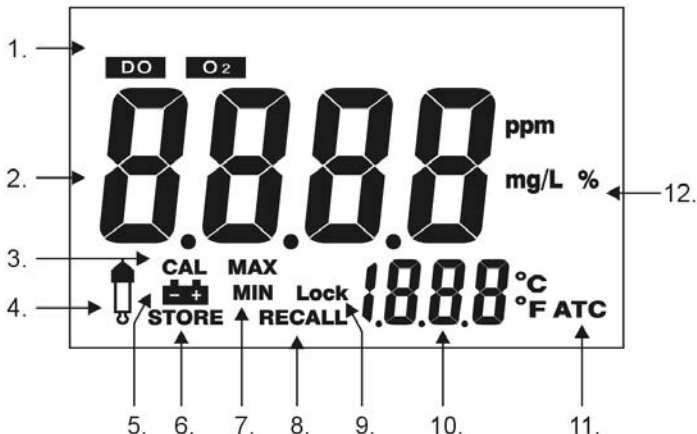
	DO	O ₂	Temp.
Range	0~20.00 mg/L 0~20.00 ppm	0~200.0 %	0~110 °C
Accuracy	±0.2+1 digit	±2% FS	±0.2+1 digit
Resolution	0.01 mg/L	0.10%	0.1 °C
Compensation	ATC: 0~50 °C MSC: 0~50 ppt MAC: 0-20000 ft		

Accessories:

Upon receiving the shipment, please inspect the container and equipment for any signs of damage. Please verify that you have received the corresponding accessories as below.

1. Meter
2. DO probe
3. Temp. probe
4. Membrane cap x 2 pcs
5. Electrolyte x 50ml
6. Neck-strap
7. 9V battery
8. Plastic burette
9. Sandpaper
10. Carrying case
11. Instruction manual

Display Description:









1. Function mode
2. Measuring value
3. Calibration mode
4. Calibration error indicator
5. Battery power low Indicator
6. Reading stored indicator
7. MAX & MIN value indicator
8. Reading recall indicator
9. Manually lock current reading
10. Temperature value
11. Auto Temperature Compensation
12. Unit

Device Description:




Functions of Keyboard:

	Lock the current reading, press for 3 sec. to enter or exit MAX/MIN mode. In this mode, press to browse MAX and MIN reading.
	Store the current reading. Press 3 sec. to enter Recall mode.
	In Recall mode, browse records. Press both together 3 sec. to enter advanced setting (see page) .
	
	Choose different function mode. Press 3 sec. to switch °C/°F, or switch mg/L or ppm (in DO mode)
	Turn ON or OFF power. Press 3 sec. to enter calibration mode






Preparation:

1. Fully extend the hinged cover, open the battery compartment by a coin and connect 9V battery.
2. Remove the protection cap from the DO probe and connect the DO probe to meter.
3. Connect the Temp. probe to meter.
4. Remove the membrane cap carefully.
5. Fill the membrane cap with the electrolyte solution up to the bottom of the threads on the inside of the cap. (Please see step 7~10 in “Membrane Cap Replacement” for details)


Press  button to turn the meter power on.

Calibration:

<DO>

1. Remove the probe cap. Press  to turn on power and press  to choose  mode. Wait 10 minutes to 30 minutes for the probe to polarize. The reading should be approx. 101.7% (saturation) after the probe has completely polarized
2. Let the probe in the air. Press and hold  for 3 sec. to enter calibration mode. The display will appear **CAL** and flashing 101.7%. When the display stops flashing and indicates “SA”, then “End” while calibration ends, and will return to measurement mode.
3. Optional 'zero oxygen' calibration: (improves measurement accuracy for very low or very high DO measurements). Place the probe into a zero oxygen calibration solution, such as 5% sodium sulfite, wait for stability and press and hold  to enter calibration. Stability in a zero solution may take many minutes, depending on electrode history.





Note:

1. The icon  will display automatically during calibration mode.
Calibration error indicator icon will appear, and “Err” instead of “SA”, if calibration fails.

3. If the reading is not 0% while the probe is not connected, calibrate it in the air without probe to make reading becomes 0%.

Measurement:





<DO>

1. Remove the probe cap. Press  to turn on power and press  to choose  mode. Wait 10 minutes to 30 minutes for the probe to polarize. The reading should be approx. 101.7% (saturation) after the probe has completely polarized
2. Select the desired units of measure by pressing  until the proper units are shown in the display.
3. Place the probe in the sample to be measured. Stir the probe in the sample to remove any trapped air bubbles from the membrane surface.
4. Allow the meter time to settle to the final measurement value.








Note:

1. The larger the difference in temperature between the probe and the solution the longer it will take for the reading to stabilize. Stabilization time can vary from ten (10) seconds to five (5) minutes.
2. Cover the probe with the probe cap. The sponge contained in the cap should be moistened (not soaked) with DI (distilled water) or clean tap water.












LOCK and MAX/MIN mode:

1. Press  button can lock the current reading, and press again will unlock the reading.
2. Press and hold  button until the display appear flashing **MAX** and **MIN** icons to enter MAX/MIN mode. Press  lightly to browse MAX and MIN value during this mode.
3. To exit this mode, press and hold  button again until the flashing **MAX** and **MIN** icons disappear and return to measuring mode.

Store and Recall mode:

1. In measuring mode, press  to store the current reading. The **Store** icon and the ordinal of this record will appear on the display.
2. Press and hold  for 3 sec. to enter Recall mode. In this mode, use  or  to browse records. Press and hold  to exit this mode and return to measuring mode.
3. In Recall mode, press   together for 3 sec. to clean all the records in the memory.

Advanced Setting:

1. Press   together for 3 sec. will enter advanced setting.
2. In DO advanced setting,
 - (1) Press  to set "Salt Compensation". Use  or  to adjust the value from 0 to 50 ppt. Then press  to confirm and return to measuring mode.
 - (2) Press  to set "Altitude Compensation". Use  or  to adjust the value from 0 to 20K ft. Then press  to confirm and return to measuring mode.
3. In any advanced setting, press  to reset all settings to factory setting.

Membrane Cap Replacement:

1. Do not touch the membrane as skin oils will interfere with the oxygen permeability rate of the membrane. Replace the cap carefully.
2. It is recommended that the probe remain attached to the meter during this replacement process.
3. Unscrew the cap firmly and carefully from the probe.
4. Rinse the old electrolyte solution from the Cathode and Anode.
5. Use the supplied polishing strips to clean, polish, shine, and/or remove scratches from the cathode. Be sure to moisten the cloth before polishing the cathode. Do not over-polish the sensitive gold cathode.
6. Set the new replacement membrane cap on a flat surface. Leave the cap in this position during the replacement process.
7. Fill the membrane cap with the electrolyte solution up to the bottom of the threads on the inside of the cap.
8. Tap the membrane cap to release and prevent air bubble in electrolyte solution.
9. Keeping the cap in a fixed position on a flat surface, carefully insert the probe into the new cap by first dipping and removing the probe several times from the cap. With each dip, push the probe progressively deeper into the bonded cap. Finally, screw the probe slowly onto the cap until fully tightened. The dipping and removal technique minimizes the introduction of air bubbles into the electrolyte solution. Air bubbles in the electrolyte can affect measurements.
10. It is normal that excess electrolyte solution will leak out

the cap during this replacement since it minimizes the introduction of air pockets. Clean off the excess electrolyte before use.

Note:

1. We recommend changing the electrolyte as it becomes yellow.
2. Re-calibrate and re-polarize the meter once the membrane cap has been replaced or reinstalled.

