



DO100 Portable DO Meter

35643-00, 35643-05 Kit

Instruction Manual



ENVIRONMENTAL EXPRESS

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1 Brief Introduction

Thank you for purchasing Environmental Express Portable Dissolved Oxygen Meter.

This meter is a perfect combination of the most advanced electronics technology, sensor technology, and software design, and is the most cost-effective portable electrochemical meter. In order to use and maintain the instrument properly, please read the manual thoroughly before use. (To improve instrument performance constantly, we reserve the right to change the manual and accessories without giving notice in advance.)

Main features and functions

- The microprocessor-based portable meter features automatic calibration, automatic temperature, salinity compensation, function setup, self-diagnostics, automatic power-off and low voltage display.
- The meter's digital filter improves measurement speed and accuracy. There is a stable reading indication on the display.
- Polarographic DO electrode comes with a special DO calibration sleeve, taking only 3~5 minutes to polarize; The electrode also comes with 3 combined membrane caps so that the membrane can be easily replaced.
- The meter is dustproof and waterproof, meeting the IP57 rating.

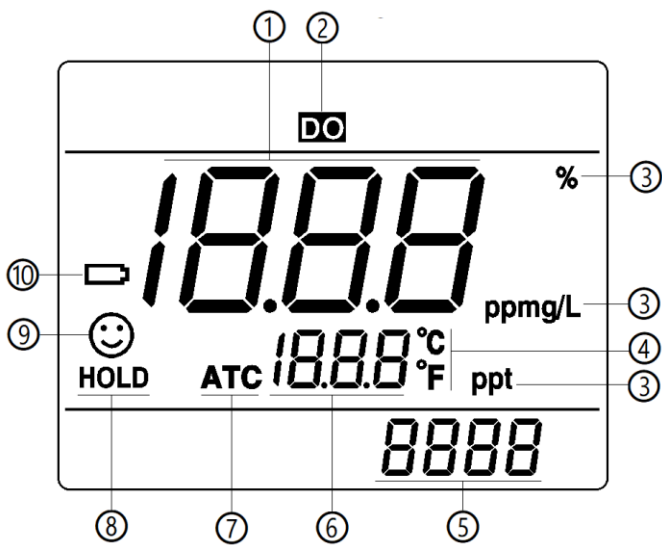
2 Technical Specifications

	Technical specifications	
DO	Range	(0 ~ 20.00) mg/L(ppm) (0 ~ 200.0)%
	Resolution	0.01/0.1 mg/L(ppm) 0.1/1 %
	Accuracy	±0.30 mg/L
	Response time	≤30s(77°F/25°C, 90% response)
	Error at zero point	≤ 0.10 mg/L
	Temperature compensation range	32~113°F (0 ~ 45°C) (Automatic)
	Salinity compensation range	0 ~ 45 ppt (Automatic)
	Air pressure compensation	60~ 200 kPa (Manual)
	Electrode type	Polarographic
Temperature	Range	32~212°F (0~100°C)
	Resolution	0.1°F (0.1°C)
	Accuracy	±0.9°F (0.5°C) ±1 digit

Other	Power	AA batteries x3 (1.5V×3)
	IP rating	IP57 dustproof and waterproof
	Dimension & weight	Meter: 91×190×33mm /352 g
		Carrying case: 330×270×82mm/ 1.6 kg
	Paper box: 255×200×45mm/ 860 g	

3 Instrument Description

3.1 LCD display








①	Measurement reading
②	Parameter mode icon
③	Units of measurement
④	Temperature units
⑤	Indicator icons
⑥	Temperature value and indicator icons
⑦	ATC—automatic temperature compensation
⑧	Automatic reading hold icon
⑨	Stability icon of readings
⑩	Low battery icon

3.2 Keypad functions

Short press ----- <2 seconds;
 Long press ----- >2 seconds.



Table -1 Keypad operations and Diagram-2

Keypad	Operations	Descriptions
	Short press	<ul style="list-style-type: none"> Press this key to turn on/off the meter
	Short press Long press	<ul style="list-style-type: none"> Short press to select measuring unit: mg/L(ppm)→ % Long press to enter the main parameter setup menu.
	Long press Short press	<ul style="list-style-type: none"> In the measurement mode, long press to enter calibration mode; Short press to cancel operation, return to measurement mode or the previous operation; When the measure value is locked-up, short press release lock-up.
	Short press	<ul style="list-style-type: none"> In measurement mode: press to turn on/off the backlight; In calibration mode: press to calibrate; In the parameter setup mode: press to enter and open the sub-menu, confirm parameter.
	Short press	<ul style="list-style-type: none"> In parameter setup mode: press to select parameter.

3.3 Display mode

3.3.1 Display mode of measurement

Refer to Diagram - 3 and Diagram - 4 for the display mode in the units of mg/L and ppm; Diagram - 5 shows the display mode in measuring unit of % referring to air saturation; Diagram - 6 shows the display mode. When salinity value is ≥ 3 ppt, salinity displays at the bottom right of LCD. *A-15* means that the automatic compensated salinity is 15 ppt, *A*--Auto.

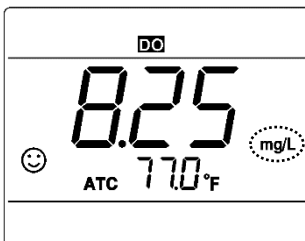


Diagram - 3

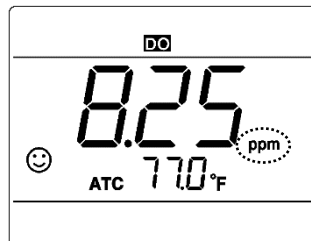


Diagram - 4

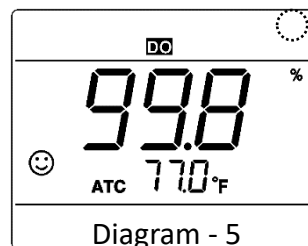


Diagram - 5

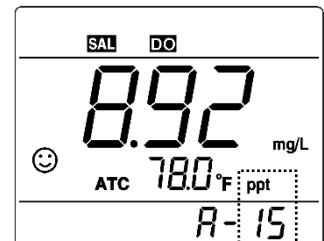





Diagram - 6

3.3.2 Display mode of stable reading

When the reading is stable, the stable icon  displays on LCD. Please do not get the reading or calibrate before the smiley icon  stays on LCD.

3.3.3 Automatic lock-up

Select from parameter setting P6.2 to set up automatic lock-up mode (Off-On), select **On** to turn on lock-up. When the reading is stable over 10 seconds, the meter will automatically lock up the measuring value, and LCD displays HOLD icon, see Diagram - 7. When the measure value is locked-up, press  to release lock-up.

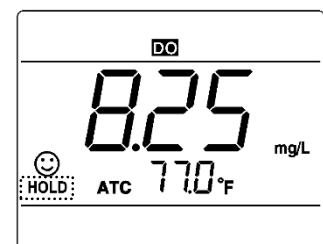


Diagram - 7

3.4 Other functions


3.4.1 Automatic Power-off

Select from parameter P4.5 to select automatic power-off (On-Off), select **On** to turn on automatic power-off, the meter will turn off automatically after 20 minutes of nonuse. Select **Off** to turn off automatic power-off.

3.4.2 Back-light

The meter is with white backlight, suitable for application even in dark environments. However, when backlight is on, the consumption of the power will increase. Select from P6.3 to select lasting time for backlight: **1-2-3-Off**, i.e. select backlight lasting time to be 1 minute, 2 minutes or 3 minutes. When Off is selected, the backlight will be turned on all the time.

3.4.3 Battery

The meter adopts 3xAA batteries. Please use LR6 alkaline battery to ensure the battery quality. Battery life >500 hours (without backlight). When LCD displays  icon, please replace with new batteries, see Diagram - 8.

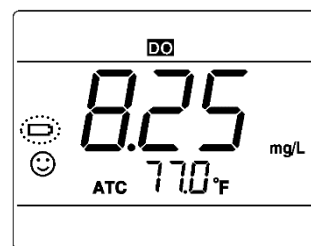
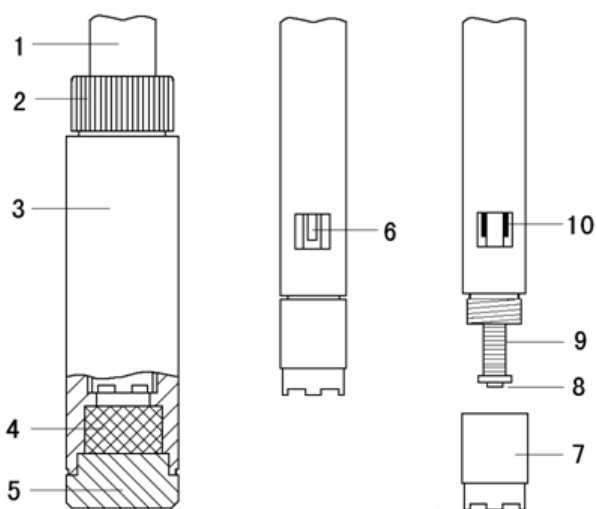


Diagram- 8

4 Polarographic DO (Dissolved Oxygen) Electrode

4.1 Structure of the DO electrode

The meter connects to DO500 polarographic DO electrode, with built-in temperature sensor and the salinity sensor, helps realize automatic temperature compensation and automatic salinity compensation. See Diagram - 9 of the electrode structure.



1	DO Electrode
2	Calibration sleeve lock-up ring
3	Calibration sleeve
4	Moistened sponge
5	Bottom cap of the
6	Temperature sensor
7	Membrane cap
8	Cathode (gold chip)
9	Anode
10	Salinity sensor

Diagram - 9

4.2 Storage of the DO electrode

The surface of the sensitive membrane of the dissolved electrode should be kept moist to prevent the electrolyte at the cathode from drying out. There's a sponge at the bottom of the calibration sleeve (see Diagram - 9), always keep it moist. Once the sponge is dry, add a few drops of distilled or deionized water into it, make sure the sponge is wet while no water flows out, and tighten the calibration lock-up ring to keep the dissolved oxygen electrode under humid conditions.

4.3 Clean the salinity electrode

The built-in salinity sensor (see Diagram - 9) is coated with platinum black to minimize electrode polarization and expand measuring range. DO NOT brush the salinity sensor as it may damage the platinum black. If the platinum black sensor is stained, rinse it in distilled or deionized water or gently clean it in warm water containing detergent or alcohol.

4.4 Replace the membrane cap

When the electrode response time is long and the measured value shows obvious deviation, or the sensitive membrane of the dissolved oxygen electrode looks wrinkled, cracked or damaged, the membrane cap should be replaced in time according to the following steps.

4.4.1 Unscrew the membrane cap, clean the electrode with distilled or deionized water, allow it to dry, use a clean flannel or tissue paper to wipe the surface of the cathode (gold chip) with a bit of force.

4.4.2 Inject the electrolyte into a new membrane cap slowly, make sure no air bubbles is generated. Flick the membrane cap with fingers to eliminate the bubbles. Then put the membrane cap on the table and slowly screw in the electrode clockwise vertically until the membrane cap is firmly screwed on. At this time, the excess electrolyte will be squeezed out, wipe it with a tissue paper and wash the electrode in distilled or deionized water.

4.4.3 Check and make sure there's no air bubbles in the electrolyte (except the tiny bubbles). Otherwise the membrane cap should be unscrewed, add the electrolyte and reassemble.

4.4.4 Do not touch the sensitive membrane when using the electrode or replacing the membrane cap, because the sweat and oil from the skin will affect the membrane quality and reduce the oxygen permeability.

5 Calibration and Measurement of Dissolved Oxygen

5.1 Connect the DO electrode

The meter uses 8-pin socket. When the electrode is connected to the meter, please rotate it slowly to find the position of the bayonet and connect it, and then tighten the cap nut. Be careful not to pull the cable forcefully to prevent poor contact and keep the plug clean and dry.






5.2 Preparation for calibration

The meter is only suitable for air calibration with the calibration sleeve. When calibrating, make sure that the air temperature and the temperature of the measured water solution to be close (temperature difference $\leq 10^{\circ}\text{C}$). If the temperature difference is large, the electrode should be immersed in the

calibration sleeve and then immersed in the measured water for about 10 minutes, then re-calibrate the meter. The electrode polarization and calibration must be performed every time when the instrument is turned on.

5.3 DO Calibration

5.3.1 Steps for DO calibration




- a) Press  to turn on the meter, press  to choose the units: mg/L (ppm) and %.
- b) Insert the DO electrode into the calibration sleeve, screw tight the calibration cap, leave it for 3~5 minutes until the reading becomes stable.
- c) Long press  and enter calibration mode. CAL will be flashing at the bottom right of LCD. Wait until the reading becomes stable and the smiley icon  displays on LCD, press  to calibrate. The calibration will be completed in a few seconds and then the meter goes back to measurement mode. If the reading is not stable, wait a few more minutes until the reading becomes stable.

Remarks: The measurement principle of the polarographic dissolved oxygen is that the oxygen reacts through the electrode membrane at the cathode and generates an electric current. Under the same conditions, the measured value of the dissolved oxygen electrode in air is greater than it in water. The calculation program of this instrument sets the display value of the instrument in the air to 110% according to the characteristics of DO500 dissolved oxygen electrode. Therefore, when the electrode is calibrated with the calibration kit of air, the dissolved oxygen saturation is 110%, and the dissolved oxygen concentration is 9.07mg/L (77°F/25°C); when the electrode is immersed in water to test, the dissolved oxygen saturation is 100%, and the concentration is 8.25mg/L (77°F/25°C), which means that the measured value in the air is 10% greater than it in water. Therefore, the meter is only suitable to calibrate in air with calibration sleeve and then measure the dissolved oxygen in water.

5.4 Other calibration and adjustment

5.4.1 Zero-oxygen calibration





Zero-oxygen calibration is generally only needed when replacing a new electrode, replacing a diaphragm cap, and when the electrode has not been used for a long time. Generally, it is not necessary to perform zero oxygen calibration. The instrument has been calibrated for zero oxygen before it leaves the factory, so it is not necessary to perform zero oxygen calibration for the first use. The zero-oxygen calibration is carried out in the following steps.

- a) Prepare 100ml anaerobic water: Weigh 5g of anhydrous sulfurous acid (Na_2SO_3) in a 100ml beaker, add 100ml of pure water and stir to dissolve. The anaerobic water is valid within 1 hour.
- b) Connect the electrode with the meter, wait for 5 minutes and perform calibration according to Section 5.3.1.
- c) Immerse the electrode into anaerobic water, long press  and the meter enters calibration mode, wait for about 5 minutes until the reading is $\leq 0.15\text{mg/L}$. Press  to calibrate, calibration will be finished in a few seconds, the meter displays 0.00mg/L , and then rinse the electrode with pure water.
- d) If the reading is $\leq 0.02\text{ mg/L}$ in 5 minutes, both the response time and zero oxygen error meet the requirements, no need to perform zero oxygen calibration, press  to turn to measurement mode.
- e) If the reading is $>0.15\text{mg/L}$ after 5 minutes, it indicates that the response of the meter is slow and the zero oxygen error is large. User can replace the membrane cap or unscrew the membrane cap, take

out the polishing paper from the accessories and polish the surface of the gold chip at cathode, wipe it with clean flannel or tissue paper, rinse the electrode with pure water and allow it to dry. Add some electrolyte into the membrane cap, screw it on tightly and then perform full saturation and zero oxygen calibration, follow the steps of 5.3.1 and 5.4.1.

5.4.2 Salinity calibration

Dissolved oxygen measurement mode has automatic salinity compensation function, so salinity calibration is required. Salinity calibration is generally only needed when a new electrode is replaced and the instrument has not been used for a long time. It is not needed in daily usage. The meter has been salinity calibrated before it leaves factory, so it is not necessary to calibrate it for the first use. The salinity calibration steps are as follows:

- a) Switch the meter to parameter setting P4.2, see Diagram – 10 (a).
- b) Press  to enter salinity calibration mode. Use 12.88mS/cm conductivity calibration solution to calibrate. If the electrode is empty or the calibration solution is not accurate, **Er1** icon displays at the bottom right of LCD. Immerse the electrode into 12.88mS/cm conductivity standard solution (Note that the solution should exceed the height of the salinity electrode). Stir gently and wait until the salinity value becomes stable and the stable icon  displays on LCD, press  to calibrate, see Diagram – 10 (b), press  twice to return to measurement mode, see Diagram – 10 (c).

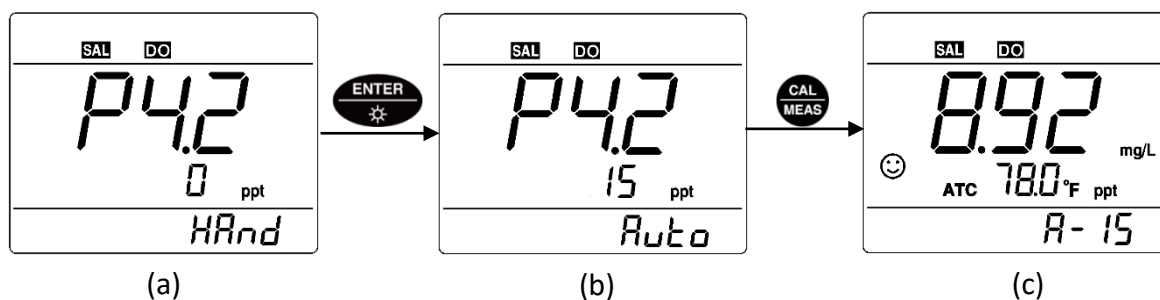


Diagram 10

5.4.3 Adjust the air pressure value

The meter has the function of manual air pressure compensation. When the air pressure of the location where the instrument is used changes greatly, it is recommended to set according to the value of the standard barometer or altitude of different regions (see Appendix – 5 and Appendix – 6) to ensure the accuracy of the air pressure compensation of the meter. Refer to parameter setting P4.3 to adjust the air pressure value.

5.5 Measurement of water samples

5.5.1 Measurement in laboratory

Use a stirrer to measure: Pour the water sample into a large beaker, install the electrode on the electrode holder, turn on the stirrer and test. This method requires a suitable stirring speed to balance the oxygen consumed by the dissolved oxygen electrode and the oxygen absorbed when the solution is stirred. Adjust the stirring speed slowly and repeatedly, and then get the reading until the reading value becomes stable.

5.5.2 Measurement in field

- a) Measurement in flow water (water velocity>5cm/s): immerse the dissolved oxygen electrode into the water, the water surface should exceed the position of the temperature sensor. The direction of the electrode and the water flow is 45°~75°, stir gently for 3~5 minutes and then get the reading after the reading is stable.
- b) Measurement in static or slow flow water: immerse the dissolved oxygen electrode in to water, make sure the water surface is above the position of the temperature sensor. The direction of the electrode and the water flow is 45°~75°, stir rapidly in the water with the speed >5 cm/s continuously for 3~5 minutes to get the reading after the reading is stable.

5.6 Notes of the measurement

5.6.1 When measuring, there should be no air bubbles on the surface of the sensitive membrane of the dissolved oxygen electrode which is in contact with water. Also, there should be no air bubbles in the electrolyte inside the electrode (not including tiny bubbles). Otherwise, it will affect the response speed and measurement accuracy. If big air bubbles appear in the electrolyte, unscrew the membrane cap, add the electrolyte, and then screw it back on.

5.6.2 In dissolved oxygen measurement, the temperature has a great influence on the measured value. The thermistor of the dissolved oxygen electrode is installed on the electrode shell and it contacts with the water directly. Due to the different sensitivity between the thermistor and the electrolyte liquid, it usually takes 3 to 5 minutes before the temperature of the electrolyte reaches the temperature of the temperature sensor. For this, the reading period must be >3min, otherwise a large error will occur. Especially when there's a big difference between the electrode temperature and the water temperature, it is necessary to extend the reading period.

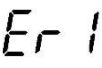




5.6.3 Factory default setting

For factory default setting, please refer to parameter setting P4.5. All calibration data is deleted and the meter restores to the theory value. Some functions restore to original value (refer to Appendix – 1). When calibration or measurement fails, please restore the meter to factory default and then perform re-calibration or measurement. Please note once factory default setting is set, all the data deleted will be irretrievable.

5.7 Self-diagnosis information

During the process of calibration and measurement, the meter has self-diagnosis functions, indicating the relative information as below, please refer to Table -2.

Table – 2 Self-diagnosis Information

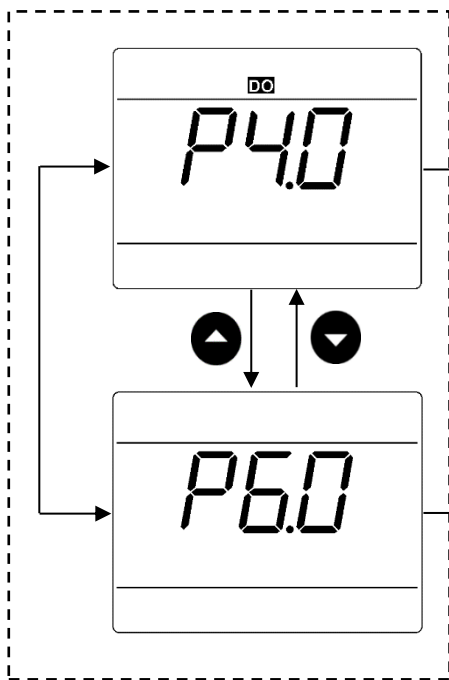
Display Icon	Contents	Checking
	Press  when reading value is not stable during calibration.	Press  after  icon displays and stays on screen.
	Solution error during salinity calibration; Salinity reading out of range of the meter recognition.	<ol style="list-style-type: none"> 1. Check if the calibration solution is accurate. 2. Check if the meter connects with the meter properly. 3. Check if the electrode is defective.

6 Parameter Setting

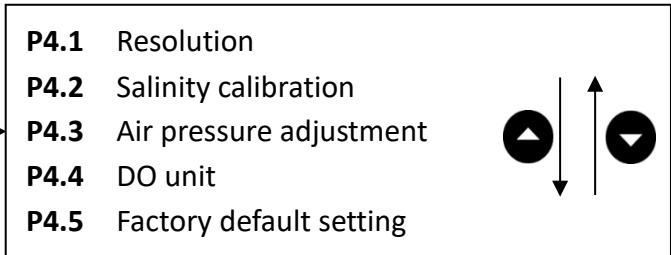
6.1 Main menu of parameter setting

Long press **MODE SETUP** in measurement mode, the meter enters P4.0 mode, and then press **▲** or **▼** to change menu P4.0→P6.0. For details, please see Diagram – 11. P4.0: sub-menu of DO parameter setup; P6.0: basic parameter setup menu.

Main menu of parameter setting



Submenu of DO parameter setting



Sub-menu of basic parameter setting

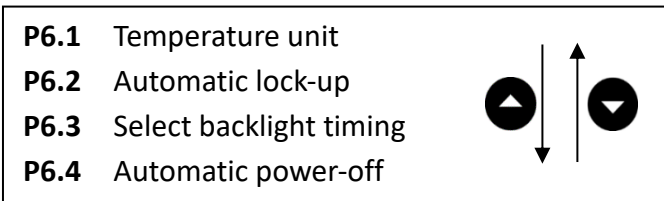
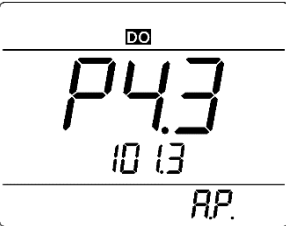






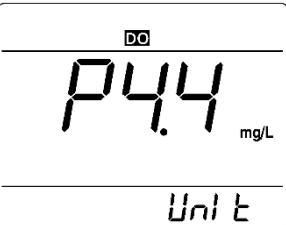





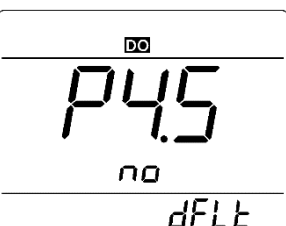





Diagram - 11




6.2 Main menu of parameter setting

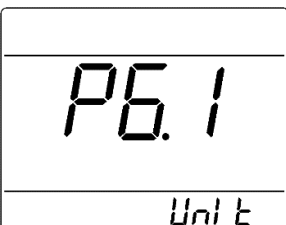





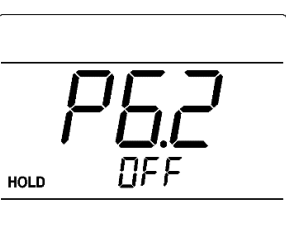





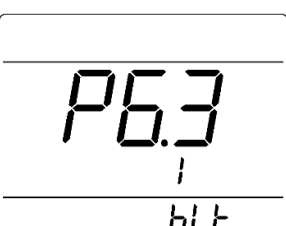





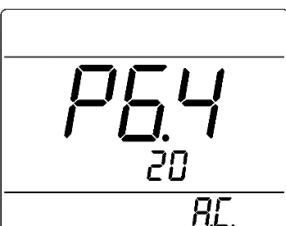




Press **ENTER** in P4.0 mode, the meter enters submenu of DO parameter setting P4.1, press **▲** or **▼** to switch among P4.1→P4.2→...→P4.5.

	<p>P4.1—Resolution(0.01-0.1)</p> <ol style="list-style-type: none"> 1. Press ENTER, 0.01 flashes, press ▲ to select resolution, press ENTER confirm. The meter automatically displays 0.1 or 1 corresponding to “%”. 2. Press ▲ to enter P4.2, or press CAL MEAS to return.
	<p>P4.2—Salinity calibration</p> <p>Refer to Section 5.4.2 for the salinity calibration steps.</p>

	<p>P4.3—Air pressure adjustment(60-120 kPa)</p> <ol style="list-style-type: none"> 1. Press , 101.3 flashes, press  or  to adjust air pressure value according to laboratory barometer, press  to confirm. 2. Press  to enter P4.4, or press  to return.
	<p>P4.4— DO unit(mg/L-ppm)</p> <ol style="list-style-type: none"> 1. Press , mg/L flashes, press  to select mg/L-ppm, press  to confirm. 2. Press  to enter P4.5, or press  to return.
	<p>P4.5—Factory default setting(No-Yes)</p> <p>Press , No flashes, press  to select No→Yes, press  to confirm, the meter returns o measurement mode.</p> <p>No— Don't restore to factory default; Yes—Restore to factory default.</p>

6.3 Main menu of parameter setting

Press  in P6.0 mode, the meter enters submenu of basic parameter setting P6.1, press  or  to switch among P6.1→P6.2→P6.3→P6.4.

	<p>P6.1 — Temperature unit(°C-°F)</p> <ol style="list-style-type: none"> 1. Press , °C flashes, press  to select °C-°F, press  to confirm. 2. Press  to enter P6.2, or press  to return.
	<p>P6.2 — Automatic lock-up (Off-On)</p> <ol style="list-style-type: none"> 1. Press , OFF flashes, press  to select OFF-On, press  to confirm. Off—Unlock-up; On—lock-up (Stable reading > 10 seconds and the reading will be automatically locked up). 2. Press  to enter P6.3, or press  to return.
	<p>P6.3— Select backlight timing (1-2-3-Off)</p> <ol style="list-style-type: none"> 1. Press , 1 flashes, press  to select 1-2-3-OFF, press  to confirm. Select Off to turn on the backlight, the time unit is minute. Factory default setting is 1 minute. 2. Press  to enter P6.4 mode, or press  to return.
	<p>P6.4—Automatic power-off setup(10-20-30-Off)</p> <ol style="list-style-type: none"> 1. Press , 20 flashes, press  to select 10-20-30-Off, press  to confirm. Select off to turn off automatic power-off, the time unit is minute. 2. Press  to return.

7 What's in the Kit?

	Content	Quantity	DO100	
			35643-05	35643-00
1	DO100 portable dissolved oxygen meter	1	√	√
2	DO500 polarographic DO electrode	1	√	√
3	DO501 DO inner solution (30mL)	1	√	√
4	DO502 cathode polishing paper	2	√	√
5	DO503 DO electrode membrane cap	3	√	√
6	Instruction manual	1	√	√
7	Carrying case	1	√	
8	Paper box	1		√

8 Warranty

We warrant this instrument to be free from defects in material and workmanship and agree to repair or replace free of charge, at option of OAKTON INSTRUMENTS, any malfunctioned or damaged product attributable to responsibility of OAKTON INSTRUMENTS, for a period of THREE YEARS (SIX MONTHS for the probe) from the delivery.

This limited warranty does not cover any damages due to:

- External causes such as accidents, abuse, improper use;
- Normal wear and tear;
- Failure to follow the product instructions or to perform any preventive maintenance, modifications, combination or use with any products, materials, processes, systems or other matter not provided or authorized in writing by us, unauthorized repair
- Other actions or events beyond our reasonable control.

The product warranty period is the time for users to get free service after purchasing the product, not the service life of the meter or electrode.


Appendix – 1 Table of Parameter Setting

Mode	Prompts	Parameter setting items	Abbreviation	Description	Factory Default
P4.0 DO	P4.1	Resolution	<i>rES</i>	0.01-0.1(mg/L, ppm) 0.1-1 (%)	0.01 mg/L
	P4.2	Salinity calibration	<i>HRnd</i>	0-45 ppt	0.01
	P4.3	Air pressure adjustment	<i>AP.</i>	60-200 kPa	101.3
	P4.4	DO unit	<i>Unit</i>	mg/L-ppm	mg/L
	P4.5	Restore to factory default setting	<i>dFLt</i>	No-Yes	No
P6.0 Basic Parameter	P6.1	Temperature unit	<i>Unit</i>	°C -°F	/
	P6.2	Automatic lock-up timing	/	Off-On	/
	P6.3	Backlight timing	<i>bLt</i>	1-2-3-Off	/
	P6.4	Automatic power-off timing	<i>AC.</i>	10-20-30-Off	/

Appendix –2 Icons and Abbreviation

Mode	Prompts	Abbreviation	Stand for	Explanation
P4.0 DO	P4.1	<i>rES</i>	Resolution	Resolution
	P4.2	<i>HRnd/ Auto</i>	Manual/Automatic	Manual or automatic salinity compensation
	P4.3	<i>AP.</i>	Air pressure	Air pressure adjustment
	P4.4	<i>Unit</i>	Unit	DO unit
	P4.5	<i>dFLt</i>	Factory default setting	Factory default setting
P6.0 Basic Parameter	P6.1	<i>Unit</i>	Unit	Temperature unit
	P6.2	/	/	/
	P6.3	<i>bLt</i>	Backlight setting	Backlight setting
	P6.4	<i>AC.</i>	Automatic power-off	Automatic power-off timing setting

Appendix –3 Table of Self-diagnosis Symbol

Icon	Self-diagnosis information	DO
<i>Er 1</i>	Press  when measuring value is not stable during calibration.	√
<i>Er 2</i>	Solution error during salinity calibration; Salinity reading out of range of the meter recognition.	√

Appendix –4 Table of DO of Saturated Water at Different Temperatures

Temp. °F/°C	DO mg/L	Temp. °F/°C	DO mg/L	Temp. °F/°C	DO mg/L	Temp. °F/°C	DO mg/L
32.0/0	14.64	53.6/12.0	10.77	75.2/24.0	8.41	96.8/36.0	6.84
33.8/1.0	14.22	55.4/13.0	10.53	77.0/25.0	8.25	98.6/37.0	6.73
35.6/2.0	13.82	57.2/14.0	10.30	78.8/26.0	8.11	100.4/38.0	6.63
37.4/3.0	13.44	59.0/15.0	10.08	80.6/27.0	7.96	102.2/39.0	6.53
39.2/4.0	13.09	60.8/16.0	9.86	82.4/28.0	7.82	104.0/40.0	6.43
41.0/5.0	12.74	62.6/17.0	9.66	84.2/29.0	7.69	105.8/41.0	6.34
42.8/6.0	12.42	64.4/18.0	9.46	86.0/30.0	7.56	107.6/42.0	6.25
44.6/7.0	12.11	66.2/19.0	9.27	87.8/31.0	7.43	109.4/43.0	6.17
46.4/8.0	11.81	68.0/20.0	9.08	89.6/32.0	7.30	111.2/44.0	6.09
48.2/9.0	11.53	69.7/21.0	8.90	91.4/33.0	7.18	113.0/45.0	6.01
50.0/10.0	11.26	71.6/22.0	8.73	93.2/34.0	7.07	/	/
51.8/11.0	11.01	73.4/23.0	8.57	95.0/35.0	6.95	/	/

Appendix –5 Table of DO of Saturated Water at Different Altitudes

Altitude		Barometric pressure		DO		Altitude		Barometric pressure		DO
Feet	Meter	kPa	mmHg	mg/L	Feet	Meter	kPa	mmHg	mg/L	
0	0	101.3	760	8.25	7500	2287	77.1	579	6.28	
500	152	99.34	746	8.09	8000	2439	75.63	568	6.16	
1000	305	97.6	733	7.95	8500	2591	74.44	559	6.06	
1500	457	95.87	720	7.81	9000	2744	72.97	548	5.94	
2000	610	94.28	708	7.68	9500	2896	71.64	538	5.83	
2500	762	92.54	695	7.54	10000	3049	70.17	527	5.71	
3000	915	90.95	683	7.41	10500	3201	68.84	517	5.61	
3500	1067	89.35	671	7.28	11000	3354	67.38	506	5.49	
4000	1220	87.75	659	7.15	12000	3659	66.58	500	5.42	
4500	1372	86.15	647	7.02	13000	3963	65.78	494	5.36	
5000	1524	84.56	635	6.89	14000	4268	64.98	488	5.29	
5500	1677	83.09	624	6.77	15000	4573	64.18	482	5.23	
6000	1829	81.63	613	6.65	16000	4878	63.38	476	5.16	
6500	1982	80.03	601	6.52	17000	5183	62.58	470	5.10	
7000	2134	78.56	590	6.40	18000	5488	61.79	464	5.03	

Appendix –6 Table of DO of Saturated Water under Different Barometric Pressure

Barometric pressure		DO (mg/L)		
mmHg	kPa	15°C	25°C	35°C
750	100.00	9.94	8.14	6.85
751	100.13	9.96	8.15	6.86
752	100.26	9.97	8.16	6.87
753	100.40	9.98	8.17	6.88
754	100.53	9.99	8.18	6.89
755	100.66	10.00	8.20	6.90
756	100.80	10.01	8.21	6.91
757	100.93	10.03	8.22	6.92
758	101.06	10.04	8.23	6.93
759	101.20	10.07	8.24	6.94
760	101.33	10.08	8.25	6.95
761	101.46	10.09	8.26	6.96
762	101.60	10.11	8.27	6.97
763	101.73	10.12	8.28	6.98
764	101.86	10.14	8.30	6.99
765	102.00	10.15	8.31	7.00
766	102.13	10.16	8.32	7.01
767	102.26	10.18	8.33	7.02
768	102.40	10.19	8.34	7.02
769	102.53	10.21	8.35	7.03
770	102.66	10.22	8.36	7.04
771	102.80	10.23	8.37	7.05
772	102.93	10.25	8.39	7.06
773	103.06	10.26	8.40	7.07
774	103.19	10.28	8.41	7.08
775	103.33	10.29	8.42	7.09

Conversion between mmHg and kPa: $\text{mmHg} \times 0.13333 = \text{kPa}$ $\text{DO}_{\text{pt}} = \text{P} \times \text{DO}_t \div 760$

DO_{pt} — DO concentration under temperature (t), barometric pressure (P), mg/L.

Note: P — Barometric pressure, mmHg;

DO_t — DO concentration under temperature (t), barometric pressure 760mmHg, mg/L;

760 — Barometric pressure, mmHg.

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