皆仪 AZOVTES®

请享皆仪

AE8403 手持式溶氧仪

中英文使用说明书

Dissolved oxygen meter

引言

- 感谢您购买本公司生产的手持式溶氧仪
- 本手册仅提供本产品的相关测量功能的使用方法以及使用方面的注意事项，要发挥本产品的最佳使用效能，使用前请详阅本手册，并妥善保管本手册以便不时之需。
- 当您收到此产品时请检查仪器是否完好，配件是否齐全，如有缺失或是其它任何问题请您尽快与供应商联系。

目录

- 产品参数 ---------- (01)
- 按键&屏幕介绍 ---------- (02~03)
- 校正 ---------- (04)
- 测量&设定 ---------- (05)
- 更换膜套 ---------- (06~07)
- 常见问题 ---------- (08)
- 特殊声明 ---------- (09)

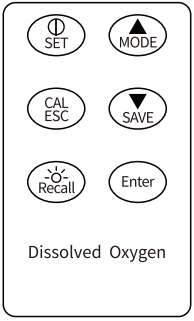
- Product parameter ---------- (10)
- Keys function ---------- (11~12)
- Calibration and measurement ---------- (13~14)
- setup ---------- (15)
- Change diaphragm ---------- (16~17)
- Frequent question ---------- (18)
- Special announcement ---------- (19)

产品参数

型号：AE8403

溶解氧测量范围	0.0~30.0mg/L 0~199.9%
溶解氧分辨率	0.1毫克/升（mg/L）
溶解氧精度	±3.0%满量程
溶解氧校正	空气中100%饱和溶氧校正
温度测量范围	0.0~50.0℃
温度分辨率	0.1℃
温度精度	±0.5℃
温度单位切换	℃/°F切换
记录数据	手动记录99笔
盐度补偿	0~42ppt
海拔补偿	0~3500m
自动温度补偿ATC	支持
自动关机	无操作一小时后
LCD尺寸	41*50mm
背光	支持
探头线长	约3.5米（加探头）
供电	AAA*4pcs
产品尺寸	65*28*165mm
产品标配	仪器/探头/膜套/电池 电解液/注射器/说明书/手提箱

按键介绍



SET键:短按开关机/长按进入设定模式

CAL/ESC键:测量模式下长按进入校正模式/设定模式下短按退出设定模式

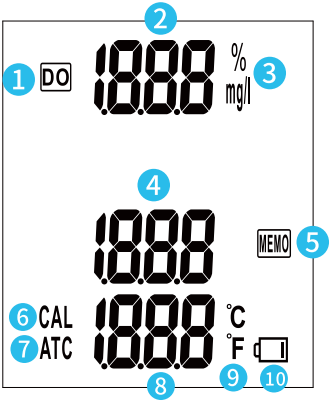
Recall键:短按开启或关闭背光灯/长按查看已保存的数据,按上下键可以逐条查看记录数据,按ESC键可退出记录查看模式。

Mode/▲键:增加数值/切换模式

Save/▼键:减少数值/切换模式/测量模式下短按可手动保存数据(最高99笔)

Enter键:确认键

屏幕介绍



1.“DO”测量模式　　2.当前读数

3.含量单位　　4.存储笔数

5.数据存储图标　　6.“CAL”校正模式

7.“ATC”自动温度补偿

8.温度读数　　9.温度单位

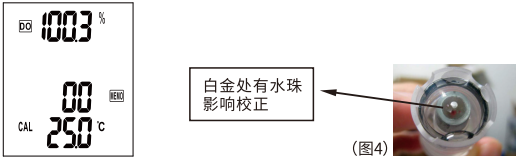
10.低电量提示，请更换电池以保证测量的准确性

校正步骤

1:按“ ⏻/SET”键开机。
2:校正时要在百分比"%"模式下,按Mode键可以切换。

(百分比模式)　　(毫克/升模式)

3:在空气中等测量值稳定,并确保**白金处没有水珠或泥浆** (图4)。
4:长按“CAL/ESC”键大于1秒进入校正,等待几分钟后自动完成校正或手动按“Enter”键完成校正。校正完成显示99%~101%为正常,超出该数值则需重新校正。



(图4)

5:按“Mode/▲”键切换到毫克/升"mg/L"单位,就可以开始测量了。

6:如果**1小时没有任何按键操作就自动关机**;要取消自动关机,则在关机状态下同时长按“SET”+“Mode/▲”键开机,直到显示“n”字样则仪器自动关机解除,仪器会一直开机至电池耗尽。

测量

1：将测棒头放置到待测的水层深度**（测棒头不能碰到池底）**，要不停地轻轻前后或左右来回摆动测棒（如果不摆动测棒，测量值会持续下降，低于实际溶氧值），1~3分钟后测棒温度和待测水层温度达到平衡，即可记录测量数据。**如果海水场合或高原地区先要设定盐度补偿或海拔补偿。**

设定

1.P10删除保存数据：测量模式下，长按“①/SET”键进入设定模式P10，按“Enter”键到P11，按“Mode/▲”或“Save/▼”键出现“YES”字样，按“Enter”键删除保存数据并回到P10。

2.P70溶解氧参数：在设定模式P10，按“Mode/▲”或“Save/▼”键切换到P70，

a) 按“Enter”键进入P71溶解氧校正时的温度值，实际测量时的温度值与校正时的温度值之差大于10°C时，测量时会出现“E21”提示；

b) 按“Enter”键到P72盐度补偿，按“Mode/▲”或“Save/▼”键调整到实际盐度(淡水为0.0ppt),按“Enter”键保存。

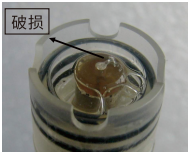
c) 按“Enter”键到P73海拔补偿，按“Mode/▲”或“Save/▼”键调整到实际地点的海拔高度（百米的倍数），按“Enter”键保存；

3.P80切换温度单位：在设定模式P10，按“Mode/▲”或“Save/▼”键切换到P80，按Enter键进入P81再按“Mode/▲”或“Save/▼”键切换°C/°F单位，按Enter键保存，最后按“CAL/ESC”回到测量模式。

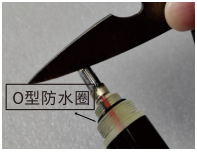
更换膜套

1.出现如下情况之一则需要更换膜套:

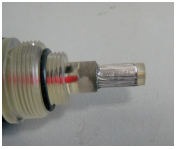
1) 使用时间长达1年以上;
2) 校正时出现E02或E03报错信息,可以更换膜套后试机;
3) 膜套的膜有松动、褶皱或破损时(图1,顶端膜有明显破损);
4) 测量数据明显异常,或响应速度明显变慢,可以更换膜套后试机;



(图1)



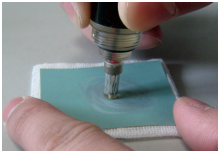
(图2)



(图3)

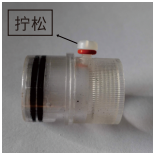
1.更换膜套步骤:

1) 旋下膜套,如果O形橡胶圈开裂、老化,则更换新O形橡胶圈;
2) 用剪刀刮干净金属管上沉积物(图2),**千万不能刮到顶端!!!** 清洗后如(图3)。顶端如有污垢则用指甲抠干净 **(千万不能用剪刀等硬物刮!);**
3) 用纸巾擦干电极,用砂纸轻轻打磨顶端(图4),用纯净水冲洗电极,反复冲洗干净,然后轻轻甩干(图5);



(图4)

(图5)

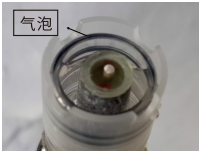


(图6)

4) **确认旋松塑料螺丝**(图6)，确定新膜套内没有杂物，然后倒放在纱布上，慢慢倒满电解液(图7)，尽量不要有气泡，如出现气泡或发现杂物重新倒电解液；

5) 测棒头垂直朝下，慢慢旋紧膜套，确定O形橡胶圈被压紧，膜套只能慢慢被旋紧，旋紧后如果出现小气泡 (图8)，用注射器加满电解液 (图9)，**最后旋紧塑料螺丝；**

（图7）



（图8）

（图9）

故障代码

1）E02：测量值超出下限；
2）E03：测量值超出上限；
3）E04：测量温度错误；
4）E21：校正时的温度与测量时的温度
相差大于10°C，重新校正即可；
5）E31：硬件问题，需要维修；

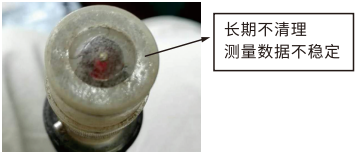
溶氧仪使用常见问题

1:错误操作:**从来不清洗测棒。**

每天测量结束后,**一定要用清水(如自来水)清洗测棒头**,冲洗或漂洗掉泥浆、有机碎屑、藻类等附着物;

每半个月要清洗膜套顶端(否则校正时会出现E02);

测棒旋下保护罩,取一张餐巾纸捏成团和测棒头一起浸入水里,在水里用餐巾纸轻轻擦拭膜套顶端。



2:错误操作:**长期不进行校正**

建议定期对仪器进行校准。

3:错误操作:**使用完没擦干、没晾干。**

使用完要用毛巾或纸巾擦干,放置通风处晾干,否则会慢慢损坏!

4:**长时间不使用没做处理,第二年拿出来可能就不能正常使用了!**

1) 一定要用清水清洗测棒头、电缆,在阴凉通风处晾干!
2) 检测膜套是否完好,如有破损则要更换,要注满电解液;
3) 取出电池,否则容易漏液造成仪表损坏!
4) **存放在零度以上的环境中,以免结冰损坏电极!**

警告:针筒针头、电解液要放置在儿童接触不到的地方!

特殊声明

1:旧电池必须按照地方法律和规则来处理。

2:本公司保留对本产品设计规格及说明书内容的更新,修改权利,若有变更恕不另行通知!

保修事项

1:本产品自购买日起,在正常使用未经拆装,维修或第三方因素的损坏下一年内享受保修服务,在任何正常情况下均提供维修。

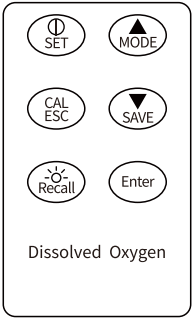
2:上述保修条款只对主机有效,探头配件等耗材不在保修范围内。

Product parameter

Model No: AE8403

Dissolved Oxygenmeasuring range	0.0~30.0mg/L 0.0~199.9%
Dissolved Oxygen Resolution	0.1mg/L
Dissolved Oxygen accuracy	±3%Full Scale
Dissolved Oxygen calibration	100% in free air for Dissolvedoxygen calibration
Temperature measurement Range	0.0~50.0°C
Temperature Resolution	0.1°C
Temperature Accuracy	±0.5°C
Unit Selection	°C/°F
Data record	Maximum99record (Manually)
Saltine compensation	0~42ppt
Altitude compensation	0~3500meter
Temperature compensation	Automatic temperaturecompensation (ATC)
Auto Power off	power off after one hour if noany key in action detected.
LCD display size	41*50mm
Backlight	Support
sensor wire length	about 3.5 meter (included sensor probe)
Power supply	AAA Size battery*4pcs
Product size	65*28*165MM
Accessories	Instrument itself /Sensor probel diaphragm sleeve /Battery /Electrolyte i Syringe / Instruction Manual / Plastic box

Keys function



SET key: Depress it to turn unit ON or OFF, depress it more than twosecond go to sETUPmode.

CAL/ ESC key:At normal measurement mode depress it morethan 3 seconds go to Calibration mode, in setup mode depress itescape from setup mode.

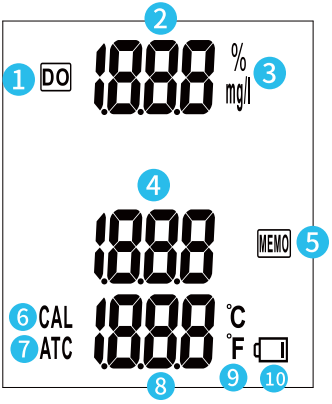
Recall key: Depress it to turn the backlight ON or OFF, depress itmore than 3 seconds to recall the stored data, at this mode depress"▲"or "▼" key to move up or down of the data record.DepressESC key escape from this mode.

Mode/▲key: Select mode / increase

Save/key: Select mode lreduce / in normal measurement mode, depress it can save data (maximum 99 record.

Enter key: confirm key.

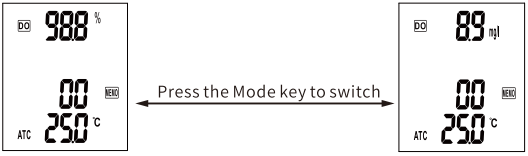
Screen introduction



1. “DO” Measurement mode
2. Current reading
3. Content unit
4. Number of stored pens
5. Storage icon
6. “CAL” Calibration mode
7. “ATC” Automatic temperature compensation
8. Current temperature
9. Temperature unit
10. Low battery prompt, please replace the battery to ensure the accuracy of measurement

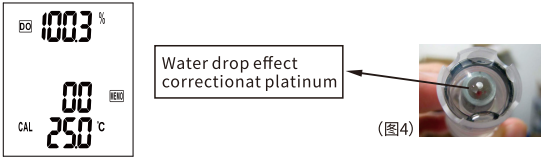
Calibration

1：Depress SET key turn unit ON.
2：In Calibration mode, if you want show in %, depress Modekey can be switch between mglL and %.



(%mode) (mg/L mode)

3：Wait the measurement value become stable, and sure nowater or mud at the golden electrode.(Figure 4).
4：Depress"CAL/ESC"key more than 1 second go to Calibrationmode, wait few minutes for auto calibration completed or depress"Enter" key to complete the calibration. After calibration LCDdisplay shown 99~101%is normal, if over this range,pleaserepeat the calibration again.sure no water or mudat the golden electrode



(图4)

5. Depress “Mode/▲" key to switch between "mg/L" can startto measure.
6：If no any key in detected，unit will be turn off after onehour; To cancel the auto power off function，in unit turn offstage, depress "SET”+“Mode/▲"at the same time to turn theunit ON,until LCD screen show "n"wording, it means no autopower off, unit will turn on until you turn it off manually.

measurement

1: Please immerse the electrode probe into the water undermeasure (probe head can't touch the bottom of the pool), andthen stir the probe slowly (if you don't stir it, the reading willdecrease timely, lower than the real value), after few minutes when the temperature of the probe same as the water undertest, than you can take the measured value, (if you aremeasure the saltine water or measure at high altitude area,please setup the saltine water compensation or altitudecompensation before measure.

setup

1：P10 Deleted stored data: In normal measurement mode, depress"⏻/SET”key go to setup mode P10, depress"Enter"key go to P11, depress “Mode/▲"or "Save/▼"key LCD screen show "YES"wording,depress"Enter"key to confirmed deleted allstored data and back to P10.

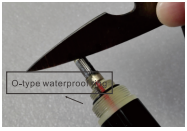
2：P70 Dissolved Oxygen parameter: ln setup P10，depress “Mode/▲ " or "save/▼" key switch to P70
a) Depress "Enter" key go to P71 dissolved Oxygen calibratedtemperature, if the real time temperature compare to calibratedtemperature is large than 10℃, when measure will show“E21"remind code;
b) Depress“Enter" key go to P72 saltine compensation,depress “Mode/▲" or “Save/▼" key to adjust to real saltinevalue，(fresh water is 0.0ppt)，depress “Enter"key to savesetting.
c) Depress“Enter”key go to P73 Altitude compensation,depress “Mode/▲" or "Save/▼" key to adjust the local areaaltitude, depress "Enter" key to save setting.

3. P80 selection temperature unit: In setup mode P10, depress “Mode / ▲ "or"Save/▼" key switch to P80, depress"Enter" key go to P81, then depress “Mode/▲ "or"Save/▼ " key switch to C/°F unit, depress"Enter" key to save setting, finally depress “CAL/ESC" key back to normal measurement mode.

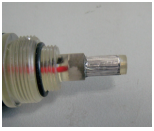
Change diaphragm

1: If below situation happened,please replace the diaphragm sleeve immediately.
a) sensor probe used more than one year.
b) In calibration mode if E02 or E03 code appeared,please change the diaphragm sleeve then calibrate again.
c) Diaphragm sleeve become loose, wrinkles or damaged (Figure 1)Measured data abnormal or response time become very slow,please replace the diaphragm sleeve then calibrate again.

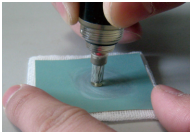
(Figure 1)



(Figure 2)


(Figure 3)

1. Step by step to replace diaphragm sleeve.
a) Unscrew the diaphragm sleeve, if the o ring broken, ageing, please also replace with a new o ring.
b) Use sharp object,for example knife or scissors to clean upthe dirty things of the probe body, be careful don't touch the topend of the sensor head !!!.After cleaned as(figure 3) shown.Topend if have dirty thing, please clean if with your nail.(don't useany hard object to clean it!)
c) Use soft paper to dry the surface of the electrode, then usesand paper to clean the top end with light force (Figure 4), thenuse pure water to clean and clear the electrode again, please doit few time to sure it is fully cleaned, then dry it (figure 5).


(Figure 4)

(Figure 5)

(Figure 6)

d) Confirm to unscrew the plastic screw (Figure 6): Confirm noany dirty thing inside the diaphragm sleeve, then place it on thegauze upside down, slowly pour over electrolyte (Figure 07),don't have any bubble find, if found any dirty thing or bubbles,please replace with new electrolyte again.

e)Place the test probe to the top of the sensor head, screw itslow until tighten, sure the o ring is press down firmly, diaphragm sleeve can only be tighten slowly,if you find any bubbleappeared after tightened (Figure 8), please use a Syringe to fill inmore electrolyte to let it full (Figure 9), finally tighten up theplastic screw;

(Figure 7)

(Figure 8)

(Figure 9)

Erroy code

1)E02: Measured value over the lower limit

2) E03: Measured value over the upper limit

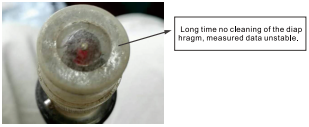
3) E04: Temperature measure error

4) E21: The different between the calibrated temperatureand the environment temperature more than 10 °C.

5)E31: Hardware problem,need return to factory for repair.

Common problem

1：Wrong operation: never clean the test probe.
Every time when you finished the operation of the dissolved Oxygenmeter, please use a fresh water to clean the test probe head (sensorhead), clean up the muds, organic debris,algae and other attachments!
Clean the diaphragm surface every half month (Otherwise in calibration will Eo2 error appeared); Detected the protection cover ofthe test probe,Take a tissue and knead it into a ball, drip it togetherwith the test probe in water, Gently wipe the top of the diaphragmsleeve.



2：Wrong operation: Long time no calibration.Highly recommend do calibration frequent.
3：Wrong operation: no dry and clean after use.Every time after use,must clean it with cloth or tissue, place in a ventilated place to dry.
4：No use of a long period of time, next year when use it again don'twork.
a)Must be cleaned with fresh water and gently wipe the top ofdiaphragm sleeve of the test probe head (sensor), place in aventilated place to dry.
b)Examine the diaphragm sleeve is perfect or not, if find damaged,must be replaced and fill in electrolyte without bubble
Warning: Syringe and syringe needle must keep away from thekids.

Special announcement

1) You,as the end user, are legally bound (Battery or dinance) to return all used batteries and accumulator: disposal in thehousehold garbage is prohibited”
You can hand over your used batteries / accumulators at thecollection points in your community or wherever batteries laccumulator are sold!
Disposal: Follow the valid legal stipulations in respect of thedisposal of the device at the end of its life cycle.
2) Our company to reserve the rights to modify and update thecontent of this manual and design specification without furthernotice.

Warranty matters

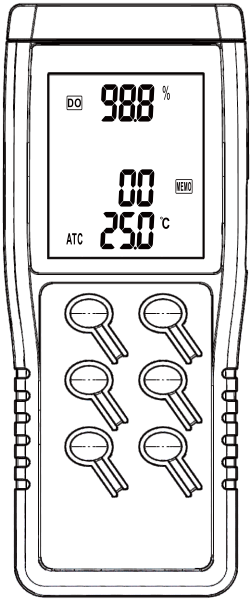
1：The meter is warranted to be free from defects inmaterial andworkmanship foraperiod ofone yearfromthe date of purchase.This warranty covers normaloperation and does notcover batterymisuse, abuse,alteration, tampering, neglect, improper maintenanceordamage resulting from leaking batteries.
2：The above warranty terms are only valid forthemain instrumentand consumables such as probeaccessories are not covered by thewarranty.

Dongguan jieyi Technology Co., Ltd.

Address: No. 221, Jiaoyu Road, Dalingshan Towr
Dongguan City
Official website: www.azovtes.com
Phone: 0769-82788006
E-mail:azovtes@163.com

皆仪 AZOVTES®

请享皆仪



东莞市皆仪科技有限公司

地址:广东省东莞市大岭山教育路221号
官网:www.azovtes.com
电话:0769-82788006
邮箱:azovtes@163.com

说明书版本号:2021_601