SMART SENSOR

希玛®仪表

笔式盐度计
使用说明书

版本号: 6-AR8012-0016-01

简介

本公司生产的便携式盐度计，产品精度高、工作稳定、可靠、便于携带。外形设计新颖美观，产品设计更具有专业性，它能测量液体的盐度值并同时显示被测液体的温度。盐度计广泛应用于工业、农业、医药、科研和环保等领域。

一、产品各部件名称：

①电源开关/数据保持键
②校准模式/数值增加键
③背光灯/数值减少键
④盐度值显示区
⑤温度显示区
⑥探头

二、产品技术参数：

技术参数	
盐度测量范围	0.00ppt～9.99ppt 10.0ppt～50ppt
分辨率	0.01ppt/0.1ppt
盐度精确度	±3%F.S±1digit
重复性	±0.01ppt/0.1ppt
被测溶液温度范围	0℃～60℃
温度精确度	±1℃
电源	4节LR44 1.5V纽扣电池
显示	LCD液晶大屏幕显示
工作环境温度	0℃～50℃
工作环境湿度	≤85%RH
产品尺寸	180×25×45mm

三、LCD液晶显示屏

①电池电量符号
②校准模式符号
③定时符号
④数据保持符号
⑤盐度值显示区
⑥温度值显示区
⑦温度单位
⑧盐度单位

四、仪器的各个按键功能

1、正常测量模式：
开机默认处于正常测量模式。正常测量模式能测量盐度值和显示当前的环境温度值或者液体温度值。在测量模式下把电极放入需要测试的溶液即可显示盐度值。

2、当仪器显示屏右上角显示[▭]电池符号时，请更换电池。仪器长期不使用请将电池取出。

3、⏻/HOLD键：短按1秒开机，开机后短按1秒锁定当前测量的读数，长按3秒关机。

4、CAL/▲键：
a、在正常测量状态下，长按3秒进入CAL校准模式。

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b、在校准模式CAL状态下，P1点和P2点校准数值，可通过短按1秒数值增加加1，长按不放数值快速增加。

5、☀/▼键：
a、短按1秒可开启或关闭背光灯。
b、在校准模式CAL状态下，P1和P2点校准数值，可通过短按1秒数值减少1，长按不放数值快速减少。

6、自动关机设置：开机前同时按住⏻/HOLD键和CAL/▲键3秒进入自动关机设置模式，LCD屏幕显示APO ON或者APO OFF选择界面，短按⏻/HOLD键1秒可在APO ON与APO OFF之间选择，选择完成，长按ON/OFF/HOLD键3秒保存并退出此模式。
a、APO ON模式：屏幕显示定时符号，在无任何按键操作下5分钟后，自动关机。
b、APO OFF模式：不会自动关机,需要手动关机，屏幕无显示定时符号。

7、温度单位转换模式：开机前，同时按住⏻/HOLD键和☀/▼键3秒进入温度单位转换模式，LCD显示温度℃或℉模式，短按⏻/HOLD键1秒可在℃或℉模式之间转换,选择完成后,长按⏻/HOLD键3秒保存，并退出此模式。

五、仪器的校准方法

打开仪器的电池盖，正确的装入电池。仪器在使用前，如果更换过探测电极，测量溶液前，先要校正。电极校正后即可使用，并不是每次使用前都要校正，一般当测量间隔时间比较短的情况下，每月校正一次即可。

仪器在校准或测量之前，把探头放入纯净水中浸泡15分钟左右可以湿润探棒表面并清除附在探棒上的杂质。

仪器采用三点校正的方式进行，在正常测量状态下，按CAL/▲键长按3秒进入以下模式：

1、LCD首先显示CAL 0.00ppt P0进入0点校准模式，CAL闪烁状态，这时把机的探头部分放入纯净水中搅动3次除去探头上的气泡，然后探头静止悬在纯净水中不动，探头不能靠近容器壁和容器底部，10秒钟左右,LCD显示PAS并自动转到下一个校准点CAL 7.00ppt P1，表示P0点校准成功。

2、快速把探棒放入7.00ppt 盐度标准溶液中搅动3次除去探棒上的气泡，然后静止悬在溶液中不动，探棒不能靠近容器壁和容器底部，10秒钟左右显示PAS并自动转到下一个校准点CAL 40.0ppt P2，表示P1点校准成功。可根据实际的盐度溶液浓度值来校准P1点。按CAL/▲键或☀/▼键调整数字与实际的校准盐度溶液浓度值一致，P1点调整范围5.0ppt～8.5ppt。

3、快速把探棒放入纯净水中清洗探棒后再放入40.0ppt盐度标准溶液中搅动3次除去探棒上的气泡，然后静止悬在溶液中不动，探棒不能靠近容器壁和容器底部，10秒钟左右显示PAS并自动转到正常测试模式.表示P2点校准成功。可根据实际的盐度溶液浓度值来校准P2点，按CAL/▲键或☀/▼键调整数字与实际的校准盐度溶液浓度值一致，P2点调整范围25.0ppt～45.0ppt。

4、如果使用的校准溶液不是预设的数值时，可在校准状态时按CAL/▲或☀/▼键调整数值与校准溶液的值一致后，再进行校准。

5、如果在校准过程中LCD显示Err的提示，表示该校准点校准失败，校准溶液不在该校准点的范围内或传感器已失效。

六、质量保证期

①电极的质量保证期是储存期，时间为一年。
②在质量保证期限内，如发现因制造厂的原因而不能正常工作时，应负责修理或退换。

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IntelliSafe CE SGS UKAS

SMART SENSOR

# Pen Type Salinometer
INSTRUCTION MANUAL
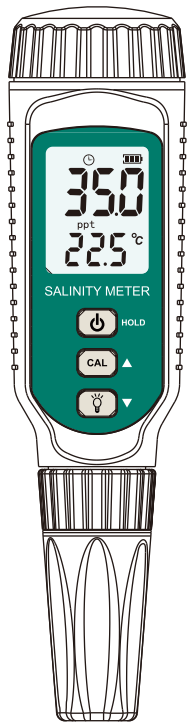
Version no : 6-AR8012-0016-01

INTRODUCTION

This device is portable and intellectual precise measurement apparatus. It design and made with industrial grade components and sensor. it have high sensitive and accuracy. stable to work with different temperature. small size for easy storage and hand carry. It can measure the salinity value and measure solvent's temperature under test. Salinometer widely applied in industrial, agriculture, medicine, food industrial, scientific research and environmental protection etc. It is very important that you read through this instruction before using this device to get the correct reading.

1. Explanation of the appearance

1) Power ON/OFF / Data Hold button
2) Unit selection / Calibrate / increase button
3) Back light / reduce button
4) Salinity value reading area
5) Temperature reading area
6) Sensor Electrode
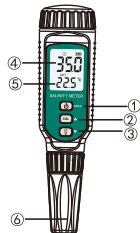
2. Technical parameters:

Technical parameters

Technical parameters	
Salinity measuring range	0. 00ppt~9. 99ppt
	10. 0ppt~50ppt
Resolution	0. 01ppt/0.1ppt
Accuracy	+/-3% F.S.+/-1digit
Instrument Repeatability	+/- 0.01ppt/0.1ppt
Solvent temperature compensation range	0~60 °C
Temperature accuracy	+/- 1 °C
Power Supply	LR44 button type battery X 4pcs
Display	Large LCD segment type display
Working temperature range	0~50 °C
Working humidity range	0%RH ~ 80%RH (non-condensing)
Size	180 X 25 X 45mm

3.LCD DISPLAY SCREEN
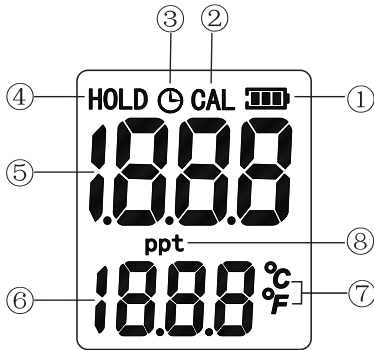
1) Battery power icon
2) Calibration mode icon
3) Timer icon
4) Data Hold icon
5) Salinity value reading area
6) Solvent temperature reading area
7) Temperature unit °C/ °F
8) Salinity value unit

4. Key function of instrument

1) Normal measurement mode: The default mode after power up is normal measurement mode, in this mode you can measure the conductivity and solvent's temperature value under test or environmental temperature value. In this mode, immerse the test probe into the solvent can detect the conductivity and temperature of the solvent under test.
2) If you find the battery power icon [▭] become empty , please replace the battery immediately to sure the instrument work in good condition and no error. If the instrument don't use for a long period, please take off all the battery to prevent battery leakage damage the instrument.
3) [⏻/HOLD] key: depress to power on this instrument, after power on depress it to hold the measured value, depress it more than 3 second to turn off this instrument.

4) [CAL /▲] key:
a) At normal measurement mode, depress more than 3 second go to calibration mode, **CAL** icon displayed in the screen.
b) In this CAL mode, you can depress [/CAL/▲] key to increase the value of P1 and P2 calibration point, long press it can increase the value in fast way.
5) [☼/▼] key:
i.   Depress this key can turn on /off of the back light.
ii. In this CAL mode, you can depress [☼/▼] key to reduce the value of P1 and P2 calibration point, long press it can deduct the value in fast way.
6) Auto Power Off setup: Before power up the unit, depress [⏻/HOLD] key and [CAL/▲] key at the same time more than 3 second unit will go to Auto Power Off setup mode, LCD display shown **APO ON** or **APO OFF** wording, depress [⏻ /HOLD] key can select **APO ON** or **APO OFF** in sequential, after selection, depress [⏻/HOLD] key more than 3 second will save the selection and back to normal measurement mode.
a) APO ON mode: LCD display shown the timer icon, if no any key in, unit will turn off after 5 minutes.
b) APO OFF: No auto power off function, user must turn the unit off by depress the [⏻/HOLD] key, also LCD no timer icon shown.
7) Temperature unit selection: Before power up the unit, depress [⏻/HOLD] key and [☼/▼] key at the same time more than 3 second unit will go to temperature selection mode, depress [⏻/HOLD] key once will select °C/°F in sequential, after selection, depress [⏻/HOLD] key more than 3 second will save the selection and back to normal measurement mode.

5, INSTRUMENT CALIBRATION METHOD

Open the battery door that located at the top of the instrument, insert four LR44 button type battery into this compartment with correct polarity. If you have replaced with a new sensor electrode, please do the calibration before use this instrument to measure.

If measuring interval time is short, each month calibration once is enough.

Before calibrate this instrument, please immerse the sensor electrode with pure water at least 15minutes, to wetting the surface of the electrode and clean the surface of it.

This instruction use three point calibration method for calibrate this unit, please following the step one by one.

The unit and calibration solution must be calibrated at ambient environment temperature 25°C +/-2 °C. At normal measurement mode, depress [CAL/▲] key more than 3 seconds, unit go to calibration mode (**P0**).

1 LCD screen shown "**CAL 000ppt PO**" go to zero point calibration mode, **CAL** keep flashing at the screen. Please rinse sensor electrode with distilled water and stirred few rounds to move out the bubble on the electrode, immerse the electrode in the pure water, keep sensor electrode about middle of the water, don't touch the bottom of the container, when the instrument detected the signal become stable (about 10 seconds), LCD display shown "PAS", it means the unit passed zero calibration and unit automatic go to next calibration point, LCD screen "**CAL 7.00ppt P1**" means it successful passed the **P0** calibration.
2) Clean the sensor electrode quickly with pure water, rinse the sensor electrode into 7.00ppt salinity calibration solvent, and stirred few rounds to move out the bubble on the electrode, keep sensor electrode about middle of the water, don't touch the bottom of the container, when the instrument detected the signal become stable (about 10 seconds), LCD display shown "PAS", it means the unit passed **P1** calibration. If you can't find 7.00ppt salinity calibration powder, you can buy a similar one and setup the calibration point value by depress [CAL/▲] key or [☼/▼] key to match the value of your in hand conductivity calibration powder, the range of **P1** calibration point is from 5.00ppt to 8.5ppt.
3) Clean the sensor electrode quickly with pure water, rinse the sensor electrode into 40.0ppt salinity calibration solvent, and stirred few rounds to move out the bubble on the electrode, keep sensor electrode about middle of the water, don't touch the bottom of the container, when the instrument detected the signal become stable (about 10 seconds), LCD display shown "PAS", it means the unit passed **P2** calibration. If you can't find 40.0ppt salinity calibration powder, you can buy a similar one and setup the calibration point value by depress [CAL/▲] key or [☼/▼] key to match the value of your in hand conductivity calibration powder, the range of P2 calibration point is from 25.0ppt to 34.0ppt,
4) If your Conductivity Calibration powder is not as our pre-set value, you can set it up by depress [CAL/▲] key or [☼/▼] key to match the value of your in hand conductivity calibration powder, then proceed the calibration as above method
5) If at the calibration process you find "**Err**" shown at the LCD screen, it means the calibration failed, maybe the calibration powder value not in our range or the sensor electrode damaged.

Warranty period

1. The warranty period of the Conductivity electrode is one year of storage.
2. In this warranty period, if found malfunction of the instrument or electrode, factory have the reliability to repair or replaced with a good one.

Special Announcement

Our company reserved the right to change the design and the user manual without prior notice to the end user.

IntelliSafe   CE

APPROVALS	NAME	DATE	ARCO ELECTRONIC LIMITED			
DRAWN BY	坪妹	2018.11.05				
CHECKED BY			AR8012 (SMART SENSOR) 中英文说明书			
APR. BY						
CUSTOMTER						

3.		SIZE A4	PDG-AR8012-0-04 ─⊖─ ─▢─ REV.A0
2.			
1.		SCALE 1:1	PART Number:6-AR8012-0016-01 SHEET 2 OF 2
次号 更 改 内 容 日 期			
更 改 记 录			