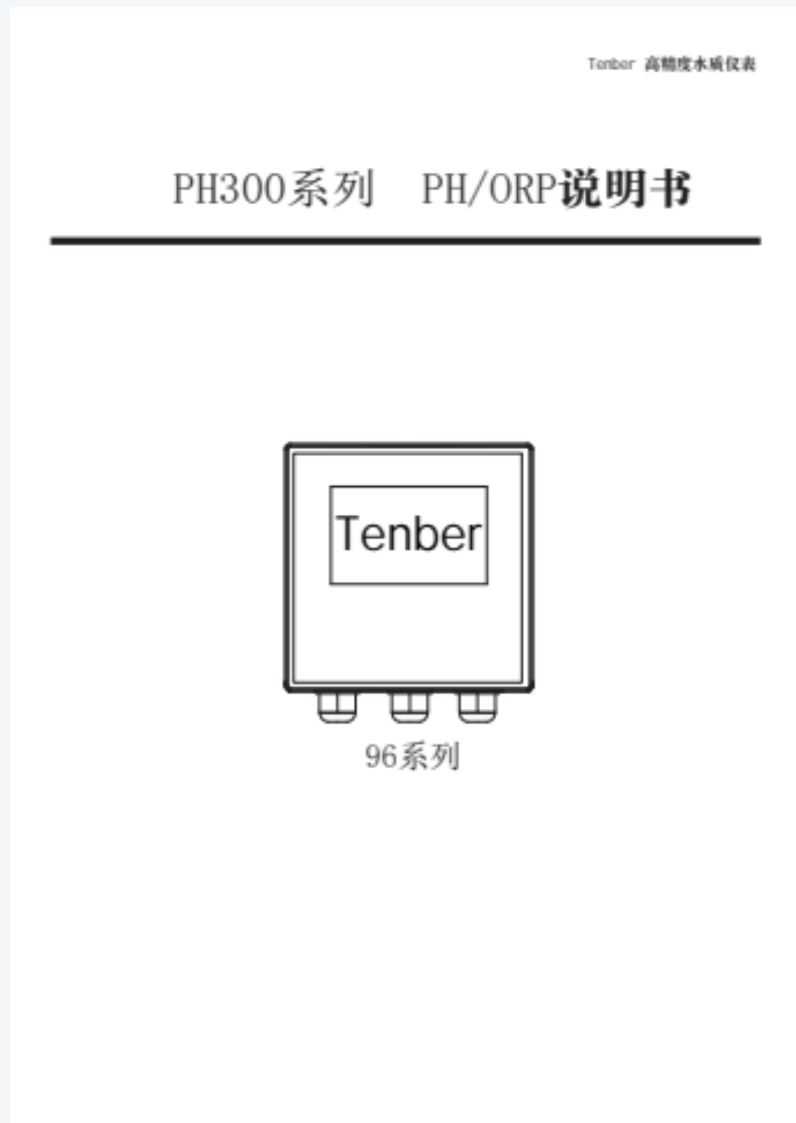


Tenber
PH300 series PH/ORP
Tenber
96 series



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Tenber 高精度水质仪表

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01

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安全操作

- 使用前请仔细阅读以下对于安全操作的说明:
- 1. 使用前请先观察仪器外观是否有因为运送挤压而造成损坏;
 - 2. 仪器须由受过训练的专业技术人员操作;
 - 3. 使用前需熟读操作手册, 避免错误的接线导致安全问题及仪器损坏;
 - 4. 所有接线完成后须仔细检查无误后才可以通电并确认所连接的设备是正确的;
 - 5. 请避开高温, 高湿及腐蚀环境安装仪器, 并避免阳光直射;
 - 6. 避免使用会产生突波干扰的电源, 如有突波干扰, 请将仪器电源和其他干扰设备电源分开。

仪器使用

仪器用于工业上pH/ORP及温度的测量, 如: 废水, 环境监测, 发酵, 食品生产过程, 加药泵比例控制/频率控制等;
仪器可以盘面安装, 壁挂安装, 管路安装;
仪器提供1路电流输出, 最大负载为500Ω;

产品内容与保固

96系列 : 产品包装、包含1台仪器、2套支架(螺丝, 固定块, 固定棒)

Tenber
safe operation
Please read the following instructions for safe operation carefully before use:

- 1. Before use, please observe whether the appearance of the instrument is damaged due to transportation and extrusion;
- 2. The instrument must be operated by trained professional and technical personnel;
- 3. Read the operation manual carefully before use to avoid incorrect wiring that may cause safety problems and damage to the instrument;
- 4. After all wiring is completed, it must be carefully checked before power can be supplied and the connected equipment must be confirmed to be correct;
- 5. Please install the instrument away from high temperature, high humidity and corrosive environment, and avoid direct sunlight;
- 6. Avoid using power supplies that can produce surge interference. If there is surge interference, please separate the instrument power supply from other interfering equipment.

Power supply is separated.

Instrument use

The instrument is used for measuring pH/ORP and temperature in industry, such as: wastewater, environmental monitoring, fermentation, food production process,

Dosing pump proportion control/frequency control, etc.;

The instrument can be installed on the panel, on the wall, or in pipelines;

The instrument provides 1 current output with a maximum load of 500Ω;

Product Contents and Warranty

96 Series: Product packaging, including 1 instrument and 2 sets of brackets (screws, fixing blocks, fixing rods)

02

Original visual reference: page 3

Tenber 高精度水质仪表

规格

功能	pH	ORP
测量范围	-2.00 到 +16.00 pH	-2000mV到 +2000mV
测量解析度	0.01pH	1mV
测量精确度	±0.01pH	±1mV
温度补偿方式	Pt-1000/NTC10K	
温度测量范围	-10.0 到 +130.0℃	
温度补偿范围	-10.0 到 +130.0℃	
温度解析度	0.1℃	
温度精确度	±0.2℃	
工作环境温度	0 到 +70℃	
储存环境温度	-20 到 +70℃	
输入阻抗	>10 ¹² Ω	
显示	带背光超大彩屏LCD	
pH/ORP 电流输出	隔离式4到20mA输出, 最大负载500 Ω	
电流输出精确度	±0.05 mA	
RS485	Modbus RTU标准协议 仅PH-302	
通讯速率	9600/19200/38400	
继电器接点容量	5A/250VAC, 5A/30VDC 仅PH-302	
防护等级	IP65	
电源	90到260VAC, 功耗<5瓦	
安装方式	盘面安装/壁挂安装/管路安装	
仪表重量	96系列0.70Kg	

Tenber

Specifications

Function pH ORP

Measuring range -2.00 to +16.00 pH -2000mV to +2000mV

Measurement resolution 0.01pH 1mV

Measurement accuracy ±0.01pH ±1mV

Temperature compensation method Pt-1000/NTC10K

Temperature measurement range -10.0 to +130.0℃

Temperature compensation range -10.0 to +130.0℃

Temperature resolution 0.1℃

Temperature accuracy ±0.2℃

Working environment temperature 0 to +70℃

Storage ambient temperature -20 to +70℃

Input impedance >10 12 Ω

Display Large color screen LCD with backlight

pH/ORP current output Isolated 4 to 20mA output, maximum load 500Ω

Current output accuracy ±0.05 mA

RS485 Modbus RTU standard protocol PH-302

Communication rate 9600/19200/38400

Relay contact capacity 5A/250VAC, 5A/30VDC PH-302

Protection grade IP65

Power supply 90 to 260VAC, power consumption <5 watts

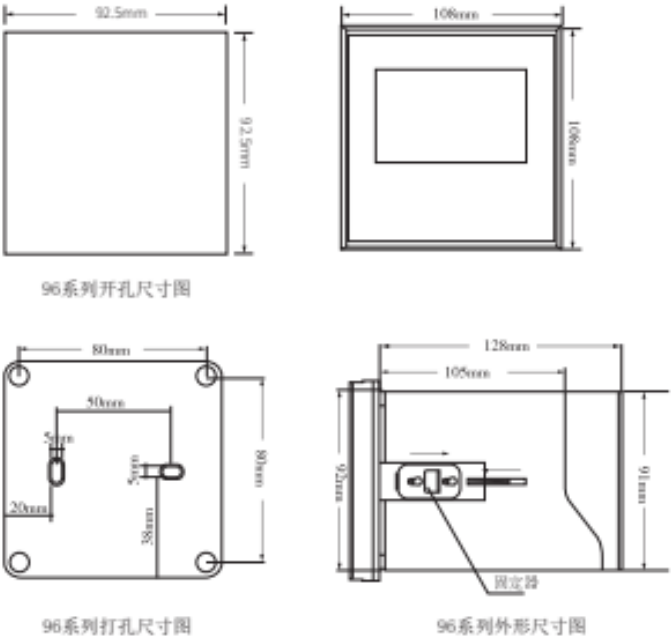
Installation method: panel installation/wall installation/pipe installation

Instrument weight 96 series 0.70Kg

03

仪器安装

96系列：仪器可以盘面式安装、管式安装、壁挂式安装。
盘面式安装：在配电箱面板上开92.5mmx92.5mm的方孔，将仪器从配电箱面板正面放入，于机器二侧装上固定器。



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Instrument installation

96 Series: The instrument can be installed in panel, pipe or wall mounting.

Panel installation: Open a 92.5mmx92.5mm square hole on the distribution box panel, and install the instrument from the front of the distribution box panel.

Put it in and install the retainers on both sides of the machine.

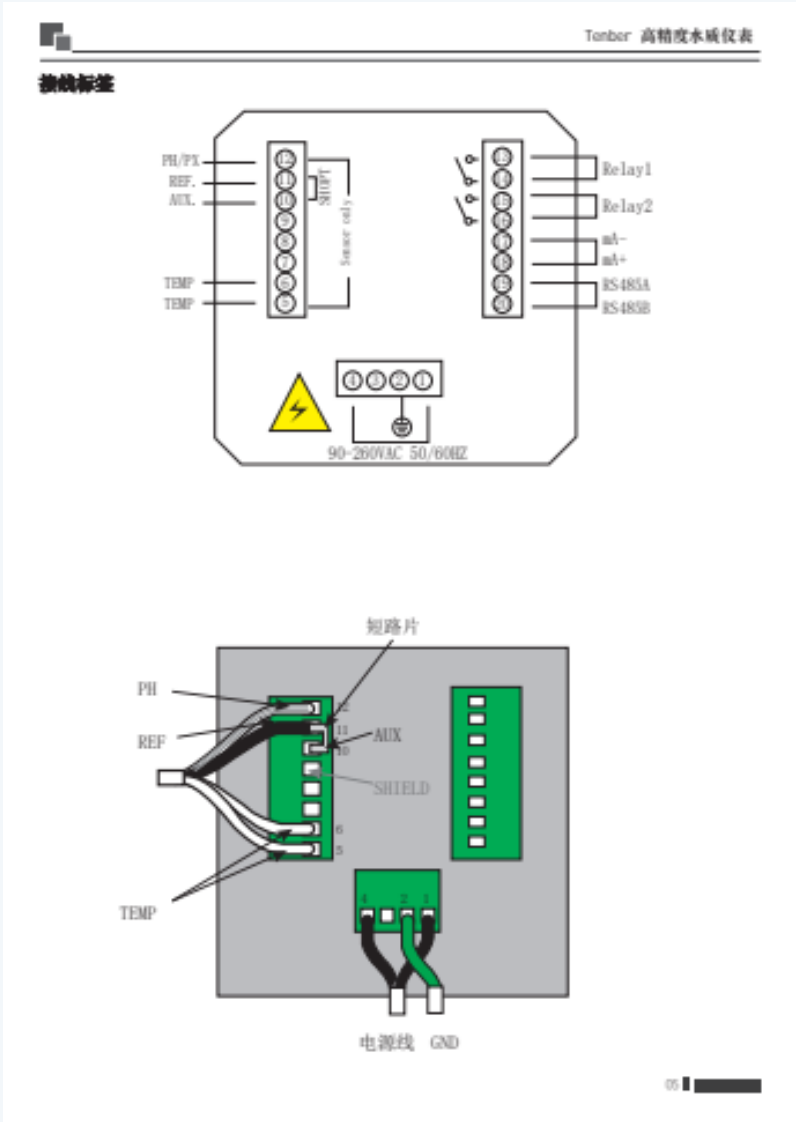
92.5mm

92.5mm

96 series opening size chart

96 Series Drilling Dimensions 96 Series Overall Dimensions

04

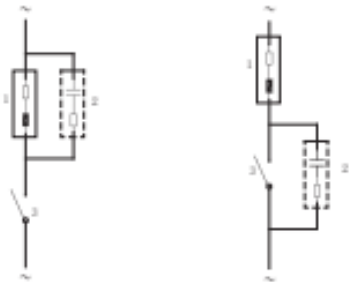


Original visual reference: page 6

- Tenber
- Wiring labels
- PH/PX 12 13
- Relay1
- SHOPT
- REF. 11 14
- AUX. 10 15 Relay2
- Sensor only
- 9 16
- 8 17 mA-
- 7 18mA+
- TEMP 6 19 RS485A
- TEMP 5 20 RS485B
- 4 3 2 1
- 90-260VAC 50/60HZ
- Short circuit piece
- PH
- 12
- 11
- REF AUX
- 10
- SHIELD
- 6
- 5
- 4 2 1
- TEMP
- Power cord GND
- 05

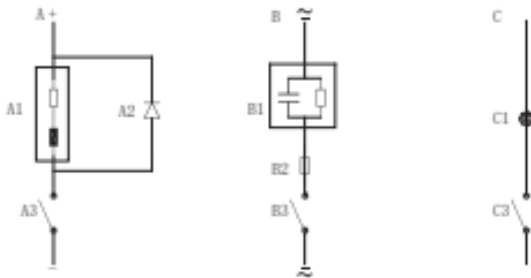
继电器触点保护图

继电器触点收到电火花会影响寿命，尤其在电感和电容性负载，为了抑制火花及电弧作用，应使用RC电路，延长继电器寿命。



交流保护，用于电感性负载

- 1. 负载
- 2. RC消除火花，用于220VAC, R=10欧姆1瓦, C=0.1630V
- 3. 继电器触点



- A 直流保护，A1: 电感式负载 A2: 1N4007, A3: 继电器触点
- B 交直流保护，B1: 电容式负载，B2: 0.8欧姆/1瓦（直流24V时），B3: 继电器触点
- C 电阻式负载，C1: 灯泡，C3: 继电器触点

Tenber

Relay contact protection diagram

Relay contacts receiving electrical sparks will affect their service life, especially in inductive and capacitive loads. In order to suppress sparks and

For arc action, an RC circuit should be used to extend the life of the relay.

~~

1

1 2

3 2

3

~~

AC protection for inductive loads

- 1. Load
- 2. RC spark elimination, for 220VAC, R=10 ohm 1 watt, C=0.1630V
- 3. Relay contacts

A+ B C

A1 A2 B1

C1

B2

A3 B3 C3

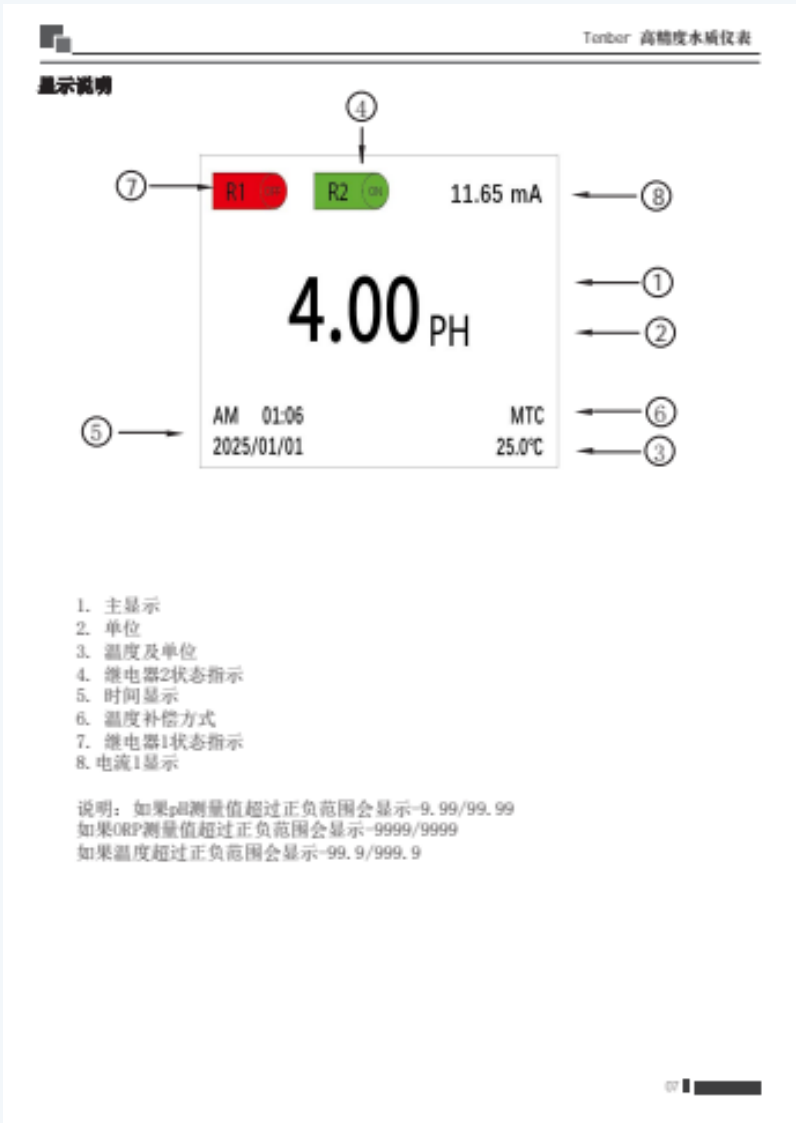
-

A DC protection, A1: inductive load A2: 1N4007, A3: relay contact

B AC and DC protection, B1: capacitive load, B2: 0.8 ohm/1 watt (at 24V DC), B3: relay contact

C resistive load, C1: light bulb, C3: relay contact

06



Original visual reference: page 8

Tenber

show description

4

7 8

1

2

6

5

3

1. Main display

2. Unit

3. Temperature and unit

4. Relay 2 status indication

5. Time display

6. Temperature compensation method

7. Relay 1 status indication

8.Current 1 display

Note: If the pH measurement value exceeds the positive and negative range, -9.99/99.99 will be displayed.

If the ORP measurement value exceeds the positive and negative range, -9999/9999 will be displayed.

If the temperature exceeds the plus or minus range, -99.9/999.9 will be displayed.

07



按键说明



按键	测量状态	设置状态	校正状态	记录状态
SET	进入设置	离开	离开	离开
CAL	进入校正	移动数字位置	移动数字位置	移动数字位置
UP	无	增加数字	增加数字	增加数字
DOWN	无	减少数字	减少数字	减少数字
ENTER	开/关背光	确认	确认	确认

保持模式

保持模式是一个安全模式，主要用于校正模式、设置模式，在保持模式下，继电器是打开（不工作），电流依据设置，测量显示值不改变。

主画面

按SET键进入设置，UP/DOWN选择功能，按ENTER 键进入功能设置：



- 说明：
1. 设置时，当输入的数值不在指定的范围内，则显示屏的最上方会出现“错误”；
 2. 数值输入后要按下ENTER键才会保存；
 3. 设置时，随时可以按SET键离开；
 4. 设置模式下，如果超过10分钟未按下按键，则会自动回到测量模式。

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Button description

SET CAL UP DOWN ENTER

Button Measurement status Setting status Calibration status Recording status

SET Enter settings Leave Leave Leave

CAL Enter Calibration Move numeric position Move numeric position Move numeric position

UP None Increase number Increase number Increase number

DOWN None Decrease number Decrease number Decrease number

ENTER Turn on/off backlight Confirm Confirm Confirm

hold mode

Hold mode is a safety mode, mainly used for calibration mode and setting mode. In hold mode, the relay is Open (not working), the current is based on the setting, and the measurement display value does not change.

Home screen

Press the SET key to enter the settings, UP/DOWN to select the function, and press the ENTER key to enter the function settings:

Setup 1/2 Setup 2/2

Analog current 1 setting Date setting

Relay 1 settings Backlight settings

Relay 2 settings restore factory settings

Analysis Settings Language Settings

temperature setting

Communication settings

Output settings

First page Second page

Description:

1. During setting, when the entered value is not within the specified range, "error" will appear at the top of the display;
2. After inputting the value, press the ENTER key to save it;
3. When setting, you can press the SET key to leave at any time;
4. In setting mode, if the button is not pressed for more than 10 minutes, it will automatically return to measurement mode.

08

模拟电流1设置

模拟电流1设置			或	模拟电流1设置		
4.00 mA	=	+ 0 0 . 0 0 pH		4.00 mA	=	+ 1 4 . 0 0 pH
20.00 mA	=	+ 1 4 . 0 0 pH		20.00 mA	=	+ 0 0 . 0 0 pH
偏移量	=	+ 0 . 0 0 mA		偏移量	=	+ 0 . 0 0 mA

模拟电流1设置			或	模拟电流1设置		
4.00 mA	=	- 2 0 0 0 mV		4.00 mA	=	+ 2 0 0 0 mV
20.00 mA	=	+ 2 0 0 0 mV		20.00 mA	=	- 2 0 0 0 mV
偏移量	=	+ 0 . 0 0 mA		偏移量	=	+ 0 . 0 0 mA

1. 设置4.00mA输出的pH/ORP对应值;
2. 设置20.00mA输出的pH/ORP对应值, 4.00mA和20.00mA之间的pH值最少要有1.00pH的差距, ORP值最少要有100mV的差距;
3. 4.00mA-20.00mA对应的pH/ORP值可逆 (-2.00pH -16.00pH);
4. 设置pH/ORP电流的偏移量, 范围±1.00mA;

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Analog current 1 setting

Analog current 1 setting Analog current 1 setting

4.00 mA = + 0 0 . 0 0 pH 4.00 mA = + 1 4 . 0 0 pH

20.00 mA = + 1 4 . 0 0 pH 20.00 mA = + 0 0 . 0 0 pH

Offset = + 0 . 0 0 mA Offset = + 0 . 0 0 mA

or

Analog current 1 setting Analog current 1 setting

4.00 mA = - 2 0 0 0 mV 4.00 mA = + 2 0 0 0 mV

20.00 mA = + 2 0 0 0 mV 20.00 mA = - 2 0 0 0 mV

Offset = + 0 . 0 0 mA or Offset = + 0 . 0 0 mA

1. Set the corresponding value of pH/ORP for 4.00mA output;

2. Set the corresponding value of pH/ORP for 20.00mA output. The pH value between 4.00mA and 20.00mA must be at least 1.00pH.

The difference in ORP value must be at least 100mV;

3. The pH/ORP value corresponding to 4.00mA-20.00mA is reversible (-2.00pH -16.00pH);

4. Set the offset of pH/ORP current, the range is ±1.00mA;

09



继电器1设置 (仅限PH-302)

继电器1设置

开关 = ☒ 开
 ☐ 关
闭合点 = + 1 0 . 0 0 pH
释放点 = + 0 4 . 0 0 pH

继电器1设置

开关 = ☒ 开
 ☐ 关
闭合点 = + 1 0 0 0 mV
释放点 = + 0 4 0 0 mV

1. 开关: 按UP/DOWN键选择开启或是关闭, 如果是关闭, 则继电器不会工作;
2. 闭合点: 继电器pH/ORP的闭合点(动作);
3. 释放点: 继电器pH/ORP的释放点(不动作);
- 说明: 如果希望pH10.00时泵动作, pH4.00时释放(泵不动作), 则闭合点设置为10.00, 释放点设置为4.00。

继电器2设置 (仅限PH-302)

继电器2设置

开关 = ☒ 开
 ☐ 关
闭合点 = + 0 4 . 0 0 pH
释放点 = + 1 0 . 0 0 pH

继电器2设置

开关 = ☒ 开
 ☐ 关
闭合点 = + 0 4 0 0 mV
释放点 = + 1 0 0 0 mV

1. 开关: 按UP/DOWN键选择开启或是关闭, 如果是关闭, 则继电器不会工作;
2. 闭合点: 继电器 pH/ORP 的闭合点(动作);
3. 释放点: 继电器 pH/ORP 的释放点(不动作);
- 说明: 如果希望pH4.00时泵动作, pH10.00时释放(泵不动作), 则闭合点设置为4.00, 释放点设置为10.00。

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Relay 1 Settings (PH-302)

Relay 1 settings Relay 1 settings

switch = on switch = on

Off Off

Closing point = 1 0 . 0 0 pH

+ closing point = + 1 0 0 0 mV

Release Point = + 0 4 . 0 0 pH Release Point = + 0 4 0 0 mV

1. Switch: Press the UP/DOWN key to select on or off. If it is off, the relay will not work;

2. Closing point: the closing point (action) of the relay pH/ORP;

3. Release point: the release point of the relay pH/ORP (no action);

Note: If you want the pump to operate when pH is 10.00 and release when pH is 4.00 (the pump does not operate), then the closing point is set to 10.00.

The release point is set to 4.00.

Relay 2 Settings (PH-302)

Relay 2 settings Relay 2 settings

switch = on switch = on

Off Off

Closing point = + 0 4 . 0 0 pH Closing point = + 0 4 0 0 mV

Release Point = + 1 0 . 0 0 pH Release Point = + 1 0 0 0 mV

1. Switch: Press the UP/DOWN key to select on or off. If it is off, the relay will not work;

2. Closing point: closing point (action) of relay pH/ORP;

3. Release point: Release point of relay pH/ORP (no action);

Note: If you want the pump to operate at pH 4.00 and release at pH 10.00 (the pump does not operate), then the closing point is set to 4.00.

The release point is set to 10.00.

10

分析设置

分析设置	
模式	= ☒ pH ☐ ORP
偏移量	= + 0 . 0 0 pH

1. 测量模式选择, 按UP/DOWN键选择;
2. 偏移量输入, 范围±1.00pH或±100mV;

温度设置

温度设置	
温补方式	= ☒ 手动 ☐ 自动
探棒种类	= ☒ Pt 1000 ☐ NTC 10K
偏移量	= + 0 . 0 °C
手动测量温度	= + 0 2 5 . 0 °C

1. 自动/手动温度补偿选择, 按UP/DOWN键选择;
2. 温度探棒种类, 按UP/DOWN键选择;
3. 温度偏移量, 范围±5.00°C (只用于自动);
4. 手动温度测量输入。

通讯设置 (仅限PH-302)

通讯设置	
通讯地址	= 0 0 1

1. 通讯位址选择: 1-255。

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Analysis settings

Analysis settings 1. Measurement mode selection, press the UP/DOWN key to select;

2. Offset input, range ±1.00pH or ±100mV;

Mode = pH

ORP

Offset = + 0 . 0 0 pH

temperature setting

Temperature setting 1. Automatic/manual temperature compensation selection, press the UP/DOWN button

Manual

choose;

Warming method =

automatic

2. Temperature probe type, press the UP/DOWN key to select;

= Pt 1000

3. Temperature offset, range ±5.00°C (only for automatic);

Probe type

4. Manual temperature measurement input.

NTC 10K

Offset = + 0.0°C

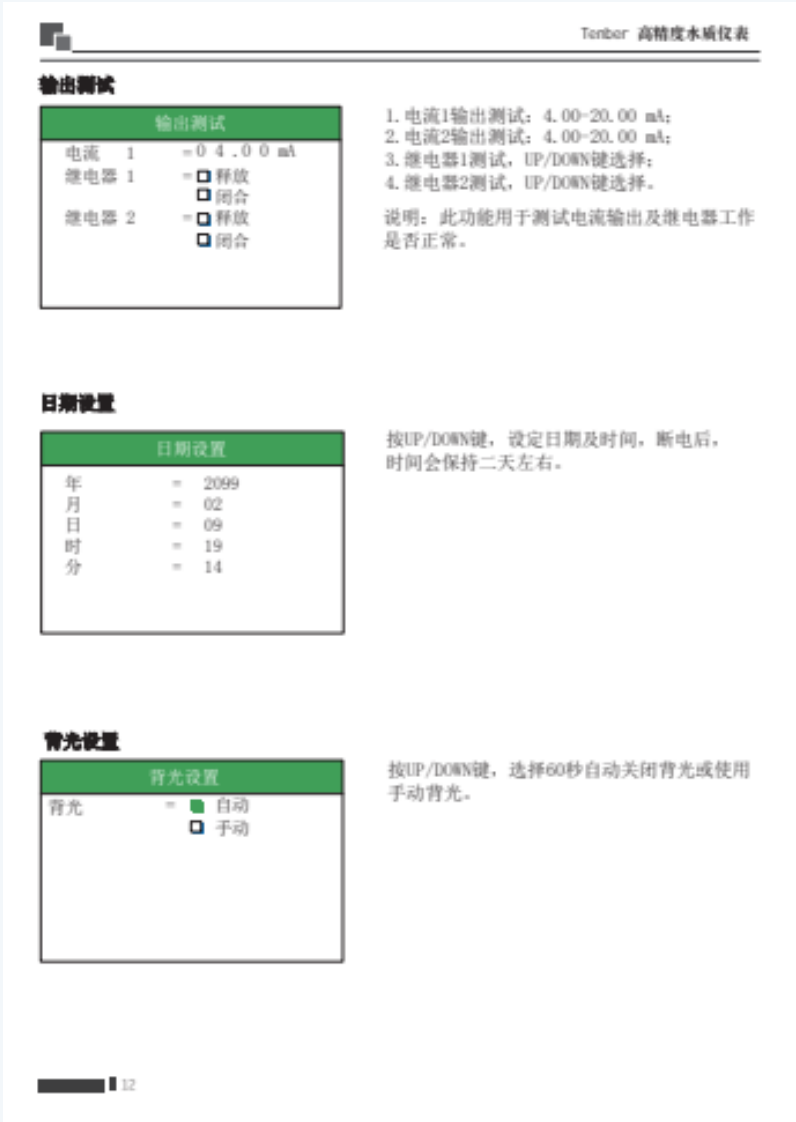
Manual temperature measurement = + 0 2 5 . 0 °C

Communication settings (PH-302)

Communication settings 1. Communication address selection: 1-255.

Correspondence address = 0 0 1

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Original visual reference: page 13

Tenber

Output test

Output test 1. Current 1 output test: 4.00-20.00 mA;

2. Current 2 output test: 4.00-20.00 mA;

Current 1 = 0 4 . 0 0 mA 3. Relay 1 test, UP/DOWN key selection;

Relay 1 = Release 4. Relay 2 test, UP/DOWN key selection.

closed

Relay 2 = Release Description: This function is used to test current output and relay operation

Is the closure normal?

Date setting

Date setting: Press the UP/DOWN button to set the date and time. After power off,

The time will last about two days.

year = 2009

month = 02

Day = 09

hours = 19

points = 14

Backlight settings

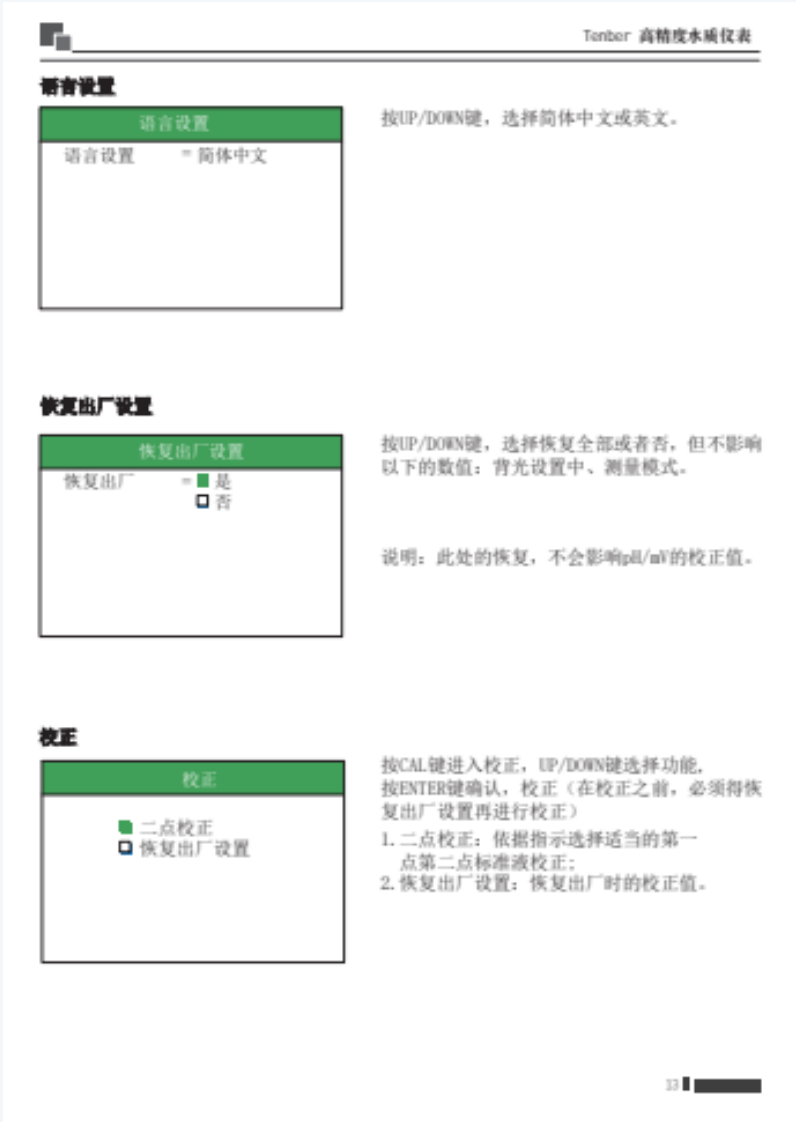
Backlight setting: Press the UP/DOWN button and select to automatically turn off the backlight in 60 seconds or use

Manual backlight.

Backlight = Auto

Manual

12



Original visual reference: page 14

Tenber

Language settings

Language setting Press the UP/DOWN key to select Simplified Chinese or English.

Language Settings = Simplified Chinese

Factory reset

Restore factory settings Press the UP/DOWN key and choose to restore all or No, but it will not affect The following values: backlight setting, measurement mode.

Factory reset = Yes

No

Note: The recovery here will not affect the correction value of pH/mV.

Correction

Press CAL key to enter calibration, UP/DOWN key to select function.

Correction

Press the ENTER key to confirm and calibrate (before calibrating, you must restore Restore factory settings and then calibrate)

two point correction

1. Two-point calibration: Select the appropriate first point according to the instructions.

Factory reset

Click the second point of standard solution calibration;

2. Restore factory settings: Restore the factory calibration values.

13



第一点校正



1. 将电极放入第一点标准液中;
2. UP/DOWN键选择第一点标准液, 然后按下ENTER键开始自动校正;
3. 若等待时间过长可以按下ENTER键, 强制校正;
4. 读值显示当前理想pH值;
5. 如果电极的值超过pH 7.00 (±1.5pH) 或温度超出0.0-60.0℃, 则显示屏下方会显示错误。

第二点校正



1. 将电极放入第二点标准液中;
2. UP/DOWN键选择第二点标准液, 然后按下ENTER键开始自动校正;
3. 若等待时间过长可以按下ENTER键, 强制校正;
4. 读值显示当前理想pH值;
5. 如果电极的值超过30%的标准PH范围, 或温度超出0.0-60.0℃, 则显示屏下方会显示错误。

Tenber

First point correction

Factory reset first point calibration

Slope = 59.16 mV/pH Reading = 07.00 pH

Standard solution = 07.00 pH

Wait for confirmation. Wait for the reading to stabilize and then press OK.

1. Place the electrode into the first standard solution;
2. Use the UP/DOWN key to select the first standard solution, and then press the ENTER key to start automatic calibration;
3. If the waiting time is too long, you can press the ENTER key to force correction;
4. The reading shows the current ideal pH value;
5. If the value of the electrode exceeds pH 7.00 (±1.5pH) or the temperature exceeds 0.0-60.0℃, the bottom of the display will display

Error.

First point correction

Second point calibration Calibration completed

Reading = 04.00 pH Status = Pass

Standard = 04.01 pH Standard = 59.84 mV/pHH

Wait for the reading to stabilize and press OK.

1. Place the electrode into the second standard solution;
2. Use the UP/DOWN key to select the second standard solution, and then press the ENTER key to start automatic calibration;
3. If the waiting time is too long, you can press the ENTER key to force correction;
4. The reading shows the current ideal pH value;
5. If the value of the electrode exceeds the standard PH range of 30%, or the temperature exceeds 0.0-60.0℃, an error will be displayed at the bottom of the display.

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恢复出厂

此功能会将校正值恢复到出厂状态

恢复出厂设置

恢复出厂 ☒ 否 ☐ 是

注：此处的恢复是恢复校正到出厂状态，不影响设置中改变的参数。

ORP校正

校正

☒ 一点校正 ☐ 恢复出厂

按UP/DOWN键选择功能，按ENTER键进入功能设定：
1. 一点校正：手动输入标准液的值；
2. 恢复出厂设置：会恢复出厂时的校正值。

一点校正

校正

读值 - 0 0 5 3 mV

标准值 - 0 0 8 3 mV

请输入标准值

1. 将电极放入标准液中；
2. 按UP/DOWN输入标准液值，等待读值稳定后，按ENTER键完成校正；
3. 读值显示当前理想ORP值。
说明：标准值必须小于等于读值的±100mV

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Factory reset

This function will restore the correction value to the factory state

Note: The recovery here is to restore the calibration to the factory state and does not affect the

Factory reset

The parameters changed in the settings will be affected.

Factory reset = No

Yes

ORP correction

Press UP/DOWN key to select function, press ENTER key to enter

Correction

Function settings:

One-point calibration 1. One-point calibration: manually enter the value of the standard solution;

Restore factory settings 2. Restore factory settings: The factory calibration values will be restored.

one point correction

1. Place the electrode into the standard solution;

Correction

2. Press UP/DOWN to enter the standard liquid value and wait for the reading to stabilize.

Reading value = 0 0 5 3 mV Press ENTER key to complete the correction;

3. The reading shows the current ideal ORP value.

Standard value = 0 0 8 3 mV

Note: The standard value must be less than or equal to ±100mV of the reading value

Please enter standard value

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校正完成

状态 - 通过

标准液 - 0086 mV

确定

当效率低于80%时，表示电极老化，应及时更换新电极
按回车键确认完成校正

出厂值		
pH 20.00mA 对应值	14.00	pH 范围: -2.00 -16.00
pH 04.00mA 对应值	0.00	pH 范围: -1.00 - 15.00
高低之间差距至少1.00		
ORP 20.00mA 对应值	2000	mV 范围: -2000 - 2000
ORP 04.00mA 对应值	-2000	mV 范围: -2000 - 2000
高低之间差距至少100		
电流1输出偏移量	0.00	mA 范围: +/- 1.00
继电器1 PH 闭合点	10.00	pH 范围: -2.00 - 16.00
继电器1 PH 释放点	4.00	pH 范围: -2.00 - 16.00
二者最小差距0.01		
继电器1 ORP 闭合点	1000	mV 范围: -2000 - 2000
继电器1 ORP 释放点	400	mV 范围: -2000 - 2000
二者最小差距1		
继电器1 延迟时间	0	秒 范围: 0-120
继电器2 PH 闭合点	4.00	pH 范围: -2.00 - 16.00
继电器2 PH 释放点	10.00	pH 范围: -2.00 - 16.00
二者最小差距0.01		
继电器2 ORP 闭合点	400	mV 范围: -2000 - 2000
继电器2 ORP 释放点	1000	mV 范围: -2000 - 2000
二者最小差距1		
继电器2 延迟时间	0	秒 范围: 0-120
储存间隔	60	秒 范围: 5-120
通讯地址	1	范围: 1-255
pH偏移量	0.00	pH 范围: +/- 1.00
ORP偏移量	0.00	mV 范围: +/-100
测量单位		范围: PH/ ORP
温补方式	手动	范围: 自动/手动
探棒种类	Pt1000	范围: Pt1000, NTC10K

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Calibration completed When the efficiency is lower than 80%, it means the electrode is aging and should be replaced in time.

Replace with new electrodes

Status = Calibration completed by pressing Enter key to confirm

Standard solution = 0086 mVH

OK

Factory value

pH 20.00mA corresponds to 14.00 pH range: -2.00 -16.00

pH 04.00mA corresponding value 0.00 pH range: -1.00 - 15.00

The difference between high and low is at least 1.00

ORP 20.00mA corresponds to 2000 mV range: -2000 - 2000

ORP 04.00mA corresponding value -2000 mV range: -2000 - 2000

The difference between high and low is at least 100

Current 1 Output Offset 0.00 mA Range: +/- 1.00

Relay 1 PH closing point 10.00 pH range: -2.00 - 16.00

Relay 1 pH Release Point 4.00 pH Range: -2.00 - 16.00

The minimum difference between the two is 0.01

Relay 1 ORP closing point 1000 mV Range: -2000 - 2000

Relay 1 ORP release point 400 mV Range: -2000 - 2000

The minimum difference between the two is 1

Relay 1 delay time 0 seconds Range: 0-120

Relay 2 PH closing point 4.00 pH range: -2.00 - 16.00

Relay 2 pH Release Point 10.00 pH Range: -2.00 - 16.00

The minimum difference between the two is 0.01

Relay 2 ORP closing point 400 mV Range: -2000 - 2000

Relay 2 ORP Release Point 1000 mV Range: -2000 - 2000

The minimum difference between the two is 1

Relay 2 delay time 0 seconds Range: 0-120

Storage interval 60 seconds Range: 5-120

Correspondence address range: 1-255

pH Offset 0.00 pH Range: +/- 1.00

ORP offset 0.00 mV Range: +/-100

Measurement Unit Range: PH/ORP

Temperature compensation method manual range: automatic/manual

Probe type range: Pt1000, NTC10K

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RS485通讯(仅限PH-302)

仪器采用标准Modbus-RTU协议,测量值为浮点数其他资料为双字节参数为(-32767 ~ 32767),16进制数表示,最高元为符号
上位机发送命令格式:

	仪器 ID地址	命令	数据起始位置	数据数量	CRC16
长度	1 byte	1 byte	2 byte	2 byte	2 byte
举例	0x01	0x03	0x0001	0x0001	0xD5CA

此为读取第一个资料,请参考下表
下位机回应格式:

	仪器 ID地址	命令	数据数量	数据内容	CRC16
长度	1 byte	1 byte	1 byte	N byte	2 byte
举例	0x01	0x03	0x02	0x02 0xBC	0xB895

当机器回复01,功能码无法辨识
当机器回复02,位址不正确
当机器回复03,资料数量不正确
通讯速率: 9600 (固定)
资料: 8
奇偶: 无
停止位: 1
功能03: 读取设置值
功能04: 读取测量值

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RS485 communication (PH-302)
The instrument adopts the standard Modbus-RTU protocol, and the measured values are floating point numbers and other data are double-byte parameters.
(-32767 32767), hexadecimal number representation, the highest element is the symbol
The command format sent by the host computer:
Instrument ID Ground Data starting bit Number of data
Command CRC16
Address setting quantity
Length 1 byte 1 byte 2 byte 2 byte 2 byte
Example 0x01 0x03 0x0001 0x0001 0xD5CA
This is the first data to be read, please refer to the table below
Response format of slave computer:
Instrument ID in data
Command Data quantity CRC16
address content
Length 1 byte 1 byte 1 byte N byte 2 byte
Example 0x01 0x03 0x02 0x02 0xB895
0xBC
When the machine replies 01, the function code cannot be recognized
When the machine replies 02, the address is incorrect
When the machine replies 03, the number of data is incorrect
Communication rate: 9600 (fixed)
Information: 8
Parity: None
Stop bit: 1
Function 03: Read setting value
Function 04: Read measured value
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04: 定义

地址

(00)	0x00	测量pH值或ORP值	读值: 浮点数
(01)	0x02	pH值或ORP值电流	读值: X0.01
(02)	0x03	单位	读值: X1
(03)	0x04	温度	读值: X0.1

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04: Definition

address

(00) 0x00 Measure pH value or ORP value. Reading value: floating point number

(01) 0x02 pH value or ORP value current reading value: X0.01

(02) 0x03 unit reading value: X1

(03) 0x04 Temperature reading: X0.1

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