
# Datasheet

# Online pH/ORP Meter

# SUP-pH6.5

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# Datasheet

## Online pH/ORP Meter
## SUP-pH6.5

Independent research and development of electronic online monitoring pH / ORP value, through the RS485 or current transmission remote access to the monitoring room for record and save.

pH / ORP meter is one of the intelligent online chemical analysis equipment, is a widely used in thermal power, chemical fertilizer, metallurgy, environmental protection, Pharmaceutical, biochemical, food and tap water solution pH value or ORP value and temperature of the continuous monitor.

### Applications

- Sewage Treatment
- Exhaust Gas Treatment
- Dyeing Wastewater
- Strong Acid And Base
- Metal Surface Treatment
- Fertigation System
- Food Processing
- Power Plants


**Online pH/ORP Meter**

### Features

- Easy operation
- Design of board card modularity, for convenience of assembly and configuration.
- 2.4 inches 128*64 lattice screen.
- Isolating transmitting output, with little interference.
- Isolating RS485 communication.
- Can be pH / ORP measurement, temperature measurement, upper and lower limit control, transmission output, RS485 communication.
- Configurable manual and auto temperature offset function.
- Configurable upper/lower limit warning and delay.
- Configurable hummer and LCD backlight switch.

## Parameters

| Parameters | Details |
|---|---|
| Screen size | 2.8 inch monochrome LCD with a resolution of 128*64 |
| Overall dimension | PH6.5: 100mm×100mm×150mm<br>PH6.8: 100mm×100mm×150.5mm |
| Cutout dimension | 92.5mm×92.5mm |
| Weight | 0.58kg |
| Ingress protection | IP5X |
| Measure variables | pH/ORP |
| Measure range | pH: (0.00 ~ 14.00) pH<br>ORP:(-2000 ~ 2000) mV |
| Accuracy | pH: ±0.02pH |
| | ORP: (-2000 ~ -1000) mV，±2mV<br>(-1000 ~ 1000) mV，±1mV<br>(1000 ~ 2000) mV，±2mV |
| Input resistance | ≥$10^{12}$Ω |
| Temperature compensation | NTC10K:<br>(-10~60) ℃ Accuracy ±0.3℃<br>(60~130) ℃ Accuracy ±2℃ |
| | Pt1000 , Pt100(Customized): Accuracy ±0.3℃ |
| | Range: (-10 ~130)℃ manual/automatic |
| Output | (4~20) mA output, maximum loop is 750Ω, ±0.2%FS |
| RS485 output | Isolated, Modbus-RTU RS485 |
| Relay | 2channels, Pickup/Breakaway AC250V/3A |
| Relative humidity | 10%~85% (No condensation) |
| Working temperature | (0~60) ℃ |
| Power supply | AC: 220V±10%，50Hz/60Hz<br>110V±10%<br>DC: 24V±10%，input power≤6W |
| Storage conditions | Temperature: (-15~65) ℃<br>Relative humidity: 5%~95%(No condensation)<br>Altitude: <2000m |

## Display


1 Temperature：Compensation temperature

2 Analyst output：Analyst output

3 Measured value：Real-time measurements value

4 High alarm：High alarm

5 Low alarm：Low alarm

6 ESC：Check related warning status on the “monitoring page”
Return to previous level page in the up& down level page linked to “menu page”

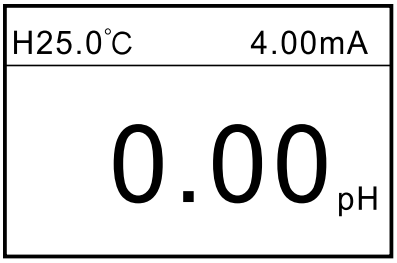
7 Menu：Enter the MENU on the “monitoring page”
Exit the MENU on the “menu page”

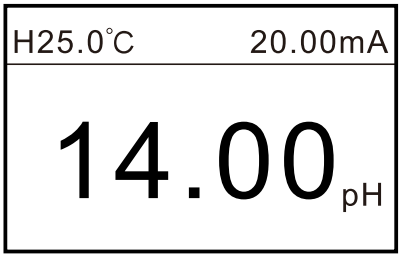
8 Choose：“MOVE RIGHT” and “MOVE DOWN”

9 Enter：Enter the sub-menu or confirm modification on the “menu page”

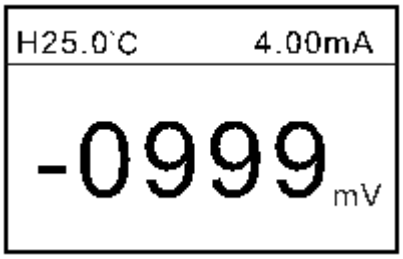
## Monitor page

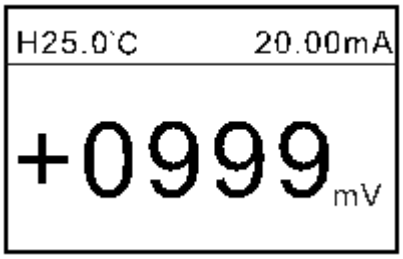
★ **pH monitor：**



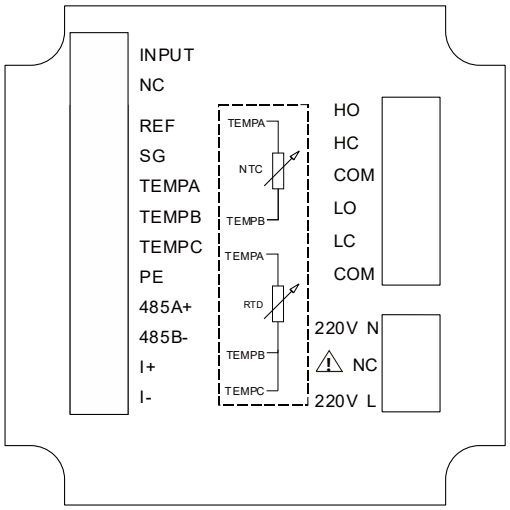




★ **ORP monitore**

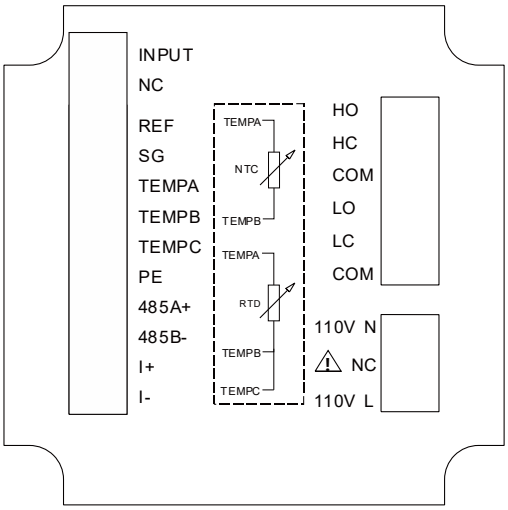


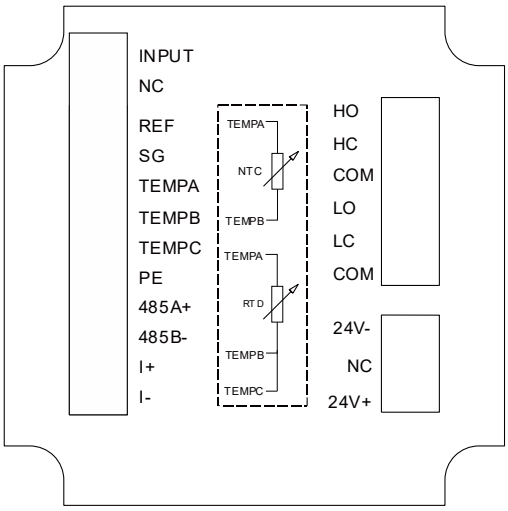
## Wiring




220V wiring diagram




110V wiring diagram

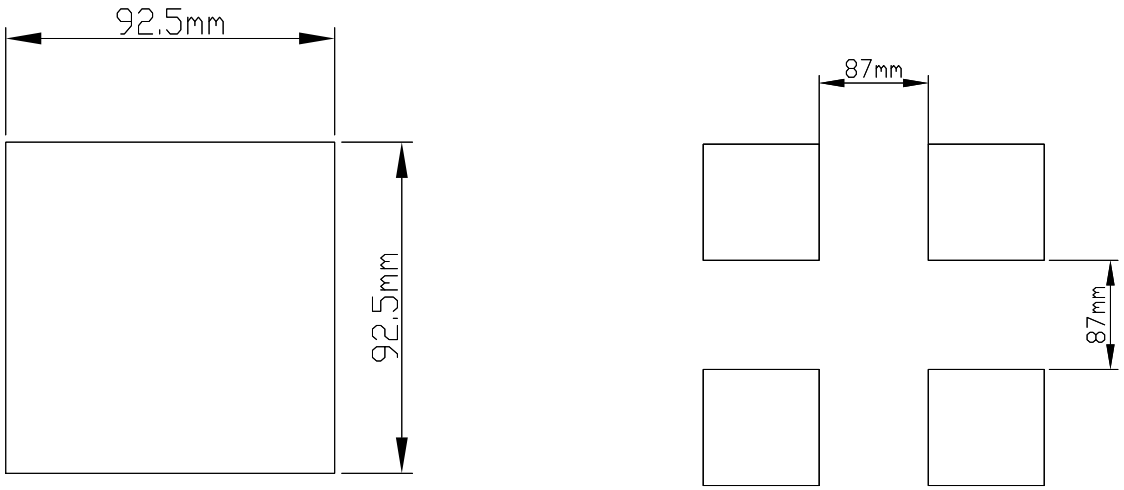



24V wiring diagram

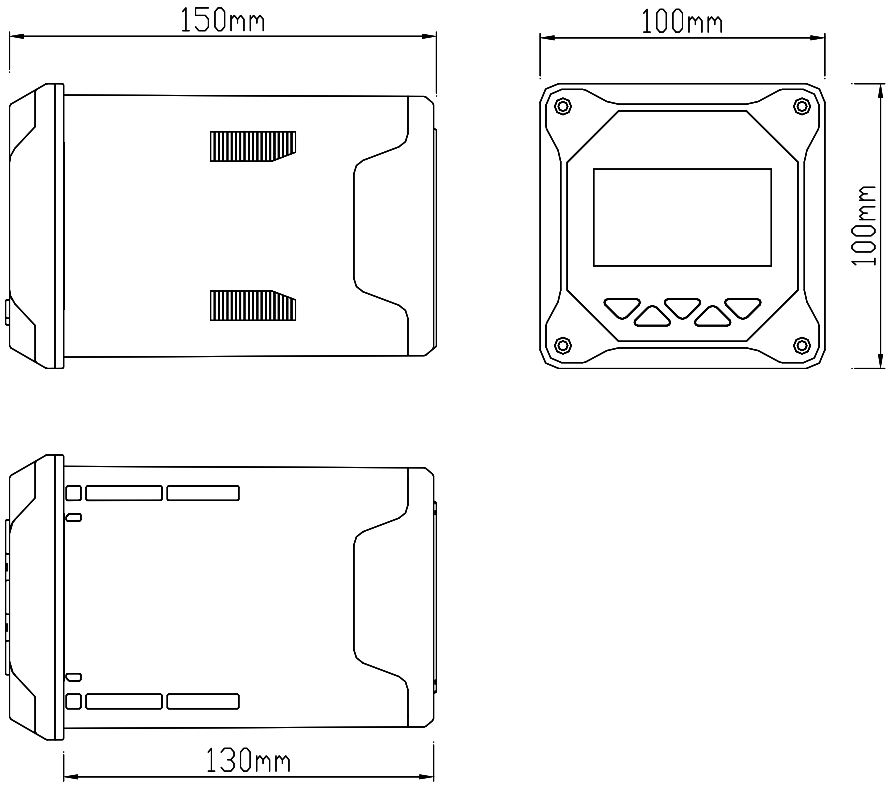
**Identification of terminal**

- INPUT: Measuring terminal of the electrode
- NC: Unidentified
- REF: Reference terminal of the electrode
- SG:Grounding terminal of the electrode
- TEMPA: Temperature compensation terminal A,NTC10K and Pt1000/Pt100 connect here
- TEMPB: Temperature compensation terminal B,NTC10K and Pt1000/Pt100 connect here
- TEMPC: Temperature compensation terminal C, Pt1000/Pt100 three-wire temperature grounding, Pt1000/Pt100 two-wire need to be connected to TEMPB, When connected to NTC10K, C terminal is not connected.
- PE:Grounding terminal of the Instrument
- 485 A +: RS485 communication interface A +
- 485 B -: RS485 communication interface B-
- I +: (4~20) mA output
- I -: (4~20) mA output
- 220V L: AC220V live wire
- 220V N: AC220V neutral wire
- HO: High alarm normally open relay
- HC: High alarm normally closed relay
- LO: Low alarm normally open relay
- LC: Low alarm normally closed relay
- COM: Common
- 110V L : AC110V live wire
- 110V N : AC110V neutral wire
- 24V+: DC24V+
- 24V-: DC24-

## Dimensions




Opening size and minimum distance between square holes of distribution box



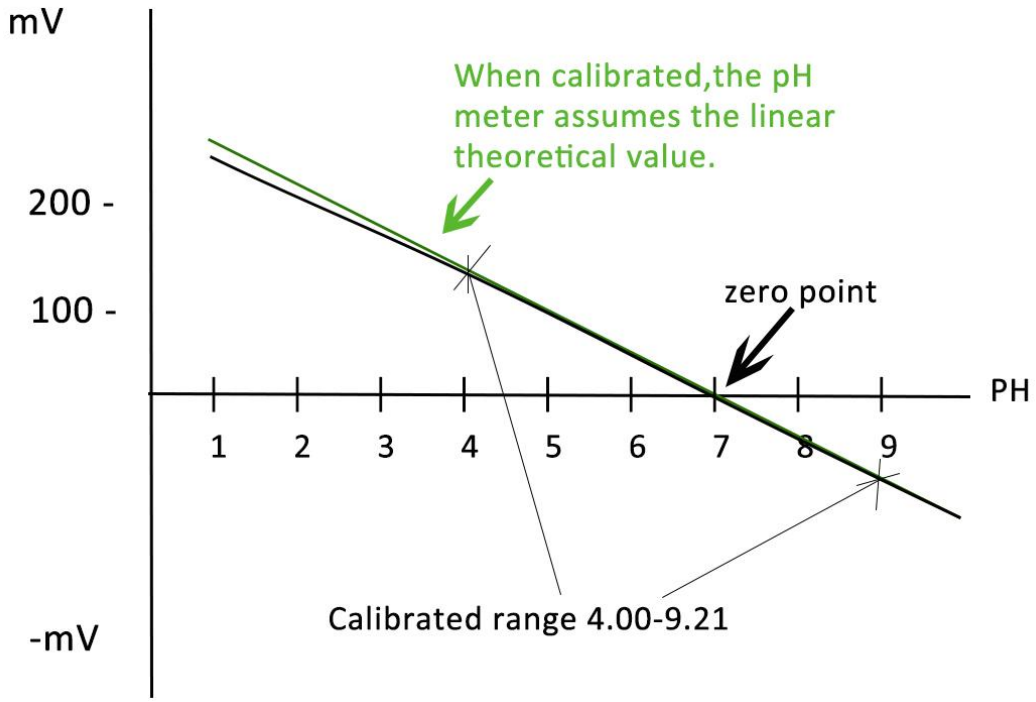

Instrument dimensions

## Multi-point calibration

To achieve the best possible accuracy, the calibration should cover the range of the desired measurement values. If the readings go beyond the calibrated range, the pH meter assumes linearity and simply extrapolates the value to be displayed. The true value may be slightly different.

More advanced pH meters will let the user calibrate at three, four or five and even higher numbers of pH values. A multi-point calibration mean, in comparison to a two-point calibration, that you can calibrate your pH tester on both sides of the zero point (pH 7.00). This will expand your pH measurement range without the need of recalibrating.

Example) Three-point calibration ar pH 4.00, 7.0 and 9.21



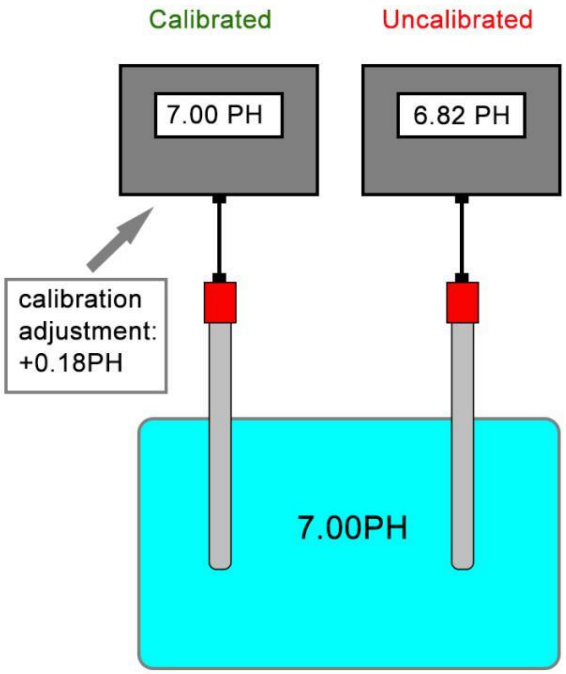
# pH calibration

A pH calibration is the procedure of adjusting the pH meter by measuring solutions of known pH values.

## Why you need to calibrate:

The characteristic of a pH electrode will change with time due to electrode coating and aging. And even a pH electrode would be stable over time, pH electrodes cannot be produced with identical characteristics.

In practice the response of a real pH sensor does not exactly follow the Nernst equation. This difference between the theoretical and actual behavior of a pH electrode must be compensated for. A calibration is required to match the pH meter to the current characteristics of the used pH sensor.




well defined solution(buffer) : 7.00 PH

## Ordering code

| SUP-pH6.5-HC-B-4-1-C | | | | | | | | | | | | | | | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUP-pH6.5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Range | HC | | | | | | | | | | | | | | （0～14）pH，<br>（-2000～2000)MV |
| Output | | B | | | | | | | | | | | | | 4-20mA+RS485 |
| Alarm Output | | | 4 | | | | | | | | | | | | 2 channels SPDT |
| Electrical Interface | | | | 1 | | | | | | | | | | | M16×1.5 cable<br>plug×2+M12×1.5 cable plug |
| Power supply | | | | | C | | | | | | | | | | 24VDC |
| | | | | | E | | | | | | | | | | 220VAC |
| | | | | | D | | | | | | | | | | 110VAC |
| Additional features (optional) | | | | | | | | | | | | | | | |
| Accessories | | | | | | | | P1 | | | | | | | 304SS back panel mounting bracket |