

Online pH/ORP controller

Committed to process automation solutions

Datasheet



SUP- PH160S

SUP-PH160S meter is an instrument independently developed by our company for online monitoring of pH/ORP value and through the current analog output to the monitoring room for record preservation. pH /ORP controller is widely used in thermal power, chemical fertilizer, metallurgy, environmental protection, Pharmaceutical, biochemical, food and water industries and for solution pH or ORP Values and temperatures are continuously monitored. The continuous monitoring data can be recorded by remote transmission through substation and output connection.

Characteristics

- Circuit modular design
- Isolated transformer output and less affected by interference
- pH /ORP measurement, temperature measurement
- Manual configuration temperature manual and automatic compensation function
- High and low alarm function.
- Buzzer switch function
- Return function without key operation over a certain time
- Quick access to online calibration
- Large size segment code LCD screen.

Parameter

| | |
|--------------------------|---|
| Display | 2.8 inch segment code LCD screen |
| Dimension | 96mm×96mm×112mm |
| Cutout dimension | 92mm×92mm |
| Measurement variables | pH/ORP |
| Measuring range | pH: 0.00~14.00pH ORP: -1000~+1000mV -2000~+2000mV (customizable) |
| Accuracy | pH: ±0.02pH; ORP: ±1mV |
| Input impedance | ≥10 ¹² Ω |
| Temperature compensation | NTC10K: -10~60℃ ±0.3℃, 60 ~ 130 ℃ ± 2 ℃ Range: -10~130℃ manual/automatic |
| Current output | Isolation type, 4~20mA can be set corresponding pH/ORP and |

| | |
|-----------------------|---|
| | temperature measurement range, maximum load 750 Ω , output accuracy + / - 0.2% FS. |
| Alarm function | 2 channels, capacity AC250V/3A |
| Relative humidity | 10~85%RH (no condensation) |
| Operating temperature | 0~60 $^{\circ}$ C |
| Power supply | AC: 220VAC \pm 10%, 50/60Hz; DC: 24VDC |
| Consumption | \leq 5W |
| Storage condition | Temperature: - 10 ~ 60 $^{\circ}$ C Relative humidity: 5~85%RH (no condensation) Altitude: <2000m |

Display

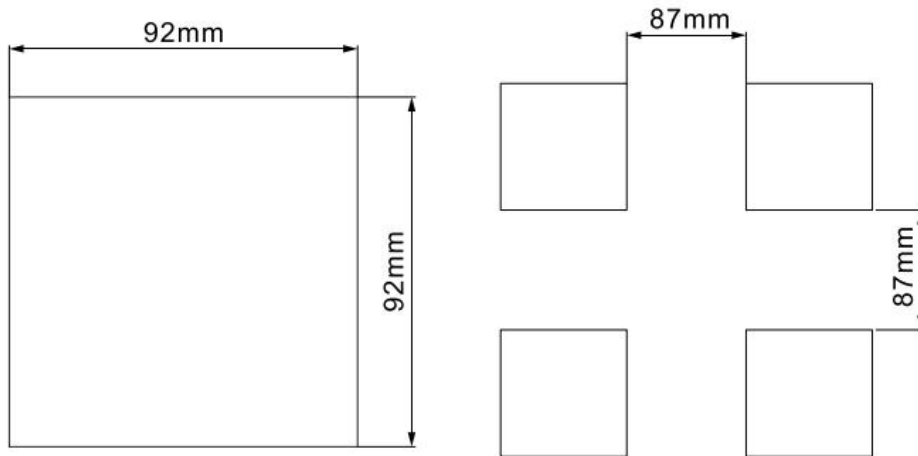
pH monitor:

| | |
|---------------------|---------|
| H25.0 $^{\circ}$ C | 20.00mA |
| 14.00 _{pH} | |

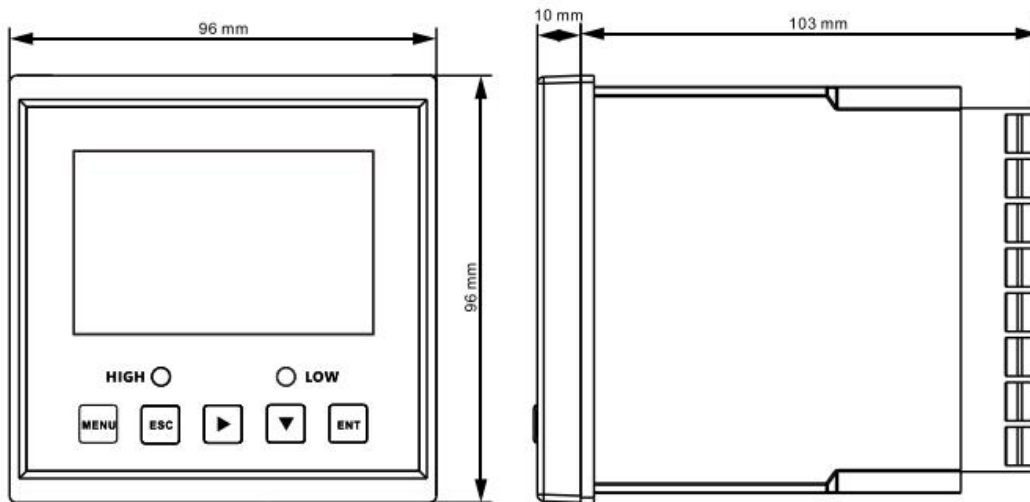
ORP monitor:

| | |
|---------------------|---------|
| H25.0 $^{\circ}$ C | 20.00mA |
| +0999 _{mV} | |

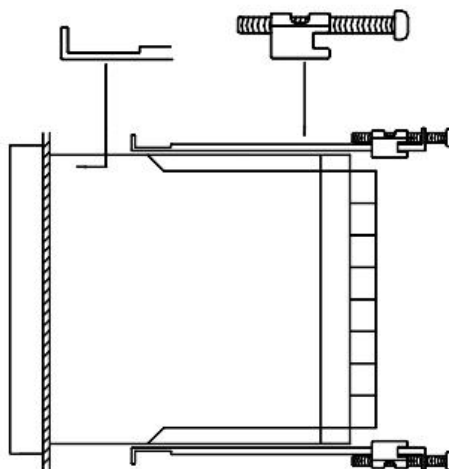
Dimension



Installation dimension

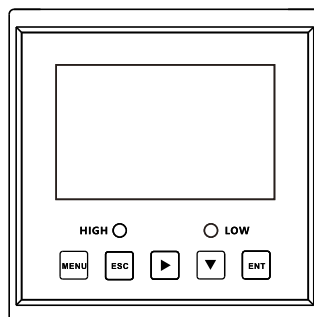


Dimension



Fixed installation

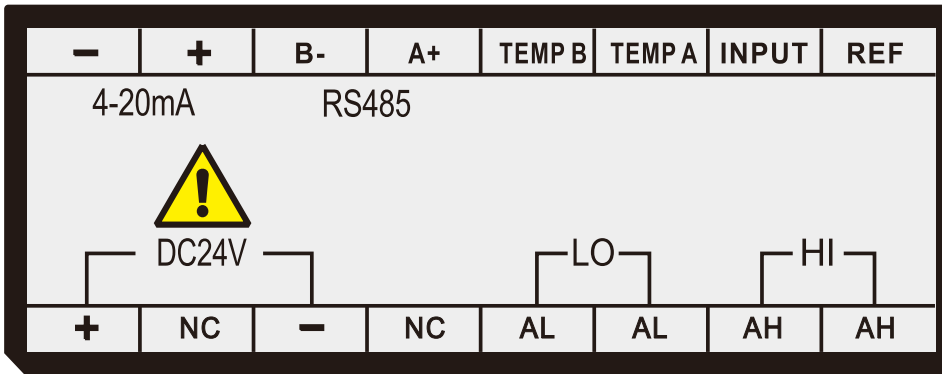
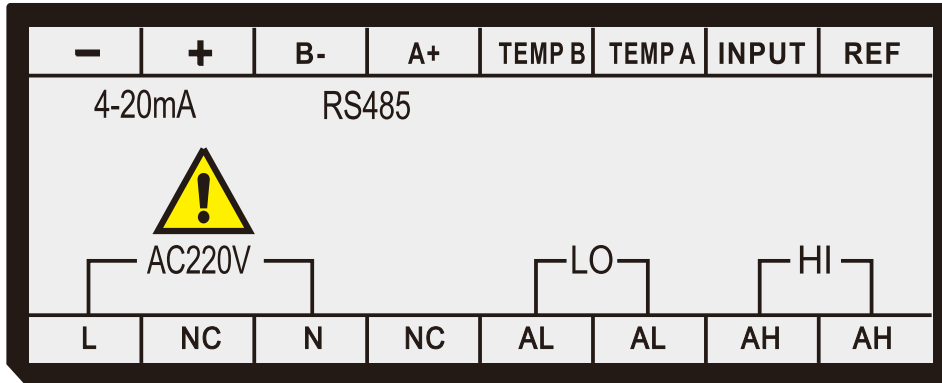
Description



pH 160S pH controller

| Sign | Name of the key | Function description |
|------|-----------------|--|
| | MUNU | Enter the menu under "Monitoring Interface" Exit menu under "Menu interface" |
| | EXIT | View related alarm status under "Monitoring Interface" Return to the upper layer between the relevant upper and lower layers of the interface under the "menu interface" |
| | RIGHT | Circularly select the digit of the parameter and switch the monitoring interface |
| | DOWN | Select the relevant menu under the "menu interface", and modify the relevant values in the configuration state |
| | ENTER | Press and hold under "Monitoring Interface" to enter the mode of holding the current measured value output In hold/fixed output mode, short press to return to "monitoring interface" Enter the submenu under "Menu interface" or confirm the modification |
| | Key combination | Long press to enter the "Temperature Compensation" interface |
| | Key combination | Long press to enter the "Online Calibration" interface |
| | Key combination | Long press to enter the "Alarm Settings" interface |

Wiring



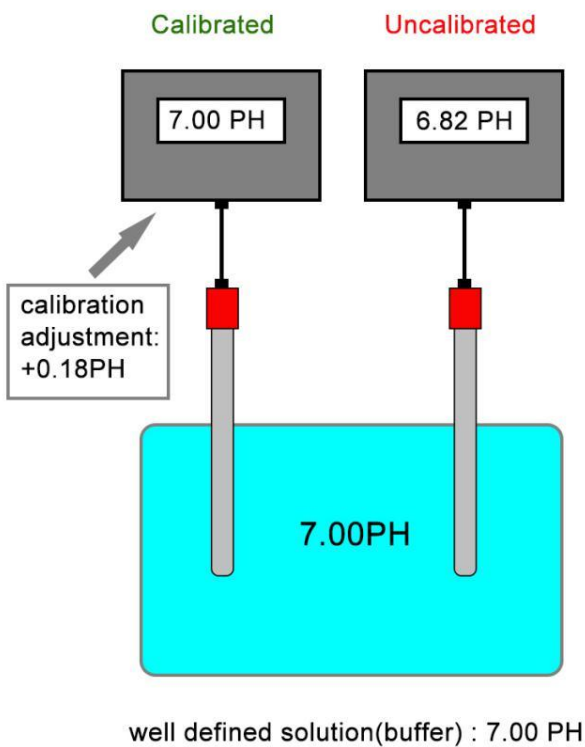
Identification of terminal

- REF: Reference terminal of the electrode
- INPUT: Measuring terminal of the electrode
- TEMPA: Temperature Compensation Terminal A
- TEMPB: Temperature Compensation Terminal B
- NC: Unidentified
- 4-20mA (+): 4-20mA output end+
- 4-20mA (-): 4-20mA output end-
- AC220V (L): AC220V Fire Wire
- AC220V (N): AC220V zero line
- LO(AL): low alarm normally open relay
- HI(AH): High alarm normally open relay
- DC24V+: 24VDC +
- DC24V-: 24VDC -

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.

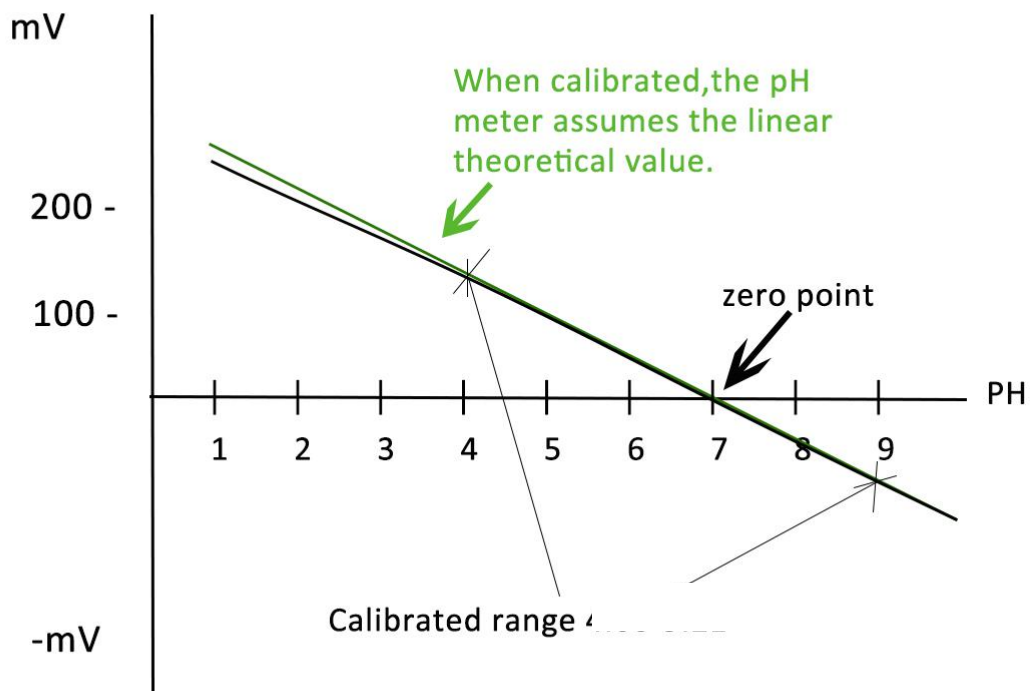
In practice the response of a real pH sensor does not exactly follow the Nernst equation. This difference between the theoretical and actual behavior of a pH electrode must be compensated for. A calibration is required to match the pH meter to the current characteristics of the used pH sensor.

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 re-calibrating.

Example Three-point calibration at pH 4.00, 7.00 and 10.00



Ordering Code

| SUP-pH160S-RT1-O1-D1-A2-V1 | | | | | | | | | | Description | |
|----------------------------|-----|---|----|----|----|----|---|---|---|-------------|-------------------------------|
| SUP-pH160s | - | - | - | - | - | - | - | - | - | - | (0~14) pH, (-1000~1000) mV |
| Range | RT1 | | | | | | | | | | (0~14) pH, (-2000~2000) mV |
| | RT2 | | | | | | | | | | |
| Transmit output | | | O1 | | | | | | | | 4-20mA |
| Communication | | | | D1 | | | | | | | RS485 |
| Relay output | | | | | A2 | | | | | | 2 relay output |
| Power supply | | | | | | V1 | | | | | 24VDC |
| | | | | | | V2 | | | | | 220VAC |

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