



Recorder



Flow



Pressure



Temp



Analyzer



Level

Datasheet

pH/ORP Controller

SIN-PH6.8

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Datasheet

pH/ORP Controller SIN-PH6.8

This product is a self-developed instrument for online monitoring of pH/ORP value. It is widely used in thermal power, chemical fertilizer, metallurgy, environmental protection, pharmaceutical, biochemical, food and water industries for continuous monitoring of pH or ORP value and temperature in solution. The continuous monitoring data can be connected to the recorder through the transmitter output to realize remote monitoring and recording, and can also be connected to the RS485 interface to communicate with the computer through the Modbus-RTU protocol, so as to realize computer monitoring and recording of the instrument.

Applications

- thermal power
- chemical fertilizer
- Metallurgy
- environmental protection
- Pharmaceutical
- Biochemical
- food



Features

- 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.

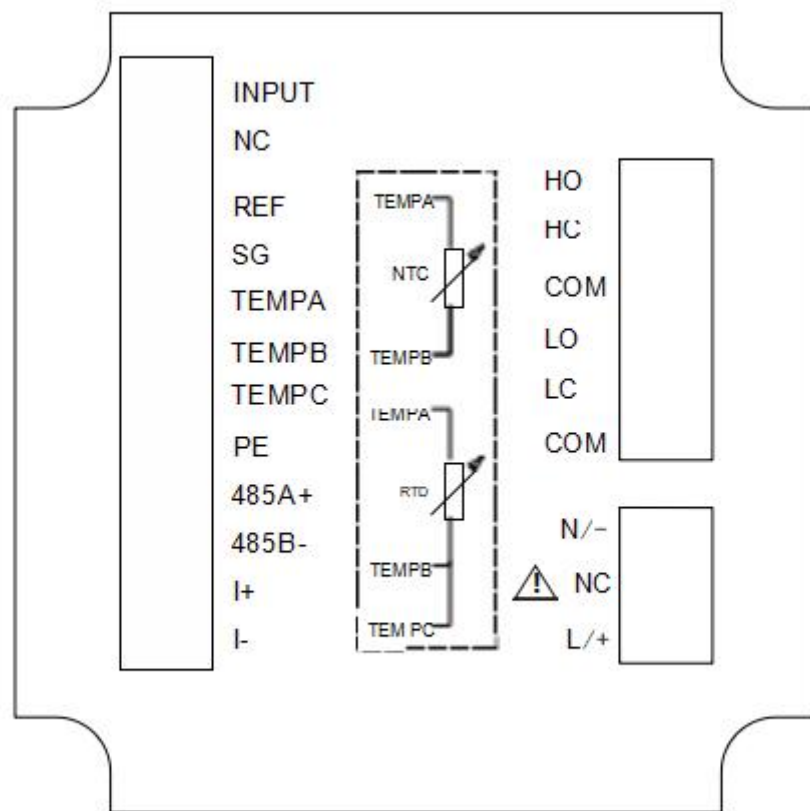
pH/ORP Controller

Principle

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.

Parameters	
Screen size	2.8 inch monochrome LCD with a resolution of 128*64
Overall dimension	PH6.5: 100mm×100mm×150mm 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 ORP:(-2000 ~ 2000) mV
Accuracy	pH: ±0.02pH ORP: (-2000 ~ -1000) mV, ±2mV (-1000 ~ 1000) mV, ±1mV (1000 ~ 2000) mV, ±2mV
Input resistance	≥10 ¹² Ω
Temperature compensation	NTC10K: (-10~60) °C Accuracy ±0.3°C (60~130) °C Accuracy ±2°C Pt1000 , Pt100(Customized): Accuracy ±0.3°C Range: (-10 ~130)°C 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) °C
Power supply	AC: 220V±10%, 50Hz/60Hz 110V±10% DC: 24V±10%, input power≤5W
Storage conditions	Temperature: (-15~65) °C Relative humidity: 5%~95%(No condensation) Altitude: <2000m
Measure range	pH: (0.00 ~ 14.00) pH ORP:(-2000 ~ 2000) mV
Accuracy	pH: ±0.02pH ORP: (-2000 ~ -1000) mV, ±2mV (-1000 ~ 1000) mV, ±1mV (1000 ~ 2000) mV, ±2mV

Wiring



Identification of terminal

INPUT: Electrode input

NC: undefined

REF: Electrode Reference End

SG: Electrode Ground

TEMP A: Temperature compensation terminal A

TEMP B: Temperature compensation terminal B

TEMP C: Temperature compensation terminal C, Pt1000, Pt100 three-wire system temperature ground; connected to the Pt1000, Pt100 two-wire system need to be shorted to the TEMP B, connected to the NTC10K when the TEMP C end of the hanging space

PE: Instrument Ground

485A + : RS485 communication interface A+

485B - : RS485 communication interface B -

I + : (4~20)mA Output +

I - : (4~20)mA Outputs -

220V N/110V N/24V - : 220VAC Power Terminal/110VAC Power Terminal/24VDC Power Terminal Negative

220V L/110V L/24V+ : 220VAC Power Terminal/110VAC/Power Terminal 24VDC Power Terminal Positive

COM : Contact Common

LC : Low alarm normally closed contact terminals

LO : Low alarm normally open contact terminals

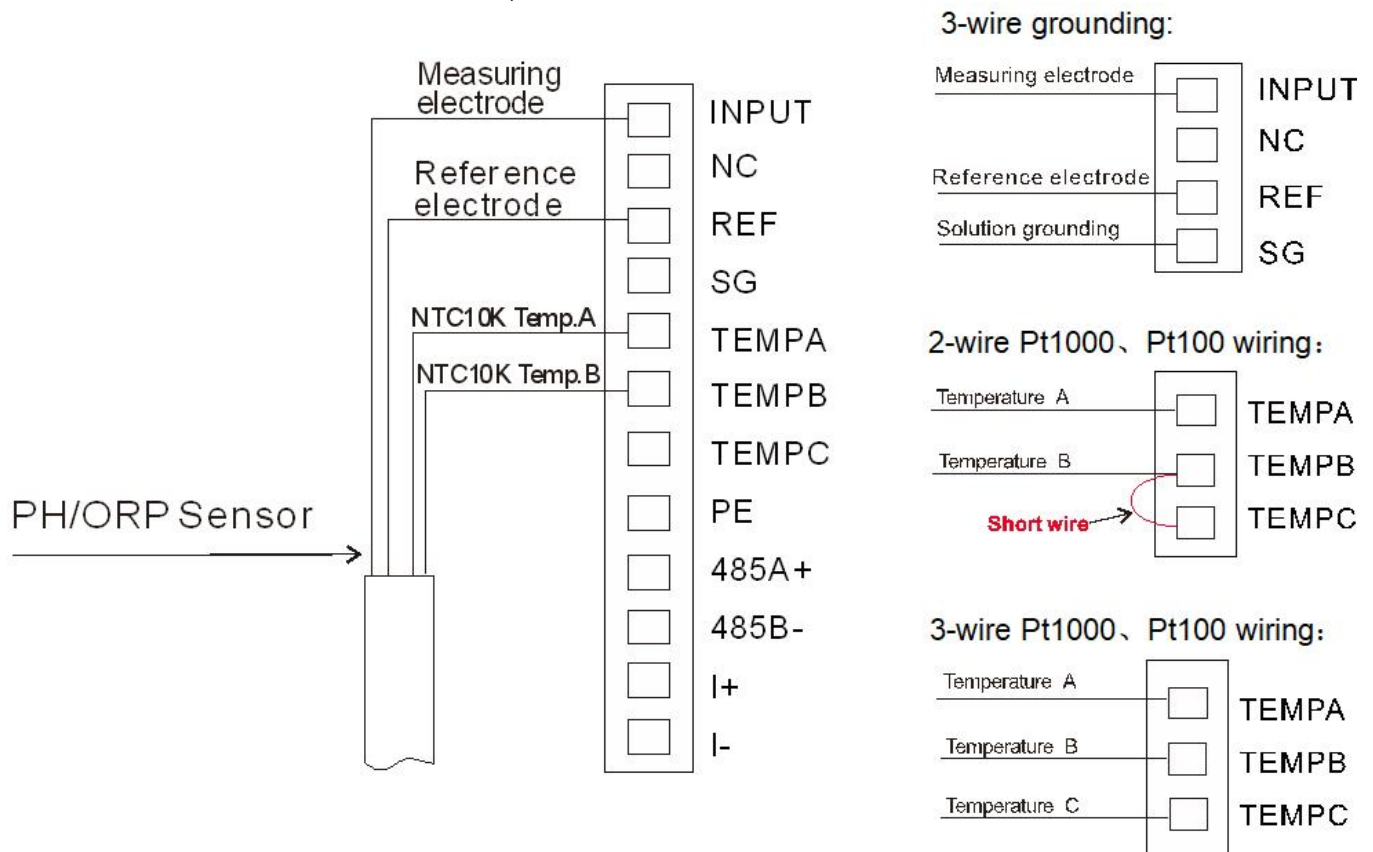
COM : Contact Common

HC: High report normally closed contact terminals

HO: High report normally open contact terminals

Sensor wiring

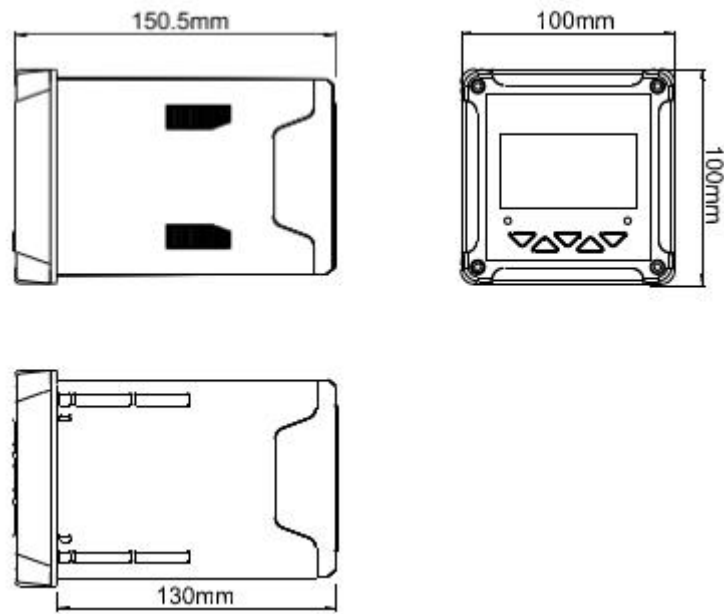
The conventional sensor wiring is shown in following figure; If a controller with solution grounding function is selected, the sensor solution grounding wire needs to be connected to the SG ; If the temperature electrode is a two-wire Pt1000 or Pt100, TEMPC and TEMPB need to be short circuited.



Sensor wiring diagram

Dimension

Dimension of PH6.8



Dimension of PH6.8

Installation

■ Installation

1. Installation conditions

This section explains where and how to install the product, so be sure to read this section when installing the product.

Related Installation Precautions

This product is installed as a disk mounted type.

Install the product indoors, away from wind, rain and direct sunlight.

To prevent the internal temperature of the product from rising, install it in a well-ventilated place.

Do not tilt the product from side to side, but install it as horizontally as possible (tilt back $<30^\circ$).

Avoid the following places when installing the product

Places where the ambient temperature exceeds 60°C during operation.

Places where the ambient humidity exceeds 85%RH.

Places near electromagnetic sources.

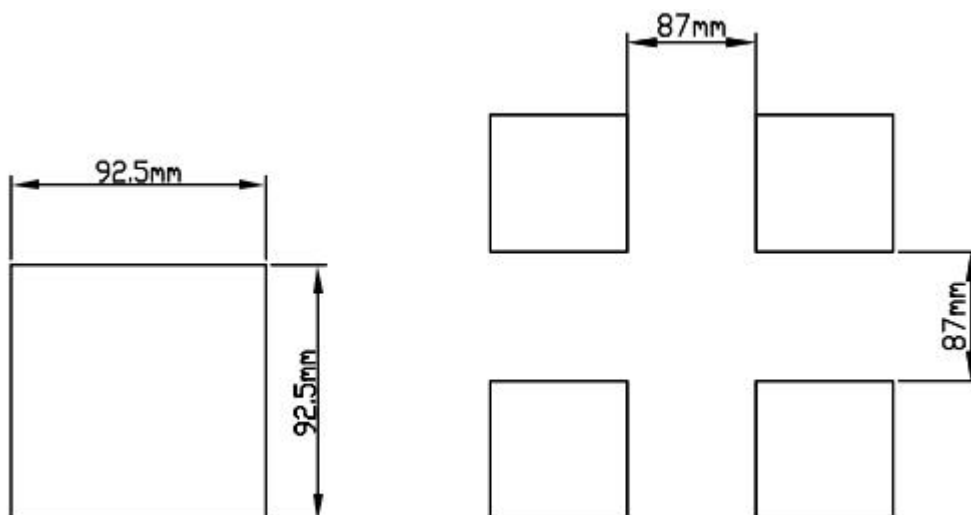
Places with strong mechanical vibration.

Places where condensation is likely to occur due to large temperature changes.

Places where there is a lot of oil smoke, steam, moisture, dust or corrosive gases.

2. Controller Installation

Cut a $92.5\text{mm} \times 92.5\text{mm}$ mounting hole in the instrument cabinet or mounting panel, and the thickness of the mounting panel is 1.5mm to 13mm. Put the instrument directly from the panel of the instrument cabinet, and snap the butterfly button of the instrument from the back of the instrument into the fixing slot, as shown in Fig. 3.



Minimum distance between square holes in disk mounted openings and instrument cabinets

Insert the meter into the mounting hole then fasten the butterfly clasp as shown in Fig. 3:

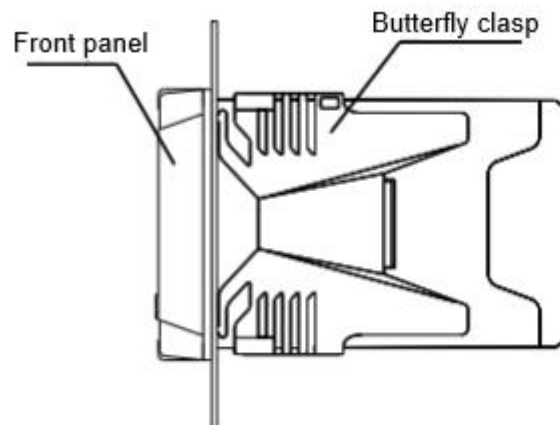


Fig. 3 Schematic diagram of controller disk mounting method

3.Sensor Installation

Common mounting methods are shown schematically in Fig. 4:

Common installation methods are illustrated below:

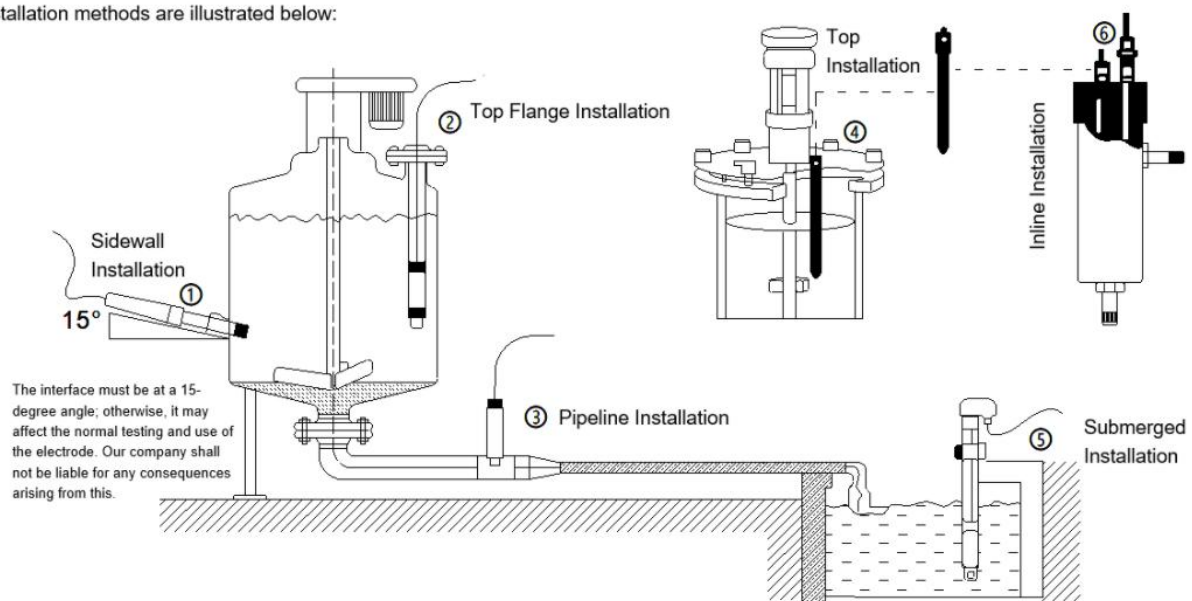


Fig.4 Common Installation Diagrams for Sensors

Sensor installation notes:

The electrodes are fragile glass material and membrane head, installation should be extra careful, hold lightly.

Threads should not be over-tightened to avoid damage to the electrode and plastic connector connections.

The installation position is easy to dismantle, which is convenient for the instrument to do electrode calibration maintenance work.

Ordering code

SIN-PH6.8-HC-B-4-1-C-S2-P1								Description
SIN-PH6.8	-	-	-	-	-	-	-	
Measurement Range	HC							(0-14) pH, (-2000-2000) mV
Output		B						4-20mA+RS485
Alarm Output			4					2-channel SPDT
Electrical Interface				1				M16×1.5 cable gland×2+M12×1.5 cable gland
					C			24VDC
Power Supply					E			220VAC
					D			110VAC
						S2		Regular Type
Instrument Type						S3		Electrode Grounding Type
Accessories							P1	304SS Back Panel Mounting Bracket