



Recorder



Flow



Pressure



Temp



Analyzer



Level

Datasheet

pH/ORP Controller

SUP-PH6.5

Supmea[®]

Committed to process automation solutions

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www.supmea.com

Datasheet**pH/ORP Controller
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.

Continuous monitoring data through the transmission output connection recorder to achieve remote monitoring and recording, you can also connect the RS485 interface through the MODBUS-RTU protocol can be easily connected to the computer to achieve monitoring and recording.

Applications

- thermal power
- chemical fertilizer
- Metallurgy
- environmental protection
- Pharmaceutical
- Biochemical
- food and tap water solution pH value or ORP value
- temperature of the continuous monitor

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**

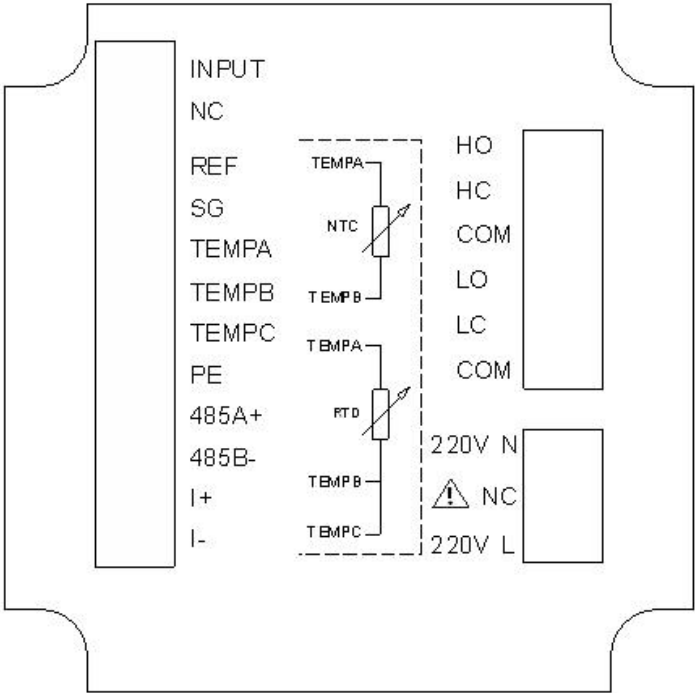
Principle

A pH controller measures the pH of a solution using a pH electrode (with a glass - membrane electrode and a reference electrode). The electrodes produce a potential difference related to the hydrogen - ion concentration in the solution, based on the Nernst equation.

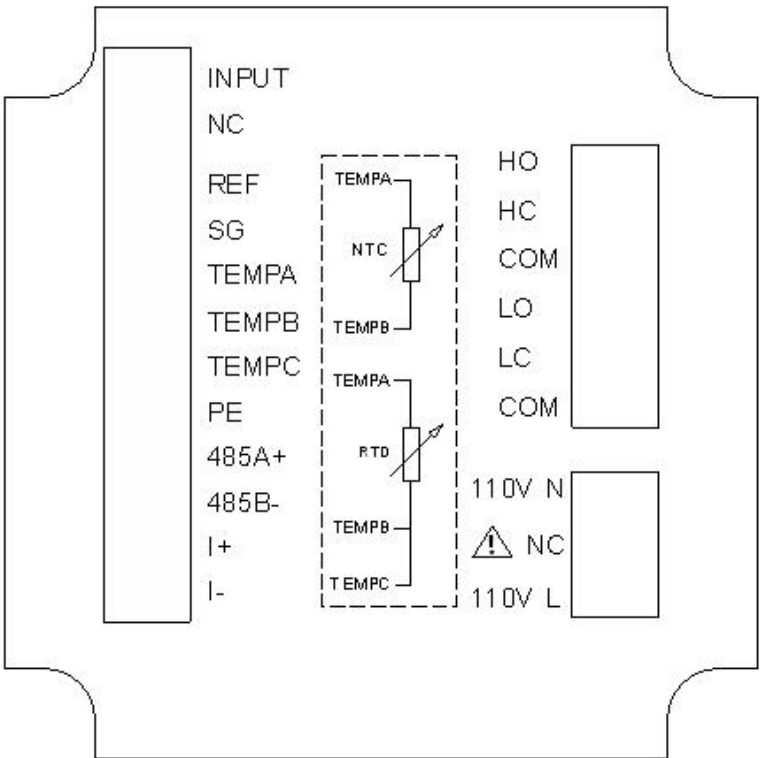
The controller compares the measured pH value with a set - point value. If there's a deviation, it sends a control signal to a dosing device (for acid or alkali) to adjust the pH of the solution until it reaches the set - point. This process often involves a feedback loop to maintain the pH at the desired level.

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≥6W
Storage conditions	Temperature: (-15~65) °C
	Relative humidity: 5%~95%(No condensation)
	Altitude: <2000m

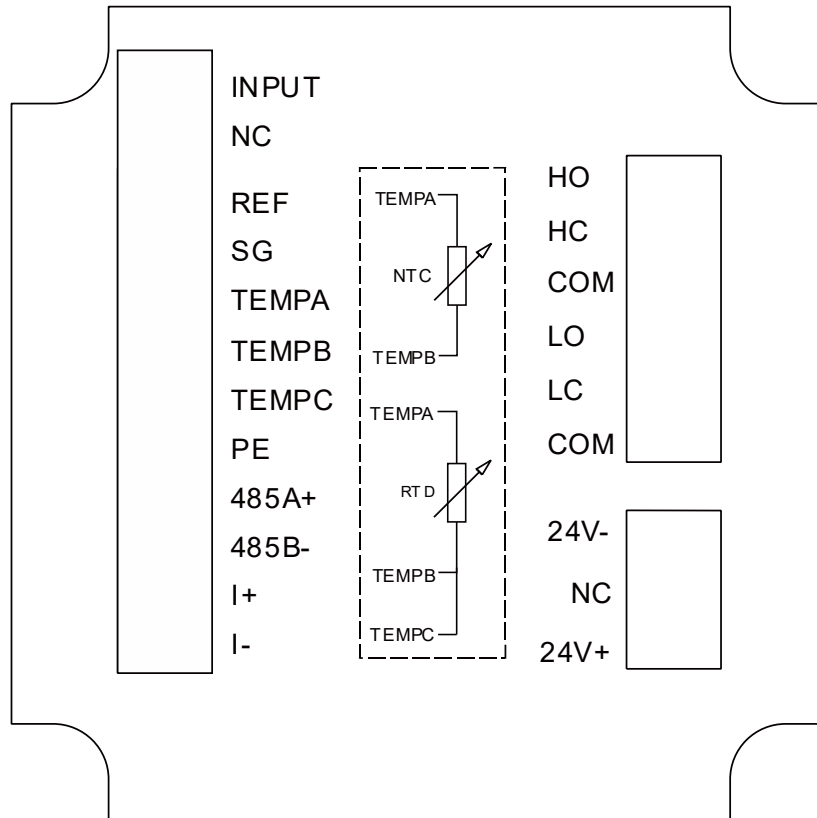
Wiring



220V wiring diagram



110V wiring diagram



24V wiring diagram

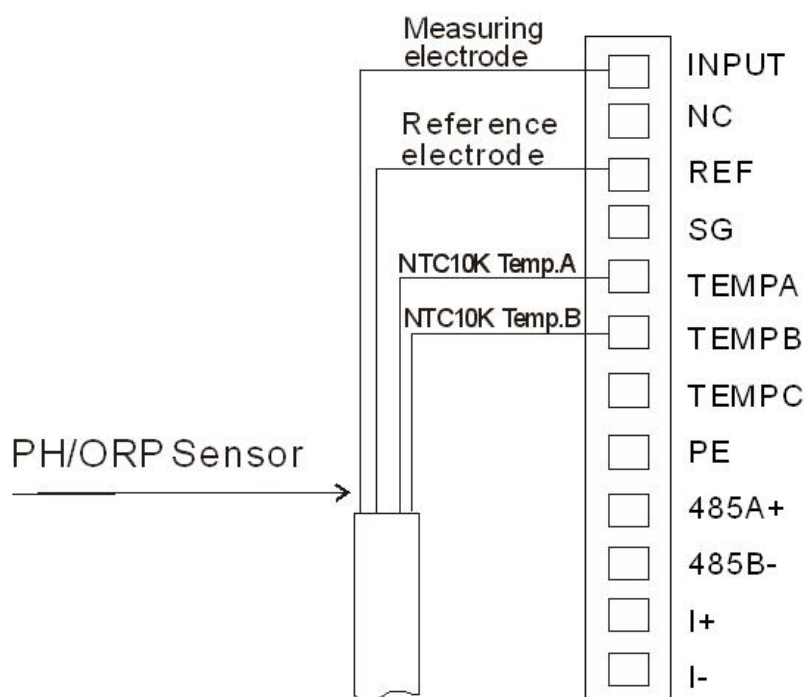
Identification of terminal

- INPUT: Measuring terminal of the electrode
- NC: Unidentified
- REF: Reference terminal of the electrode
- SG: Grounding terminal of the electrode
- TEMP A: Temperature compensation terminal A, NTC10K and Pt1000/Pt100 connect here
- TEMP B: Temperature compensation terminal B, NTC10K and Pt1000/Pt100 connect here
- TEMP C: Temperature compensation terminal C, Pt1000/Pt100 three-wire temperature grounding, Pt1000/Pt100 two-wire need to be connected to TEMP B, 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

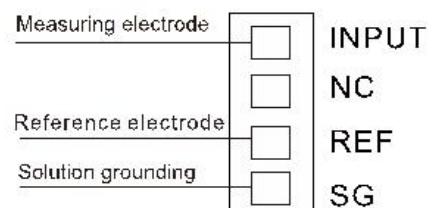
- 110V L : AC110V live wire
- 110V N : AC110V neutral wire
- 24V+: DC24V+
- 24V-: DC24V-

Sensor wiring

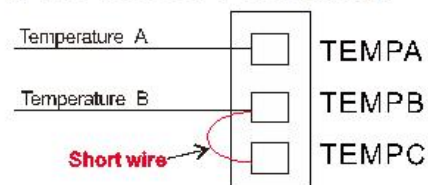
The conventional sensor wiring is shown in following figure; If a controller with solution grounding function is selected, the sensor solution grounding wire needs to be connected to the SG ; If the temperature electrode is a two-wire Pt1000 or Pt100, TEMPC and TEMPB need to be short circuited.



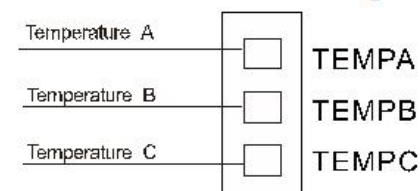
3-wire grounding:



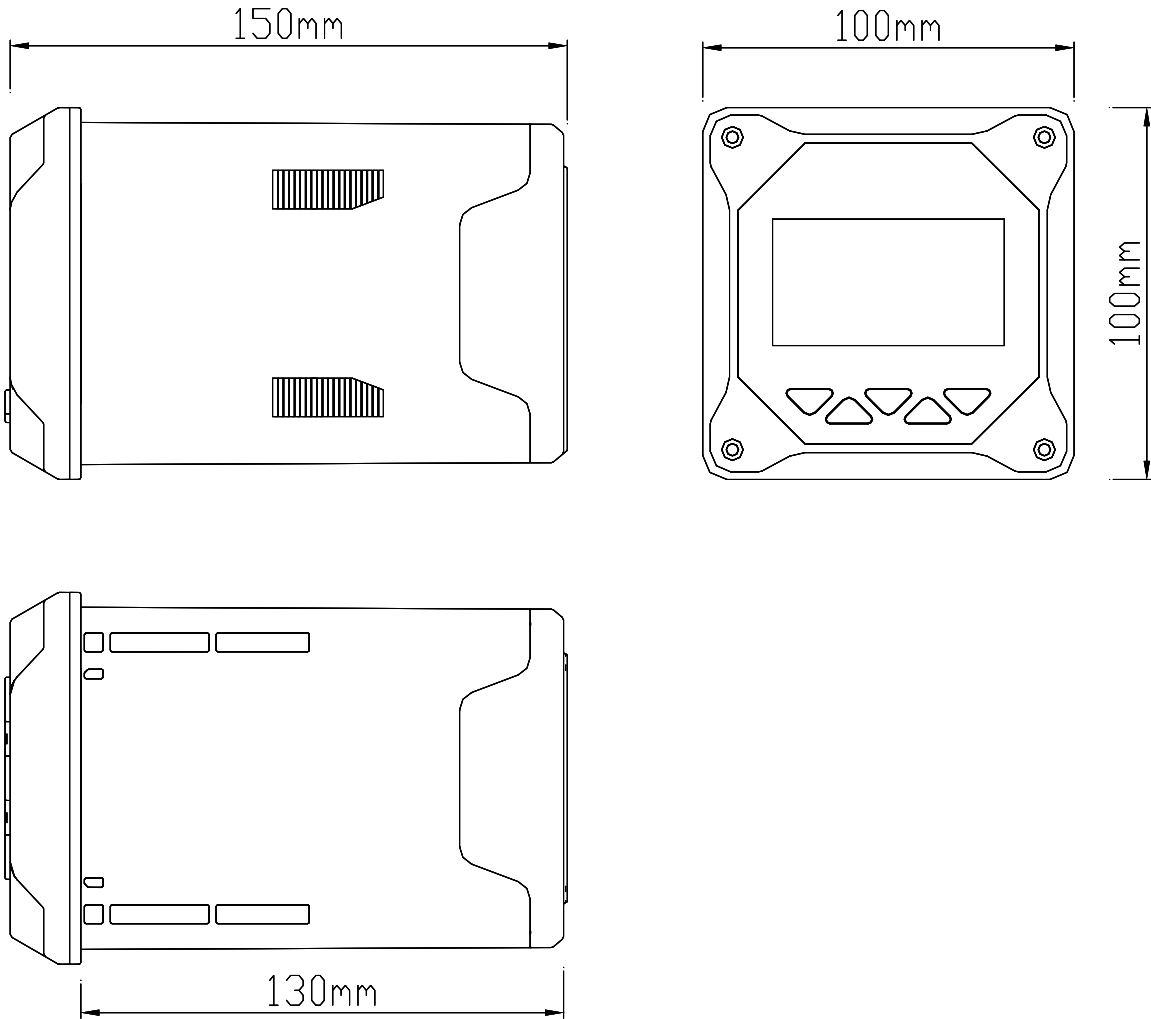
2-wire Pt1000、Pt100 wiring:



3-wire Pt1000、Pt100 wiring:



Dimension



Dimension of PH6.5

Installation

■ Installation

Instrument installation

Please read the instruction of installation location and method of instrument as described during installation.

2.1.1 Installation precautions

- This product is tray mounted.
- Please install it indoors, avoiding wind, rain and direct sunlight.
- In order to prevent the internal temperature of this product from rising, please install it in a well-ventilated place.
- When installing this product, please do not tilt it to the left and right, try to install it horizontally (it can be tilted back $<30^\circ$).

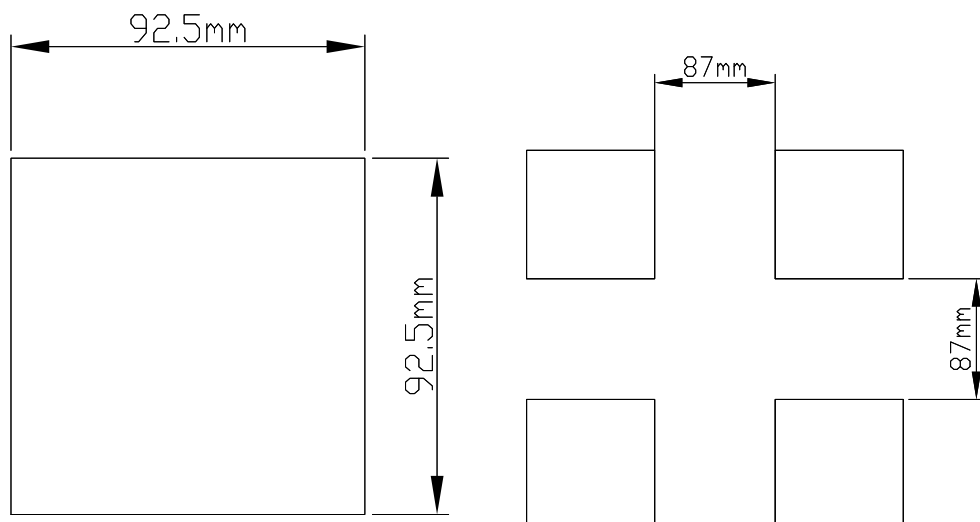
2.1.2 Installation should be kept away from the following site

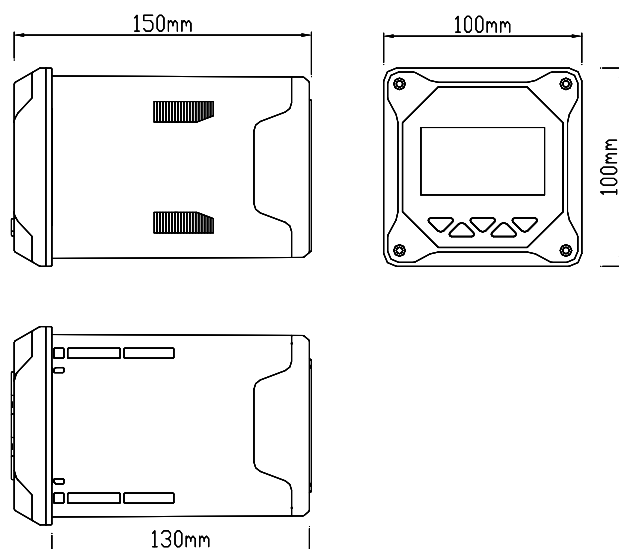
- In direct exposure to sunlight and near thermal equipment.
- With ambient temperature over 60 degrees in operation.
- With humidity over 85% in operation.
- Nearby electromagnetic source.
- In strong mechanical vibration.
- With varying temperature and dew condensation.
- With oil smoke, steam, humidity, dust and corrosive gases.

Installation methods

Install a 92.5 * 92.5 mounting hole on the instrument cabinet or mounting panel, The thickness of the installation panel is 1.5mm~13mm.

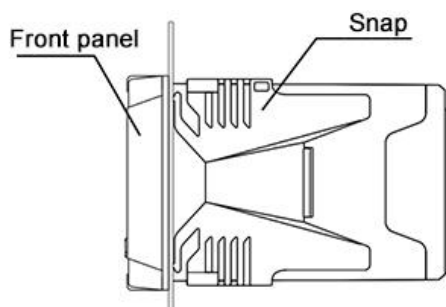
Dimension of PH6.5





Dimension of PH6.5

The instrument into the mounting hole and then buckle on the Snap, as shown below



Electrode installation

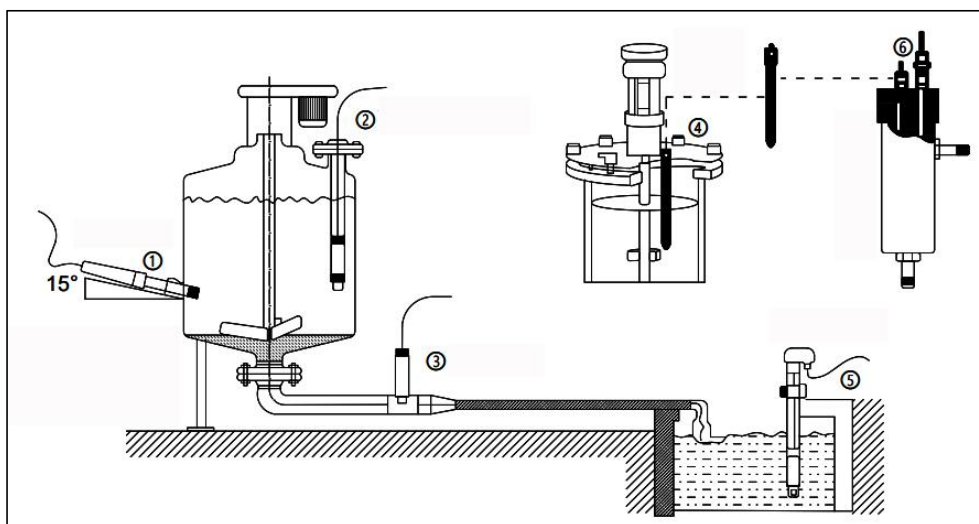


Fig.4 Schematic diagram of common installation method

①Side wall installation ②Flange mounted at the top ③Pipe installation ④Top installation ⑤Submersible installation ⑥Flow-through installation

The interface must be in 15° oblique angle, or it will affect the normal test and use of the electrode. We won't be responsible for any results due to this.

Ordering code

SUP-PH6.5 -HC-B-4-1-C-S2-P1								Description
SUP-PH6.5	-	-	-	-	-	-	-	
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
Instrument Type						S2		Regular Type
						S3		Electrode Grounding Type
Accessories							P1	304SS Back Panel Mounting Bracket