Online pH/ORP meter

Committed to process automation solutions

Datasheet

SUP-pH4.0

Supmea SUP-PH4.0

The SPE-PH4.0 is a true multivariable analyzer used for measuring/controlling the pH with temperature and ORP. The function is switchable on the device itself. Depending on the measured variable, combination electrodes (e. g. pH sensors) or split versions (glass electrodes with a separate reference electrode) can be readily connected.

Truly unique is the SPE-PH200 in the Human Machine Interface. The high resolution digital display and LCD screen make the measurements are clearly legible and the keyboard operation make it easier for the user to configure the device. The instructions on screen assure that the best configuration for the application is obtained

Universal application in water and waste water engineering, service/process water and drinking water and well/surface water, leakage monitoring in refrigeration plant


SUP-PH4.0

Features

• Easy operation
• NEMA enclosure for field mounting and panel mounting
• Automatically Temperature Compensation
• Directly switchable to PH or ORP
• Large LC D display with background lighting
• PH or ORP sensors can be connected thanks to the sensor supply integrated in the output
• Using the setup program: user-friendly programming
• 4-20mA analog output
• RS485 communication

General Specifications of SUP-PH4.0

(A) **Measure Range:** PH(0-14）；ORP(-1000~+1000Mv）

(B) **Resolution: PH:** 0.01 ORP: 1Mv

(C) **Stability: PH：** ≤0.02PH/24H; ORP: ≤3Mv/24H

(D) **Accuracy: PH:** ±0.02PH; ORP：±1Mv

(E) **Input impedance:** ≥10^12

(F) **Temperature compensation:** NTC 10K 0-100℃

(G) **Communication**：RS485, MODBUS-RTU

(H) **Power Supply:** AC220V±10%, 50Hz or DC 24V

(I) **Relay output:** AC250V, 3A

(J) **Cable Length:** 5M, 10M, 15M

(K) **Transmission signals:** 4-20 mA

(L) **Process alarm**：High/Low process alarms, selected from pH, ORP

(M) **Panel Front Size (mm) :** 96(W) x 96(H) x Approx.112 (D)

(N) **Panel Cutout Size (mm):** 92(W) x 92(H) x Approx.112 (D)

(O) **Converter weight :** Approx. 1 kg

(P) **Display:** LCD with back lights in English

(Q) **Calibration:** Semi-automatic 3 points calibration using pre-configured buffer tables 4, 7& 10, or 4, 6.18& 9.18

(R) **Color:** Black

(S) **Ambient temperature :** -20 to +55ºC (-5 - 130 ºF).

(T) **Storage temperature :** -30 to +70ºC (-20 - 160 ºF).

(U) **Humidity :** 10 to 90% RH at 40ºC (100 ºF)
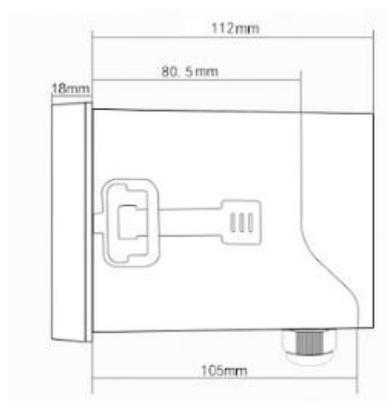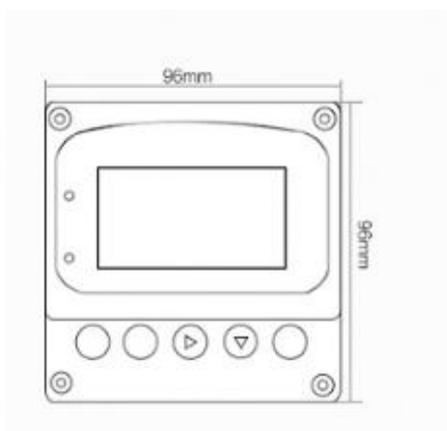
General Specifications of SUP-PH6.0

(V) **Measure Range:** PH(0-14）；ORP(-1000~+1000Mv）

(W) **Resolution: PH:** 0.01 ORP: 1Mv

(X) **Stability: PH：** ≤0.02PH/24H; ORP: ≤3Mv/24H

(Y) **Accuracy: PH：** ±0.02PH; ORP：±1Mv

(Z) **Input impedance:** ≥10^12

(AA) **Temperature compensation:** NTC 10K

　　　　　　　　　　　　 or PT1000 -10-130℃

(AB) **Communication：** RS485, MODBUS-RTU

(AC) **Power Supply:** AC220V±10%, 50Hz or DC 24V

(AD) **Relay output:** AC250V, 3A

(AE) **Cable Length:** 5M, 10M, 15M

(AF) **Transmission signals：** 4-20 mA

(AG) **Process alarm：** High/Low process alarms, selected from pH, ORP

(AH) **Panel Front Size (mm) :** 100(W) x 100(H) x Approx.150 (D)

(AI) **Panel Cutout Size (mm):** 92(W) x 92(H) x Approx.150(D)

(AJ) **Converter weight :** Approx. 1 kg

(AK) **Display:** LCD with back lights in English

(AL) **Calibration:** Semi-automatic 3 points calibration using pre-configured buffer tables 4, 7& 10, or 4, 6.86& 9.18

(AM) **Color:** Black

(AN) **Ambient temperature :** -20 to +55ºC (-5 - 130 ºF).

(AO) **Storage temperature :** -30 to +70ºC (-20 - 160 ºF).

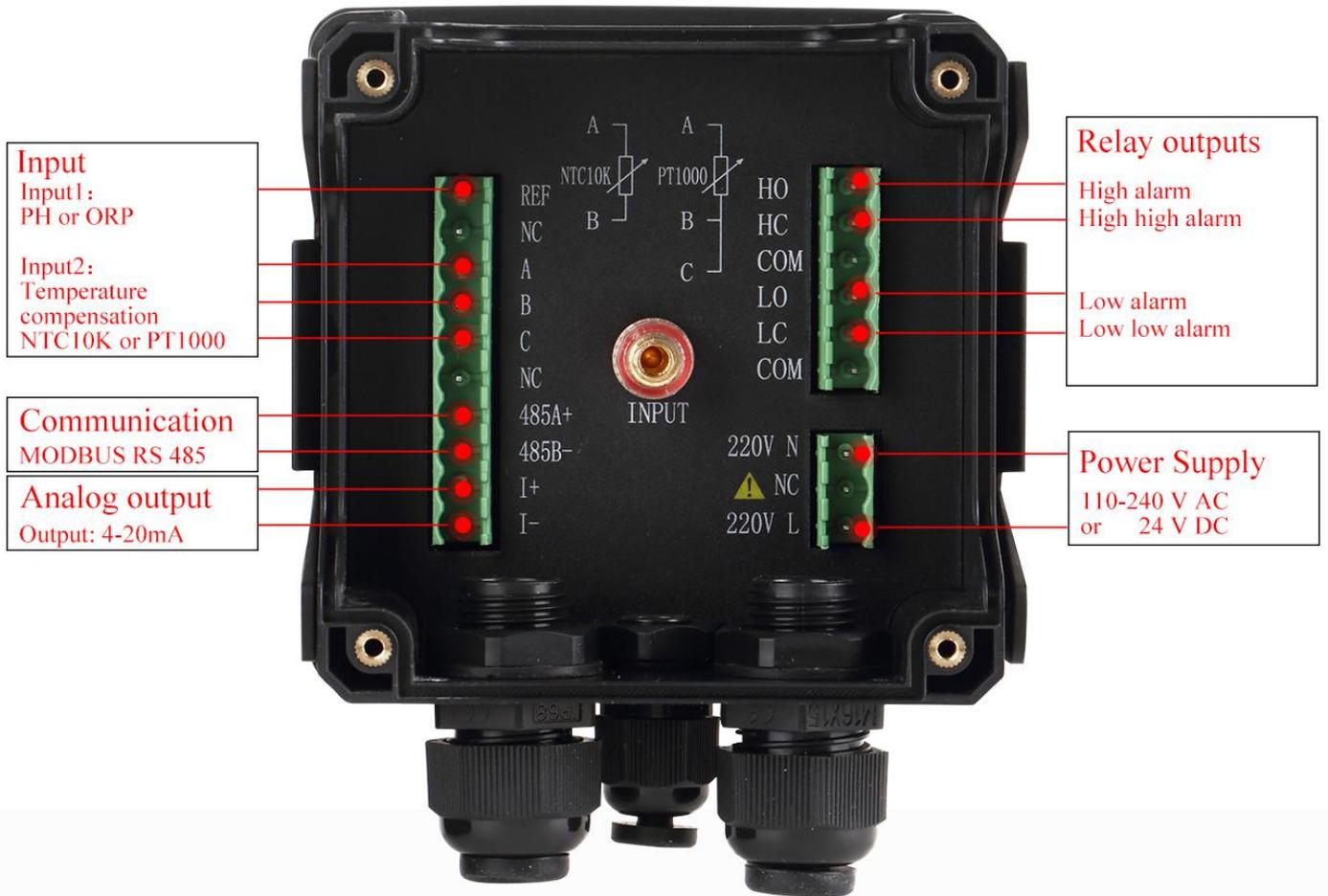(AP) **Humidity :** 10 to 90% RH at 40ºC (100 ºF)

The device is designed for use on site. A rugged housing protects the electronics and the electrical connections from corrosive environmental conditions . As an alternative, the device can also be installed in a control panel.

1, Temperature

2, Temperature output

3, High alarm

4, Low alarm

5, Measured value

6, Menu

7, Exist

8, Choose

9, Enter

Function diagram

Input
Input1:
PH or ORP

Input2:
Temperature
compensation
NTC10K or PT1000

Communication
MODBUS RS 485

Analog output
Output: 4-20mA

REF
NC
A
B
C
NC
485A+
485B-
I+
I-

NTC10K   PT1000
A   A
B   B
C

INPUT

HO
HC
COM
LO
LC
COM

220V N
NC
220V L

Relay outputs
High alarm
High high alarm

Low alarm
Low low alarm

Power Supply
110-240 V AC
or   24 V DC

pH monitor：

H25.0°C   20.00mA

14.00PH

ORP monitor：

H25.0°C   20.00mA

±1000mV

How to select the probe

Plastic pH probe

- Technical parameters

Measure Range: 0-14pH
Temperature Range: 0-60℃
Material: PS
Cable length: 5m/10m/15m
Tread Type: 3/4NPT

- Not recommended:
≥60℃
Strong acid and alkaline
Biotechnology, sterilization process

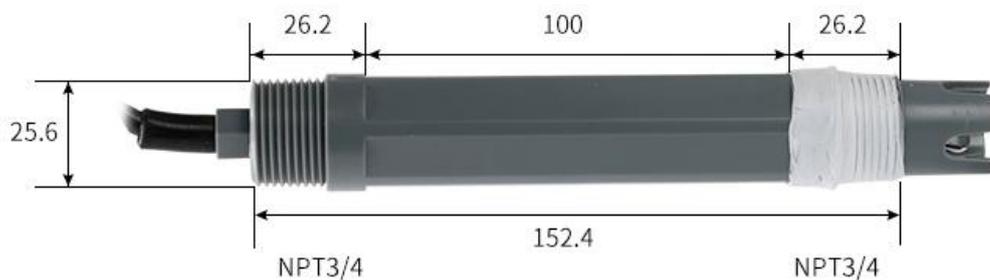- Recommended Application
Drinking water monitoring and treatment
Swimming pools
Aquariums(also marine aquariums)
Lightly polluted service water
Process water and wastewater
Rainwater,pond water and surface water

Glass pH probe

● Technical parameters
Measure Range: 0-14pH
Temperature Range:0-80℃
Tread type: PG13.5
Material: Glass

● Not recommended:
≥80℃
Strong acid and alkaline
Biotechnology, sterilization process

● Recommended Application
Drinking water monitoring and treatment
Swimming pools
Aquariums(also marine aquariums)
Lightly polluted service water
Process water and wastewater
Rainwater,pond water and surface water

High Temperature Glass pH probe

● Technical parameters
Measure Range: 0-14pH
Temperature Range:0-130℃
Tread type: PG13.5
Material: Glass

● Not recommended:
≥130℃
Strong acid and alkaline
Biotechnology, sterilization process

● Recommended Application
Drinking water monitoring and treatment
Swimming pools
Aquariums(also marine aquariums)
Lightly polluted service water
Process water and wastewater
Rainwater,pond water and surface water

Made In Germany pH probe

● Technical parameters：
Measure Range: 0-12pH
Temperature Range: 0-80℃
Pressure：10Bar
Tread type: PG13.5
Material: PPS/PC/PTFE

● Not recommended:
≥80℃
Strong acid and alkaline
Biotechnology, sterilization process

● Application：
For industrial and communal water and wastewater engineering
For measurements in suspensions and varnishes
For measurements in low-ion media
For high-alkaline, high-temperature and sterilization processes
For media containing fluorides and low-temperature applications
PRO version for the toughest operating condition

Plastic ORP probe

● Technical parameters

Measure Range: -1000~+1000Mv
Temperature Range: 0-60℃
Material:　PS
Cable length: 5m/10m/15m
Tread Type: 3/4NPT

● Not recommended:
≥60℃
Strong acid and alkaline
Biotechnology, sterilization process

● Recommended Application
Drinking water monitoring and treatment
Swimming pools
Aquariums(also marine aquariums)
Lightly polluted service water
Process water and wastewater
Rainwater,pond water and surface water

Glass ORP probe

- Technical parameters

Measure Range: -1000~+1000Mv
Temperature Range:0-80℃
Tread type: PG13.5
Material: Glass

- Not recommended:

≥80℃
Strong acid and alkaline
Biotechnology, sterilization process

- Recommended Application

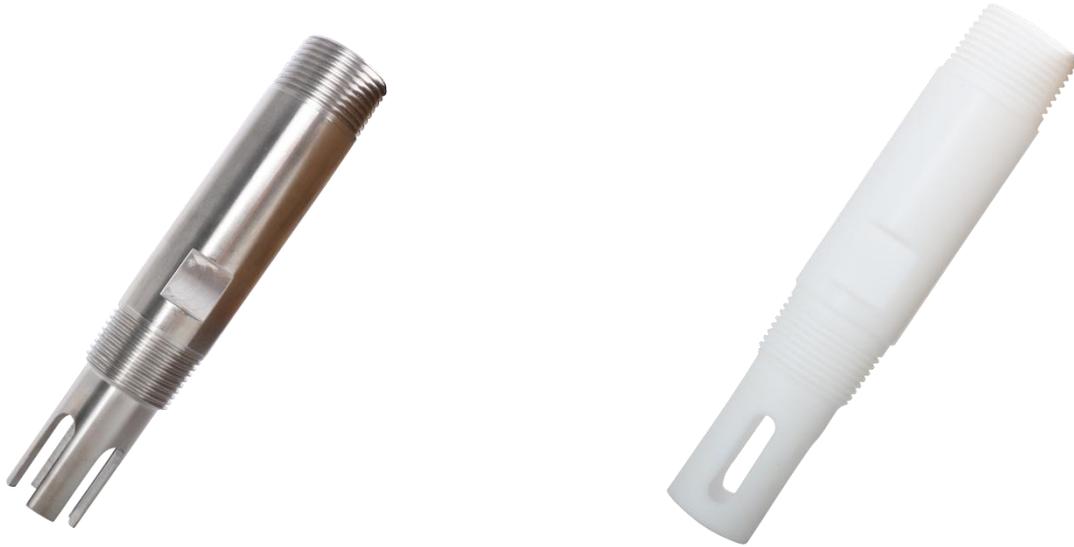Drinking water monitoring and treatment
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pH Calibration

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.
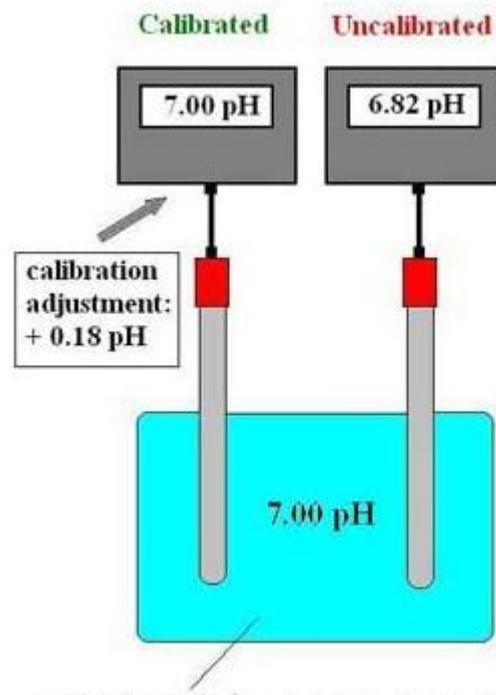
Multi-point calibration:

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 recalibrating.

Example) Three-point calibration at pH 4.00 , 7.0 and 9.21.
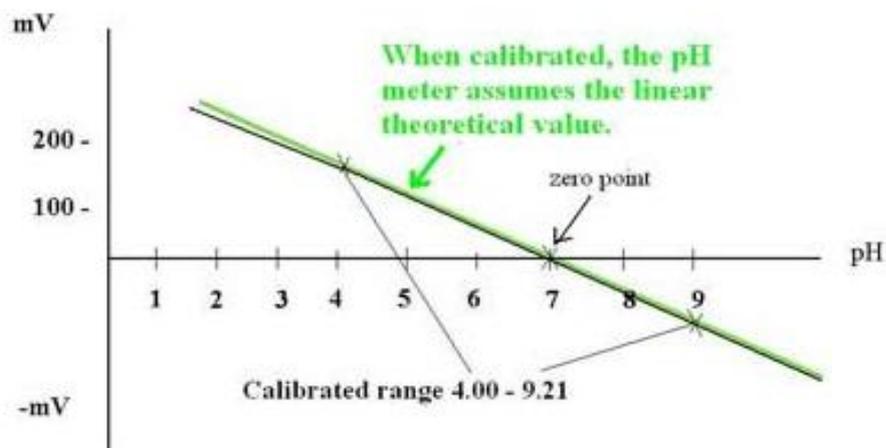
Ordering Code

Basic Type
A:SUP-PH4.0   B:SUP-PH6.0

pH Probe
C：Plastic pH sensor with NTC 10K (0-60℃)
D: Glass pH sensor with NTC 10K (0-80℃)
E:High Tmeperature pH sensor with NTC 10K (0-130℃)
F: Made in Germany pH sensor (0-80℃)
G:Made in Germany pH sensor with PT1000 (0-80℃)
H: Plastic ORP sensor with NTC 10K (0-60℃)
I: Glass ORP sensor with NTC 10K (0-80℃)

Cable Length
J：5 meters
K: 10 meters
J：15 meters

Calibration Points
L: pH4, 7, 10
M:pH 4, 6.86.9.18

Power Supply
N: 220VAC
O: 24VDC

Medium
P: Normal water
Q: Waste water
R: Nutrient solution
S: Galvanic plating
T: Cooling water
U: Drinking water
V: Others:

Note: 4-20mA, RS485 and relay output are standard functions
Make inquiries by placing letter in the pertinent boxes

Order code: ☐ ☐ ☐ ☐ ☐ ☐

Order example: A   C   J   L   N   P