SUNTEX

pH ORP ℃

Intelligent

SUNTEX PC-3310

pH/ORP Transmitter

Intelligent pH/ORP Transmitter

PC-3310

High quality, high performance, high safety
Intuitive menu driven operation
Extremely protection ability

● *PC-3110, 1/4DIN*

● *PC-3100, 1/2DIN*

Combined with large screen of PC-3100 and graphic display of PC-3110 as well as anti-spilled keypads & anti-interference shell for offering a greater reliabilities

@Suntex has improved on our products with more **human-based** design, more **intuitive** operation, and more **time-saving** installation to meet customer's requirements.

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Measuring Principle

pH

A measurement of hydrogen ion concentration in the solution, called pH, represents the acidity or basicity of a solution. For acidic solutions, pH is less than 7; for basic solutions, pH is greater than 7; for pure water, pH is approximately close to 7. The pH measurement for aqueous solutions can be acquired by using indicators or a pH meter as well as a glass electrode. pH is recognized as a basic parameter to examine water quality, so it's widely used in industrial wastewater, food industry, water treatment, medicine and many other industries.

ORP

Redox potential, which is also called ORP (oxidation / reduction potential), is a tendency for chemical substances to acquire electrons and thus be reduced. The measuring unit for ORP is volts, or mini-volts. Owing to each species with its intrinsic reduction potential, the more positive the potential, the greater the affinity for electrons. Usually, the ORP can be measured by the potential difference of the platinum electrode and the reference cell. It's also widely used as indicators for water quality.

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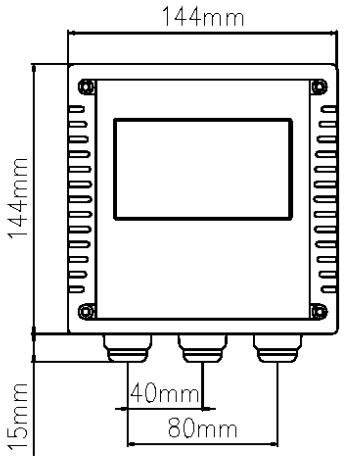
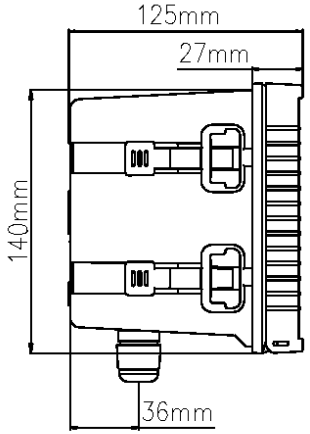
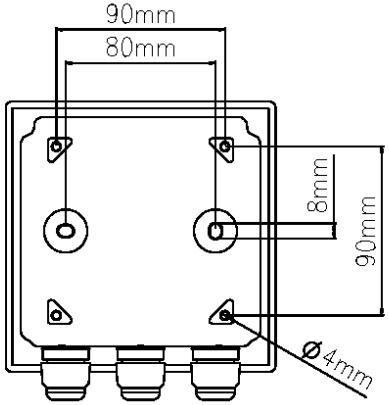
Dimensions

1/2DIN







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Front Panel

Cover protection

- IP 65 Waterproof and dustproof design

Large LCM display

- 144 x 144 mm transmitter with large screen, auto-sense backlight, contrast function, and separate LED indicator alarms for recognition even from far away place

Intuitive keypads

- Easy-to-use operation makes it suitable for users at all level

IP65

ISO 9001:2000 Certificate supplier

1 year guarantee

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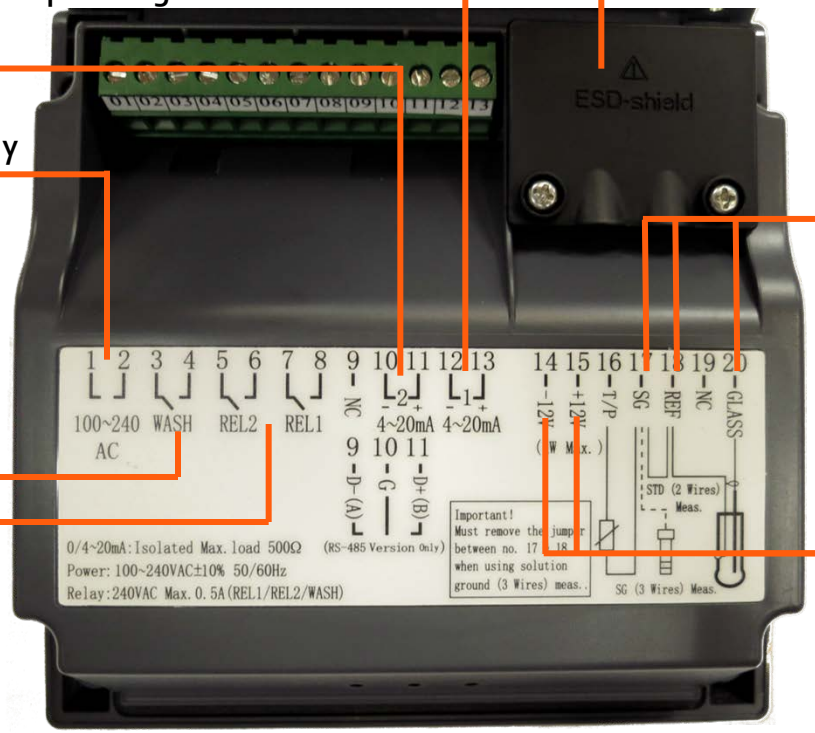
Wiring Illustrations

- Isolated DC 0/4~20mA corresponding to pH / ORP, max. load 500Ω
- Equipped with **electronic cover shield to reduce the interference**
- Isolated DC 0/4~20mA corresponding to temp., max. load 500Ω
- 100~240 VAC power supply
- Compatible with **pH/ORP electrode(Incl. SG wire)**
- Wash contact output
- DC ±12V output **for accessorial transmitter PH-300T**
- Selectable two limited contact output with programmable set-point and hysteresis



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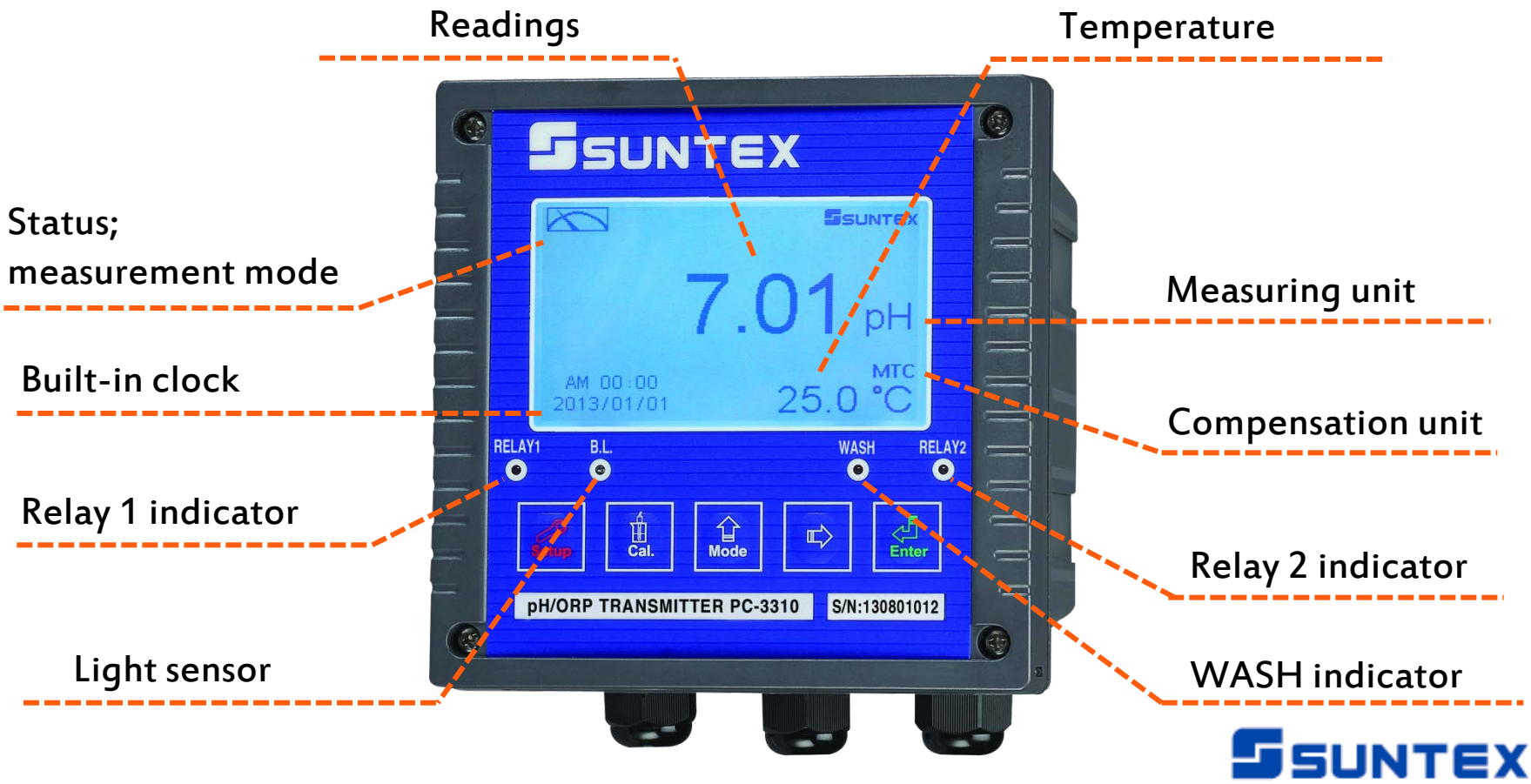
Clear Display

Adjustable backlight for a clear look even in the dark



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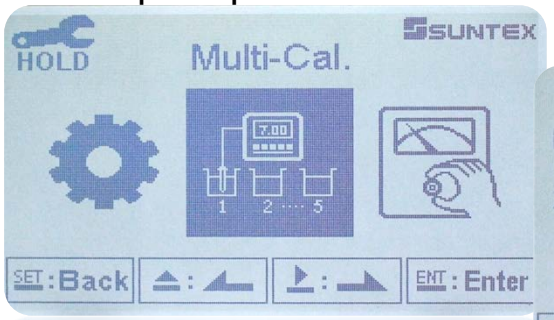
Clear at a glance.....

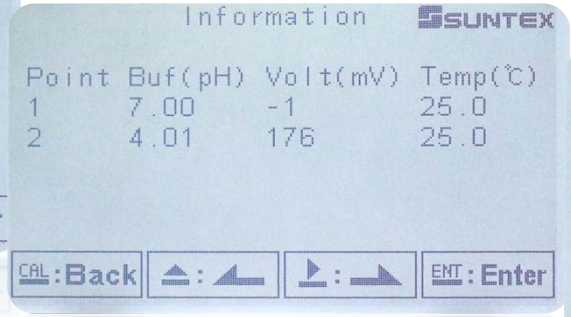
Calibration Record

.....For fast comprehension

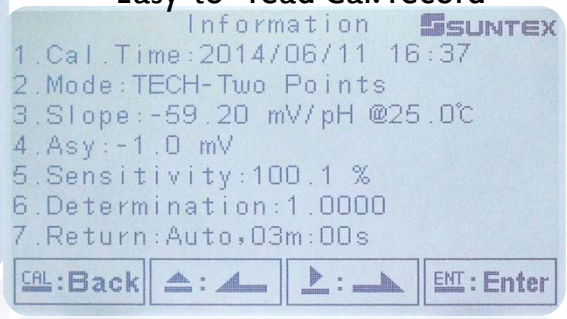
✓Max. up to 3 points calibration



✓Calibration buffer data



✓Easy-to –read Cal. record



Calibration of pH electrodes is required as signal of pH sensors is drifting or deviation. Basically, calibration frequency depends on the desired accuracy and via the calibration it makes the aging sensor available for further use

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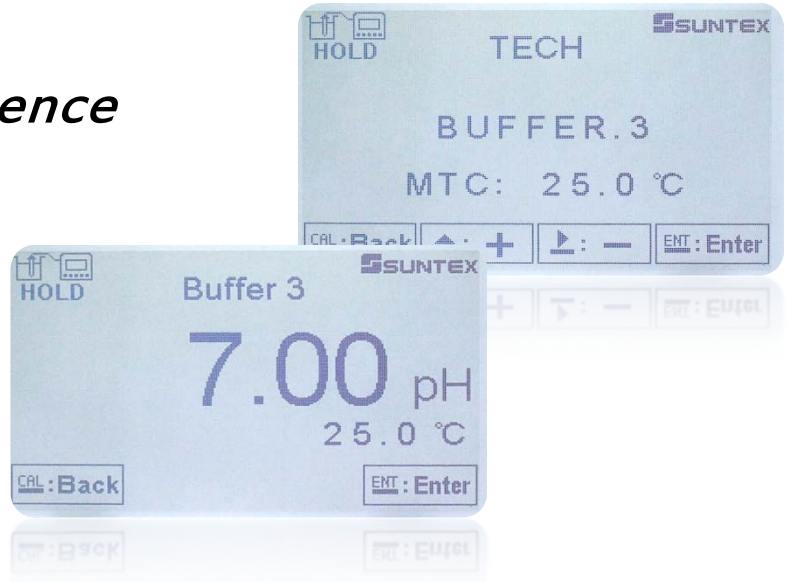
Built-in.....

Buffer Table

.....For enhancing cal. convenience



Note: Suntex also provides our own buffer solutions as picture, pH 4.00, pH 7.00, and pH 10.00.

Combination of standard buffers table,
TECH (pH 4.01, pH 7.00, pH 10.00),
NIST (pH 1.68, pH 4.01, pH 6.86, pH 9.18, pH 12.45),
or any buffer solution offers full-range accuracy .

Besides, auto buffer recognition allows an easy & quick calibration.

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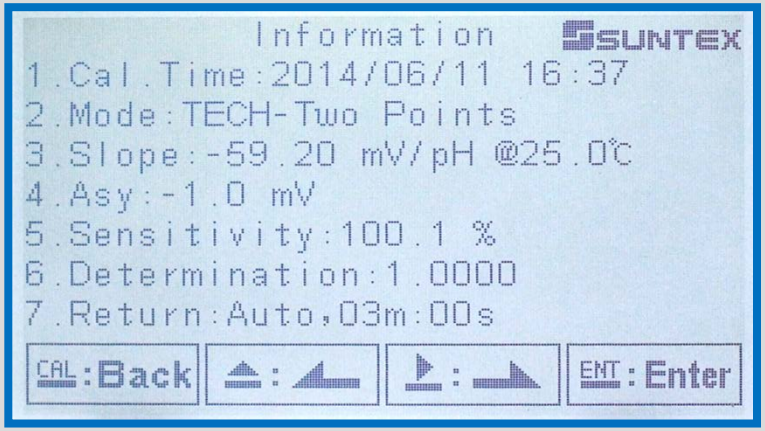
Sensor Diagnosis

The slope and zero value derived from a buffer calibration provide an indication of the condition of the glass electrode from the magnitude of its slope, while the zero value gives an indication of reference poisoning or asymmetry potential.

- Please refer to following table as reference for condition of electrode

Excellent:
zero-point= -15 ~ 15 mV
slope= -58.0~-60.0 mV/pH
Good:
zero-point= 15 ~ 20 mV or -15 ~ -20mV
slope= -57.0 ~ -58.0 mV/pH
Acceptable:
zero-point= 20 ~ 30 mV or -20 ~ -30mV
slope= -56.0 ~ -57.0 mV/pH
Bad:
zero-point > 30 mV or < -30 mV
slope= -50.0 ~ -56.0 mV/pH

- After compared with the table, the condition of the sensor is perfect, providing great accuracy and reliability



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Broad Applications

Sewage treatment plant

Recycling water

Scrubber

UPW process

Pharmacy

Aquaculture

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INDISPENSABLE.....

Relay control

.....For industrial effluents

Programmable design with 2 relays including Hi/Lo set-point value and hysteresis value is widely used in online monitor process. If pH of a measured solution is very close to set-point, it will activate the relay function frequently and probably damage the loading of pumps or solenoid valves.

Therefore, setting of the hysteresis helps to avoid the effects resulted from slight pH fluctuation at a desired point, bringing much more flexible control.

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INDISPENSABLE.....

Relay control

.....For industrial effluents

Example:

The discharge of a chemical company containing $Ca(OH)_2$ must be maintained at pH 6-9, and the solution of a strong acid needs to be added as neutralization solvent.

If exceeding pH 9, strong acid is acquired to lower the pH value. So, relay control with high-point is necessary at the moment to effectively control the dosing. By adjusting the set-point to pH 7.5, hysteresis value for 1.5, and then the relay can be activated at pH 9 to prevent the effluent from going too alkaline.

If a desired pH range of the effluent needs to be more narrow, just input a smaller hysteresis value.

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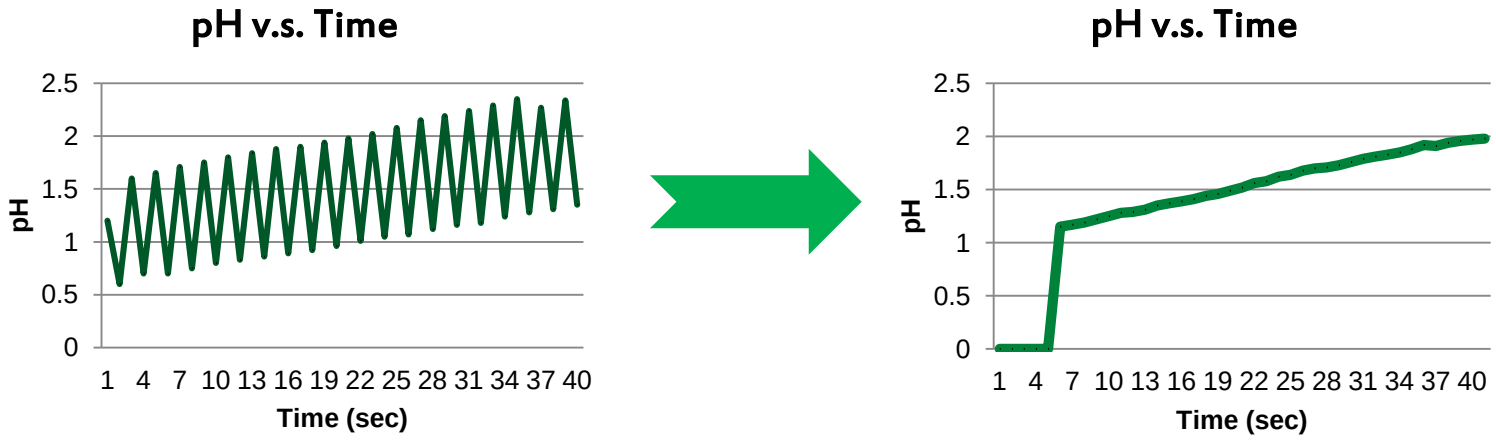
Digital Filter

Setting the number of samples to be averaged at interval to become a readout makes the fluctuating signal more stable and more samples being averaged each time results in less sensitiveness as changes of value.

Ex: 7 samples to be averaged each time



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UNIQUE.....

Clean control

.....For regular maintenance

Programmable control to automatically activate external devices for maintenance work on sensor which may be coated or contaminated by impurities especially in wastewater treatment reduces the degree of contamination and ensures the accuracy and saves the cost of manual maintenance work.

User customization for when to start, when to end the clean procedure

High suspended solids & high turbidity sample

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Industrial Discharge

Off-standard effluent of industrial use can cause environmental concerns and even endanger human's life. So, monitoring and controlling instrumentation and cost-effective treatment system are widely used for wastewater treatment. And pH, the most common indicator, can be used to judge the status of treatment in many stages of wastewater treatment.

Food & beverage process

Chemical process

Wastewater plant

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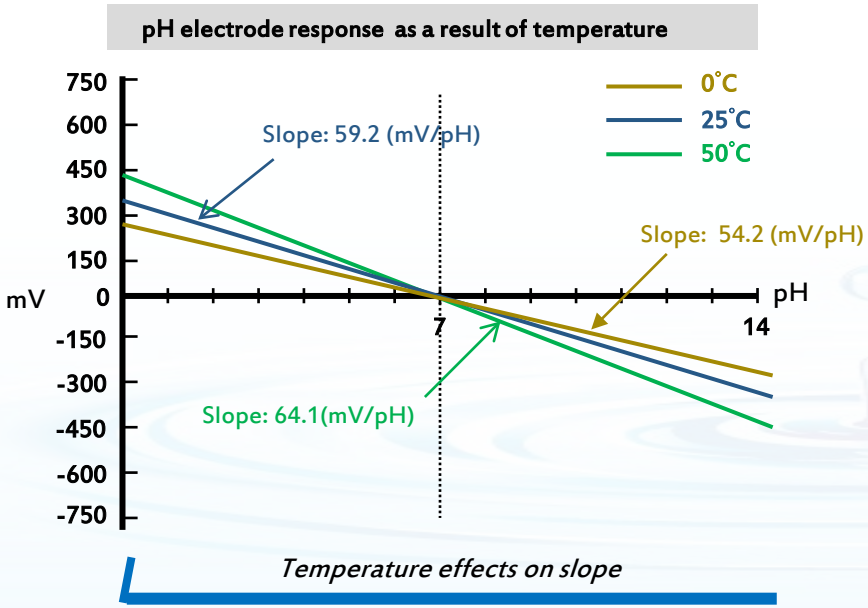
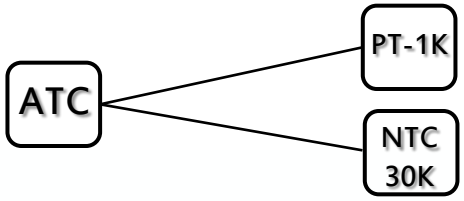
Temperature Compensation

There are built-in temperature compensation function inside the pH meter. Selection of MTC(Manual Temperature Compensation) or ATC(Automatic Temperature Compensation, PT-1000 and NTC-30K), (PT-100 by optional) which compensates the temperature effects on sensor and modifies the measuring error caused by the temperature of measurement differing from the calibration makes the value more reliable and accurate.



Temperature effects on slope



Due to the temperature effect on the pH of a solution and measurement of pH electrode, it causes a difference in readings by the change in temperature.

Actually, the true pH value varies by the temperature. The temperature compensation function which applies to the function of the electrode eliminates the dependent slope changes and thus reduces measuring error.

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Thank You

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