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ISFET pH Probe



pH is a critical parameter in many areas, for example: agriculture, horticulture, water environment, food industry, medical applications like gastro-enterology and life science research

Sentron's ISFET pH sensor probe

- Wireless
- Glass-free
- Robust
- Dry storage

Sentron has developed a comprehensive line of wireless high-quality probes for glass-free pH measurements. Sentron's ISFET pH sensor technology offers accurate and reliable pH measurements for various applications. All pH probes include a replaceable and interchangeable sensor part for extra durability. It is wirelessly connected via Bluetooth to our Sentron app for setting configurations and for acquiring, storing and exporting all your measurement data.

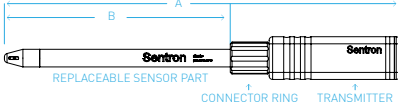
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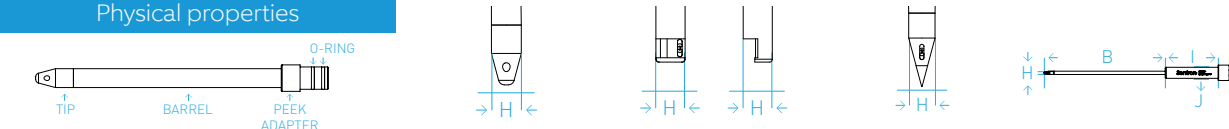


ISFET pH probe	ConeFET	CupFET	LanceFET	MicroFET
Product order code	3380-100	3320-100	2370-100	9370-100
General description				
General fluids (low viscosity)				
Semi fluids (low to medium viscosity)				
Pastes and semi solids (medium to high viscosity)				
Piercing applications (normal to medium force penetration)				
General beakers and containers				
Small sample volumes (one drop ~20 µl)				
Narrow vials / test tubes (as small as Ø 3 mm)				

Probe properties	ConeFET	CupFET	LanceFET	MicroFET
Connection	BLE (Bluetooth Low Energy) wireless connection to mobile device			
Compatibility	Compatible to the free Sentron app for Android, iOS and Huawei			
Battery	Wireless chargeable battery			
Status	RGB LED for status update and recognition to cloud-based application			
Data storage	Temporary data storage when mobile device is disconnected			
Mobile device minimal specs	Bluetooth 5.0			
Ingress protection	IP67 dust and waterproof			
Operation time	2-3 weeks			
Operation and storage temperature	0...80 °C (32...176 °F)			
Operation and storage humidity	30%...80% relative humidity			

Probe dimensions	ConeFET	CupFET	LanceFET	MicroFET
				
Total length probe (A)	224 mm (8.8")	224 mm (8.8")	227.3 mm (8.9")	252 mm (9.9")
Length replaceable (c.q. immersible) sensor part (B)	128 mm (5.0")	128 mm (5.0")	131.3 mm (5.2")	110 mm (4.3")
Length x width x depth transmitter part (C x D x E)	74 x 24.2 x 20 mm (2.9" x 1.0" x 0.8")			
Length x outer diameter connector ring (FxG)	22 x 18 mm (0.9" x 0.7")			
Materials transmitter / connector ring	ABS / PEEK			
Weight of complete probe	55.0 gr. (1.9 oz)	55.1 gr. (1.9 oz)	55.2 gr. (1.9 oz)	49.3 gr. (1.7 oz)

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Replaceable sensor part	ConeFET	CupFET	LanceFET	MicroFET
Product order code	3380-005	3320-005	2370-005	9370-005
Physical properties				
Barrel diameter (H)	10 mm (0.4")	10 mm (0.4")	10 mm (0.4")	3 mm (0.1")
Length adapter (I)				48 mm (1.9")
Diameter adapter (J)				10 mm (0.4")
Materials tip / barrel	PEEK / ABS	PEEK / ABS	Stainless steel point / PEEK / ABS	PEEK / PEEK
Weight	18.0 gr. (0.6 oz)	18.1 gr. (0.6 oz)	18.2 gr. (0.6 oz)	12.3 gr (0.4 oz)

pH	ConeFET	CupFET	LanceFET	MicroFET
Sensor	Glass-free Ion Sensitive Field Effect Transistor (ISFET) semiconductor			
Range	pH 0.00...14.00			
Accuracy	+/- 0.02 pH			
Resolution	0.02			
Drift maximal (in pH7 @ 25°C)	0.14 pH/day			
Drift typical (in pH7 @ 25°C)	0.05 pH/day and lower			
Calibration	1-, 2-, 3- and 5-point calibration			
Automatic Temperature Correction (ATC)	yes			
Calibration buffer types	Sentron buffers, DIN, NIST, JIS			

Reference system	ConeFET	CupFET	LanceFET	MicroFET
Type	non-flow			
Reference solution	gelled KCl			
Diafragm	porous PTFE	porous PTFE	porous PTFE	ceramic

Temperature	ConeFET	CupFET	LanceFET	MicroFET
Sensor	NTC	NTC	NTC	NTC
Accuracy	+/- 5.0 °C (9.0 °F)	+/- 5.0 °C (9.0 °F)	+/- 5.0 °C (9.0 °F)	+/- 5.0 °C (9.0 °F)
Resolution	+/- 0.1 °C (0.1 °F)	+/- 0.1 °C (0.1 °F)	+/- 0.1 °C (0.1 °F)	+/- 5.0 °C (9.0 °F)
Range	0...80 °C (32...176°F)	0...80 °C (32...176°F)	0...80 °C (32...176°F)	0...80 °C (32...176°F)

Application	ConeFET	CupFET	LanceFET	MicroFET
Application features	Cloud-based free, easy and intuitive application; Compatible to Android, iOS and Huawei; Calibration, acquisition, visualization, storage and export of measurement data; Up to 6 connectable probes for simultaneous wireless measurements; Real-time notifications whenever the value of the pH is out of reach; GPS location based pH map in Google maps; Language English; Free downloadable in GooglePlay, AppStore and in Huawei AppGallery.			

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Agriculture and Horticulture

Agriculture varies from the home gardener to horticulture with commercial greenhouses. They all have a common thread: they sustain the world. Testing, monitoring and adjusting growth parameters help to maximize efficiency, quality and production.

Healthy Soil

As the soil pH influences plant growth, the importance to check and adjust it is important for many market segments. To name a few: crop growth and fruit for the food market, hemp for the industrial and medical market, grass/ hay for the horse market. All of these are affected by a suboptimal soil pH. Thus checking and adjusting pH is of great importance.

Soil pH

Soil pH is a measurement of the acidity or alkalinity of the soil. Soil pH is a key factor in soil fertility and is important because it influences several soil factors affecting plant growth, such as nutrient availability, nutrient leaching, toxic elements, soil bacteria and soil structure.

Take the lab with you!
Wireless handheld pH
probe connected to
your smartphone.

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Robust pH Measurements

In the field, pH is often measured in a slurry of soil mixed with distilled water. Thanks to its stainless-steel point at the tip, the LanceFET pH probe is perfectly suited for the measurement of soil pH. The more generally used ConeFET probe with its blunt tip can also be used by pre-drilling a pilot hole in the soil.

The positions of the ISFET and reference electrode have been designed to be clog and pollution resistant. The sensor can be easily cleaned with demineralized water and a soft toothbrush. This benefits the probe's performance and prolonged life.

Measurement of Plant Health

Agri pH package

For easy use, we have assembled a complete agriculture-package. This package is all you need for wireless, durable pH monitoring in the field. The use of a smartphone provides easy use of the app. Multiple probes can be connected to the app for simultaneous readings. The required buffer solutions and pre-drill stick complete the package. The carry case protects the equipment and provides easy carriage and storage.

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Indicator of Dairy Food Quality and Safety

pH, together with temperature, ranks as the most important indicator of food quality and safety. pH is monitored at different stages of food processing to guarantee safety, improve production and enhance quality. Along with temperature, pH also determines the shelf-life of food.

In the milk industry, pH is a parameter for impurities or signs of infection. Higher pH values in fresh milk indicate udder infection (mastitis) and lower values indicate bacterial activity. In processes such as sterilization, pH is checked, since a lower pH value helps to

speed up the sterilization process.

Milk used for cheese manufacturing must be of excellent quality and its pH value determines whether the cheese will be soft or hard. pH is checked during cheese preparation, souring of milk and cream maturation. For example, during the production process of cheese, it is standard to monitor the pH value before the cheese goes into the brine bath. Therefore, it is an important measure for the quality of the end-product.

Industrial

In many industries, pH is a critical parameter. These industries include food (e.g. meat, dairy beverage, wine and beer), pharmacy, textile and water treatment. pH testing during the manufacturing process can enhance production usability, accuracy and excellence.

Quality of Meat

Measuring the pH is common use in the meat industry and even obligatory in some countries.

Meat quality is determined by the muscle pH and its change in time, which in turn is strongly dependent on pre-slaughter conditions (i.e. stress) imposed on the animals. Too much stress can affect the taste and aroma of the meat.

Monitoring the pH of meat is important for quality control.

Indicator for Fish Freshness

pH is an indicator of freshness, which is fundamental to fish quality. A few hours after death, the glycogen in the muscle will be metabolized to lactic acid, causing a drop in pH. This drop in pH will contribute to an increased shelf-life of the fish and also to a good nutritional state of the fish. Alkaline bacterial metabolite production increases the pH and initiates fish spoilage. Hence, pH can be used as a measurement for quality and shelf life prediction in the fish marketing sector.

Glass Free and Wireless pH Probe: Ideal for Inline Food Processes

Industry pH package

For ease of use, we have developed an industry measurement package for pH measurements in your facility or other environments. The large screen of the tablet provides easy visualization of the app and the tablet case protects it against damages. The carry case is large enough to take all the required buffer solutions and pH probes with you. It provides easy carriage and storage and protects the equipment.

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Laboratory

Whether you run a large-scale laboratory or whether you are in a classroom, the safety and integrity of your studies and instrumentation is of the utmost importance. The Sentron laboratory glass-free ISFET pH meter delivers precision while offering simplicity and versatility at the same time.

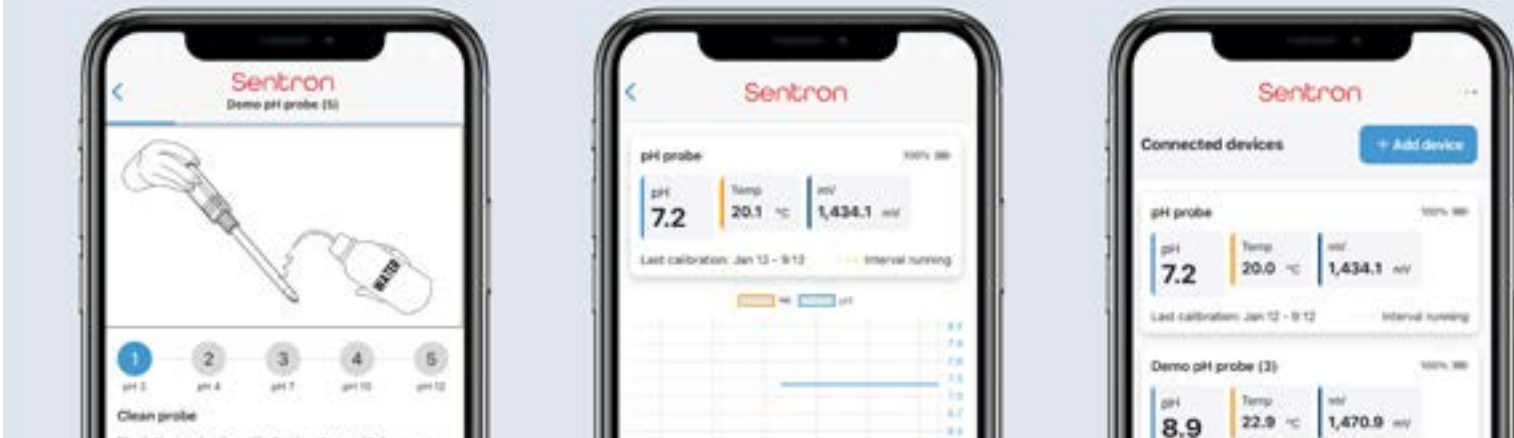
A Measure for Water Quality - Outdoor and in the Laboratory

Lab pH package

Look no further: we have the laboratory package. This complete benchtop package includes everything you need for wireless, durable pH monitoring in the laboratory. The tablet, held by a universal holder, provides easy use and visualization of the app on your lab table. The package contains a buffer solution set, so you can start immediately with your pH measurements.

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Complete control from the Sentron app.



The app is for free and available in the AppStore, GooglePlay and Huawei AppGallery



No matter what.



Contact

Sentron Europe B.V. is a member of the [Welling Group](#), together with Blue Medical Devices (Helmond, The Netherlands) and PendraCare (Leek, The Netherlands). Originally Sentron is a spin-off of Johnson & Johnson.

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More info

At Sentron, we develop and produce sensors in our inhouse semiconductor production facility. We have many years of experience and specific know-how in developing and producing sensors. We design and manufacture OEM sensor assemblies and complete products with our pH and pressure sensors as well as with third party sensors.

[See our leaflet](#) sensor integration services for these sensor integration solution services.

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