

ISFET pH Probe



pH is a critical parameter in many areas, for example: agriculture and 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


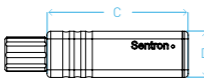
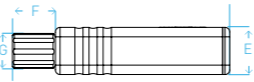
Sentron has developed a comprehensive line of wireless high-quality probes for glass-free pH measurements. Sentron's ISFET pH sensor technology offers accurate and reliable pH measurements for various applications. All pH probes include a replaceable and interchangeable part for extra durability. It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




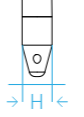
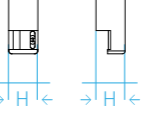
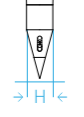
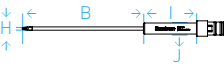
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General description	ConeFET	CupFET	LanceFET	LanceFET +H	MicroFET
					
Robust general purpose probe		Probe for measurements of small volumes (~ 20 µl)	Steel tipped probe for easy penetration of firm samples (e.g. meat, fruits, ground, etc)	Equal to LanceFET but with handle for additional grip	Laboratory probe of 3 mm diameter that fits tubes and mini-cuvettes
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)			✓	✓	
(high force and stabbing 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	LanceFET +H	MicroFET
Connection	BLE (Bluetooth Low Energy) wireless connection to mobile device				
Compatibility	Compatible to the free Sentron app for Android and iOS				
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				
Waterproof	TBD (we aim for IP68)				

Dimensions	ConeFET	CupFET	LanceFET	LanceFET +H	MicroFET	
						
Total length probe (A)	224 mm (8.8")	224 mm (8.8")	227,3 mm (8.9")	227,3 mm (8.9")	252 mm (9.9")	
Length immersible part (B)	128 mm (5.0")	128 mm (5.0")	131,3 mm (5.2")	TBD	110 mm (4.3")	
Length x width x depth handle (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 handle / connecting ring	ABS / PEEK					
Operation and storage temperature	0...80 °C (32...176 °F)					
Operation and storage humidity	30%...80% relative humidity					

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Physical properties replaceable probe	ConeFET	CupFET	LanceFET	LanceFET +H	MicroFET
				TBD	
Barrel diameter (H)	10 mm (0.4")	10 mm (0.4")	10 mm (0.4")	10 mm (0.4")	3 mm (0.1")
Length adapter (I)				TBD	48 mm (1.9")
Diameter adapter (J)				TBD	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)	TBD	12,3 gr (0,4 oz)

Application	ConeFET	CupFET	LanceFET	LanceFET +H	MicroFET
Application features	Cloud-based free, easy and intuitive application; Compatible to Android and iOS; Calibration, acquisition, visualization, storage and export of measurement data; Unlimited number of 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 or AppStore.				

pH	ConeFET	CupFET	LanceFET	LanceFET +H	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	less than 0.14 pH/24h				
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	LanceFET +H	MicroFET
Type		non-flow			non-flow
Diafragma		porous PTFE			ceramic
Reference solution		gelled KCl			gelled KCl

Temperature	ConeFET	CupFET	LanceFET	LanceFET +H	MicroFET
Sensor		PT1000			NTC
Accuracy		+/- 0.5 °C (0.9 °F)			+/- 5.0 °C (9.0 °F)
Resolution		+/- 0.1 °C (0.1 °F)			+/- 5.0 °C (9.0 °F)
Range		0...80 °C (32...176 °F)			0...80 °C

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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 produce.

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 for the human food market, hemp for the industrial and medical market, hay for the horse market and fruit for the food market. All of these are affected by a suboptimal soil pH and so 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 water. Thanks to its stainless-steel point at the tip, the LanceFET pH probe is perfectly suited for the measurement of soil pH under these circumstances. The more generally used ConeFET probe with its blunt tip can also be used, eventually by pre-drilling a 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 running tap or de-ionized 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 agri-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 storage.





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. 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.

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.

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.

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

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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 storage and protects the equipment.



Laboratory

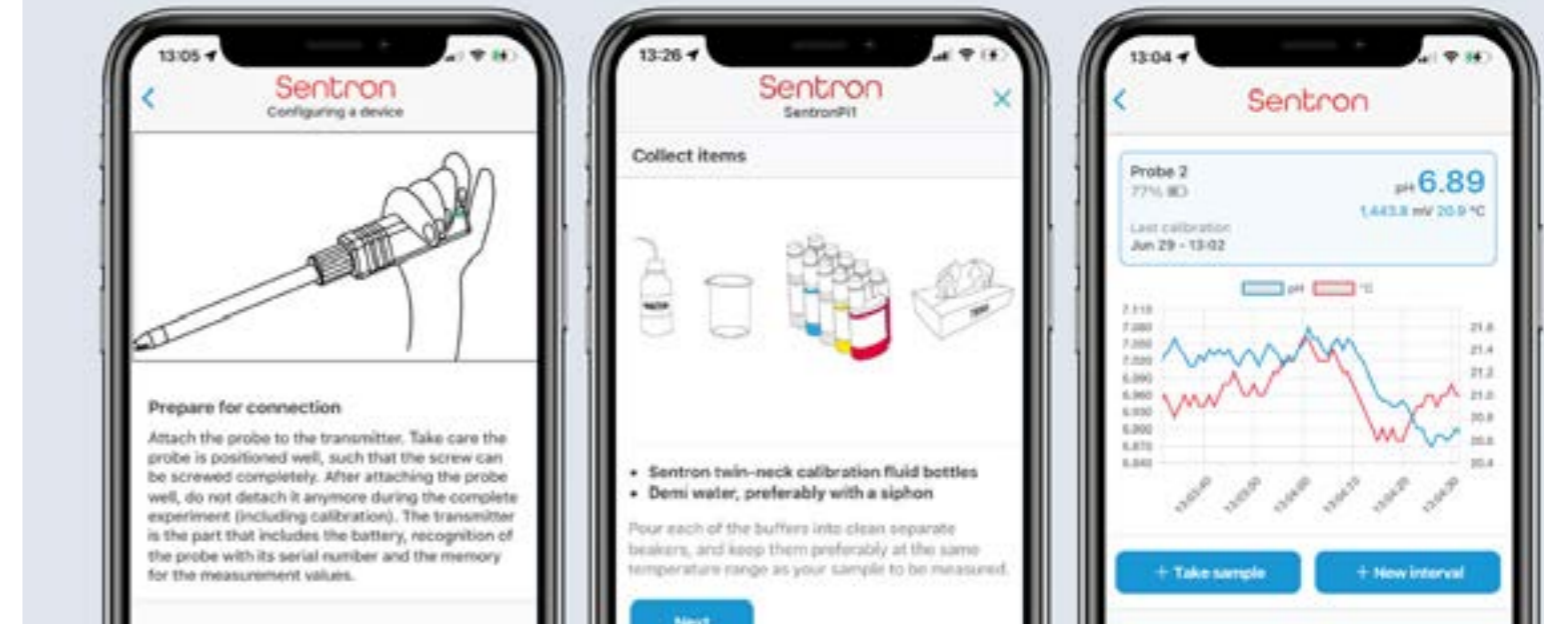
Whether you run a large-scale laboratory or whether you are in a classroom, the safety and integrity of your studies and instrumentation is of the utmost importance. The Sentron laboratory glass-free ISFET pH meter delivers precision while offering simplicity and versatility at the same time.

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 at your lab table. The package contains a buffer solution set so you can start immediately with your pH measurements.

Complete control from the Sentron app.



The app will be free of charge and downloadable at the AppStore and GooglePlay





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.

Address

Sentron Europe B.V.
Kamerlingh-Onnesstraat 5
9351 VD Leek
The Netherlands
info@sentron.nl

More info

At Sentron, we develop and produce sensors in our own 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.

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