



## ISFET pH probe for small sample volumes

Sentron offers a comprehensive line of high quality meters and probes for glass-free pH measurement. The SI meter and probe line is created around our proprietary ISFET pH sensor that offers accurate and reliable pH measurement for demanding applications.

The CupFET pH probe is especially designed for measurement of small volume samples. Measurements can be performed by placing as little as a single droplet of liquid directly onto the probe's cup shaped tip. Sentron's customers use the ConeFET probes to directly measure the pH of fruit in the field by pressing a droplet of juice onto the probe tip. Similarly, in laboratories or industrial processes, they pipet droplets directly onto the ConeFET probe tip to measure the pH of samples.

### ISFET = glass-free

The CupFET probe contains Sentron's non-glass ISFET (Ion Sensitive Field Effect Transistor) pH sensor. This sensing component is Sentron's proprietary design and has been improved continuously over the past 15 years.

In contrast to conventional glass pH electrodes, ISFET pH sensors are robust and do not require wet storage. This makes them well suited for many environmental, food and pharmaceutical applications. Even in areas like education or in laboratories, where glass pH electrodes can be used, ISFET pH measurement technology offers a much more durable and reliable solution.

### Fast response time

ISFET pH sensors are fast because they measure directly at the surface. Sentron's SI series probes can give stable readings in less than 5 seconds for almost all samples.

### Extremely robust

Sentron probes are built from high quality ABS, PVC and PEEK materials. They are resistant to many aggressive solutions and can withstand rugged use. At the same time, they are light weight and easy to handle.

The probes have a polymer body snap-on type connector. Unlike DIN and bayonet type connectors, there are no moving parts nor screw thread that can be damaged.

In the event debris has accumulated on the ISFET sensor it can be easily cleaned with water and a brush.

Sentron probes are provided with protection against Electrostatic Discharge (ESD) ensuring measurements continue even in harsher electrostatic environments.

### Easy handling

The ergonomic design makes the probe easy to hold. Its reduced weight and soft flexible cable allow it to be manipulated freely.

The position of the ISFET and reference electrode are placed near each other in the "cup" shaped probe tip. This enables direct measurement of a droplet on the probe tip.

### Comprehensive probe line

The CupFET is part of a comprehensive probe line that meets a broad range of pH measurement needs.

**ConeFET:** Robust general purpose probe.  
3280-010

**CupFET:** Probe for measurements of small liquid samples.  
3200-010

**LanceFET:** Steel tipped probe for penetration and measurement of non-liquids such as meat and fruit.  
2270-010

**LanceFET+H:** Equal to LanceFET but with large handle for additional grip.  
2274-010

**MiniFET:** Compact and sturdy probe with a 5mm (0.2") diameter barrel, ideal for embedded application.  
9202-010

**MicroFET:** Laboratory probe with a very small 3mm (0.1") diameter barrel that fits test tubes and mini-cuvettes.  
9270-010



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## Highlights

- ISFET = glass-free
- Fast response time
- Extremely robust
- Easy handling

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### About Sentron

Sentron is an innovative technology company specialized in the development and production of small sensors for medical and analytical applications. The company leverages more than 15 years of experience to develop and produce its high quality ISFET pH and pressure sensors. Peripheral equipment for the sensors, like measurement instruments, are designed, developed and produced in house as well.

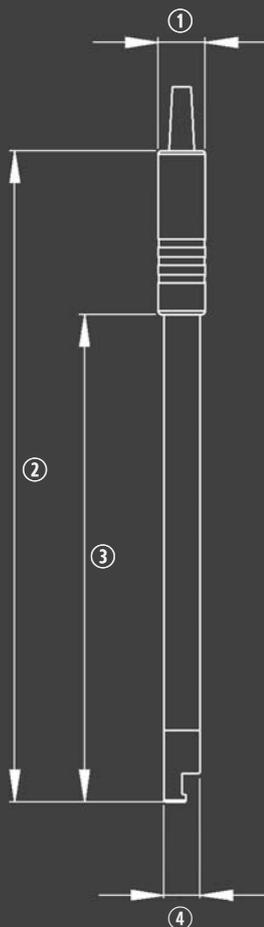
Sentron is ISO 13485: 2003 certified for the development, manufacture and sales of sensors, subassemblies and meters for the determination of physical and chemical measured values in the engineering field, including medical applications.

Sentron is part of Wellingq, a Dutch high tech company with activities in sensing and medical devices. Please visit [www.wellingq.com](http://www.wellingq.com) for more information.

Please contact one of our distributors or visit our website for more information about the company, potential applications and for probes and accessories available for the pH meter.

### Specifications

	ConeFET 3280-010	CupFET 3200-010	LanceFET 2270-010	LanceFET+H 2274-010	MinifET 9202-010	MicroFET 9270-010
<b>General description</b>						
General fluids ( <i>low viscosity</i> )	✓	✓	✓	✓	✓	✓
Semi fluids ( <i>low to medium viscosity</i> )	✓	✓	✓	✓	✓	✓
Pastes and semi solids ( <i>medium to high viscosity</i> )	✓		✓	✓		
Piercing applications ( <i>normal to medium force penetration</i> )			✓	✓		
( <i>high force and stabbing penetration</i> )				✓		
General beakers and containers	✓	✓	✓	✓	✓	✓
Deep containers (up to 140 mm)	✓		✓			✓
Small sample volumes (one drop ~20 µl)		✓				✓
Narrow vials / test tubes (as small as Ø 3 mm)						✓
<b>pH</b>						
Sensor	Glass-free Ion Sensitive Field Effect Transistor (ISFET) semiconductor					
Range	pH 0.00...14.00					
Drift ( <i>total after 24 hours in pH7 @ 25°C</i> )	Max. 0.14 pH					
<b>Reference system</b>						
Type	non-flow					non-flow
Diafragma	porous PTFE					ceramic
Reference solution	gelled KCl					gelled KCl
<b>Temperature</b>						
Sensor	PT1000					NTC
Accuracy	±/ 0.5 °C (0.9 °F)					±/ 5.0 °C (9.0 °F)
Range	0...80 °C (32...176 °F)					0...80 °C
<b>Physical properties</b>						
Tip						
<b>Dimensions</b>						
Total length	183 mm (7.2")	183 mm (7.2")	190 mm (7.5")	223 mm (8.8")	83 mm (3.3")	160.5 (6.3")
Barrel length (immersible)	137 mm (5.4")	134 mm (5.3")	144 mm (5.7")	52 mm (2.0")	36 mm (1.4")	110 mm (4.3")
Barrel diameter	10 mm (0.4")	10 mm (0.4")	10 mm (0.4")	10 mm (0.4")	5 mm (0.2")	3 mm (0.1")
Cable length	1600 mm (63")	1600 mm (63")	1600 mm (63")	1600 mm (63")	1600 mm (63")	1600 mm (63")
<b>Materials</b>						
Tip/barrel	PEEK / ABS		PEEK + Stainless steel point		PEEK / ABS	PEEK
Handle, strain relief, cable and connector	PVC		PVC		PVC	PEEK
<b>Weight</b>						
	53 gr. (1.9 oz)	53 gr. (1.9 oz)	53 gr. (1.9 oz)	198 gr. (7.0 oz)	20 gr. (0.7 oz)	29 gr. (1.0 oz)
<b>Operation / storage</b>						
Temperature	0...80 °C (32...176 °F)					
Humidity	30%...80% Relative humidity					
<b>Protection rating</b>						
Connector	IP68 (connector IP67)					
Meter compatibility	5-pin, push-pull SI meter series					



①	13 mm	0.5"
②	183 mm	7.2"
③	134 mm	5.3"
④	10 mm	0.4"