



HI-98161 Food pH Meter

Food quality pH & temperature measurement

The right electrode for food pH measurement

Food products can pose a number of challenges when measuring pH. Food samples can vary in consistency from solid to semi-solid and from liquids to creams and emulsions. Conventional pH electrodes soon become clogged and slow to respond, resulting in inaccurate and time consuming results in addition to needing frequent electrode replacement.

Using an electrode designed specifically for the challenges that measuring food pH presents, results in better accuracy, faster readings, longer electrode life and lower operational costs.

The FC2023 pH electrode supplied with our dedicated food pH meter has been designed to overcome these challenges. It features a conic tip shape for easier penetration into solid and semi-solid foods, an open junction reference to resist clogging, and a white PVDF food grade plastic body which is easy to clean. In addition to pH, the electrode measures temperature directly in the sample for maximum accuracy and convenience.



Conic shaped tip

This design allows for penetration into semi-solids and emulsions for the direct measurement of pH in a variety of food products including sauces, dough, and other semi-solids.

Built-in temperature sensor

A thermistor temperature sensor is in the tip of the indicating pH electrode. A temperature sensor should be as close as possible to the indicating pH bulb in order to compensate for variations in temperature.

Viscolene electrolyte

The viscolene electrolyte offers a hard gel interface between the inner electrode components and the sample being measured. The electrolyte is silver-free for use in food products and is maintenance-free.

Specially formulated glass tip

The FC2023 electrode uses Low Temperature (LT) glass for the sensing bulb. The LT glass tip is a lower resistance glass formulation. As the temperature of the sensing glass decreases, the resistance of the LT glass will increase approaching that of standard glass at ambient temperatures. The FC2023 is suitable to use with samples that measure from 0 to 50°C.

Open reference junction

Clogging of the reference junction is a common challenge faced by food producers who measure pH in slurries and semi-solid products. The solids can easily clog the ceramic junction used with standard laboratory pH electrodes. The open junction design of the FC2023 resists clogging and continues to provide accurate, stable readings.

White PVDF easy clean body

Polyvinylidene fluoride (PVDF) is a food grade plastic that is resistant to most chemicals and solvents, including sodium hypochlorite. It has high abrasion resistance, mechanical strength and resistance to ultraviolet and nuclear radiation. PVDF is also resistant to fungal growth.

The importance of pH in food production

pH is one of the most important measurements within food production because the pH of the food affects key characteristics such as shelf life, texture and flavour.

Shelf life is a key factor in processed foods and some products require pH measurement in order to comply with industry regulations. A lower pH value will prevent unwanted bacteria from growing within the processed food and thus extend shelf life of the product whilst offering

increased food safety. By achieving an acidic pH value of 4.6pH or less, food shelf life and food safety are both increased.

Understanding the pH of a food product can also help achieve consistent flavours and textures. Through natural fermentation and other biological processes, many foodstuffs only achieve these desired qualities at a particular pH value, thus measuring pH throughout the food production cycle provides the best possible product.

HI-98161

pH / Temperature Meter for Food



HI-98161 is a professional portable pH and temperature meter with a probe designed specifically for pH measurement in the Food sector.

- **Waterproof**
 - IP67 rated waterproof, rugged enclosure
- **CAL Check™**
 - Alerts users to problems during calibration including dirty/broken electrode, contaminated buffer and overall probe condition
- **Automatic or manual temperature compensation**
 - pH sensors incorporate a built-in temperature sensor
- **Calibration**
 - Up to a five-point calibration with seven standard buffers and five custom buffers
- **Approximately 200 hour battery life**
 - Powered by (4) 1.5V AA batteries
- **Clear display**
 - Dot matrix display with multi-functional virtual keys
- **Auto hold**
 - Alerts when calibration is due at a specified interval
- **Calibration timeout**
 - Alerts when calibration is due at a specified interval
- **Connectivity**
 - PC connectivity via opto-isolated micro-USB with HI-92000 software
- **GLP**
 - GLP data provides data from previous calibration to ensure Good Laboratory Practices are met
- **Intuitive keypad**
 - Important and often used functions such as GLP information, help, range, calibration and backlight have a dedicated button
- **Supplied complete**
 - Each meter is supplied complete with sensor, calibration and cleaning solutions, beakers, PC software and connection cable, instruction manual, quick start guide and batteries in a rugged, customised carrying case

Specifications

HI-98161

pH*	Range	-2.0 to 20.0 pH; -2.00 to 20.00 pH; -2.000 to 20.000 pH
	Resolution	0.1 pH; 0.01 pH; 0.001 pH
	Accuracy (@25°C)	±0.1 pH; ±0.01 pH; ±0.002 pH
	Calibration	up to five-point calibration, seven standard buffers available (1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45) and five custom buffers
	Temperature Compensation	automatic or manual from -20.0 to 120.0°C
mV	Range	±2000 mV
	Resolution	0.1 mV
	Accuracy	±0.2 mV
	Relative mV Offset Range	±2000 mV
Temperature*	Range	-20.0 to 120.0 °C
	Resolution	0.1°C
	Accuracy (@25°C)	±0.4°C (excluding probe error)
Additional Specifications	pH Probe	FC2023 PVDF body, pH electrode with internal temperature sensor, quick DIN connector and 1 m cable
	Slope Calibration	from 80 to 110%
	Log-on-demand	Up to 200 samples (100 pH, 100 mV)
	PC Connection	opto-isolated USB with HI-92000 software and micro USB cable
	Input Impedance	10 ¹² Ω
	Battery Type / Life	1.5V AA batteries (4) approximately 200 hours of continuous use without backlight (50 hours with backlight)
	Auto-off	user selectable: 5, 10, 30, 60 min, disabled
	Environment	0 to 50°C; RH 100% IP67
Dimensions / Weight	185 x 93 x 35.2 mm / 400 g	
Ordering Information	HI-98161 is supplied with FC2023 pH electrode, HI-7004M pH 4.01 buffer solution (230 mL), HI-7007M pH 7.01 buffer solution (230 mL), HI-700641 electrode cleaning solution sachet for dairy deposits (2), 100 mL plastic beaker (2), HI-92000 PC software, HI-920015 micro USB cable, 1.5V AA batteries (4), quick start guide, quality certificate and instruction manual in a rugged carrying case with custom insert.	

* Limits will be reduced to actual probe/sensor limits.

Also available from Hanna Instruments

Food Refractometers

portable digital meters for testing salts and sugars in liquids such as beer, wine, fruit juice

Food Thermometers

from pocket to waterproof hand-held meters, our food probes are used throughout the food chain and offer unrivalled accuracy

Food Titrators

replace manual titration with one of our fully automatic and competitively priced food titrators



Hanna Instruments Ltd

Eden Way
Pages Industrial Park
Leighton Buzzard
Bedfordshire LU7 4AD

Tel 01525 850855
Fax 01525 853668
Email sales@hannainstruments.co.uk
Web www.hannainstruments.co.uk

Distributed by: