



HI-98163 Meat pH Meter

Food quality pH & temperature measurement

The right electrode for meat pH measurement

The main body of the meat pH electrode is manufactured from food grade PVDF which is resistant to most chemicals and solvents used in the food industry.

The proteins present in meat can block and slow down the response of a conventional pH electrode. The meat pH electrode supplied with the Hanna meat pH meter is designed to overcome these issues with a hard gel interface between the inner electrode components and the meat sample being measured.

To aid insertion into meat products, the electrode features a stainless steel knife type blade which allows easy introduction to the sample without the need for extensive sample preparation.



PVDF 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.

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.

Stainless steel piercing blade

The FC099 (35mm) stainless steel blade can be attached to the probe for easy meat penetration. Piercing into the meat will allow for the pH glass and reference junction to be in contact with the sample for a direct pH measurement without extensive sample preparation.

Open junction reference

Clogging of the reference junction is a common challenge faced by food producers who measure pH in semi-solid products such as meat. The solids can easily clog the ceramic junction used with standard laboratory pH electrodes. The open junction design of the FC2323 resists clogging and continues to provide accurate, stable readings.

Low temperature glass

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.

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.

Conic tip shape

This design along with a piercing blade allows for the easy penetration into semi-solids for the direct measurement of pH.

The importance of pH in meat production

In the meat production industry, the monitoring of pH is considered to be of the utmost importance due to its effect on the meat's quality factors including water binding capacity and shelf life. Upon slaughter, biochemical processes begin to break down the meat. Glycolysis begins post-mortem, converting glycogen to lactic acid, reducing the pH of the carcass. Depending on a number of factors, such as type of animal and even breed, this decrease in pH can take anywhere from a single hour to many. It is vital to monitor pH during this phase as once the lowest pH value is reached, the pH will begin to slowly rise, indicating that decomposition has begun.

The pH value of meat influences its' water binding capacity which directly impacts consumer qualities such as tenderness and colour. Lower pH values result in a lower water-binding capacity

and lighter colours. Factors such as these can be important when considering how to efficiently produce meat products. For example, when producing dry sausages, the meat must have a low water binding capacity so that it can dry evenly.

Depending on the type of final product and the steps required to get there, pH values will vary throughout the meat processing industry. It is imperative, regardless of the final product, that pH be maintained at a low value to prevent bacterial spoilage and comply with food safety regulations.

By monitoring pH values throughout the meat production process, you can ensure the creation of consistent and safe meat products.

HI-98163

pH / Temperature Meter for Meat



HI-98163 is a professional portable pH and temperature meter with a probe designed specifically for pH measurement in meat.

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-98163

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	FC1013 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-98163 is supplied with FC2323 pH electrode, FC099 meat piercing stainless steel blade, HI-7004M pH 4.01 buffer solution (230 mL), HI-7007M pH 7.01 buffer solution (230 mL), HI-700630 electrode acid cleaning solution sachet for meat grease and fat 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



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