

HI1000 Series Process Digital pH Probe-50m (164.0?) -LT – Low Temperature-PTFE

Description

A Worldwide Leader in Electrode Manufacturing

Since the beginning of the 1990's Hanna has been a leader in the research & development of pH electrode technology. The HI1000 series of digital pH probes represent the continual evolution of the technology. The HI1000 series perform all measurements within the probe and then transfer the data digitally to a process meter with a digital probe input.

The use of digital sensors allows for a process meter to be updated measuring a different parameter without changing controllers. This technology allows for a facility that has multiple control points to only have to maintain a single version of a controller.

The other advantage is that the digital transmission of measurement data is immune to electrical noise generated by motors, pumps, and humid environments. The digital signal can be transmitted over very long distances. This cannot be done with a standard analog probe unless it is amplified or a transmitter is used. The HI1000 of digital probes are available with cable lengths up to 50 meters.

All Hanna industrial digital pH electrodes are combination type, i.e. the reference half cell and the measurement half cell are assembled in the same body. All of the probes are made with a chemically resistant PVDF body and have a pt100 temperature sensor for automatic temperature compensation.

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Advantage of flat tip electrodes

- In a continuous in-line installation, the glass sensor of the pH electrode can be physically damaged by solution streams containing suspended solids.
- Our Flat Tip electrodes are the best answer to this problem. The flat tip virtually eliminates deposits that can foul the electrode, significantly reducing necessary maintenance.
- This characteristic makes flat tip electrodes ideal for continuous in-line monitoring and for solutions containing aggressive chemicals.

Each pH electrode is provided with an internal matching pin that helps to avoid typical problems caused by grounding loop current, such as:

- progressive damage of the electrode
- fluctuating measurements
- poor process regulation

In many industrial applications there is a potential for a ground loop. This can happen when the ground of the process is different than the ground of a controller/transmitter.

When a traditional electrode/controller system is used, the electrode reference is connected from the electrode to the instrument and current can flow through the reference half cell, causing fluctuations in reading and serious damage to the Ag/AgCl element. The potential matching pin shields the reference from external electrical fields. Shown above, the matching pin allows the measurement to stabilize and ensures effective process regulation. In order to function properly, the matching pin has to be continuously immersed in the measured solution and for this reason is placed near the electrode junction.

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Installation

These electrodes have been designed with ?? external thread for easy installation for in-line applications. HANNA instruments? also provides a series of probe holders for submersion tank installations.

Front thread ?? NPT

- Direct in-line installation ?? standard tee
- Immersion installation in vessel, tank, plating bath with HI 60501 (PVC) or HI 60503 (PVDF) electrode holders with

adjustable immersion level: min 10 cm, max 70 cm

- Direct pipe installation with HI 60542 PVC electrode holder, 2" thread

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HI1000 Series Flat Tip Digital pH Electrode FEATURES/BENEFITS:

Junction

Two junction types are available:

- Annular non-clogging PTFE junction, for testing solutions with high content of suspended solids, aggressive chemicals, or for high pressure installation
- Ceramic junction that is ideal for drinking water and other low conductivity applications.

Glass Sensor

HI1000 series is available with three types of specialized glass.

- LT glass for low temperatures (-5 to 80 °C). The resistance of the glass is low and increases to ideal resistance as the temperature increases.
- HT glass for high temperatures (0 to 100 °C). The HT glass has a high resistance that increases to the ideal temperature as the temperature increases. The HT glass is ideal for highly alkaline pH measurement due to reduced amount of sodium error as compared to other glass types.
- HF glass is for samples that contain fluoride as hydrofluoric acid. This glass type is resistant to HF up to 2 g/L of fluoride at a pH of 2 or greater.

Temperature Sensor

- All HI1000 series of digital pH electrodes have a built-in 3-wire Pt100 temperature sensor that allows for the temperature compensation of pH readings as well as temperature measurements.

Connection Type

- Electrodes are wired for direct connection to the HI510 Universal Process Controller.

Cable Length

- HI1000 digital pH probes are available with a 5, 10, 15, 25, or 50 m of cable.

PVDF Body

- The PVDF body used for the Flat Tip Series withstands high pressure and high temperature applications, and guarantees a high chemical and mechanical resistance. These characteristics make the PVDF material the most recommended for many industrial applications.

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