

# HB551 – Quick Change pH/ORP Sensor Series HB Specifications

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## Overview

Honeywell's pH/ORP electrodes for applications with high temperatures and pressures in addition to low and high pH. The HB Series complements the other pH/ORP offerings – the Durafet and Meredian electrodes.

The **HB551** is:

- a quick change pH/ORP sensor
- a pH/ORP sensor with an external nut-loc that improves safety and makes replacement easy
- ideal for sample lines and valve side-streams
- rugged, versatile and simple to use
- compatible with most industrial transmitters and analyzers

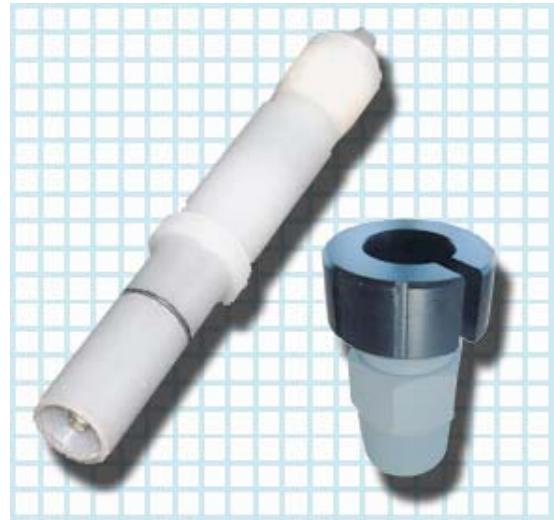
Honeywell's HB Series of electrode mountings utilize a patented Reference Cell Technology. The unique Reference Technology:

- prevents sensor poisoning
- prevent internal leaks
- prevent internal plugging
- allows extreme temperature and pressure tolerance
- allows for long life in low and high pH applications

## Description

The **HB551** pH electrode offers a reliable combination of measuring and reference electrodes together with an integral automatic temperature compensator in a 1-piece corrosion resistant body (the body material is chosen by the customer).

The **HB551** pH electrodes are designed for quick-change in-line installations. The **HB551** can also be used in submersion operations.



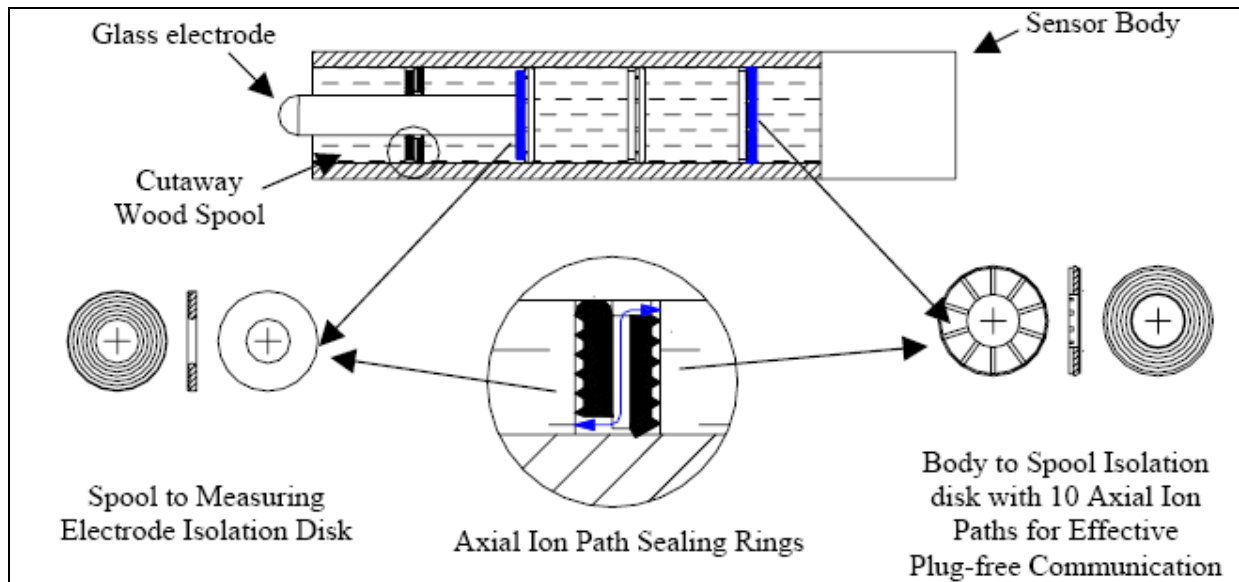
**HB551 Electrode and Fitting**

*The HB551 pH/ORP electrode is a quick change sensor.*

### Unique Reference Technology

Like other rugged semi-solid state references, the reference is formed by a series of wood segments impregnated with KCL. The difference with the unique reference technology, where others utilize an epoxy or impermeable barrier between each of the wood segments; the HB Series uses a pair of formed discs.

When the two formed disc faces are positioned adjacent to one another they form a long pathway (filled with electrolyte) between each of the segments. The pathway provides a more complete transition of KCl ions between the wood segments and creates a difficult and longer distance for poisons traveling back into the reference from the process fluid.



This is a porous surface, which passes ions between the reference and measurement fluid. The primary function is to allow very small amounts of KCl to leach from the reference and provide the millivolts necessary for pH measurement. The secondary function is to maintain a barrier between the measurement fluid and the reference so that the measurement fluid does not rapidly poison or foul the reference.

### Temperature Compensator

This is typically a component (RTD, Resistor, Thermistor) for pH measurement (not required for ORP) that produces a proportional resistance to the temperature of a measured solution. The resistance is understood by the pH Transmitter/Indicator so it can make adjustment to the measurement slope to match the effect of temperature on the sensor. With conventional glass measuring electrodes the T.C. is typically located near the measurement bulb to reduce the time necessary to recognize the solution temperature.

The **HB551** allows the user to specify which temperature compensator is right for their instrument. The user has the following options:

- **Honeywell 8550 ohm**
- PT1000 RTD
- PT100 RTD

**Features HB551 Electrode**

- Uses unique reference technology
- One electrode for entire pH and temperature ranges
- Platinum ORP sensor option
- **Intended for quick-change in-line applications**
- **Ideal for sample lines and valve side-streams**
- Integral automatic temperature compensator
- Chemically resistant CPVC, Kynar or Polypropylene body

- User can specify following:
  - Body Material
  - O-Ring Material
  - Measuring Electrode
  - Tip Configuration
  - Thermocompensation
  - Insertion Depth
  - Cable Configuration
  - Lead Terminations
- Great for high temperature and high pressure applications
- Can be used in both low and high pH conditions
- Utilizes an external nut-loc to improve safety
- Compatible with most industrial transmitters and analyzers

**Specifications**

<b>Electrode</b>	
<b>Pressure and Temperature Rating</b>	CPVC & Polypropylene: 100 psig, 100°C Kynar: 150 psig, 140°C
<b>Operating Range</b>	0-14 pH -1600 to +1600 mV for ORP
<b>Mounting</b>	Quick-change in-line: 1" MNPT threaded adapter for installation into process, sample line or automatic cleaning system. Nut-loc retainer for quick removal and replacement. Submerged: 3/4" MNPT threaded top for connection to 3/4" FNPT coupling and extension pipe. <i>See Accessories in Module Selection Guide</i>
<b>Wetted Materials</b>	Kynar, CPVC, Polypropylene (Body Material Choices) Gr.2 Titanium, 316 SS, porous Teflon, Viton, EPDM, Kalrez, Nickel, Wood, Glass (pH sensor) & Platinum (ORP sensor)
<b>Dimensions</b>	Dependent upon user specifications
<b>Weight</b>	Approximately 0.23 kg (0.5 lb)

*Specifications are subject to change without notice.*

## Sales and Service

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

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### For More Information

Learn more about how Honeywell's HB551 – Quick Change pH Sensors are designed for high temperature, high pressure and harsh chemical applications, visit our website [www.honeywell.com/ps/hfs](http://www.honeywell.com/ps/hfs) or contact your Honeywell account manager.

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