

HB547 – Ball valve Mounting Assemblies Series HBD Specifications

70-82-03-69 July 2013



Overview

Honeywell's HBD Series of pH electrodes are for applications with high pressure and temperature as well high and low pH ranges. They are intended for the harshest of applications where traditional glass sensors and reference electrode technology do not stand up. The HBD Series combines the superior stability and ruggedness of the Durafet sensor with a unique reference technology that resists poisoning and fouling.

The **HBD547** is:

- intended for use with ball valve insertion assemblies (see Model Selection Guide for details)
- rugged, versatile and simple to use
- compatible with most industrial transmitters and analyzers

Honeywell's HBD Series of electrode mountings utilize the patented Unique 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 HBD547 offers a reliable combination style pH electrode with measuring and reference electrode together with an temperature sensor in a 1-piece corrosion resistant Kynar body.

The **HBD547** pH electrodes are designed to be used with 1" MNPT Wrench-tite or 1-1/4" MNPT Hand-tite compression fittings. These sensors require 1-1/4" or larger full port valve. The insertion depth is user selectable with variable titanium sheath set lengths.



Hand-Tite Fitting and Electrode



The HBD547 pH electrode is intended for use with specified ball valve assemblies.

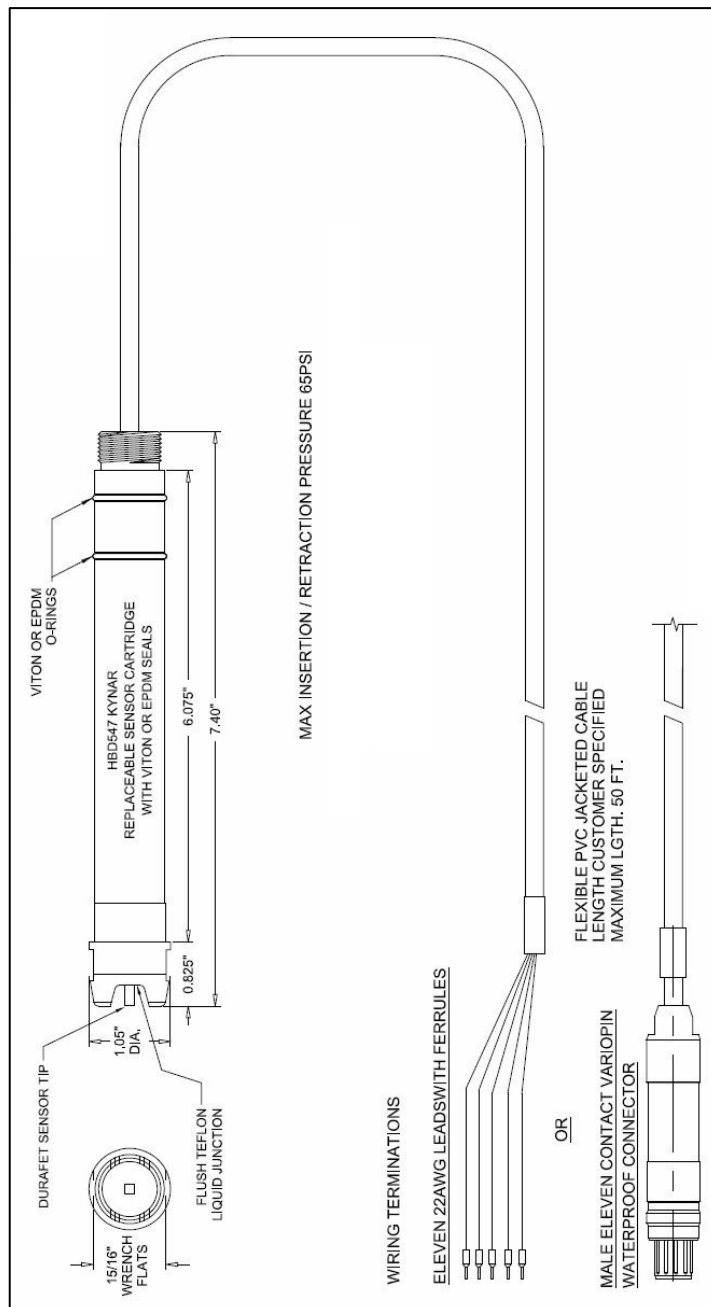
Unique Reference Technology

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

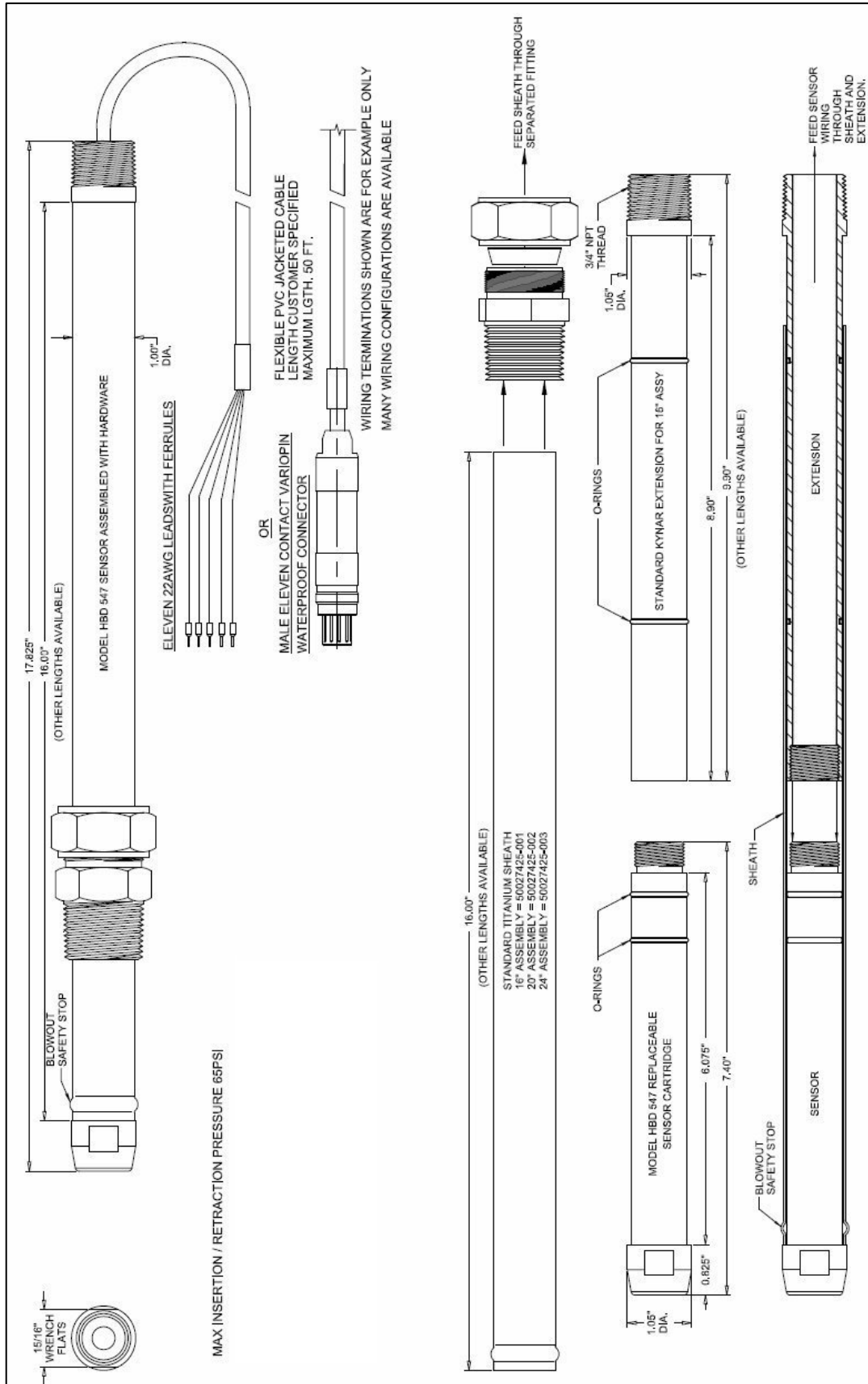
When the two formed disc faces are positioned adjacent to one another they form a tortuous path (filled with electrolyte) between each of the segments. This path provides a more complete transition of KCl ions between the wood segments forward and creates a difficult and longer distance for poisons traveling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

The reference junction is made of Teflon and acts as the interface between the process fluid and the reference electrode. 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.

Dimension Drawing



Dimension Drawing



Accessory Parts

Description	Part Number
316SS Ball Valve Assembly 1-1/4" Assembly with Reducer 1-1/4" x 1" NPT & Nipple 1-1/4" NPT 1-1/2" Assembly with Reducer 1-1/2" x 1" NPT & Nipple 1-1/2" NPT	50027636-001 50027636-002
Fittings Hand-tite Compression Fitting: 316SS with Teflon Ferrule 1-1/4" MNPT Wrench-tite Compression Fitting: 316SS with Teflon Ferrule 1" MNPT	50027418-001 50027406-001
Clean, Calibrate & Purge Fittings Hand-tite: 1-1/4" FNPT x 1-1/4" MNPT 316SS Hand-tite: 1" FNPT x 1-1/2" MNPT 316SS	50027412-001 50027412-002
Insertion Collar Stop: 316SS 1" ID x 1-3/4" OD	50027421-001
Sheath Set Titanium with Viton O-Rings & Kynar Extension Rod 16" Titanium 20" Titanium 24" Titanium	50027425-001 50027425-002 50027425-003

Features

HBD547 Electrode

- Non-Glass Ion Sensitive Field Effect Transistor (ISFET) pH sensor
- Rugged, virtually non-breakable.
- Long lasting stability in the harshest of application environments
- Integral automatic temperature compensator
- Chemically resistant Kynar body
- Reduced replacement costs due to breakage and reference electrode failure
- Faster response for better process control and lower reagent usage
- Great for high temperature and high pressure applications
- Can be used in both low and high pH conditions
- Insertion-retraction device
- Compatible with most industrial transmitters and analyzers
- Less cleaning lowers maintenance costs
- Less frequent need for calibrations

Specifications

Electrode	
Pressure and Temperature Rating	50 psig, 100°C 100 psig, 50°C
Operating Range	0-14 pH
Mounting	Threaded in-line: 1 1/4" MNPT threaded nose for installation into process, sample line or automatic cleaning system. Insertion depth user specifiable
Wetted Materials	Kynar, porous Teflon, Viton, Ryton, EPDM & Silicon, 316SS
Cable Options	20 ft (6.1 m) and 50 ft (15.2 m) integral ferrule terminated leads or 10 inch integral VarioPin connector
Temperature Sensor	8550 Ohm Thermistor, Pt1000 RTD
Weight	Approximately 0. 23 kg (0.5 lb) without retraction device

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 HBD547 – Multi-Installation Sensor Cartridge are designed for high temperature, high pressure and harsh chemical applications, visit our website www.honeywellprocess.com/analytical-instruments-and-sensors or contact your Honeywell account manager.

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