

## Durafet<sup>®</sup> Non-Glass pH Electrodes

## Specification

### Description

Honeywell defines state-of-the-art pH measurement with the Durafet pH electrode, an industrial, non-glass, unbreakable, Ion Sensitive Field Effect Transistor (ISFET)-based pH sensor. This industry-proven pH electrode, with over 11 years of application experience, provides fast, accurate and dependable pH measurement in the most demanding applications. The Durafet electrodes include a connector, enabling easy and reliable electrode replacement without twisting of cables. Durafet III electrodes are designed with a rugged waterproof Vario Pin connector. Durafet II electrodes have a P.C board connector.

Durafet electrodes offer a reliable combination of measuring and reference electrodes together with an integral automatic temperature compensator in a 1-piece construction. The compact Durafet electrodes are available in two basic designs: a 3/4" NPT male threaded connection or a 12mm diameter electrode (Durafet II only). The type of design is based on the mounting.

### Features

#### Durafet Electrode:

- **NEW!** Durafet III Vario Pin quick disconnect waterproof cable option
- Uses ISFET (Ion Sensitive Field Effect Transistor) technology for exceptionally fast response.



Durafet III pH Electrode with Vario Pin



Durafet III pH Electrode with PC Board Connector

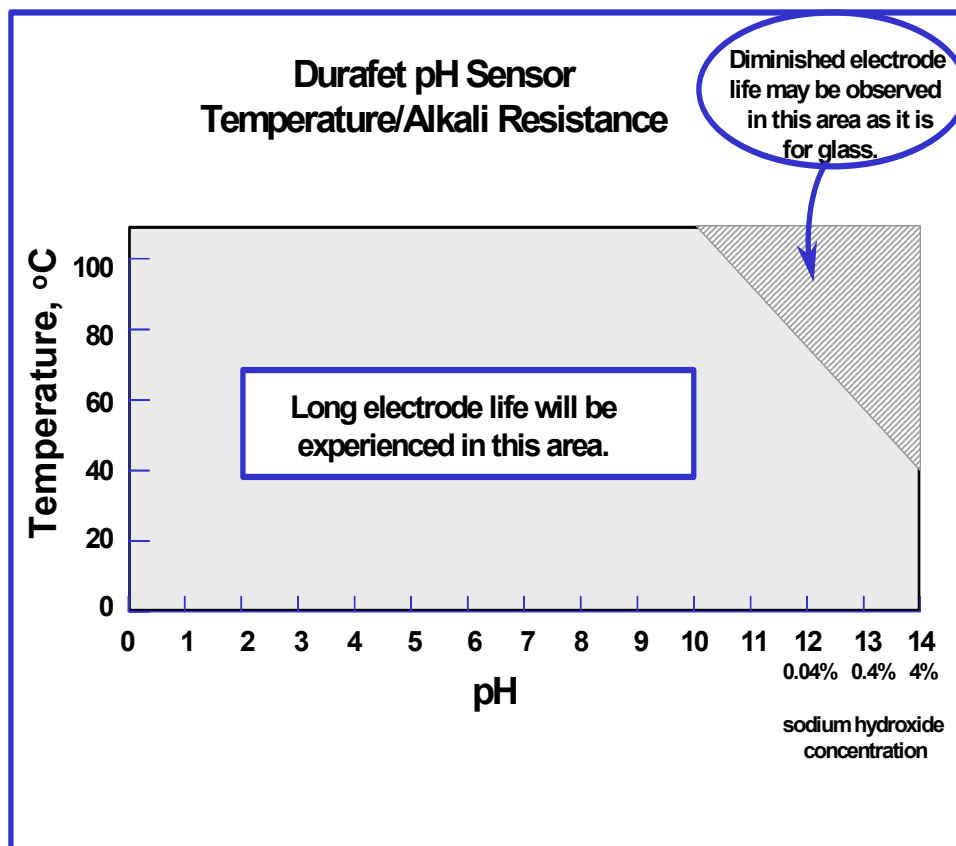
- Non-glass - virtually unbreakable, truly solid state.
- Stable pH signal over time for less frequent calibrations
- Cable connector designs for easy electrode installation/replacement
- Chemically resistant Ryton body
- KCl gelled reference for long life and reduced maintenance
- Reference junction frit and gel are replaceable, extending electrode lifetime
- Low impedance pH signal.
- 3/4" NPT mounting design with connections at top and bottom of electrode for in-line or immersion installations
- Durafet II 12mm diameter body design for use with various Honeywell installation mountings
- One electrode for entire pH and temperature ranges
- Can be used with entire Honeywell line of instrumentation: APT Series, 9782 Analyzers, DirectLine<sup>®</sup> Sensor modules

## Specifications

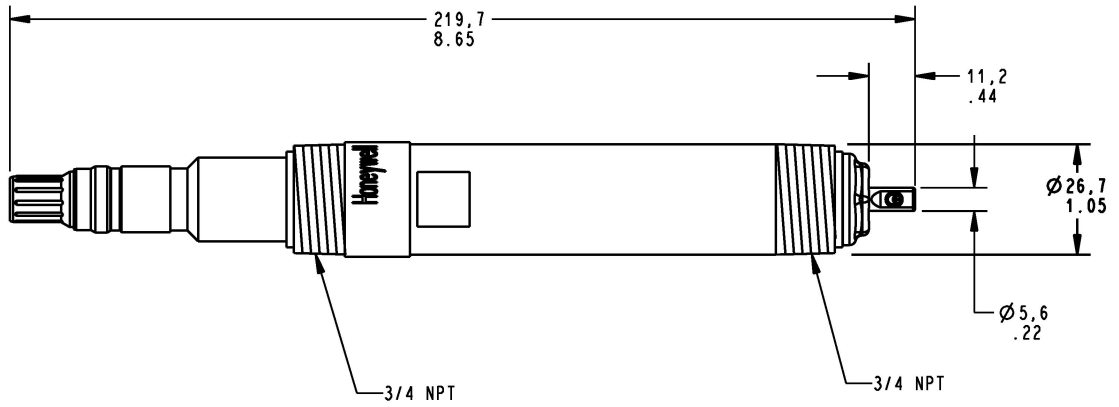
	Electrode Style	
	¾" NPT	12mm diameter
Operating Range	0-14 pH	
Pressure Rating	345 kPa (50 psig) @ 100°C, 690 kPa (100 psig) @ 50°C	
Temperature Rating	-10 to 110° C	-10 to 110° C (130° C for intermittent sterilizations)
Temperature Sensor	8550 ohm Thermistor and 1000 ohm RTD	
Wetted Materials	Ryton body, silicon ISFET die, Ceramic reference junction, Viton media seal, EPM reference frit seals	
Electrical Connection	Durafet III: Vario Pin, 11 conductor connector, IP68 rated Durafet II: PC Board Connector	
Acceptable Cables and Lengths (ordered separately)	DirectLine Remote Cable: 20 feet and 50 feet Cap Adapter (for 9782P and APT Series): 20 feet and 50 feet	
Weight	Durafet III: 0.23 kg (0.5 lb) Durafet II: 0.11 kg (0.25 lb)	Durafet II: 23 g (0.8 oz)

## Operating Conditions

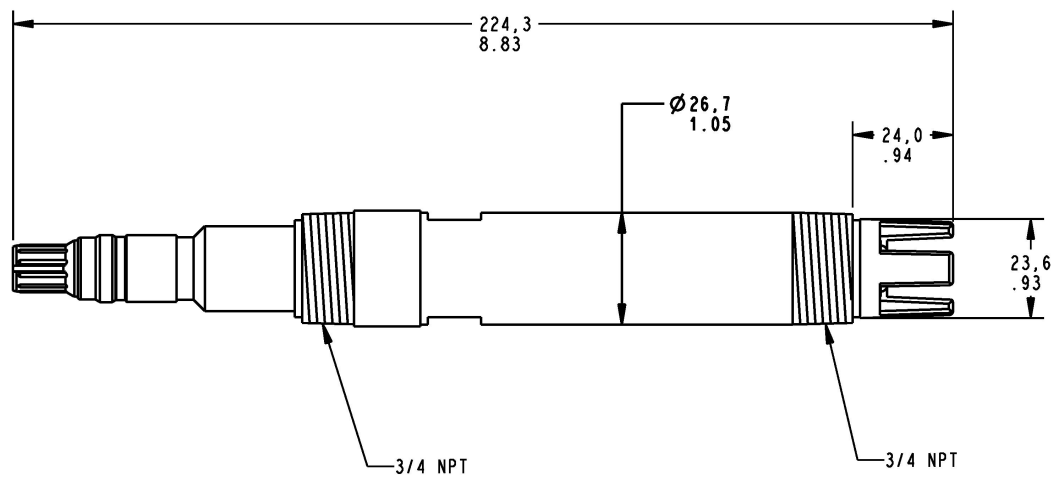
The lifetime of Durafet pH electrodes is adversely affected by hydrofluoric acid (HF) and conditions of high pH and high temperature. The graph below is a guideline for the Durafet electrode when exposed to the high pH and high temperature conditions.



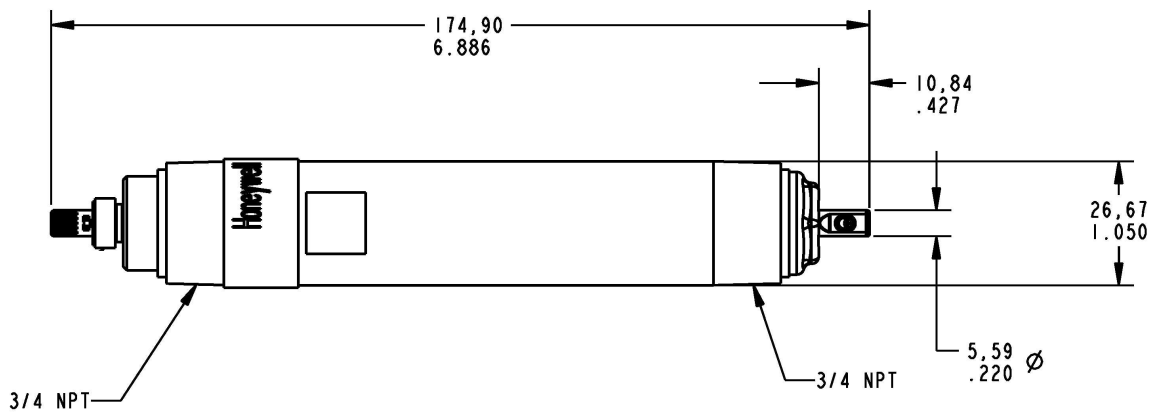
Dimensions



Durafet III (Vario Pin Connector) pH Electrode for In-Line Mountings (Smooth Tip)



Durafet III (Vario Pin Connector) pH Electrode for Immersion Mountings (Guarded Tip)

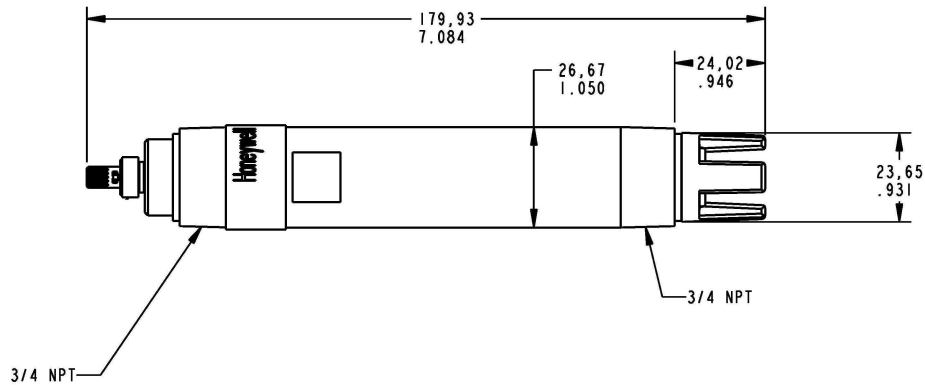


Durafet II (PC Board Connector) pH Electrode for In-Line Mountings (Smooth Tip)

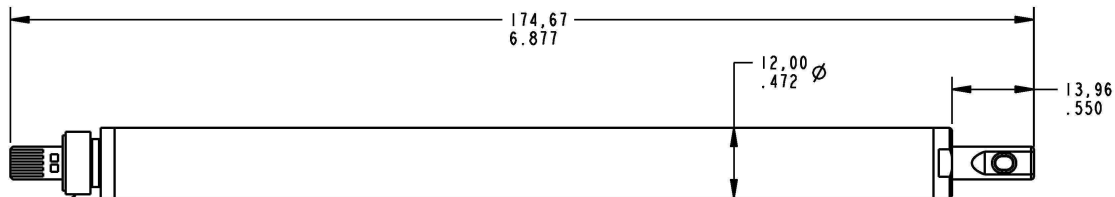
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**Dimensions (cont'd)**


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**Durafet II (PC Board Connector) pH Electrode for Immersion Mountings (Guarded Tip)**



**Durafet II (PC Board Connector) pH Electrode 12mm diameter**

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**Cable Compatibility**


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The Durafet pH electrodes are designed with a connector for easy installation and replacement. Two connectors are available:

- Durafet II with PC Board Connector
- Durafet III with Vario Pin Connector













Use a DirectLine Remote Cable to connect to a DirectLine module. Use Cap Adapter cable to connect to a 9782 Series Analyzer or to an APT Series Transmitter or Analyzer.

The table below identifies the different cable part numbers.

Cable	Durafet II	Durafet III	
Cap Adapter			
8'	51205965-007	-	
12'	51205965-001	-	
20'	51205965-002	51453388-001	
50'	51205965-005	51453388-002	
DirectLine			
20'	51500270-001	51453225-001	
50'	51500270-002	51453225-002	

### Electrode Mounting Compatibility

The various styles of Durafet electrodes are compatible with specific mounting designs, marked by X in the table below.

Electrode Mounting ↓	Electrode Style →	3/4" NPT Durafet III 	3/4" NPT Durafet II 	12 mm diameter Durafet II 	3/4" NPT Integral DirectLine Durafet II 
7777DVP 		X			
DirectLine – Integral 					X
DirectLine – Remote 		X	X		
7777D 			X		
7774D (SS) 				X	
7774D (CPVC) 			X		
7773D 				X	
7758D 				X	

Distributor :



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**Industrial Measurement and Control**

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