


# TUpH™ pH Sensor in the Quik-Loc Kit

## THE TUpH MODEL 397 pH SENSOR OFFERS:

-  • **SILCORE™<sup>3</sup> TECHNOLOGY PROVIDES INCREASED SENSOR LIFE** when used in elevated temperature applications.
- EXCELLENT PERFORMANCE in process solutions with a high solids content.
- LONGER SENSOR LIFE and reduced maintenance due to the industry proven patented polypropylene reference junction and helical reference pathway.
- ACCUGLASS™ pH glass formulation for maximum glass performance.
- INSTRUMENT COMPATIBILITY with Rosemount and other manufacturers' instruments.



Model 397  
pH sensor



## THE QUIK-LOC KIT OFFERS:

- QUICK AND EASY ACCESS to Model 397 pH sensor without cable twisting.
- VISUAL CONFIRMATION that the sensor is locked into position.

Model 397 in Quik-Loc Kit

## TUpH MODEL 397 pH SENSOR FEATURES AND APPLICATIONS

The low maintenance Model 397 pH sensor offers long life and high performance in the measurement of pH in aqueous solutions with high suspended solids. The Model 397 is housed in a highly chemical resistant polypropylene body and is completely sealed with EP (ethylene propylene) to eliminate process intrusion. This TUpH sensor features a patented, large area, polypropylene reference junction<sup>1</sup> for maximum resistance to process coatings, generally found in harsh, dirty and high solid applications. In addition, the patented secondary helical reference pathway<sup>2</sup> serves as added protection from poisoning ions. The Model 397 features ACCUGLASS™<sup>3</sup> and a large glass bulb for increased resistance to the effects of aging for longer life. The sensor is specifically designed for use with the Quik-Loc Kit and is only available without an integral preamp. The preamplifier must be in a remote location or integral to the analyzer/transmitter.

**The TUpH large area reference junction for minimum maintenance requirements:** The reference junction provides an electrical connection between the reference electrode and the sample, and helps maintain a stable reference potential, regardless of the change in sample pH. The TUpH reference electrode junction, the entire plastic tip surrounding the glass pH electrode, maintains a steady reference

signal even in the dirtiest of applications because it resists plugging (a common cause of pH signal drift). This large reference junction area is made of micron sized reference pathways used for ionic exchange so it resists plugging by large particles and will continue to send a steady pH signal, even in the dirtiest of applications. The TUpH reference junction technology has been field-proven for minimum maintenance requirements.

**The TUpH helical reference pathway stops reference poisoning.** Ions diffuse through the reference pathways and a charge is passed to the reference element. The reference element must be protected from contamination by poisoning ions such as sulfide, mercury, cyanide, and ammonia or else the pH signal will drift. The TUpH sensor's long internal helical reference pathway hinders and slows down the rate of contaminants migrating to the reference element therefore providing for a longer sensor life.

**The entire line of TUpH model sensors now incorporate the new SILCORE technology contaminant barrier.** This triple-seal barrier prevents moisture and material impurities from migrating to the pH sensor's reference electrode's metal lead wire. By preventing these contaminants from compromising the integrity of the pH measurement, sensor

life is increased, especially at higher temperatures where increased migrations occur. In addition, the SILCORE technology provides added protection against sensor failure due to vibrations and shock by transferring damaging energy away from the glass-to-metal seal.

**The AccuGLASS pH glass formulations exceed industry standards.** The AccuGLASS pH glass is a result of many years of glass research resulting in a formulation which has been found to increase the life of the sensor. Unlike other pH glasses presently on the market, this glass resists cracking especially at higher temperatures and reduces sodium ion error commonly found in high pH applications. Overall, the AccuGLASS formulation enhances the sensor performance to measure pH more accurately and have a longer sensor life than ever before.

**The TUpH reference junction and helical pathway combined with the AccuGLASS pH glass** performs exceptionally well in dirty, high solid applications and requires only minimum maintenance. This is the toughest pH sensor on the market and is still unmatched by all other pH sensors. The constant increase in demand for the TUpH sensor proves it's success as the best process industry pH sensor.

**All TUpH sensor models** have been specifically designed for improved life in harsh, dirty, and abrasive applications such as lime slurry, waste treatment, paper machine head-box, and pigment/dye applications, where large quantities of suspended solids are present. Various sensor materials, depending on the sensor model, is available for a variety of different application needs.

<sup>1</sup> U.S. Patent No. 5,152,882, Foreign Patent Pending

<sup>2</sup> U.S. Patent No. 6,054,031, Foreign Patent Pending

<sup>3</sup> SILCORE, ACCUGLASS and TUpH are trademarks of Rosemount Analytical.

## QUIK-LOC KIT FEATURES & APPLICATIONS

The Quik-Loc Kit consists of an adapter and a coupler. The PEEK adapter enables the Model 397 pH sensor to fit into a 1 inch MNPT coupler for quick disconnection without sensor cable twisting. The 316 stainless steel Dixon coupler is sealed with an EP gasket and features locking arms. The B100 mechanism keeps the coupler arms locked in place until removal of the sensor is desired. The Quik-Loc Kit is not recommended for use in processes with hazardous, corrosive, or strong oxidizing chemicals due to a risk of spray or bodily injury.

## TUpH MODEL 397 pH SENSOR PERFORMANCE & PHYSICAL SPECIFICATIONS

**pH Range:** ACCUGLASS™, GPHT: 0-14 pH  
 Percent Linearity Over pH Range: 0-2 pH 97%,  
 2-12 pH 99%, 12-13 pH 96%, 13-14 pH 92%

**Wetted Materials:** glass, polypropylene, EP

**Process Connections:** None, must use Quik-Loc Kit

**Interconnecting Cable:** 15 ft (4.6 m), for use with remote preamplifier

**Temperature Range:** 32° to 212°F (0° to 100°C)

**Pressure Range:** 0-100 psig (100-790 kPa abs)

**Minimum Conductivity:** 75 µS/cm, nominal 100µS/cm

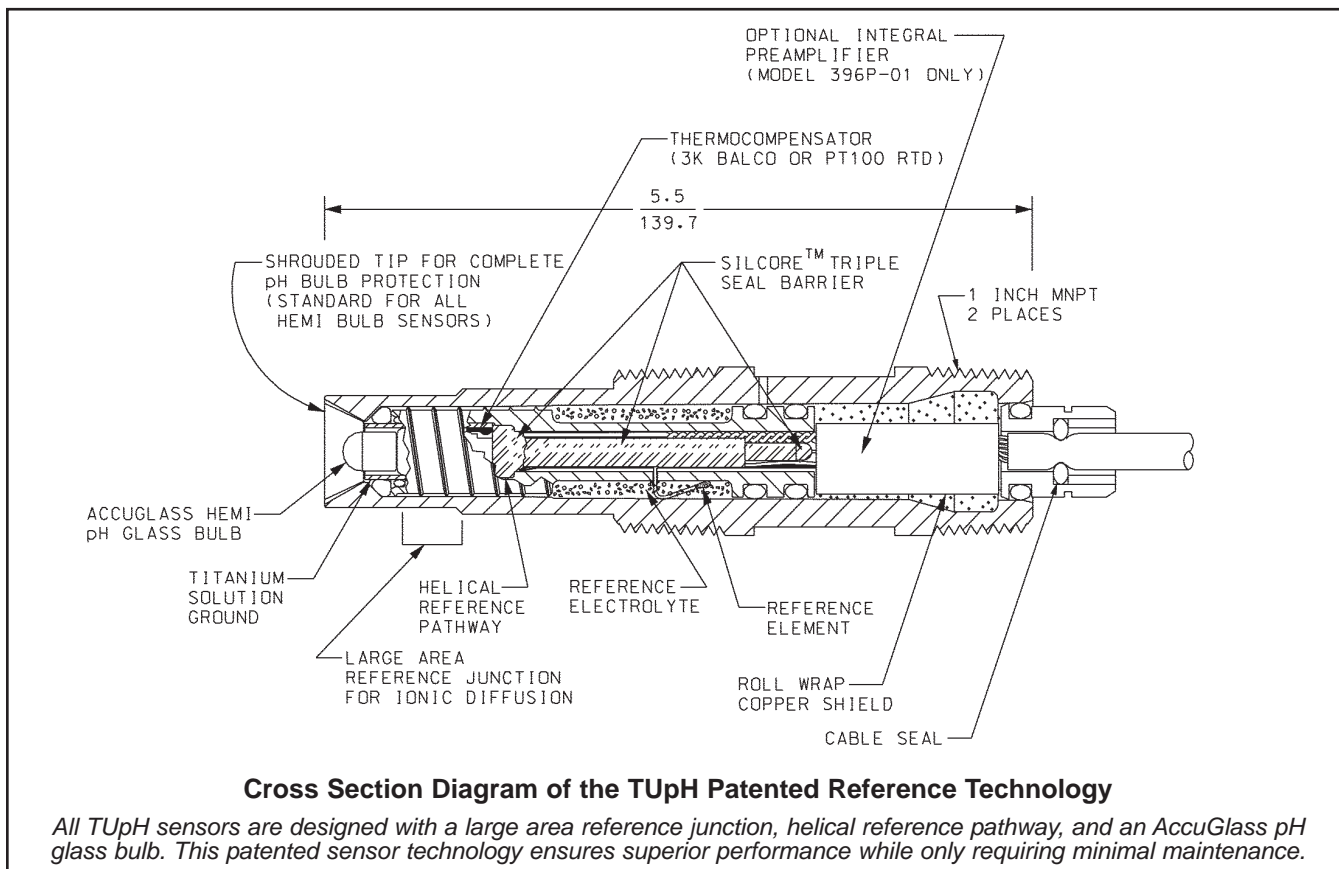
**Weight/Shipping Weight:** 1 lb/2 lb (0.45 kg/0.9 kg)

## QUIK-LOC KIT PHYSICAL SPECIFICATIONS

**Process Connections:** 1-in. MNPT

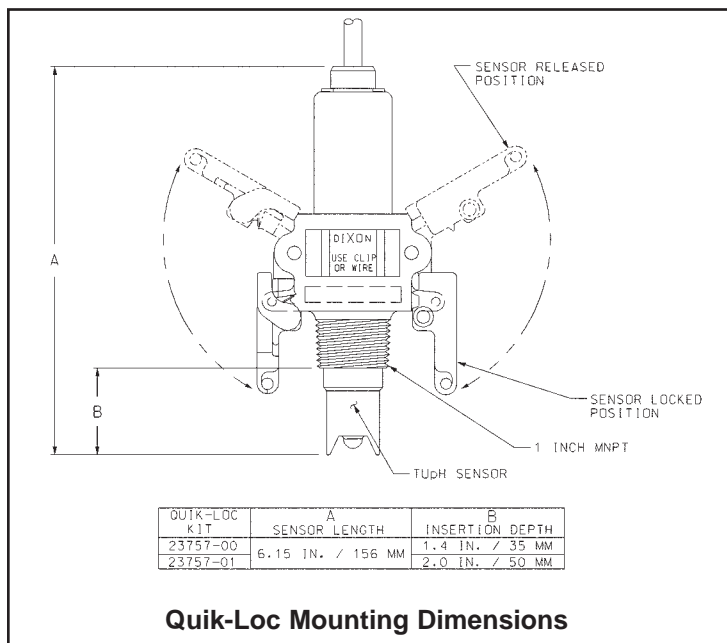
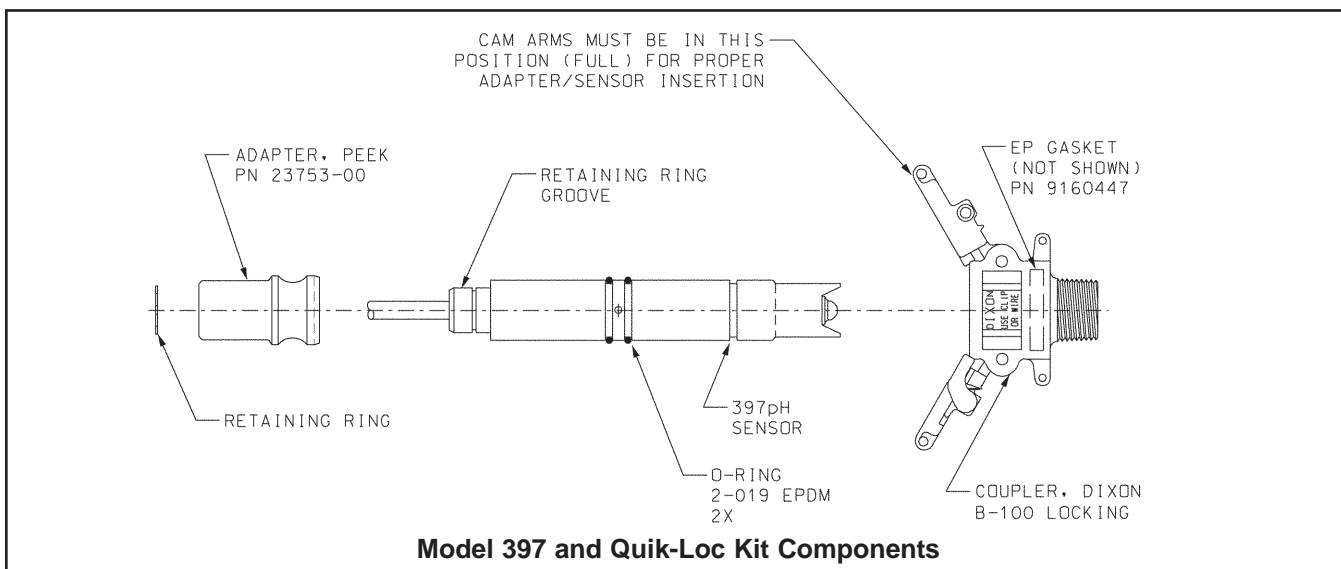
**Wetted Materials:** 316 SST, EP, PEEK

**Weight/Shipping Weight:** 1 lb / 2 lb (0.45 kg / 0.9 kg)



The **TUpH Model 397 pH Sensor** is housed in a polypropylene body and is designed to be used with the Quik-Loc Kit. The sensor includes a large general purpose (GPHT) glass pH electrode and a large area polypropylene reference junction with gel filled reference electrolyte. The Model 397 is only available without an integral preamplifier and has 15 ft (4.6 m) of cable.

<b>MODEL 397 TUpH pH SENSOR</b>	
<b>CODE</b>	<b>PREAMPLIFIER/CABLE (Required Selection)</b>
02	Without integral preamp, 15 ft (4.6 m) cable
<b>CODE</b>	<b>MEASURING ELECTRODE (Required Selection)</b>
10	GPHT, General Purpose (0-13 pH)
12	ORP
<b>CODE</b>	<b>ANALYZER/TC COMPATIBILITY (Required Selection)</b>
50	For Models 1181pH (3 K Balco TC)
54	For Models 1054, 2054, 2081 [w/code -62: Models 54, 1055, 81, 2081, 3081, 4081, 5081] (Pt100 RTD)
<b>CODE</b>	<b>OPTIONS</b>
62	Cable prepped w/o BNC for direct wiring to Models 54, 1055, 81, 2081, 3081, 4081, 5081



**FOR FIRST TIME 397/QUIK-LOC INSTALLATIONS, ROSEMOUNT ANALYTICAL RECOMMENDS USING THE FOLLOWING GUIDE:**

**1. Quik-Loc Mounting (required for all first time installations)**

Choose one: PN 23757-00, Quik-Loc Kit: for use in 1 in. tees; insertion depth 1.4 in. (35 mm)  
 PN 23757-01, Quik-Loc Kit: for use in 1-1/2 in. and 2 in. tees; insertion depth 2 in. (50 mm)

**2. Junction Boxes (optional, recommended for sensor to analyzer distances of more than 15 ft)**

**Remote Junction Boxes**

Choose one: PN 23555-00 includes preamplifier for Models 54, 81, 3081, 4081  
 PN 23309-03 and PN 22698-02 plug-in preamplifier for Model 1181 Analyzer  
 PN 23309-04 and PN 22698-03 plug-in preamplifier for Models 1054 series, 2054, 2081 Analyzers  
 PN 23054-03 includes preamplifier for Solu Cube Model 2700

**3. Extension cables (used with remote junction boxes)**

Choose one: PN 23646-01, 11 conductor, shielded, prepped  
 PN 9200273, 11 conductor, shielded, unprepped

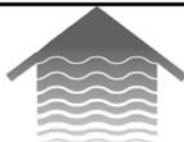
**ACCESSORIES**

22698-02	Preamplifier plug-in for Junction box, for Models 1181, 1050
22698-03	Preamplifier plug-in for Junction box, for Models 1054, 2054, 2081
23557-00	Preamplifier for Junction box, for Models 54e, 1055, 81, 3081, 4081
9160441	1 in. MNPT 316 stainless steel coupler
23753-00	PEEK Adapter for insertion depth of 2 in. (50 mm)
23753-01	PEEK Adapter for insertion depth of 1.4 in. (35 mm)
9160442	Optional 1 in. stainless steel plug
2002011	1-1/2 in. CPVC Tee with 1 in. FNPT process connection
9160447	1 in. E.P. gasket for Quik-Loc coupler



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**Emerson Process Management**

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