

Rosemount™ 397

TUpH pH/ORP Sensor



A high performance sensor with ease of maintenance in mind

Rosemount 397 pH/ORP sensors feature a TUpH reference design and are designed to be used with the Quik-Loc kit allowing for easy installation and maintenance. These low maintenance sensors are ideal for measuring pH or ORP in aqueous solutions with high levels of suspended solids.

Overview



A TUpH Sensor Design

- Excellent coating resistance and extended sensor life in process solutions with high levels of suspended solids.
- Highly chemical resistance with polypropylene and Tefzel sensor body options.
- Operates in process temperatures up to 100 °C and in pressures up to 100 psig.
- Helical reference pathway slows down the effects from poisoning ions.

Ease of Maintenance and Installation

- Quik-loc kit allows for quick and easy access to Rosemount 397 sensor without cable twisting.
- Visual confirmation that the sensor is locked into position.



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Ordering Information



The Rosemount 397 sensor is housed in either a polypropylene or Tefzel body and is designed to be used with the Quik-Loc kit (sold separately). Sensors come standard with 15 ft. of integral cable and do not come with an integral preamplifier.

Table 1. Rosemount 397 pH/ORP Sensor ordering information

Model	Sensor type
397	pH/ORP sensor
Preamplifier/Cable	
02	Without Integral Preamplifier and 15 ft. Integral Cable
Measuring Electrode	
10	pH - GPHT Hemi Glass Bulb
12	ORP
Temperature Element	
50	3k Balco ⁽¹⁾
54	Pt-100 ⁽²⁾
Temperature Element	
_	No Selection - Polypropylene Body and Cable with BNC
62	Polypropylene Body and Cable without BNC ⁽³⁾
64	Tefzel Body Material ⁽⁴⁾
Typical Model Number: 397-02-10-54-64	

1. For use with legacy transmitter model Rosemount 1181.
2. If selected with option -62, compatible with existing transmitter models Rosemount 1056, 1057, 56, 1066, and 5081. Without option -62, compatible with legacy transmitter models 1054, 2054, 2081, and XMT.
3. Only available with option -54.
4. Only available with options -02-10-54.

Specifications

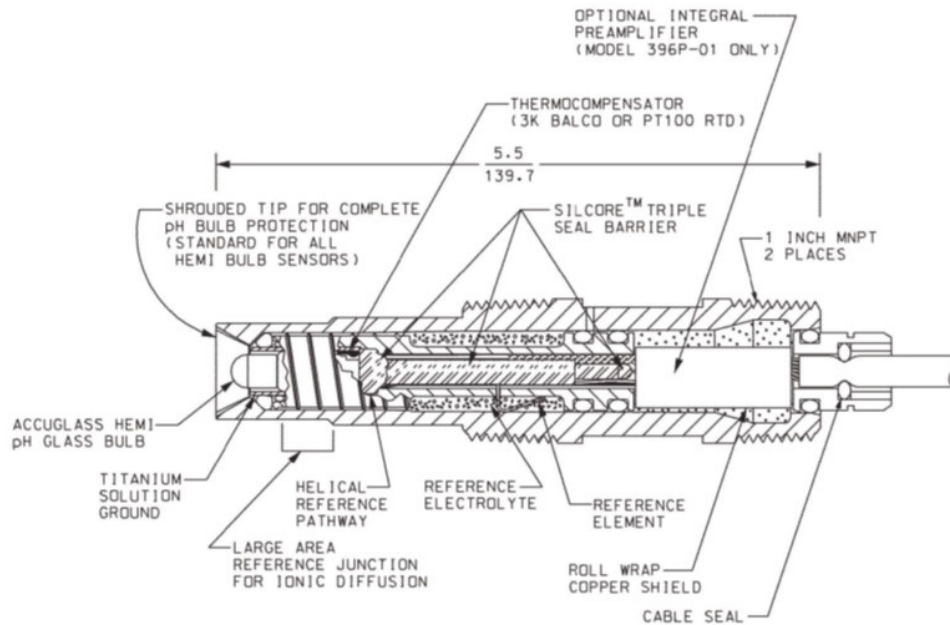
Table 2. Rosemount 397 sensor specifications

Sensor type	
TUpH Model 397 pH Sensor	
pH range	
ACCUGLASS™, GPHT: 0-14 pH	
Percent Linearity Over pH Range	
0-2 pH	94%
2-12 pH	99%
12-13 pH	97%
13-14 pH	92%
Temperature range	
32° to 212 °F (0° to 100 °C)	
Pressure range	
0-100 psig (100-790 kPa abs)	
Minimum conductivity	
75 μ S/cm, nominal 100 μ S/cm	
Wetted materials	
Glass, polypropylene, EP, Tefzel (optional)	
Process connections	
None, must use Quik-Loc Kit	
Interconnecting cables	
15 ft (4.6 m), for use with remote preamplifier	
Weight/shipping weight	
1 lb/2 lb (0.45 kg/0.9 kg)	

Quik-Loc Features and Applications

The Quik-Loc Kit consists of an adapter and a coupler. The PEEK adapter enables the Rosemount 397 pH sensor to fit into a 1 in. 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, cor-rosive, or strong oxidizing chemicals due to a risk of spray or bodily injury.

Figure 1. Cross Section Diagram of the TUpH Reference Technology



All TUpH sensors are designed with a large area reference junction, helical reference pathway, and an AccuGlass pH glass bulb. This sensor technology ensures superior performance while only requiring minimal maintenance.

Table 3. Quik-Loc Kit Specifications

Process connection
1-in. MNPT
Wetted materials
316 SST, EP, PEEK
Weight/Shipping weight
1 lb / 2 lb (0.45 kg / 0.9 kg)

Product Certifications

Please see online certificates for further details.

IECEX

Ex ia IIC T4 Ga (-20 °C ≤ Ta ≤ +60 °C)

Per standards IEC60079-0: 2011, IEC 60079-11: 2011

ATEX

–  II 1 G Ex ia IIC T4 Ga (-20 °C ≤ Ta ≤ +60 °C)

Per standards EN 60079-0: 2012 + A11:2013, EN 60079-11:2012

FM

Intrinsically Safe for use in Class I, II, and III, Division 1, Groups A, B, C, D, E, F, and G; Temperature Class T6 Ta = -20 °C to +60 °C

Intrinsically Safe for use in Class I, Zone 0, AEx ia IIC T6 Ta = -20 °C to +60 °C

Nonincendive for use in Class I, Division 2, Groups A, B, C, and D; Temperature Class T6 Ta = -20 °C to +60 °C

Suitable for use in Class II and III, Division 2, Groups E, F, and G; Temperature Class T6 Ta = -20 °C to +60 °C Hazardous (Classified) Locations

IS/I,II,III/1/ABCDEFG/T6 Ta = 60 °C - 1400332; Entity; I/0/AEx ia IIC/T6 Ta = 60 °C - 1400332; Entity; NI/I/2/ABCD/T6 Ta = 60 °C; S/II,III/2/EFG/T6 Ta = 60 °C

Per standards 3600:1998, 3610:2010, 3611:2004, 3810:2005

CSA

Intrinsically Safe and Non-Incendive:

Class I, Division 1, Groups ABCD; Class II, Division 1, Groups EFG; Class III; Class I, Division 2, Groups ABCD; Ex ia IIC; T6; Ambient temperature rating -20 °C to +60 °C: (Simple Apparatus)

Per standards C22.2 No. 142 – M1987, C22.2 No 157 – M1992, CAN/CSA E60079-0:07, CAN/CSA E60079-11:02, UL 50:11th Ed., UL 508:17th Ed., UL 913: 7th Ed., UL 60079-0: 2005, UL 60079-11: 2002

Dimensional and Installation Drawings

Figure 2. Rosemount 397 sensor and Quik-Loc Kit Components

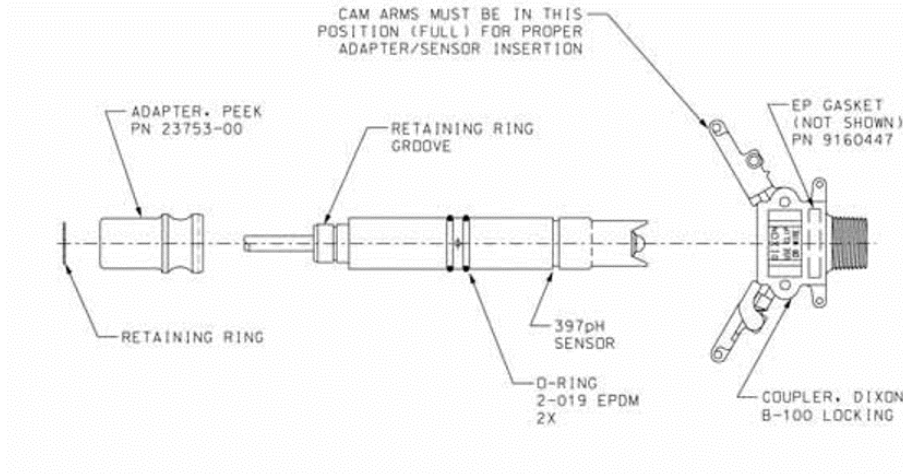
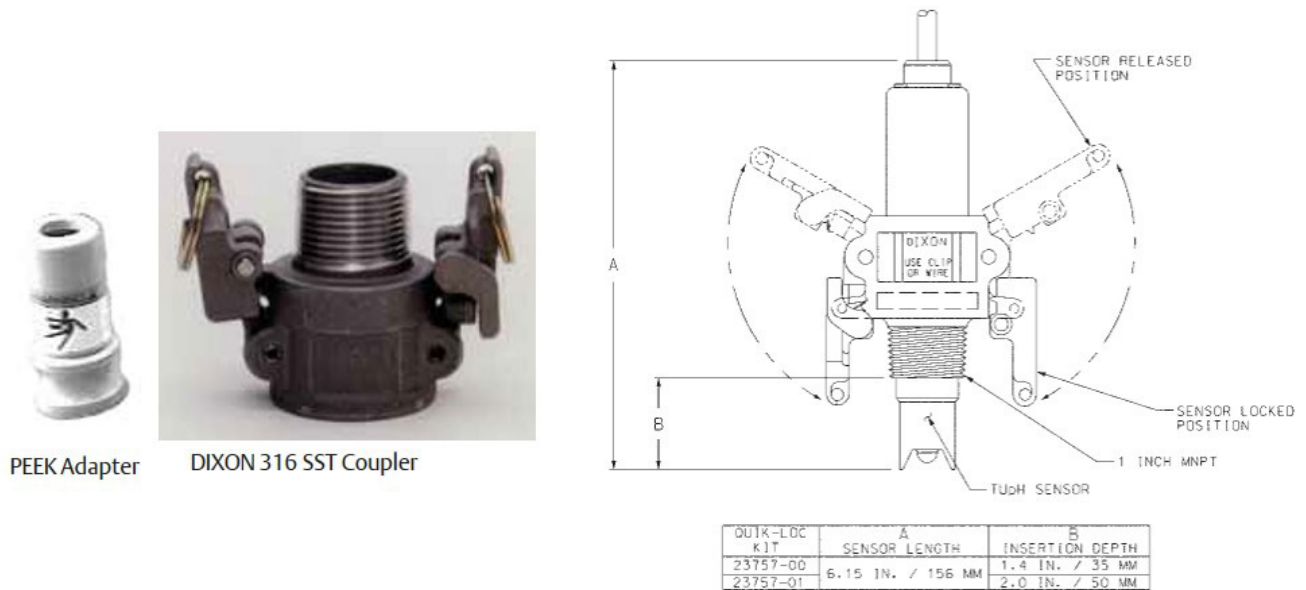


Figure 3. Quik-Loc Mounting Dimension



Accessories

Table 4. Rosemount 397 Sensor accessories information

Part number	Description
23555-00	Junction box with preamplifier
2002565	Mounting bracket kit for junction box
23646-01	Extension cable for junction box, prepped
9200273	Extension cable for junction box, unprepped
23757-00	Quik-Loc Kit; for use with 1 inch tees; 1.4 inch insertion depth
23757-01	Quik-Loc Kit; for use with 1-1/2 in. and 2 in. tees; 2 in. insertion depth
9160441	1 inch MNPT 316 Stainless Steel Coupler
23753-00	PEEK Adapter for insertion depth of 2 inches
23753-01	PEEK Adapter for insertion depth of 1.4 inches
9160447	1 inch E.P. Gasket for Quick-Loc Coupler

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