



pH & ORP SENSORS



Designed with Tough Applications in Mind

**Our sensors provide extended life in volatile applications
where other sensors may not last.**

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Non-Porous Cross-Linked Polymer Reference System:

These are the only truly solid-state reference systems of their kind in existence. This is a non-permeable system in which only selective ionic communication with the secondary junction (and tertiary) is permitted. This creates a very stable reference potential, even during harsh process conditions, that provides the following advantages:

- Experiences far less aging and deterioration over long periods for low drift and maintenance.
- Solid-state construction allows for scraping clean with a straight-edge razor to extend sensor lifetime when fouled.
- It is not easily dried out when exposed to air for prolonged periods.
- Does not absorb fluids or gases into junction and is significantly more impervious to solvents.
- Stable operation even in the presence of harsh chemical attack at high temperature in the presence of abrasive slurries.

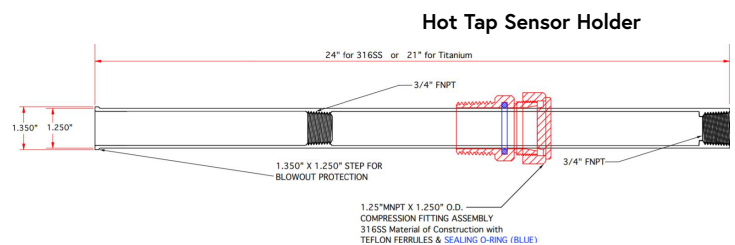
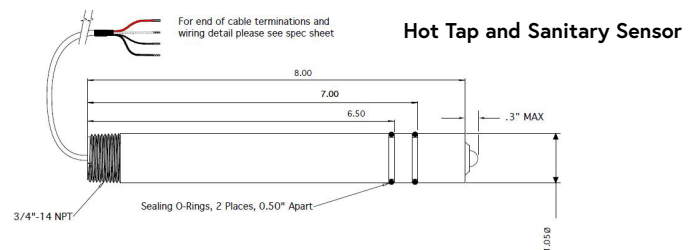
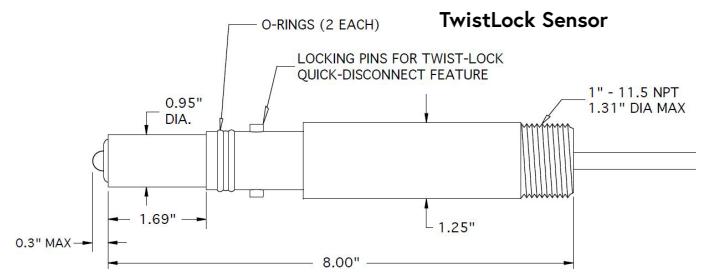
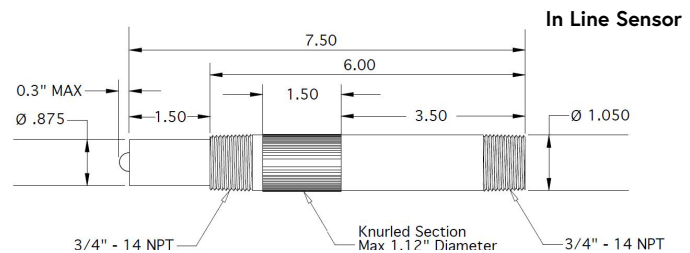
pH Glass features include:

- Unique low-profile thick-wall break-resistant parabolic pH glass element.
- Ideal for high viscosity solutions or high particulate abrasive slurries.
- Substantially minimize breakage with process upsets, mechanical abuse, or accidents.
- Low-profile platinum ball style ORP sensing element.
- Suitable for applications requiring resistant to high velocity flow, high pressure installations up to 200 psig, as well as aggressive dissolved gases and volatile organic solvents with suitable options invoked.
- Saturated sodium (brine) resistant pH glass elements.
- High-temperature & pressure-resistant pH glass elements.
- Supports down to -35° C to 150° C at pressures up to 200 psig.
- Wide range pH glass
- Low impedance pH glass
- Dual pH & ORP All-In-One

Integrated Modular Sensor Design

Specialized pH Glasses & Platinum ORP Redox Sensing Elements. These specialized pH elements are designed not only to survive such conditions but perform with great repeatability, accuracy, and sensitivity.

- Application-specific pH & ORP sensing elements are optimized for each application.
- Solid-State Reference Junctions employ non-porous cross-linked conductive polymer optimized for each process.
- Resilient Plastic Housings
- Integrated electronics components, which include: Temperature Compensation, Solution Ground, Analog, and Smart Digital Sensor.
- Waterproofing options for fully submersible sensor assemblies.



pH & ORP Sensor Specifications

Specifications	pH Sensor	ORP Sensor
Description	pH Sensor for Tough Applications / Aggressive Media Resistant	
Temperature Range	-31° F to 300° F	
Pressure	6.9 to 1035 kPa absolute (1 to 200 psig)	
Body Type S	Submersible Hot Tap In-Line	
Junction Material	Kynar (Poly-Vinylidene-Fluoride)	
Cable Length	20 foot Standard	
Temperature Compensation	Pt1000	
Waterproofing	Standard Waterproofing	
Connection	Quick Connect Plug -NEMA 6P (-QCD)	
pH/ORP Range	0 to 14 pH	+/- 2,000 mV Absolute
Measuring Element Type	Ultra Tough Break Resistant Glass	Platinum Ball in Low Profile Configuration
Element Dimensions	8.0 mm (0.315") Diameter	5.0 mm (0.197") Diameter
Initial Impedance	<1,500 M Ohms @ 25° C	N/A
Sodium Ion Error	<0.15 pH in saturated Na solutions at 14.00 pH	N/A
Acidic Errors	<0.05 pH in HCl solutions at 0.00 pH	N/A
Reference Type	Double Junction	
Reference Half Cell	Ag/AgCl, saturated KCl	
Primary Junction	Porous Ceramic, Saturated KCl in Cross-linked polymer, interfaced to secondary junction	
Secondary Junction	Solid-state non-porous cross-linked polymer embedded in Kynar support matrix holds excess KCl assuring saturation at all temps for stability & long sensor service life	
Special Features	Acid/Fluoride, Ammonia, Chlorine, and Sulphide Gas Resistant	
Analyzer / Interface	Handheld Field Communicator, Touchscreen PLC Controller	
Storage	Item should be kept at room temperature with closed protector cap, filled with storage solution in an upright position — Shelf life warranted for 12 months from date of purchase	
Warranty	12 Month Conditional Warranty	



Rhino PCI Sensor Part Numbering Reference Guide

RH – [A1] – [A2] – [A3] – [A4] – [A5] – [A6] – [A7] – [A8] – [A9] – [A10] – [A11] – [A12] – [A13]			
Example:	RH77-PH-D-4-2-2T-NS-DJ-0-00-NA-NA-NA	Rhino Hot Tap pH Sensor - Digital Signal - for Acids, Fluorides, and HF Solutions - 301 Ohm RTD Temperature - 2 each glass protective tines on tip - no solution ground - double junction standard process - standard cable length - no cable protection tube - without preamp analog - without specials - without additional hardware	
[A1] Probe Configuration		[A4] Intended Application of Sensor	
RH71	Inline Twist Lock		
RH76	Submersible		
RH77	Hot Tap or Sanitary		
[A2] Measurement Type			
PH	pH Sensor		
ORP	ORP Sensor		
[A3] Signal Type			
A	Analog		
D	Digital		
[A8] Process Junction			[A11] Analog with Preamp
DJ	Double Junction Standard		
TJ	Triple Junction Standard		
[A9] Cable Length		[A12] Specials	
0	Standard Length: 10' Analog 20' Digital		
10	+10 Length		
20	+20 Length		
30	+30 Length		
[A10] Cable Protection		[A13] Hardware	
00	No Protective Tube		
VT	Vinyl Tubing		
BC	Shielded and Braided Reinforced Blue Cable		
		[A5] Temperature Compensation	
		AT	ACCU-TEMP Temperature Sensor
		1	3000 Ohm Balco RTD
		2	301 Ohm RTD
		3	1000 Ohm Platinum RTD
		4	100 Ohm Platinum RTD
		[A6] Protection Tines on Tip	
		NT	No Glass Protective Tines
		2T	2 Each Glass Protective Tines
		4T	4 Each Glass Protective Tines
		[A7] Grounding Solutions	
		NS	No Solution Grounding
		SG	316 Stainless Steel Solution Addition
		PG	Platinum Solution Addition

