

pH & ORP SENSORS



Designed with Tough Applications in Mind

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



(251) 418–4286

WWW.RHINOPCI.COM

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 of 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

Sealing O-Rings, 2 Places, 0.50" Apart

3/4"-14 NPT

- Integrated electronics components, which include: Temperature Compensation, Solution Ground, Analog, and Smart Digital Sensor.
- Waterproofing options for fully submersible sensor assemblies.







050

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 KCI 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	

3

Rhino PCI Sensor Part Numbering Reference Guide

RH – <u>[</u>A1] – <u>[</u> A2] – <u>[</u> A3] -	– <u>[A4]</u> – <u>[A5]</u> – <u>[A6]</u> – <u>[A7]</u> – <u>[A8]</u> – <u>[A9]</u> – <u>[A10]</u> – <u>[A11]</u> – <u>[A12]</u> – <u>[A13]</u>
Example: RH77-PH-D-4-2-2T- DJ-0-00-NA-NA-N	-NS- 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 ConfigurationRH71Inline Twist LockRH76SubmersibleRH77Hot Tap or Sanitary[A2]Measurement TypePHpH SensorORPORP SensorImage: Image: Ima	[A4] Intended Application of Sensor[A5] Temperature Compensation0General PurposeAT1High Temperature12Ultra-High Temperature23Abrasive Slurries and High Viscosity34Acids, Fluorides, and HF Solutions35Pulp and Paper Slurry Type ProcessesIOO Ohm Platinum RTD6Dissolved Sulfide (H2S, HS, and S2)NTAggrossive Dissolved Ammonia2T2 Fach Glass Protective Tines
A Analog D Digital	7 & Chlorine Gas & Volatile Organic Solvents 8 ORP 9 Saturated Sodium (Brine) Samples SG 316 Stainless Steel Solution Addition PG Platinum Solution Addition
DJ Double Junction Standard TJ Triple Junction Standard [A9] Cable Length 0 10' Analog 10' Di	[A11] Analog with PreampNANot ApplicablePREAMPAnalog Sensor withPreamp. Max SubmersibleTemperature
20' Digital 10 +10 Length 20 +20 Length 30 +30 Length	[A12] Specials [A13] Hardware NA Not Applicable NA No Hardware Required Extreme Dehydration Resistance. SS SS Hot Tap with 316 SS 1-1/4" Compression Fitting (RH77 Only) SS SS
[A10] Cable Protection 00 No Protective Tube VT Vinyl Tubing Shielded and Braided	DR is capable of being left dry for long periods of time and subject to intermittent periods of wetness. (Digital Probe Only) TI Titanium Hot Tap with 316 SS 1-1/4" Compression Fitting (RH77 Only) TR 316 SS Sanitary TRI-CLOVER 1.5", 2.0", & 2.5" Sensor Holders
BC Reinforced Blue Cable	