

Model 70 Differential pH Sensor

Features

- Differential Electrode Measurement Technique using Three Electrodes
- Replaceable Equitransferant Salt Bridge and Reference Reservoir
- Patented*, Non-fouling, Porous Teflon® Liquid Junction
- Non-metallic Solution Ground for Enhanced Chemical Resistivity
- Detachable Cable with Built-in Encapsulated Preamplifier
- Capillary Temperature Sensor for Quick Response
- TOP68 Connector Allows Easy Sensor Removal
- Glass Reinforced Ryton® Body
- Versatile Body Style with 1-inch NPT Threads on Both Ends.
- Various Mounting Options Available
- For use with Most Manufacturers Analyzers



Applications

- Water and Wastewater Treatment
- Coagulation and Flocculation
- Process Monitoring and Control
- Acid and Caustic Neutralization
- Plant Effluent
- Pulp Stock Batches
- Ore Separation
- Cooling Towers
- Plating Baths
- Separation Systems
- Boiler Flue Gas Scrubbers
- Textile Dye Processes
- General Industrial Service

Description

The Model 70 uses the field proven, three-electrode differential measurement technique; the pH and reference electrodes are compared to a ground electrode for excellent measurement accuracy, even in harsh chemical applications. The sensor body is offered in glass-reinforced Ryton for chemical compatibility in most process solutions. The replaceable salt bridge and refillable reference reservoir insures a long service life in applications containing sulfides (H₂S) and metals such as lead, mercury, and silver. It will maintain a constant reference cell potential by resisting dilution over time with pressure and temperature changes. The patented porous Teflon® reference junction resists fouling and chemical attack.

The sensor cable has a built-in preamplifier to boost the pH signal while ensuring a quiet and reliable measurement. The transmitter powers the preamplifier. A self-powered preamplifier is also available as an option for use with analyzers which do not have an adequate voltage source. The capillary temperature sensor design places the temperature element within the pH sensitive membrane for fast and accurate temperature measurement and compensation.

The 1-inch NPT versatile body allows mounting into a standard 1-inch pipe tee or onto the end of a pipe for immersion into a vessel. Mounting adapters are available in CPVC or 316 SS for direct replacement of GLI sensors used in 1-½ inch threaded pipe tees. Other materials are available upon request.

Specifications

Model 70	Specifications
Body Material	Ryton®
O-ring	Viton®
Other Wetted Materials	Teflon®, carbon, epoxy
Measuring Range	0-14 pH
Operating Temperature Range	-5 to 95°C (23 to 203°F)
Temperature Element	300 ohm NTC; PT100, PT1000, and 3Kohm also available
Pressure Range	100 psi @ 95°C (203°F)
Maximum Flow Rate	Not flow sensitive
Sensitivity	Less than 0.005 pH
Stability	0.03 pH per 24 hours, non-cumulative
Sensor Cable (Detachable from Sensor)	6 conductor (3 twisted pair each pair shielded with a common drain wire), overall Mylar shield with drain wire, UV enhanced Santoprene jacket; rated to 135C. Encapsulated differential amplifier built into cable.

*United States Patent No. 4,128,468

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Ordering Information

Ordering Code	Description
M-70	Differential pH sensor with 300 ohm NTC and TOP68 connector.
Z7075	TOP68 Cable with transmitter powered preamplifier, 20 ft (6.0M) (for use with transmitters 6-20V)
Standard Options	
PT100	PT100 temperature compensation
PT1000	PT1000 temperature compensation
ORP	Platinum ORP electrode
Other Available Options	
3KTC	3 Kohm temperature compensation (non-capillary design)

Accessories

Part Number	Description
Z8160	CPVC adapter; 1 ½ inch MNPT x 1 inch FNPT
Z8161	316 SS adapter; 1 ½ inch MNPT x 1 inch FNPT
Z6000	Replacement salt bridge
Z7307	Replacement reference solution, 500 mls
Z7076	TOP68 Cable with transmitter powered preamplifier, 30 ft (9.1M)
Z7077	TOP68 Cable with self-powered preamplifier, 20 ft (6.0M)
Z7078	TOP68 Cable with self-powered preamplifier, 30 ft (9.1M)

Wiring Information

Measurement	Wire Color
pH electrode	Red
Reference Electrode	Green
Shield (both inner and outer shield)	Clear with Black Band
Temperature	Black
Temperature	Yellow
Supply Power for transmitter powered preamplifiers (+ terminal) -V to +V = 6 to 20V	White
Power (- terminal)	Blue

