Model 12 Process pH Sensor

Features

- Patented Plunger[1] pH Electrode
- Concave or Flat Sensor Design
- Choice of High Temperature or High pH Measurement
- Patented Porous[2] Teflon® Liquid Junctions
- Double Junction Reference Cell
- **New** Cast-In-Place Solid Reference Electrolyte
- Optional Integral Unity Gain Preamplifier
- **New** Capillary TC Design
- **New** Non-Metallic Solution Ground

Applications

- Water and Wastewater Treatment
- Coagulation and Flocculation
- Process Monitoring and Control
- Pulp Stock Applications
- Ore Separation

Description

The Model 12 process pH sensor features the Plunger pH electrode design which permits 360° sensor mounting. The porous Teflon® liquid junction resists fouling and chemical attack. Double junction reference cells increase the service life in applications containing sulfides (H_2S) and metals such as lead, mercury and silver. The new cast-in-place solid reference electrolyte helps maintain a constant reference cell potential by resisting dilution over time with pressure and temperature changes. The new capillary temperature sensor design places the Pt100 TC behind the pH sensitive membrane for accurate temperature compensation and measurement.
The IP68 environmental rating protects the high impedence pH electrode signal from moisture resulting from condensate build up in submersion pipes.

Specifications

Model 12	Specifications
Body Material	Ryton®
O-Rings	Viton®
Measuring Range	0 to 14 pH
Temperature Range	0 to 80°C (32 to 176°F) Standard Version 0 to 110°C (32 to 230°F) High Temp Version
Pressure Range	0 to 6.9 bar (0 to 100 psig) Standard Version 0 to 10.3 bar (0 to 150 psig) High Temp Version
Drift	< 2.0 mV/week
Response Time @ 25°C	95% of reading in 10 seconds
Asymmetry Potential	7.0 pH ± 0.2 pH
Theoretical Slope	±59.16 mV / pH unit @ 25°C (77°F)
Sodium Error	< 0.05 pH in 0.1 Molar Na+ Ion @ 12.8 pH
pH Glass Bulb Impedance @ 25°C	150 Megohms

[1] United States Patent No. 4,333,812
[2] United States Patent No. 4,128,468
® Teflon and Viton are Registered Trademarks of E.I. Dupont de Nemours Company
® Ryton is a registered trademark of Philips 66 Co.

INNOVATIVE SENSORS INC.
REGISTERED TO ISO 9001
CERTIFICATE NO. 00-1011

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New Zealand

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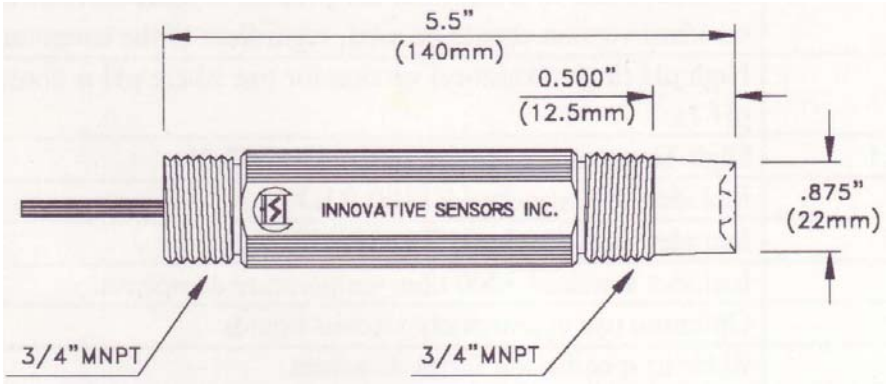
Ordering Information

Model 12 pH sensor features a concave probe design with a short insertion length of 12.7mm (0.5"). Concave sensor designs tend to be self-cleaning and are recommended for flow applications containing suspended solids.

Model 12 Ordering Information	Description
M -12	Process pH Sensor with Concave Sensor Design Double Junction Reference Cell, KCl/AgCl and KNO_3 No Temperature Compensation ¾" MNPT Process Connections 12.7 mm (0.5") Insertion Length 4.6m (15 ft.) Cable
Options	**Description**
PT100	Temperature Compensation, 100 Ohm RTD
HT	For continuous high temperature use, >80°C (176°F)
M-12-PT100-HT	**Example Order Number**



Submersion Installation

- ¾" Submersion Pipe (By Others)
- Attach Sensor to Pipe with ¾" Union (By Others)
- Use Teflon® Tape on Sensor to permit removal for routine maintenance
- Sensor must remain in solution at all times

Wire Colours:
Black = pH - reference (REF)
Clear = pH + internal (INT)
Red = PT100 (TC)
White = PT100 (TC)

Red/White are interchangeable.

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