

General Purpose pH / ORP Sensor

- Enhanced performance and increased life with minimal glass cracking provided by field proven ACCU-Glass™ pH glass formulation
- New $\frac{3}{4}$ " and 1" mounting threads meet a variety of application installation requirements
- Solution ground provides enhanced diagnostic capability
- Extended sensor life provided by double junction reference
- Operates in sub-zero temp down to -10°C and up to a maximum of 100°C
- Responds to changes in pH at a minimum conductivity of 0.1 μ S/cm when used with the low flow cell panel



Models 3900 and 3900VP are housed in a molded PPS body, making each sensor rugged and chemically resistant



The Rosemount Analytical 3900 pH sensor by Emerson Process Management is designed for general use in the following applications:

- Algin product yield maximization (food)
- Reverse osmosis membrane protection in beverage production (beverage)
- Spent acid measurement in chemical neutralization process (chemical)
- Optimizing indigo dye process (textile)
- Cooling water condensate monitoring (power)
- Refinery wastewater contaminant treatment (refinery)
- Cyanide leaching process measurement (chemical)
- Wort/water interface monitoring in breweries (beverage)
- Monitoring Reverse osmosis process for removing dissolved solids from filtered raw water (water)

FEATURES AND APPLICATIONS

Installation is easily achieved through the wide variety of mounting configurations. Both models feature 1" and 3/4" inch (MNPT) front and rear facing connections for insertion, submersion, or flow-through pH and ORP applications.

The 3900 and 3900VP are provided with a double junction reference, which protects the reference element from poisoning ions – such as ammonia, chlorine, cyanides, and sulfides – in the process. Both models are made with porous Teflon® junction positioned near the measuring electrode.

The 3900 and 3900VP are housed in a molded PPS body, making each sensor virtually indestructible and chemically resistant. Complete encapsulation eliminates leakage or high humidity problems traditionally found in other pH/ORP designs. The simplified construction, designed with user convenience in mind does not require electrolyte (KCl) replenishment or any high maintenance troubleshooting procedures.

The 3900VP is offered with a watertight sensor-to-cable connector which eliminates re-wiring and cable twisting when replacing sensors. The Variopol VP multiple pin connector is an integral part of each sensor model and uses a mating VP cable. Once the cable is installed and wired to the analyzer, sensors are easily replaced without replacing the cable and without rewiring the analyzer. Also the cable can be disconnected from the sensor before removal from the process which eliminates cable twisting.

Both models are combination sensors (pH, reference, and temperature within sensor body) and measure pH or ORP (Oxidation/Reduction Potential) of aqueous solutions in pipelines, open tanks, or ponds. Models 3900 and 3900VP are suitable for virtually all applications and are compatible with Rosemount Analytical and other manufacturers' instruments.

PHYSICAL PERFORMANCE AND SPECIFICATIONS

Measured Range: pH: ACCUGLASS 0-14
ORP: -1500 to +1500 mV

Percent Linearity Over pH Range:

Range	Linearity
0 - 7	97%
1 - 7	98%
4 - 7	98%
7 - 10	99%
7 - 12	97%
7 - 13	96%
7 - 14	95%

Operating Temperature: -10° to 100°C (14° to 212°F)
Automatic temperature compensation -10° to 100°C (14° to 212°F)

Maximum Pressure: 790 kPa [abs] (100 psig) at 100°C (212°F)

Conductivity: Responds to changes in pH at a minimum conductivity of 0.1µS/cm when used with the low flow cell panel. The sample flow rate must be controlled to 2gph (7.6L/hr).

Materials of Construction: stainless steel, glass, Teflon®, polyphenylene sulfide (PPS), EDPM and silicone

ORP Electrode: Platinum

Process Connections:

Front facing: 3/4" and 1" MNPT

Rear facing: 1" MNPT

Integral Cable: 32 ft (10m) cable with integral SMART preamp; 15 ft (4.7m) cable without preamp sensor

VP8 Cable: use 24281-XX, 2.5 ft (.8m) to 100 ft (31m)

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