

PER_{pH}-X™ High Performance pH/ORP Sensors for High Temperature

- SMART enabled
- High Temperature design increases sensor life when used in elevated temperatures up to 155 °C
- Field proven AccuGlass™²pH glass formulations minimize glass cracking, resulting in enhanced performance and increased life
- Longer sensor life because of refillable reference electrolyte and replaceable reference junction
- Rugged Titanium and Ryton®³ outer body construction

¹ PER_{pH}-X is a trademark of Rosemount Analytical.

² AccuGLASS is a trademark of Rosemount Analytical.

³ Ryton is a registered trademark of Chevron Phillips Chemical Company.

These new Rosemount Analytical Inc. products by Emerson Process Management are designed for use in the following Industries:

Pulp & Paper, Metals & Mining, Chemical Processing, Petroleum Refining, Power, Wastewater and General Applications



MODEL 3300HT

155°C at 400 psig

INSERTION/SUBMERSION DESIGN allows for variable insertion depths and simple sensor removal without cable twisting



MODEL 3400HT

155°C at 400 psig

RETRACTABLE DESIGN allows sensor to be removed for calibration and maintenance without process shutdown



MODEL 3500VP

120°C at 100 psig

FRONT AND REAR FACING 1" MNPT THREADS allow use in either insertion or submersion applications.



ROSEMOUNT
Analytical


EMERSON
Process Management

FEATURES and APPLICATIONS for MODELS 3300HT, 3400HT and 3500P

Rosemount Analytical **PERpH-X™**. High Performance pH/ORP sensors incorporate several design innovations that prolong the life of the pH sensor in difficult applications. High temperatures cause deterioration of the glass pH sensing membrane, depletion of the reference electrolyte, and thermal stress on all sensor components. Use the Models 3300HT, 3400HT and 3500P to lower your total cost of ownership and avoid frequent sensor replacement.

SMART option becomes enabled when used with the Model 1056, 1057 Analyzer and on 6081P wireless transmitter. The pH-loop capabilities include auto-recognition of the SMART sensor, automatic upload of calibration data and associated time stamp, historical recording of pH diagnostics (slope, offset, reference impedance, glass impedance). This trending data allows technicians to predict frequency of maintenance and estimate sensor life for a particular process condition. Additional SMART features include factory calibration, resetting SMART sensor calibration data with user menus without power cycling, and manufacturing information.

The **PERpH-X™** sensors contain an enhanced double junction reference that is excellent for extreme applications. The outer gel based

reference retains viscosity to resist the pumping actions of temperature and pressure. Predictive maintenance of the outer reference can extend the ultimate life of the pH sensor considerably by preventing concentration changes in the inner reference.

Reference flow into the process stream is controlled using a porous Teflon junction that can be replaced in the event of fouling or plugging. The specially designed junction is chemically resistant and has a large surface area to maintain a steady reference signal in dirty or oily applications.



- High Temperature Kit
- Bio-Film Resistant Kit
- Poisoning Resistant Kit
- Oil Resistant Kit
- Scaling Resistant Kit
- Metals Resistant Kit.

Six different SOLUTIONS Kits are available
Each kit uses a specific chemistry to extend the life of the reference electrode in its targeted application.

SPECIFICATIONS

Sensor Type: PERpH-X

Models 3300HT/HTVP
Models 3400HT/HTVP
Models 3500P/3500VP

Measured Range:

pH range: 0 - 14 pH
ORP range: -1500 mV to 1500 mV

Operating Temperature:

Models 3300HT/3400HT without preamplifier:
5°C to 155°C (41°F to 311°F);
Model 3300HTVP SMART enabled (-70): up
to 85°C (185°F)
Model 3400HTVP SMART enabled (-70): up
to 110°C (230°F)
Models 3500P/3500VP: 5°C to 120°C (41°F
to 248°F)

Maximum Process Pressure:

Models 3300HT/3400HT: 400 psig (285g
kPa [abs])

Models 3500P/3500VP: 100 psig (790 kPa
[abs])

Maximum Pressure at Retraction or Insertion (Model 3400HT only):

64 psig (524 kPa [abs]) Code 21
35 psig (343 kPa [abs]) Code 25

Materials: Titanium, Ryton®, Teflon⁴, glass,
and user specified o-ring material

Process Connections: NONE

3300/3400 must use 1 inch compression
process connector (PN 23166-00 or 23166-01).

Models 3400HT can be inserted through a
ball valve

Models 3500P/3500VP 1 inch MNPT, Front
and Rear facing Threads

VP8 Cable: use PN 24281-00

⁴ Teflon is a registered trademark of E.I. du Pont de Nemours and Company.