Foxboro® 876PH Transmitter*

For pH, ORP And ISE Measurement

Model 876PH Transmitter Description

The Foxboro® brand Model 876PH is a 2-wire loop powered intelligent transmitter that, when used with appropriate electrochemical sensors, provides measurement, local display, and transmission of pH, ORP (Oxidation-Reduction Potential), or ISE (Ion Selective Electrode) concentration. The transmitter outputs a HART digital signal and a 4 to 20 mA analog output.

For pH, ORP or ISE applications requiring a two-wire, loop powered transmitter, the Foxboro brand Model 876PH with Foxboro sensors provides the most flexible solution for wide ranging application conditions.

Unlike other pH measurement solutions, Foxboro’s offering provides the widest choice of sensing and configuration selections, resulting in the best possible match for your application. The result is long service life, quick and easy application set changes, and savings in both material and labor costs.

Summary

The Foxboro Model 876PH is a full featured transmitter for pH, ORP or ISE applications. It offers easy configurability, a rugged field-mounted enclosure for the most challenging industrial environments, and agency certifications for hazardous electrical areas. HART communications and a time saving HART Device Type Manager integrates with your plant asset management strategies.

Business Value

Unlike other pH measurement solutions, Foxboro’s offering provides the widest choice of sensing and configuration selections, resulting in the best possible match for your application. The result is long service life, quick and easy application set changes, and savings in both material and labor costs.

* Foxboro also offers Smart Sensor and Transmitter technology. For information on these products, refer to Foxboro Datasheet Part No. FD-DS-A-001
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Features / Benefits

Application Flexibility:
Transmitter can be rapidly customized to specific application requirements. One basic transmitter handles all applications, simplifying inventory.

Simultaneous pH and ORP Measurement:
One transmitter handles two measurements, and outputs both measurements digitally via HART, greatly reducing cost and space requirements.

Sensor and Transmitter Diagnostics:
Sensor faults such as broken glass and coated reference are continuously checked. This feature allows maintenance to be better managed, reducing costs and ensuring asset availability.

Save and Restore Configurations:
Up to two unique configuration profiles can be saved, facilitating a quick and easy change, saving operator time and cost.

HART DTM: A time-saving HART Device Type Manager (DTM) simplifies configuration and troubleshooting, and provides trend graph capabilities.
Model 876PH Transmitter for pH, ORP, ISE Specifications

<table>
<thead>
<tr>
<th><strong>Accuracy:</strong></th>
<th>+/- 0.009 pH with 3-wire, 1000 ohm RTD</th>
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<td><strong>Stability (After 6 Months):</strong></td>
<td>+/- 0.009 pH with 3-wire, 1000 ohm RTD</td>
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| **NAMUR Compliance:** | NAMUR NE 43 for analog overrange and underrange  \
|                       | NAMUR NE 21 for interference immunity requirements |
| **Measurement Range (Selectable):** | -2 to +16 pH  \
|                       | -2000 to +2000 mV ORP  \
|                       | 0 to 9999 ppm Ion Selective Electrode concentration |
| **Temperature Inputs:** | 100 ohm platinum RTD, 2 or 3 wires  \
|                       | 1000 ohm platinum RTD, 2 or 3 wires  \
|                       | 3000 ohm Balco RTD, 2 wires |
| **Output Hold:** | Hold OFF, Hold at PRESENT value, or Hold at MANUAL value |
| **Auto Buffer Recognition:** | Six (6) tables of preprogrammed buffer values |
| **History Log:** | 100 most recent events stored in nonvolatile memory |
| **Environmental and Corrosion Resistance:** | IP66 and NEMA 4X |
| **Electrical Safety Specifications:** | Approved by FM, ATEX, CSA, IECEx and NEPSI. Zone 0 and Zone 2, Divisions 1 and 2 |
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Model Code Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
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<tr>
<td>Intelligent Transmitter for pH, ORP and ISE Measurement</td>
<td>876PH</td>
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Output Signal

- Intelligent; Digital HART and 4 to 20 mA: -T

Enclosure Mounting

- Panel Mounting: W
- Surface Mounting: X
- Pipe Mounting (Horizontal or Vertical Pipe): Y

Electrical Safety (contact Foxboro for the current status of certifications)

- ATEX intrinsically safe; II 1 G, Ex ia IIC, Zone 0: AA
- ATEX energy limited for II 3 G, Ex nL IIC, Zone 2: AN
- CSA intrinsically safe; Class I, II, III, Division 1; and Ex ia IIC, Zone 0: CA
- CSA for Class I, II, III, Division 2; and energy limited for Ex nL IIC Zone 2: CN
- FM intrinsically safe; Class I, II, III, Division 1; and Ex ia IIC, Zone 0: FA
- FM nonincendive for Class I, II, III, Division 2; and energy limited for AEx nL IIC, Zone 2: FN
- IECEx intrinsically safe; II 1 G, Ex ia IIC, Zone 0: DA
- IECEx energy limited II 3 G, Ex nL IIC, Zone 2; and intrinsically safe II 3 G, Ex ic IIC, Zone 2: DN
- NEPSI, Ex ia IIC Ga; intrinsically safe for Zone 0: NA
- NEPSI, Ex ic IIC Gc; intrinsically safe for Zone 2: NN
- No Certification: ZZ

Optional Selections

- Special per Engineering Order (a): -1
- Storm Door (b): -7
- Detailed Instruction Manual (c): -M

(a) Provides ability to preconfigure the instrument with custom temperature compensation.
(b) Used to protect front panel controls, particularly in field mounting applications.
(c) A CD-ROM is shipped as standard with each transmitter and Process Electrode Seal.