

Process pH/ORP Analytical Transmitter

The OPM2x3 is a high-precision process pH/ORP transmitter offered in both field mount (OPM253) or panel mount (OPM223) packages, providing the utmost in installation flexibility. Designed for industrial monitoring and control, it is available with two programming versions (Standard and Plus) and covers the widest possible range of pH and ORP applications.

The OPM2x3 supports glass or antimony pH sensors and platinum ring ORP probes. PT100 temperature sensors can be connected as standard to correct pH readings. The plus programming package also supports PT1000 and NTC 30K temperature sensors for greater resolution. A second output from the unit can be configured as a temperature signal.

It is equipped with a large, two-line LED display and 6 button user interface, facilitating easy operation through an intuitive menu system. Calibration employs a simple 2 step procedure and includes built-in plausibility checking that will alert the user if, for instance, buffers are used in the wrong order. The plus programming package includes advanced diagnostics that continuously check sensor health and probe response.

The transmitter is equipped with full PID controller capability configurable to use either relay outputs or an analog output to control pH/ORP to the desired setpoint. The plus programming package includes an advanced neutralization control capability that utilizes separate PID settings for acid and base addition.



General Specifications

Measurement Range	pH	-2 to 16 pH (min span 1 pH)
	ORP	-1500 to +1500 mV (min span 50mV) / 0 to 100%
Resolution	pH	0.01 pH
	ORP	1mV/0.1%
	Temperature	0.1°C
Measurement error	pH	max 0.5% of measurement range
	ORP	max 0.5% of measurement range
	Temperature	max 1.0% of measurement range
Temperature Range	Pt100	-50 to +150°C (-58 to +302°F)
	Pt1000 (Plus)	-50 to +150°C (-58 to +302°F)
	NTC 30K (Plus)	-20 to +100°C (-4 to +212°F)
Enclosure Dimensions	OPM223 panel mount	1/4 DIN (~4 x 4")
	OPM253 field mount	9.72 x 6.69 x 4.53"
Power Supply Options		100/115/230 V AC +10/-15 %, 48 to 62 Hz 24 V AC/DC +20/-15 %
Max Cable Length to Sensor		50 m (164 ft)
Digital Inputs	2	10 to 50 V, Max 10mA
Analog Output	1 (optionally 2)	0/4...20mA, active, galvanically isolated, 2.4 or 22mA on alarm
Relay Outputs	up to 4 max	C form, 250VAC, 30Vdc, 2A max
Status/Alarm	1	C form, 250VAC, 30Vdc, 2A max
Power Consumption		max 7.5 VA
Ambient Temperature		-10 to +55°C (+14 to +131°F)
Relative Humidity		10 to 95%, non-condensing
Ingress Protection	OPM223	IP 54 (front), IP 30 (housing)
	OPM253	IP 65 / NEMA 4X
Material	OPM223	Polycarbonate / Polyester
	OPM253	ABS / Polyester

Features and Benefits

- **Timer Function for Reagent Addition and Probe Cleaning:** Provides greater resolution and accuracy for applications with non-linear response
- **Relay Output Manual Override:** Allows manual triggering of outputs for cleaning or additional reagent addition
- **LED Display and Relay Status Indicators:** Complete parameter and control status at a glance
- **Full PID Control Capability:** Automated output controls pumps/valves to maintain process at setpoint
- **Ultrasimple Two-Point Calibration with Plausibility Check:** Menu driven calibration routine that double checks buffer values and response
- **Advanced Diagnostics:** Predictive maintenance capabilities to ensure reliable performance and reduce downtime

Applications

- **Water Treatment:** Monitoring the of pH drinking water and wastewater treatment processes
- **Chemical Processing:** Controlling chemical reactions and ensuring product quality by measuring pH or ORP
- **Food and Beverage:** Ensuring product consistency and safety by monitoring pH levels in various stages of production
- **BioPharma/Pharma:** Maintaining precise pH levels in drug manufacturing and quality control processes
- **Pulp and Paper:** Monitoring pulping, bleaching, and paper manufacturing processes
- **Power Plants:** Measuring pH in boiler feedwater and cooling water systems to prevent corrosion and scaling
- **Mining:** Monitoring pH in leaching processes and wastewater treatment
- **Brewing:** Ensuring optimal fermentation conditions and product quality

Related Equipment and Accessories

- **Weather Cover**
- **Post Mounting Kit**

Additional Features in the Plus Programming Package

- **User Defined Current Output Curve:** For greater accuracy and resolution when working with non-linear response processes
- **Automatic Cleaning Trigger on Alarm/Limit Violation:** Initiates a cleaning cycle on a sensor alarm or when pH/ORP exceeds a set limit
- **Sensor Check System for pH Glass and Reference Cell:** Continuously checks sensor health for any issues
- **Measurement Live Check for Fouling:** Monitors sensor response to make sure reading is live and not fixed at one value
- **Neutralization Controller:** For applications with widely varying pH. Has individual control settings for Acid and Base addition



Panel Mount (OPM223) & Field Mount (OPM253)