



ORP15 ORP/Temperature Instrument

Accurate, economical handheld measurement

The newest EcoSense® pen-style instrument provides an easy-to-use graphic interface, simple one-hand operation, memory, and low cost of ownership over the life of the product. The ORP15 measures ORP (absolute and relative mV) and temperature with the following features:

- IP-67 waterproof housing
- Replaceable electrodes
- 50-set memory (absolute and relative ORP, temp, date and time stamp)
- Absolute and relative mV readings
- Low battery indicator
- “Hold” feature locks readings on display
- Graphic display with on-screen instructions

The ORP15 is designed for quick, accurate results in an economical platform. The ability to measure ORP and temperature in a simple, compact instrument allows for the most convenient sampling method available. With a one-year instrument warranty and six-month electrode warranty, the ORP15 will fit your needs for an easy-to-use mV instrument for food (vegetable washing and sanitizers), swimming pools, wastewater, and aquaculture.

Applications include:

- Pulp Bleaching
- Bleach Production
- Water/Wastewater
- Aquaculture (Ozone)
- Fruit & Vegetable Washing
- Cooling Towers
- Swimming Pools/Spas
- Metal Finishing
- Poultry Processing

Pure
Data for a
Healthy
Planet.®

*Compact design and
affordable price*



Food, swimming pools, wastewater and aquaculture are typical applications for the ORP15 pen.



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ORP15 (System Specifications)

Temperature	Range	-5.0 to 99.9 °C (23.0 to 211.8 °F)
	Resolution	0.1 °C (0.2 °F)
	Accuracy	±0.3 °C (±0.6 °F)
ORP	Range	-1200 to 1200 units
	Resolution	1 mV
	Accuracy	1 mV ±1 LSD

Additional Technical Specifications

Operating range	0.0 to 50.0 °C (32.0 to 122.0 °F)
Water resistance	IP-67 waterproof case
Weight with batteries	105 grams (3.7 ounces)
Offset range	User input from -999 to +999 mV
ATC Probe	Thermistor, 10kΩ / 25°C
Battery	Four LR44 alkalines included with purchase
Battery life	Approximately 40 hours (low battery indicator)
Memory	Non-volatile; stores 50 sets (absolute and relative ORP, temperature, date and time stamp)

ORP15 Ordering Information

ORP15	Waterproof, pen-style instrument with manual and electrode
605123	Replacement ORP electrode
580	Carrying case, soft-sided

ORP Introduction

Oxidation Reduction Potential (ORP) is an indication of a solution's ability to oxidize or reduce another solution. It is a ratio of both oxidized to reduced species in a solution. Some commonly used oxidizers include chlorine (pools, spas, water treatment, bleach production, pulp bleaching, fruit and vegetable washing, poultry processing), ozone (commercial aquariums, water disinfection), bromine, sodium hypochlorite, and hydrogen peroxide. Examples of reductants include sodium bisulfite and sulfur dioxide. The terms "ORP" and "Redox" are both commonly used.

ORP Theory

ORP measurements and electrodes are similar to pH measurements. While pH measures hydrogen ion activity, ORP measures electron activity indicating the oxidizing or reducing ability of a solution. Essentially, a reducing agent is a substance capable of donating an electron, where an oxidizing agent is capable of accepting an electron. There can be no oxidation without simultaneous reduction.

Rust is a good example of oxidation/reduction. Oxygen combines with iron to form iron oxides. In this process, the iron is oxidized and the oxygen is reduced. More pertinent to water treatment is the oxidation/reduction of chlorine reacting with bacteria or algae.

Bacteria and algae are essentially hydrocarbons and chlorine is a powerful oxidizing agent. Basically, chlorine destroys bacteria and algae by literally burning their carbon and hydrogen into carbon dioxide and water. When all of the oxidizing and reducing materials have reacted, an equilibrium is reached and there is usually a surplus of one or the other. It is this surplus material that creates the oxidation or reduction potential of a solution. The ORP15 measures this potential to provide a mV reading of the solution.

For more information about this product, please call YSI at 800-897-4151. You may also send e-mail inquiries to ecosense@ysi.com or visit www.ysicosense.com.