



## 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

#### *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*

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.



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



To order, or for more information, contact YSI Environmental.  
 +1 937 767 7241  
 800 897 4151 (US)  
 www.ysicosense.com

YSI Environmental  
 +1 937 767 7241  
 Fax +1 937 767 9353  
 environmental@ysi.com

Endeco/YSI  
 +1 508 748 0366  
 Fax +1 508 748 2543  
 systems@ysi.com

SonTek/YSI  
 +1 858 546 8327  
 Fax +1 858 546 8150  
 inquiry@sontek.com

YSI Environmental Gulf Coast  
 +1 225 753 2650  
 Fax +1 225 753 8669  
 environmental@ysi.com

YSI Hydrodata (UK)  
 +44 1462 673 581  
 Fax +44 1462 673 582  
 europe@ysi.com

YSI Middle East (Bahrain)  
 +973 1753 6222  
 Fax +973 1753 6333  
 halsalem@ysi.com

YSI (Hong Kong) Limited  
 +852 2891 8154  
 Fax +852 2834 0034  
 hongkong@ysi.com

YSI (Qingdao) Limited  
 +86 532 575 3636  
 Fax +86 532 571 0101  
 ysiqd@ysiqd.com.cn

YSI Nanotech (Japan)  
 +81 44 222 0009  
 Fax +81 44 221 1102  
 nanotech@ysi.com

**ISO 9001**  
**ISO 14001**

Who's Minding the Planet?, EcoSense, and Pure Data for a Healthy Planet are trademarks of YSI Incorporated.

©2007 YSI Incorporated  
 Printed in USA 0107 W28-01



YSI incorporated  
 Who's Minding  
 the Planet?®

## 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](mailto:ecosense@ysi.com) or visit [www.ysicosense.com](http://www.ysicosense.com).