SuperOX high temperature oxygen sensor monitors / controls combustion efficiency by enabling manual / automatic adjustment of air/fuel ratio

**SuperOX Applications**

- Direct-fired furnaces (reheat, annealing, tunnel)
- Glass furnaces (slide-fired, end-fired, float, container, and fiberglass)
- Power Generation - boilers (gas-fired and coal-fired)
- Ceramic and brick kilns
- Petrochemical - incinerators, after-burners, package boilers, sulfur burners

**SuperOX Specifications**

- **Process variable range:** $8.77 \times 10^{23}$ to 20.9% Oxygen
- **Temperature range:** 1150 - 3000 °F (650 - 1650 °C)
- **Sensor impedance:** less than 20 K ohms at 1700 °F
- **Sensor output:** 0 to 1250 mVDC
- **Response time:** less than 1 second
- **Sheath material:** 99% Alumina or Silicon Carbide
HP15/HP6500

Self-heated oxygen measurement and control system used where standard, unheated in situ probes cannot be installed for accurate measurement

SELF-HEATED AND EXTRACTIVE OXYGEN CONTROL SOLUTIONS

HP15 Includes:
- Reference Air System
- Model 9120 PID Controller and O₂ Alarm
- 4-20mA Process Variable Re-transmission
- On-board Sample Pump
- Sample Filter & Flow Meter (Exterior)
- Color Touch Screen display
- Probe Care (Burnout solenoid)
- Interfaces to HP3000 - Heated Probe Enclosure (P/N 13462) or HP6500 Probe Heater (P/N 1350100)

Radiant Tube Oxygen Monitoring System

e-TRIM Burner Management System

e-TRIM Benefits
- Reduced time to heat
- Lowered fuel and operational costs
- Reduced tube maintenance
- Increased utilization
- 3.5” Color touch screen display
- Data logging to flash memory
- Remote burner status indication through web browser
- Multi-sensor inputs
- Ethernet communications

Typical combustion equation: \( \text{CH}_4 + 3\text{O}_2 + 4\text{N}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O} + \text{O}_2 + 12\text{N}_2 \)