

OXYFIRE

High-Temperature In-Situ Oxygen Sensor for Combustion Trim Control Applications

Oxyfire is Industry's Most Powerful Weapon in the battle against skyrocketing fuel costs!



TUV
CERTIFIED

CE
MARKED

MAXIMIZE Combustion Efficiency

MINIMIZE NO_x formation

REDUCE fuel costs

Providing dependable and verifiable oxygen measurement in the fossil fuel-fired environments found in most steel, glass, power generation, petrochem and petroleum refining, as well as kilns and incinerator applications. Oxyfire users worldwide include PPG, Owens Corning, North Star Steel, NIPSCO, Entergy, Hylsa, LTV, Saint Gobain and many others.

Oxyfire is a low-cost, Clean Air Act-compliant technology.

Oxyfire “Measures where it Matters” in the combustion chamber, close to the source of combustion. So response to combustion atmosphere change is instant and precise and there is no need for the compensation of an extractive or heated system.

Features and Performance Advantages:

- High temperature capability (550°C-1600°C)
- Most accurate/rapid response
- Integral T/C
- On-line verification
- Patented high temperature ceramic “boot”
- No external power, calibration or artificial heating required
- Intrinsically safe*
- TÜV certified
- CE marked
- Wet O₂ reading vs. dry reading

Oxyfire



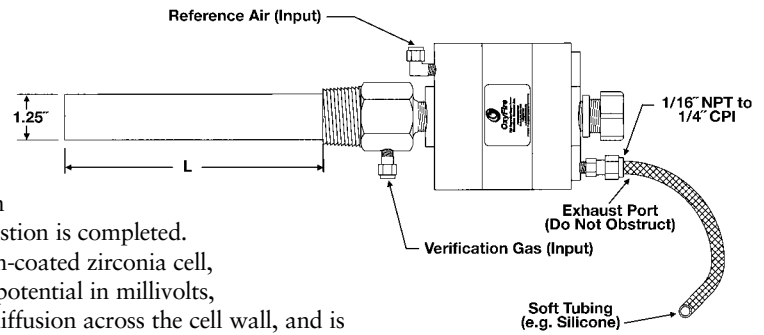
**Marathon
Sensors Inc.**

Oxyfire

Operation

Oxyfire works by precisely measuring the net concentration of oxygen in a process; i.e. the amount of oxygen that remains after combustion is completed.

At its core is the platinum-coated zirconia cell, which measures the emf potential in millivolts, that is generated by the diffusion across the cell wall, and is logarithmically proportional to the oxygen concentration. Also included is a required "B" type (R and S types optional) thermocouple which provides the sensor temperature needed for the O₂ calculation.



Specifications

Net O ₂ Range	PPM to 21%
Accuracy	± 1.5% of observed process variable or 0.05% O ₂ , whichever is greater
Control System Interface	Marathon VersaPro-O or Smart Transmitter panel
Response Time	Less than one second for 98% of final value.
Stability	Less than 1% deviation in signal output over the life of the sensor.
Temperature Limits:	
<i>Process</i>	550°C - 1600°C, (1022°F - 2912°F)
<i>Terminal Head</i>	Ambient to 149°C, (300°F)
Mounting	Vertical or horizontal
Construction:	
<i>Inner Tube</i>	Zirconia
<i>Outer Protection Sheath</i>	Alumina, Silicon Carbide, HR-160 high temperature alloy, Zirconia
<i>Sensor Head</i>	Air-tight, machined 6061-T6 aluminum, (cast aluminum, Class 1 available)
<i>Integral T/C</i>	Type "B" standard, "R" and "S" optional
<i>Integral Verification Port/Fitting</i>	
Sensor Insertion Lengths	6", 12", 18", 24", 30", 36", 42", 48" (non-std)
Speed of Insertion	1 inch (25.4mm) per 5 minutes
Reference Air Requirement	50 – 150 cc per minute (less than 2 psi) clean, dry air 1/4" tubing fittings
Cabling	Shielded four conductor, stranded, twisted-pair. Belden #89418 or equivalent.

* The Oxyfire oxygen sensor is a "simple apparatus" and thereby intrinsically safe per EN50 14 (1977) Clause 1.3.

Oxyfire is industry's Ultimate Answer to precise combustion trim. It is a powerful, proven cost-savings tool that will instantly and permanently reduce fuel use, and maintenance, while it improves productivity.

- If you're a steelmaker, Oxyfire offers another advantage, in that it can substantially reduce process scale.
- Helps reduce costs for fuel and "air" in Oxy-Fuel fired systems.

To find out what Oxyfire can do for YOU, talk with Marathon at (800) 547-1055 or visit

WWW.MARATHONSENSORS.COM



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