

OXYGEN SENSING TECHNOLOGY SAVES CONTAINER GLASS MANUFACTURER OVER \$120,000

A North American container glass manufacturer, using UPC-Marathon high temperature oxygen sensors, reduced their fuel consumption by \$120,000 in the first year. This is a twelve-fold return-on-investment on an installed cost of less than \$10,000.

Over the past several years, as fuel costs have increased and emissions requirements have become more stringent, industries world-wide have struggled with methods for reducing their fuel expense and emissions. Within the glass industry, several major glass manufacturers have looked to UPC-Marathon high temperature oxygen sensing technology to help control fuel usage and emissions in their container and float glass furnaces.

One company, a container glass manufacturer here in North America, installed UPC-Marathon OxyFire sensors and controls in one furnace. This manufacturer operates a reversing, end-fired furnace with two re-generators. They placed one sensor in the centerline of each regenerator. The sensor's outputs were tied to a UPC-Marathon instrument. The instrument uses the sensor signals to calculate oxygen concentration and allows the supervisory system to adjust the fuel/air ratio as needed. After more than 14 months of operation, the customer has seen significant reduction in fuel usage. By using the UPC-Marathon oxygen sensors to trim the fuel/air ratio they have achieved fuel cost savings in excess of \$120,000 per year. This customer was able to reduce fuel consumption by 2% for every 1% reduction in excess O₂. With an acquisition cost of under \$10,000 for the UPC-Marathon equipment, the company's investment has been returned more than twelve-fold and they have begun installing the sensors on other furnaces.

Prior to installing the UPC-Marathon products, oxygen levels had been monitored by periodic manual sampling. The OxyFire sensors allow for continuous, accurate oxygen measurement and control in the combustion zone. Reduction in excess O₂ will reduce emissions of combustion by-products such as SO₂, NO₂ and CO. Since installation, the UPC-Marathon products have performed with little maintenance. Sensor endurance in the aggressive environment of a container glass furnace is typically 18 months. Replacement is a simple process which can be performed by on-site personnel. UPC-Marathon Applications Engineers can assist customers in selecting the proper oxygen sensor technology and sensor placement within the furnace for optimal usage.