

COSA L YbHU f 7 cfd"

Application Data Sheet for Cosa9610 Wobbe Index Meter for HYCO (Hydrogen)



No Open Flame

The COSA 9610 BTU Analyzer's measuring principle is based on the analysis of the oxygen content in the flue gas after combustion of the sample. A continuous gas sample is mixed with dry air at a precisely maintained constant ratio. The fuel air mixture is oxidized in a combustion furnace in the presence of a catalyst at 812°C, and the oxygen concentration of the combusted sample is measured by a long life Zirconia Oxide cell. The residual oxygen provides an accurate measurement for the Combustion Air Requirement of the sample gas, which can be correlated accurately to the Wobbe Index and with a Specific Gravity cell will also provide a BTU measurement.

Application:

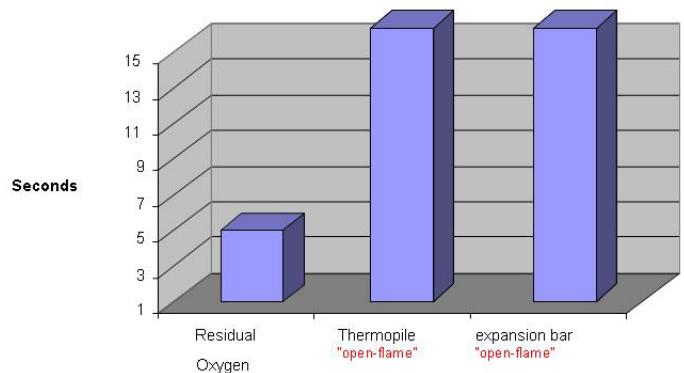
- HYCO (Hydrogen) Plant
- Quality reporting of process gas
- Process gas feed-back control
- Hydrogen stream composition 30% - 80%

User benefits:

- Less than 5 second response time and reports **Wobbe, BTU, and Specific Gravity**
- Provides a stable process control
- Improved product quality; prevents off-spec production
- Low cost of ownership



Speed of Response Calorimeters



The Cosa9610 pictured above shows a Class I, Division 2, Group B,C,D, classified outdoor installation at a HYCO facility located in the United States.

In 2002, a HYCO plant needed to install several calorimeters to measure the BTU content of the gas being brought into the plant as its feed stock. Speed of response was critical as slow measurements would not accurately capture the calorific value of the purchased gas. This could have led to process optimization errors and thousands of dollars in billing errors per month. The bar chart above shows the results of the head-to-head test of three competing methodologies for this HYCO plant, and the results above show the Cosa9610 was clearly responding to changes in composition the fastest. Typical range of the hydrogen in the process gas being measured varied from 30% to 80%. Accuracy in most all cases is better than, or equal to *typical open flame technology for High Hydrogen in stream gas for HYCO, blending, process off-gas and flare applications.