

# Effimax Fuel Efficiency System

## BOILER O<sub>2</sub> % INDICATOR AND CONTROLLER

Combustion Efficiency is a vital objective for optimal fuel use in a boiler.

The essential components of combustion:

- Fuel
- Air

During combustion fuel reacts with Oxygen to release heat. Pure Oxygen is rarely used for combustion.

Air contains about 21 % Oxygen and 79% Nitrogen by volume. If the burning is complete then the products generated will be nothing but Carbon Dioxide, Water and Nitrogen.

In reality, to achieve optimal combustion requires excess Air, because burners cannot mix fuel and air perfectly. Too little will cause poor combustion and Carbon Monoxide generation. Too much means nitrogen has been heated thus wasting fuel. The RIGHT ratio is important for high efficiency.

## MAXIMIZING EFFICIENCY BY CONTROLLING EXCESS AIR

The widely accepted practice for determining and maintaining correct amount of excess air has been flue gas analysis in boilers and process equipment

Development of Oxygen flue gas monitor has resulted in determining oxygen concentration in excess air leaving stack.

Zirconia cells are now commonly used for continuous monitoring of flue gases, essential if correct adjustments of excess air is to be achieved.

The voltage created by the Oxygen partial pressure differential is carried down to the length of the probe and through inter connecting cable to our electronics enclosure where it is conditioned in to an output signal suitable for a control system. It is used for control of air for combustion input.

## Scope of supply:

### OXYGEN % INDICATOR AND CONTROLLER SYSTEM

#### Electronic Unit

Complete electronics on plug-in type printed circuits board with power supply to operate on 220V +10% 50 c/s with:  
 Display : Digital to indicate % of Oxygen.

Control : 4-20ma output

Program able logic controller

A.C. Drive for air or fuel control

Sensor Assembly

Zirconium cell with due accessory and mounting connection arrangement housed in SS assembly.

