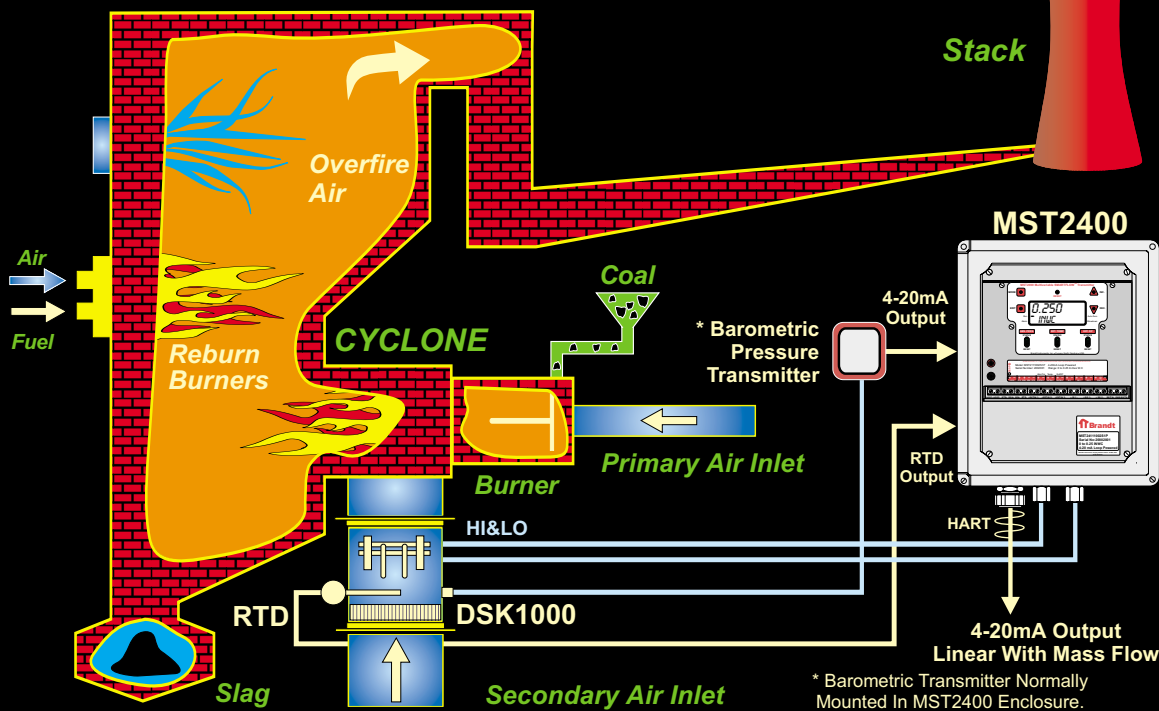


Cyclone Burners

Secondary Combustion Air Measurement



Application Bulletin No. 8

Secondary Combustion Air Flow Measurement in Cyclone Burners

The efficient and environmentally friendly operation of today's power plants hinge largely upon accurate and repeatable measurement and control of various air inputs to the boiler or furnace. *Cyclone Burners* exhibit some of the most difficult air flow applications in the industry.

Precise control of the air/fuel ratio is necessary to maximize the efficiency of a cyclone burner. The ideal air/fuel ratio results in the maximum performance of the burner with reduced *NOx* emissions in the waste gases.

The Problems

Air flow measurements in cyclone burner applications are difficult due to:

- Large duct sizes associated with the cyclone inlet, or bellmouth.
- Lack of straight run that is available in the cyclone inlet duct work to create a uniform air flow pattern. Uniform air flow patterns are essential to accurate and repeatable air flow measurements.
- Low flow rates and high turndown requirements. Differential Pressures of 0.5" W.C. Or lower are very common and with turndowns of 3 or 4:1, minimum flows can be as low as 0.1" W.C.

Thermo Brandt