



Control Instruments' standalone CalorVal BTU Analyzer optimizes burner efficiencies through measuring and controlling blended gas mixtures. These economical, fully-heated, air aspirator driven assemblies come complete and ready to install.

Measure & Control Waste Gases for Added Fuel Savings

Features and Benefits

- Compact Standalone System - Integrated Controller & Sampling System
- Direct Measure of Calorific Value - No Need to Differentiate Gases in Sample Stream
- Fast Response Time < 4 Seconds
- Universal Calibration - Highly Uniform Response to a Wide Variety of Combustibles
- Includes State-of-the-Art Electronics Plus Full Complement of Relays
- Not Poisoned by Process Contaminants, Water, Corrosives, Organo-Metallics
- Failsafe System Design
- Class 1 Div 1 Flame Cell
- Advanced Self-Diagnostics
- Indoor & Outdoor Options
- On-Line Process Control
- Real Time Measurement
- On Board Controls



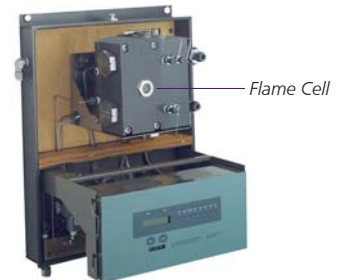
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Theory of Operation

A carefully metered flame burns at a constant reference temperature inside an explosion proof measuring cell.

A sample, drawn from the atmosphere to be monitored, is passed through the flame cell. A thermocouple measures changes in flame temperature. An increase in temperature is directly proportional to the Calorific Value (BTU).



Application Example

Consider advanced combustion equipment such as a flare stack, boiler, oxidizer or turbine engine which may need to optimize its burner efficiency for reduced fuel costs. A waste gas stream can supplement the fuel supply to achieve proper combustion while saving costs. The waste stream can consist of many renewable energy sources such as landfill gas, sludge, alcohol fuels or other biomass compounds that may be able to self-sustain the equipment without added fuel.

To do this, continuous monitoring of the waste stream is necessary to identify the energy content or calorific value, to determine whether it can be used as a standalone fuel supply or whether it needs to be blended with the constant fuel source such as natural gas.

The CalorVal BTU Analyzer will accurately measure the direct BTU concentration of the waste stream and provide the alarm set point to alternate between the waste stream and the constant fuel source quickly for uninterrupted fuel.

CalorVal Applications:

- Bio Gas
- Chemical Processing
- Digester Gas
- Ethanol Plants
- Ethanol Production
- Gas Distribution
- Gas Pipeline Facilities
- Hydrocarbon Processing (HPI) - Refining & Ethylene
- Landfills
- Landfill Gas
- Lime Kilns
- Low BTU Waste Streams
- Petroleum Production
- Petroleum Refining
- Pilot Plants
- Process Vents
- Recovery Boilers
- Research & Development Facilities
- Wood Products

