EffiMax™
Efficiency Management System for Hot Air Generators
The EffiMax™ provides real-time readings of fuel flow, direct hot air generator efficiency, heat generated, hot air flow and total fuel consumed, which adds to its functionality and effectiveness. The central processing unit compiles the data and calculates the efficiency of the heater in accordance with BS845 standard. This provides a break-up of the losses and enables the operator to take corrective action, thus improving the efficiency of the heater.

Operators agree that installing the EffiMax™ greatly improves the way hot air generators are operated. It avoids the need for more expensive distributed control systems, guessing, or sampling and manual calculation and helps achieve the goal of lowering fuel bills, increasing profits, and improving plant efficiency.

The EffiMax displays all measured parameters, such as calculated losses, scope for savings and detailed efficiency on a touch-screen, along with trends and alarm screens. The alarm values can be set by the operator. In addition, all parameters can also be linked to the PC provided with the accompanying user-friendly data acquisition and diagnostic software package. The software provides analytical information in the form of shift / daily / hourly / monthly and yearly logs, which is extremely useful for system operators.

The Forbes Marshall online efficiency monitoring package, EffiMax™ for Hot Air Generators is designed to provide operators with precise and up-to-date feedback of their systems on a real-time basis.

By monitoring key parameters such as flue gas oxygen levels, stack gas temperature, hot air inlet and outlet temperature, radiation losses and density compensated hot air flow rate, the user can effectively decide on the course of action required to optimise heater operation.

Display Features
The general mimic screen displays a representative schematic of Hot Air Generator with instantaneous value of all measured parameters
The parameter screen displays graphical trends for measured parameters, losses and efficiency parameters
The alarm screen displays all deviations from desired results with diagnostic tips to resolve these
The PC can be located up to 1 km from the computation unit in a central control room or utility manager’s cabin as per user convenience
The data log screen indicates all important parameters logged at the end of every hour and trends suitable for hard copy
The EffiMax 4000 System for Oil / Gas

The EffiMax 4000 System for Solids

Symbols and Abbreviations:
- FF – Fuel Feeder
- O₂ – Oxygen Sensor
- FD – Force draft
- ID – Induced draft
- FPT – Furnace Pressure Transmitter
- O/L T – Outlet Temperature
- VFD – Variable Frequency Drive
The EffiMax Package Includes

- Oxygen analyser probe for oxygen measurement in flue gases
- Air inlet (return) temperature measurement
- Hot air outlet temperature measurement
- Stack temperature measurement
- Combustion air temperature measurement
- Computation and display unit
- Hot air flow meter
- Data acquisition and diagnostic software package
- Oil / gas flow meter (in EffiMax 3000)
- Oxygen trim (in EffiMax 4000 on Oil / Gas / Solids)
- ID-FD feeder automation (in EffiMax 4000 Solids)
- Hot air heat output

The EffiMax Advantage

- Streamlined complete package
- Simple installation and maintenance
- Continuous monitoring and reporting
- Quick payback
- Adaptable to any hot air generator system
- Web connectivity with mobile app

The EffiMax System Provides Online Recording and Trend Analysis of the Following

- Hot air generator system efficiency %
- Stack loss %
- Enthalpy loss %
- Radiation loss %
- Air inlet temperature
- Hot air outlet temperature
- Density compensated hot air mass flow rate
- Oxygen %
- Stack temperature
- Combustion air temperature

Additional Features

- Oil / gas / solids fuel flow
- Hot air generator direct efficiency
- Total fuel consumed
- Hot air generator heat output rate and total heat output