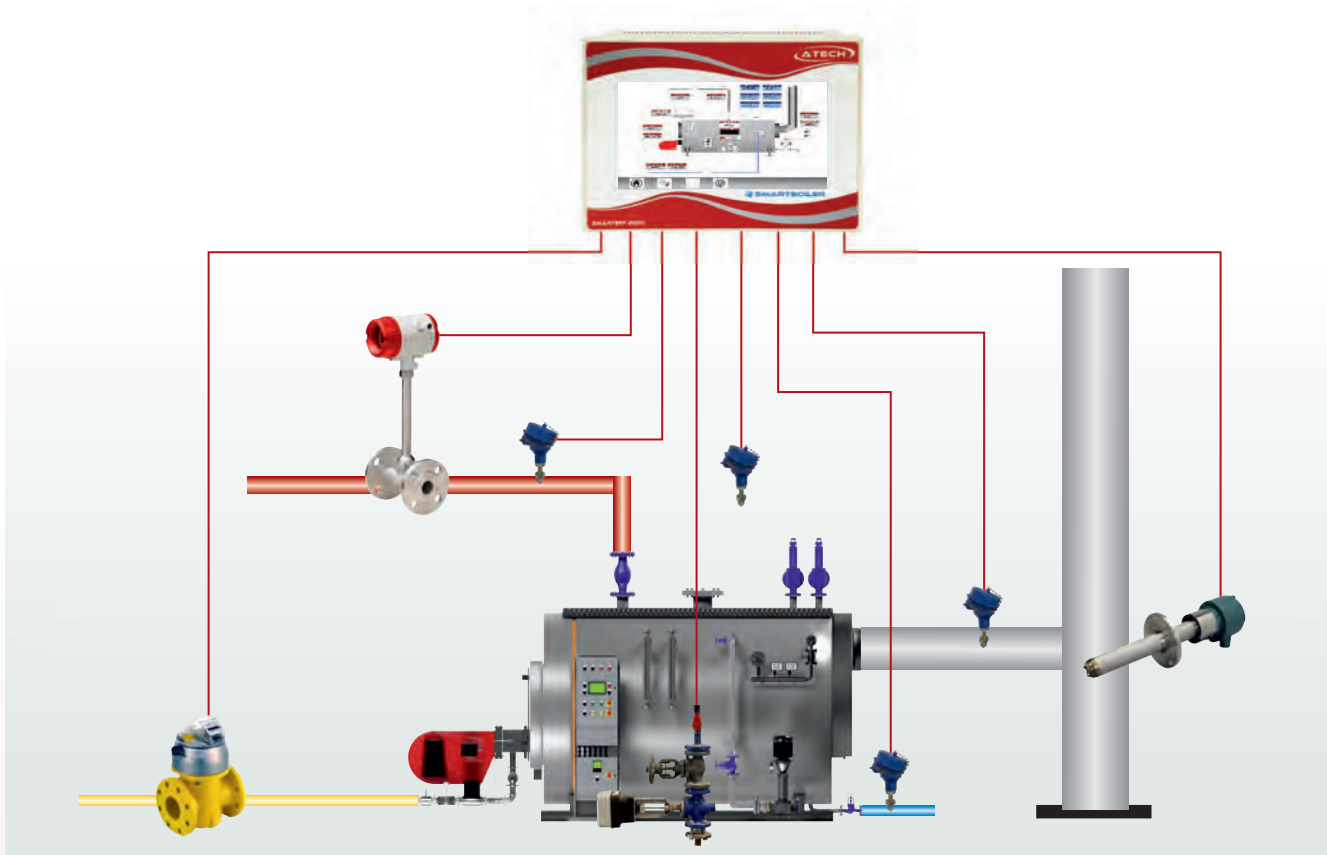


STEAM BOILERS CONTROL MODULS

SMARTEFF 2000 EFFICIENCY MONITORING SYSTEM FOR DTEAM BOILER



SmartEff 2000 Efficiency Monitoring System for steam boiler is a complete efficiency monitoring and analysis system for boilers. Continuous monitoring of performance parameters for prompt actions to improve boiler efficiency with direct or indirect method.

SmartEff 2000 efficiency monitoring unit takes input from the key field instruments and analysis performance of the steam boiler then displays important parameters locally on a touch screen HMI. The System monitors below parameters to undertake proactive actions leading to decrease in fuel bill.

Parameters for monitoring:

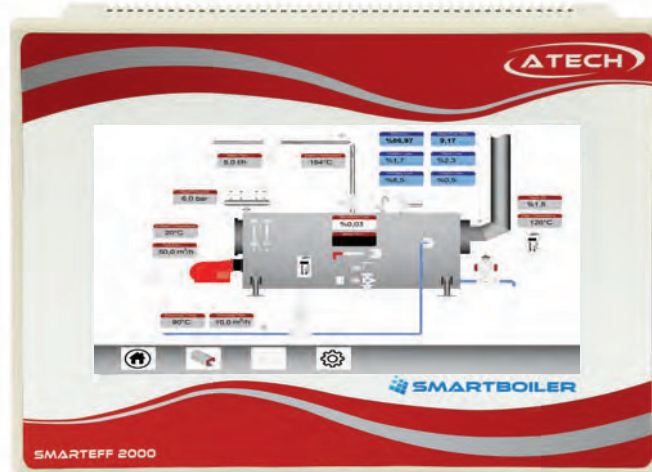
- Stack oxygen (%)
- Stack temperature (°C)
- Steam pressure (bar) / temperature (°C)
- Steam flow (kg/hr)
- Feed water temperature (°C)
- Ambient temperature (°C)
- Fuel consumption (for gas m³/hr)
- Amount of blow down (kg/h or m³/hr)

SmartEff components/Field instruments:

- SmartEff Unit (Computation & display unit)
- Steam flow meter
- Automated TDS and bottom blowdown system
- Oxygen analyzer
- Stack temperature transmitter
- Steam temperature transmitter
- Feed water temperature transmitter
- Ambient temperature transmitter
- Fuel flow meter

STEAM BOILERS CONTROL MODULS

SMARTEFF 2000 EFFICIENCY MONITORING SYSTEM FOR STEAM BOILER



Saving energy - reducing costs - protecting the environ

SmartEff 2000 Efficiency Monitoring System will help to improve the performance of the steam boiler. Our solution will provide information about the performance, condition and operating efficiency of the steam boiler.

Benefits

- Provides user-friendly interface,
- Measure and monitor the parameters,
- Gives individualised recommendations for action,
- Reduce fuel costs and maximize steam production,
- Stores boiler performance data for long periods for review,
- Planning proactive preventive maintenance,
- Increase boiler availability and lifetime,
- Protecting the environment,

Calculated Parameters (%)

- Boiler efficiency
 - Direct efficiency (%)
 - Indirect efficiency (%)
- Steam to fuel ratio,
- Stack loss,
- Enthalpy loss,
- Blowdown loss,
- Radiation loss,
- Blowdown quantity,

