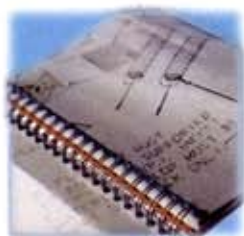


Specifier's Notebook

TECHNOLOGY ANALYSIS

Harnessing the power of web-based boiler control systems

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Web-based control advantages

- Cost reduction and efficiency of monitoring multiple boiler rooms remotely
- Real-time access to information on alarms, shutdowns and maintenance needs
- Real-time monitoring of equipment such as boiler units, burners, deaerators and softeners.

Web-enabled advanced boiler control systems have many advantages. And many of these control systems can retrofit into existing boiler systems. But what are the advantages, and what does one need to consider when selecting a system?

One advantage that developers of these systems suggest is reduced cost and improved efficiency. With the growing trend toward decentralization of boilers to buildings across a campus or complex, there is a benefit to keeping controllers in one location and monitoring boiler conditions via the web.

Web-based controllers give real-time access to operators on boiler room conditions, such as alarms, shutdowns and maintenance reminders. Many systems also send an e-mail or page alert if an alarm goes off so that an operator can address problems immediately, thus controlling and reducing the costs of operation.

But a boiler system control must do more than turn your boiler on and off and sound alarms. It needs to monitor an entire boiler room including boiler, burner, deaerator, softeners and other features. With the real-time and historical trending data from web-based controls, operators are positioned to anticipate service needs and troubleshoot problems.

Safety, accessibility, integration

Safety is the highest priority. Boiler rooms are often cramped, making it difficult to take readings and reach switches. Performing these tasks via the web can be easier and safer for operator and maintenance personnel. But keep in mind web-enabled monitoring does not preclude periodic visual inspections. And control locations should be specified so that controls can be easily accessed manually.

Another important feature is the ability to integrate with the existing building management system. To keep costs in check when buying new boiler room equipment, make sure it already has integrated sensors that will make it easily compatible with your control system.

Advanced options

But whether boiler controls are web-based or not, new controllers alone save thousands of dollars in energy costs due to the increased efficiencies they bring.

When specifying any new boiler control system, the following options dramatically increase fuel efficiency:

Parallel positioning: During setup, a boiler is often set with a fixed air-to-fuel ratio. Environmental changes alter that ratio, decreasing

A growing trend toward decentralization of boilers increases the benefits of remote web monitoring.

combustion efficiency. Parallel positioning solves this problem by generating less excess oxygen in the stack to ensure complete combustion.

O₂ trim: Ensures peak efficiency by using an oxygen sensor/transmitter in the exhaust gas. The sensor/transmitter continuously senses oxygen content and provides a signal to the controller, which trims the air damper and/or gas valve, maintaining a consistent oxygen concentration for increased system efficiency.

Variable speed drive: VSDs allow a motor to operate only at its required speed rather than a constant 3600 rpm. This speed variance results in the elimination of unnecessary energy consumption saving thousands of dollars a year.

