



DELTA V STANDARD BMS SOLUTION

Operate Safely and Ease Troubleshooting

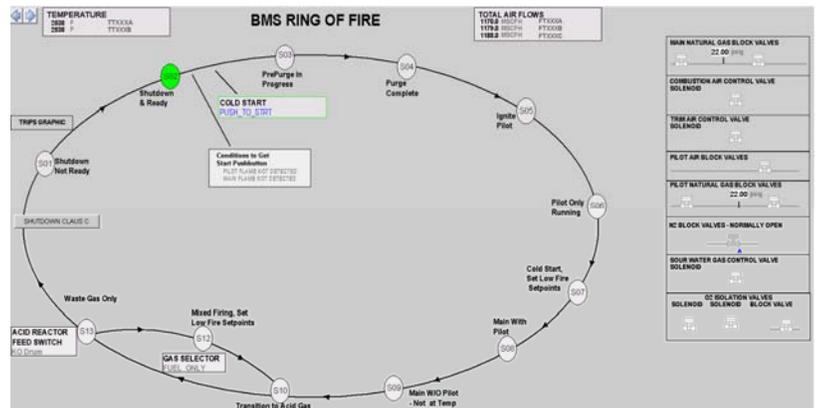
Better control for safe and reliable operation

Safe firing of boilers, fired heaters, furnaces, and other combustion processes is of utmost concern at sites that operate these processes. The Burner Management System (BMS) provides functionality to ensure safe start-up, operation, and shut down of a combustion process by helping to prevent hazardous situations where a dangerous combustible atmosphere is created that could lead to an explosion.

The Emerson Standard BMS (Burner Management System) Solution helps deliver safe and reliable combustion operation for a site by:

- Providing control and monitoring of the combustion process for safe firing per NFPA, EN 298, and EN 50156 and other applicable codes
- Communicating the state of the burner light-off sequence to operations personnel and any missing interlocks for easy troubleshooting
- Identifying the “first out” cause of a process trip to assist in diagnosing combustion issues

In short, the Emerson BMS solution accomplishes safe firing per applicable codes, and also delivers information to operations that allows quicker problem resolution.



What is controlled?

Emerson provides pre-engineered BMS configuration for gas or oil-fired combustion processes. The Standard BMS Solution includes:

- **Purge Interlocks and Monitoring** - monitoring and purging of the unit to ensure that the furnace chamber is adequately purged of accumulated fuel before a burner light-off can be attempted
- **Fuel Header/Burner Starting and Tripping Logic** - Control of fuel train and burner starting sequences to ensure safe firing practices, tripping of burner and/or fuel header when conditions occur that might lead to an accumulation of unburned fuel in the furnace chamber

- **Alarms and System Diagnostics** - Extensive diagnostic messages to alert operations personnel of potential combustion instability and improve process maintenance by providing quick identification and isolation of problems. Message types provided include:
 - First-out cause of trip
 - Missing interlocks and permissives
 - System hardware fault identification
 - Field device failure

How can BMS controls improve the combustion process?

BMS implementations have typically been done simply to comply with code and provide a minimum of functionality. In practice, this has often left site operations “in the dark” as to the status of the BMS sequence or any field device issues. If an interlock was preventing light-off or if the combustion process tripped, little or no information was available about the cause of the problem.

The Emerson Standard BMS Solution delivers the safe firing control functionality needed, and also provides extensive diagnostic information for operations and maintenance such that:

- Burner light-off is simplified and accomplished more quickly
- Causes of process trips are identified more quickly and downtime is reduced
- Repeat causes of combustion problems are pinpointed so that downtime can be lessened

Contact:
Emerson Process Management
Process Systems and Solutions
Telephone: +1 (512) 835 2190
email: Bob.Sabin@Emerson.com

How is engineering cost reduced?

Because Emerson utilizes pre-configured and well documented control templates, less time is spent in implementing the controls. Reduced time for design, configuration, testing, check-out, and commissioning is required to deliver a proven solution.

How flexible can the BMS solution be?

The flexibility to accommodate more complex or unusual combustion solutions is available. Whether it is multiple fuel trains, dual fuel burners, multiple burners, or other situations, the Emerson engineering team can design a custom BMS solution that fulfills the safe firing need and delivers needed status information to operations.

What's the operator interface?

Included with the Standard BMS Solution are graphic displays showing a fuel train overview and a BMS sequence detail display. The detail display includes an indication of the status of each sequence interlock.

What other combustion control functionality is available?

Emerson can provide a complete set of combustion process control and optimization functionality to improve process performance and reliability while reducing fuel cost and emissions, such as:

- Combustion efficiency optimization
- Automatic warm-up routines
- Improved turn-down capability
- Emissions constraint control
- Cost based load allocation over multiple units

What about support?

Few operations have the resources or expertise to design, implement, startup, tune, and maintain a complex combustion process control system on their own. Emerson experts are available to assist with any stage of a combustion control project. Our industry experts can help design, justify, and implement improved combustion control that will show immediate results on an organization's bottom line. Please call us to find out how.

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