Fuel Gas Supply System Solutions for Furnaces

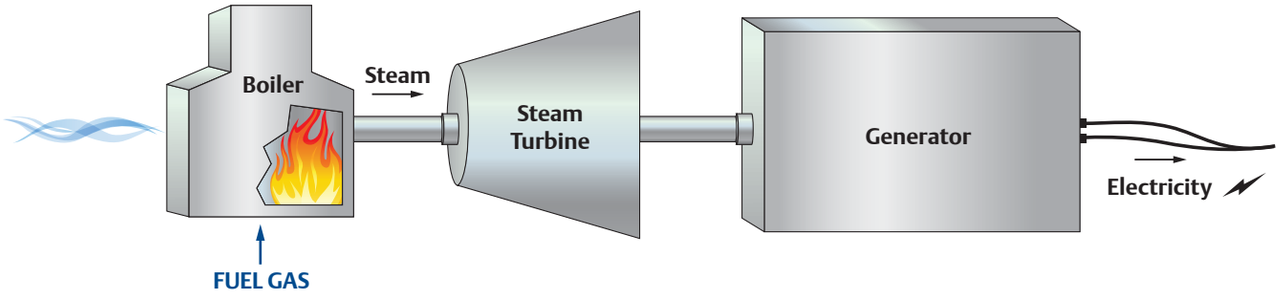
Solutions for safer and more reliable operation of furnaces and their fuel gas systems.

EMERSON

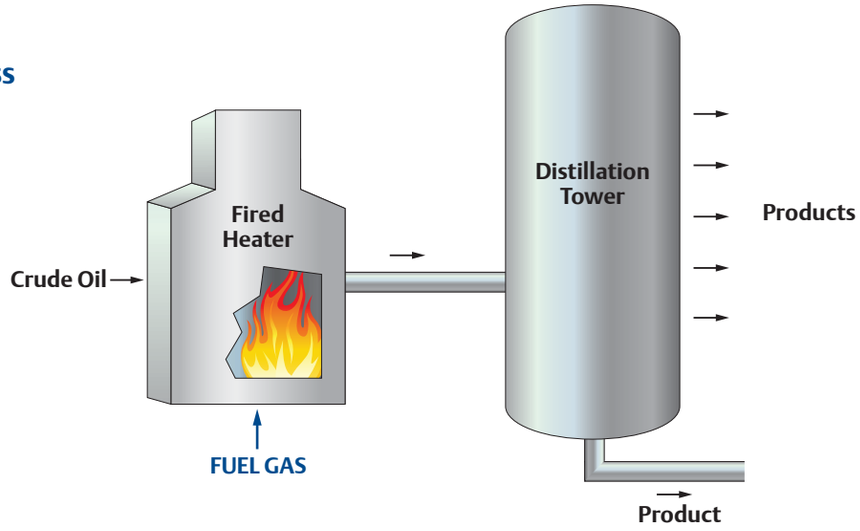
Fuel Gas Supply Systems

Furnaces, boilers, and fired heaters are essential components of most industries such as power generation facilities, petroleum refineries, chemical plants, steel plants, glass and ceramic industries, etc.
Whether helping to safely operate a furnace or produce steam or heat hydrocarbons, the fundamentals of fuel gas supply system are relatively standard across a wide range of such heating applications.

Power Generation



Refining Process



Fuel Gas Pressure Control Challenges

- Inadequate speed of response of pressure control devices causing unplanned shutdowns
- Poor fuel gas quality or lack of routine maintenance leading to equipment failures
- Poor pressure control caused by improper equipment selection

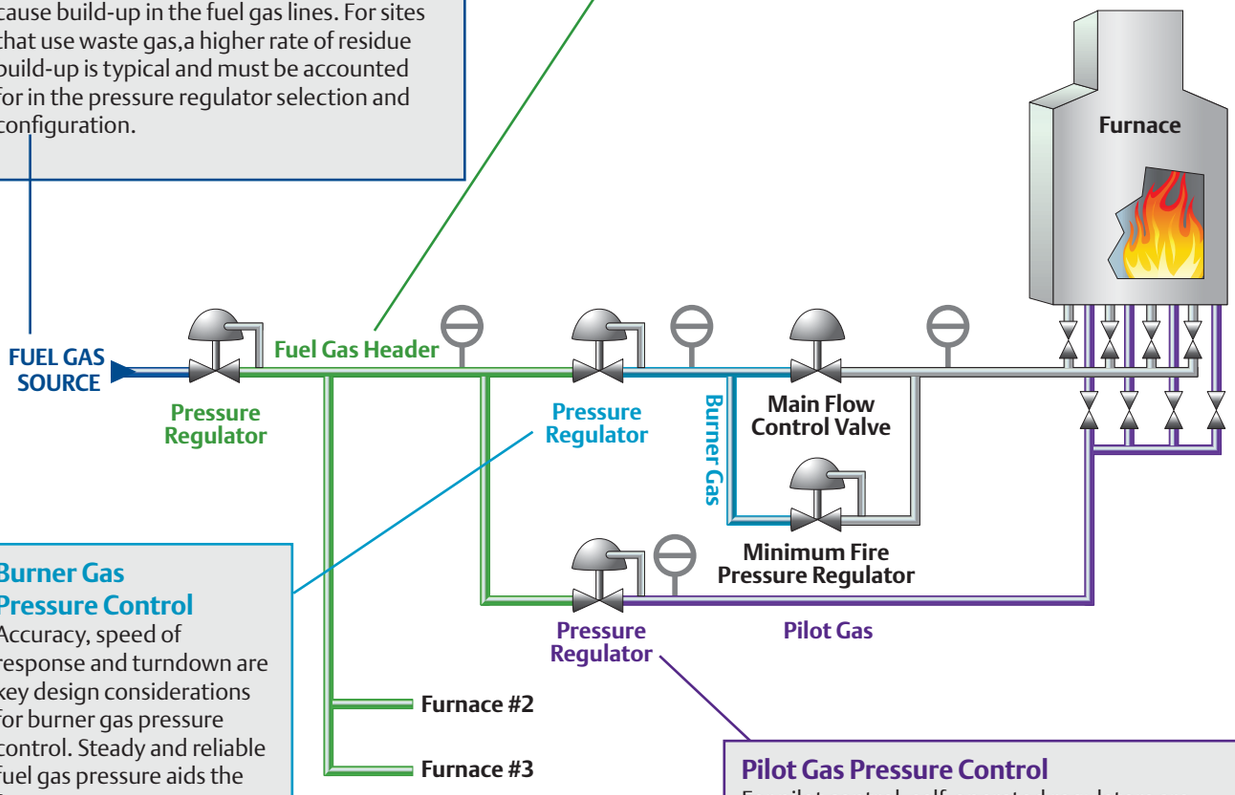
Prevent process downtime by keeping your critical furnaces online.

Fuel Gas Source

Although natural gas has become the most preferred fuel in boilers, fired heaters, furnaces, etc., many refineries, and chemical plants mix process waste gases into their fuel gas supply systems. These process gases may contain heavy hydrocarbons that can cause build-up in the fuel gas lines. For sites that use waste gas,a higher rate of residue build-up is typical and must be accounted for in the pressure regulator selection and configuration.

Fuel Gas Header Pressure Control

Because a fuel gas header can supply fuel to one or multiple furnaces, reliability, speed of response, maintainability and noise limits are important design considerations when selecting a pressure control device.



Burner Gas Pressure Control

Accuracy, speed of response and turndown are key design considerations for burner gas pressure control. Steady and reliable fuel gas pressure aids the furnace start-up process and ensures efficient fuel gas control to a furnace.

Pilot Gas Pressure Control

For pilot control, self-operated regulators are commonly selected because they are easier to maintain, less complex and have very high turndown capabilities when compared to other pressure control devices.

Real World Solutions

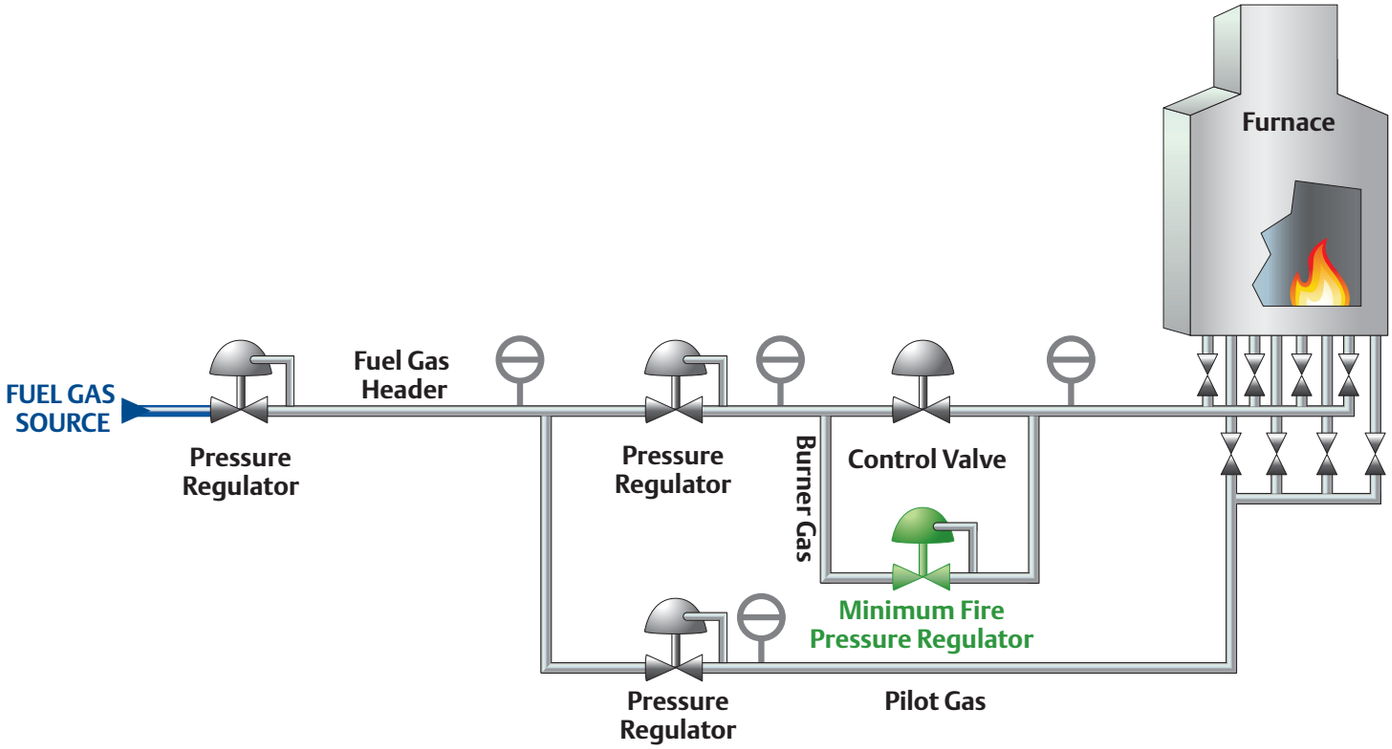
Emerson develops fuel gas pressure control solutions by first understanding the real-world requirements and challenges.

Fuel Gas Solutions

Minimum Fire Pressure Control

Complicated burner management systems can hinder your ability to start a furnace safely and quickly. An API 556-recommended minimum fire pressure regulator is essential when the fuel gas control valve lacks sufficient turndown to light the first burner.

This regulator not only helps minimize the complexity of the burner management system, but also reduces operator interaction during start-up. Simply set the regulator to the required setpoint during commissioning and it can remain untouched through multiple start-ups.



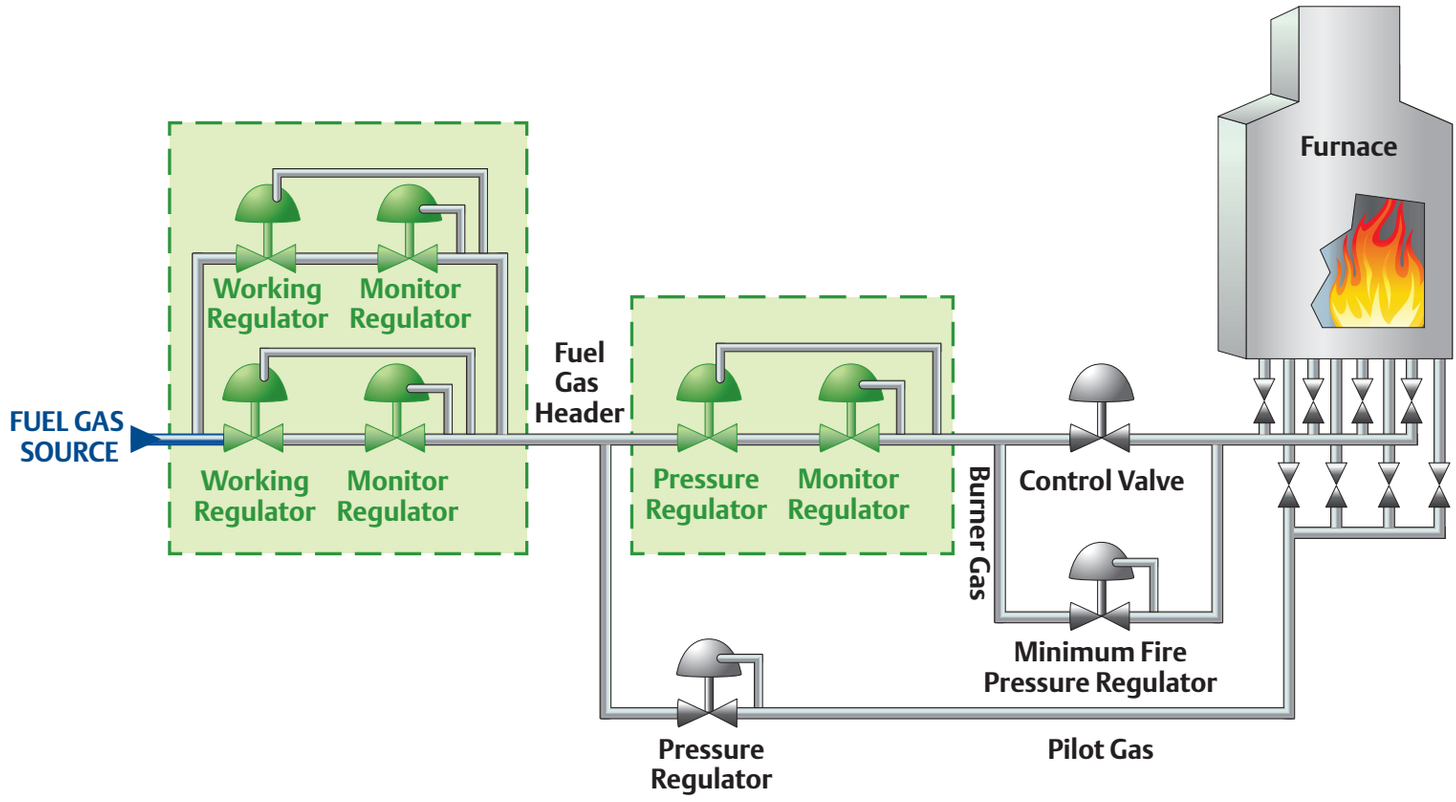
Reliable Customized Systems

For more than 80 years, Emerson™ has worked with customers to design monitor systems that provide a reliable pressure control solution. In addition to keeping your process online, monitor systems are easier to maintain and operate than other failure protection methods.

Minimizing the dangers associated with equipment start-up is a top priority.

Monitor Setup

A monitor setup provides predictable control for certain pressure regulator failure modes without sacrificing pressure control performance. Commonly used in natural gas distribution by gas utilities, a monitor setup uses regulators in series to provide a layer of redundancy in the event the primary pressure regulator ceases to control downstream pressure. Monitor setups are recommended for use in fuel gas header and burner gas pressure control applications.



Exceeding Standards

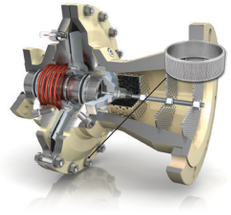
Emerson regulators are designed to both meet and exceed applicable standards, helping keep your process compliant and safe.

Optional Features

Slam Shut

The Emerson slam-shut valve is a mechanical device that will “slam shut” when it senses a high- or low-pressure event. With Class VI shutoff capability, the slam-shut valve can be used to increase the safety of your furnace shutdown system.

A slam-shut valve can be installed independently or attached to an existing pressure regulator valve body to save space and reduce piping modifications. A solenoid valve can also be added to connect the slam-shut to an existing safety system.

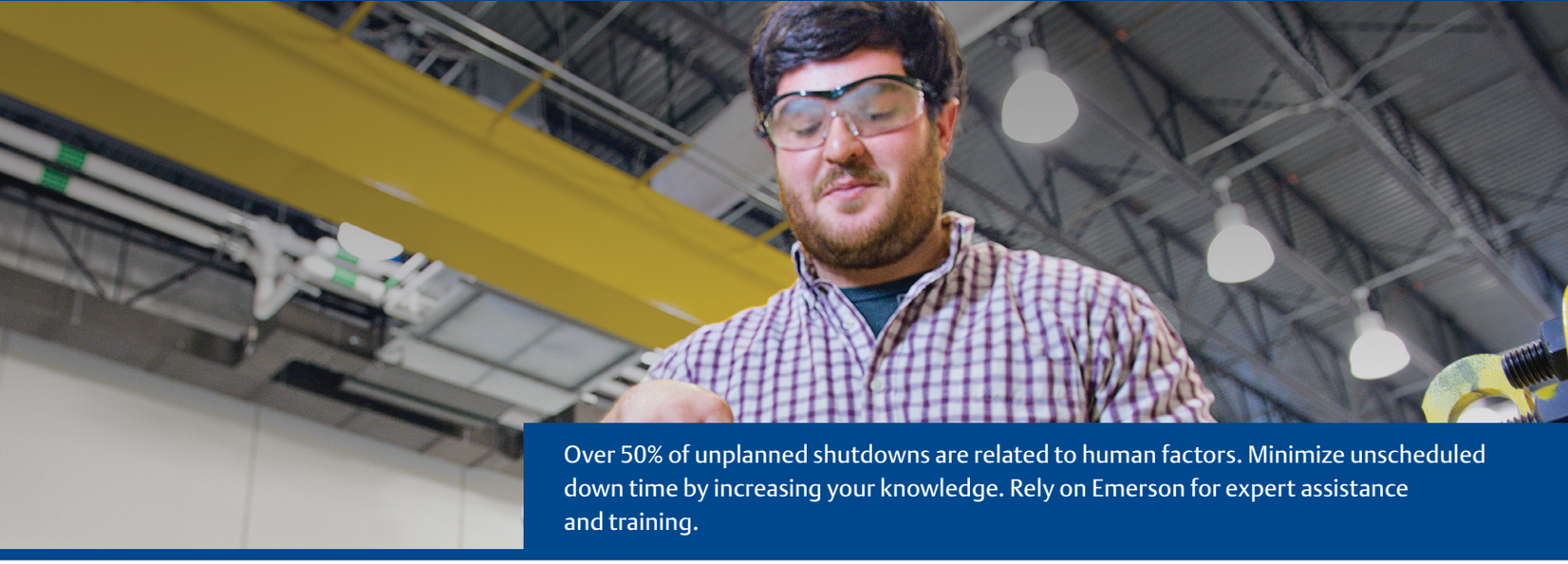


Noise reduction

High-pressure drops increase the possibility of high noise – a big concern for fuel gas pressure control when downstream demand can fluctuate. Noise attenuation options can reduce noise by up to 10 to 20 dB depending on the application.

Innovative Technologies

Emerson offers innovative solutions like remote monitoring options and emergency shutdown capability that can help minimize downtime and improve plant safety.



Over 50% of unplanned shutdowns are related to human factors. Minimize unscheduled down time by increasing your knowledge. Rely on Emerson for expert assistance and training.

Unparalleled Support

Expert help when you need it the most

Emerson state-of-the art flow and materials labs provide an extensive worldwide network of engineers, application experts and sales professionals to help you size, select and troubleshoot your pressure regulators. Emerson test and evaluation teams provide flow, material and environmental testing under real-world operating conditions before you place them in your application.

Training to help you effectively maintain your systems

No other regulator manufacturer in the world offers more products and local services dedicated to safe, effective applications than Emerson. We strive to be the leader in training pressure control personnel.

Emerson offers a wide array of onsite and offsite training for all levels of your organization. Together with our local business partners we work with you to develop training that fits the needs of your team, whether it is application training for engineers, operational training for operators or maintenance training for technicians. With our courses, your personnel can learn to:

- Perform maintenance on regulators
- Troubleshoot field problems
- Understand the influence of the service environment on regulator performance
- Properly size regulators

Global Sales and Service

Emerson sales and service offices are located strategically around the globe in North America, Latin America, Europe, Asia Pacific and the Middle East and Africa. With more than 2000 technical experts in nearly 200 offices, application support is just a call or click away.

Fuel Gas Supply System Solutions for Furnaces

Emerson™ sales, service and technical support are as close as your telephone or on the web, anywhere in the world. Our distribution network offers a full complement of expert sales and support staff and more than 2000 technical experts strategically located across nearly 200 offices worldwide.

Emerson Automation Solutions

AP Headquarters
1 Pandan Crescent
Singapore, 128461
T +65 6777 8211

PressureManagement.AP@emerson.com
Emerson.com
Facebook.com/EmersonAutomationSolutions
Linkedin.com/company/emerson-automation-solutions
Twitter.com/emr_automation

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