

# UPGRADING COMBUSTION CONTROL SYSTEMS FOR IMPROVED CONTROL AND REMOTE MONITORING

The Future is Now

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# The new CLR combustion management system is an innovative fuel air ratio and flame safeguard control solution designed to modernize obsolete Honeywell Controlinks™ systems. It is built around the Honeywell SLATE™ modular burner control platform to provide unparalleled flexibility, integration, and system visibility.

## History of Burner Management

In the past, process combustion systems utilized a mix of independent components to assemble a functional system for burner management and fuel/air control.

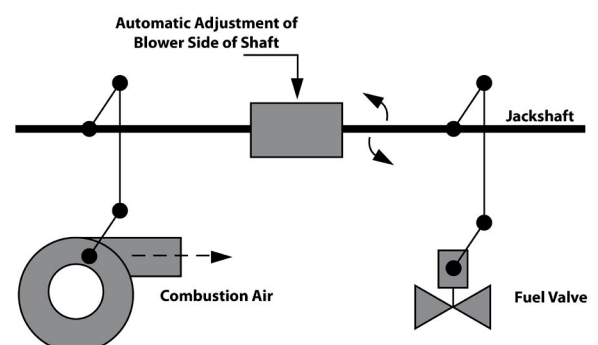
Burner management was accomplished through visual observation of the fire by an individual on-site; his title was “fireman”. Over time, the process progressed with the introduction of temperature sensors and tube type optical sensors. Today there are solid state sensors to insure safe flame monitoring.

The evolution of combustion control has taken a similar path to that of flame monitoring, Combustion control began with the use of levers and valves positioned and/or manipulated by the “fireman” to maintain a safe fuel/air ratio producing the required heat for the process at hand.

As the fireman’s duties increased, the operation of the manually operated levers and valves were coupled to various devices to achieve automated operation. This now afforded the fireman the time to perform additional duties while maintaining safe reliable combustion control. The road to automation began with the simple cross connecting of the combustion air mechanically with levers and rods to the device regulating the fuel supply.

As time marched on, the mechanical devices were replaced with pneumatic operators using air to operate the fuel and combustion air supply. Pneumatic systems allowed for increased sophistication using relays, balance beams, volume chambers and valves to achieve complex fuel/air ratio schemes. Pneumatic control systems were an improvement but were expensive to implement because of the required piping. They required a large footprint for installation and any air leaks in the connecting tubing meant hours of troubleshooting, poor operation, and/or potentially hazardous operating conditions.

The next evolution in the combustion control path was the introduction of the electro-mechanical systems. These systems replaced the cumbersome pneumatic hardware and its interconnecting piping with electric motors, switches, relays, and wire. These systems were less expensive to install and afforded more control devices in a smaller installation footprint. Electric operators provided more power to the final control devices without the need for large cylinders. The controllers implemented components such as, galvanometers, rheostats, tube type amplifiers and relays. Diagnostics improved, but troubleshooting was still time consuming. With all these innovations, there still exists the need for better control, monitoring and diagnostics.



## Burner Management in the Modern Age

Over the past twenty years we have seen the dawn of the microprocessor era which allowed control devices to shrink in size. The need for mechanical linkage lessened as final control devices became more powerful and direct coupled to combustion air dampers and fuel valves. Troubleshooting became easier as manufacturers began implementing self-diagnostics into their field devices in the form of blinking lights and error codes. These improvements, revolutionary at the beginning, still required skilled technicians to be on site to monitor the components and implement solutions. When issues were intermittent, resolutions could be time consuming and expensive.

In today's world, manufacturers are constantly finding ways to reduce operating costs to improve profitability. To achieve these goals, they are investing in the latest available control technology. Modern combustion efficiency systems allow for greater control, improved energy efficiency, and the ability to remotely monitor status and alerts. With shrinking margins and just-in-time delivery strategies, however, it is more difficult for manufacturers to upgrade their combustion systems. Fortunately, out-of-the-box combustion retrofit solutions are now available. These allow manufacturers to update their control systems in hours instead of days, during pre-scheduled outages.

## Why CLR?

With the **GTH CLR system**, you have the latest innovation of combustion control delivered in an easy-to-install subpanel or retrofit kit. The CLR is built around the Honeywell SLATE™ platform, a modular controller offering configurable safety and programmable logic. It offers flexible programming, intuitive diagnostics, and optimized energy efficiency as well as full integration using BACnet or Modbus protocols.

The CLR panel is designed, built and quality tested to achieve the following objectives:

- Meets current NFPA 85 and NFPA 86 guidelines
- Minimizes installation time with two (2) UL508A options:
  - An enclosure containing all panel mounted system components
  - A sub-panel version for installation in an existing control panel
- Preconfigured and factory tested prior to shipment for reduced startup time
- Directly replaces an existing obsolete Honeywell ControlLinks™ system by reusing the existing field wiring.
- Local system monitoring via a 10" color touchscreen
- Improved fuel/air ratio control with a parallel position control scheme, utilizing high resolution direct coupled electric actuators
- Integrated flame supervision utilizing ultraviolet flame detection (other flame detectors available)



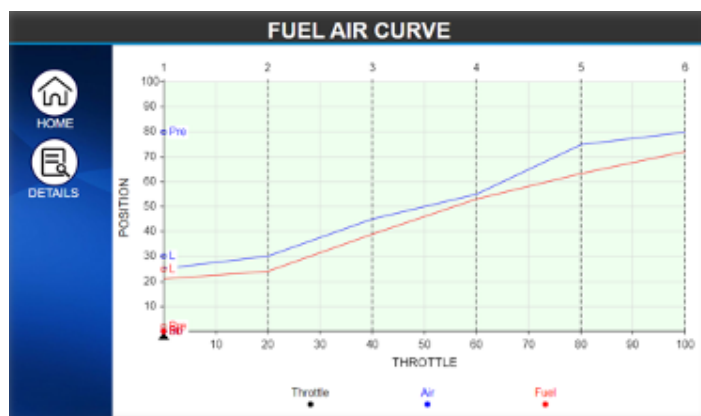
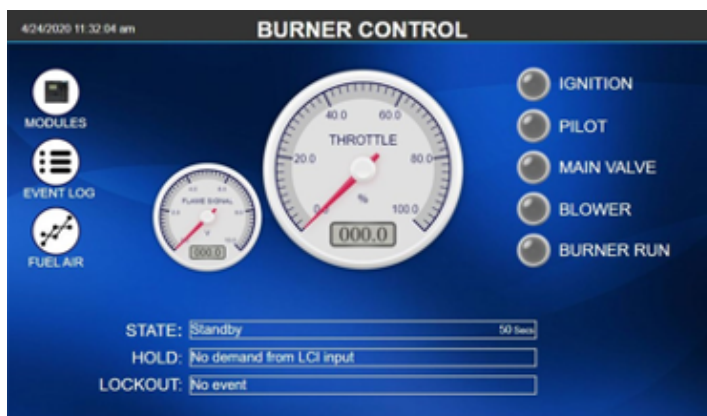
**CLR Control Panel**



**CLR Retrofit Kit**

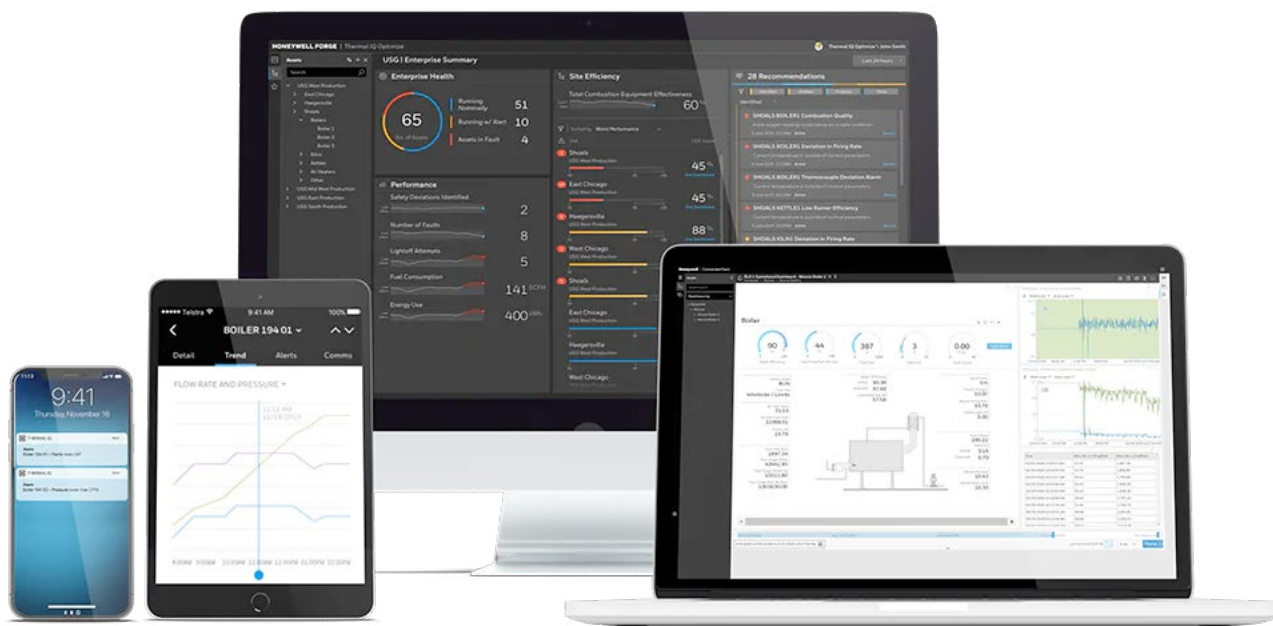
## Easy Install and Configuration

The CLR is available as a complete panel or a retrofit kit for field installation. Both packages come with everything required to replace a ControlLinks™ system including field devices, wiring diagrams, and pre-configured HMI screens.



## Remote Access

There is also the option of remote access using Honeywell's Thermal IQ™, the remote monitoring solution that securely connects your combustion equipment to the cloud, making critical thermal process data available anytime, anywhere, with any smart device or desktop. The application allows the end user to observe critical system operations, review historical data, and set up alerts via any smart device.



**The GTH CLR is clearly the future of Combustion Management, and it is available today!**



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