FENWAL CONTROLS

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The Front Burner

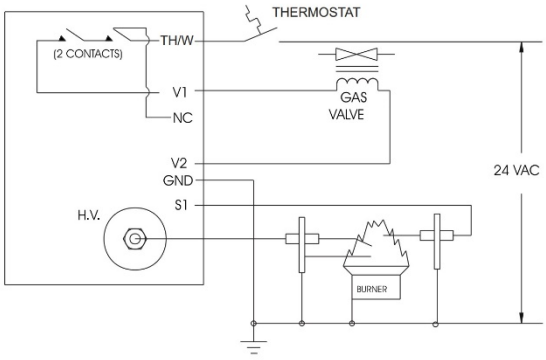
A Quarterly Newsletter Highlighting Product & Industry News

Affordable Integration of an Optical Flame Sensor

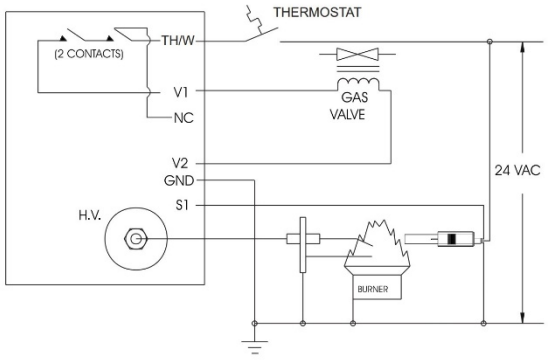
Flame sensing is a critical part of any gas ignition control's safety design and there are circumstances where a flame rod (flame rectification) is not the best solution. Historically, optical flame sensing was considered an expensive alternative, but there are available affordable solutions for design engineers to consider.

There are a multiple conditions that should make an engineer think about switching to an optical sensor. Burners equipped with strong fans may create erratic flames that do not support flame rectification well. Dusty environments, like in bakeries or in some industrial applications, can have accumulation on a flame sense rod causing isolation of the ionization current on the flame rod. Methane from landfill gas mixed in with natural gas create siloxanes that can coat or corrode the flame rods. As the industry also looks to cleaner solutions, adding hydrogen to natural gas creates fewer carbon atoms, which reduces ionization and thus flame current. Each of these conditions are good reasons to consider optical flame sensing.

In some cases, the cost of a single repair visit far exceeds the cost of the optical sensor. The BST Solutions KLC 20 is designed to be a low-cost solution that integrates easily with gas ignition controls designed for flame rectification. The attached wiring diagram shows how the flame rod circuit has been replaced with the optical sensor on a Fenwal Controls 35-60 gas ignition control.



35-60 DSI control with remote flame sense



35-60 DSI control with optical flame sensor

Optical flame scanners are common in larger industrial applications and typically require more expensive gas ignition controllers. This combination of Fenwal Controls and BST Solutions KLC 20 create an invaluable solution for many customers at an affordable price.

Learn more about Fenwal Gas Ignition Controls

Learn more about BST Solutions KLC20

High Reliability & Relays

Have you ever wondered how many cycles a gas ignition control can go through in its life?

All gas ignition controls from Fenwal Controls meet at least one of the following agency standards: UL, CSA, CE, or AGA. North American approval by UL and CSA require a minimum of 100,000 cycles of operation. European and Australian approval by CE and AGA require a minimum of 250,000 cycles of operation. We took this testing above and beyond the standards for one of our commercial cooking equipment OEM's that needs controls that will stand up to the rigors of 24/7 fast food operations.

Equipped with high capacity dual relays, Fenwal Controls reached 6 million gas valve relay cycles on our 35-608 and 35-40 gas burner controls. It should be noted that this is far in excess of the expected life of the gas valve itself.

Qualifying relays that are both durable and cost effective is a lengthy process. Typical considerations such as voltage and current alone are not enough to select the best relay. The impact of inductive loads caused by gas valve solenoids can put high stresses on the relay. Additional circuitry may also be necessary to suppress voltage spikes. Extensive testing of relays is done each time a new manufacturer or model is selected. These relays are then individually qualified for each product family application.

The benefit to the OEM and end user is that a relay selected by Fenwal Controls is tested and re-tested in a variety of configurations across many samples and hundreds of thousands of cycles to ensure it works well beyond agency requirements.

Thermostat with Communications

The UTEC color touchscreen thermostat product utilizes premium state-of-the-art technology with capacitive touch and proximity sensing capability. This thermostat supports the entire HVAC ecosystem and offers a multitude of features like connectivity, advanced programming, sensing, smart home assist, energy management, alerts & reminders.

Learn more about UTEC Controls

Questions with your control systems?
Contact our Sales Managers: Bill Sager or Mark Tully
Or find a representative near you at fenwalcontrols.com

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