

# Kiln Corner

## The Relays of a Glass Kiln

by Arnold Howard

Photography Courtesy  
of Paragon Industries, L.P.

*Though Arnold Howard works for Paragon Industries, L.P., the information here applies to all brands of glass kilns. Feel free to send questions for this column no matter what brand of kiln you own.*

### What is the relay that is used in kilns and how does it work?

Relays turn on the heating elements of digital kilns. When the controller sends a signal to a relay, an electromagnet in the relay closes electric contacts. The elements are wired to the relay so that when the relay contacts close, electricity flows to the elements.

### Why do half of the elements in my digital kiln remain on even when I press the stop button?

This happens when a relay has burned out. Disconnect the power to shut off the elements and replace the relay before firing the kiln again.

### When replacing relays, how do you know you are installing the correct ones?

Read the label printed on the side of the new relay to be sure you are installing the correct one. The label is confusing until you spend a little time studying it.

On the label, find the voltage of the relay coil, which is the electromagnet inside the relay. When the electromagnet receives a signal from the controller, terminals inside the relay come together and make a clicking noise.

The voltage of the coil is printed on the relay near a symbol of the coil. In the sample relays shown, the coil is symbolized by a rectangle with a diagonal line. The coil in the top left relay is 12 volts DC, which is the most commonly used kiln relay. The coil in the bottom left relay is 240 volts AC. The coil in the relay on the right is 200 to 240 volts AC (for 208 volt kilns).

The 12 volt DC coil is used in relays that are turned on by a digital controller. The 240 volt AC coil is used for relays that are activated by an infinite control switch instead of a digital controller. The earlier Paragon GL-24ADTSD, which is a digital kiln with switches that adjust the top and side elements, uses both types of relays.

DC means direct current, which comes from the controller to the relays. The symbol for DC is a horizontal solid line over a broken line. AC is the current from the wall outlet and is symbolized by a wavy line.

### What is the maximum number of times per minute that the Sentry Xpress controller can turn on the relay during a hold?

The maximum number of relay cycles is 6 times a minute.

### Why do the relays on my kiln seem to wear out too often? The last relay I replaced has a melted spot.

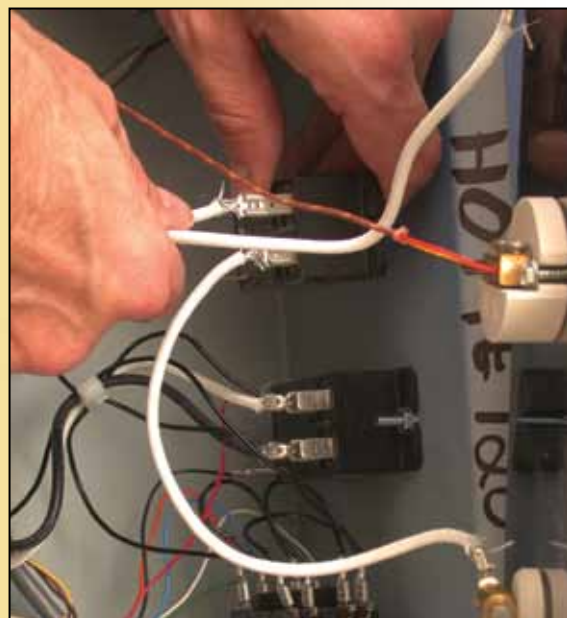
Examine the relays that you previously replaced. Is the heat damage on those relays in the same location as the heat damage on the relay you are now replacing? If so, you have found the problem—a loose push-on connector.

The push-on connectors must be tight. Loose connectors burn up new relays, leaving heat damage near the terminal. Push-on connectors should be difficult to slide off the relays.

**GPQ**



*Read the label printed on the side of the relay and compare it to the label on the relay you are replacing.*



*The push-on connectors must be tight. Loose connections can destroy even a new relay.*

*Arnold Howard writes instruction manuals and advertisements for Paragon Industries, L.P. His hobbies are glass fusing and karate. He also enjoys studying history and watching classic movies. You can reach Arnold at [ahoward@paragonweb.com](mailto:ahoward@paragonweb.com) with questions for future columns. Sign up for his kiln newsletter at [www.paragonweb.com](http://www.paragonweb.com).*

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