Kiln Corner
Digital Controllers

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.

Why would a temperature controller overshoot the program on the ramp up?

If you're driving 80 miles per hour and slam on your breaks, the car will slide some distance before it finally stops. The same concept goes for heating a digital kiln. If you program the kiln with a full rate (as fast as it can go) to a low temperature, it will have a hard time "slamming on the breaks" and stopping, for instance, at exactly 135°F. It will bypass this temperature, but it will eventually level back out within several degrees of 135°F. The lower the temperature and the faster the rate, the greater the difficulty in stopping exactly at the hold temperature.

When I'm firing my SC-2 jewelry kiln, opening the door to slide in an enameling rack drops the temperature from 1450°F to under 1300°F. Does the timing for a temperature hold begin again right then or when the kiln gets back to 1450°F, which is 90 seconds later?

The Sentry Xpress hold time will begin the first time the target temperature is reached. At that point, the temperature display will start the hold time countdown. You can watch the countdown timer to check on the amount of time left in hold.

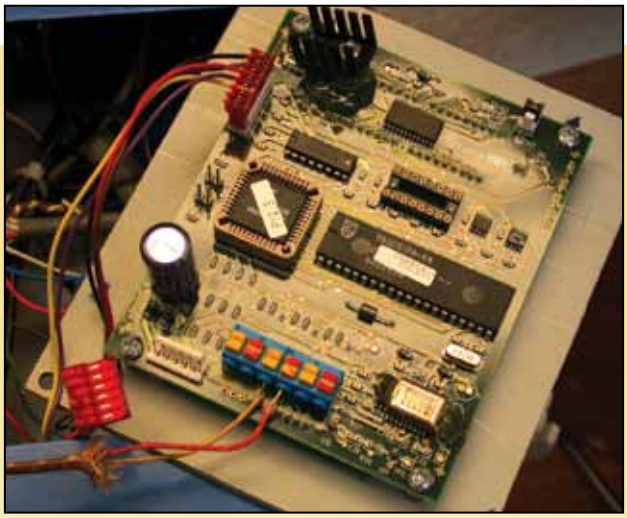
If I open the door while my digital kiln is hot, will the kiln continue to fire within the programmed firing schedule after I close the door, or will I have to restart the kiln and adjust the firing schedule?

The controller will automatically begin raising the temperature again to continue firing the segment that you programmed. You do not need to reprogram the kiln. Opening the door may trigger an alarm message that indicates the kiln cannot heat as fast as you had programmed, but the kiln will continue to fire.

I am getting the "TCR" (thermocouple reversed) error message and negative temperature readings, but the thermocouple wires are attached to the correct terminals.

Visually check to be sure the thermocouple wires and lead wires are attached to the correct terminals on the oval connection block and the back of the controller. If all is correct, hold a magnet to the red thermocouple wire (the wire marked red that comes from the thermocouple and goes to the connection block). The red wire should attract the magnet. If not, reverse the thermocouple wires at the connection block.

If you still get a TCR message after doing the above, remove the thermocouple wires from the back of the controller and replace them with a bent paperclip. You should get a room temperature reading. If you still get a negative temperature reading, the problem is with the controller itself rather than the thermocouple. (This is assuming that the room is not freezing.) **GPQ**



When reinstalling the controller, avoid twisting the thermocouple wires, which can cause them to touch at the bare ends. This will give a low reading.

Note that one of the thermocouple wires is marked red. That is the side that should attract a magnet. If you think the wire may have been incorrectly marked red, touch the wire to the door magnet on a bead kiln or a magnetized screwdriver tip to check it.

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 with questions for future columns. Sign up for his kiln newsletter at www.paragonweb.com.