Digital Temperature Control Made Simple A digital kiln or furnace uses only six basic parts to control heat. Understanding how they work simplifies trouble-shooting. **1. Fuse:** Helps protect the controller from power surges. 2. Transformer: Reduces the power to 24 volts AC, which operates the controller. 3. Digital controller: Controls temperature and rate. 4. Thermocouple: Senses temperature. The tip protrudes into the firing chamber. 240 volts 5. Relay: Turns the heating elements on and off. Receives a signal from the controller. **Fuse** 6. Heating elements Located in the switch box. AGC 1/2 amp, 250 v. AC. Reduces power to 24 volts AC, which operates **Transformer** the controller. 24 volts AC White Top of **Board** Sentry Kilns with one thermo-**Digital** couple: use center terminals. Observe color coding. Controller Power flows to the elements when the relay turns on. Thermocouple Relay Two wires of dissimilar metal join together in the The relay is a switch. thermocouple tip. When which is triggered by heated, the wires produce the controller. A 12 volt a small voltage, which the signal from the controller controller interprets

energizes an electro-

power to the elements.

magnet inside the relay. This closes the switch, sending

Heating

Element

as a temperature.