

Summary: The system I use in my own shop –

After a good many years of experimenting with different hookup arrangements I would like to share with you what I do in my own shop. Each kiln has its own mercury relay hard wired to the kiln. The kiln is plugged into a source of power which is protected by fuses or breaker box.

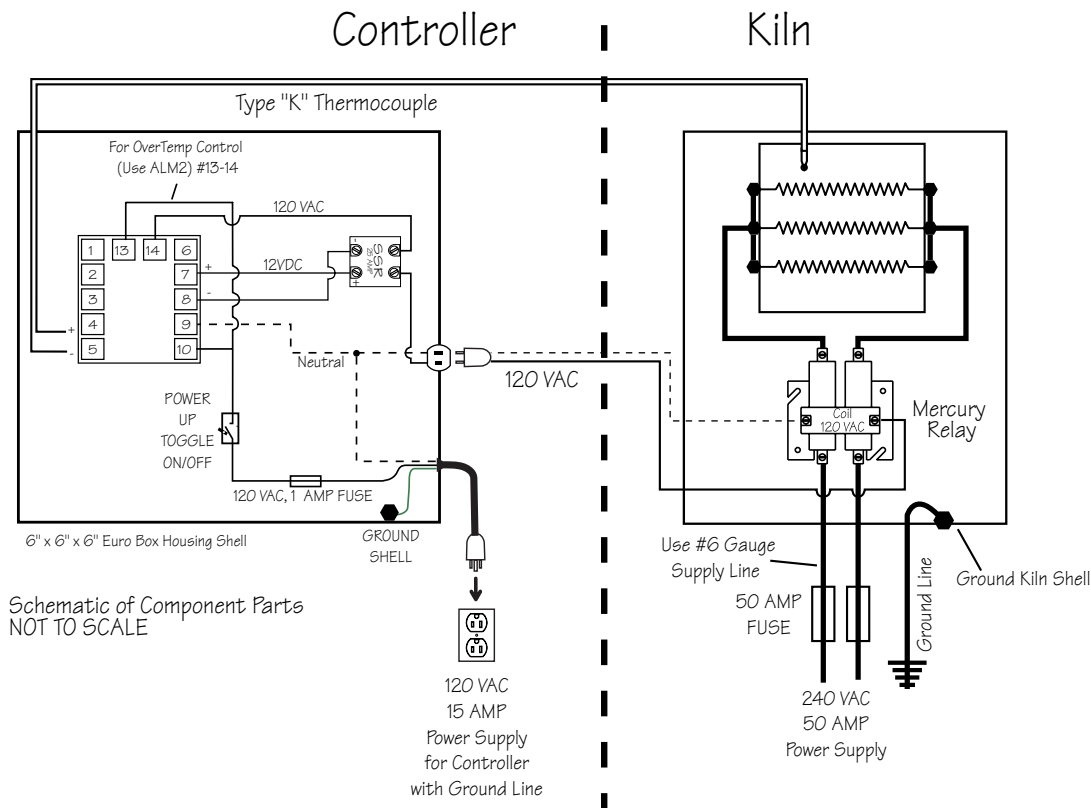


Fig. 14 Schematic for controller and kiln with internal over temperature control through the use of the Alm-2 function. This kiln has a 240 volt power source with 3 elements for heat and it draws 42 amps of power. The kiln and mercury relay are "hard wired" and the control box is hooked onto a cool side of the kiln and plugged in to a wall outlet. The mercury relay is plugged into the control box and the pyrometer is inserted through the kiln wall to read the internal kiln temperature.

And finally I want to discuss a little more about over temperature control. I have never experienced what is call a "lock-on" or a melt down since I've been using automatic controllers. I had plenty of that foolish stuff when I was manually running things in my gas annealer or in chromalox controlled annealers. But as has already been mentioned the Auber controller has two alarm circuits which work perfectly for our purposes and the one I most prefer is the Alm-2, what is called the low alarm. This means if the temperature of the probe is under the set parameter the circuit is closed. Say with an annealer you don't want the temperature to ever get above 965° F. you would set the parameter of Alm-2 at 965. Put this relay inline with the power going to the mercury relay coil. Now if ever the temperature goes above 965° F. the power to mercury relay coil is shut off which in turn kills the power to the elements. When the temperature drops below 965 the power goes back on. The advantage of this system is you don't loose your glass which would happen from a latching relay which essentially would crash the kiln. If you wanted to know this event was in process you could set the Alm-1 to 965°F too. This relay works just the opposite. When the temperature event occurs this circuit will close (not open as Alm-2 does) which can send power to an alarm light or buzzer or both. Again, if you like the latching relay idea use the DigiKey #PB472-ND. I want to devote a few pages to the actual construction of this handy controller.