

Hardware shutdown for furnace over temperature alarm

APPLICATION A165

Type of Company: [Manufacturer/Supplier of Gasses](#)

Location: [New York](#)

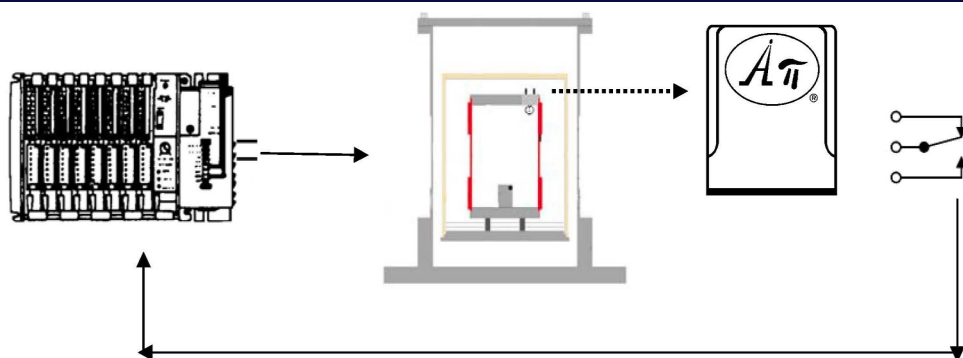
Powder coating is a type of coating that is applied as a free-flowing, dry powder. Powder coatings contain no solvents and release negligible amounts of Volatile Organic Compounds (VOCs) into the atmosphere. The coating is typically applied electrostatically and is then cured under even heat distribution in a furnace to allow it to flow and form a "skin." The customer has designed a new furnace that uses an application-specific custom PLC to maintain extremely accurate heat control. The PLC can shut furnace software down in case of an overtemperature event but has limitations.



Photo by S zillayali

The Engineering Issue

- The PLC uses software to shut the furnace down in case of an overtemperature event, but there must be a hardware shutdown for the control power to the furnace.
- This hardware shutdown is to prevent the furnace from going to an over-temperature condition in case of any software issues and needs to be "failsafe."
- The hardware shutdown system must be easy to repair in the field.



The engineer used a API 1200 G. This specially-ranged unit was not only "failsafe" but also has a latching relay functionality that requires someone to manually reset the furnace and verify that the power is operating properly. It is easy to "hot-swap" out to repair in the field.

Problem. Solved.