



#### 4 Thermal Hazards in Control Panels and How to Prevent Them

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Among the biggest stumbling blocks associated with creating a reliable control panel are problems related to thermal heat transference and control. When designing an enclosed control panel unit, keep these hazards in mind in order to address problems in the future:

#### Improperly Arranging Electrical Components

Heat-sensitive components should always be placed near the bottom of the component to allow for cooler internal air. Natural convection causes heat to rise within enclosed spaces, meaning you should place more sophisticated, insulated, or heat-shielded components closer to the top of the component design if you arrive at an impasse.

### Choosing an Inadequate Enclosure Size

Though today's design influences dictate everything must be smaller, faster, and cheaper, the truth is that many internal components fail prematurely due to lack of proper airflow and poor heat dissipation. By increasing the spacing between components, your design will help unrestricted the flow of air and guard against the formation of hot spots inside your control panel.

### Neglecting Environmental Considerations


When was the last time you asked where your design would be placed in relation to the warehouse, factory, or workshop? With a little extra legwork on your part, you can eliminate the potential for external environmental hazards in your design that may lead to premature component failure. After all, what good is a well-designed control panel if it's going to be placed next to the facilities primary furnace or HVAC exhaust?

### Failing to Include Heat Monitoring Tools and Equipment

Again, going the extra mile for your client or company and including built-in heat monitoring functionality in your control panel designs will alert users to a potential heat hazard. Basic monitoring systems are extremely cost-effective and in the long run, one could argue for their importance in preventing replacement or repair costs for your original unit.

For more information on building the ideal industrial control panel without breaking the bank, [contact Front Panel Express](#). With complimentary design software and a wealth of knowledgeable design experts at your disposal, we can be the perfect partner for small, medium, or large-scale component enclosure projects no matter where you're located.

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