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# Fail-Safe Over-Heating Protection

Fail-Safe Over-Heating Protection: A Necessity for Electric Heaters in HVAC Systems

Potential Melt-Downs of Electric Heaters Not Having Fail-Safe Thermal Fuse Links Can Cause Fires

"Without overheating protection, a contractor is literally playing a life and death game. The fire danger and potential life loss is never worth the risk. Having a system in place to prevent the risk seems like a no-brainer." Those are the experienced words of Fred Kobie, president of Kobie Kooling, Fort Meyers, Fla. Automatic reset temperature limit controls are commonly used to cycle the heaters on-and-off. However, it is not widely known that they do not provide failsafe over-heating protection. In fact, a major automatic reset temperature limit control manufacturer actually disclaims liability with the following notice: "If failure of the control to operate could result in personal injury or property damage, the user should incorporate supplemental system control features to achieve the desired level of reliability and safety."



Heaters having automatic reset temperature limits and no supplemental system control features, such as thermal fuse links, can short-cycle (cycle off and on excessively). This occurs from overheating due to overvoltage, low airflow, or fan failure. In time, after operating in this abnormal condition, the limit's contacts can fail in the closed position with the contacts welded together (commonly referred to as "sticking"), thus preventing the heater from shutting off safely. Out-ofcontrol overheating and potential melt-down can result. During the equipment's service life, this condition can go unnoticed by the end-user for extended periods of time until fire or other catastrophic damage occurs without any warning.

Only electric heaters with fuse links that provide fail-safe over-heating protection (or other fail-safe system control features that provide equivalent protection) should be used in homes and buildings to ensure safe operation throughout the life of the equipment.

The solution is to use thermal fuse links that inherently provide fail-safe overheating protection and do not require "supplemental system control features".







