Protecting Your Micro-environment From Fire

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Micro-environments are applications where the potential for fire hazard can be contained within a specific enclosure. Firetrace International's stand-alone automatic fire suppression system for microenvironments is currently protecting more than 250,000 pieces of mission-critical equipment around the world.

The company's fire suppression system detects and extinguishes a fire in an electrical cabinet, keeping damage to the protected cabinet to an absolute minimum and preventing the spread of fire to adjoining units. This ensures that the cabinet can resume its function as an essential part of the plant's production process in the shortest possible time.

A major benefit of a system like Firetrace's is that, in addition to detection taking place inside the cabinet itself, because the system is self-seeking, detection is at the very point where the fire breaks out. In Firetrace's case it is possible because the system utilizes Detection Tubing – specially developed small-bore polymer tubing that is a linear pneumatic heat and flame detector that delivers the desired temperature-sensitive detection and delivery characteristics. The flexibility of the proprietary tubing means that it can be threaded around the cabinets tightly packed compartments and components.

Electrical cabinets that use the Firetrace Direct Release System utilize the Firetrace tubing as both the detection device and the suppressant delivery system. When the tubing detects a fire anywhere along its length it ruptures, forming an effective spray nozzle that automatically releases the entire contents of the cylinder, extinguishing the fire precisely where it starts and before it can do extensive damage to the cabinet. The entire cabinet is filled with extinguishing agent at a design concentration that prevents fire spread and re-ignition. In fact, due to the discharge via tubing rupture, multiple cabinets can be protected with a single Firetrace system, as the system will deliver agent only to the affected cabinet.

The Firetrace Detection Tubing is linked, via a custom-engineered valve, to an extinguishing agent cylinder. A wide selection of suppression agents is available, the choice being dependent upon the particular characteristics of the fire hazard and any environmental considerations. For electrical cabinets and enclosures, such as fuse panels, switchgear and relays, the most appropriate suppression agents include 3M™ Novec™ 1230 Fire Protection Fluid and Chemours™ FM200™. Both of these clean-agent suppressants leave no residue to damage sensitive equipment; they are non-conductive and non-corrosive, making them ideal for electrical components.

Significantly, Firetrace is self-activating, which means it does not require any electrical power. The Firetrace Detection Tubing is fed into each compartment through cable glands, so the installation in no way compromises the cabinet's IP rating. Firetrace systems carry UL [Underwriters Laboratories] and FM [Factory Mutual] certification, along with more than 25 international certifications including CE and CSIRO (listings and approvals vary by system and agent).

The high-risk areas of sealed electrical cabinets are the internal compartments, so this is where the fire detection and suppression needs to be sited. Relying on external protection is doomed to fail because, by the time the fire is detected, the fire has potentially escaped the initial enclosure to spread to create much greater damage.

Installation of Firetrace is very straightforward for both new and retrofit installations The system is delivered with a factory-fitted normally open/normally closed low pressure switch that allows system discharge to be monitored and integrated with the site's fire detection and alarm system or building management system. It can also be configured to activate other fire safety measures including sounding alarms, shutting-down equipment, activating dampers and closing fire doors.

About Firetrace® International

ISO 9001:2008 registered Firetrace International is headquartered in Scottsdale, Arizona, with its EMEA offices in Gatwick in the UK. Genuine Firetrace is available only via Firetrace International's global network of authorised distributors. These trading partners are skilled in hazard analysis, agent and system selection, installation, commissioning and support. They also use only genuine Firetrace components.

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