

## MACHINERY CONTROL CABINET PROTECTION

WITH



**ONLY GENUINE FIRETRACE  
SYSTEMS ARE UL LISTED AND  
FM APPROVED.**

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**APPLICATION OVERVIEW  
PROTECTING ELECTRICAL CABINETS WITH FIRETRACE**

**Machinery Control Cabinets** – maintain and control vital processes within an organization. The loss of or damage to an electrical cabinet by fire can cause catastrophic impairment to an organizations' ability to continue a critical operational procedure. This can lead to financial loss, downtime or loss of ability to function.

**A BURNT OUT MACHINERY CONTROL CABINET**



**Worst Case Scenario.** This is a recent photo of a burnt out MCC at a location in Europe which did not have any automatic in cabinet fire protection. It was a control cabinet for vital functions within this company's operation. The loss through downtime and effected stock was considerable. Though the smoke alarm was triggered by the time the the fire brigade could extinguish the fire the damage had been done. An engineer on site tried to tackle the fire with a hand held CO2 portable extinguisher but the smoke and flames and the enclosure around the burning components meant that he was unable to effect the fire in any way.

### Small Fire – High Value Risk

A small fire starting in a low cost electrical cabinet can spread and cause millions of dollars worth of incremental damage. A Fire of this nature can impact the whole operation of a business and cause serious life safety issues. Small Fires can lead to huge damage and cost. A small electrical cabinet fire in the Cargo section of Turkey's Ataturk Airport in June 2006 is thought to have developed to go on to cause tens of millions of dollars of further damage. Protecting Electrical cabinets with a low cost but highly effective Firetrace Protection System can be part of responsible Fire Risk Reduction program inside an organisation.



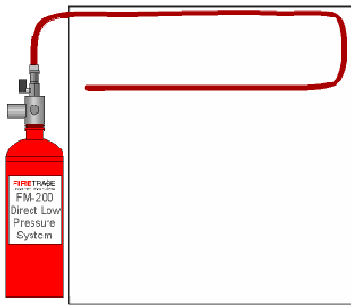
### **Solutions**

The common systems selected to protect electrical cabinets are Firetrace FM-200 or Novec-1230 Direct Low Pressure Systems. The extinguishing agent is electrically non conductive and can be delivered directly onto the source of the fire in a charged or live cabinet - extinguishing at the point of ignition immediately. The discharge of agent will continue through the burst point in the Firetrace Detection Tube until the Firetrace cylinder is empty. This means that the entire cabinet becomes filled with extinguishing agent at a design concentration which prevents fire spread and fire re-ignition. As a general guide we would suggest 1KG (2.5lbs) of extinguishing agent per cubic metre of internal cabinet volume. This is well above the heptane cup burner extinguishing concentration values of each extinguishing agent but far under the LOAEL of the room volume meaning the extinguishing power of a Firetrace system in electrical cabinets is exceptionally high whilst completely safe for use in occupied spaces.

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## FIRETRACE DIRECT LOW PRESSURE SYSTEMS INSTALLED ON ELECTRICAL CABINETS



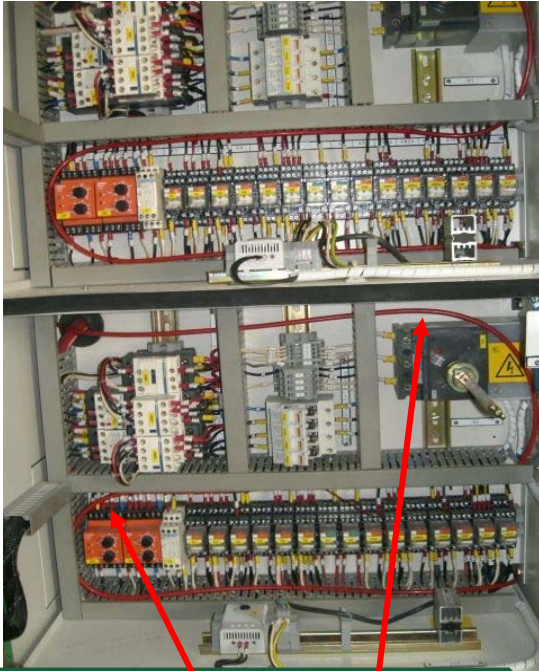
This photo was taken at a large Aluminium Plant in Europe where Firetrace MCC in-cabinet fire protection was installed on critical process control equipment. The photo demonstrates that Firetrace requires no additional cylinder storage space, gas distribution piping or structural impact on the room.

### INSTALLATION

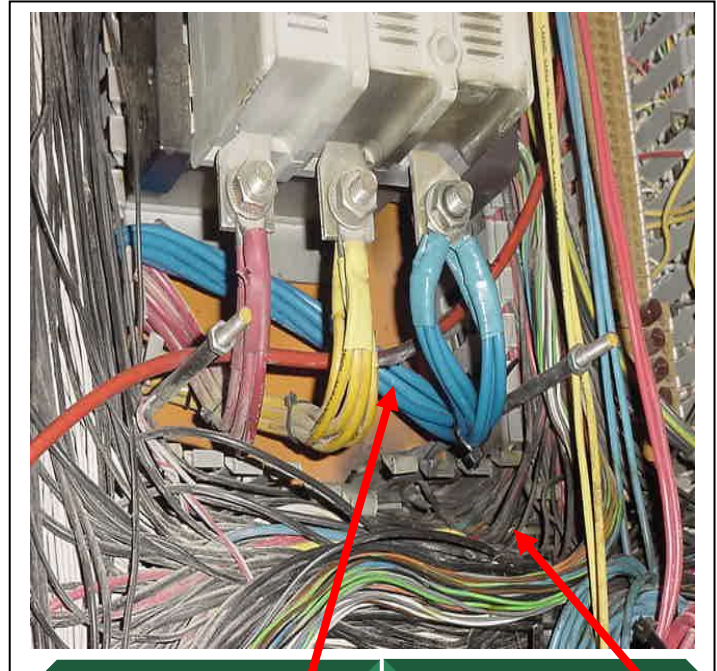
Firetrace systems are modular, self contained detection and extinguishing systems. They do not require an external power supply to operate and their installation is very simple. Whilst other Fire extinguishing systems require installation of pipe work, pressure ventilation outlets, and a dedicated area for cylinder storage Firetrace Cabinet protection systems are installed in, on or close to the Fire Hazard itself.

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## INSTALLING FIRETRACE



Firetrace Detection Tube is installed to be in close proximity of MCC components to ensure quick reaction detection and extinguishing at the point where the fire starts.



Tube Burst Point – showing the extinguishing agent was delivered straight into the heart of the fire.

Seat of Fire in Cable Bundle caused by loose connection / arcing

Fires in electrical cabinets are normally rapid developing fires caused by short circuits or arcing meaning there is typically a very short time between fire development and physical flame. The use of the Firetrace Detection Tube strategically located in close proximity to the individual components will rapidly detect and then extinguish a fire as shown the photographs. Unlike systems that require discharge through nozzles or diffusers – the strength of the Firetrace solution is that the agent is always delivered straight to the heart of the fire - wherever it starts - leading to instant extinguishing. There is no time wasted, taken to fill an enclosure to an extinguishing concentration.

The fire is rapidly extinguished and the damaged components can then be easily and quickly replaced. The Firetrace system prevents fire spread within the cabinet meaning that a fire is quickly contained and limited to the place where it starts.

Because all Firetrace systems are supplied with a factory installed Low Pressure Switch the Firetrace system can be integrated into the Fire Alarm system immediately notifying on site engineers that a fire has been detected and extinguished.

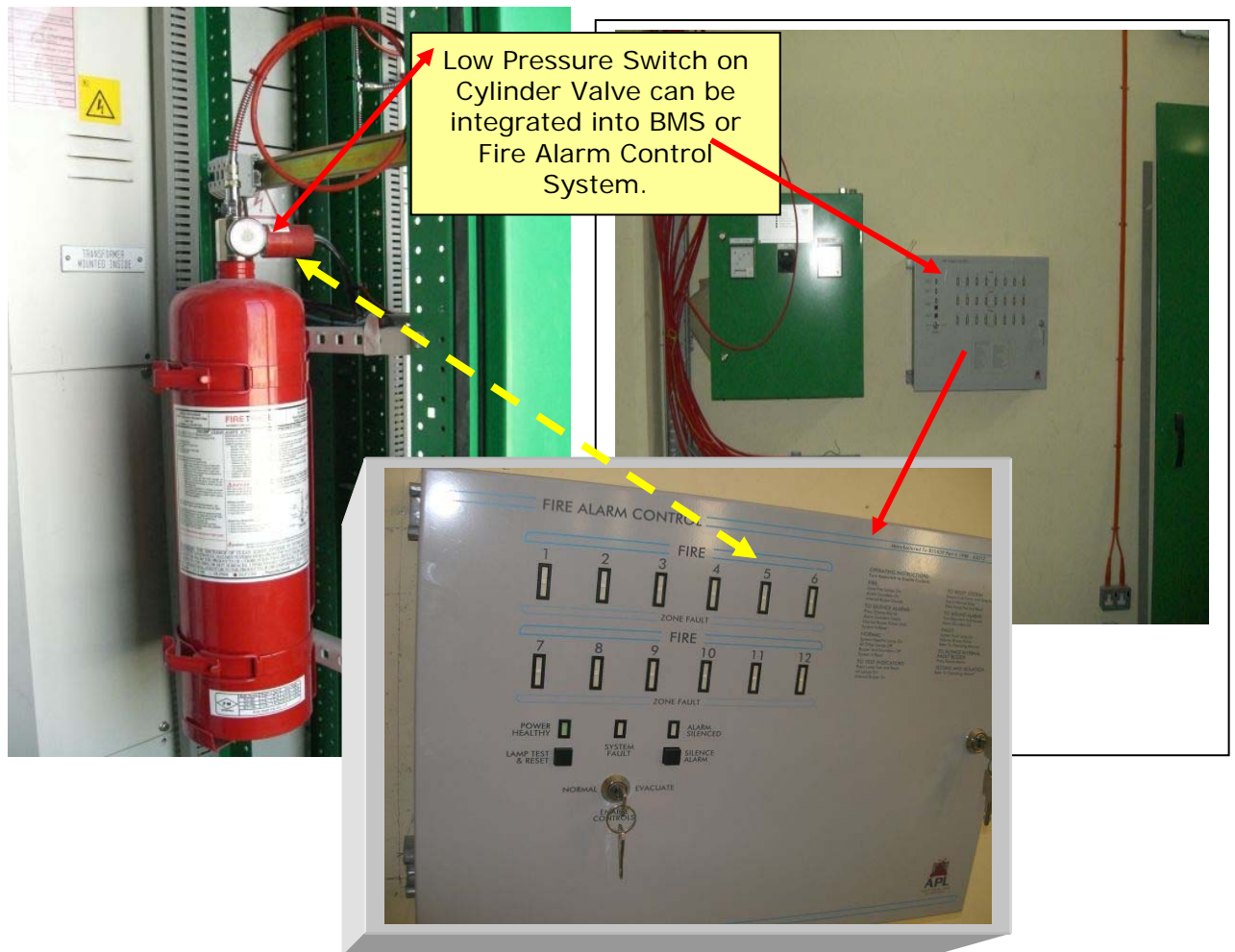
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## FIRE ALARM INTEGRATION

The Firetrace system is delivered including a factory installed normally open / normally closed Low Pressure Switch. This allows the discharge of a Firetrace system to be monitored and integrated with the Fire Alarm or Building Management system.

This output signal can perform other functions as required ie sounding alarms, shutting down equipment, activating dampers, fire doors etc.



The Firetrace systems do not need to be connected to an external power supply source so even in the event of a general power failure the Firetrace System is always on and ready to protect critical equipment against the risk of fire.

FIRETRACE SYSTEMS ARE ONLY AVAILABLE FROM FIRETRACE INTERNATIONAL AND ITS AUTHORISED PARTNERS. THE FIRETRACE BRAND NAME IS ONLY APPLICABLE TO GENUINE FIRETRACE SYSTEMS.  
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## So Why is Firetrace so Good for Protecting Electrical Cabinets?

Firetrace systems are the ideal in-cabinet Fire Protection solution and are installed in thousands of locations worldwide. They quickly detect and extinguish fires inside critical equipment. The extinguishing agent is delivered straight onto the source of the fire through the burst point in the Firetrace Detection Tubing, extinguishing it immediately.

Unlike some other technologies there is no delay in the build up of an extinguishing concentration or a delay caused because the extinguishing gas must find a way into the cabinet and to the source of the fire from the outside. Firetrace systems localise the fire and prevent fire damage to the cabinet components.

Each electrical cabinet can be protected on an individual or grouped basis (depending on hazard analysis and risk assessment) so a fire in a given cabinet does not lead to the costly discharge of a large amount of room volume extinguishing agent meaning refill costs are low. Firetrace systems are small, refilling and reinstallation is quick.

Above all, the benefit of Firetrace systems is in the Firetrace Detection Tubing. The Detection tubing allows detection anywhere inside the cabinet meaning the fire is detected and extinguished at an early stage – at the point where the fire starts.

Other technologies using “ glass sprinkler bulb” type actuators discharge much later as the heat must build up around the glass bulb and reach a certain temperature to break it. This can be a problem if the glass bulb is located a distance from the source of the fire as the fire needs to be of unacceptable size before the glass bulb breaks – meaning that the electrical cabinet might be completely destroyed before the extinguishing agent is deployed.

Systems that discharge through pipework and nozzles have the difficulty in delivering the extinguishing agent rapidly onto the fire source. Electrical Cabinet manufacturers are hesitant about maintaining warranty and type test certificates on Electrical / Machinery Control Columns that might be installed with electrically conductive (metal) pipework.

The Firetrace Detection Tubing is electrically non-conductive and is flexible enough to be routed through the electrical cabinet just like any other “cable”.

It is the simplicity, efficiency and effectiveness of Firetrace Direct Low Pressure Detection and Extinguishing systems that makes them appear purpose built for protecting critical Electrical and Machinery Control Cabinets from Fire.

Please visit our websites for much more information: -

[www.firetrace.com](http://www.firetrace.com)  
[www.ftaero.com](http://www.ftaero.com)

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PROTECT YOUR  
ELECTRICAL CABINETS

**BUSINESS OPERATION,  
MANUFACTURING, PROCESSES,  
QUALITY CONTROL, CAPABILITY,  
REVENUES, PEOPLE, CONTINUITY,  
CUSTOMER CONTRACTS,  
CONTROL, ABILITY TO FUNCTION**

FROM FIRE



**SPECIFY  
&  
INSTALL**

**FIRETRACE**<sup>®</sup>  
AUTOMATIC FIRE SUPPRESSION SYSTEMS

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