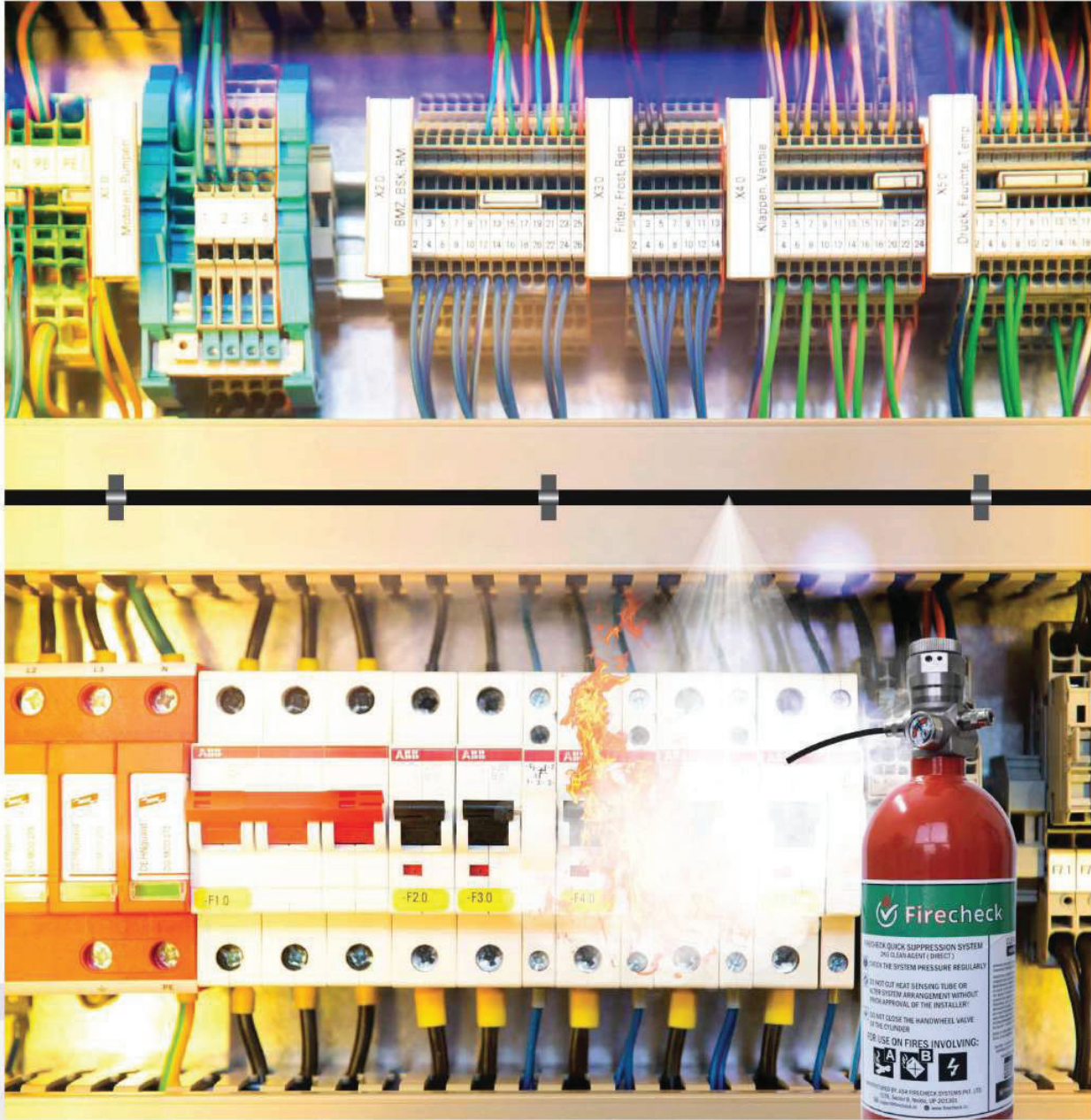
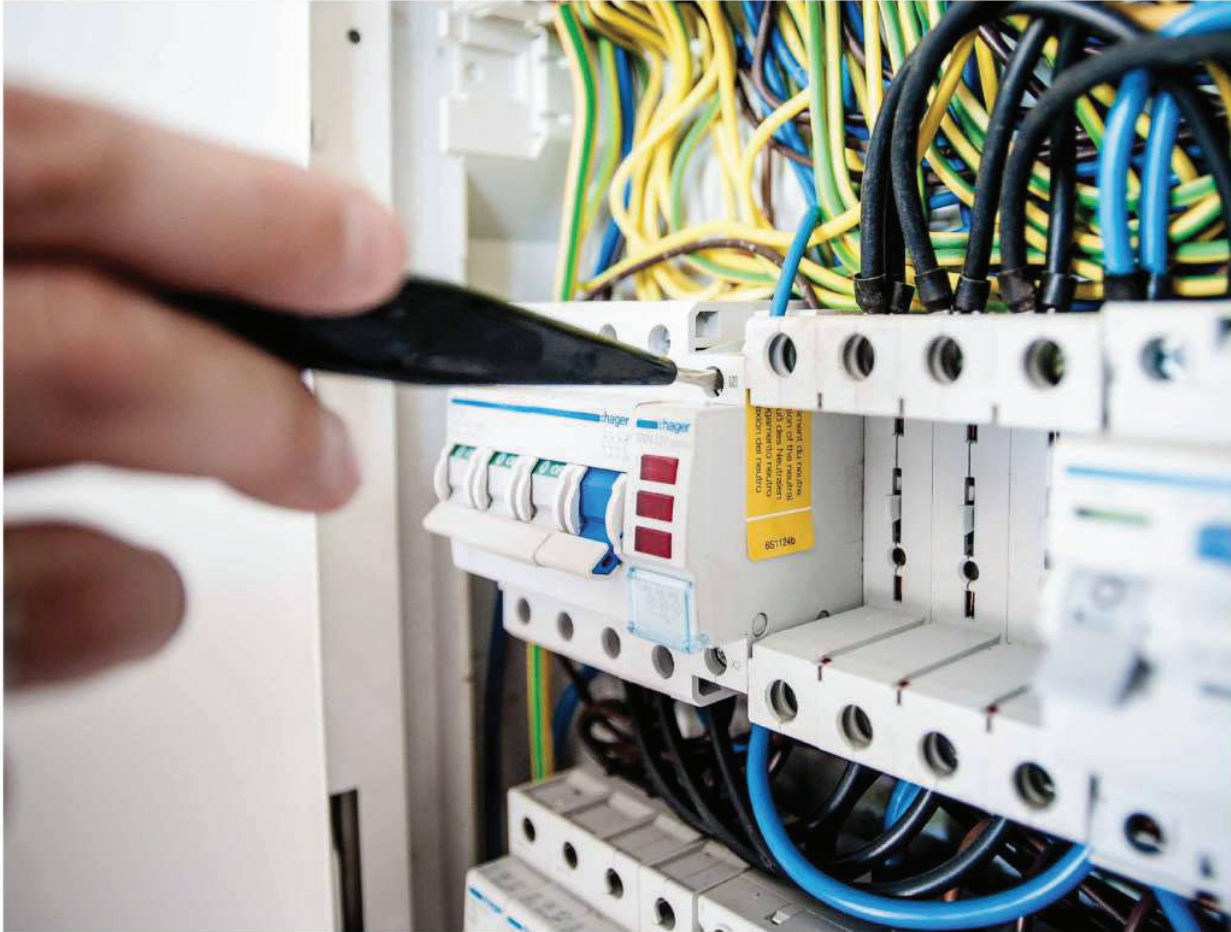




HOW TO FIGHT A FIRE WHICH IS NOT EVEN VISIBLE TO YOU



**IN-PANEL TUBE BASED MICRO
ENVIRONMENT SUPPRESSION SYSTEM**



Most of the fires start with short circuits due to failures in electrical infrastructure. They start with a tiny spark in the equipment, be it a Server rack, a Generator, Electrical Panel or any industrial machinery or equipment.

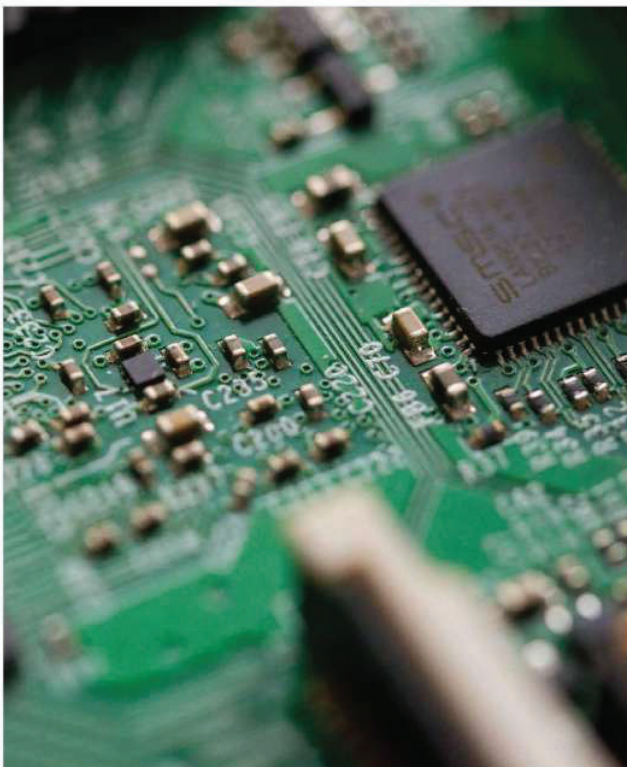
By the time you are able to detect the fire and take necessary action, its already too late because the equipment has already been destroyed by then. And since these fires are hidden and un-noticed, they start spreading out of the equipment and burning everything in the surrounding areas.

Your offices, production houses, commercial shops are always installed with flammable material, these flammable material becomes fuel to the tiny fire and becomes big and goes out of control. There is only way to deal with them : Instant detection and quick suppression.

But the question is how to detect a fire which is hidden and not visible to you? And even if it is detected by some means, how to fight such fires which is difficult to access ?



IS THERE A WAY TO INSTANTLY DETECT AND SUPPRESS A HIDDEN FIRE?



Introducing FIRECHECK QUICK SUPPRESSION SYSTEM (FQSS), a revolutionary firefighting solution, which combines automatic state of the art technology, with functional simplicity to keep what's precious for you remains safe. This technology is being introduced in India by Firecheck industry experts having decades of experience in designing and developing fire fighting solutions.

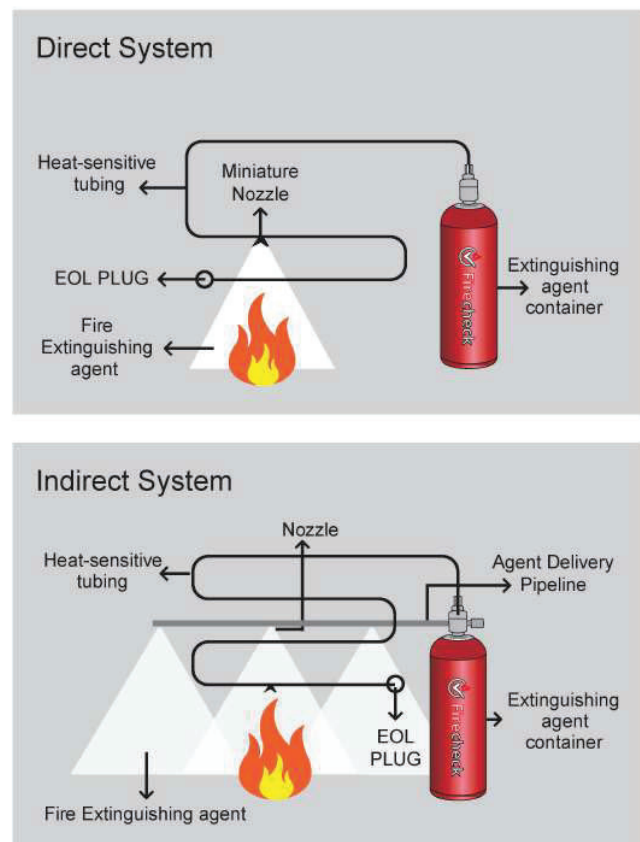
The most prominent feature of the Firecheck Quick Suppression System is the specially designed heat-sensitive pneumatic based modified polyamide tubing. The tube is connected at one end to the extinguishing agent container valve, while the rest runs throughout the nook and corners of your enclosed panels and different compartments. When the heat or flame arising out of the tiny fire comes in contact of the pressurized tube and reaches a temperature of 150 degree to 180 degree Celcius, the tube burst opens at the weakest point and creates a miniaturized nozzle. The pressure inside the container starts propelling the agent from the container and distributing / spraying from the nozzle directing the fire or flame, dousing the fire instantaneously. Due to the use of the extinguishing agent which is applicable on all type of fires, the system is effective in any class of fires.

This special technology is based on pneumatic activation and therefore, the same is entirely free from any third party sources and works on self-activation mode. It requires no human intervention and once it is installed, it guards round the clock every nook and corners of your enclosed micro-environments (Such as electrical panels, server racks, genset canopy etc.)

ENGINEERED SOLUTION FOR COMPLETE PEACE OF MIND

The Firecheck Quick Suppression System operates on two technologies – Direct and Indirect. In the Direct system, the heat-sensitive tubing works on a dual action mode, i.e. bursting and creating a nozzle upon heating or getting in touch with direct flame due to the tiny fire and delivering the extinguishing agent from the miniature nozzle directly on the fire to achieve total extinguishment. This is ideal solution for fire risks in panels having multiple compartments.

The Indirect system, works indirectly, the heat sensitive tube works as a detection device and the extinguishing agent is delivered from the secondary pipe line fitted with the fixed nozzles. This is ideal solution for the cabinets or machinery having large compartments, where a total flooding like scenario is required to combat the fires, this solution is right fit for big UPS, Server Racks, CNC Machines, Generator Canopy, Bus engines, Earth movers engines, Enclosed transformers etc.



AN OVERVIEW OF SOME OF THE SALIENT FEATURES OF THE FIRECHECK QUICK SUPPRESSION SYSTEM:

Built to Firecheck's high quality standards, which are in compliance with international quality standards.

Entirely self-actuated, do not need any third party power supply to function, it works 24x7 without fail.

Quick and automatic activation, no need for human intervention. The system is ever-ready in case of any fire scenario.

Uses Clean agent, Powder or other extinguishing agents depending on the requirement.

Flexible tubing allows protection in areas that are difficult to access for any other means of detection.

Simple design, can be installed quickly within few hours.

European quality ensures it can withstand even harsh conditions where other types of detection systems might be found inadequate.

DIRECT SYSTEM

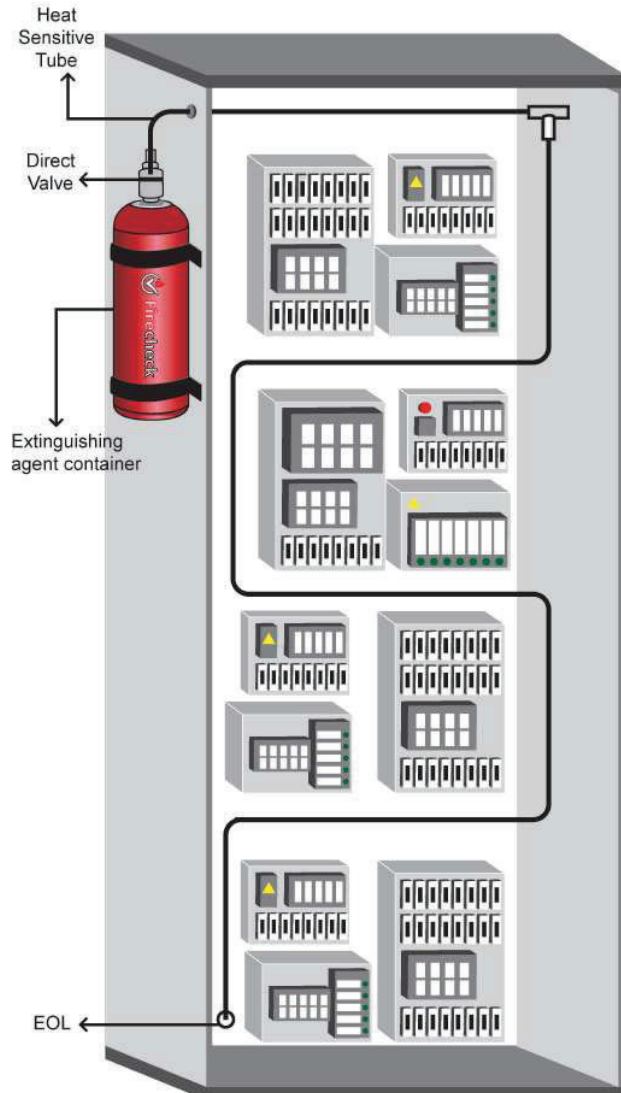
The Firecheck Direct Quick Suppression System is ideal for situations in which fires can break out in micro environments. The Direct System is designed by the Firecheck's Design Cell and installed by Firecheck's trained installers post an assessment of the location.

FUNCTIONING

The multi-layered heat-sensitive modified polyamide tube is connected to an extinguishing agent container via a specially designed release valve. When a fire breaks out, it results in a fast increase in temperature. When it reaches 150° - 180°C the heat-sensitive tubing bursts at the point it is in contact with the flame to form a miniature nozzle. The agent further travels out of the container and through the miniature nozzle, flooding the enclosed localized area or the micro-environment and instantly extinguishing the flame.

ADVANTAGES

The advantages are plain to see. A small fire that breaks out in a server or machine may not trigger an alarm until it is too late. This system, on the other hand, can run intricately and unobtrusively through servers, gensets and electrical mains boxes, and is triggered instantly and automatically. This eliminates the need for human intervention and provides a swift and comprehensive solution.



FIRECHECK DIRECT LOW PRESSURE QUICK SUPPRESSION SYSTEM

The Firecheck Direct Low Pressure Quick Suppression System is an ideal solution in case of fire in a Multi compartment Panel, whether small or large.

It uses HFC236fa or HFC227ea or FK-5-1-12 clean agent or MAP90 Powder.

The Firecheck Direct Low Pressure Quick Suppression System is available in 1Kg, 2kg, 3Kg, 4Kg& 6Kg variants.



FIRECHECK INDIRECT LOW PRESSURE QUICK SUPPRESSION SYSTEM

The Firecheck Indirect Low Pressure Suppression System is ideal for locations where there is a chance of ignition of fires at multiple points in a single or double compartment unit. For example: a large server rack, a UPS box, a

CNC machine, BUS engine, earth mover engine where a voltage surge can short-circuit components at multiple locations and cause them to catch fire.

STRUCTURE AND INSTALLATION

The Indirect System works differently from the Direct System. The Pneumatic Polyamide heat sensitive Tube acts as a fire or heat detector wherein the secondary pipeline fitted with specially designed nozzles acts as a total flooding system in a confined volume.

The installation of Firecheck Quick Suppression System requires a preliminary assessment by our expert team, using blueprints, CAD drawings, photographs and information of the enclosed cabinet. The Design team then puts together a completely customised solution based on the technical survey.

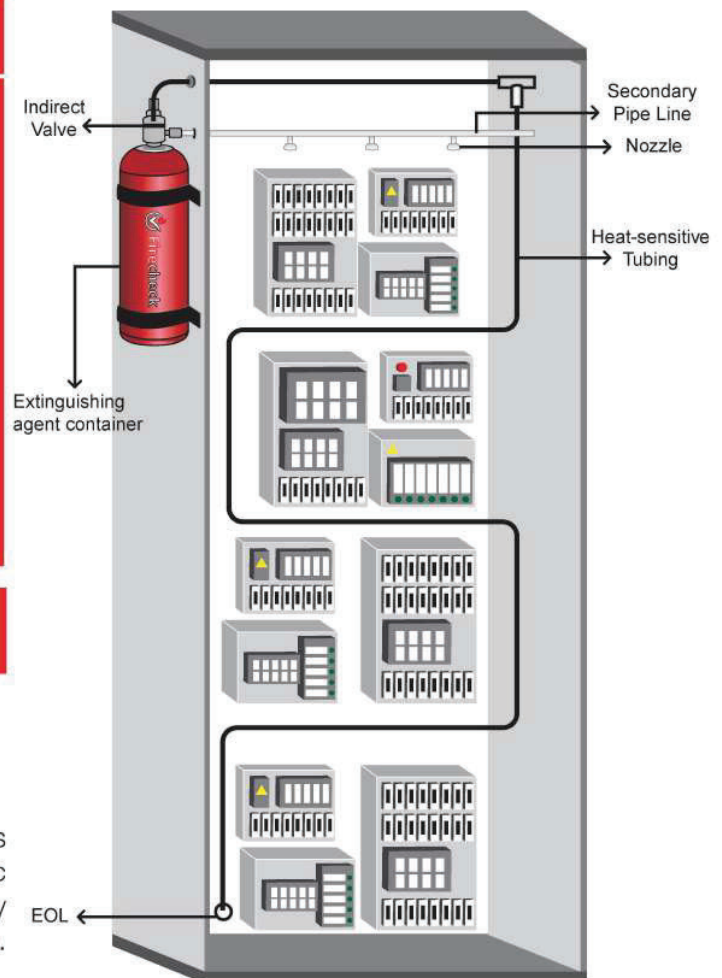
SYSTEM FUNCTIONING

When a fire breaks out at any location, it is detected by the firecheck pneumatic tube, upon release in pressure of the tube, the in-direct pressure differential valve triggers automatically. When the valve opens, extinguishing agent propels out of the main cylinder through the pipework, and is sprayed through strategically placed nozzles, achieving a total flooding of the enclosed volume and achieving a total extinguishment.

ADVANTAGES

The flooding of entire enclosure ensures a complete extinguishment and also prevents from re-ignition.

The main advantage of In-direct system, is total flooding and the design of the pneumatic system makes it totally independent from any human or electrical or electronic activation.



The Firecheck Design Cell

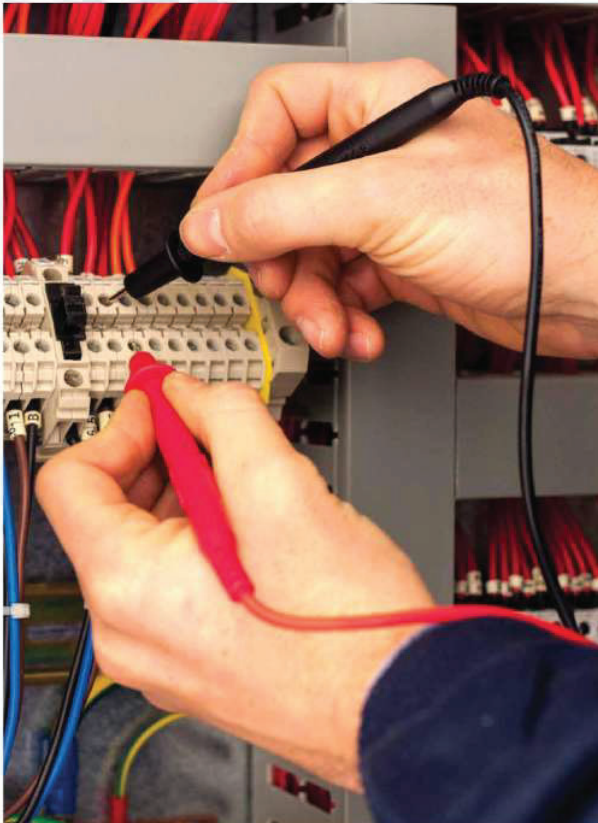
When it is the matter of saving lives, there is no room for compromise. Even a silly error can result into total malfunction of the system installed. A poorly designed system is as good as having no protection.

It is therefore, important to follow a proven design standard with reference to all National and International Guidelines.

This is where the Firecheck Design Cell comes in. A team of experts carries out a complete survey of the area or equipment to be protected, identifying the risk points, with the assistance of CAD layouts, blueprints and photographs of the equipment to be protected. Once received the inputs a

Firecheck Installation Team

Once the System Design is approved by the customer, the Firecheck Trained & Certified Installers, follows the system design layout and completes the installation.



comprehensive solution is then engineered – be it a Direct or Indirect system, to know the exact tube lengths, pipe and fittings and capacity of the extinguisher agent required to achieve the flooding factor as specified in various standards of repute like LPS1666, UL, NFPA.

Firecheck Audit Team

Post the installation is completed, a complete handover document is generated, the Quality control Checklists are filled as per ISO 9001 process, Photograph and Video is taken of the various vital installation points and forwarded to the Firecheck Audit team, the audit team then reviews the complete installation and certifies the same. In case of any error, the same is corrected and re-certified by the Auditors.



RECOMMENDED USAGE

The Firecheck Quick Suppression Systems are ideal for a variety of applications, including:

- Electrical Panels
- Enclosed Battery Banks
- Networking/Switching Racks
- CNC Machines
- Printing Press
- Mobile Tower Switching Areas
- Heavy Transport Vehicles such as Airplanes, Ships and Cargo trucks
- UPS Cabinets / SMPS / PIU
- Server Racks
- Genset Canopy
- Injection Moulding Machines
- Diagnostic Machines
- Commercial Vehicles such as Cars, Buses & Trucks
- Industrial Equipment like Forklifts, Heavy Machinery, Earthmovers



Electrical Panels, UPS and SMPS

Short Circuits in the Electrical Panels, Electrical Component enclosures such as PIU, SMPS, UPS etc. are regular fire threat to any building, with constantly-running electrical equipment sometimes overloaded too are always prone to

fire. Minor short circuits can spark major blazes. It is imperative for these locations to be sufficiently protected against damage from such fires.



Electrical Panels, UPS and SMPS

Typical electrical enclosures include control panels, UPS, transformers/generators, cables, power vaults, SMPS and other similar enclosures with wires and components, which can spark a fire at any time. Most of these can be found practically in any industrial or commercial space. These instruments are all prone to fires, which may occur due to various reasons, starting from improper installation and wire fatigue to overloaded circuits and equipment failure or malfunction. Should a fire occur in any of these locations, it could spread rapidly, destroying equipment, lives and even the building.

Using Firecheck Quick Suppression System, the fire can be caught at a single location and extinguished before it can spread. It completely avoids the collateral damage that is caused due to other means of extinguishments like Water, Foam etc. Moreover, because the system utilises a non-damaging, non-corrosive extinguishing agent, there is no significant downtime required to restore the facility to a normal functional level.



SERVER AND TELECOMMUNICATION ENCLOSURES

In today's world, communication is key to success for any business. Nowadays, the machines are fitted into a rack of equipment and connected with complex wiring structures. In spite of inbuilt cooling fans, air conditioning

and air ventilation, short circuits and power fluctuation can spark fires that will sweep through a rack, destroying expensive equipment like Servers, Switchers, Routers and moreover priceless, the irreplaceable data.



SERVER AND TELECOMMUNICATION ENCLOSURES

For larger organizations, such accidents could mean massive losses in revenue; and even worse - a massive blow to reputation. Fircheck Quick Suppression System is the complete solution to these problems. Not only will it help extinguish these fires before they cause any

damage, it also helps to sound alarm to alert everyone at the vicinity and it will also help reduce the time and money taken to clean up and re-establish damaged property. Most importantly, it can save a reputation that's taken years to build.



INDUSTRIAL EQUIPMENT PROTECTION

Industries using high- end machinery such as CNC machines, injection moulding machines, generators, printing press or diagnostic machines are extremely prone to fire. Especially cutting, milling and grinding processes, which make use of oil-based cooling systems. Even smaller equipment within these factories such as forklifts, generator engines and alternators always run the risk of overheating and resulting into a fire explosion.

An undetected fire in any of these machines could easily spread to the surrounding areas into the building's structure through the ducting and wiring. This also becomes vulnerable when it comes into contact with other stored items,

such as Cooling Oil, Lubricating Oils, Petroleum Products, Spirits, Plastics, Woods and Furniture etc. Using pre-installed sprinkler systems often doesn't do enough to save machinery; worse still, collateral damage can often take a toll far heavier than that of the original fire.

Firecheck's Quick Suppression System is always vigilant and ready to spring into action in case of a fire. Should a fire break out, the heat-sensitive pneumatic modified polyamide tubing will detect the fire and activate the system to douse the flames almost instantaneously.



COMMERCIAL TRANSPORT

While using Cars, Buses, Trains and Trucks we never think about the fire, however, if you check news every day there is an incident of either of these catching up fires and costing lives and serious injuries to the mankind. The impact of fire in any of these public transport systems is tremendous. Most crucially, loss of life.

Using Firecheck Quick Suppression System in vehicles can help instantly detect and extinguish fires. The heat-sensitive modified polyamide tubing remains under pressure and bursts due to the heat and radiant energy of a fire, releasing the extinguishing agent through specially designed nozzles, therefore, flooding the fire zones and extinguishing the fire. It is a fast, reliable solution canasily be installed in any vehicle old or new.

