

Electrical Enclosure Fire Protection

Automatic Fixed
Fire Suppression Systems
for Electrical Enclosures

Using 3M™ Novec™ 1230 Fire Protection Fluid



LPS1666
Cert/LPCB ref. 783d



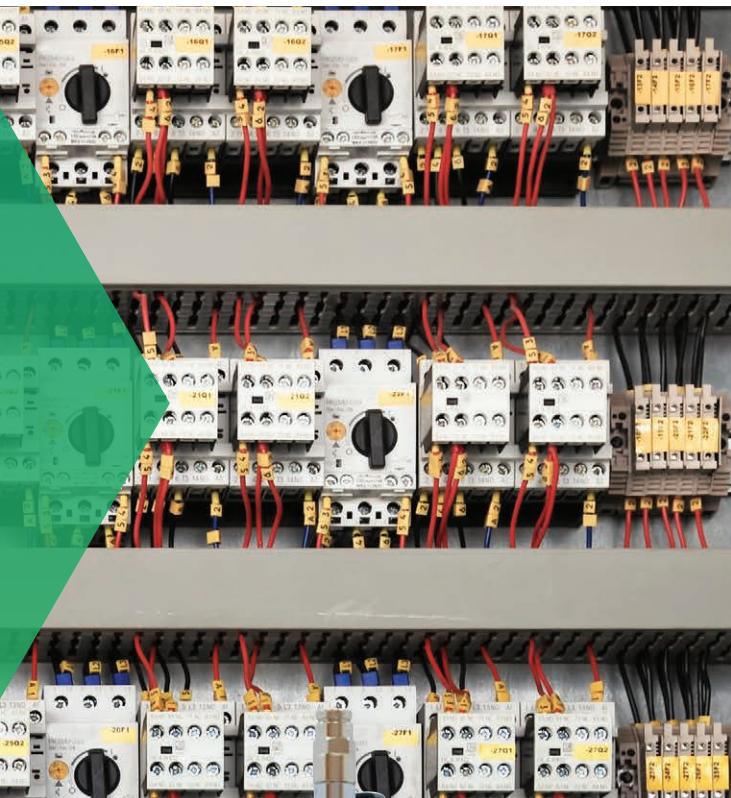
Why choose PAFSS®

► THE PROBLEM

Electrical enclosures can be found, often in multiple numbers, in more or less every workplace, factory, warehouse or general commercial site.

These small enclosures, including those for distribution, control, communication and servers, can present a particular problem where faulty equipment, damaged wiring or improper installation can increase the risk of fire.

Fires in such enclosures can be difficult to identify, often until it is too late to take action, especially in well sealed enclosures where there would be limited escape of combustible products or heat.



► THE PAFSS SOLUTION

PAFSS offers peace of mind for customers looking to specify a fully tested, approved and certified solution for fire protection of their electrical enclosures.

PAFSS Direct Low Pressure (DLP) fixed fire suppression systems have been specifically designed to protect small enclosures in accordance with **Loss Prevention Standard, LPS 1666. "Requirements and test procedures for the LPCB approval of direct low pressure (DLP) application fixed fire suppression systems".**

PAFSS DLP systems provide protection **inside** the enclosure and discharge at the heart of the fire, suppressing quickly and preventing the fire from spreading to neighbouring enclosures, equipment and the wider building. This can significantly reduce the risk of injury to personnel and losses caused by equipment down time and operational disruption.

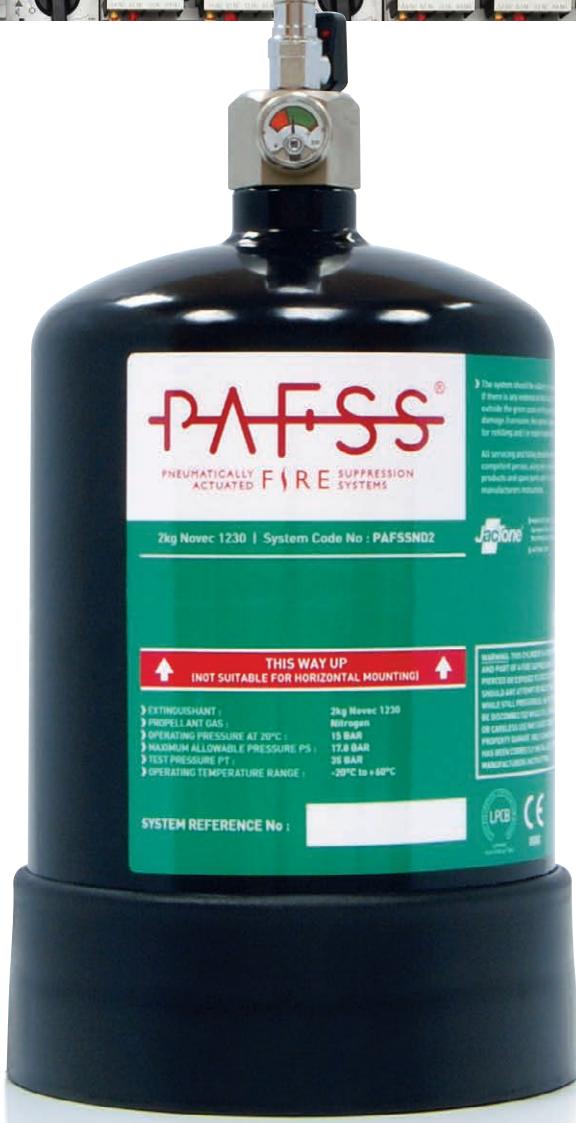
On guard 24 hours a day, 365 days a year



2797



*UL Listing for
PAFSS detection tubing



How PAFSS® works

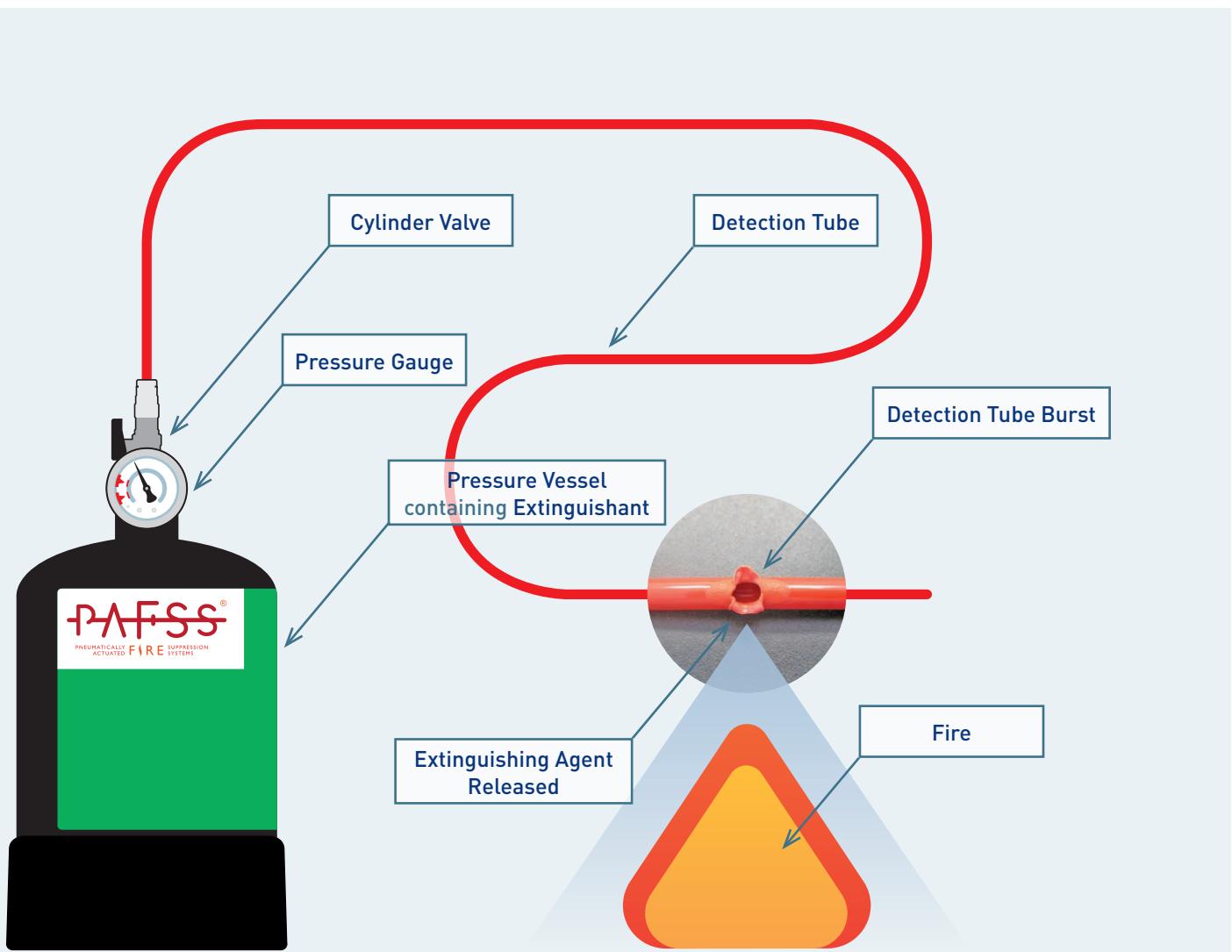
► PRINCIPLES OF OPERATION

PAFSS fire suppression systems are self-activating and require no external power for detection or operation making them ideal for unmanned or unsupervised applications.

At the heart of any PAFSS system is the special detection tubing which acts as a linear heat and flame detector. PAFSS detection tubing is completely flexible and is installed throughout the risk areas of the enclosure, providing fast and effective detection.

When the system detection tubing is exposed to flame or high ambient temperature, it ruptures with a burst at the hottest point and the drop in pressure activates the cylinder valve. The extinguishing agent is then discharged from the connected cylinder through the burst hole at the heart of the fire.

FIRE → TUBE BURSTS → EXTINGUISHING AGENT RELEASED THROUGH TUBE



PAFSS® protection

› WHAT DO PAFSS DLP SYSTEMS PROTECT



MOTOR CONTROL
CENTRES (MCC's)



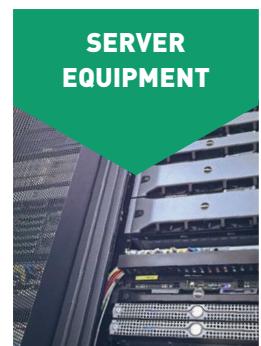
SWITCHGEAR



AUTOMATION
PANELS

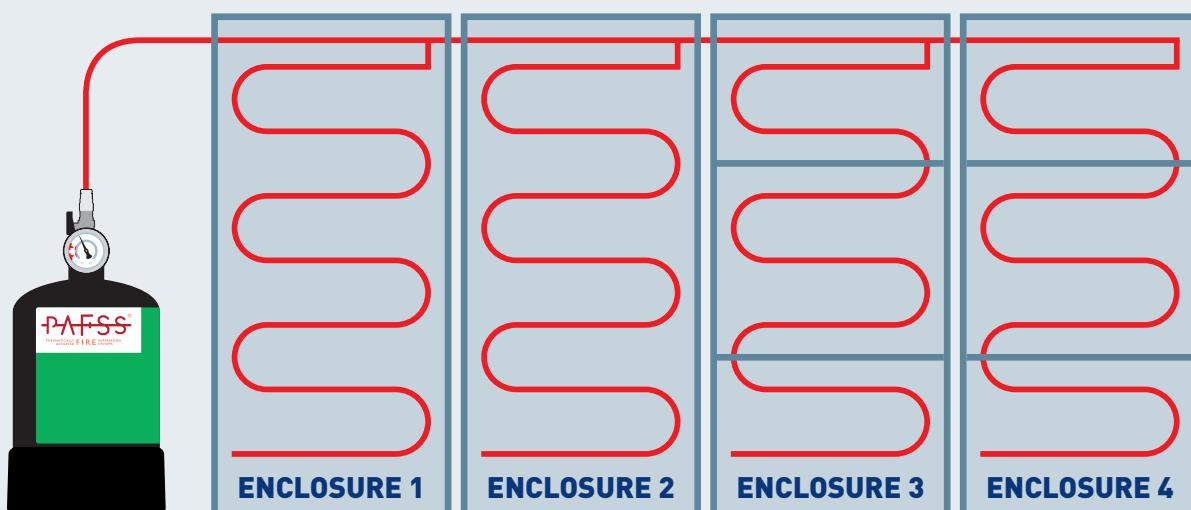


COMMUNICATION
CABINETS



SERVER
EQUIPMENT

› PROTECT UP TO FOUR ENCLOSURES WITH ONE SYSTEM



Four enclosures each protected by individual PAFSS detection tubing. Each enclosure can be multi-compartment.

NOTE: Risk assessment allows for only ONE fire in any ONE enclosure.

Detection: Tube Detection and Discharge

Due to its proximity to any fire or high ambient temperature, PAFSS detection tube can operate within the enclosure much earlier than detection devices outside the enclosure.

Suppression Performance

The discharge of the extinguishant is inside the enclosure and therefore right at the heart of the problem, meaning there is a much greater probability that the fire will be extinguished. The early detection and system discharge means the fire is suppressed at an earlier stage in its development. This minimises equipment damage and generation of combustion by-products.

Effectiveness against fire spread

PAFSS systems are able to prevent migration of the fire between cabinets e.g. from Enclosure 1 → 2 → 3 → 4

As electrical enclosures are often situated adjacent to each other and in multiples, this prevention of fire spread is absolutely critical.

Since systems are sized to protect the volume of enclosures only and not the whole room, this means there is a considerable reduction in the overall quantity of extinguishing agent required. This can result in significant cost savings when compared to much larger systems.

PAFSS® protection

› VENTILATION AND AIRFLOW

PAFSS DLP fixed fire suppression systems, which utilise 3M™ Novec™ 1230 Fire Protection Fluid, are fully certified to LPCB standard LPS1666 with the added provision of being tested and approved for use on enclosures that have either VENTILATION (enclosed or open vents) and / or AIRFLOW (fans). The presence of either determines the system container size, as per the guidance and limits in the system manual.

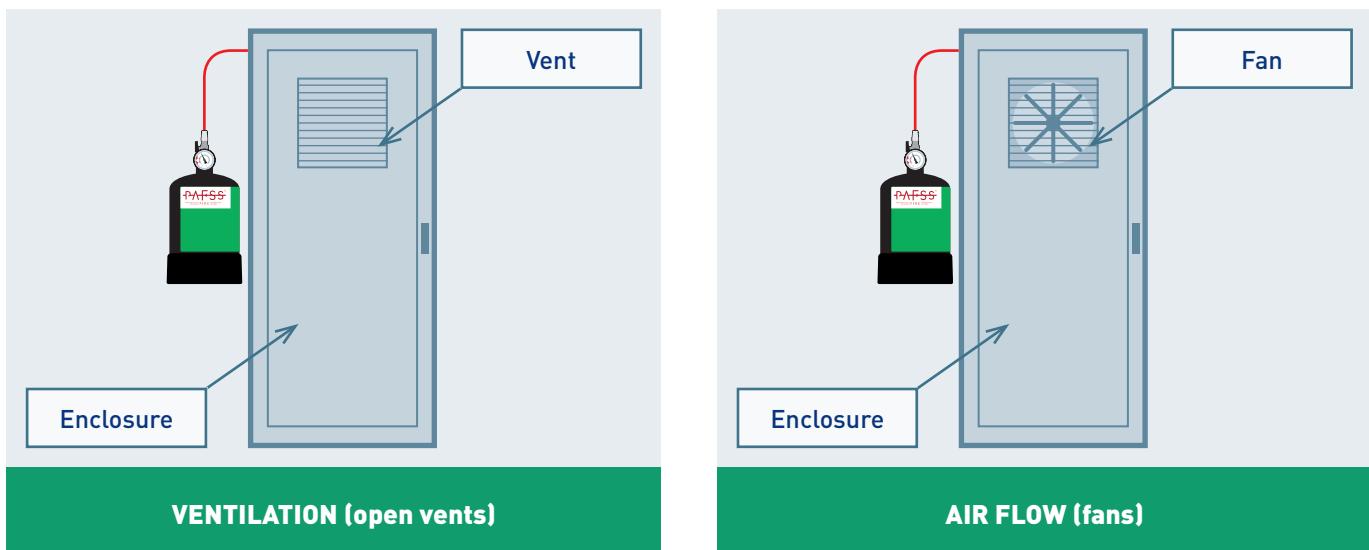


Appendix to Certificate No: 783d
Jactone Products Limited
Jactone® PAFSS® 3M™ Novec™ 1230 Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
PAFSSND2	2 kg	2 kg Novec™ 1230 DLP system	FSTFV300	Enclosed & open options ⁴	Forced & natural ⁵	783d/01
PAFSSND25	2.5 kg	2.5 kg Novec™ 1230 DLP system	FSTFV300	Enclosed & open options ⁴	Forced & natural ⁵	783d/02
PAFSSND3	3 kg	3 kg Novec™ 1230 DLP system	FSTFV300	Enclosed & open options ⁴	Forced & natural ⁵	783d/03

Notes

This provision in PAFSS DLP fixed fire suppression systems also future proofs the systems performance against maintenance or modifications that introduce further vent areas or fans to the enclosure that is being protected.



› UL LISTED DETECTION TUBE

The special detection tubing used in all PAFSS fire suppression systems is UL Listed.

The UL Listing qualifies all Jactone PAFSS detection tube as a 'Heat-automatic Fire Detectors – Component', after comprehensive testing in accordance with ANSI / UL 521 – 'Heat Detectors for Fire Protective Signaling Systems'.



PAFSS® protection

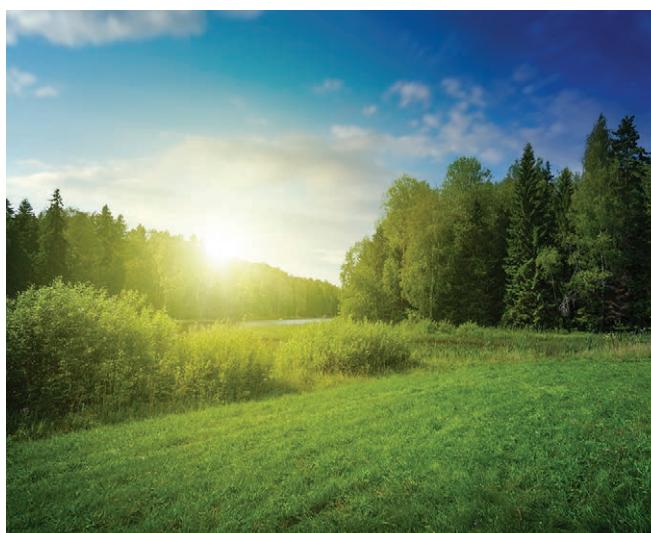
› 3M™ NOVEC™ 1230 FIRE PROTECTION FLUID

PAFSS DLP fixed fire suppression systems use the clean agent extinguishant 3M™ Novec™ 1230 Fire Protection Fluid.



Jactone Products, the manufacturer of PAFSS are a **3M approved original equipment manufacturer (OEM)** and offer PAFSS DLP fixed fire suppression systems with 3M™ Novec™ 1230 Fire Protection Fluid. A fluoroketone, it's environmentally sustainable and fast-acting. It's a cost-effective and environmentally sustainable Halon 1301 replacement and hydrofluorocarbon (HFC) alternative. Not only does it have more than 99.9% lower global warming potential than any halocarbon agent accepted for use in occupied spaces, but 3M also offers its 20-year Blue Sky Warranty to help protect system owners from regulatory risk of phasedown or phaseout.

3M Novec 1230 fluid is waterless and discharged as a gas, making it ideal to extinguish fires in spaces where electronics or irreplaceable, mission critical assets are stored or where continuity of operations is crucial. It has the highest margin of occupant safety of any NFPA 2001 clean agent and evaporates quickly, leaving no residue. In addition, it is electrically non-conductive, designed for applications where energised circuits and electronic systems cannot be shut down during an emergency.



Smart

When you choose 3M™ Novec™ 1230 Fire Protection Fluid, you're making a smart decision.

3M Novec 1230 fluid is designed to extinguish fires rapidly without damaging the contents of the room. And because it puts out fires fast, it reduces the likelihood of water damage from a sprinkler discharge. It's designed to help preserve business operations.

3M Novec 1230 fluid's environmental profile supports sustainability and LEED initiatives.

Safe

3M Novec 1230 fluid helps keep spaces safe for people, data and equipment - it's even safe enough for valuable items like works of art.

If discharged, it leaves no residue behind and does not damage electronic equipment or the data stored on it.

3M Novec 1230 fluid helps extinguish fire quickly, before it reaches a concentration that's unsafe for people. It has the highest margin of safety for occupied spaces of any clean agent in NFPA 2001 (2018 edition).

3M Novec 1230 fluid safeguards businesses in other ways, too. Its minimal knockdown time to extinguish a fire means little to no downtime - business keeps running, equipment and people keep working, and there's no impact to your customers.

Sustainable

3M Novec 1230 fluid is a sustainable solution.

It does not harm the ozone layer and has the lowest global warming potential of all chemical clean agents.

Comes with a 20-year 3M™ Blue Sky™ Warranty against future regulatory restrictions.

The benefits of PAFSS®

› CERTIFIED

PAFSS Direct Low Pressure (DLP) fixed fire suppression systems using 3M™ Novec™ 1230 Fire Protection Fluid are LPCB certified to LPS 1666, with allowance for vents (open or closed) and airflow (fans).

› EASY TO INSTALL

PAFSS is simple to install and maintain on both new and existing equipment.

› AUTOMATIC

PAFSS offers a fast and automatic operation from the initial detection of a fire, through to suppressing it.

› RELIABLE

PAFSS UL listed highly reliable detection tube remains unaffected by dirt, dust, debris and oil.

› FLEXIBLE

The detection tubing allows for an unlimited number of fire detection points. Its flexible nature means it can be located adjacent to identified risk areas, providing fast effective detection.

› EARLY INTERVENTION

The early intervention of a PAFSS system can often prevent the release of a larger room suppression system, saving on expensive refill costs.

› NO ELECTRICAL POWER

PAFSS requires no power supply for detection or actuation, remaining operational during power interruption.

› SYSTEM MONITORING

Integral pressure switches allow remote system monitoring and initiation of safeguarding actions.

› QUALITY COMPONENTS

Superbly engineered specialist valves and pressure vessels containing clean agent extinguishant.

› BSI ISO 9001:2015

Manufactured under a BSI audited quality management system ensuring commitment to quality products and services.

On guard 24 hours a day, 365 days a year



UK manufacturing and assembly



Fully certified system



Simple to install and maintain



On guard 24 hours a day, 365 days a year



Technical expertise, training and support

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