PAFSS LPS 1666 Certified Systems – User Instructions

1. Introduction

Small enclosures, detailed within this document, include electrical enclosures (Distribution, Control, Communication, Servers), CNC machines, Wind Turbines etc. Such enclosures can present a particular problem where faulty equipment and/or damaged wiring increase the risk of a fire. Other applications that fall within the system certification criteria can be considered for protection.

It can sometimes be difficult to identify when there is a fire in an enclosed volume until it is too late to take action, especially in well sealed enclosures where there would be limited egress of combustion products / heat from the enclosures.

PAFSS® provides protection inside the enclosure and discharges at the heart of the fire giving a surety that the fire will be extinguished.

A particularly important characteristic of PAFSS DLP systems is that they stop migration of fire from the enclosure where fire starts to neighboring enclosures, reducing significantly consequential losses and disruption.

The Jactone® PAFSS® DLP fixed fire suppression system has been specifically designed to protect small enclosures in accordance with LPS 1666 (Loss Prevention Standard):

"Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems using Heat Sensitive Pneumatic Detection Tube for the Protection of Small Defined Volume Unoccupied Enclosures".

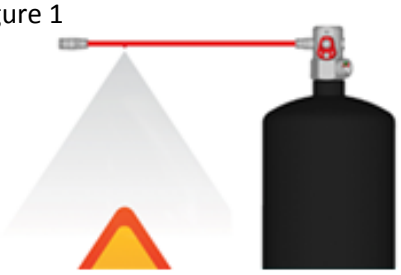
LPS1666
Cert/LPCB ref. 783d

2. Principles of Operation

Upon Flame impingement or high ambient temperature, the pressurised detection tube, connected to a cylinder containing the extinguishing agent, ruptures with a burst at the hottest point. The agent is then discharged through the burst hole at the heart of the fire.

PAFSS® DLP can protect up to 4 enclosures, each up to 2m^3, with just one system. Each enclosure may be multi-compartment.

Figure 1



Warning – Damage to the detection tube may lead to inadvertent system discharge

3. Extinguishing Agent

PAFSS LPS 1666 certified systems use 3M™ Novec™1230 Fire Protection Fluid, an electrically non-conductive clean agent – data sheet available upon request.

Novec 1230 fluid is applied as a gas but is a liquid at room temperature. It vaporises upon discharge due to its low heat of vaporisation and has a larger heat capacity than air alone. This allows it to absorb enough heat to extinguish the fire and requires the concentration of agent within the enclosure to be maintained for a sufficient duration. If discharged, it does no damage to electronic equipment or the data stored on it and also does no damage to the ozone layer.

4. Visual Inspection by the responsible person

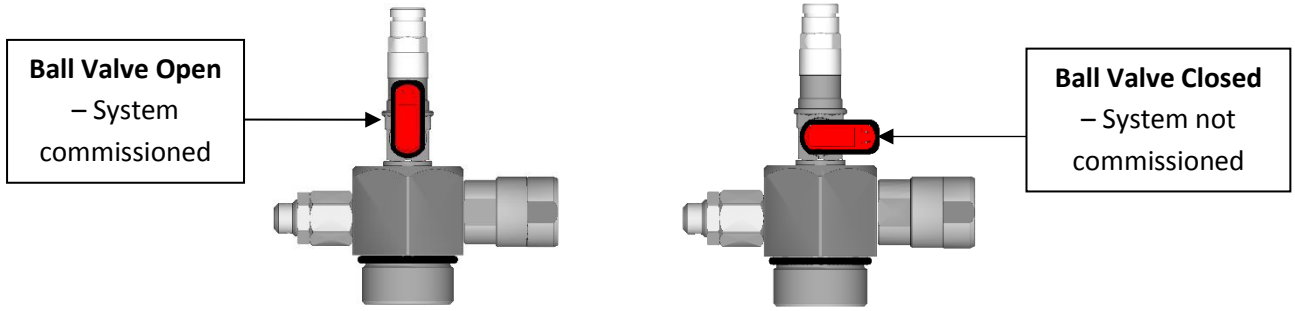
The responsible person should carry out visual inspections of all PAFSS systems regularly. These visual inspections should be carried out **at least monthly.**

When carrying out these visual inspections, it should be ensured that:

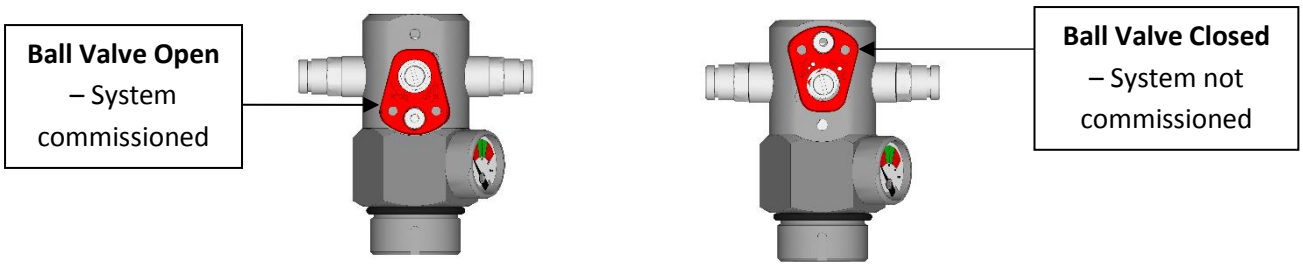
1. The operating instructions of each system are clean and legible.
2. The valves on each system are open and have not been closed.
   Where the valve lever is in the vertical position on the standard valve and downwards on the monitored valve, the ball valve is open and the system is commissioned – See Figure 2 below.

Figure 2

Standard Valves



Valves with System Isolation Monitoring



3. Each system has not been operated and is not obviously damaged or has any missing parts.
4. The reading of any pressure gauge or indicator fitted to a system is within operational and safety limits (15 Barg) – See Figure 3.

Figure 3

End of Line c/w Gauge

Pressure Gauge – 1 Switch Contact for **Low Pressure Monitoring**

Pressure Gauge – 2 Switch Contacts for **Low Pressure** and **Discharge Monitoring**

5. The locking screw of each system is not broken or missing (where applicable) – See Figure 4.

Figure 4

The responsible person should record the results of these visual inspections and arrange for corrective action, where necessary, by a competent person. If in doubt, the responsible person should arrange for a competent person to examine the system.

5. In the Event of a Fire

In the event of a fire, PAFSS is designed to operate automatically.
Any pressure switches fitted and their integration with other equipment and any subsequent actions, including alarm, equipment isolation and evacuation are determined by the local requirements, which should be referred to.
All other local specific fire emergency procedures should be followed.

6. System Repair & Maintenance

If at any time a system discharges, loses pressure or appears abnormal in any way, a PAFSS Approved Installation Company should be contacted and requested to review the system.

Figure 5

The details of the responsible person should be completed on the label (See Figure 5) which also serves to notify any users that the system is fitted.

7. Planned Service

The system should be serviced annually as per the details in the PAFSS Manual (Latest Revision). This should be done by a PAFSS Approved Installation Company.