FSL - HFC 227ea

System User Manual and Log Book

Protected space

System reference

Installation date

Operator*

The FSL HFC 227ea system contains a Fluorinated Greenhouse Gas as included in the Fluorinated Greenhouse Gas Regulation (EC) No 517/2014 updating Regulation 842/2006. The system must be serviced by a Certified Technician who will be trained in the correct procedures of leak inspection and monitoring. This user's manual/log book must be retained for reference by the authorities upon request and shall record the date, result and identity of the Technician and Company undertaking the maintenance of the cylinders/containers.*

Installer and contact details

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* The Operator must be nominated for every system as the obligations under the Regulation are placed on the Operator. "Operator means the natural or legal person exercising actual power over the technical functioning of products and equipment covered by the following Regulation". Ref. Regulation (EC) No 517/2014 of the European Parliament and the Council of 16 April 2014 on fluorinated greenhouse gases.

INTRODUCTION

Thank you for purchasing the FSL HFC Fixed Fire Fighting System. This User's manual provides information on the system for you and your employees.

The manual does not cover every detail of the installation and maintenance of the FSL HFC Fixed Fire Fighting System. We recommend that:

- The system is maintained by FSL trained personnel who are F -Gas Certified Companies and personnel.
- Your system installer is immediately notified of any changes to the protected space or the system activates so that the systems can be re-commissioned as soon as possible.
- The Operator, Installation and Services Company must keep these records for a period of 5 years, making them available to the Commission and the EU member states' competent authority.

ABOUT THE SYSTEM

The FSL CG^2 system utilises HFC-227ea as the fire extinguishant (agent), as defined in ISO 14520/EN15004 as the firefighting agent. HFC-227ea has been selected for use because of its proven firefighting effectiveness and acceptance by Health and Safety Authorities for use in the automatic discharge mode in occupied areas.

HFC 227ea (C_3HF_7) Global Warming Potential (GWP) 3220

FSL HFC 227 is stored in either 25 or 42 bar containers.

Upon the detection of a fire the control panel will warn of a fire and then confirm the presence of a fire before initiating the discharge of extinguishant. When instructed by the control panel or through the manual over-ride on the control panel, the remote discharge actuation or the manual release on the container valve the container valves opens and the stored extinguishant enters the protected space via the distribution pipe work and nozzles. The controlled discharge through each of the nozzles ensures that a homogeneous mixture is produced within the coverage area of each nozzle.

FIRE FIGHTING AGENT SAFETY

Personnel should avoid unnecessary exposure to any fire environment.

The system has been designed with the appropriate concentration of extinguishant and discharge sequences and procedures. Therefore it is important that any proposed changes to the protected space are notified to the system installer before they are implemented.

The system installer will as part of the handover explain the use of the system and provide instruction on how to operate and if necessary disable the system. As staff change it is important that the training and procedures are given to all staff working or managing the protected space.

INSTRUCTIONS IN CASE OF FIRE

1. Direct all occupants to leave the fire area immediately
2. Suspend all operations in the fire area.
3. Contact the Fire Brigade no matter how small the fire appears to be.
4. Make sure that all persons have evacuated the fire area and that they stay safely away.
5. Do not re-enter the fire area and await the arrival of the Fire Brigade.

POST FIRE INSTRUCTIONS

After the fire has been extinguished, DO NOT ATTEMPT TO RESUME OPERATIONS IN THE FIRE AREA until the following has been completed:

1. Do not re-enter the fire area until the Fire Brigade have confirmed that the fire is extinguished and that the area has been thoroughly vented of the products of combustion and the fire extinguishant. Forced ventilation may be required
2. Contact the system installer to arrange for the recharge of the containers and the reinstatement of the system
3. Do not recommence operations until the cause of the fire has been rectified.

SYSTEM USER INSPECTION SCHEDULE

The owner of the FSL HFC227 Fire Protection Fixed Fire Fighting System must:

Weekly

1. Visually check the protected space and the integrity of the enclosure for changes that might reduce the efficiency of the system which includes changes in room volume including impermeable equipment, combustible materials in the space and openings to the protected space.
2. Carry out a visual check that there is no obvious damage to the system, pipe work or nozzles and that all operating controls are properly set and undamaged.
3. Inspect the storage containers and check that the valve pressure gauges show a pressure of 25 bar or 42 bar at 20°C. Any container assemblies showing a loss in pressure of more than 10% should be replaced.
4. Visually check that all detectors are in position and that there are no signs of damage either to the detectors or the system wiring.
5. Check that the manual release points are accessible and clearly labelled.

Monthly

1. Check that all personnel who may have to operate the system are properly trained and authorised to do so. In particular check that all new employees have been instructed in the use of the system

SERVICE AND MAINTENANCE SCHEDULE

Every Six Months

1. Inspect the system in accordance with ISO 14520 or EN 15004
2. Record in this User's manual the leak check inspection by the F -Gas certified company and personnel in accordance with European regulation 517/2014. The minimum inspection requirements are those of ISO 14520 / EN15004. In addition to these requirements systems containing 155 kg or more (in a single container or the total quantity when containers are linked by a common discharge manifold) shall have a leak detection system which alerts the Operator fitted to all new and existing systems.
3. The system must only be serviced by a Certified Person. The Operator is responsible for ensuring compliance. Only those Persons and Companies holding a current certificate are permitted to undertake this work.

Every Twelve Months

1. Carry out a check of the enclosure integrity using a suitable fan pressurisation unit. If the measured aggregate area of leakage has changed significantly from that originally measured the necessary sealing work should be carried out to reduce the leakage.

2. Conduct a thorough check of the "leakage detection system", as detailed in 2. Above are fitted, these have to be checked at least once every 12 months to ensure proper functionality.

Records – Reference information to be completed at the time of system commissioning

Container reference number	Extinguishant /Agent quantity kg	Container pressure bar & temperature °C	Liquid level height from base mm

Leak check/service record – to be completed every 6 months

Complete every column

Date	Serviced by Record Person + Company and certification number	Any gas added or removed kg *1	Pressure ok *3	Agent qty. ok	Leakage detection ok *2	Notes Record any repeat problems or follow up leak checks required.

*1 Record any change in the container gas charge e.g. leakage or recharge. State the quantity of gases that have been recycled/reclaimed including the address of the appropriate facility, certification no. and documentation if applicable.

*2 Applicable for systems with a connected quantity of 155 kg or more of extinguishant. Check for proper functioning of the leak detection system every 12 months.

*3 Pressure corrected for temperature.