

Case story | SEM-SAFE® high-pressure water mist system

Reliable fire safety in VIRTUS LONDON9 Data Centre

Danfoss Fire Safety A/S



VIRTUS, ‘a beating heart’ for modern digital infrastructure in London

VIRTUS Data Centres is an innovative and fast growing UK data centre provider, which owns, designs, builds and operates efficient and flexible data centres. VIRTUS focuses on cost-efficient, eco-friendly and safe data centre solutions and facilities. VIRTUS has an expanding portfolio in London of more than 165 MW of power in over 70,000 m² of data centre space. This makes VIRTUS a vital part of the IT infrastructure in London, allowing its customers’ businesses to grow easily and securely.

LONDON9 - an advanced and scalable data centre

The facility is part of the VIRTUS Data Centre Campus in Slough, with LONDON9 designed to provide high-quality solutions comprised of over 10,000 m² net technical data centre space and delivering an IT load of 24 MW. LONDON9 is capable of being subdivided, thus providing clients with the flexibility to expand. The VIRTUS Data Centre Campus in Slough has significant scope for customer expansion into the Slough Trading Estate area. Situated at the heart of the Slough data centre ecosystem, the facilities are centric to one of the largest data centre clusters in the world.

VIRTUS
Data Centres

The journey

Ensuring optimum fire safety for the state-of-the-art LONDON9 Data Centre is paramount. Danfoss Fire Safety is extremely proud to be the supplier of the fire safety system for LONDON9, where its SEM-SAFE® high-pressure water mist system has been installed. This is the result of a great collaboration between Danfoss Fire Safety and Fireworks Fire Protection, one of our business partners in the UK, which handles the design, management and installation of the SEM-SAFE® system.

Modern fire safety in LONDON9

In line with the state-of-the-art data centre facilities, the SEM-SAFE® high-pressure water mist system is highly efficient. The pump unit has a compact design, low weight, small footprint and an easy configuration to fit the data centre’s need for expansion. In addition, we use only stainless-steel pipes and the best possible quality components for a long service life and a reduced total cost of ownership.

The intelligent use of water for fire fighting applications

The SEM-SAFE® high-pressure water system uses water micro-droplets released through the nozzle into protected areas. An ultra fine mist is formed with a two-fold extinguishing effect. In addition to cooling the flames, it simultaneously starves the fire of oxygen. The cooling effect also lowers the risk of re-ignition. This makes high-pressure water mist highly effective in the fight against fire and protects against heat damage.

SEM-SAFE® in brief

The SEM-SAFE® system comprises a high-pressure modular pump unit, section valves, piping and water mist nozzles. With small pipe dimensions, large coverage and minimal water consumption, SEM-SAFE® high-pressure water mist is a reliable choice to protect data centres against fire.

For this project, we supplied a SEM-SAFE® high-pressure water mist pump unit comprising five pumps/motors. There are 14 pre-action valves serving the data halls with 4,000 SEM-SAFE® high-pressure water mist nozzles installed throughout all areas of the data centre.

Optimum fire protection for people and assets

The ultimate goal is to save lives and limit damage to the equipment while keeping the data centre running. High-pressure water mist produces a high level of atomization. That, in combination with the low water consumption of the SEM-SAFE® system, means that water damage is kept to a minimum.

A double knock pre-action system is used in LONDON9. The piping system is dry and nozzles are closed (with a bulb). When a fire is detected and confirmed by the fire alarm system, the section valve of the SEM-SAFE® system opens immediately and water flows into the distribution pipe network. Only nozzles with broken bulbs are activated. This means that only the areas affected by fire will be actively sprayed.

"Fireworks Fire Protection Limited were delighted to be awarded the water mist fire suppression package at VIRTUS LON9. The specification called for an FM 5560 high-pressure water mist system and the SEM-SAFE® product enabled us to secure the project. With our excellent design, project and installation teams providing the necessary professional technical support to both client and end user, we were able to showcase our skills and expertise installing the SEM-SAFE® high-pressure water mist system in Phases 1, 2 and 3 at LON9. We were very pleased to work together with Danfoss Fire Safety and we look forward to having other exciting Data Centre projects in the future."

Lee Haines

Sales Director at Fireworks Fire Protection Ltd.

Green technology all the way

The SEM-SAFE® system is built with sustainability in mind and uses an ultra-clean technology: pure water. The 100% environmentally-friendly fire safety technology is completely safe for people.

Maintenance-free Danfoss pumps

The SEM-SAFE® high-pressure water mist system uses high-quality Danfoss PAH high-pressure pumps, which are lubricated by water, making them virtually maintenance-free.

Tested & approved

The system is designed and installed to meet BS 8489-1:2016: Fixed fire protection systems. Industrial and commercial watermist systems.

One fire safety technology covers an entire data centre

The SEM-SAFE® high-pressure water mist system is approved to protect all applications in a data centre, including storage rooms, data halls, loading bays, generators and office spaces.



SEM-SAFE® high-pressure water mist nozzle

SEM-SAFE® has many advantages for data centre fire safety

- ✓ Minimum downtime
- ✓ Instant cooling in the fire zone
- ✓ Ventilation can be kept running
- ✓ No need to keep the data centre airtight
- ✓ Lower total cost of ownership with no refill cost and maintenance-free pumps

About Danfoss

Danfoss is a Danish multinational company, that manufactures products and services used in cooling, heating, air conditioning, fire safety, drives, power modules and much more. With over 28,000 employees and operations in over 100 countries, Danfoss is fully committed to developing sustainable and climate friendly solutions for greener cities and more efficient district energy networks.

SEM-SAFE®

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