

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

Equinix AM3 data centre in the Netherlands

“Digital Gateway to Europe” protected with SEM-SAFE®

Danfoss Fire Safety A/S



The Equinix AM3 Science Park Amsterdam is the third data centre built in Amsterdam by Equinix, the American provider of global carrier-neutral data centre services. The facility offers valuable data centre and service support to a worldwide business base. Construction of Equinix AM3 started in December 2011 and was completed in the third quarter of 2012.

A Danfoss SEM-SAFE® high-pressure water mist system has been chosen for the fire protection of the data centre. With no disruption to the building construction process, phase 1 of the installation of the system has been completed. As the data centre gradually expands, the system easily covers more sections.

Building description

The impressive Equinix AM3 measures 107 x 58 x 24 metres. All vital areas in the building are elevated 4.2 metres above ground level. The building has 250 interconnected networks and features a surface area for customers of 6,400 m² across 2 floors. In total the building has 4 floors, all protected with SEM-SAFE® high-pressure water mist.



SEM-SAFE® high-pressure water mist system

The excellent collaboration between Equinix, Danfoss, Unica (Danfoss Business Partner in the Netherlands) and the relevant authorities for the previous data centre, Equinix AM2, made Danfoss a trustworthy and reliable supplier of fire fighting system for the new Equinix AM3 data centre.

The protected areas comprise data halls, corridors, transformer rooms, mechanical plant rooms, switch gear rooms, generator spaces, battery rooms and UPS rooms.

The SEM-SAFE® high-pressure water mist system consists of a compact pump unit with 3 high-pressure pumps, 11 pre-action section valve systems (phase 1), and 6 pre-action section valve systems (phase 2). In the initial phase of the project, the Equinix AM3 has been fitted with a total of 826 nozzle heads, tested in accordance with the CEN/TS 14972 and VdS standard for office occupancies (OH1).

Some of the areas in Equinix AM3 are having a ceiling height of up to 8 metres. For protecting these areas, third generation drilled SEM-SAFE® high-pressure water mist nozzles have been installed. These innovative nozzles have been tested according to the VdS fire test protocol for OH1 areas with up to an 8-metre ceiling height.

The benefits of SEM-SAFE®

The SEM-SAFE® water mist system offers optimal fire protection of all areas in the data centre, simplifying operation and maintenance. The benefits of the SEM-SAFE® high-pressure water mist system are immense. The fire is put out rapidly, with minimal consumption of water and close to no water damage to the surrounding equipment and environment.

Being able to keep the data centre operating round the clock is critical. With SEM-SAFE®, the Equinix AM3 data centre can function even during a fire extinguishing process. Harmless to people, the facility does not need to be sealed off during the discharge of the water. By using a pre-action system, the reliable SEM-SAFE® water mist nozzles activate locally, only in the areas where a fire has been detected. Additionally, the design of the SEM-SAFE® system is modular, thus enabling easy system extension to cover more sections as the data centre gradually expands. The small footprint of the SEM-SAFE® pump unit also opens up more space in the Equinix AM3 centre for installation of computer equipment.

Approvals

The performance of the system has been approved by the recognized classification and inspection societies R2B Inspecties B.V. / NEN-EN 14972.

Project Manager at Equinix, Kevan Harrison, states:

"When looking for fire suppression for our new data centre in Amsterdam, following extensive market research, the SEM-SAFE® water mist system was chosen due to a mixture of good technical engineering systems, the quality of the installation, and cost. The system and engineers have matched our expectations."



Compact SEM-SAFE® pump unit installed at Equinix AM3.



SEM-SAFE® pre-action section valve placement in Equinix AM3.