



Fire Protection for Hospitals

With SEM-SAFE® High-Pressure Water Mist System

Danfoss Semco A/S

Total Solution Provider of Certified Fixed Fire Fighting Systems

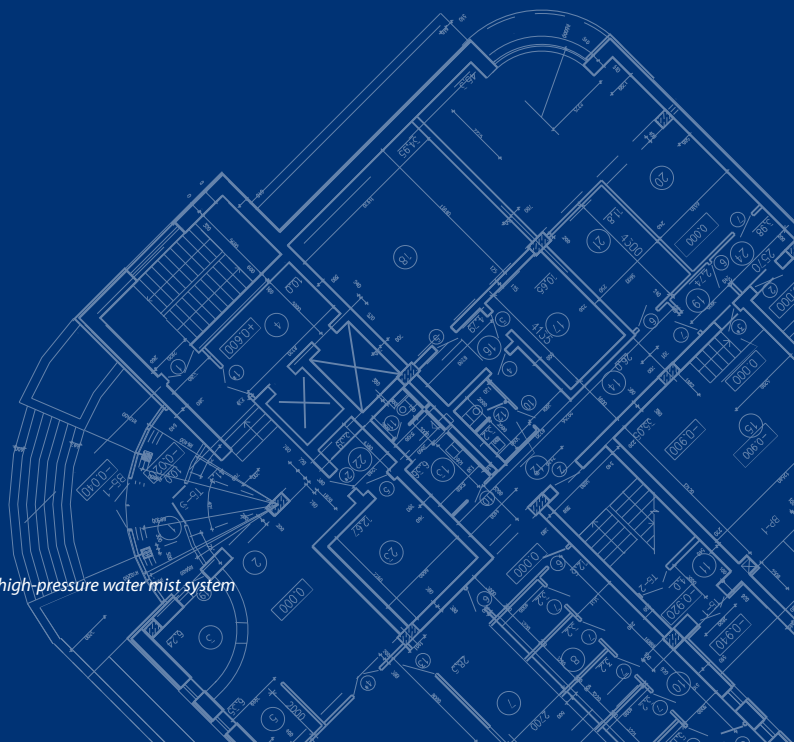


Reliability and high-quality with SEM-SAFE® high-pressure water mist system

In line with the advanced medical equipment inside a hospital, Danfoss Semco's SEM-SAFE® high-pressure water mist system is a state-of-the-art fire fighting system, providing optimum protection for personnel and surroundings. The SEM-SAFE® system:

- Allows for safe evacuation
- Keeps water damage to a minimum
- Reduces downtime
- Is environmentally friendly and 100% harmless to people
- Is easy to integrate and blend in with other equipment in the hospital
- Is the optimal technology for high-sensitive equipment

Cover page: Shanghai Shuguang Hospital, protected with Danfoss Semco SEM-SAFE® high-pressure water mist system



SEM-SAFE®

For hospitals



SEM-SAFE® in brief

SEM-SAFE® is a high-pressure water mist fire fighting system that uses micro droplets released through nozzles into protected areas. It comprises a high-pressure modular pump unit, section valves, piping and water mist nozzles.

The system is safe, efficient and environmentally friendly. With small pipe dimensions, large coverage, minimal water consumption, a compact skid unit and simple design, SEM-SAFE® high-pressure water mist is the perfect choice to protect hospitals against fire, with reliability and cost-saving in mind.

Safe evacuation of patients and staff

- The excellent properties of water mist make this fire fighting technology the best choice for protecting a hospital, where the priority in case of a fire is the safe evacuation of patients
- The system is only activated in areas, where fire is detected. Other areas in the hospital will not be affected

Functionality and aesthetic design

- The pipes are very small and easy to bend
- Perfect integration with other installation parts such as electrical, mechanical and plumbing equipment present in a hospital
- Aesthetics nozzle design

Substantial amount saved in damage control

- SEM-SAFE® uses corrosion resistant stainless steel pipes. The water coming from the pipes is clean water. In case of discharge, clean-up is easier, faster and with lower costs
- Reduced water damage

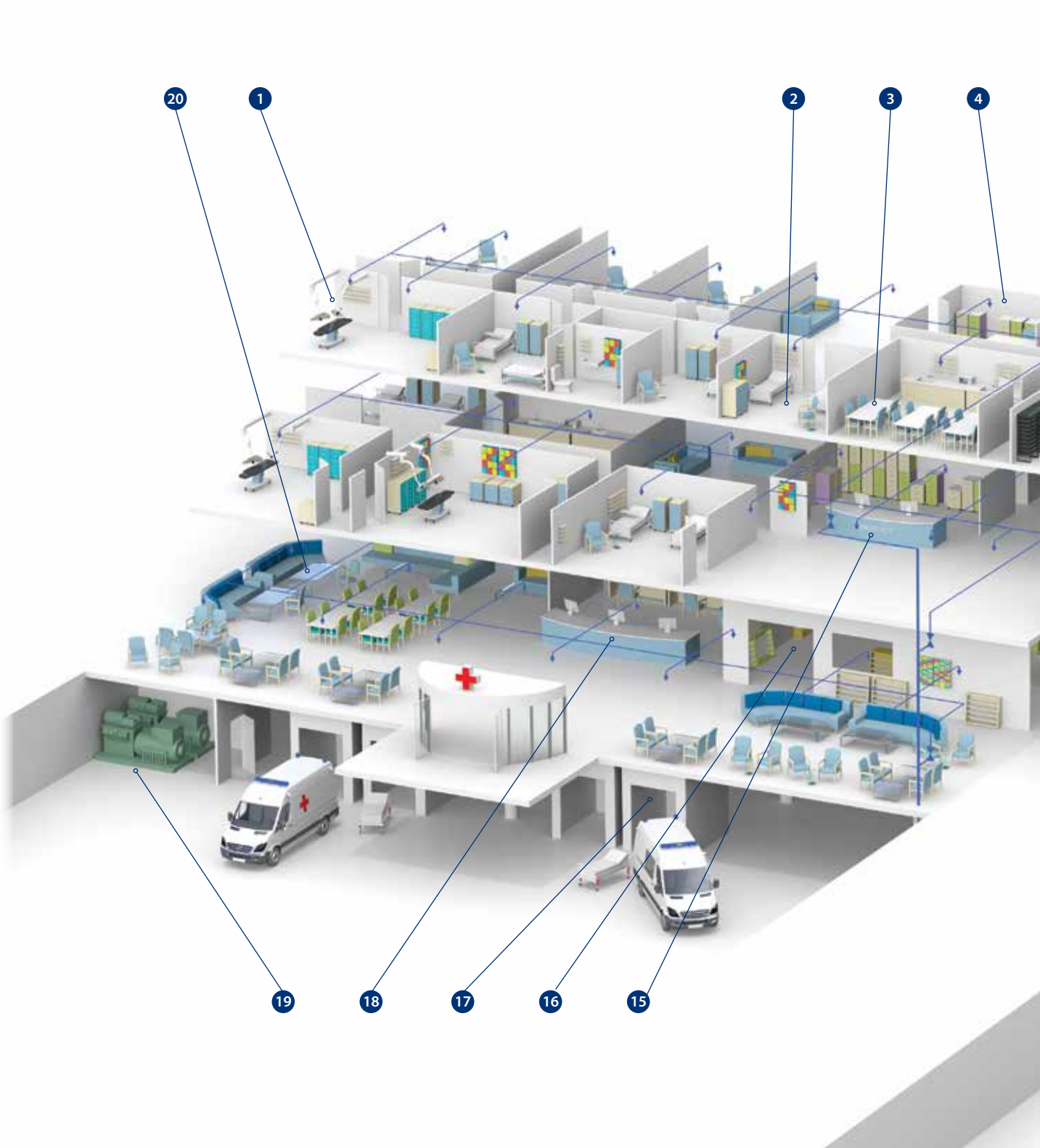
Simplicity and modularity

- Easy to install in modern hospitals, where the SEM-SAFE® installation will not disrupt any of the desired architectural features
- Perfect solution for old buildings, where valuable historical preservation is important
- The modular and compact SEM-SAFE® system can easily be expanded to cover new sections added to a hospital building



SEM-SAFE®

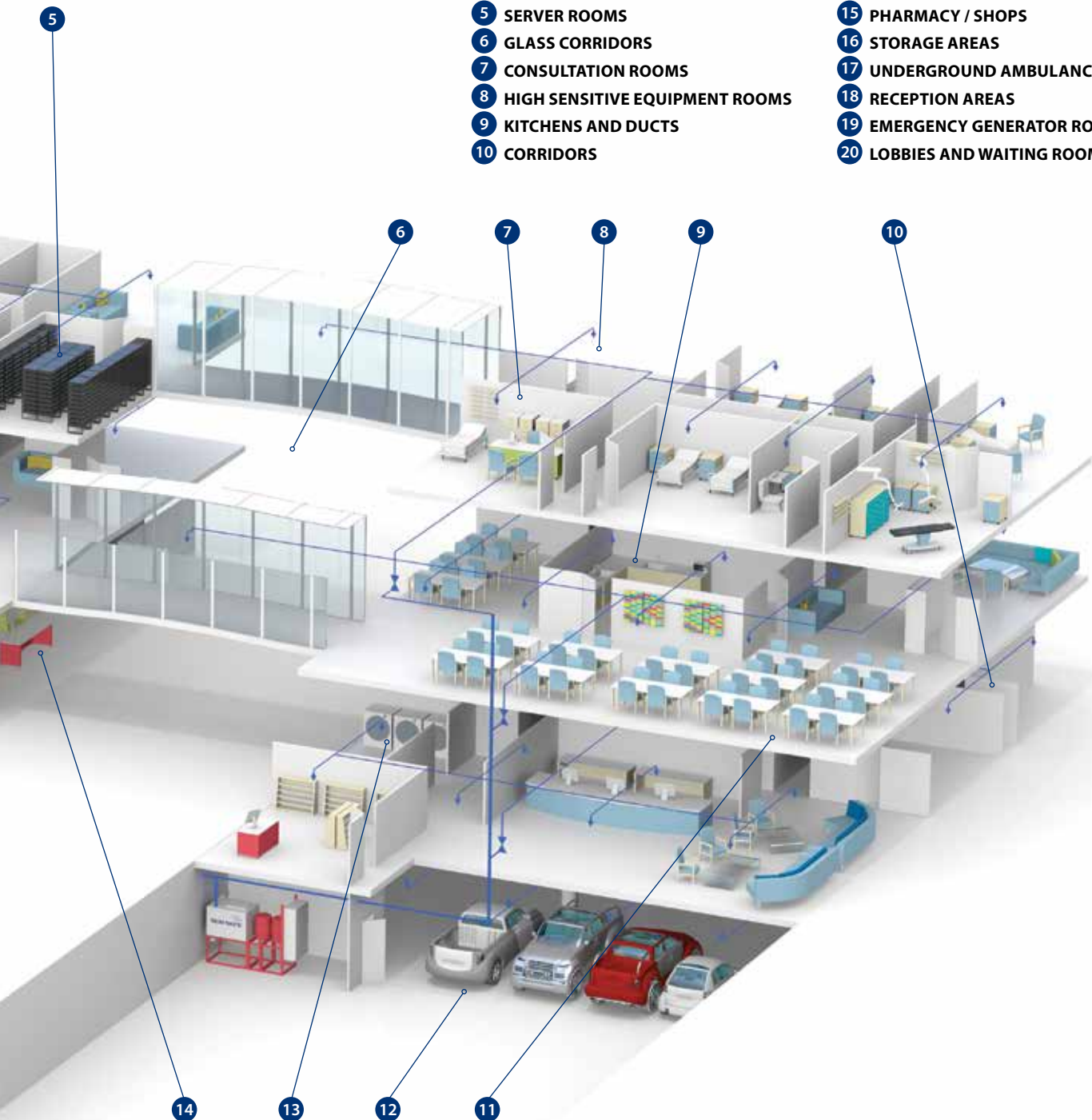
One single system to protect all areas in the hospital!





Danfoss Semco provides fire fighting solutions for the following areas:

- 1 OPERATING THEATRES
- 2 PATIENT ROOMS
- 3 STAFF FACILITIES ROOMS
- 4 OFFICES
- 5 SERVER ROOMS
- 6 GLASS CORRIDORS
- 7 CONSULTATION ROOMS
- 8 HIGH SENSITIVE EQUIPMENT ROOMS
- 9 KITCHENS AND DUCTS
- 10 CORRIDORS
- 11 CANTEENS
- 12 CAR PARKS
- 13 LAUNDRY ROOMS
- 14 ARCHIVES
- 15 PHARMACY / SHOPS
- 16 STORAGE AREAS
- 17 UNDERGROUND AMBULANCE AREAS
- 18 RECEPTION AREAS
- 19 EMERGENCY GENERATOR ROOMS
- 20 LOBBIES AND WAITING ROOMS



SEM-SAFE® high-pressure water mist system

How SEM-SAFE® works

When water is forced through nozzles at high-pressure, a fine mist is formed that has a two-fold extinguishing effect – it rapidly cools down the fire and starves the flames of oxygen to reduce damage and quell fires.

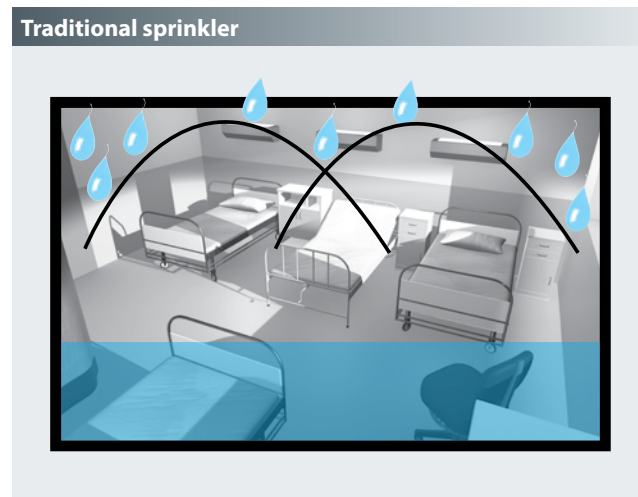
Benefits of SEM-SAFE® high-pressure water mist

Tackles fire swiftly and efficiently

- Minimal consumption of water
- Radial heat is blocked efficiently. This helps in protecting against any structural damage by not allowing the flames to expand
- Gentle with the electrical equipment due to small water droplets. Therefore the functionality of the electrical equipment in the hospital is not disrupted and data is saved

Money-saving solution

- With fewer nozzles required thanks to optimized spacing and the need for only one pump unit for all applications, installation cost and time as well as required service interventions are considerably reduced
- Our high-pressure pumps are water-lubricated and hence virtually maintenance-free
- With 30% fewer components compared to other competing systems, the SEM-SAFE® system is lighter and more compact. This allows for easier installation, simplified maintenance and valuable space saving
- Cost of water supply is significantly reduced due to less piping, reduced water demand from the water supply, lower taxes and no or significantly smaller water reservoirs
- No need for other technologies. SEM-SAFE® is the perfect solution for fire protection of more sensitive areas such as server rooms and archives



SEM-SAFE® uses up to 50% less water when compared to low-pressure water mist systems and up to 80% less water when compared to traditional sprinklers

Proven experience across the world



For more than 15 years, Danfoss Semco has been installing fire protection systems in both new and retrofit hospitals and nursing homes all over the world. The experience we build with each installation and project allows us to provide our customers with the best and most reliable fire fighting solution in the market. The excellent fire suppression properties, and the system's advantages that allow for sustainability and reliable fire protection of buildings, people and the environment has made SEM-SAFE® the right choice for numerous hospitals, clinics and nursing care homes, such as:

- *DNU Skejby University Hospital* in Denmark, the biggest hospital in Denmark protected with SEM-SAFE®
- *Isala Clinics* in The Netherlands, gold awarded hospital protected with SEM-SAFE®
- *PTE 400 Hospital* in Hungary, large-scale project
- *Pikonlinna Hospital* in Finland, senior nursing care centre
- *Heidelberg Ethianum* in Germany, elite surgery clinic

In-house design

We have the necessary experience and technological know-how to provide you with the optimal fire fighting system based on fire risk analysis for your hospital.



Tested and approved

The design of the SEM-SAFE® high-pressure water mist system is based on full scale fire tests. For industrial and commercial applications, approvals are obtained by testing according to specifications from, for example, FM, UL and ISO, as well as from the European guideline CEN/TS 14972 and approvals from DBI and VdS.



Internal HSE&Q system in accordance with:

- DS/EN ISO 9001:2008, DS/EN ISO 14001:2004, DS/OHSAS 18001:2008.



DS/EN ISO 9001:2008



DS/EN ISO 14001:2004



DS/OHSAS 18001:2008

Danfoss Semco A/S

History

Danfoss Semco A/S is a global leader in the sale, development, production and service/commissioning of certified fixed fire fighting systems. In 2006, two leading firms in the field, Danfoss A/S and Semco Maritime A/S, joined forces to form the present company, with Semco Maritime boasting over half a century of expertise in designing and installing fixed fire fighting systems. All the while, Danfoss has developed and delivered key components for the high-tech systems.

Today Danfoss Semco is an integral part of the Danfoss Group, Denmark's largest industrial manufacturing company with a daily output of more than 250,000 finished components. With more than 24,000 employees worldwide, Danfoss is truly a global company.

Business areas

Our company is located in Odense, Denmark, and operates three main business areas.

Our water mist division comprises two business areas: the marine division and the industrial and commercial division. The former has pushed the boundaries for development and design to offer a wide range of solutions for numerous application areas on almost any type of vessel.

Within the industrial and commercial area, Danfoss Semco has a successful track record with different applications, ranging from complex fire fighting systems for museums and heritage sites to industrial applications, office buildings and universities.

Our gas and foam division is the world's largest low-pressure CO₂ based fire fighting systems supplier for the marine industry. This division supplies gas, foam and dry chemical powder systems worldwide

In-house manufacturing of key components

Danfoss Semco operates in-house research, development and manufacturing facilities of all critical components to ensure uncompromising performance and cost-effective systems. This puts us in a unique position to maintain our technological leadership in the future.

Proven experience

Danfoss Semco has supplied fire fighting systems for a wide range of commercial and industrial applications, including prominent projects such as:

- *Metro line* in Shanghai, the fastest-growing rapid transit system in the world
- *Equinix* in the Netherlands, a worldwide renowned data centre
- *Alston* in Denmark, a 28,400 m² building housing a university, concert hall and a research park
- *AB6* in Denmark, a unique office block in the heart of Copenhagen
- *Heinrich-Hertz-Institute* in Germany, a high-rise building for leading-edge IT research and development
- *Shanghai Shuguang Hospital*, one of the top 100 national hospitals in China



DNU Skejby University Hospital in Denmark