



Trusted above all.



Fireking CAS FK

Factsheet | End-user

FIREKING 

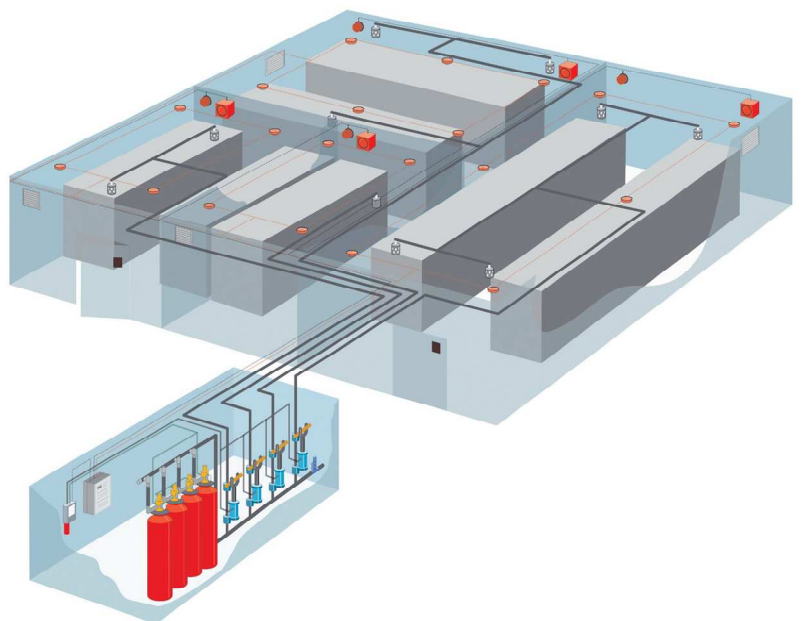


The aim of a fire suppression system using gaseous extinguishing agents is to protect equipment and facilities from severe damage to ensure their operational availability. The extinguishing agent leaves no residue and is electrically non-conductive, has a 3-dimensional effect and is therefore very good at extinguishing fires in obstructed areas such as cabinets. Ideally, the extinguishing agent does not pose a danger to persons.

These systems shall have at least one system approval from internationally recognized approval bodies such as, VdS Schadenverhütung GmbH (VdS), FM Approvals (FM) or UL LLC (UL).

A gas fire suppression system can either be designed for one room (single zone system) or as a system for several rooms using one common extinguishing agent reserve (multi zone system).

For the calculation of the system, a specialized software is used, which includes all system components for single zone and multi zone systems, and which takes their pressure loss into account. The results of the calculation have been validated by independent approval bodies during (fire) tests.



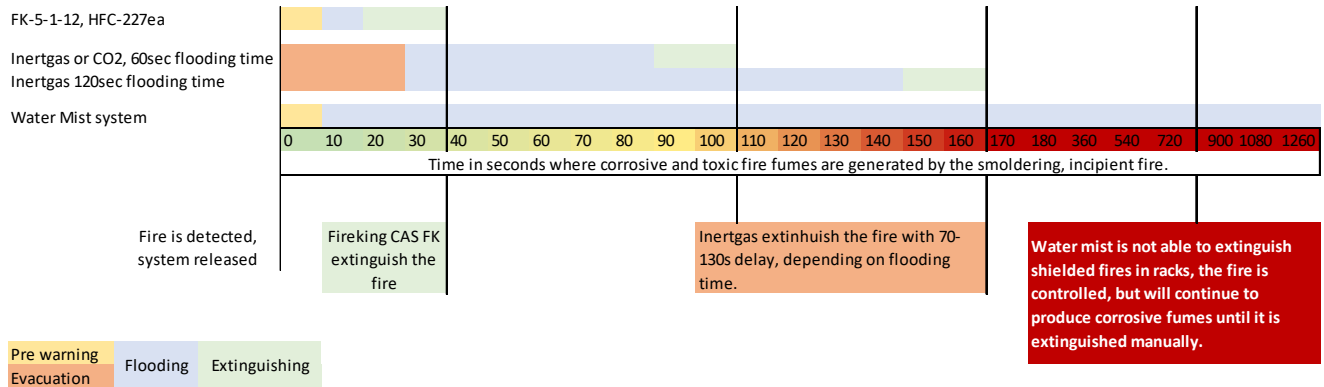


Fireking CAS FK | The best choice for extinguishing systems with gaseous agents

Why is fast extinguishing important?

In an IT environment, incipient fires first develop a lot of smoke. This smoke contains toxic and corrosive fumes as well as acids, which damage the equipment in the short and medium term and lead to failure. Therefore, it is important to extinguish the incipient fire as quickly as possible, every second counts.

Amongst the various agents, there are significant time differences in fighting incipient fires. Fireking CAS FK uses a gas called FK-5-1-12, which is applied very quick and therefore extinguishes much faster. This prevents the formation of large quantities of fire smoke gases and consequential damage.



Graph1: Comparison of flooding and extinguishing times

As can be seen in graph 1, Water mist systems cannot extinguish the fire in cabinets, but only stop the spread. Meanwhile, fire smoke gases and high humidity continue to develop.

How much space is needed for the extinguishing system?

Space in the IT area is often scarce and valuable, especially when an extinguishing system is to be retrofitted. Owners often have problems finding a suitable place for the extinguishing agent containers close to the extinguishing area. Fireking CAS FK requires the least space of all systems. A suitable installation site is easy to find and more space is left for other applications.

	FK-5-1-12/HFC-227ea	Inertgas 80l - 300bar / CO2 HP	Inertgas 140l - 300bar	Water Mist system cylinder based
100m ³	 0,3m ²	 1,1m ²	 1m ²	 1,3m ²
250m ³	 0,5m ²	 1,8m ²	 1,9m ²	 1,8m ²
500m ³	 1,1m ²	 3,6m ²	 3,2m ²	 3,6m ²
750m ³	 1,6m ²	 5m ²	 4,5m ²	 5,4m ²
1000m ³	 2,2m ²	 6,8m ²	 5,8m ²	 6,8m ²

Table1: Comparison of required space (one dot is one cylinder)



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Is Fireking CAS FK safe for people?

Inert gas systems displace oxygen for at least 10min, from 21vol% to below 13.6vol% to extinguish. Typically, the oxygen concentration after extinguishing is 10-12vol%. This level is dangerous for normal people, they will faint if the oxygen is reduced so much within 1-2min.

Fireking CAS FK adds 5-6% extinguishing agent to the room, the oxygen level decreases only slightly to 19.5-20vol%, at this concentration it is safe for people present.

Room integrity is important!

Rooms with sensitive equipment, such as data centers, must be tight. On the one hand, this ensures effective air conditioning and, on the other hand, prevents harmful smoke gases from adjacent rooms from entering and causing damage. The room tightness is also required to maintain extinguishing concentration over a period of 10min.

Inert gas extinguishing systems need to replace about half of the room volume with gas to extinguish, the displaced room air needs to be vented through separate ducts/flaps to outside or a much larger room. In comparison, Fireking CAS FK can use existing exhaust ducts or small overpressure dampers. The additional costs of installing pressure venting is less with Fireking CAS FK.

Why is system approval important?

In Europe, certain components of an extinguishing system must pass a test according to EN 12094. This is usually referred to as CE conformity.

Essential tests for the reliability of a gas extinguishing system, such as release tests, aging of components or extinguishing tests with nozzles are not required by EN 12094. Therefore, there is no certainty whether CE components work as a system and extinguish the fire, because no independent testing or approval body has tested the system as a whole.

In a system approval test with VdS, FM or UL, many more tests are performed. These include release tests, aging of components, and extinguishing tests with nozzles. See table 2 for a full comparison. Fireking CAS FK contains only CE compliant components AND has been tested by VdS, FM and UL as a system.

	FM/UL	VdS	EN 12094
System performance test	✓	✓	X
Aging Tests	✓	✓	X
Components salt spray test	✓	✓	For mandatory components
Component cycle test	✓	✓	
Component flow resistance test	✓	✓	
Components burst test	✓	✓	For some mandatory components
Nozzle performance test	✓	30m ² covered by System performance test	X

Table2: Required test for component and system approval

Your advantages when using Fireking CAS FK:

- ✓ **Fireking CAS FK** ensures the fastest possible extinguishing success and low space requirements.
- ✓ The extinguishing agent used, leaves no residue, is electrically non-conductive and is harmless to persons present.
- ✓ During flooding, hard disc drives are not impaired in their function.
- ✓ Fireking CAS FK has VdS, FM and UL approval, can be used as a single-zone or multi-zone system and the systems are calculated using approved software.
- ✓ Compared to inert gas systems, Fireking CAS FK is less expensive considering the constructional measures and all advantages.

For further information and quotations, please contact our sales partners or offices throughout Europe.