



MX 200[®] fire extinguishing system
with the extinguishing agent FM-200[®]

Fire Protection Systems

MINIMAX[®]

EFFICIENT +

fast and smooth

Lost data, the breakdown of machines and equipment, on which enterprise-critical business processes are dependant, or a total breakdown of operations – those are risks, which represent a concrete existential threat for every company. Companies with unique and high-value technical equipment and central IT systems are dependent on the high availability of these critical operating resources. This is inevitably leading to growing expectations concerning fire protection.

Here fire extinguishing systems are in demand, which detect a developing fire in its initial stage and extinguish it in an exceptionally fast and protective manner so that even sensitive components are not damaged e.g. by residues of extinguishing agent. This is why (Minimax has developed the MX 200®) fire extinguishing system with the fire extinguishing agent FM-200®. It is characterized by its highly effective and fast extinguishing action (< 10 seconds). The extinguishing agent itself is toxicologically harmless; it extinguishes without leaving any residue. The extinguishing agent acts both physically and chemically.

Extinguishing agent approved throughout the world

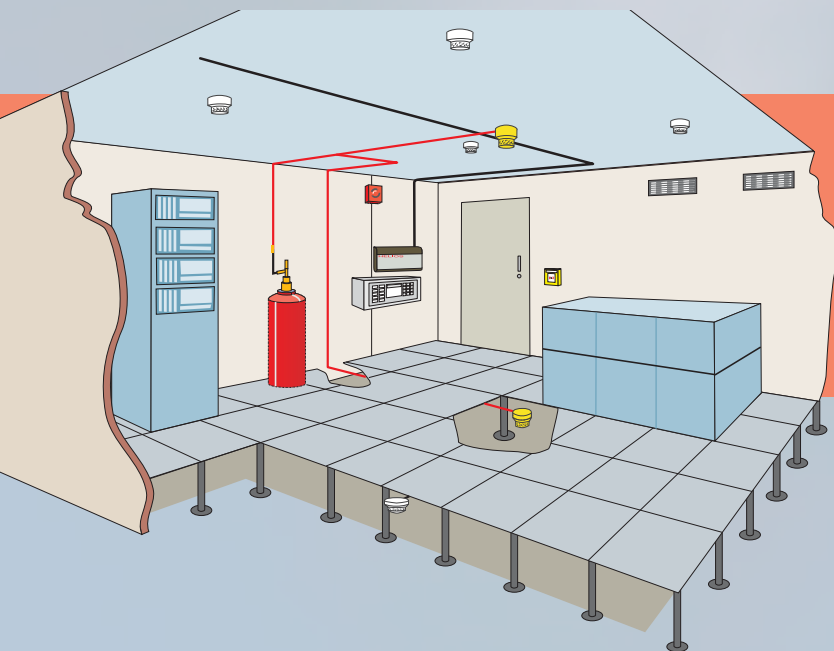
The fire extinguishing agent treated in the ISO 145209 under the designation FM-200® is

widely used throughout the world. Thanks to its environmental properties and good price/performance ratio it has become established in many countries as the extinguishing agent for manageable IT and electrical risks.

The MX 200® fire extinguishing system can be individually adapted to suit nearly every area. Nozzle bores and container fill volumes are the result of hazard-specific design calculations and characterize a system optimized down to the smallest detail. The charging pressures of up to 725 psi create many design advantages.

Mode of operation

When a fire is detected by one of the automatic fire detectors or when a pull station is activated, the fire detection control panel sets off a fire alarm. After a time delay the pressurized extinguishing agent cylinders are opened either electrically or pneumatically. The extinguishing agent, still liquid at this point, flows to the extinguishing nozzles where it vaporizes and rapidly and effectively floods the room.



MX 200® fire extinguishing systems –
efficient fire protection for electrical and
electronic installations

CLEAN

extinguishes without leaving any residue

The extinguishing agent FM-200®

FM-200® is suitable for class A, B, C fire and is used as a total flooding agent. The gas pressure of 57 psi at 68° F favors a rapid vaporization at the nozzles and speedy distribution throughout the room. FM-200® is neither corrosive nor electrically conductive and therefore causes no damage through short circuits or through residues left on sensitive components. It is colorless and almost odorless and is in gaseous form at room temperature. Its molecules consist of carbon, fluorine and hydrogen. FM-200® deprives the flames of heat, thus interrupting the combustion reaction.

FM-200®

Chemical formula	CF ₃ -CHF-CF ₃
Chemical name	Heptafluoropropane
ISO designation	FM-200®
Specific weight 68° F (20° C)	3.04 lbs/gal (1.41 kg/l)
State of aggregation	gaseous at 68° F/14.69 psi (at 20° C/1.013 bar)
Boiling point	2.3° F at 14.69 psi (-16.5° C at 1.013 bar)
Environmental properties	No ozone depletion potential (ODP 0) global warming potential (GWP 3500)

Safety of persons

Due to its worldwide use, FM-200® has become one of the most studied synthetic extinguishing agents so that has been assessed as safe for use in rooms where persons are present.

Safety factor at the design concentration

- NOAEL 9% by volume
(no observed adverse effect level)
The highest extinguishing gas concentration in % by vol., at which no detriments to health have been observed.
- LOAEL 10.5% by volume
(lowest observed adverse effect level)
The lowest extinguishing gas concentration in % by vol., at which detriments to health have been observed.



ADVANTAGES

MX 200® fire extinguishing system

- Excellent price/performance ratio
- Robust design, so low maintenance costs
- Rapid extinguishing effect
- Safe for use in occupied areas
- No extinguishing agent residues, neither corrosive nor electrically conductive
- Simple design and hydraulic calculation by using MX Design Manager Software
- Higher operating pressure available provides
 - longer pipe length
 - smaller pipe diameter
 - greater fill ratio
- Compact and space-saving
- UL and FM Approved
- Worldwide recognized and approved extinguishing agent

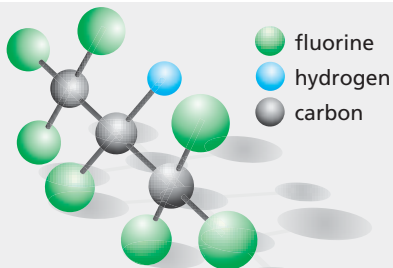


Example of a multi-cylinder system

What you're looking for: system types from A to Z

- Available cylinder sizes/nominal fill (lbs):
130, 200, 270, 350, 370, 450 lbs
- Pressures available: 360, 725 psi
- Single- or multi-cylinder systems

FM-200® molecule



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