

## Concept with FM-200

### Clean Agent Fire Suppression System



#### Agent

**FM-200** is an odourless, colourless, liquefied compressed gas. It is stored as a liquid and dispensed into the hazard as a colourless, electrically nonconductive vapour that is clear and does not obscure vision. It leaves no residue and has acceptable toxicity for use in occupied spaces at design concentration. **FM-200** extinguishes a fire by a combination of chemical and physical mechanisms. **FM-200** does not displace oxygen and therefore is safe for use in occupied spaces without fear of oxygen deprivation. **FM-200's** mechanism of extinguishing fires is considered active. Its primary action is through physically cooling the fire at the molecular level. **FM-200** belongs to the same class of agents used in the refrigeration industry; therefore, it is an efficient heat transfer agent. **FM-200** removes the thermal energy from the fire to the extent where the combustion reaction cannot sustain itself.

#### Application

**FM-200** provides superior fire protection in a wide range of applications from sensitive electrical equipment to industrial applications using flammable liquids. **FM-200** is ideal for applications where clean-up of other media presents a problem, where weight versus suppression potential is a factor, where an electrically non-conductive medium is needed and where people compatibility is an overriding factor. When environmental impact is a consideration, **FM-200** is particularly useful. It has zero ozone-depleting potential, low global warming potential and a short atmospheric lifetime. These characteristics make it suitable not only for new installations using total flooding systems, but also for Halon 1301 replacement applications. **FM-200** is an odourless, colourless, liquefied compressed gas. It is stored as a

colourless, electrically nonconductive vapour that is clear and does not obscure vision. It leaves no residue and has acceptable toxicity for use in occupied spaces at design concentration. **FM-200** extinguishes a fire by a combination of chemical and physical mechanisms. **FM-200** does not displace oxygen and therefore is safe for use in occupied spaces without fear of oxygen deprivation.

The following are typical hazards protected by **FM-200** systems:

- Computer rooms
- Document store
- Tape storage
- Telecommunication/Switchgear
- Vaults
- Process equipment
- All normally occupied or unoccupied electronic areas where equipment is either very sensitive or irreplaceable

#### Features

**Composition and Materials** – The basic system consists of extinguishing agent stored in high strength alloy steel cylinders. Various types of actuators, either manual or automatic, are available for release of the agent into the hazard area. The agent is distributed and discharged into the hazard area through a network of piping and nozzles. Each nozzle is drilled with a fixed orifice designed to deliver a uniform discharge to the protected area. On hazards where two or more cylinders are needed, a pipe manifold assembly is employed or cylinders are positioned around the room.

**Additional equipment includes** – Control panels, releasing devices, remote manual pull stations, corner pulleys, door closures, pressure trips, bells and alarms, and pneumatic switches. All or some are required when designing a total system.

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**Cylinders** – The cylinders are constructed, tested, and CE marked.

**Cylinder Assembly** – The cylinder assembly is of steel construction with a red standard finish. Four sizes are available 5L, 9L, 16L, 26L, 45L, 83L and 150L. Each cylinder is equipped with a valve.

**Electric Actuator** – Electric actuation of an agent cylinder is accomplished by an electric actuator. In auxiliary or override applications, a manual lever actuator can be installed on top of the actuator.

**Detection System** – The **Concept** Fire Suppression Ltd Control System is used where an automatic electronic control system is required to actuate the **FM-200** system. This control system is used to control a single fixed fire suppression or alarm system based on inputs received from fire detection devices. The detection circuits can be configured using coincidence or independent inputs. The control system is designed to BS5839 or BS6266.

**Nozzles** – Nozzles are designed to direct the discharge of **FM-200** agent using the stored pressure from the cylinders. Nozzles are available in 180° and 360° discharge patterns from 10mm to 50mm. The system design specifies the nozzle and orifice size to be used for proper flow rate and distribution pattern. The nozzle selection depends on the hazard and location to be protected.

Make **Concept** Fire Suppression Ltd with **FM-200** part of your fire protection plan.

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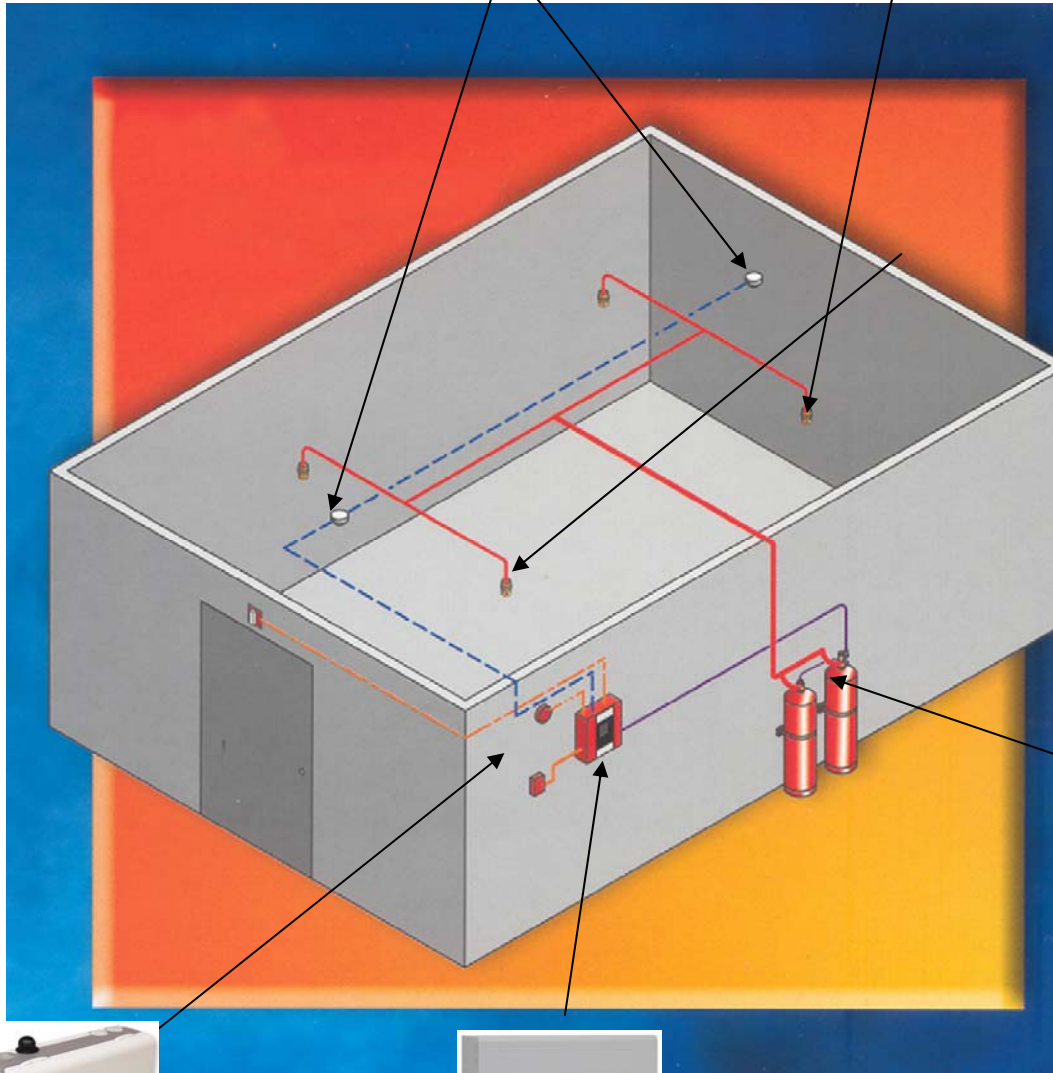
#### Smoke Detectors

Smoke detectors arrange so that two detectors from two zones are required before the gas is discharged.



#### Discharge Nozzles

From 10mm to 50mm discharge nozzles ensure the gas agent is discharged throughout the room and voids.



#### Cylinders

5L, 9L, 16L, 26L, 45L, 83, and 150L agent cylinders 25bar.



#### Optional VESDA Detection

For increased levels of detection VESDA is utilised to give early warning of a fire.



#### Control Panel

3 to 8 zone control panels controlling 1 to 4 areas.

FM-200 is a registered trademark of Great Lakes Chemical Corp.  
FE-227 is a registered trademark of Du Pont.