

MARINE FM-200®

Special Hazard Systems



Kidde Fire Protection is at the forefront of new technologies in fire safety, offering a range of state-of-the-art fire extinguishing systems for marine applications.

Kidde Fire Protection Marine FM-200 fire protection systems utilise a gaseous agent manufactured by Great Lakes Chemical Corporation, which has emerged as the leading alternative to Halon. FM-200 is fast and effective with a low space/weight characteristic and environmental acceptability.

FM-200 has been adopted by the majority of the world's fire protection companies with tens of thousands of systems installed.

Benefits

- Fast and effective against a wide range of Class A, B and electrical fires
- Non-corrosive and electrically non-conductive – no damage to sensitive equipment
- Environmentally-acceptable
- Zero Ozone Depletion Potential
- Low pressure 25 bar system
- Engineered modular systems for optimum protection
- Minimal space/weight characteristics
- Low cost of ownership

- Computer design for maximum system effectiveness
- USCG, Lloyd's Register and other prestigious approvals
- MED 96/98/EC compliant

What is FM-200?

FM-200 is a colourless, odourless gas containing only carbon, hydrogen and fluorine; lacking the ozone-depleting presence of bromine atoms. Highly penetrative in the hazard zone, it acts on fires largely by physical means, lowering the temperature of the flame and fuel to a point at which combustion reactions cannot be sustained. There is no significant obscuration on discharge, no post-discharge clean-up, and no damage to sensitive equipment.

The environment

FM-200 has zero ozone-depletion potential and a short atmospheric lifetime, and is accepted for use by the US EPA (Environmental Protection Agency) plus many other approval bodies. FM-200 mitigates the effects of an uncontrolled fire and at the end of the lifetime of the system, the gas can be readily recovered and recycled.





System design

The Kidde Fire Protection FM-200 range comprises a versatile line of cylinders, valves and related components which have been selected and approved for use in the marine environment and have been subject to stringent testing procedures. Flexibility, quality and reliability make the Kidde Fire Protection FM-200 range the world's finest in fire safety.

Engineered systems offer optimum designs for defined risks with reduced pipe sizes, unbalanced flows and multiple compartment protection.



Systems are designed in accordance with the Kidde Marine FM-200 Manual to achieve a minimum FM-200 concentration of 8.7% for diesel fuel with a maximum discharge time of 10 seconds. As a result, FM-200 provides rapid fire protection, strictly limiting fire and smoke damage.

FM-200 actuation components

FM-200 valves are designed for optimum system performance, reducing pipe sizes and lowering installation costs. The fast-opening valves are available in a range of sizes and are manufactured from tough, corrosion-resistant brass under stringent quality control standards. An easy-to-read gauge on the valve permits the convenient visual inspection of the cylinder pressure.

Marine FM-200 system valves are actuated by the following means:

- Remote cable release direct to agent container or via a CO₂ or nitrogen pilot cylinder, also with manual release
- Pressure actuation using slave FM-200 or pilot CO₂ or nitrogen with local actuation

- Manual local actuation of FM-200 cylinder valves
- Pneumatic actuation via pneumatic heat detectors, also under remote and local manual control
- Time delays and pre-discharge alarms are also available.

All related components from discharge nozzles to control heads are designed to be compatible, allowing a complete system to be configured using USCG, Lloyd's Register, MCA, DNV, FM, UL and LPCB approved Kidde equipment.

FM-200 cylinders

A wide range of sizes is available, offering a choice of fill capacities to meet specific requirements and ensure maximum economy in installation. Each cylinder is manufactured from high strength alloy steel. The larger cylinders have an optional liquid level device for ease of contents monitoring and improved system maintenance.

Nozzles

A range of custom-designed nozzles is available including 180° bulkhead and 360° deckhead types.

System space requirements

FM-200 is stored as a liquid in nitrogen-pressurised containers at 25 bar, leading to minimal storage space requirements comparing favourably with all other viable gaseous agents.

Assured reliability

Kidde Fire Protection systems are designed to conform to NFPA 2001 and tested to limits established by the International Maritime Organization (IMO). An empirically-verified Windows™-based computer program is used to model two-phase agent flow and ensure that the correct concentration of agent is achieved

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within 10 seconds throughout the protected zones as required by the NFPA 2001 as well as the forthcoming ISO 14520.

Approvals

Kidde Marine FM-200® systems carry the following approvals:

- United States Coast Guard*
- Det Norske Veritas**
- Maritime & Coastguard Agency
- American Bureau of Shipping
- Lloyd's Register of Shipping
- Lloyd's Register Verification



**YY' denotes the year of affixing the mark to the product*

*US CoastGuard approval indicates compliance with NFPA 2001 and IMO MSC Circular 848.

**DNV approval is granted with reference to SOLAS 1994.

Applications

FM-200 systems are ideally suited to the protection of machinery spaces and cargo pump rooms in a wide range of vessel types:

- Container ships
- Chemical tankers
- Passenger vessels
- General cargo ships
- Workboats
- Ferries
- Warships
- Government coast guard and research vessels
- Offshore oil and gas installations
- Pleasure craft

Kidde Fire Protection operates a continuous programme of product development. The right is therefore reserved to modify any specification without prior notice and Kidde Fire Protection should be contacted to ensure that the current issues of all technical data sheets are used.