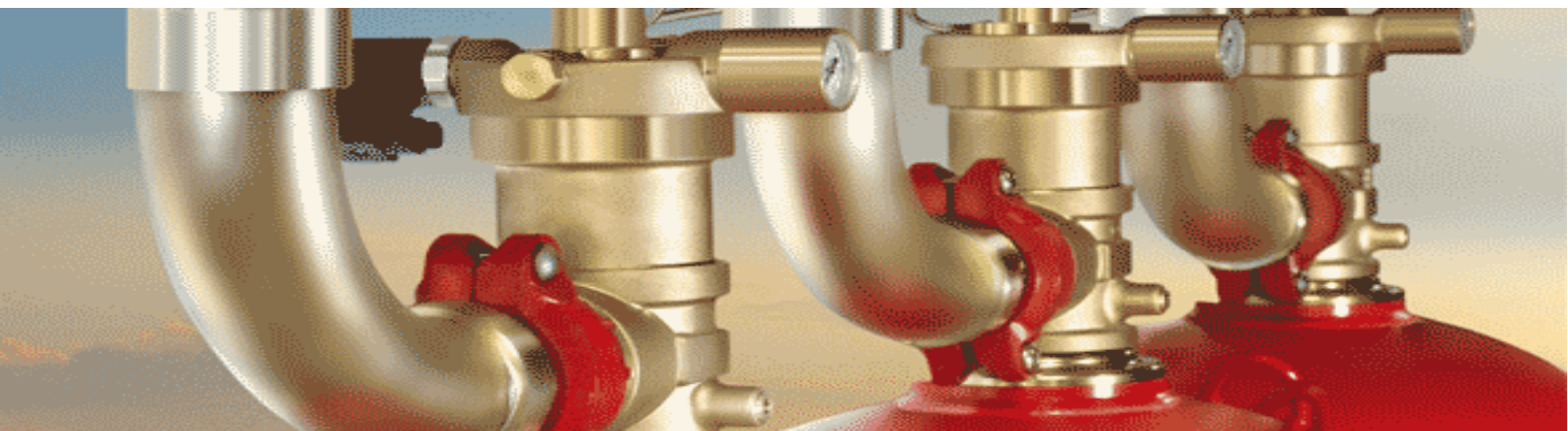




Safety for your life





FM200 fire suppression system is an ideal choice for all users as it utilizes the agent HFC-227ea to combat fire in the fastest time.

Exceptionally Fast and Protective

Once a developing fire in its initial stage is detected, HFC-227ea extinguishes it quickly by discharging in just 10 seconds or lesser. FM200 fire suppression system effectively removes heat and breaks up the fire at molecular level. With fast and protective extinguishing action, sensitive components are not damaged. Toxicologically harmless, HFC-227ea discharges as gas and leaves no residue, thus there is no hassle for any clean-up cost, unlike sprinklers. Indeed, FM200 can provide greater coverage in the shortest time span than any other options. This is significant to minimize damages and interruptions for your business especially when your company relies heavily on the high availability of critical operating procedures.

Space Efficiency

FM200 can be individually adapted to suit every area and desired corner in your company. Nozzle holes and container fill volumes are the result of object-specific calculations and characterize a system optimized down to the smallest detail. The charging pressures of up to 25 Bar depict that multi-zone systems and longer pipe works can be designed. No separate space is needed for the supply of extinguishing agent; it can be located in the protected area itself. Equipped with environmental properties and good performance ratio, you will definitely get greater protection while utilizing less floor space.

Clean and Safer Choice

Colourless, odourless, and in gaseous form, FM200 extinguishes without leaving any residue. With speedy distribution throughout the room, FM200 is not erosive and electrically conductive thus causes no damage through short circuits. The function of FM200 is to deprive the heat and interrupt the combustion reaction.



FM200 fire suppression system protect enclosed areas where there is a need for quick reaction to fire, where people may be present, where fire may strike anytime or where damage from conventional agents cannot be tolerated. Some examples of such areas are:

- Power Generation, Transmission & Distribution Facilities
 - Power Plant
 - Substation control room
 - Power Transmission
 - Substation switch room
- Telecommunications Facilities
 - Telephone Exchanges
 - Communication Centres
 - Central & Remote Cellular Sites
 - Satellite Ground Stations
- Commercial & Institutional Facilities
 - Bank Vaults & Documents Storage
 - Medical Diagnosis Rooms
 - Art Galleries & Achieves Storage
 - Museums & Libraries
 - Aviation & Marine Applications
 - Insurance Industry
- Data Centres & Industrial Applications
 - Computer Rooms & Electronics
 - Tape & Back Up Storage
 - Server Rooms & Process Control Rooms
 - Laboratories & Clean Rooms
 - Pharmaceutical/ Medical Facilitie
 - Military Installations

Safety and Precautions

Exposure to FM200 at the design concentration of 7% to 9% is not hazardous to health within a permissible period of time. According to Non Observed Adverse Effect Level (NOAEL), the maximum human exposure time shall not exceed 5 minutes with 9% concentration level.

It is recommended that unnecessary exposure to any agent be avoided and that personnel evacuate protected areas as quickly as possible to avoid the decomposition products of the clean agent.

FM200 can decompose at high temperature or under fire to a form of halogen acids which is readily detected as a sharp, pungent odor even after fire extinguished or long before hazardous maximum exposure levels are reached. Ventilation and openings are required to clear the protected areas after FM200 discharged, no one is allowed to enter the areas during system discharge or before the area is totally ventilated and safe for occupancy again.

Direct contact with the vaporizing liquid discharge from a FM200 nozzle has a cool chilling effect on objects and in extreme case can cause frostbite to the skin. One should avoid direct contact with the agent.

FM200 shall not be used on fires involving the follow- ing materials:

- Certain chemicals or mixtures of chemicals, such as cellulose nitrate and gunpowder, those are capable of rapid oxidation in the absence of air.
- Reactive metals such as lithium, sodium, potassium, magnesium, titanium, zirconium, uranium, and plutonium.
- Metal hydrides.
- Chemicals capable of under going auto thermal decomposition, such as certain organic peroxides and hydrazine.

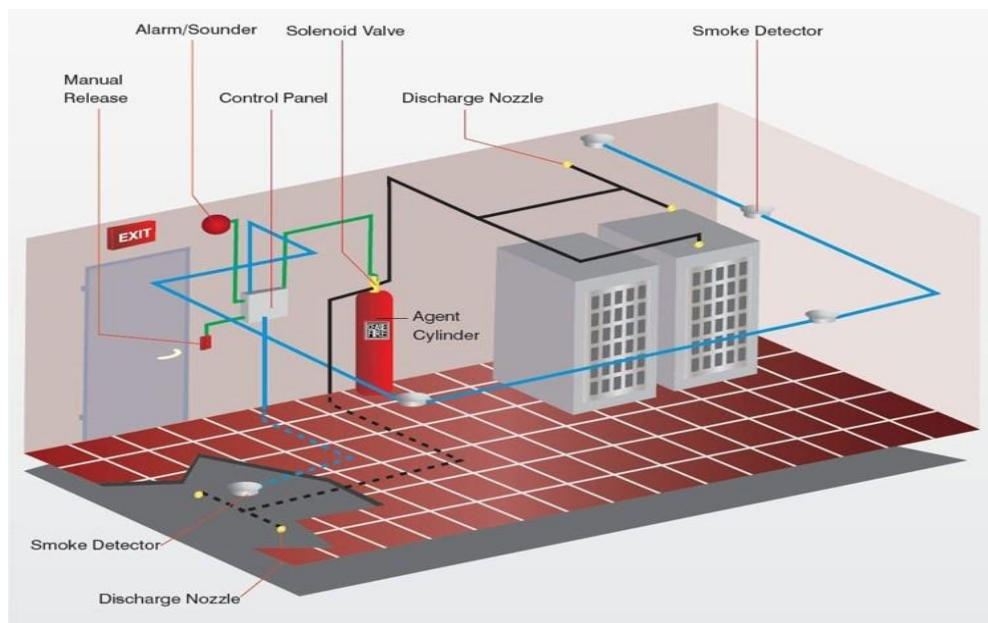


The FM200 fire suppression systems are designed, installed and maintained according to NFPA 2001 (Clean Agent Fire Extinguishing Systems).

FM200 utilizes the halocarbon gas Heptafluoropropane (HFC-227ea) in NFPA 2001 and ISO 14520-1. The general requirements and design criteria are based on both NFPA 2001 and ISO 14520-1.

FM200 is employed as a total flooding system and should not be used for local application system. FM200 suppresses fire by absorbing heat energy at its molecular level faster than the heat can be generated, so the fire cannot sustain itself.

It also forms free radicals to chemically interfere with the chain reaction of the combustion process. This makes it a highly effective fire fighting agent that is safe for people and causes no damage to equipment.



Design Calculations

The required agent quantity is based on the volume of protected area at the lowest expected ambient temperature and concentration required. To obtain the minimum agent quantity required, use the following equation:

$$W = (V/S) \times (C/100-)$$

W = weight of Agent required

V = volume of protected area

S = specific vapour volume

$S = 0.1269 + 0.000513 T$

C = Required HFC-227ea Design Concentration (% by volume) at Design Temperature (t).

T = Design temperature in protected area (°C)

Product Specification

FM200 System Application



No	Description	Material
1	Container Valve	Brass
2	Electric Actuator	Brass
3	Manual Actuator	Brass
4	Pressure Gauge	Plastic
5	FM200 Discharge Hose	Rubber Hose or Flexible
6	Check Valve	Brass Alloy 352
7	Pilot Hose DN8	Wire Braided Rubber Hose
8	Pneumatic Release Device	Brass
9	FM200 Cylinder	Chromium Molybdenum Steel

FM-200 is stored in steel cylinders as a liquid superpressurized with nitrogen at 25 Bar or 42 Bar gauge at 21 deg the cylinder valve assembly is equipped with a supervisory pressure with connection for monitoring cylinder pressure a pressure gauge and a safety bust disc in compliance with DOT requirements.

Order information for 25 Bar Type

Part Number	Discharge Outlet	Min.Fill	Max.Fill
CA-8036FM25	DN32	20kg	36kg
CA-14063FM25	DN50	40kg	63kg
CA-20091FM25	DN50	60kg	91kg
CA-240109FM25	DN50	80kg	109kg
CA-330159FM25	DN65	100kg	159kg
CA-500227FM25	DN65	150kg	227kg
CA-700317FM25	DN65	200kg	317kg

Order information for 42 Bar Type

Part Number	Discharge Outlet	Min.Fill	Max.Fill
CA-8036FM42	DN32	20kg	36kg
CA-14063FM42	DN50	40kg	63kg
CA-20091FM42	DN50	60kg	91kg
CA-240109FM42	DN50	80kg	109kg
CA-330159FM42	DN65	100kg	159kg
CA-500227FM42	DN65	150kg	227kg
CA-700317FM42	DN65	200kg	317kg



Product Specification



Manual Actuator

Material: Aluminium
Actuating Pressure: 25-42bar
Part Number: CA-MF200MAT



Electric Actuator Type:
Stackable 24 VDC
0.2Amp
Part Number: CA-24EAT



FM200 Discharge Hose (Flexible Type)

Working Pressure: 25-42bar
Part Number: CA-32FLE - DN32mm - 1 1/4"
Part Number: CA-40FLE - DN40mm - 1 1/2"
Part Number: CA-50FLE - DN50mm - 2"
Part Number: CA-65FLE - DN65mm - 2 1/2"



Discharge Nozzle (180°)

Material: Brass
Working Pressure: 25-42bar
Part Number:
CA-DIS15-180 (Size 15mm - 1/2")
CA-DIS20-180 (Size 20mm - 3/4")
CA-DIS25-180 (Size 25mm - 1")
CA-DIS32-180 (Size 32mm - 1 1/4")
CA-DIS40-180 (Size 40mm - 1 1/2")
CA-DIS50-180 (Size 50mm - 2")



Discharge Nozzle (360°)

Material: Brass
Working Pressure: 25-42bar
Part Number:
CA-DIS15-360 (Size 15mm - 1/2")
CA-DIS20-360 (Size 20mm - 3/4")
CA-DIS25-360 (Size 25mm - 1")
CA-DIS32-360 (Size 32mm - 1 1/4")
CA-DIS40-360 (Size 40mm - 1 1/2")
CA-DIS50-360 (Size 50mm - 2")



Selection Valve (Control by Electric or Pressure)

Material: Carbon Steel
Working Pressure: 25-42bar
Part Number:
CA-SELEC32 (Size 32mm - 1 1/4")
CA-SELEC40 (Size 40mm - 1 1/2")
CA-SELEC50 (Size 50mm - 2")
CA-SELEC65 (Size 65mm - 2 1/2")
CA-SELEC80 (Size 80mm - 3")
CA-SELEC100 (Size 100mm - 4")



Pneumatic Release Device

Material: Brass
Working Pressure: 25-42bar
Part Number: CA-PRD-FM200



Safety Relief Valve DN25 (1")

Material: Brass
Working Pressure: 25-45bar
Part Number: CA-SRV-FM200



Check Valve DN32-DN65 (1 1/4"-2 1/2")

Material: Brass
Working Pressure: 25-45bar
Part Number: CA-CV-FM200

Product Specification



**Hochiki Conventional
Releasing Fire Alarm
Control Panel**

Part Number: HCVR-3

- UL Listed, FM Approved and CSFM listed
- Three conventional zones
- Any single zone or any combination of zones can be configured to release
- Fully programmable using simple menu options
- Simple, single board construction
- Installer-friendly
- Compatible with a wide range of detection devices
- Configurable first stage NAC delays
- Configurable detection delays
- Built-in manual release switch and external manual release circuit
- Built-in abort circuit
- Compatible with FirePro® Xtinguish
- Compatible with various releasing valves
- Configurable releasing delays up to 60 seconds in 5-second intervals
- Configurable releasing duration up to 5 minutes in 5-second intervals
- Releasing countdown timer displayed on the panel
- Supports up to seven HCVR-SDU or HCVR-AB
- Built-in relays for Fire, Trouble, Stage 1, Stage 2, Extract and Local Fire
- Available in red or gray



Hochiki Photoelectric Smoke Detector

Part Number	SOC-24VN
Light Source	GaAlAs Infrared Emitting Diode
Nominal Rated Voltage	24 VDC
Working Voltage	8 - 35.0 VDC
Maximum Voltage	42 VDC
Supervisory Current	59µA @ 24 VDC
Surge Current	160µA max. @ 24VDC
Alarm Current	150mA max. @24 VDC
Air Velocity Range	0-4000 fpm
Maximum Humidity	95% RH Non-Condensing
Ambient Temperature	32°F to 120°F (0°C to 49°C)
Color & Case Material	Bone PC/ABS Blend
Sensitivity Test Feature	Automatic Sensitivity window verification test
Mounting	Refer to NS Conventional Detector Base Data Sheet

Product Specification



Hochiki ROR Heat Detector

Part Number	DSC-EA
Rated Voltage	24VDC
Working Voltage	15 - 30VDC
Maximum Switching Current	100mA max.
Heat Sensing Element	Air chamber composed with the diaphragm.
Operating Temp. Range	-10°C - +50°C (14°F - 122°F)
Storage Temp. Range	-30°C - +70°C (-22°F - 158°F)
Relative Humidity (at 40°C)	95% RH Non-Condensing
Dimensions	3.9" D x 1.3" H
Weight	3 oz.
Color	Bone
Applicable Standard	UL-521
Response Grade	Ordinary



Hochiki Fixed Heat Detector

Part Number	DCD 135/190
Response	135° ± 7.5°F 190° ± 7.5°F
Rated Voltage	17.7 - 30.0 VDC
Working Voltage	15.0 - 33.0 VDC
Maximum Voltage	42 VDC
Supervisory Current	40µA @ 24 VDC
Surge Current	160µA max. @ 24 VDC
Alarm Current	150µA max. @ 24 VDC
Ambient Temperature	32°F to 120°F (0°C to 49°C)
Contact Rating	N/O Contacts 150mA max. @ 24 V
Color & Case Material	Bone PC/ABS Blend
Mounting	Refer to the NS Conventional Detector Base Data Sheet



Hochiki Flame Detector

Part Number	HF-24
Rated Voltage	17.6 - 27.7 VDC
Working Voltage	15 - 30 VDC
Normal Current	200µA @ 24 VDC
Alarm Current	250mA Maximum
Response to Ultraviolet	1850 - 3000 Angstrom
Ambient Temperature	14° to 122° Fahrenheit (-10°C to +50°C)
Mounting	HSC-4R and HSB-Series Bases
Color	Ivory ACS

Product Specification



Hochiki Manual Pull Station

Part Number: HPS-DAK-SR

Contact: Form

Contact Rating: 10A @ 120 VAC

Operating Temperature: -30°F (-35°C) ~ 150°F (66°C)



Hochiki Abort Switch

Part Number: HCVR-AS-R

Switch Rating: 1A @ 30VDC

Dimension: 3.81" W x 3.81" H x 2.32" D

Finish Colour: Red



Canatech Discharge Warning Box

Part Number: CA-DCW-FM200

Voltage: 24VDC

Ambient Temperature: -25 ~ +70 Deg

Dimensions (mm): H150 x W400 x D85

Material: Black Steel

Finish Colour: Red



Canatech Electronic Sounder and Beacon

Part Number: CA-17ESB

Voltage: 24V DC

Current Consumption 24V DC (tone 3): 14.5mA

Volume Control: 0 to -20dB adjustment

Ambient Temperature: -25°C ~ +80°C

Material: ABS plastic

Dimensions: 92.5mm(Dia.) x 110mm(H)

Weight: 278g



Hochiki Fire Alarm Bell

Part Number: FBB-150I

Rating: DC 24V, 8mA

Sound Pressure: ≥90 dB (at distance of 1m from the front)

Operating Temperature Range: -20°C - 60°C

Material: Steel, 1.2mm thickness, Chrome-plated

Color: Equivalent to Munsell 7.5R3.6/12.8

Weight: Approx. 465g

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Safety for your life



FIRE PROTECTION