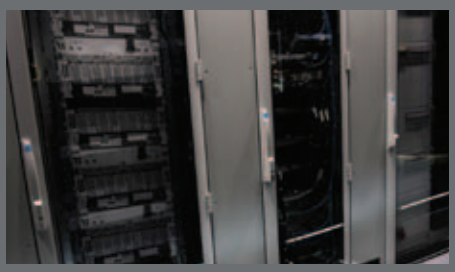

tyco
Fire Protection Products
FM-200®
Gaseous Fire Suppression Systems
HYGOOD

FM-200®

Gaseous Fire Suppression Systems

Fast, clean & safe fire protection

FM-200® systems are internationally accepted as providing reliable and effective fire protection solutions for high value assets, processes and locations, as well as the people who work in these protected areas.



Electrically non-conductive, FM-200 works by removing heat from a fire so that combustion cannot be sustained. When it comes to being safe for use, FM-200 delivers, which is why FM-200 systems are approved by, FM and UL listed; an ideal solution where personnel safety and process continuity are paramount.

The decision to use FM-200 can be based on a number of key factors: it is the most widely used of the chemical replacements for Halon 1301 and it is an agent that has been used to successfully protect tens of thousands of high-technology facilities in 70 countries around the world.

At its design concentration, FM-200 does not sufficiently deplete the oxygen level to a point where it is unsafe for occupants to remain in the room.

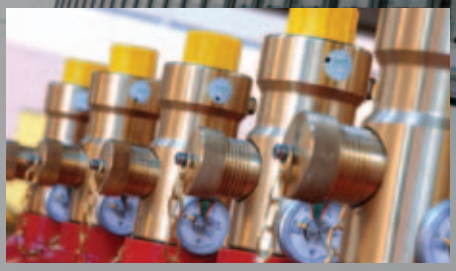
FM-200 agent is stored in cylinders as a liquid, super-pressurised with nitrogen so requiring only a very small storage 'footprint'.

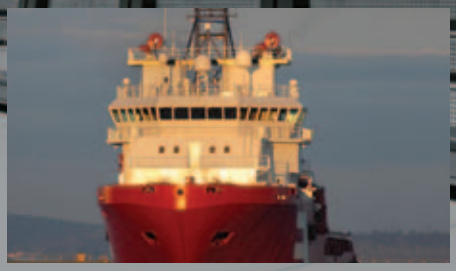
The discharged gas flows through a piping network into the protected area, where it is applied to suppress the fire through heat absorption.

Significantly, there is no risk of thermal shock to delicate electronic equipment and FM-200 is electrically non-conductive and non-corrosive.

Additionally, it leaves no oily residue or deposits to damage software, data files or communications equipment, meaning post-discharge clean up time and costs are minimal.

Its use as a fire suppressant is not inhibited by the Montreal Protocol. Indeed, it is a clean agent that belongs to a class of compounds that was introduced specifically to facilitate the phase-out of ozone depleting gases, such as Halon 1301.





Benefits

// *Colourless, odourless, non-contaminating gaseous fire protection*

// *Designed to protect critical assets and processes without consequential damage*

// *Safe to use in occupied areas*

// *Tried and tested through thousands of installations around the world*

// *Quality & technical/ service support*

Applications

// *Computer suites and data centres*

// *Offshore oil/gas exploration and production facilities*

// *Telecommunications centres*

// *Power generation*

// *Marine*

// *Museums and archives*

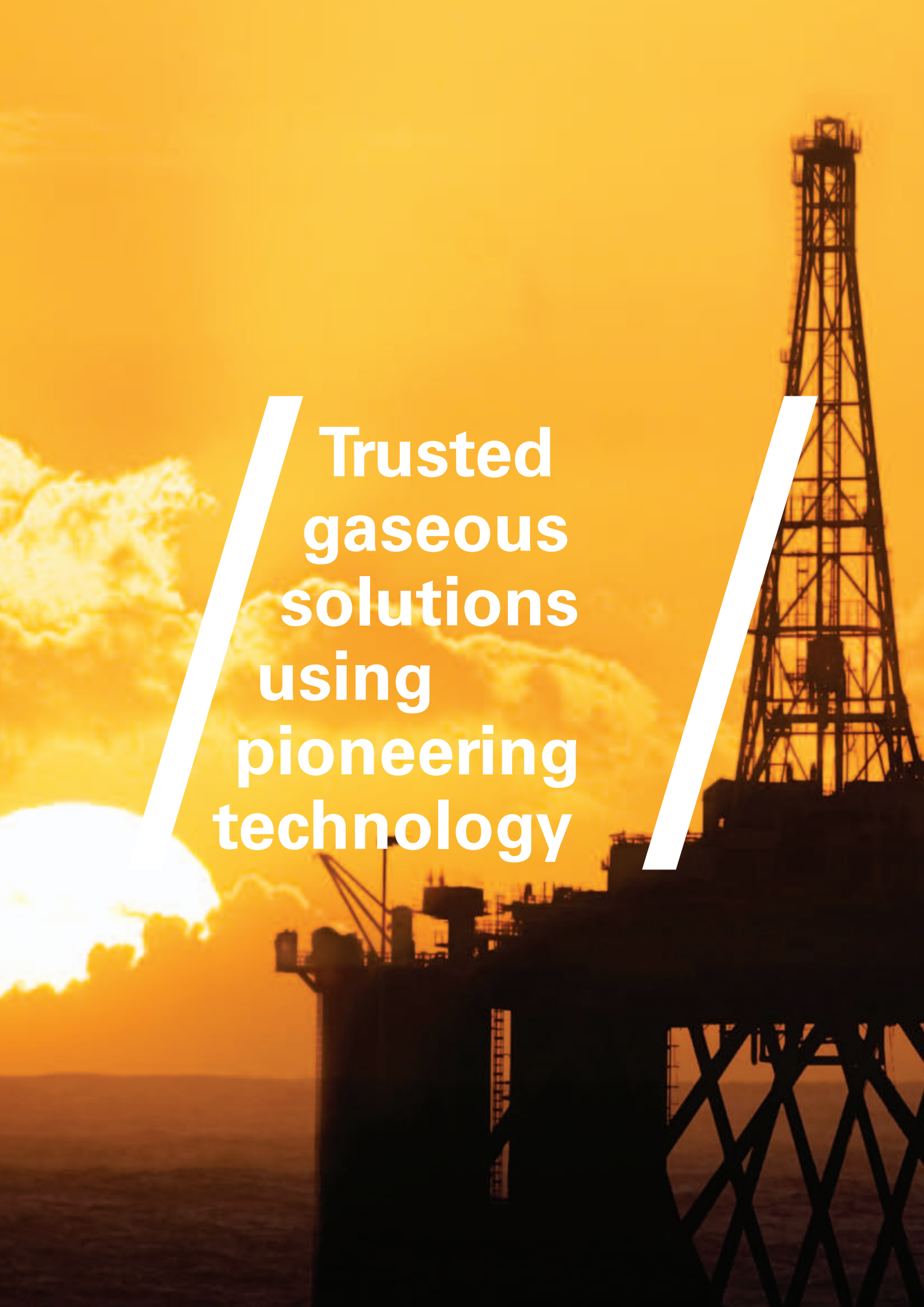
// *Data storage*

Fast, effective fire protection for critical assets & processes

Full list of international approvals

Tried & trusted technology

Clean & safe solutions


Trusted
gaseous
solutions
using
pioneering
technology

FM-200®

Proven in thousands of successful installations worldwide

Protecting your most valuable assets

Extensively tested, FM-200 systems are proven safe for use in occupied areas. They are designed using bespoke software, which accurately calculates the amount of FM-200 required for the protected space. The target concentration of FM-200 in an identified protected volume is matched to international standards, which themselves are the result of extensive and repeated fire tests, to match design to fire protection performance.

HYGOOD

Global strength. Local expertise.
At your service.

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Fire Protection Products

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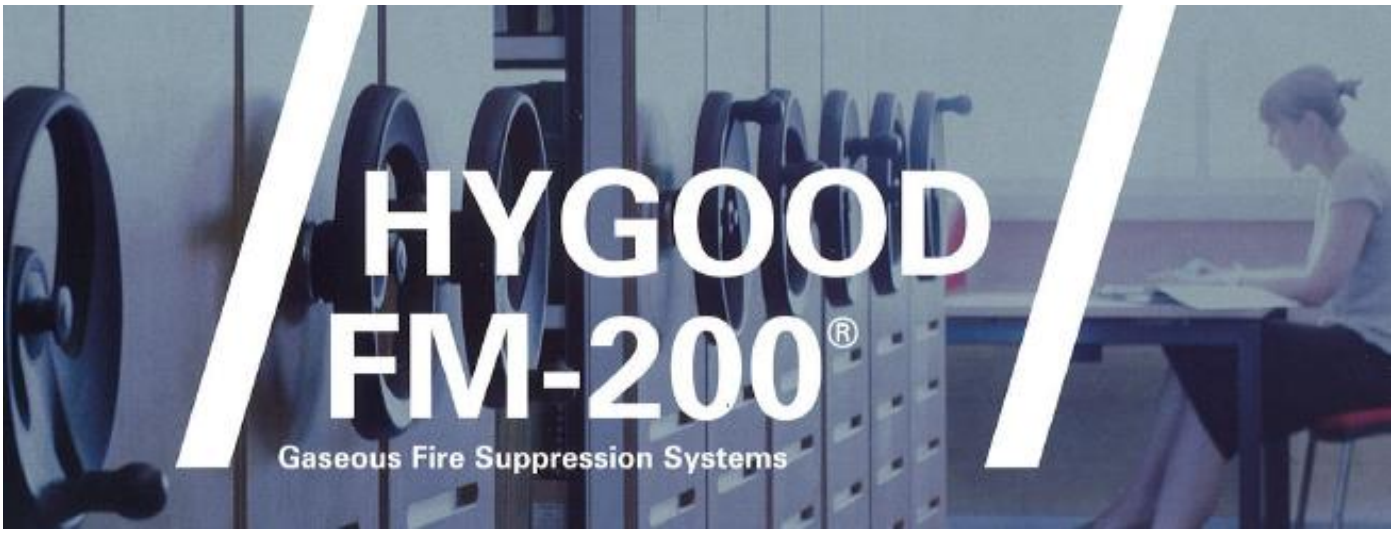


System Components

EUNIX FIRE PROTECTION PTE LTD
YOUR TOTAL FIRE PROTECTION SOLUTION
25 KIAN TECK WAY SINGAPORE 628743
Tel : 6553 3700 Fax : 6457 7338

HYGOOD FM-200®

System Components

FM-200® Container

The container assembly consists of a container fitted with a valve and internal syphon tube, factory filled with FM-200®, and super-pressurised with dry nitrogen to 25 bar @ 21 °C (360 psi @ 70 °F).

Containers sharing the same manifold shall be equal in size and fill density. Containers are finished in red and are available in various sizes.

A nameplate is fixed to the container displaying the agent weight, tare weight, gross weight, fill density, charge date and fill location.

FM-200® Container

Technical Information

The 4.5, 8, 16, 32, 52, 106, 147 and 180 litre containers are manufactured in accordance with DOT 4BW500 or 4BW450, and the 343 litre container in accordance with DOT 4BW450.

Material:	Carbon Steel
4BW500Hydraulic test pressure: Working Pressure:	69.0 bar (1000 psi) 34.5 bar (500 psi)
4BW450Hydraulic test pressure: Working Pressure:	62.1 bar (900 psi) 31.0 bar (450 psi)
Paint Specification:	Red epoxy polyester or red polyester powder coated

DOT Container details.

Part No. (Nominal Volume)	Minimum and Maximum Fills kg	(lbs)	Valve Size mm	(in)	Height from floor to outlet (nominal) mm	(in)	Diameter mm	(in)	Nominal Tare Weight kg	(lbs)
303.205.026 (4.5 litre)	2.3 to 4.5	(5 to 10)	25	(1")	280	(11")	178	(7")	7.7	(17)
303.205.015 (8 litre)	4.0 to 8.0	(9 to 18)	25	(1")	304	(12")	254	(10")	14.8	(32.6)
303.205.016 (16 litre)	8.0 to 16.0	(18 to 35)	25	(1")	502	(19.8")	254	(10")	18.4	(40.6)
303.205.017 (32 litre)	16.0 to 32.0	(35 to 71)	25	(1")	833	(32.8")	254	(10")	26.1	(57.5)
303.205.030 (40 litre) *	20.0 to 40.0	(44 to 88)	50	(2")	1352	(53.2")	227.2	(9")	52.2	(115)
303.205.018 (52 litre)	26.0 to 52.0	(58 to 115)	50	(2")	596	(23.5")	406	(16")	49.1	(108.3)
303.205.031 (67.5 litre) *	33.8 to 67.5	(75 to 149)	50	(2")	1526	(60")	265	(10.4")	81.6	(180)
303.205.032 (80 litre) *	40.0 to 80.0	(88 to 176)	50	(2")	1685	(66.3")	276	(11")	95.3	(210)
303.205.019 (106 litre)	53.0 to 106.0	(117 to 234)	50	(2")	1021	(40.2")	406	(16")	71.8	(158.3)
303.205.020 (147 litre)	73.5 to 147.0	(162 to 324)	50	(2")	1354	(53.3")	406	(16")	89.9	(198.2)
303.205.021 (180 litre)	90.0 to 180.0	(198 to 397)	50	(2")	1634	(64.3")	406	(16")	105.8	(233.2)
303.205.022 (343 litre)	171.5 to 343	(378 to 756)	80	(3")	1466	(57.7")	610	(24")	207	(456)

* For UL Listed Systems Only (Not FM Approved)

Valve Assembly

The container valve is the result of extensive research and development and incorporates many unique safety features. The valve assembly is factory-fitted to the container and is supplied pre-assembled with a low pressure switch (to be ordered separately), pressure gauge and burst disc.

Figure 3 - Valve Assembly

25 mm (1") Valve Assembly Part No. 302.209.001
50 mm (2") Valve Assembly Part No. 302.209.002
80 mm (3") Valve Assembly Part No. 302.207.009

Technical Information

25 mm (1") Valve

Body Material:	Brass CZ 121
Outlet Anti-Recoil Cap Material:	CZ122
Max. Working Pressure:	34 bar (493 psi)
Outlet:	25mm (1" BSPP)
Low Pressure Switch Port:	1/8" NPT
Gauge Port:	1/8" NPT
Pilot Pressure Port:	1/4" BSPP
Solenoid Adaptor Port:	1/8" NPT
Overall Size:	130mm x 62mm
Weight:	2.96 kg / 6.526 lbs

50 mm (2") Valve

Body Material:	Brass CZ 121
Outlet Anti-Recoil Cap Material:	CZ122
Max. Working Pressure:	34 bar (493 psi)
Outlet:	50mm (2" BSPP)
Low Pressure Switch Port:	1/8" NPT
Gauge Port:	1/8" NPT
Pilot Pressure Port:	1/4" BSPP
Solenoid Adaptor Port:	1/8" NPT
Overall Size:	173mm x 100mm
Weight:	9.18 kg / 20.238 lbs

80 mm (3") Valve

Body Material:	Brass CZ 121
Outlet Anti-Recoil Cap Material:	Brass UNS36000
Max. Working Pressure:	34 bar (493 psi)
Outlet:	80mm (3" Flared*)
Low Pressure Switch Port:	1/8" NPT
Gauge Port:	1/8" NPT
Pilot Pressure Port:	1/4" BSPP
Solenoid Adaptor Port:	None
Overall Size:	241mm x 129mm
Weight:	18.82 kg / 41.491 lbs

Principle of Operation

The FM-200® valve is a high-flow-rate device specially designed for use in fire systems. Operation is by means of a pressure-differential piston. Container pressure is used within the valve to create a positive force on the piston, sealing the valve closed. Operation of the valve occurs when the upper chamber is vented faster than the 'make up device' in the shuttle can replace the pressure. Thereby allowing, the shuttle to be forced up, and free flow of FM-200® from the valve. Upper chamber pressure is released by the electrical, mechanical or pneumatic actuator.

The valve incorporates the following features:

- A pressure operated safety release device (burst disc).
- Main outlet, fitted with anti-recoil cap.
- A connection for a pneumatic, mechanical or electrical actuator, fitted with safety cap.
- A connection for an electrical solenoid.
- A connection for the pneumatic actuation port.

Burst Disc

A burst disc is factory fitted to every valve assembly. It is designed to rupture when the container becomes over pressurised when subjected to temperatures above the designed storage temperature of the container.

Figure 4 - Burst Disc

Burst Disc for 25 mm (1") Valve
Part No. 20915

Burst Disc for 50 mm (2") Valve
Part No. 20915

Burst Disc for 80 mm (3") Valve
Part No. 15330

Technical Information

25 mm (1") Valve & 50 mm (2") Valve

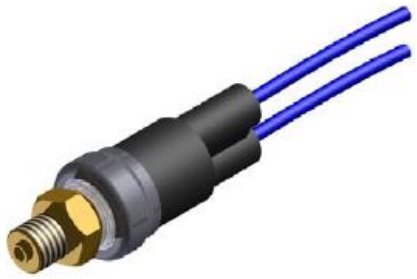
Body:	Brass CZ 121
Rating:	53.4 bar (774.5 psi) @ 50 °C
Thread:	M18 x 1.00
Hole Orientation:	90° to Body
Torque:	35 Nm (25.8 lbs.ft)
Overall Size:	20mm (L) x 18mm (Dia)
Weight:	0.028 kg / 0.062 lbs

80 mm (3") Valve

Body:	Brass UNS-C36000
Rating:	52 bar (760 psi) @ 50 °C
Thread:	0.9375-16UN-3A
Hole Orientation:	90° to Body
Torque:	68 Nm (50 lbs.ft)
Overall Size:	33.3mm (L) x 18mm (Dia)
Weight:	0.088 kg / 0.195 lbs

Low Pressure Switch

A low pressure warning switch is fitted to every container and must be ordered separately. The device continuously monitors the container pressure and in the event of the pressure dropping below 20 bar (290 psi) the switch operates to enable the condition to be signalled to a control unit.



Low Pressure Switch (Close On Fall)
(Part No. 305.209.005)

Low Pressure Switch (Open On Fall)
(Part No. 305.209.006)

Technical Information

Body:	Hermetically sealed Stainless Steel
Switch Type:	Normally Open at Atmospheric Pressure
Switch Point (Open on Fall):	Open on Fall at 20 bar (290 psi) Close on Rise at 24.1 bar (350 psi)
Switch Point (Close on Fall):	Close on Fall at 20 bar (290 psi) Open on Rise at 24.1 bar (350 psi)
Tolerance:	+/-0.7 bar (± 10 psi)
Proof Pressure:	345 bar (5003 psi)
Electrical Housing:	Epoxy Sealed terminals
Connection:	Brass 1/8" NPT
Max. Current:	Max 2.9 A
Voltage Range:	5-28 v dc
Electrical Connection:	0.9m (3ft) x 2 Core Cable
Certification:	UL Recognised
IP Rating:	IP65
Wire Leads:	1.82 m (6 ft)
Overall Size:	38mm (L) x 16mm (Dia)(1.50" (L) x 0.63" (Dia))
Weight:	0.087 kg (0.192 lbs)

Fixing Brackets

The bracket assembly consists of one back channel and two nuts and bolts with a bracket. To securely hold the container in position during the system discharge, Min. one bracket assemblies are required per container.

Each strap is notched for insertion into the back channel allowing the container to be properly aligned. The bracket assembly is designed to be mounted to a rigid vertical surface with the container assembly resting fully on the floor.

Figure 9 - Fixing Bracket (Strap Style)

Technical Information

Material:	Mild Steel	
Coating:	Silver Paint	
Mounting:	Unistrut Channel	
Weight:	0.34 kg (0.75 lbs) (Part No. 311.205.020)	4.5 litre Cylinder
	0.30 kg (0.66 lbs) (Part No. 311.205.013)	8, 16, 32 litre Cylinder
	0.46 kg (1.01 lbs) (Part No. 311.205.014)	52, 106, 147, 180 litre Cylinder
	0.71 kg (1.56 lbs) (Part No. 311.205.019)	343 litre Cylinder

Manual Actuator

The manual actuator is used to mechanically operate the system at the container position and is fitted to the top of the valve assembly or removable electrical actuator. Inadvertent operation is prevented by a safety clip which has to be removed before activation.

Figure 10 - Manual Actuator (Part No. 304.209.002)

Technical Information

Body:	Brass CZ 121
Actuation Pin:	Stainless Steel
Knob:	PVC (Colour: Red)
Safety Pin:	Stainless Steel 303
Piston Rod:	Brass CZ 121
Min. Actuation Force:	25.5 N (5.73 lbf)
Overall Size:	52mm (L) x 41.5mm (Dia)(2.05" (L) x 1.63" (Dia))
Weight:	0.265 kg (0.584 lbs)

Pneumatic Actuator

The pneumatic actuator is used to pneumatically operate the system at the container position and is fitted to the top of the valve assembly or removable electrical actuator. Pressure from a 'master' container is used to actuate the valve, via small bore piping or a flexible hose.

Technical Information

Body:	Brass CZ 121
Actuation Pin:	Stainless Steel
Piston Rod:	Brass CZ 121
Pipe connection:	1/4" NPT Female
Min. Actuation Pressure:	4 bar (58 psi)
Min. Actuation Pressure:	75 bar (58 psi)
Piston Rod:	Brass CZ 121
Min. Actuation Force:	25.5 N (5.73 lbf)
Overall Size:	48mm (L) x 41.5mm (Dia)
Weight:	0.228 kg (0.503lbs)

Figure 11 - Pneumatic Actuator (Part No. 304.209.004)

Removable Electrical Actuator

The removable electrical actuator locates to the top of the container valve. 24 v dc is required for solenoid operation. Provision is made for the connection of a manual actuator to the top of the actuator assembly.

The removable electrical actuator has a life span of 10 years from manufacture, which is indicated on the label.

Figure 13 - Electrical Actuator

Bridge Rectifier (Part No. 304.209.001)
Suppression Diode (Part No. 304.205.010)

Technical Information

Body:	Mild Steel & Dull Nickel
Swivel nut:	Brass CZ121
Actuation Pin:	Stainless Steel
Actuation Type:	Latching
Reset Requirement:	Manually via Reset Tool supplied
Connection:	1" BSPP Brass
Nominal Voltage:	24 v dc
Nominal Current:	0.25 A
Max. Monitoring Current:	25 mA
Manual Actuation Force:	50 N (11.24 lbf)
Nominal Pin Travel:	4.4 mm (0.17")
Electrical connection:	3-pin plug connector
Back EMF Protection:	Suppression Diode
Certification:	UL Recognised
Overall Size:	104mm (L) x 44mm (Dia)
Weight:	0.95 kg (2.09 lbs)

Discharge Nozzle

FM-200® is distributed within the protected area by the discharge nozzle which is sized to ensure the correct flow of agent for the risk.Nozzles are available with seven or eight ports to allow for 180° or 360° horizontal discharge patterns. Ports are drilled in 0.1 mm (0.004 in) increments to the specified system design. Nozzles are supplied as standard in Brass NPT.

Figure 30 - 7 & 16 Port Nozzle Brass Configuration

Technical Information

Material:	Brass / Stainless Steel
Thread Type:	BSPP / NPT
Drill Incrementation:	0.1 mm
Nozzle Type:	8 Port 360° / 7 Port 180°
Max. Agent per Nozzle:	100 kg (220 lbs)
Orientation:	Pendant / Upright

Nozzle Weights

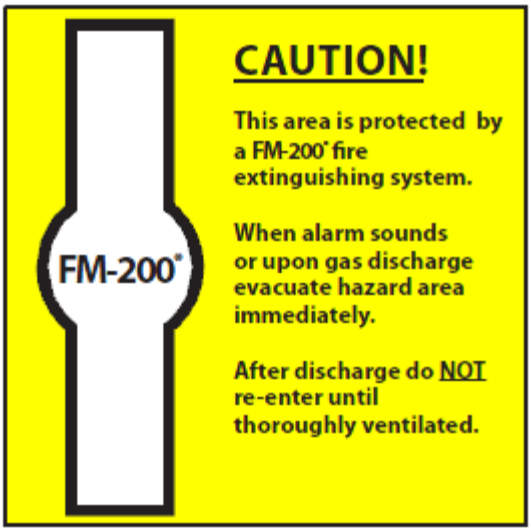
Nozzle Size	Brass
10 mm (3/8")	0.10 kg (0.22 lbs)
15 mm (1/2")	0.15 kg (0.33 lbs)
20 mm (3/4")	0.21kg (0.46 lbs)
25 mm (1")	0.27 kg (0.60 lbs)
32 mm (1¼")	0.41 kg (0.90 lbs)
40 mm (1½")	0.46 kg (1.01 lbs)
50 mm (2")	0.83kg (1.83 lbs)

Nozzle Overall Sizes

Nozzle Size	Length	Diameter
10 mm (3/8")	33.5 mm (1.32")	25 mm (0.98")
15 mm (1/2")	41 mm (1.61")	29 mm (1.14")
20 mm (3/4")	47 mm (1.85")	34.5 mm (1.36")
25 mm (1")	52 mm (2.05")	41.3 mm (1.63")
32 mm (1¼")	62 mm (2.44")	50 mm (1.97")
40 mm (1½")	68 mm (2.68")	60 mm (2.36")
50 mm (2")	89 mm (3.50")	76 mm (2.99")

Door Notice

A door notice is required at each entrance to the risk to advise personnel that they are entering a protected area.



For areas protected by concentrations less than NOAEL (Part No. 314.205.002).

Technical Information

Material:	2 mm (0.08") Craylon
Finish	Gloss, scratch resistant
Overall Size:	210mm (L) x 210mm (W)
Weight:	0.025 kg (0.055 lbs)

ONLINE CERTIFICATIONS DIRECTORY

GAQF.EX5104
Clean-agent Extinguishing System Units

Page Bottom

Clean-agent Extinguishing System Units

See General Information for Clean-agent Extinguishing System Units

HYGOOD EX5104

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Great Yarmounth, NORFOLK NR31 0NN UNITED KINGDOM

ENGINEERED UNITS

3M™ Novec™ 1230 Fire Protection Fluid (FK-5-1-12) Clean Agent Extinguishing System Units, utilizing DOT rated cylinders, HYGOOD Models 303.207.010, 303.207.001, 303.207.002, 303.207.003, 303.207.004, 303.207.005, 303.207.006, 303.207.007 and 303.207.008, stored pressure type, having nominal storage capacities of 11, 21, 42, 84, 137, 280, 388, 459 and 851 lb (5.4, 9.6, 19.2, 38.4, 62.4, 127.2, 176.4, 208 and 386 kg) of Novec™ 1230 Fluid (FK-5-1-12), respectively. 3M™ Novec™ 1230 Fire Protection Fluid (FK-5-1-12) Clean Agent Extinguishing System Units utilizing TPED rated cylinders, Models 303.207.020, 303.207.021, 303.207.022, 303.207.023, 303.207.024, and 303.207.025, stored pressure type, having nominal storage capacities of 21, 42, 84, 137, 280, and 388 lb (9.6, 19.2, 38.4, 62.4, 127.2, and 176.4 kg) of Novec™ 1230 Fluid (FK-5-1-12), respectively. The units are pressurized to 360 psig (24.8 bar) at 70F with operating temperatures of 0°F to 130°F. The units are designed for total flooding protection against Class A surface burning, Class B flammable liquid and Class C fires occurring within an enclosure. A description of these extinguishing system units and the design and installation limitations are contained in the Listee's installation manual P/N 14A-11H dated 2010-03-11, and Actuator Placement Indicator Switch Technical Bulletin p/n 16056A dated December 10, 2015. These installations require the use of the Listee's Novec 1230 Engineered System Flow Calculation Software Versions HYG 3.60b or TYCO4. Copies are available from the above Listee.

Engineered FM-200® Models 303.205.026, 015, 016, 017, 030, 018, 031, 032, 019, 020, 021, and 022 Clean Agent Extinguishing System Units utilizing DOT rated cylinders, stored pressure type, having nominal charging capacities of 4.5, 8, 16, 32, 40, 52, 67, 80, 106, 147, 180, 343 L (9, 17, 35, 70, 88, 114, 148, 176, 233, 324, 396 and 756 lbs) of FM-200® Clean Agent, respectively.

Engineered FM-200® Models 303.205.045, 046, 047, 048, 049, and 050 Clean Agent Extinguishing System Units utilizing TPED rated cylinders, stored pressure type, having nominal charging capacities of 8, 16, 32, 52, 106, and 147 L (17, 35, 70, 114, 233, and 324 lbs) of FM-200® Clean Agent, respectively.

The units are super-pressurized to 25 bar (360 psig) with operating temperatures of 0°C to 54°C (32°F to 130°C). The units are designed for total flooding protection against Class A surface burning, Class B flammable liquid and C fires occurring within an enclosure. A description of these extinguishing system units and the design and installation limitations are contained in the Listee's Engineered System Installation, Recharge and Maintenance Manual, p/n 14A-07H dated 2010-03, Actuator Placement Indicator Switch Technical Bulletin p/n 16056A dated December 10, 2015, and the FM-200® Engineered System Flow Calculation Software Versions HYG3.04b or TYCO4.00. Copies are available from the above Listee.

Engineered HFC-227ea Models 303.205.055, 056, 057, 058, 040, 041, 042, and 059 Clean Agent Extinguishing System Units utilizing DOT rated cylinders, stored pressure type, having nominal charging capacities of 8, 16, 32, 52, 106, 147, 180, and 343 L (17, 35, 70, 114, 233, 324, 396 and 756 lbs) of FM-200® Clean Agent, respectively. The units are super-pressurized to 25 bar (360 psig) with operating temperatures of 0°C to 54°C (32°F to 130°C). The units are designed for total flooding protection against Class A surface burning, Class B flammable liquid and C fires occurring within an enclosure. A description of these extinguishing system units and the design and installation limitations are contained in the Listee's Engineered System Installation, Recharge and Maintenance Manual, p/n 14A-07H/CH Issue 3 dated 2013-03, Actuator Placement Indicator Switch Technical Bulletin p/n 16056A dated December 10, 2015, and the FM-200® Engineered System Flow Calculation Software Versions TSPC 3.34b or TYCO4.00. Copies are available from the above Listee.

Engineered HFC-227ea Models 303.205.026, 015, 016, 017, 030, 018, 031, 032, 019, 020, 021 and 022 Clean Agent Extinguishing System Units utilizing DOT rated cylinders, stored pressure type, having nominal charging capacities of 4.5, 8, 16, 32, 40, 52, 67, 80, 106, 147, 180, 343 L (9, 17, 35, 70, 88, 114, 148, 176, 233, 324, 396 and 756 lbs) of HFC-227ea Clean Agent, respectively. Engineered HFC-227ea Models 303.205.045, 046, 047, 048, 049, and 050 Clean Agent Extinguishing System Units utilizing TPED rated cylinders, stored pressure type, having nominal charging capacities of 8, 16, 32, 52, 106, and 147 L (17, 35, 70, 114, 233, and 324 lbs) of HFC-227ea Clean Agent, respectively. The units are super-pressurized to 25 bar (360 psig) with operating temperatures of 0°C to 54°C (32°F to 130°C). The units are designed for total flooding protection against Class A surface burning, Class B flammable liquid and C fires occurring within an enclosure. A description of these extinguishing system units and the design and installation limitations are contained in the Listee's Engineered System Installation, Recharge and Maintenance Manual, p/n 14A-18H dated 2011-02, Actuator Placement Indicator Switch Technical Bulletin p/n 16062 dated January 4, 2016, and the HFC-227ea Engineered System Flow Calculation Software Versions HYG 3.34b or TYCO4.00. Copies are available from the above Listee.

These system units are intended to be designed and installed in accordance with the Listee's Engineered System Installation, Recharge and Maintenance Manual, P/N 14A-11H dated 2010-03 (Issue 02), Actuator Placement Indicator Switch Technical Bulletin p/n 16056A dated December 10, 2015, and the Sapphire Engineered System Flow Calculation Software Versions HYG3.61 b or TYCO4.00.

Engineered HFC-227ea Models 303.205.026, 015, 016, 017, 030, 018, 031, 032, 019, 020, 021 and 022 Clean Agent Extinguishing System Units utilizing DOT rated cylinders, stored pressure type, having nominal charging capacities of 4.5, 8, 16, 32, 40, 52, 67, 80, 106, 147, 180, 343 L (9, 17, 35, 70, 88, 114, 148, 176, 233, 324, 396 and 756 lbs) of HFC-227ea Clean Agent, respectively.

Engineered HFC-227ea Models 303.205.045, 046, 047, 048, 049, and 050 Clean Agent Extinguishing System Units utilizing TPED rated cylinders, stored pressure type, having nominal charging capacities of 8, 16, 32, 52, 106, and 147 L (17, 35, 70, 114, 233, and 324 lbs) of HFC-227ea Clean Agent, respectively.

The units are super-pressurized to 25 bar (360 psig) with operating temperatures of 0°C to 54°C (32°F to 130°C). The units are designed for total flooding protection against Class A surface burning, Class B flammable liquid and C fires occurring within an enclosure.

A description of these extinguishing system units and the design and installation limitations are contained in the Listee's Engineered System Installation, Recharge and Maintenance Manual, p/n 14A-18H - Issue 01 dated 2011-02, Actuator Placement Indicator Switch Technical Bulletin p/n 16062 dated January 4, 2016, and the HFC-227ea Engineered System Flow Calculation Software Versions HYG 3.04b or TYCO4.00.

Engineered FM-200® Models 303.205.035, 303.205.032, 303.205.033, 303.205.034, and 303.205.36 Clean Agent Extinguishing System Units stored pressure type, utilizing seamless pressure cylinders having a nominal charging capacity of 34, 80, 120, 140, and 180L (75, 176, 265, 308, and 397 lbs) of FM-200® Clean Agent. The units are super-pressurized to 25 bar (360 psig) with operating temperatures of 0°C (32°F) to 54.4°C (130°F). The units are designed for total flooding protection against Class A surface burning, Class B flammable liquid and C fires occurring within an enclosure. A description of these extinguishing system units and the design and installation limitations are contained in the Listee's Engineered System Design and Installation Manual, P/N 14A-07HI, Rev 03 dated 2017-09, Actuator Placement Indicator Switch Technical Bulletin p/n 16056A dated December 10, 2015, and the FM-200® Engineered System Flow Calculation Software Versions HYG 3.04b or TYCO4.00. Copies are available from the above Listee.

Engineered FM-200® Models 303.205.026, 303.205.015, 303.205.016, 303.205.017, 303.205.030, 303.205.018, 303.205.031, 303.205.032, 303.205.019, 303.205.020, 303.205.021, and 303.205.022 Clean Agent Extinguishing System Units utilizing DOT rated cylinders, stored pressure type, having nominal charging capacities of 4.5, 8, 16, 32, 40, 52, 67, 80, 106, 147, 180, and 343 L (9, 17, 35, 70, 88, 114, 148, 176, 233, 324, 396 and 756 lbs) of FM-200® Clean Agent, respectively.

Engineered FM-200® Models 303.205.045, 303.205.046, 303.205.047, 303.205.048, 303.205.049, and 303.205.050 Clean Agent Extinguishing System Units utilizing TPED rated cylinders, stored pressure type, having nominal charging capacities of 8, 16, 32, 52, 106, and 147 L (17, 35, 70, 114, 233, and 324 lbs) of FM-200® Clean Agent, respectively.

The units are super-pressurized to 25 bar (360 psig) with operating temperatures of 0°C to 54°C (32°F to 130°C). The units are designed for total flooding protection against Class A surface burning, Class B flammable liquid and C fires occurring within an enclosure.

These system units are intended to be designed and installed in accordance with the Listee's Engineered System Installation, Recharge and Maintenance Manual, p/n 14A-07L - Issue 02 dated 2015-10, and the FM-200® Engineered System Flow Calculation Software Version TYCO 4.00.

HYGOOD FM-200 Piston Flow System - (FM-200 PFS), Models MFC-P50, MFC-P75, MFC-P100 and MFC-P150, FM-200 (HFC-227ea) Clean Agent Extinguishing System Units, stored pressure type, having nominal charging capacities of 50, 75, 100 and 150 kg of FM-200 (HFC-227ea) Clean Agent, respectively. The units are super-pressurized to 25 bar with operating temperatures of 32°F to 130°F (0°C to 55°C). The units are designed for total-flooding protection against Class A surface burning, Class B flammable liquid, and Class C fires occurring within an enclosure.

A description of these extinguishing system units and the design and installation limitations are contained in the Listee's installation and design manual, part number MM-FM200-01H, Rev. 02, dated July 13, 2016. These installations require the use of the Listee's flow calculation software version HYG4.00. Copies are available from the above Listee.

AGENT STORAGE CONTAINER ASSEMBLY

Weight of Agent (lbs)	Part No.
66.6 to 133.6	MFC-P50
93.9 to 188.7	MFC-P75
125.7 to 244.3	MFC-P100
86.7 to 168.3	MFC-P150

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