

۱۳۱۰

توريد وتركيب نظام إطفاء بغاز FM200 لغرفة الراكات

Item	Description	QTY	Unit	total
1	Firefighting system			
1.1	FM 200 cylinder 27 Kg	1	46770	46770
1.2	Discharge Nozzle	1	568	568
1.3	<u>Piping and fitting material</u> Supplying, installing, connecting and testing of Seamless carbon black steel fire protection piping system complete, including pipes, threaded and welded fittings, supports, hangers, pressure gauges, sleeves, inserts, painting and all required couplings and adapters all as per ASTM A-53 schedule 40. 1"	6 m	510	3060
2	Fire alarm system			
2.1	Control panel	1	13739	13739
2.2	Conventional combined sounder stroop	1	990	990
2.3	6" conventional Bell	1	663	663
2.4	Abort switch	1	615	615
2.5	Conventional detectors (smoke detector + heat detector)	2	653	653
2.6	Fire rated cables	1	2326	2326
2.7	Manual call point double action	1	360	360
Total price EGP				69744
14% VAT EGP				9764.16
Total price include 14% VAT (EGP)				79508.16

For
has

- توريد وتركيب نظام إطفاء تلقائي لتأمين غرفة الراكات بقسم المراقبة الإلكترونية.
 - توريد وتركيب نظام إطفاء يغاز FM200 لغرفة الراكات، شامل أسطوانات الغاز وشاسيه الأسطوانة ونظام الإنذار وزر التشغيل اليدوي وبد التشغيل، وجهاز إيقاف إطلاق الغاز، ورشاشات الغاز.
 - سوف يتم تقديم جميع الرسومات الفنية لنظام إطفاء تلقائي لتأمين غرفة الراكات بقسم المراقبة الإلكترونية واعتمادها من مكتب فني معتمد من قبل الحماية المدنية قبل البدء في أعمال التنفيذ.
 - توريد وتركيب نظام إطفاء FM 200 من نوع Tyco المعتمد والحاصل على شهادة UL/FM.
- نظام الإطفاء :**

- أسطوانة غاز FM200 سعة ٢٧ كجم من النوع TYCO الحاصل على اعتماد UL/FM.
- عدد ١ GAS NOZZEL 360 طبقاً للحسابات الهيدروليكية.
- شبكة مواسير سيمليس للإطفاء (جدول ٤٠) طبقاً للمواصفة التالية:

PIPING AND FITTING MATERIAL:

Supplying, installing, connecting and testing of Seamless carbon black steel fire protection piping system complete, including pipes, threaded and welded fittings, supports, hangers, pressure gauges, sleeves, inserts, painting and all required couplings and adapters all as per ASTM A-53 schedule 40.

نظام الإنذار:

نظام الإنذار من النوع FIRE GURD مكون من :

- زر إطلاق وإيقاف الغاز.
- لوحة تحكم نظام الإنذار.
- سارية إنذار.
- جرس إنذار.
- زر إيقاف للإنذار.
- كاشف ضوئي وكاشف حرارة.
- زر تشغيل يدوي.
- شبكة مواسير وكابلات الإنذار (Fire Retardant Cable) المضاد للحريق مع تقديم كل الشهادات الدالة على مقاومة الكابلات للحريق.

أعمال التركيبات :

- سيتواجد مهندس مقيم طول فترة أعمال التركيب بالموقع يقوم بعملية الإشراف اليومي على الأعمال والتنسيق مع إدارة المكان لترتيب الأعمال.
- جميع أعمال التفصيل والتجهيز لشبكة المواسير سوف تتم في ورشه مؤقتة سوف يتم انشاؤها في الموقع بالتنسيق مع إدارة المكان.
- عمليات التفصيل سوف تتم عن طريق مجموعة من البرادين المحترفين والمتخصصين في أعمال الحريق وخبره في أكبر المشاريع.
- سوف يتم تقديم تقرير بمواصفات أعمال الاختبار لخط المواسير حسب الضغط المطلوب (مره ونصف ضغط التشغيل).

• جميع الاعمال من تفصيل ولحام سوف تتم حسب نظام الامان من وجود طفايات اثناء اللحام واستخدام الادوات والمعدات والمقالات السليمة والمختبرة لضمان سلامة العمال ومكان العمل.

- تلتزم الشركة باتمام الاعمال طبقا للكود المصري للحريق و اصول الصناعة.
- ال Nozzel 360 degrees
- تقدم الشركة منشأ المواسير المستخدمة و الشهادات
- النظم double knock يعمل بكاشف حرارة و دخان
- Mannall pull station double action
- لوحة التحكم وكاشف الحرارة وكاشف الدخان وال manual pull station (Double action) جميعهم
- حاصلين على اعتماد UL وفقا للكatalogات المرفقة .
- السريعة والجريس حاصلين على اعتماد LPCB .
- جميع عناصر الانتذار والتحكم والكواشف من نفس الشركة (FIRE GURD)

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the above describes the individual companies that maintain a complete record, have access to records according to the regulations, and are disclosed in public.

FM-200F CONTAINER

The FM-200F is a 2.2, 10.6, 14.7 and 22.0 lb. container. The FM-200F is used in accordance with UL 200F and is used in accordance with UL 200F and is used in accordance with UL 200F.

FBI, Bureau of the Federal Bureau of Investigation

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Table 4: DOT Container details.

Plant Name	Maximum Height (m)	Native Range	Height from Floor to seedling (m)	Diameter (cm)	Normal Leaf Type
1. <i>Acacia saligna</i> (Mill.) Benth.	15.0	India	1.0	1.5	Simple
2. <i>Albizia lebbekii</i> (DC.) Benth.	10.0	India	1.0	1.5	Simple
3. <i>Artocarpus lacucha</i> (DC.) Benth.	12.0	India	1.0	1.5	Simple
4. <i>Bauhinia variegata</i> (L.) Koenig	10.0	India	1.0	1.5	Simple
5. <i>Clitoria maritima</i> (L.) DC.	10.0	India	1.0	1.5	Simple
6. <i>Cassia siamea</i> (L.) DC.	10.0	India	1.0	1.5	Simple
7. <i>Gliricidia sepium</i> (L.) DC.	10.0	India	1.0	1.5	Simple
8. <i>Leucaena leucocephala</i> (L.) DC.	10.0	India	1.0	1.5	Simple
9. <i>Mimosa pudica</i> (L.) DC.	10.0	India	1.0	1.5	Simple
10. <i>Neonotia wightii</i> (DC.) Benth.	10.0	India	1.0	1.5	Simple
11. <i>Pithecellobium dulce</i> (Roxb.) DC.	10.0	India	1.0	1.5	Simple
12. <i>Sesbania bispinosa</i> (L.) DC.	10.0	India	1.0	1.5	Simple
13. <i>Sesbania portulacastrum</i> (L.) DC.	10.0	India	1.0	1.5	Simple
14. <i>Sesbania rostrata</i> (L.) DC.	10.0	India	1.0	1.5	Simple
15. <i>Sesbania sesban</i> (L.) DC.	10.0	India	1.0	1.5	Simple
16. <i>Sesbania speciosa</i> (L.) DC.	10.0	India	1.0	1.5	Simple
17. <i>Sesbania venusta</i> (L.) DC.	10.0	India	1.0	1.5	Simple
18. <i>Sesbania virgata</i> (L.) DC.	10.0	India	1.0	1.5	Simple
19. <i>Sesbania virgata</i> (L.) DC.	10.0	India	1.0	1.5	Simple
20. <i>Sesbania virgata</i> (L.) DC.	10.0	India	1.0	1.5	Simple

Table 5: TPEO Controller details.

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ANITA - BUREAU OF DOCUMENTATION

Part No.	Dimensions (mm)
9991	100.0 (3.94) 150.0 (5.91)
9992	100.0 (3.94) 150.0 (5.91)
9993	100.0 (3.94) 150.0 (5.91)
9994	100.0 (3.94) 150.0 (5.91)
9995	100.0 (3.94) 150.0 (5.91)
9996	100.0 (3.94) 150.0 (5.91)
9997	100.0 (3.94) 150.0 (5.91)
9998	100.0 (3.94) 150.0 (5.91)
9999	100.0 (3.94) 150.0 (5.91)

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FM-200® (UL/FM)

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SECTION 2 - SYSTEM COMPONENTS

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



- ① 25 mm (1") Valve Assembly
Part No. 302.209.001
- ② 50 mm (2") Valve Assembly
Part No. 302.209.002
- ③ 80 mm (3") Valve Assembly
Part No. 302.205.002

Technical Information

25 mm (1") Valve

Body Material:	Brass CZ 121
Outlet Anti-Recall Cap Material:	CZ122
Max. Working Pressure:	34 bar (493 psi)
Outlet:	25mm (1" BSP)
Low Pressure Switch Port:	1/8" NPT
Gauge Port:	1/8" NPT
Pilot Pressure Port:	1/4" BSP
Solenoid Adaptor Port:	1/8" NPT
Overall Size:	130mm (L) x 62mm (Dia)
	(5.12" (L) x 2.44" (Dia))
Weight:	2.96 kg (6.526 lbs)
Equivalent Length:	6.096 m (20 ft)

50 mm (2") Valve

Body Material:	Brass CZ 121
Outlet Anti-Recall Cap Material:	CZ122
Max. Working Pressure:	34 bar (493 psi)
Outlet:	50mm (2" BSP)
Low Pressure Switch Port:	1/8" NPT
Gauge Port:	1/8" NPT
Pilot Pressure Port:	1/4" BSP
Solenoid Adaptor Port:	1/8" NPT
Overall Size:	173mm (L) x 100mm (Dia)
	(6.81" (L) x 3.94" (Dia))
Weight:	9.18 kg (20.236 lbs)
Equivalent Length:	10.668 m (35 ft)

80 mm (3") Valve

Material:	Brass UNS6000
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" NPT
Solenoid Adaptor Port:	None
Overall Size:	241mm (L) x 129mm (Dia)
	(9.52" (L) x 5.06" (Dia))
Weight:	18.62 kg (41.471 lbs)
Equivalent Length:	25.91 m (85 ft)

*Outlet adaptors are available for 1" NPT, BSP and grooved.

Signature



SECTION 2 - SYSTEM COMPONENTS

EQUIPMENT: FM-200® (UL/FM)
PUBLICATION: 14A-07
ISSUE No: 02
DATE: 2016-05

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 meter, fitted with anti-siphon 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 psf @ 50 °C (122 °F)
Thread: M18 x 1.00
Hole Orientation: 90° to Body
Torque: 35 Nm (25.8 lbf.ft)
Overall Size: 20mm (L) x 18mm (Dia)
(0.79" L x 0.71" (Dia))
Weight: 0.039 kg (0.086 lbf)

80 mm (3") Valve

Body: Brass UNS-C36000
Rating: 52 bar (750 psf @ 50 °C (122 °F)
Thread: 0.9375-16UN-3A
Hole Orientation: 90° to Body
Torque: 68 Nm (50 lbf.ft)
Overall Size: 33.3mm (L) x 14mm (Dia)
(1.3125" L x 0.71" (Dia))
Weight: 0.058 kg (0.128 lbf)

Signature

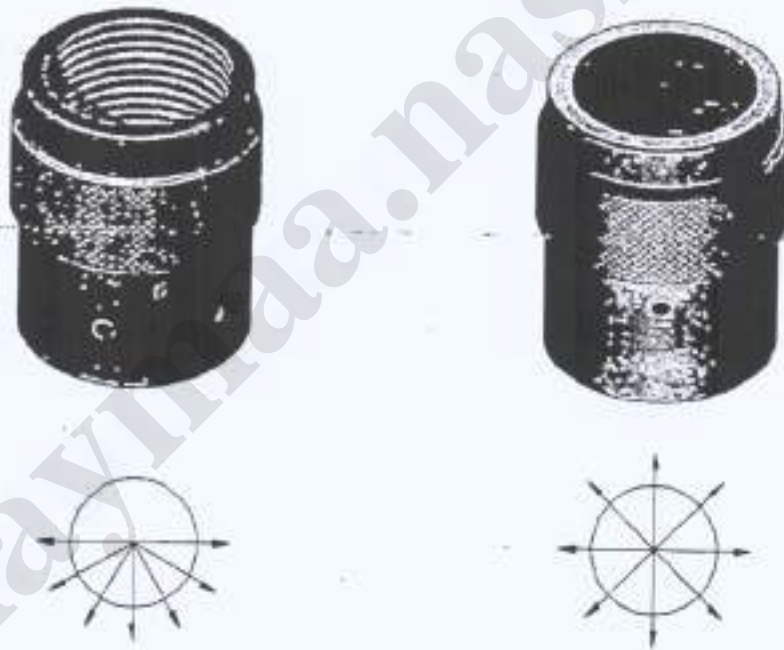
EQUIPMENT: FM-200® (UL/FM)
PUBLICATION: 14A-07T
ISSUE No. 02
DATE: 2010-03

SECTION 2 - SYSTEM COMPONENTS

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 as BSPP or NPT with Stainless Steel as an option.

Figure 30-7 & 8 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. Distance from Ceiling:	300mm
Max. Agent per Nozzle:	300 kg (220 lbs)
Orientation:	Pendant / Upright

FM-200* (UL/FM)

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SECTION 2 - SYSTEM COMPONENTS

Removable Electrical Actuator (Suppression Diode)

The removable electrical actuator locates in the top of the container valve. 24 vdc is required for solenoid operation. Provision is made for the connection of a manual actuator to the top of the actuator assembly. The suppression diode electrical actuator must be wired up correctly with the positive supply from the control panel connected to terminal 1, and the negative supply connected to terminal 2. The removable electrical actuator has a life span of 10 years from manufacture, which is indicated on the label.

Figure 12 - Electrical Actuator - Suppression Diode (Part No. 304,205,010)



Technical Information

Body:	M24 Steel & Duct Nickel
Swivel nut:	Brass (C212)
Actuation Pin:	Stainless Steel
Actuation Type:	Latching
Reset Requirement:	Manually via Reset Tool supplied
Connection:	1" BSP Brass
Nominal Voltage:	24 vdc
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 Recognized
Overall Size:	106mm (4.2) x 44mm (Dia) (4.09" (L) x 1.73" (Dia))
Weight:	0.91 kg (2.00 lbf)

Removable Electrical Actuator (Bridge Rectifier)

The removable electrical actuator locates in the top of the container valve. 24 vdc is required for solenoid operation. Provision is made for the connection of a manual actuator to the top of the actuator assembly. Due to the design of the bridge rectifier it will operate regardless of how it is wired up, the positive supply from control panel can be connected to either terminal 1 or 2 with the reverse for the negative supply. 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)



Technical Information

Body:	M24 Steel & Duct Nickel
Swivel nut:	Brass (C212)
Actuation Pin:	Stainless Steel
Actuation Type:	Latching
Reset Requirement:	Manually via Reset Tool supplied
Connection:	1" BSP Brass
Nominal Voltage:	24 vdc
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:	Bridge Rectifier
Certification:	UL Recognized
Overall Size:	106mm (4.2) x 44mm (Dia) (4.09" (L) x 1.73" (Dia))
Weight:	0.95 kg (2.09 lbf)

GAQF.EX15488 Clean Agent Extinguishing System Units

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Clean Agent Extinguishing System Units

See General Information for Clean Agent Extinguishing System Units

TYCO SAFETY PRODUCTS

BURLINGTON HOUSE
CAPTON HALL INDUSTRIAL ESTATE
HEWETT RD
GREAT YARMOUTH, NORFOLK NR31 0NW UNITED KINGDOM

EX15488

ENGINEERED UNITS

3M™ Novec™ 1230 Fire Protection Fluid (FK-5-1-12) Clean Agent Extinguishing System Units, utilizing DOT rated cylinders, 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, 9.4, 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 (9.4, 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 70°F 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-117 dated 2010-08 (Issue 3) and supplemental Technical Bulletin for Cable Pneumatic Manual (CPM) Actuator, P/N 15527 dated 2012-03-21. These installations require the use of the Listee's Novec 1230 Engineered System Flow Calculation Software Version TSP 3.51b. 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, 57, 60, 106, 147, 180, 343 L (9, 17, 35, 70, 88, 114, 149, 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°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 Installation, Recharge and Maintenance Manual, P/N 14A-077 dated 2010-03, supplemental Technical Bulletin for Cable Pneumatic Manual (CPM) Actuator, P/N 15527 dated 2012-03-21, and the FM-200® Engineered System Flow Calculation Software Version TSP 3.04b. Copies are available from the above Listee.

Engineered HFC-227ea Models 303.205.076, 035, 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, 57, 60, 106, 147, 180, 343 L (9, 17, 35, 70, 88, 114, 149, 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°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 Installation, Recharge and Maintenance Manual, P/N 14A-077 dated 2010-03, supplemental Technical Bulletin for Cable Pneumatic Manual (CPM) Actuator, P/N 15527 dated 2012-03-21, and the HFC-227ea Engineered System Flow Calculation Software Version TSP 3.34b. Copies are available from the above Listee.

Engineered HFC-227es Models 303.205.055, 056, 037, 038, 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 HFC-227es 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°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 Installation, supplemental Technical Bulletin for Cable Pneumatic Manual (CPM) Actuator, P/N 15527 dated 2012-03-21, Recharge and Maintenance Manual, P/N 14A-077/CH Issue 3 dated 2013-03, and the FM-200® Engineered System Flow Calculation Software Version TSP 3.34b. Copies are available from the above Listee.

Last Updated on 2015-04-17

Questions?

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The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.



Clean Agent Fire Extinguishing Systems

These systems contain electrically nonconducting, volatile, or gaseous fire extinguishing agents that don't leave a residue upon evaporation (per NFPA 2001 paragraph 1-3.1). They are effective for total flooding protection against hazards involving liquid flammable materials, electrical equipment, and ordinary solid combustibles in occupancy arrangements which produce only surface burning. In general, these agents are not effective or appropriate for hazards which produce deep-seated burning or for those which involve chemicals containing their own oxygen (such as cellulose nitrate), metal hydrides, or reactive metals (such as sodium, magnesium or uranium).

Clean Agent systems are similar in many respects to Halon 1301 and carbon dioxide systems. Discharge of the agent by total flooding or local application may create atmospheric hazards to personnel. Toxic thermal decomposition products can be minimized by fast fire detection coupled with rapid agent discharge. Personnel should not remain in the area following system discharge. Table A-1-5, I.1 of NFPA 2001 provides information on toxicological and physiological effects covered in this equipment classification. The No Observed Adverse Effect Level (NOAEL) is the highest concentration at which no adverse physiological or toxicological effect has been observed. The Lowest Observed Adverse Effect Level (LOAEL) is the lowest concentration at which an adverse physiological or toxicological effect has been observed.

Systems can only be FM Approved under this classification if they use agents having a component Approval. The system Approvals specifically reference the relevant agent Approval. Individual agent listings appear under the category Clean Extinguishing Agents. Compatible FM Approvals controls must be used. (See AUTOMATIC RELEASES FOR EXTINGUISHING SYSTEMS AND OTHER FIRE PROTECTION EQUIPMENT under ELECTRICAL SIGNALING.)

Application of this equipment should be subject to the limitations specified and subject to FM Global's acceptance of plans prior to installation. Required design concentrations vary from agent to agent and depend upon maximum design parameters, the concentration may vary among system manufacturers. The design concentrations listed by the system manufacturers are generally accepted in electrical/electronic hazards, i.e. computer, telecommunication areas, provided that Class A ordinary combustibles are kept to a minimum, thereby minimizing the potential for a deep seated Class A fire.

System charging and recharging shall be done only by the manufacturer or a FM Approved representative.

The Clean Agent systems FM Approved under this classification have been addressed by NFPA 2001, Standard on Clean Agent Extinguishing Systems, 1994 Edition and must be listed in the United States Environmental Protection Agency (EPA) Significant New Alternatives Policy (SNAP) as an acceptable substitute to Halon 1301.

Jurisdictions outside the United States may not recognize NFPA and EPA sanction of certain clean agents. Local and national governmental regulations should be consulted prior to agent selection.

*Alternative to Halon 1211 and Halon 1301.

Tyco Safety Products FM-200 / HFC 227ea Fire Suppression Systems

System Designation:	Tyco Safety Products FM-200® / HFC 227ea Fire Suppression Systems
System Type:	Engineered Systems
Agent Identification:	FM-200®/ HFC 227ea
Minimum and Maximum Agent Storage Temperatures:	32°F to 130°F (0°C to 54°C)
Minimum and Maximum Nozzle Heights:	16 ft (4.9 m) Maximum Height 1 ft (0.3 m) Minimum Height
Types of Nozzles Available:	180°, 360°
Maximum Area of Coverage for Nozzle Type:	180°: Radius 33 ft (10.05 m) 360°: Radius 28.6 ft (8.7 m)
Minimum Design Concentrations for Hazard Class:	Class A – 7.37% Class B – 9.0%
Minimum and Maximum Discharge Times:	6 to 10 seconds
Design, Installation, Operation, and Maintenance Manual:	Tyco Safety Products FM-200® / HFC 227ea Total Flood Fire Suppression Systems Engineered Systems Design and Installation Manual, P/N 14A-07T, Issue 03, 2013-03
Design Software:	Tyco Safety Products Flow Calculation Software TSPC 3.34b
Limitations or Exceptions to the Approval:	None.

Company Name:

FM Approvals

Approved Filing Stations: Tyco Safety Products
Burlingham House, Hewett Rd, Ganton Hall Industrial Estate,
Great Yarmouth NR31 0NN, United Kingdom

Company Name:	Tyco Safety Products
Company Address:	Burlingham House, Hewett Rd, Ganton Hall Industrial Estate, Great Yarmouth NR31 0NN, United Kingdom
Company Website:	http://www.tycosafetyproducts-europe.com
New/Updated Product Listing:	No
Listing Country:	United Kingdom
Agent Type:	FM-203, HFC-227
Certification Type:	FM Approved

For



Manual Pull Station

The FGMS manual pull station is a high quality non toxic die-cast manual pull station. Low profile design and smooth edges offer an attractive yet functional design. All components are Powdered coated or have plated surfaces and inhibit corrosion. Electrically the FGMS manual pull station is unbeatable with 10 amp snap action switch offered in all possible contact arrangements (including gold contacts). The FGMS pull station can be used with or without a break glass rod with replacement requiring no special tools. All stations are Red, unless otherwise indicated.

Other features include:

- Lift and pull
- Break glass cover
- Institutional key lock
- Weather and explosion proof versions
- All stations offer hex screw or key lock access
- Brass plated and other color options available



FGMS-EXP ()



FGMS () WP



Hex Version



KL Version



Custom Version



FGMS-1T-LP/NY



FGMS () LP



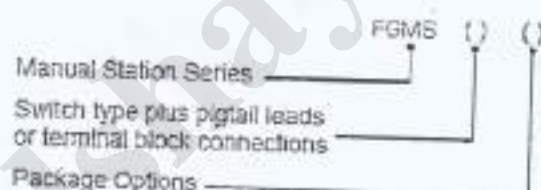
FGMS () KD





- Painted Die Cast Housing
- 14 Ga Plated Steel Back Plate
- Corrosion Inhibited Surfaces
- Terminal Block (4 Position)
- Single Gang Mounting
- 10 AMP Snap Action Switch (S.P.S.T., S.R.D.T.)

ORDERING INFO



SPECIFICATIONS

Electrical

Switch	10 amp @ 120vac
Gold Contact	1.0 amp @ 120vac
Key Switch	0.5 amp @ 30vac
Phone Jack	0.1 amp @ 24vac

Dimensions

Station	Width 3.200in
	Length 4.750in
	Depth 0.875in
Weight	15.5oz/420 grams
Mount	Single gang

FGMS-DAH	Width 3.325in
	Length 4.750in
	Depth 1.625in
Weight	11b 9oz/756 grams

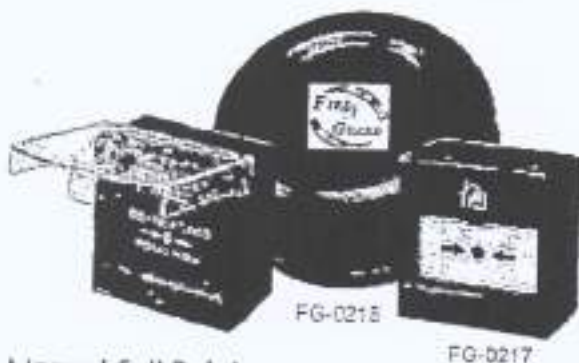
FGMS-LP and LPH	Width 3.325in
	Length 4.750in
	Depth 1.5in
Weight	11b 4oz/560 grams

Options

- 1P S.P.S.T. with pigtails
- 1T S.P.S.T. with terminal block
- 2T D.P.S.T. with terminal block
- 6T D.R.D.T. with terminal block
- PS Presignal key switch 0.5 amp @ 30vac
- LP Lift and pull dual action adaptor
- LPH Lift and pull dual halon adaptor
- LED Light emitting diode (red/green/yellow)
- GCS S.R.D.T. Gold Contact 1.0amp @ 120vac
- GCD D.R.D.T. Gold Contact 1.0amp @ 120vac
- PJ Phone Jack 0.1 amp @ 24vac
- KL Key Lock access (specify key type)



Call Point & Alarm Bell



Manual Call Point Features

- Available for flush or surface mounting.
- Plastic film on glass.
- Test key inserted from bottom.
- Open circuit with series resistor.
- Suitable for the majority of conventional fire alarm system.
- Clear protection cover is also available (optional).

Specification

Model	FG-0217
Operating Contact	5A 125/250VAC
Resistance	30mΩ
Temperature	-25°C ~ +85°C
Dimensions	88mm(H) x 88mm(W) x 52mm(D)
Weight	About 165g

Call Point & Alarm Bell

Fire Alarm Bell 6" Features

- High efficiency low current consumption on 24VDC motorised bells.
- Terminals will accept 2.5mm cables.
- Simple installation via multi-fixing base plate for all types of location.
- Fitted with two series diodes for fault monitoring.
- Fully suppressed and no interference with other equipment.
- Option of customised discs printed with company name and logo.

Specification

Model	FG-0218
Dimensions	Φ 6" (152mm) x 56mm(H)
Voltage	24V DC
Current	25mA
Sound Output	93dB @1M
Movement	Motor, Pinion and striker
Movement Features	DC Motor, acetal gear wheel, steel striker
Gong	Steel, secured with phillips screw
Base Plate	Molded black polycarbonate
Weight	About 850g



Conventional Heat Detector

IQ-458

IQ 458 conventional heat detectors are state-of-the-art detectors suitable for connection to conventional fire detection control and indicating equipment, or to addressable fire detection control and indicating equipment that can accept conventional type detectors.

An electronic thermistor sensor provides sensitive rate-of-rise alarm operation, or fixed-temperature operation when the response threshold value is exceeded.

The IQ458 heat detectors are available in a wide range of variants to suit many applications.

- Advanced algorithms provide excellent detection discrimination
- Easy installation. No programming required
- Sleek low-profile housing design
- Durable sensor. No adjustment or replacement required
- Dual LEDs for 360° visibility
- Magnet-initiated alarm test function available with some models
- 2-Wire and 4-wire models for DC 12 V or DC 24 V operation
- 4-Wire models include a N/C or N/O alarm relay output
- Connects to zone monitor for use with addressable control and indicating equipment



Specifications Summary

Operating voltage	DC (9-33) V
Start-up current	170 μ A
Standby current	50 μ A
Alarm current	40 mA-90 mA
Reset voltage	≤ 1 V
Reset time	≤ 3 s
Alarm response threshold	59 °C static temperature, and 31.7 °C/min rate-of-rise temperature
Operating temperature	-30 °C to +37.8 °C
Operating humidity	0% - 95% RH, non-condensing
Alarm indicator	Two continuous emitting red LEDs
Dimensions (excluding contacts)	ϕ 100 mm x 37 mm
Ingress protection rating	IP-43

For complete specifications, see product datasheet 31-0043.



Conventional Heat Detectors

Ordering Information

	2-Wire	4-Wire	Relay Output	Magnet-Initiated Test
IQ458-2	✓	-	-	-
IQ458-2M	✓	-	-	-
IQ458-2L	✓	-	✓	-
IQ458-2LM	✓	-	✓	-
IQ458-4	-	✓	-	✓
IQ458-4M	-	✓	-	✓

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Electronic Sounder and Beacon



FG-03127-S

FG-03127-BS

Electronic Sounder and Beacon

General

This electronic sounder is designed for use within fire alarm systems, security systems and industrial signaling systems. Combined sounder and beacon provides an audio-visual warning which is suitable for place where is require high sound output and visual indication.

Features

- 32 signaling tones selectable by Dip switch
- High sound output with low current consumption.
- 12/24V DC operation in the same unit, no adjustment is required.
- High efficiency lens for maximum light output.
- Volume Control as standard.
- Two sets of IN and OUT terminals, easy for installation.

Specification

Model	FG-03127-S	FG-03127-BS
Voltage Range	12-24V DC	
Current Consumption	14.5mA	
24V DC (Note 3)		
Sound Output 24V DC	Max. 114	
dB (A) at 1 meter		
Volume Control	0 to -20dB adjustment	
Ingress Protection	IP42	
Ambient Temperature	-25°C to +80°C	
Material	ABS plastic	
Dimensions	92.5mm(Dia.) x 94mm(H)	92.5mm(Dia.) x 110mm(H)
Weight	254g	278g

Order Information

FG-03127-S	Electronic Sounder
FG-03127-BS	Electronic Sounder & Beacon

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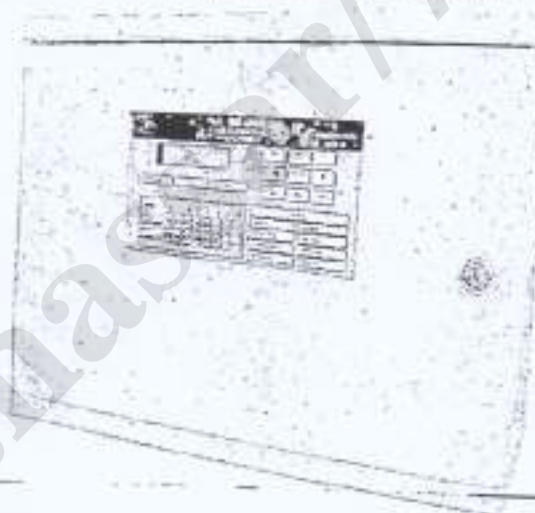


iQ800 series Extinguishing control panel



Fireguard iQ series microprocessor based UL listed extinguishing control panels provide a flexible approach to multiple area extinguishing protection.

Fireguard iQ series panels fully comply with UL-864 and NFPA-72. Approval by Underwriters Lab to the most rigorous of international standards, provides peace of mind for both designers and end-users. With gas panels often protecting high cost, high risk areas.



Fireguard iQ series panels are packed with advanced features as standard to ensure ease of use and high reliability. It comes with 16x2 dot matrix LCD display with walk test facility & 200 event log

Model iQ800 series-W (White cabinet)
Model iQ800 series-R (Red cabinet)

Features:

- Fully complies with UL -864 9th Edition and NFPA-72.
- Rugged CRCA sheet with powder coated finish.
- 4 Class B initiating device circuit (IDC).
- All zones accept smoke detectors and any normally open contact device.
- Any Zone can be configured as Alarm or supervisory Zone.
- 2 Class B Releasing Agent Circuits (RAC).
- 2 Class B Notification Appliance Circuits (NAC).

LL



- Operates on 120 - 220v 60 / 50 Hz, AC Mains power supply.
- Standby (battery) backup 24v DC power supply with built in charger
- 16x2 Dot Matrix LCD Display.
- Error free Fire / Fault status in unambiguous colored LED indication.
- System ON indication.
- Main, Standby status audible and visual indication.
- Battery Low visual warning with audible tone.
- 3 Form C relays one for fire and two programmable relays for Fire / fault / supervisory / Cross Zone / Gas Released.
- Programmable two Input Circuits for Manual release and abort.
- Two modes of operations Auto / Manual.
- Programmable 24v D.C. Outputs.
- Programmable NAC2 as RAC1.
- RS 485 Communication facility (Optional).
- 200 Events Log facility with RTC.
- Walk Test facility.
- Zone Isolation facility.
- All field wiring circuits are Power limited except 120 / 220v AC and Battery.
- All field wiring circuits are supervised.
- AC Low voltage cutoff.
- Programmable RAC's with count down timer.
- Programmable NAC's.
- NAC It is saying releasing agent circuit
- Programmable IDC's.
- Programmable Supervisory Mode.
- Programmable AC loss delay.
- Alarm verification facility.
- Programmable trouble reminder facility.



Technical Specification :

Primary Power – CN1 (RE-SMPS-4A-R1)
120 - 220VAC \pm 10%, 50 Hz,
Standby Power
24v D.C (2 Nos of 12v, 12Ah Sealed Lead acid battery).
Operating Condition
Operating Temperature – 0 - 49° C/32-120° F.
Relative Humidity – 93 \pm 2% RH (non-condensing) at 25 \pm 2° C/77 \pm 3° F.
Charging Circuit
Charging Voltage – 28.4V, \pm 0.2V with Current – 800mA (Max.).
Initiating Device Circuits
All zones are Class B Style B/C operation (Programmable).
Normal Operating Voltage : 120 - 220VAC \pm 10%, 50 Hz,
Alarm Current : 15- 30mA.
Short Circuit Current : 45mA Maximum
Loop resistance : 100 ohms Maximum
End-Of-Line Resistor : 3K9, 1/2watt
Standby Current : 7mA (2mA for Detectors)
Notification Appliance Circuits
Class B Style - Y wiring
Operating Nominal Voltage : 24VDC Special Application
Current for all NACs : 1.2Amps (0.6A per circuit)
Current Limit: CN5 and CN6 via Thermal Fuse
Line Drop : 1.8V
End-Of-Line Resistor : 3K9, 1/2watt
Releasing Appliance Circuits – CN 13 & 14
Class – B Style - Y wiring
Operating Nominal Voltage: 24VDC – Special Application
Current for all RACs: 0.6A per circuit
Line Drop: 1.8V
End-Of-Line Resistor: 3K9, 1/2watt
D.C. Output Power
Supervised 24VDC regulated, 300mA Max. (for 4 wire smoke detector)
Common Three Form C Relays
Relay Contact Rating : 2Amps @ 30 VDC, 2Amps @ 30VAC.
Power Factor : 0.6
Dimension of the panel
440 x 350 x120 mm (l x h x d)

Lee

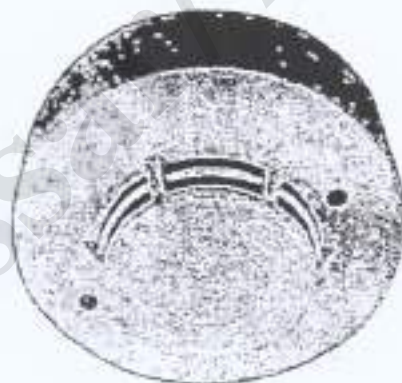


CONVENTIONAL SMOKE DETECTORS

IQ series

Fireguard IQ series detectors are UL listed compatible with most of the panels.

Fireguard 19 series conventional smoke detectors are engineered to the best quality and durability in accordance with UL standards. They work with all conventional fire control panels and SECURITY panels. Series detector also comes as a multisensor smoke and heat detector. Your perfect choices of reliable smoke detectors that completely meet the strictest testing in UL lab.



PRODUCT FEATURES:

- 2 or 4 wire model with universal voltage input (9-33V)
- Dual LEDs for 360° total visibility
- Advanced detection and discrimination algorithms
- Easy installation and maintenance
- Sleek low-profile design
- Durable sensor. No need for replacement
- SMD circuit board design
- N/C - N/O selectable relay output
- Five-year limited warranty
- Regular 100 mm base or large 125 mm base



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CONVENTIONAL SMOKE DETECTORS



www.fireguard-uk.com

Model	2 wire	4 wire	Smoke Alarm	Heat Alarm	Remote LED	12VDC	24VDC	UL Approval	Relay Output
IQ458S-2	■		■			■	■	■	
IQ458S-2M	■		■			■	■	■	
IQ458S-4		■	■			■	■	■	■
IQ458-4M		■	■			■	■	■	■
IQ458S-2L	■		■		■	■	■	■	
IQ458S-2LM	■		■		■	■	■	■	
IQ458H-2	■			■		■	■	■	
IQ458H-2M	■			■		■	■	■	
IQ458H-4		■		■		■	■	■	■
IQ458H-4M		■		■		■	■	■	■
IQ458H-2L	■			■	■	■	■	■	
IQ458H-2LM	■			■	■	■	■	■	
IQ458SH-2	■		■	■		■	■	■	
IQ458SH-2M	■		■	■		■	■	■	
IQ458SH-4		■	■	■		■	■	■	■
IQ458SH-4M		■	■	■		■	■	■	■
IQ458SH-2L	■		■	■	■	■	■	■	
IQ458SH-2LM	■		■	■	■	■	■	■	

SPECIFICATIONS:

Voltage: 9-33V

Standby current: 50uA

Alarm Current: 80mA for 2 Wire, 40mA for 4 Wire, 90mA for 2L & 2LM Models

Surge Current: 170uA

Start up time: 60 Sec Reset Time: <3 Sec

Reset voltage: <1v

Sample Cycle: 5 Sec

Remote Output: 15mA maximum diode gate

Alarm indicator: Continuously emitting red LED light

Humidity range: 0% to 95% relative humidity, non condensing

Alarm contact: (for 4-wire) N/O or N/C operation, Form A, 1.0 A @ 30 VDC/0.5A @ 125VAC

Height: 46mm, Diameter: 100mm, Weight: 1300 with base

Lee



خطاب ضمان نهائي رقم

الى: هيئة قناة السويس - إدارة التمويل - الاسماعيلية
بعد التحية..

والكائن في

بناء على طلب السادة/

لتعهد بموجب هذا بأن نضع تحت تصرفكم مبلغ

فقط بشأن تأمين نهائي 5% من عملية توريد

والصادر عننا أمر التوريد رقم

في

ونقبل سداد هذا المبلغ إليكم عند أول طلب من الهيئة وبالرغم من أية معارضة قد

يبديها المذكور أو البنك أو أية جهة أخرى.

ويسرى مفعول هذا الضمان حتى وللهيئة الحق في طلب تجديد سريانه

لأي فترة أخرى ولحين تنفيذ أمر التوريد الصادر للسادة المكفولين على أكمل وجه.

وبانقضاء هذا التاريخ وعدم حصول التنبيه بإيه مطالبة بمقتضاء تصدر منكم وتصل إلى

البنك في أو قبل هذا التاريخ يصبح هذا التعهد لاغيا وليس ذي أثر

بنك

توقيع تالي

توقيع أول

