ONLINE CERTIFICATIONS DIRECTORY

# UOJZ.S25191
# Control Units, System

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## Control Units, System

See General Information for Control Units, System

**SHIELD FIRE SAFETY & SECURITY LTD** S25191
29TH FL, REGUS SUITE
ONE CANADA SQUARE
CANARY WHARF
LONDON, E14 5DY UNITED KINGDOM

| Model | Type | Type Service | Type Signaling |
|---|---|---|---|
| **"SHIELD A-XT"** | | | |
| **S1810-12, S1810-13** | L | A, M | - |

L - Local System Type

A - Automatic fire alarm: Thermostats, smoke detectors, etc.

M - Manual fire alarm: Manually-operated boxes

Last Updated on 2012-06-25

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# GAQF.EX15844
# Clean-agent Extinguishing System Units

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## Clean-agent Extinguishing System Units

See General Information for Clean-agent Extinguishing System Units

**NATIONAL FIRE FIGHTING MFG FZ CO** EX15844

PO BOX 17014

JEBEL ALI FREE ZONE

DUBAI, UNITED ARAB EMIRATES

**ENGINEERED and PRE-ENGINEERED UNITS**, Models NF-70-263, NF-70-264, NF-70-265, NF-70-266, NF-70-267, NF-70-268, NF-70-269, NF-70-270, and NF-70-271, HFC-227ea clean agent extinguishing system units incorporating DOT/TC containers, stored pressure type, having nominal charging capacities of 20, 35, 60, 100, 150, 215, 375, 650, and 1000 lb of HFC-227ea clean agent, respectively. The units are super pressurized to 360 psig with operating temperatures of +32 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.

These systems are intended to be designed and installed in accordance with the Listee's design, installation and maintenance manual, Part No. NF-06-433 (Rev. 1) dated November 2011, liquid level manual, Part No. NF-06-549 (Rev. 3) dated November 2011, and NAFFCO Flow Program, Version NF3.02.

**ENGINEERED UNIT**, NAFFCOInert, Models NFIG01-200-067A, NFIG01-200-067B, NFIG01-300-067A, NFIG01-300-067B, NFIG01-200-080A, NFIG01-200-080B, NFIG01-300-080A, NFIG01-300-080B, NFIG01-200-140 and NFIG01-300-140, Clean Agent Extinguishing System Units, stored pressure type, having nominal charging capacities of 67, 67, 67, 67, 80, 80, 80, 80, 140 and 140 L of IG-01 (Argon) Clean Agent, respectively. The units are pressurized to 200, 200, 300, 300, 200, 200, 300, 300, 200, and 300 bar, respectively, with operating temperatures of -4°F (-20°C) to 130°F (54°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.

NAFFCOInert, Models NFIG100-200-067A, NFIG100-200-067B, NFIG100-300-067A, NFIG100-300-067B, NFIG100-200-080A, NFIG100-200-080B, NFIG100-300-080A, NFIG100-300-080B, NFIG100-200-140 and NFIG100-300-140, Clean Agent Extinguishing System Units, stored pressure type, having nominal charging capacities of 67, 67, 67, 67, 80, 80, 80, 80, 140, and 140 L of IG-100 (Nitrogen) Clean Agent, respectively. The units are pressurized to 200, 200, 300, 300, 200, 200, 300, 300, 200, and 300 bar, respectively, with operating temperatures of -4°F (-20°C) to 130°F (54°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.

NAFFCOInert, Models NFIG55-200-067A, NFIG55-200-067B, NFIG55-300-067A, NFIG55-300-067B, NFIG55-200-080A, NFIG55-200-080B, NFIG55-300-080A, NFIG55-300-080B, NFIG55-200-140 and NFIG55-300-140, Clean Agent Extinguishing System Units, stored pressure type, having nominal charging capacities of 67, 67, 67, 67, 80, 80, 80, 80, 140 and 140 L of IG-55 Clean Agent, respectively. The units are pressurized to 200, 200, 300, 300, 200, 200, 300, 300, 200, and 300 bar, respectively, with operating temperatures of -4°F (-20°C) to 130°F (54°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.

NAFFCOInert, Models NFIG541-200-067A, NFIG541-200-067B, NFIG541-300-067A, NFIG541-300-067B, NFIG541-200-080A, NFIG541-200-080B, NFIG541-300-080A, NFIG541-300-080B, NFIG541-200-140 and NFIG541-300-140, Clean Agent Extinguishing System Units, stored pressure type, having nominal charging capacities of 67, 67, 67, 67, 80, 80, 80, 80, 140 and 140 L of IG-541 Clean Agent, respectively. The units are pressurized to 200, 200, 300, 300, 200, 200, 300, 300, 200 and 300 bar, respectively, with operating temperatures of -4°F (-20°C) to 130°F (54°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, Design and Maintenance Manual, P/N 027650015-NF Rev. 01 dated June 2015, and the VDS SCHADENVERHUTUNG Engineered System Flow Calculation Software Version 2.2.01.

**AGENT STORAGE CONTAINER ASSEMBLY**

| Weight of Agent (lbs) | Part No. |
|---|---|
| 67L, 200 Bar, IG-01 Unit | NFIG01-200-067A, NFIG01-200-067B |
| 67L, 300 Bar, IG-01 Unit | NFIG01-300-067A, NFIG01-300-067B |
| 80L, 200 Bar, IG-01 Unit | NFIG01-200-080A, NFIG01-200-080B |
| 80L, 300 Bar, IG-01 Unit | NFIG01-300-080A, NFIG01-300-080B |
| 140L, 200 Bar, IG-01 Unit | NFIG01-200-140 |
| 140L, 300 Bar, IG-01 Unit | NFIG01-300-140 |

| | |
|---|---|
| 67L, 200 Bar, IG-100 Unit | NFIG100-200-067A, NFIG100-200-067B |
| 67L, 300 Bar, IG-100 Unit | NFIG100-300-067A, NFIG100-300-067B |
| 80L, 200 Bar, IG-100 Unit | NFIG100-200-080A, NFIG100-200-080B |
| 80L, 300 Bar, IG-100 Unit | NFIG100-300-080A, NFIG100-300-080B |
| 140L, 200 Bar, IG-100 Unit | NFIG100-200-140 |
| 140L, 300 Bar, IG-100 Unit | NFIG100-300-140 |
| 67L, 200 Bar, IG-55 Unit | NFIG55-200-067A, NFIG55-200-067B |
| 67L, 300 Bar, IG-55 Unit | NFIG55-300-067A, NFIG55-300-067B |
| 80L, 200 Bar, IG-55 Unit | NFIG55-200-080A, NFIG55-200-080B |
| 80L, 300 Bar, IG-55 Unit | NFIG55-300-080A, NFIG55-300-080B |
| 140L, 200 Bar, IG-55 Unit | NFIG55-200-140 |
| 140L, 300 Bar, IG-55 Unit | NFIG55-300-140 |
| 67L, 200 Bar, IG-541 Unit | NFIG541-200-067A, NFIG541-200-067B |
| 67L, 300 Bar, IG-541 Unit | NFIG541-300-067A, NFIG541-300-067B |
| 80L, 200 Bar, IG-541 Unit | NFIG541-200-080A, NFIG541-200-080B |
| 80L, 300 Bar, IG-541 Unit | NFIG541-300-080A, NFIG541-300-080B |
| 140L, 200 Bar, IG-541 Unit | NFIG541-200-140 |
| 140L, 300 Bar, IG-541 Unit | NFIG541-300-140 |

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## 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-1-5.1.1 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 depending 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.

## NAFFCO HFC-227ea Clean Agent Extinguishing Systems

| | |
|---|---|
| System Designation: | NAFFCO HFC-227ea Clean Agent Extinguishing System |
| System Type: | Engineered Systems, Pre-Engineered Systems |
| Agent Identification: | 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 45ft-8in (13.92 m) |
| | 360°: Radius 29ft-8in (9.04 m) |
| Minimum Design Concentrations for Hazard Class: | Class A – 6.25 |
| | Class B – 8.71 |
| Flow Calculation Software: | NAFFCO HFC227ea Flow Calculation NF3.02 |
| Design, Installation, Operation, and Maintenance Manual: | NAFFCO HFC-227ea Clean Agent Fire Suppression System Equipment, Design, and Service Manual, P/N NF-06-433, Rev 1, February 2011 |
| Limitations or Exceptions to the Approval: | None. |

| | |
|---|---|
| Approved Filling Stations: | Fike Corporation<br>704 South 10th St<br>Blue Springs, Missouri 64015 |

| | |
|---|---|
| **Company Name:** | National Fire Fighting Mfg FZCO |
| **Company Address:** | Box 17014, Jebel Ali Free Zone, Dubai, United Arab Emirates |
| **Company Website:** | http://www.naffco.com |
| **Listing Country:** | United Arab Emirates |
| **Agent Type:** | HFC-227 |
| **Certification Type:** | FM Approved |

# Electrical Signaling

**Electrical protective signaling systems are configurations of components used to produce alarm signals indicative of fire, smoke, sprinkler waterflow or other emergency and to produce supervisory signals indicative of conditions needing attention with respect to protection equipment or watch service. System configurations are classified according to where and how the signals are received. The categories are commonly designated as local, municipal, remote station, proprietary and central station. Auxiliary systems are either local or proprietary systems interconnected with a municipal system.**

**This category presents the major system component categories and the integrated system configurations. The selection of components to form a hybrid system should be made only by those skilled in system design. Also, the suitability of any system application should be judged on the basis of the hazard(s) being protected.**

## Local Protective Signaling

Local systems produce alarm and/or supervisory signals within the protected property, which may not be constantly attended. The systems are electrically supervised, include a secondary power supply having sufficient capacity to operate the system for 24 hours under maximum normal load and often are primarily for the purpose of providing occupant evacuation signals. Some local systems also provide for signaling to a constantly attended remote location.

The heart of a signaling system consists of a control unit to which are connected the initiating and signal indicating circuits. The control unit is usually in a separate enclosure, provides power to its external circuits, and often is of modular design to enable flexibility in obtaining multiple functions. In a coded signaling system, transmitters may be either separate from or integral to a control; they transmit to the control or from a control to remote receiving equipment. The equipment listed below, in conjunction with peripheral devices, may be used to form a complete system or a portion of a multizone system.

### SHIELD A-XT

SHIELD A-XT Fire Alarm Control Panel and Release is a three zone conventional control panel. The variants include the red, 115 Vac panel (model S115R-EXT), the red 230 Vac panel (model S230R-EXT), the Gray,115 Vac panel (model S115G-EXT) and, the Gray 230 Vac panel (model S230G-EXT). Control uses firmware revision XTUS10.HEX The main board contains: power supply, rated 3 Amps and provides the charge for two, in series, 12 Volt, 7 AH batteries; three Initiating Device Circuits (each can be programmed Style C or Style B) for detector input or as manual release; three Style Y Notification Appliance Circuits (500 mA output) and one Auxiliary Power output (rated 500 mA). There are the following six relay outputs, each relay contacts rated at 30 Vdc and 1Amp: Fire Relay, Local Fire Relay, Trouble relay, First Stage Relay, Second Stage Relay and Extract Relay. The following ancillary devices can be used with the Model SHIELD A-XT panel: SHIELD A-XT Status Display Unit (model S106R-SM, S106R-FM, S6MSR-SM, S6MSR-FM, S106G-SM, S106G-FM, S6MSG-SM, S6MSG-FM) Releasing System Status Indicator and SHIELD A-XT Ancillary Board (model S100R-B, S110G-BE, S120G-BE). (See also AUTOMATIC RELEASES FOR EXTINGUISHING SYSTEMS AND OTHER FIRE PROTECTION).

| | |
|---|---|
| **Company Name:** | Shield Fire Safety and Security Ltd |
| **Company Address:** | 28th Floor Regus Suite, One Canada Square, Canary Wharf, London, City of E14 5DY, United Kingdom |
| **Company Website:** | http://www.shielduk.com |
| **New/Updated Product Listing:** | Yes |
| **Listing Country:** | United Kingdom |
| **Certification Type:** | FM Approved |