

# FIREFLEX® DUAL

## Combined Automatic Sprinkler and Clean Agent Integrated Fire Suppression Systems

Clean agent systems are designed with the purpose of protecting the contents of water sensitive hazards, such as IT or telecom equipment. Automatic sprinkler systems are intended and designed as primary fire protection as they offer life safety to occupants and provide building protection. A dual agent system provides the highest level of protection for mission critical facilities.

Automatic sprinklers are required in all compartments of completely sprinklered buildings as defined in **NFPA 13**. Preaction systems are specialized sprinkler systems that provide security against accidental water damage by using supervisory air or nitrogen pressure in the piping instead of water. When used in combination with sprinkler systems, clean agent systems are designed to serve as initial fire protection with the intent of extinguishing the fire, thereby reducing the potential for sprinkler discharge, and thus minimizing damage to the electronic equipment.

The **FIREFLEX® DUAL** provides an integrated solution for dual agent applications.



### FEATURES

- simple and quick installation thereby reducing costs
- compact factory assembled and tested systems
- lockable doors to avoid unauthorized handling
- clean agent safe for occupants
- environmentally safe long-term solution
- available in multiple sizes
- serial number for easy reference
- FM Approved and UL/ULC Listed as an assembled unit
- available with seismic construction option up to 601 lbs cylinder

The **FIREFLEX® DUAL** system uses **3M™ Novec™ 1230 Fire Protection Fluid** combined with a **Viking Preaction System**. This clean extinguishing agent is based on sustainable technology and is the only chemical agent currently available that not only meets current regulations but also those in the future regulatory framework. It is also the only extinguishing agent that allows a 1 to 1 cylinder replacement for existing halon systems. Factory assembly of the **FIREFLEX® DUAL** cabinets ensures that all components have been properly integrated. All systems are fully programmed and tested at the factory which facilitates the onsite installation and commissioning process.

#### ■ EXTINGUISHING AGENT

Typically used at concentrations from 4.5% to 6%, the **3M™ Novec™ 1230 Fire Protection Fluid** is a new generation of halon replacement gas designed to mitigate concerns regarding occupant safety, extinguishing performance and the environment. Contrary to first generation HFC's, the **Novec™ 1230** fluid has key characteristics that define a clean extinguishing agent such as:

- ozone layer depletion potential of zero (ODP)
- global warming potential of 1 (GWP)
- atmospheric lifetime of only 5 days
- widest safety margin for occupants

The **FIREFLEX® DUAL** integrated systems are thus adapted for use in any mission critical facility requiring a clean extinguishing agent that is not only fast and efficient, but also safe for people and the environment.

#### ■ APPLICATIONS

- telecommunication centers
- server rooms and data storage
- control rooms
- art galleries & museums
- medical treatment centers & laboratories
- archives
- emergency diesel generators



#### ■ SEVO™ DISCHARGE NOZZLES

The **SEVO™** discharge nozzles are designed to provide a complete and rapid vaporization of the **Novec™ 1230** fluid as well as properly distribute the agent within the protected space. Standard nozzles are made of aluminum and are available in various sizes, including ½", 1", 1½", 2" and 2½". Both 180° and 360° models cover a maximum area of 32' x 32' with a maximum height of 16'- 4" (FM) or 14'-0" (UL/ULC).



#### ■ PREACTION AUTOMATIC SPRINKLER SYSTEM

The **FIREFLEX® DUAL** system integrates a **Viking preaction sprinkler system** with the *Model F1 Straight Through Deluge Valve*. **FIREFLEX® DUAL** systems are provided with an integrated 2" or 3" diameter single or double interlocked preaction system.

#### ■ SEVO™ 1230 FORCE500™ TECHNOLOGY

The **FIREFLEX® DUAL** system uses **SEVO™ 1230 FORCE500™** cylinders pressurized at 500 psi and designed for a high volume discharge rate in order to meet the rapid discharge requirements specified in the **NFPA 2001** standard. Discharge valves are of brass construction and are designed as per the pressure differential concept. They are also provided with an integrated pressure safety device, a pressure indicating gauge and an electric actuator. The **SEVO™** system is UL/ULC Listed and FM Approved. All systems are designed as per the **NFPA 2001** standard and in compliance with the limitations and instructions found in the manufacturer's design manual. All cylinders are factory-filled with the extinguishing agent and then pressurized with nitrogen allowing maximum flexibility at the time of installation. They are fabricated, tested and stamped according to D.O.T. 4BA500 or 4BW500 or TC specifications depending on their size and capacity.

#### ■ SHUT-OFF VALVE OPTION

The riser shut-off valve option consists of a supervised butterfly valve which allows for a full flow trip test without flooding the system piping and a sight glass located on the main drain for a visual indication of the water flow.

#### SEVO™ 1230 CYLINDERS

| CYLINDER SIZE (LBS) | FILL CAPACITY (LBS) | MAX. VOLUME @ 4.5% (70° F) |
|---------------------|---------------------|----------------------------|
| 40                  | 16-40               | 941 ft³                    |
| 76                  | 31-76               | 1788 ft³                   |
| 164                 | 66-164              | 3859 ft³                   |
| 322                 | 129-322             | 7577 ft³                   |
| 601                 | 241-601             | 14167 ft³                  |
| 850                 | 366-854             | 20098 ft³                  |

## AIR SUPPLY OPTIONS

Two styles of air supplies are available for the **FIREFLEX® DUAL** units depending on needs or configurations. These air supplies are factory assembled and pressure tested.

**Air supply style "A"**: is used to supervise the sprinkler piping network of preaction systems. This option includes an oilless piston-type air compressor with supervisory trim integrated in the **FIREFLEX® DUAL** cabinet and factory piped to the system riser.

### AVAILABLE IN 3 SIZES

| HP  | VAC / Hz    |        |
|-----|-------------|--------|
| 1/6 | 220/120//60 | 220/50 |
| 1/3 | 220/120//60 | 220/50 |
| 1/2 | 220/120//60 | 220/50 |

Air compressors have open, single-phase motors with internal thermal protection.

**Air supply style "B"**: is provided with an air pressure maintenance device factory mounted and adjusted in the **FIREFLEX® DUAL** cabinet and piped to the air inlet port of the unit. Used to supervise the sprinkler piping network of preaction systems when the external air supply (by tank-mounted air compressor, plant air or dry nitrogen cylinders) is provided by others.

**Note:** The air supply must be restricted to ensure that it cannot replace air as fast as it escapes when a releasing device or sprinkler operates.

## FIREFLEX® DUAL CABINETS

The **FIREFLEX® DUAL** cabinets are of the freestanding type and are made of robust 14 gauge steel with a corrosion resistant fire red paint finish, polyester powder-coated and oven-baked on a phosphate base. Cabinets are also provided with two locked frontal doors that are removable without special tools, reducing space requirements for ease of installation and maintenance. Furthermore, all doors are provided with a neoprene gasket to reduce vibrations.

| FIREFLEX® DUAL CABINET CYLINDER CAPACITY |                     |    |     |     |     |     |
|------------------------------------------|---------------------|----|-----|-----|-----|-----|
| CABINET WIDTH (IN.)                      | CYLINDER SIZE (LBS) |    |     |     |     |     |
|                                          | 40                  | 76 | 164 | 322 | 601 | 850 |
| 36*                                      | 1                   | 1  | —   | —   | —   | —   |
| 46*                                      | —                   | —  | 1   | 1   | 1   | —   |
| 52                                       | —                   | —  | —   | —   | —   | 1   |

\* Available with seismic construction option.

## COMBINED SEQUENCE OF OPERATION

The combined preaction-clean agent suppression system is configured to prevent unwanted water discharge in the hazard. The clean agent system is typically activated by using a cross-zoned smoke detection system. When the detection conditions are fulfilled, the pre-discharge delay timer is activated. Once the pre-discharge delay expires, the **Novac™ 1230** is released with the single interlocked preaction system, the piping will fill with water and will discharge in the hazard only if the sprinkler heads have opened. With the double interlocked configuration, it is required that both the detection conditions and the loss of system air pressure occur—further to the opening of a sprinkler—for the water to be released into the system piping. Water will then flow through the open sprinklers.

## REMOTE-CONTROLLED OPTION

The remote-controlled option provides a junction box where all supervisory and control devices, are prewired to a set of terminals for field wiring to a releasing control panel to be provided by others. The system's electric actuator must be compatible and listed with the releasing control panel.

## INTEGRATED RELEASING CONTROL PANEL OPTION

The optional releasing control panel integrated in the **FIREFLEX® DUAL** cabinet is a **Notifier®** model NFS-320.

This panel includes two Class A or B, conventional detection zones; four Class B, supervisory zones and four Class A or B, programmable output circuits.

Programming of the control panel is done by **FIREFLEX® Systems**. The panel uses conventional devices and is password protected. The panel is compatible with many types of fire alarm & supervisory devices such as linear heat detectors, spot-type heat and smoke detectors, water flow and release indicators, low and high air pressure switches, manual pull stations and abort switches.

The control panel also includes an alphanumeric display with 2 lines of 40 characters describing all the system conditions, as well as a set of red and yellow LED lamps individually indicating the alarm and trouble conditions of the system. Easy to operate control buttons are also provided to activate and operate the system's various functions.



## SEISMIC CONSTRUCTION OPTION

The **FIREFLEX® DUAL** seismic construction option is available with or without control panel up to 601 lbs cylinder on the 46" cabinet.

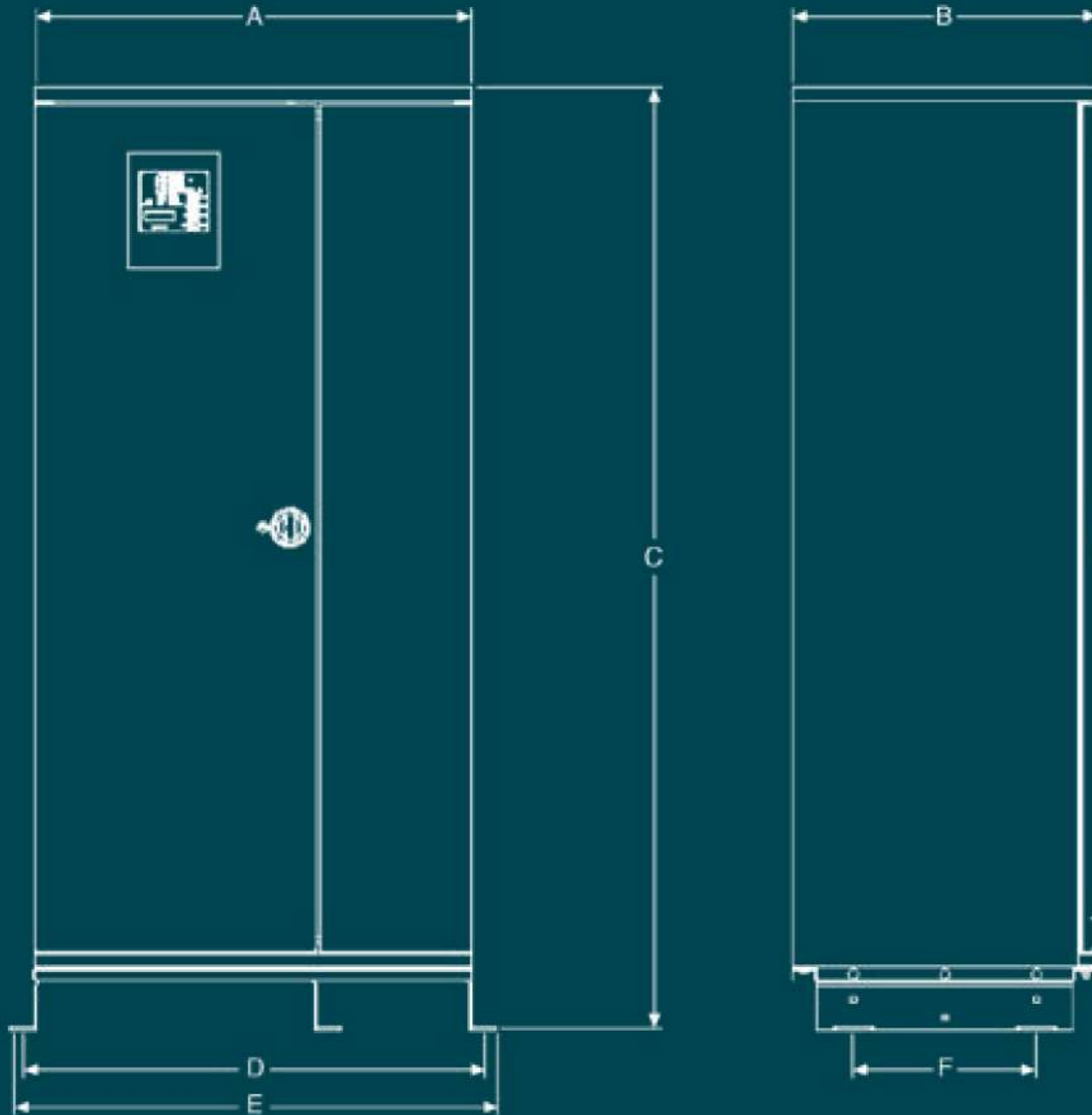
### QUALIFICATIONS

The **FIREFLEX® DUAL** seismic construction option is tested and qualified in accordance with:

- International Building Code, 2006-2009 Edition
- California Building Code, 2013 Edition
- ICC-ES AC-156, 2010 Edition

Seismic testing is for equipment being installed above the grade of the building structure, including roof top; with a maximum calculated  $S_{DS}$  of 2.212 for Soil Class D. Following seismic testing, a visual evaluation and functional testing was repeated on the seismic test items to verify their integrity and operability.

**FIREFLEX® DUAL CABINET DIMENSIONS**



| System Size | A                  | B   | C   | D                  | E                  | F   |
|-------------|--------------------|-----|-----|--------------------|--------------------|-----|
| 36"         | 35 $\frac{3}{4}$ " | 25" | 77" | 37 $\frac{3}{4}$ " | 39 $\frac{3}{4}$ " | 15" |
| 46"         | 46"                | 25" | 77" | 48"                | 50"                | 15" |
| 52"         | 52"                | 31" | 81" | 54"                | 56"                | 21" |



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