Refrigerated Area Sprinkler Systems

A refrigerated area sprinkler system affords fire protection in refrigerated rooms or buildings and includes special safeguards against accidental filling with water and subsequent freezing of the system. A fire detection system must actuate and one or more automatic sprinklers in the piping must operate before water will enter the sprinkler system. An alarm sounds if the detection system only is actuated while pneumatic pressure is maintained in the sprinkler piping. An alarm also sounds if the pneumatic pressure in the sprinkler piping is not properly maintained. In either case, water does not enter the system piping. These systems should be installed in accordance with FM Global Loss Prevention Data Sheet 8-29, "Refrigerated Storage". System calculations regarding required system air capacity should be performed if only one air maintenance device is contemplaed for several sprinkler systems.

Refrigerated area sprinkler systems which are operated pneumatically/hydraulically are FM Approved as complete systems. Only the listed components for a given system may be used in combination.

Fire detection systems which are operated electrically are FM Approved on a component basis. Only compatible components may be used in combination.

Viking Double Interlock Preaction Sprinkler System, Pneumatic/Pneu-Electric Release

Viking Double Interlock Preaction Sprinkler System, Pneumatic/Pneu-Electric Release. System rated working pressure is 250 psi (1724 kPa). Consists of an automatic water control valve with one of the following combinations of model, size, and end connections:

Valve Model	*Size, inches NPS*	*End connections*
E-1, E-2	2 3, 4, 6	Threaded Flanged, Flanged x Grooved
E-3, E-4	1 1/2	Threaded
F-1, F-2	1 1/2, 2, 2 1/2 3, 4, 6 8	Threaded, Grooved Flanged, Grooved, Flanged x Grooved Flanged, Grooved

Major system components include:

- Deluge valve conventional trim:
  - o Priming valve (normally open)
  - o Strainer
  - o 1/16" restricted orifice
  - o Spring loaded check valve
  - o Alarm test valve (normally closed)
  - o Auxiliary drain valve (normally closed)
  - o Model D-1 or D-4 Drip check valve
  - o Drain check valve 05781A
  - o Alarm shut off valve (normally open)
  - o Model C-1 or D-1 or D-2 pressure-operated relief valve (PORV)
  - o Model C-1 or C-2 emergency release
  - o Priming pressure water gauge and valve
  - o Water supply pressure water gauge and valve
  - o Flow test valve (normally closed)
- Water flow alarm equipment:
  - o Pressure switch o Strainer
- Riser
  - o Water supply control valve
  - o Rubber Seated Check Valve
  - o Sprinkler system main drain
- Supervisory air supply
  - o System pressure gauge and valve
  - o Soft seat check valve
  - o Pressure switch
- Release System
  - o Solenoid valve part no. 11591, 11592, 11593, 11594, 11596, 11601, 11602, 13843, or 13844 (normally closed)

    - o System control panel
    - o Electric detection system
- Automatic air supply

Optional system components include:
- Model E-1 Accelerator
- Model D-2 Air Pressure Maintenance Device
- Model LD-1 anti-water column device
- Model A-1 Speed Control Assembly trim option
- TRIMPAC Models B-6, B-6B, and B-6S
- Viking Total Pac enclosure, for sizes 1-1/2 through 6 inch NPS
- Double Interlocked Preaction Sprinkler Systems, which utilize the angle type main water control valves, are available factory assembled in the Viking Total Pac2 enclosure, a second generation enclosure which replaces the Total Pac. The Total Pac2 is available in several configurations: 1) the system fully enclosed on legs with an access door and a built in electrical control panel (when electric activation required); 2) the valve system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and used with a remote control panel.

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Certification Type:	FM Approved