

## On-Off Multicycle Sprinkler Systems

Multicycle sprinkler systems are FM Approved automatic sprinklers and hydraulic controls capable of repeated on-off cycles appropriate to the possible redevelopment of fire in the protected area.

The cycling occurs as the result of fire detector operation which, acting as an electrical interlock, causes the main water control valve to open and close. Fire detector actuation precedes sprinkler operation so water is discharged as from a conventional water system. Should the fire rekindle after its initial control, water again flows from the opened sprinklers. Manual control valve operation, in the event of detector impairment, is a required system capability. Sprinkler replacement after a fire does not cause impairment of protection.

Plans for converting existing wet or dry sprinkler systems to multicycle should be reviewed by your insurance company before actual installation.

A very important feature of the multicycle sprinkler system is its effect toward the reduction of the closed-valve, catastrophic fire. With the multicycle system, the manual sprinkler control valve would not have to be closed except in the very infrequent case of major maintenance involving a certain small section of the overall system. Unless otherwise noted in the listing, this system has 175 psi (1205 kPa) rated working pressure.

## Firecycle III System

Firecycle III System. System rated working pressure is 250 psi (1725 kPa). Consists of an automatic water control valve with one of the following combinations of model, size, and end connections:

<i>Valve Model</i>	<i>Size, inches NPS</i>	<i>End connections</i>
H-1	2 3, 4, 6	Threaded Flanged, Flanged x Grooved
H-3	1-1/2	Threaded
J-1, J-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:

- FM Approved check valve (Viking Model E-1 or equivalent having rubber-faced clapper)
- Viking Control Panel VFR400
- Firecycle III Model B heat-actuated fire detectors for 140°F (60°C), P/N 04625-B; 160°F (71°C), 04626-B; 190°F (88°C), P/N 04627-B; 225°F (107°C), P/N 04628-B;
- Firecycle aluminum clad detector cable, P/N 04632-A;
- Model C-1 emergency release;
- 90-hour, 17 A-H battery back-up power supply capable of being recharged in 48 hours, P/N A-09867;
- Normally closed solenoid valve part no. 11591, 11592, 11593, 11594, 11596, 11601, 11602, 13843, or 13844
- FM Approved 30 psi Supervisory Pressure Switch;
- FM Approved 5 psi Pressure Alarm Switch;
- Pneumatic Actuator, Viking Model H-1;
- Pressure Operated Relief Valve (PORV), Viking Model C-1;
- With the TRIMPAC system, the Pressure Operated Relief Valve (PORV), Viking Model D-1, is utilized.
- Automatic Drip Check Valve, Viking Model D-1.

Available with TrimPac trim package. A restricted and regulated air supply is recommended by the manufacturer. An equivalent FM Approved air pressure maintenance device may be used.

The Viking Model VFR400 Control Panel automatically starts and stops waterflow to the sprinkler system in response to the on-off cycling of the heat responsive detectors. Piping above the riser check valve contains supervisory air pressure at 25-30 psi to monitor system integrity. If the system piping is damaged, the low air pressure alarm is activated, but the main water control valve does not trip and no water flows from the sprinkler system.

The temperature rating of the detector should be lower than the rating of its adjacent sprinklers. Power failure and fire alarm are signaled automatically. System is powered by line voltage (110/220/240 V ac) and operates (cycles) normally with the 24 V emergency battery back-up system (90 hr standby capability).

Detectors are spaced according to ceiling construction and possible obstruction conditions, but should not exceed 40 ft (12 m) for P/N 04625-B or 25 ft (8 m) for P/N 04626-B, 04627-B and 04628-B; their location should be within 18 in. (457 mm) laterally of a sprinkler deflector except in low hazard occupancies. Sprinkler discharge continues for a timed interval (5 min. normally) after all normally closed contact detectors have been restored; this interval should be extended to 15 min. where persistent localized fire is anticipated. The manufacturer's instructions and appropriate sprinkler installation rules should be followed in Firecycle III installation, testing and maintenance.

FireCycle III and FireCycle III-OH Sprinkler Systems are available factory assembled in the Viking Total Pac enclosure in sizes 1 1/2 through 6 in. NPS, when utilizing the angle type main water control valves, Models H-3 and H-1, in both single-interlock preaction and cycling wet pipe configurations. The Total Pac2 enclosure and assembled valve systems comprise an integrated fire protection system which is assembled and tested at the factory, and requires only the connection to the water supply inlet, water outlet (to system), main drain, the alarm and detection connections, and the electrical power supply.

<b>Company Name:</b>	Viking Corp The
<b>Company Address:</b>	210 N Industrial Park Rd, Hastings, Michigan 49058, USA
<b>Company Website:</b>	<a href="http://www.vikinggroupinc.com">http://www.vikinggroupinc.com</a>
<b>Listing Country:</b>	United States of America
<b>Certification Type:</b>	FM Approved

## On-Off Multicycle Sprinkler Systems

Multicycle sprinkler systems are FM Approved automatic sprinklers and hydraulic controls capable of repeated on-off cycles appropriate to the possible redevelopment of fire in the protected area.

The cycling occurs as the result of fire detector operation which, acting as an electrical interlock, causes the main water control valve to open and close. Fire detector actuation precedes sprinkler operation so water is discharged as from a conventional water system. Should the fire rekindle after its initial control, water again flows from the opened sprinklers. Manual control valve operation, in the event of detector impairment, is a required system capability. Sprinkler replacement after a fire does not cause impairment of protection.

Plans for converting existing wet or dry sprinkler systems to multicycle should be reviewed by your insurance company before actual installation.

A very important feature of the multicycle sprinkler system is its effect toward the reduction of the closed-valve, catastrophic fire. With the multicycle system, the manual sprinkler control valve would not have to be closed except in the very infrequent case of major maintenance involving a certain small section of the overall system. Unless otherwise noted in the listing, this system has 175 psi (1205 kPa) rated working pressure.

## Firecycle III-OH System

Firecycle III-OH System. System rated working pressure is 250 psi (1725 kPa). Consists of an automatic water control valve with one of the following combinations of model, size, and end connections:

<i>Valve Model</i>	<i>Size, inches NPS</i>	<i>End connections</i>
H-1	2 3, 4, 6	Threaded Flanged, Flanged x Grooved
H-3	1-1/2	Threaded
J-1, J-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:

- Viking Model F-1 riser check valve, sizes 3, 4, 6, and 8 in., or Model L-1 riser check valve, sizes 1 1/2 and 2 in. having a rubber-faced clapper);
- Firecycle III Control Panel Model VFR400
- Firecycle III-OH heat detectors are self-restoring, normally closed, heat-actuated switches. There are two types: Viking Model C surface mount and Viking Model C flush mount. The surface mount is attached directly to a ceiling or to a ceiling mounted standard octagonal electrical box, and the detector wire in conduit is exposed below the ceiling. The flush mount detector is attached to a standard octagonal electrical box recessed in the ceiling, and the detector wire is concealed above the ceiling.
- The detector wire is Viking P/N 09954, NEC FPL rated wire, 16 gage, 2 conductor, 2 hour rated (in conduit or equal), or Viking P/N 11988, NEC FPL rated wire, 18 gage, 2 conductor, 2 hour rated (in conduit or equal), or Viking P/N 04236A, aluminum clad wire installed behind proper rated construction.
- Model C normally closed heat-actuated flush mounted fire detectors for Ordinary Hazard applications: 140°F (60°C), P/N 11723; 160°F (71°C), P/N 11724; 190°F (88°C), P/N 11725; 225°F (107°C), P/N 11726
- Model C normally closed heat-actuated surface mounted fire detectors for Ordinary Hazard applications: 140°F (60°C), P/N 11727; 160°F (71°C), P/N 11728; 190°F (88°C), P/N 11729; 225°F (107°C), P/N 11730.
- Model C-1 emergency release; 90-hour, 18 A-H battery back-up power supply capable of being recharged in 48 hours, P/N A-09867.
- Normally closed solenoid valve part no. 11591, 11592, 11593, 11594, 11596, 11601, 11602, 13843, or 13844.
- 30-50 psi adjustable supervisory pressure switch
- 5 psi Pressure Alarm Switch
- Pneumatic Actuator, Viking Model H-1.
- Pressure Operated Relief Valve (PORV), Viking Model C-1
- With the TRIMPAC system, the Pressure Operated Relief Valve (PORV), Viking Model D-1, is utilized.
- Automatic Drip Check Valve, Viking Model D-1.

Available with TrimPac trim package. A restricted and regulated air supply is recommended by the manufacturer.

The Firecycle III-OH On-Off Preaction Sprinkler System piping has supervisory system air pressure (minimum 30 psi, for 20 psi

water supply pressure, up to 50 psi, for 250 psi water supply pressure) to monitor system integrity. If the system piping is damaged or a sprinkler activates, the low air pressure alarm is activated, but the main water control valve does not trip and no water flows to the sprinkler system. When the heat detection system has been activated, the main water control valve opens and water will flow out any open sprinklers.

The Model VFR400 Control Panel automatically starts and stops water flow to the sprinkler system in response to the on-off cycling of the heat responsive detectors. The heat detectors open when the detectors are exposed to the heat of the fire and close when the detector cools below its set point. Sprinkler discharge continues for a timed "soak" interval (5 min normally) after all normally closed contact detectors have closed. This interval should be extended to 15 minutes where persistent localized fire is anticipated. The on-off cycling of the heat responsive contacts controls the system solenoid valves which in turn control the opening and closing of the main water control valve.

The temperature rating of the detectors should be lower than the rating of its adjacent sprinklers. Power failure and fire alarms are signaled automatically. System is powered by line voltage (110/220/240 VAC) and operates (cycles) normally with the 24 VDC emergency battery back-up system (90 hr standby capability).

Detectors are spaced according to ceiling construction and possible obstruction conditions, but should not exceed 40 ft (12 m) for P/N 11727 or 25 ft (8 m) for P/N 11728, 11729 and 11730; their location should be in accordance with NFPA 72E. The manufacturer's instructions and appropriate sprinkler installation rules should be followed in FireCycle III-OH installation, testing and maintenance.

FireCycle III and FireCycle III-OH Sprinkler Systems are available factory assembled in the Viking Total Pac2 enclosure in sizes 1 1/2 through 6 in. NPS, when utilizing the angle type main water control valves, Models H-3 and H-1, in both single-interlock preaction and cycling wet pipe configurations. The Total Pac enclosure and assembled valve systems comprise an integrated fire protection system which is assembled and tested at the factory, and requires only the connection to the water supply inlet, water outlet (to system), main drain, the alarm and detection connections, and the electrical power supply.

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