

DELUGE & PREACTION SYSTEMS



Deluge Systems are normally used in special hazard installations where water must be applied to an entire area for protection. They use open sprinklers or spray nozzles attached to a piping system connected to a water supply through the deluge valve. The deluge valve is used to control water flow into deluge, preaction, and special types of fire protection systems in response to a fire. This valve is opened by a fire detection system installed in the same areas.

Precision Systems are used to protect areas where water damage from damaged sprinklers or piping must be avoided. A prealarm of a possible fire allows time for alternate fire extinguishment prior to a sprinkler discharge. They are designed for applications such as refrigerated areas that require maximum protection against inadvertent operation of the sprinkler system.

APPLICATIONS:

- *Flammable Liquid Handling*
- *Storage Areas for Valuable Artifacts*
- *Aircraft Hangars*
- *High-Hazard Installations*
- *Using Water as Extinguishing Agent*
- *Computer Rooms*
- *Libraries*
- *Archives*
- *Refrigerated Areas*

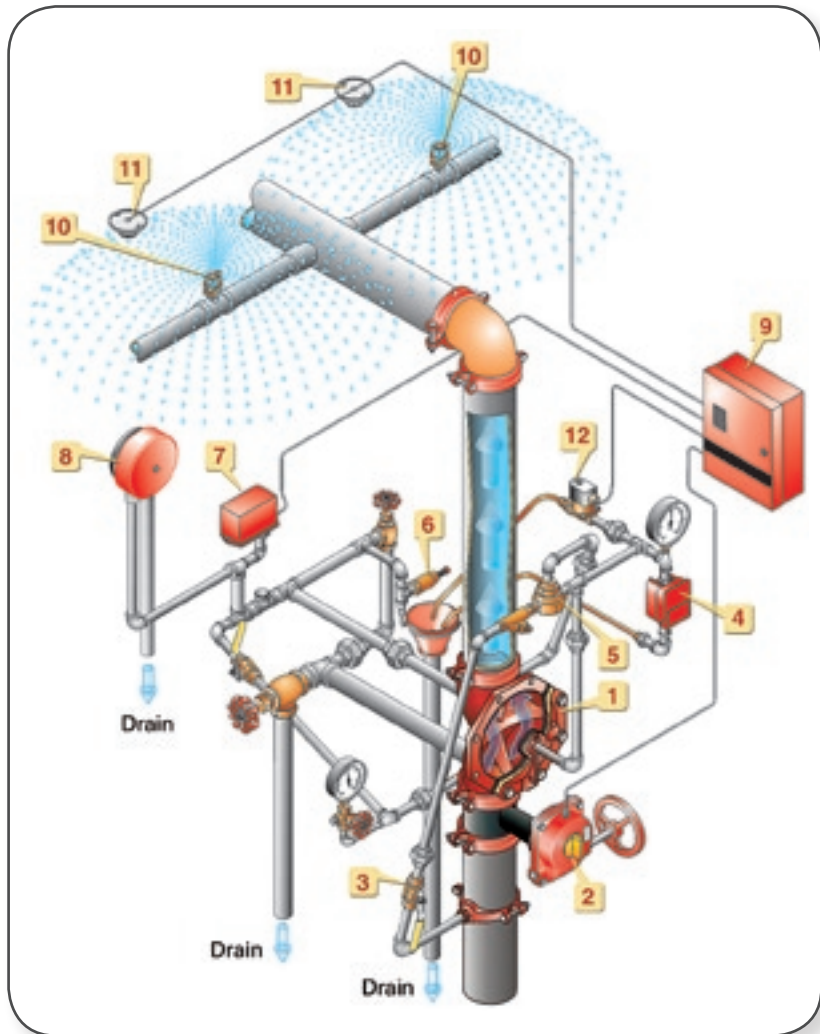
SYSTEM VALVES & DEVICES

DELUGE & PREACTION SYSTEMS

DELUGE SYSTEMS

Electric Actuation

Deluge fire protection systems are normally used in special hazard installations where an entire area application of water or foam is required for protection. Applications may include flammable liquid handling and storage areas, aircraft hangars, and other high-hazard installations where water is the most effective extinguishing agent. Deluge systems employ open sprinklers or spray nozzles attached to a piping system. The system is connected to a water supply through the deluge valve. This valve is opened by the operation of a fire detection system installed in the same areas as the open sprinklers or nozzles. Deluge systems may be activated by wet or dry pilot sprinklers, or electric detectors. When the deluge valve opens, water flows into the piping system and discharges from all open sprinklers and nozzles.



Legend:

- | | |
|----------------------------|------------------------|
| 1 Deluge Valve (DV-5) | 7 Pressure Switch |
| 2 Isolation Valve | 8 Water Motor Gong |
| 3 Diaphragm Supply Valve | 9 Releasing Panel |
| 4 Manual Control Station | 10 Spray Nozzle |
| 5 Automatic Shut-off Valve | 11 Smoke/Heat Detector |
| 6 Automatic Drain Valve | 12 Solenoid Valve |

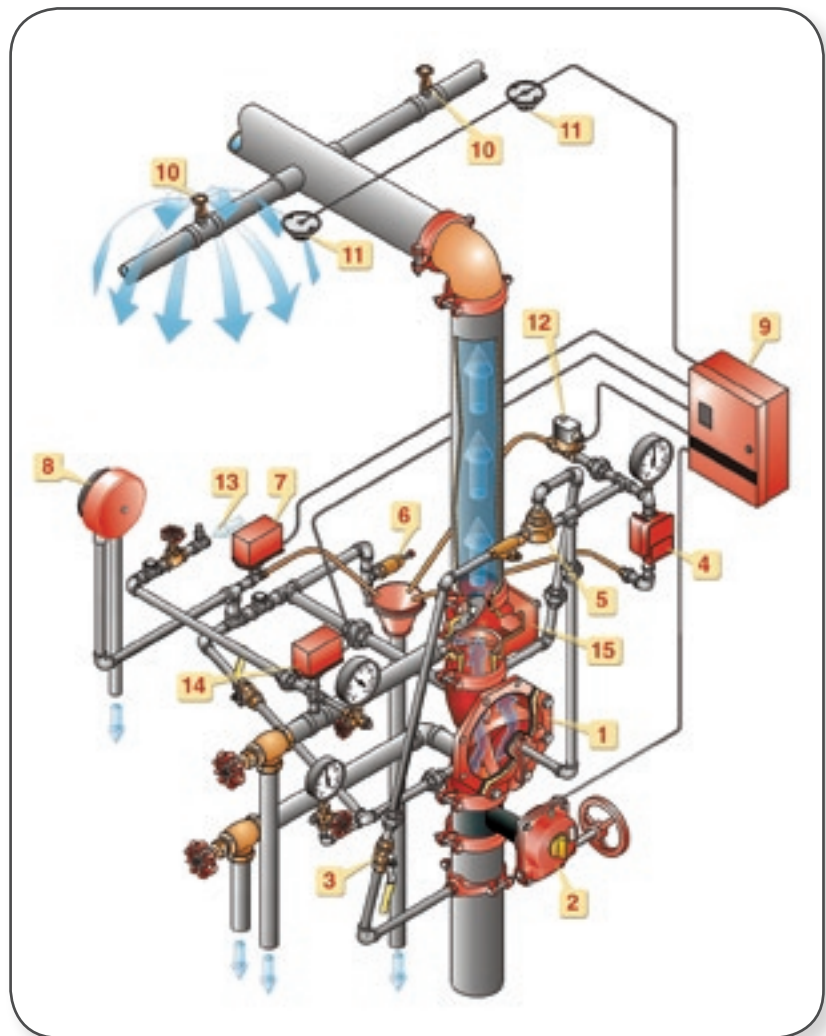
Always refer to the product's Technical Data Sheet for a complete description of all Listing and Approval criteria, design parameters, installation instructions, care and maintenance guidelines, and our limited warranty.

SINGLE INTERLOCK PREACTION SYSTEMS

Electric/Electric Actuation

Single interlock preaction systems are used to protect areas where there is danger of serious water damage that might result from damaged automatic sprinklers or piping. Typically, such areas include computer rooms, storage areas for valuable artifacts, libraries and archives. Also, preaction systems are effectively used to protect properties where a prealarm of a possible fire condition may allow time for fire extinguishment by alternate suppression means, prior to a sprinkler discharge. In the event the fire cannot otherwise be extinguished, the preaction sprinkler system will then perform as the primary fire protection system.

Single interlock preaction systems employ automatic sprinklers attached to a piping system containing 10 psi (0,7 bar) supervisory pressure, with a supplemental electric fire detection system installed in the same area as the sprinklers. Preaction systems with 10 psi (0,7 bar) supervisory pressure may also be activated by either wet or dry pilot sprinklers instead of electric detectors. Actuation of the fire detection system from a fire opens the deluge valve, allowing water to flow into the sprinkler piping system and to be discharged only from those sprinklers that have been operated by heat over the fire. Loss of supervisory pressure from the system piping as a result of damaged sprinklers or broken piping will activate a trouble alarm to indicate impairment of the system. The deluge valve will not open due to loss of supervisory pressure.



Legend:

- | | |
|----------------------------|--------------------------|
| 1 Deluge Valve (DV-5) | 9 Releasing Panel |
| 2 Isolation Valve | 10 Sprinkler |
| 3 Diaphragm Supply Valve | 11 Smoke/Heat Detector |
| 4 Manual Control Station | 12 Solenoid Valve |
| 5 Automatic Shut-off Valve | 13 Air Supply Inlet |
| 6 Automatic Drain Valve | 14 Pressure Switch (Air) |
| 7 Pressure Switch Water | 15 Check Valve |
| 8 Water Motor Gong | |

SYSTEM VALVES & DEVICES

DELUGE & PREACTION SYSTEMS

DOUBLE INTERLOCK PREACTION SYSTEMS

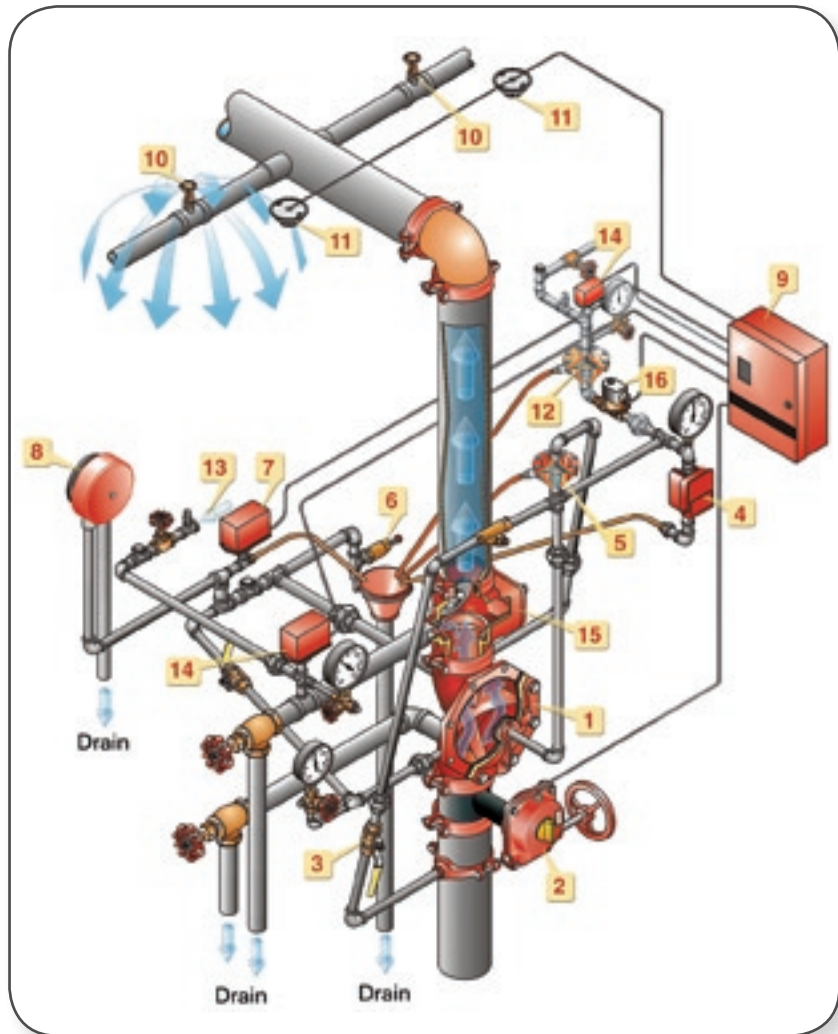
Pneumatic/Electric Actuation

Double interlock preaction systems are designed for applications such as refrigerated areas that require the maximum degree of protection against an inadvertent operation that could result in unnecessary flooding of the sprinkler system piping.

The double interlock system consists of a deluge valve and swing check valve with releasing trim featuring both a solenoid valve and a dry pilot actuator in a series configuration. The swing check valve isolates the body of the deluge valve from the system air or nitrogen pressure that holds the dry pilot actuator closed. The solenoid valve remains closed until it is electrically energized by a deluge releasing panel that responds to the operation of a fire detection device.

In order to actuate the double interlock preaction system, two independent events, caused by a fire condition, must occur. The sprinkler system piping must lose air or nitrogen pressure due to the operation of one or more sprinklers, and the deluge releasing panel must energize and open the solenoid valve upon the operation of a fire detection device.

The double interlock system will operate only when both the dry pilot actuator and the solenoid valve are open at the same time. Opening of the dry pilot actuator only (for example: a forklift truck accidentally dislodges a sprinkler) or of the solenoid valve only (for example: accidental operation of an electric manual pull station) will cause an alarm, and will not trip the system or flood the sprinkler system piping.



Legend:

- | | |
|--------------------------|--------------------------|
| 1 Deluge Valve (DV-5) | 9 Releasing Panel |
| 2 Isolation Valve | 10 Sprinkler |
| 3 Diaphragm Supply Valve | 11 Smoke/Heat Detector |
| 4 Manual Control Station | 12 Pneumatic Actuator |
| 5 FSV (Fail-Safe Valve) | 13 Air Supply Inlet |
| 6 Automatic Drain Valve | 14 Pressure Switch (Air) |
| 7 Pressure Switch Water | 15 Check Valve |
| 8 Water Motor Gong | 16 Solenoid Valve |

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DV-5

Deluge Valve, External Resetting Diaphragm Style – 1½" thru 8"

Model DV-5 Deluge Valves are diaphragm type valves designed for vertical or horizontal installation for fire protection system service. They are used as "automatic water control valves" in deluge, preaction, and special types of fire protection systems such as foam-water systems. When properly trimmed, the DV-5 Valves provide actuation of fire alarms upon system operation.

The unique diaphragm style design of the DV-5 Valve allows external resetting. Deluge or preaction systems can be reset without having to open a valve handhole cover and manually reposition a clapper or latch mechanism. Simply repressurizing the diaphragm chamber resets the valve.

The one-piece, diaphragm style design of the DV-5 allows standard internal and external coating of the valve to provide corrosion resistance. The internal corrosion resistance offered by the Rilsan coating makes the DV-5 suitable for most seawater and brackish water supplies when utilized in deluge systems. The external corrosion resistance of the Rilsan coating permits the use of the DV-5 in corrosive atmospheres associated with many types of industrial processing plants and outdoor installations.



- Available sizes:
1½" (DN40), 2" (DN50), 3" (DN80), 4" (DN100), 6" (DN150), and 8" (DN200)
- Vertical or horizontal installation
- One internal working part
- No linkage or clapper assembly
- Light weight ductile iron body
- Available with deluge and single & double interlock preaction trim
- Internally & externally coated
- Features external resetting
- Diaphragm operation
- For most seawater & brackish water supplies
- For deluge, preaction & foam systems
- Available as Flange x Flange, Flange x Groove, or Groove x Groove body styles
- Rated for 250 psi service
- Listings and Approvals: UL, C-UL, FM, VdS

TECH DATA

TFP1305

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SYSTEM VALVES & DEVICES

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RED-E-CABINET®

Integrated Fire Protection Packages

The Red-E-Cabinet is a pre-assembled fire protection valve package enclosed within a free-standing cabinet designed to occupy minimal floor space and to provide an aesthetically pleasing enclosure for a fire protection valve riser. The entire package is pre-wired and the water inlet and outlets to the valve riser are grooved to ease installation. The valve package includes the system (manual) shut-off control valve, automatic water control valve, as well as water flow and supervisory switches where system air pressure is required for either supervision or automatic water control valve actuation. An air compressor and associated controls are also provided.

Integral to the Red-E-Cabinet door is a control panel and back-up batteries for providing electrical alarm, supervisory, and trouble functions. All switches within the cabinet are pre-wired to the control panel, making the electrical connections for power, detection circuits, and alarms the only remaining electrical connections to complete the system.

In addition to the integral control panel, windows have been provided in the Red-E-Cabinet door for viewing the releasing panel functions and essential system pressure gauges. A lock for the control panel access door is standard, and a lock for the cabinet door is optional.

- The Red-E-Cabinet has been designed to readily incorporate 1½" (DN40), 2" (DN50), 3" (DN80), 4" (DN100) & 6" (DN200) valve risers for the following types of systems:
 - Deluge System – Electric Actuation
 - Single Interlock Preaction System
 - Double Interlock Preaction System
- Aesthetically pleasing appearance
- Professionally assembled
- Minimal installation time
- Internally pre-wired
- UL/ULC/FM components
- Custom manufactured
- Model DV-5 deluge valve (standard)
- All gauges and panel display are visible externally
- UL, C-UL Listed, FM Approved
- The Red-E-Cabinet is constructed of 14 gauge steel, and is free-standing. The standard paint finish is bright red



All Four Side Panels
Easily Removed For
Ease of Maintenance

TECH DATA TFP1300

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