Single Interlock Pre-Action Valve

Electric Release

**FP 400Y - 7M**

The BERMAD Model FP 400Y-7M is an elastomeric deluge valve, designed for advanced fire protection systems and the latest industry standards. The Single Interlock Electric Release is suitable for use in systems requiring that water be kept out of the sprinkler piping until an electric detecting device activated.

The Single Interlock Pre-Action Systems include automatic sprinklers attached to a dry sprinkler piping system, with a supplementary electric detection system installed in the same area. This system admits water into the sprinkler piping upon activation of the detection system. Water is discharged only through sprinklers that have been opened due to excessive heat.

When a Supervised System is required, a pneumatic low pressure supply shall be provided through a proper Air Maintenance Device (AMD-74 or 75), also an anti-flooding feature is provided by utilizing an in-line check valve, which creates an intermediate vented chamber using a Normally Open drip-check.

As an option the 400Y-7M features a visual quarter turn valve position indicator, available with limit switches for remote valve position monitoring.

### Benefits and Features

- **Safety and reliability**
  - Time-proven, simple, fail-safe actuation
  - Single-piece, rugged, elastomeric diaphragm seal - VRSD technology
  - Intermediate anti-flooding chamber
  - Obstacle-free, uninterrupted flow path
  - No mechanical moving parts

- **High performance**
  - Very high flow efficiency
  - Straight through flow  Y-type body
  - Approved for 25 bar / 365 psi

- **Quick and easy maintenance**
  - In-line serviceable
  - Quick cover removal without detaching control trim

### Typical Applications

- Water sensitive material storage
- Computer and electronics rooms
- Libraries / museums & archives

### Approvals

- UL-Listed
  - Special System Water Control Valves, Deluge Type (VLFT)
- FM Approved
  - for Deluge Sprinkler Systems
- Det Norske Veritas
  - Type Approval
- ABS
  - American Bureau of Shipping Type Approval
- Lloyd’s Register
  - Type Approval

### Factory Fitted Options

- Valve position limit switches
- Local valve position indicator beacon
- Air maintenance device (AMD-74 or 75)
- Water motor alarm
- Pressure alarm device
- Sea water compatibility
- Stainless steel seat ring
**Operation**
(for Illustration Only)

The BERMAD model 400Y-7M is held closed by water pressure in the control chamber [1]. Upon release of pressure from the control chamber, the valve opens.

Under NORMAL conditions, water pressure is supplied to the control chamber via the priming line [2] and strainer [3], and is then trapped in the control chamber by the manual emergency release [6], check valve [4], check feature of the EasyLock Manual Reset [5], and a closed solenoid valve [7]. The water pressure trapped in the control chamber holds the diaphragm against the valve seat, sealing it drip-tight and keeping the system pipes dry.

Under FIRE conditions, water pressure is released from the control chamber, either with the manual emergency release, or by the solenoid valve opening in response to the releasing control panel [A]. The control panel energizes the solenoid valve only the electric heat-detection device [B] has been activated. Vent the valve control chamber, whilst the EasyLock Manual Reset prevents water pressure from re-entering the control chamber. The 400Y-7M pre-action valve latches open, allowing water to flow into the system piping and to the alarm device [9].

**System P&ID**

**Components**

1. BERMAD 400Y Deluge Valve
2. Priming Ball Valve
3. Priming Strainer
4. Check Valve
5. EasyLock Manual Reset
7. 2-Way Solenoid Valve
8. Drain Valve
9. 3-Way Alarm Test Ball Valve
10. Pressure Gauge
11. Pressure Switch
12. Limit Switch Assembly
13. Visual Indicator
14. Automatic Drip Check Valve
15. Additional Drain Valve
16. Water Motor Alarm
17. Air Maintenance Device Model AMD-74
**System Installation**

A typical installation of the BERMAD model 400Y-7M features automatic actuation via a solenoid valve and UL/FM releasing control panel. Actuation occurs only when the control panel receives an electric signal from the fire-detection system.

When open and fitted with a limit switch, the valve can send a feedback signal to the remote valve position monitoring system.

An inline check valve and drip-check valve create an intermediate vented chamber to ensure against flooding when the valve is closed.

An air supply system including Air Maintenance Device (AMD-74 / 75) with Low Pressure Switch shall be provided when a Supervised System is required.

**Optional Items**

- Air Maintenance Device
- Water Motor Alarm
- Pressure Switch
- Valve Position Indicator
- Limit Switch
- Strainer

**Engineering Specifications**

The pre-action valve shall be a UL listed and FM approved, for 25 bar / 365 psi, straight-through, Y-type-body valve. The valve shall have an unobstructed flow path, with no stem guide or supporting ribs.

Valve actuation shall be accomplished by a single-piece, rolling diaphragm bonded with a rugged radial seal disk. The diaphragm assembly shall be the only moving part.

The preaction valve shall include an EasyLock latching check valve with manual reset, a 2-way solenoid valve with a voltage tolerance of 35% below the rated voltage, a Y-type strainer, two ball type drain valves, an automatic drip-check with manual override, 4-inch pressure gauges, and a manual emergency release housed in a stainless steel box.

The valve shall be equipped with a protective-covered, dual-color, rotational position indicator, readable from 50 meters, and with two limit switches enclosed in a protective switch box.

Removing the valve cover for inspection or maintenance shall be in-line and not require removal of the control trim.

The pre-action valve and its entire control trim shall be supplied pre-assembled and hydraulically tested by a test facility certified to ISO 9000 and 9001 standards.
**Technical Data**

**Available Sizes (inch)**
- Flanged - 2, 3, 4, 6 & 8"
- Grooved - 2, 3, 4, 6 & 8"

**Pressure Rating**
- ANSI #150 - 16 bar / 235 psi
- ANSI #300 - 20 bar / 300 psi
- Grooved/Threaded - 20 bar / 300 psi

**Temperature Rating**
- 60°C / 140°F with NR elastomers (standard)
- 90°C / 194°F with EPDM elastomers

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<th>Valve Size</th>
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<th>4&quot;</th>
<th>6&quot;</th>
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**Friction loss**
- at 5 m/s - 16.4 ft/s
- Unit: bar, psi

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**Weight**
- approx

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**Notes:**
- L(1) Refers to the length dimensions for Flanged ANSI #150, ISO 16 Flanged, Threaded and Grooved valves
- L(2) Refers to the length dimensions for Flanged ANSI #300 and ISO 25 Flanged valves
- Leq (Equivalent Pipe Length) refers to turbulent flow in new steel pipe schedule 40, values given for general consideration only
- Friction Loss values include the downstream check valve
- General: Exact dimensions for the trim envelope may vary with specific component positioning

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**Valve Code Designations**

**Category**
- Standard
- Seawater

**Installation**
- Vertical
- Horizontal

**Material Body & Cover**
- Ductile Iron ASTM A395 (1)
- Steel ASTM A216 WCB (1)
- Stainless Steel 316 ASTM (1)
- Nickel Al Bronze C96800 (1)
- Super Duplex ASTM A890 Grade 5A (2)

**Coatings**
- Polyester Red (PR)
- High Build Epoxy (ER)
- Uncoated (UC)

**Voltage**
- Main Valve N.O or N.C

**Tubing & Fittings**
- Stainless Steel 316 (NN)
- Monel 400 (MM)
- Super Duplex (SD)

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**Factory Fitted Options**

**Material Body & Cover**
- Ductile Iron
- Steel
- Stainless Steel
- Nickel Al Bronze
- Super Duplex

**Voltage**
- Main Valve N.O or N.C
- 24VDC - N.C.
- 110VDC - N.C.
- 110-120VAC - N.C.
- 5VDC
- 5VAC
- 4VDC

**End Connections**
- ANSI #150RF
- ANSI #150FF
- ANSI #300RF
- ISO PN16
- ISO PN25
- Grooved ANSI C9006

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- ANSI #150RF
- ANSI #150FF
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- ISO PN16
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- Grooved ANSI C9006

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**Notes:**
- Other materials available see Engineering Data
- Coated internally and externally
- FM approved with 24VDC only
- Supplied loose

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**General:**

Exact dimensions for the trim envelope may vary with specific component positioning