

SINGLE INTERLOCK PRE-ACTION VALVE ELECTRIC RELEASE SYSTEM

Model FP-400E-7M

The BERMAD Model FP 400E-7M utilizes 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 is activated.

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.



Features & Benefits

- Safety and reliability
 - Time proven, simple design with a fail safe actuation
 - Single piece rugged elastomer, VRSD technology
 - Obstacle-free, uninterrupted flow path
 - No mechanical moving parts
 - Reduced valve opening time, enabling faster fire suppression
- Quick and easy maintenance
 - In-line serviceable
 - Fast and easy cover removal

Approvals



UL-Listed
Special System Water Control
Valves, Deluge Type (VLFT)
Sizes 1½" - 10"



Det Norske Veritas
Type Approval



ABS
American Bureau of Shipping
Type Approval



Lloyd's Register
Type Approval

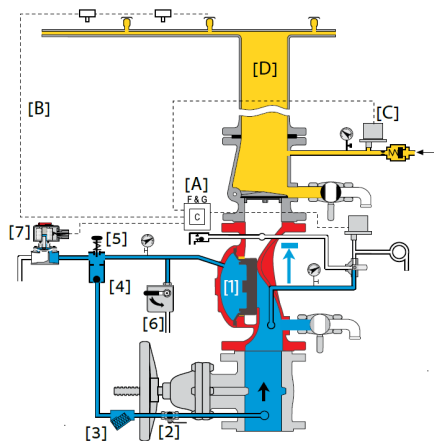
Typical Applications

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

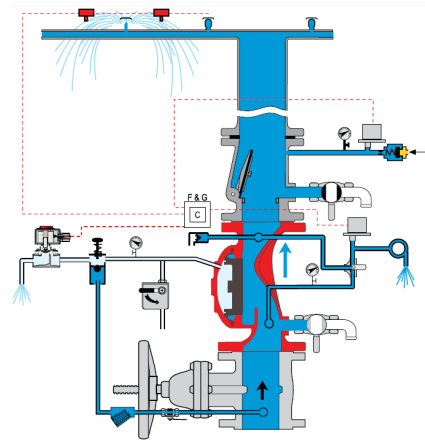
Additional Features

- Valve position limit switches
- Air Maintenance Device
- Seawater compatibility
- 316 Stainless Steel control trim
- Corrosion resistant zinc based high build epoxy coating

Operation



Valve Closed (normal conditions)



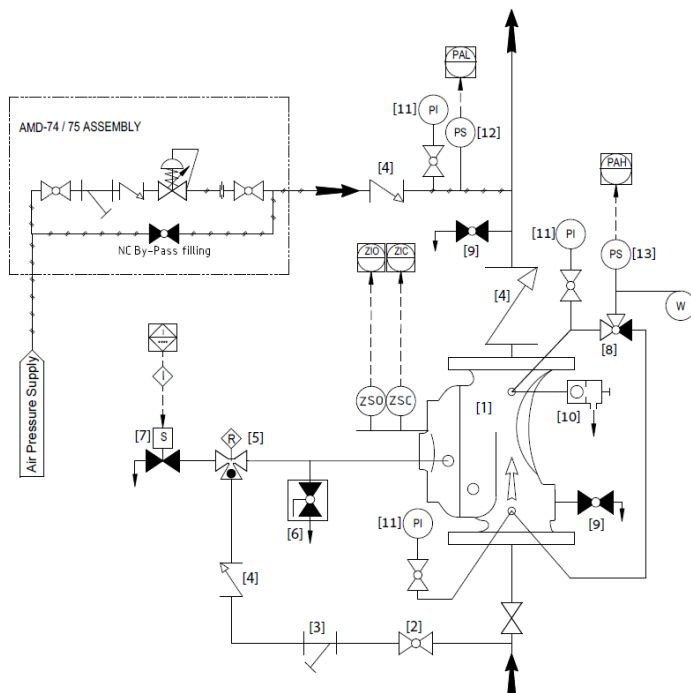
Valve Open (fire conditions)

The BERMAD model 400E-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 feature [4], 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 when the electric heat-detection device [B] has been activated. Once energized and open, the solenoid vents the main valve control chamber, whilst the Easylock Manual Reset check feature prevents water pressure from re-entering. 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 400E Deluge Valve
2	Priming ball valve
3	Priming strainer
4	Check valve
5	Easy-Lock Manual reset
6	Manual emergency release
7	2-Way Solenoid
8	3-Way alarm valve
9	Drain valve
10	Automatic drip check valve
11	Pressure Gauge (PI)
12	Pressure Switch Low (PAL)

Optional System Items	
PS	Pressure Switch
ZS	Limit Switch Assembly
I	Visual Valve Position indicator
W	Water Motor Alarm
AMD	Air Maintenance Device

See code designations and additional Factory Fitted Options on page 4

System Installation

A typical installation of the BERMAD model 400Y-7M features automatic actuation via a solenoid valve and releasing control panel. Actuation occurs only when the control panel receives an electric signal from the fire-detection 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 an Air Maintenance Device (AMD-74 / 75) with a low Pressure Switch can be provided when a Supervised System is required.

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

Optional System Items



Water Motor Alarm



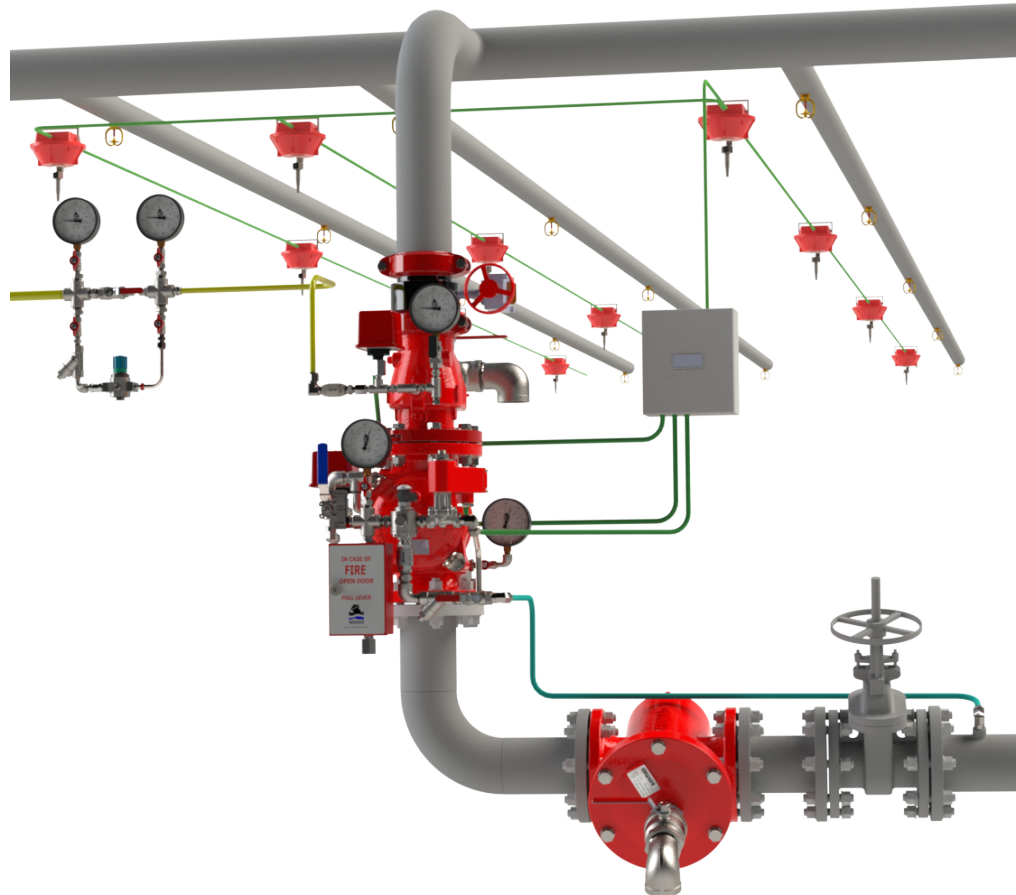
Exd Pressure
Switch - Stainless
Steel Enclosure for
Harsh
Environments



Proximity S.S.316
Limit Switch



Basket Strainer -
60F



Suggested Specifications

The pre-action valve shall be UL listed and 250 psi/17.2 bar rated.

The valve shall have an unobstructed flow path, with no stem guide or supporting ribs.

The valve shall have no mechanical moving parts, and the actuation shall utilize a single-piece diaphragm assembly of VRSD technology.

The valve shall be coated internally and externally with UV protection. Optional: C5-VH grade of ISO-12944 standard against corrosive conditions.

The control trim shall include a manual emergency release unit, an Easy-Lock latching valve, a Y-type strainer, two 4-inch pressure gauges, and an automatic drip-check with manual override.

The solenoid valve shall be a 2-way FM and UL429A-listed for 365 psi/25 bar with 65% of the rated voltage.

A valve position indicator shall be provided, and equipped with two proximity limit switches.

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

The pre-action valve and control trim shall be pre-assembled and hydraulically tested by a UL/FM and ISO 9000, 9001 certified factory.

Technical Data

Available Sizes:

Flanged- 2, 3, 4, 6 & 8"

Grooved- 2, 3, 4, 6 & 8"

Pressure Rating:

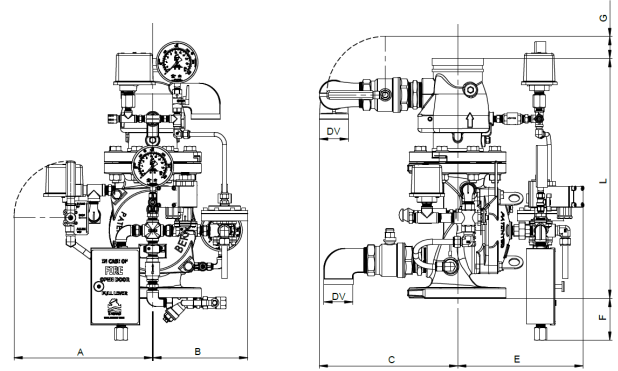
ANSI#150 - 17.2 bar | 250 psi

Grooved - 17.2 bar | 250 psi

Elastomer:

HTNR - Fabric Reinforced High Temperature

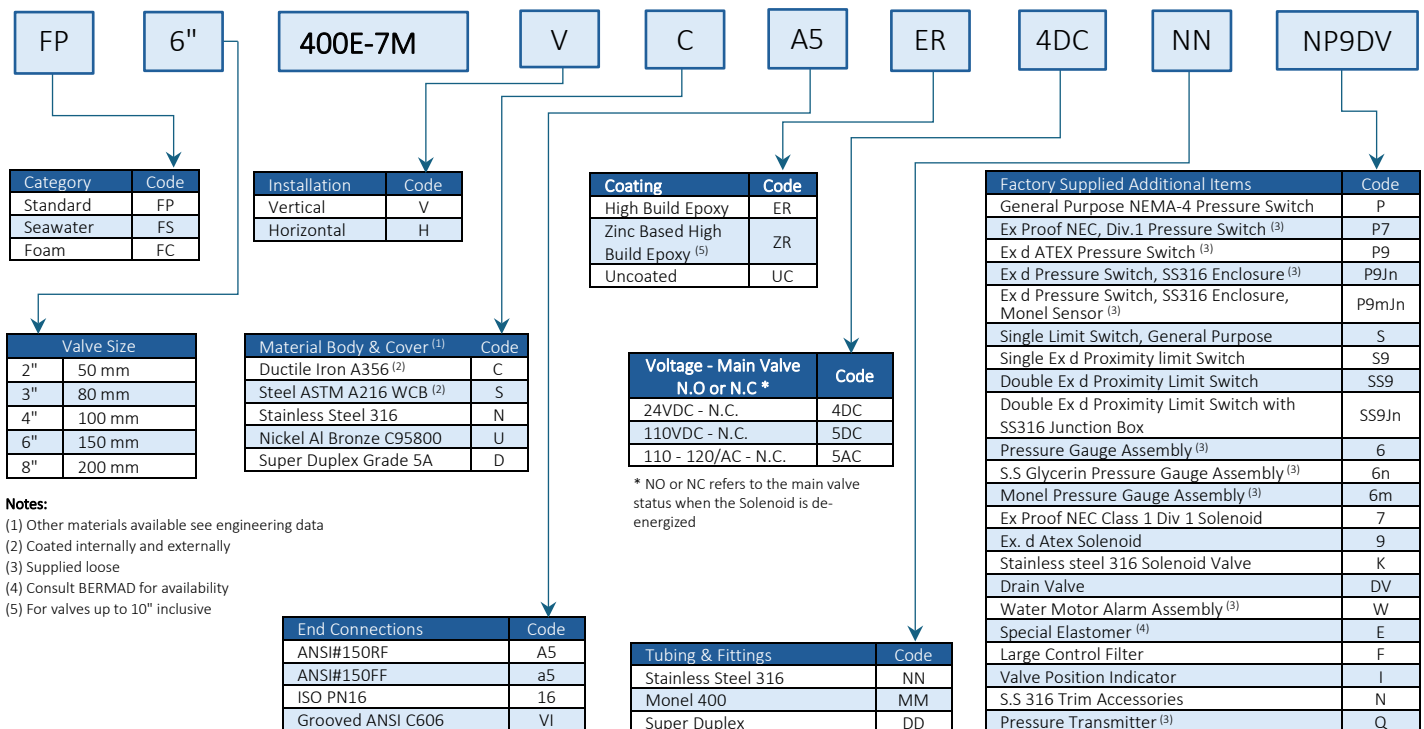
Compound - See engineering data



Valve Size	L #150 mm in	L Grooved mm in	A mm in	B mm in	C mm in	øD in	E mm in	F mm in	G mm in	Weight #150 kg lb
DN50 2"	427 16.8	427 8.1	313 12.3	238 9.4	218 8.6	¾"	242 9.5	156 6.1	53 2	28 62
DN80 3"	504 19.8	511 20.1	345 13.6	250 9.8	305 12	1½"	278 10.9	130 5.1	42 1.66	42 92
DN100 4"	566 22.3	566 22.3	327 12.9	255 10	327 12.9	1½"	296 11.7	99 3.9	52 2	58 128
DN150 6"	710 28	710 28	348 13.7	240 9.4	364 14.3	2"	374 14.7	51 2	39 1.5	112 246
DN200 8"	856 19.7	856 19.7	382 15	270 10.6	392 15.4	2"	424 16.7	9 0.4	-	183 403

IMPORTANT: Dimensions for the trim envelope or extents refer to a vertical orientation and may vary with specific component positioning - Apart from the "L" dimension, allow a tolerance of at least ±15%

Valve Code Designations



* More options available - contact BERMAD