

DOUBLE INTERLOCK PRE-ACTION SYSTEM ELECTRIC-ELECTRIC RELEASE

Model FP-400Y-7BM

The BERMAD Model FP 400Y 7BM utilizes an elastomeric deluge valve, designed for advanced fire protection systems and the latest industry standards. The Double Interlock Pre-Action is suitable for use in systems requiring that water be kept out of the sprinkler piping until an electric detecting device and a sprinkler have both been activated. Electric-Electric double interlock systems include automatic sprinklers attached to a dry sprinkler piping system with a low air pressure switch, along with a supplementary electric detection system which are both wired to a Cross-Zone releasing control panel. Model FP 400Y-7BM Pre-Action System admits water into the sprinkler piping only when both the detection device and the supervised systems simultaneously signal the control panel to trigger the solenoid valve.



Features & Benefits

- Safety and reliability
 - Time proven, simple design with a fail safe actuation
 - Single piece rugged elastomer, VRSD technology
 - Intermediate anti-flooding chamber
 - Obstacle-free, uninterrupted flow path
 - No mechanical moving parts
- High performance
 - Very high flow efficiency
 - Straight through Y type body
 - Approved for PN20 - 300 psi
- Quick and easy maintenance
 - In-line serviceable
 - Fast and easy cover removal
 - Swivel mounted drain valves (for valves 3" and larger)

Approvals



UL-Listed
Special System Water Control
Valves.
Sizes 1½" - 10"



FM Approved
for Preaction and Refrigerated
Area Sprinkler Systems
Sizes 1½" - 8"



Det Norske Veritas
Type Approval



ABS
American Bureau of Shipping
Type Approval



Lloyd's Register
Type Approval

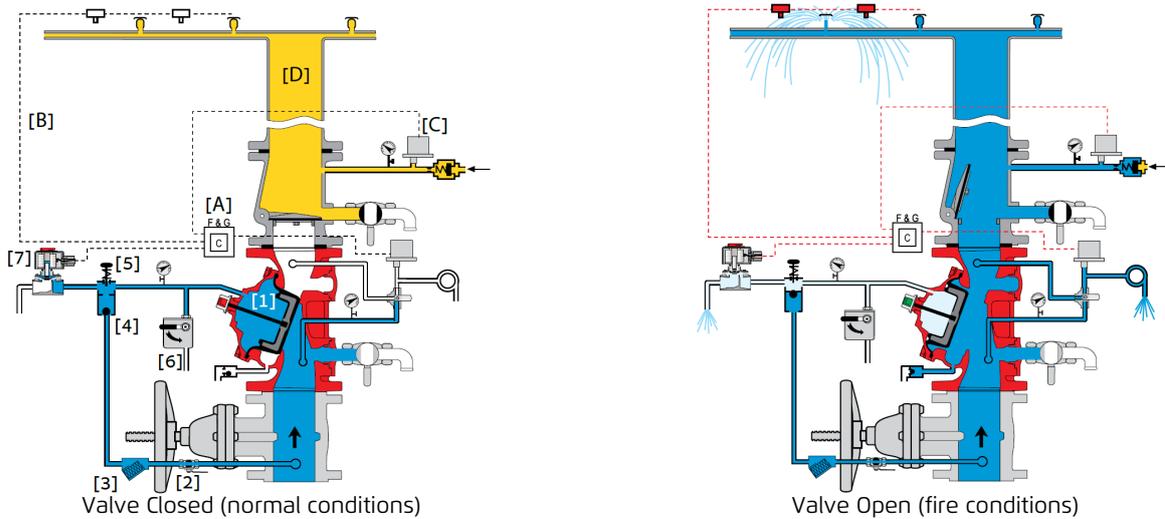
Typical Applications

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

Additional Features

- Valve position limit switches
- Local valve position indicator beacon
- Seawater compatibility
- Air Maintenance Device
- Corrosion resistant zinc based high build epoxy coating

Operation



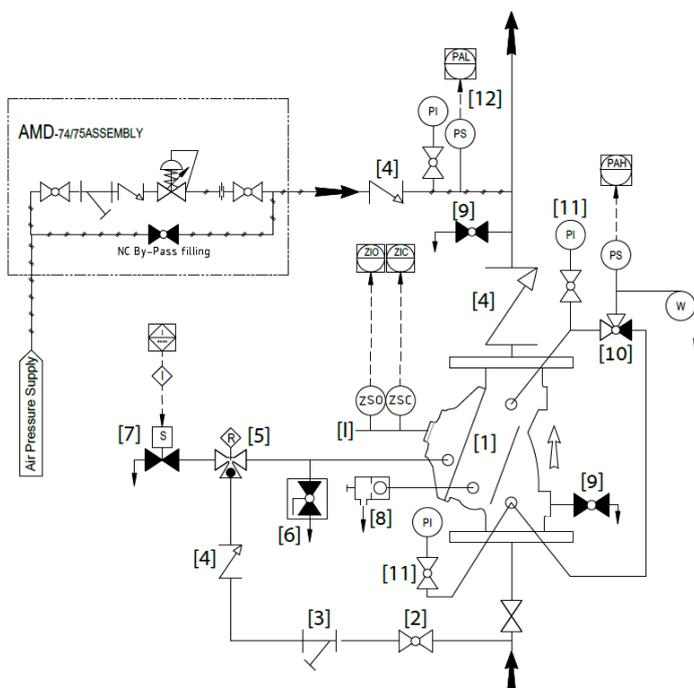
The BERMAD model 400Y-7BM is held closed by water pressure in the control chamber [1]. Upon release of pressure from the control chamber, the valve opens.

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].

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 cross-zone releasing control panel [A]. The control panel energizes the solenoid valve only when both of two conditions coexist: Activation of the electric heat-detection device [B] and triggering of the low pressure switch [C] as a result of a drop in pneumatic pressure in the system [D], caused by heat opening at least one of the automatic sprinkler heads installed in the covered area.

When these two conditions occur simultaneously the solenoid releases the pressure in the valve control chamber, opening the 400Y-7BM, whilst the Easylock Manual Reset prevents water pressure from re-entering the control chamber.

System P&ID



Components	
1	BERMAD 400Y Deluge Valve
2	Priming Ball Valve
3	Priming Strainer
4	Check Valve
5	EasyLock Manual Reset
6	Manual Emergency Release
7	2-Way Solenoid Valve
8	Automatic Drip Check Valve
9	Drain Valve
10	3-Way Alarm Test Ball Valve
11	Pressure Gauge
12	Pressure Switch (PAL)

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

See code designations and additional Factory Fitted Options on page 4

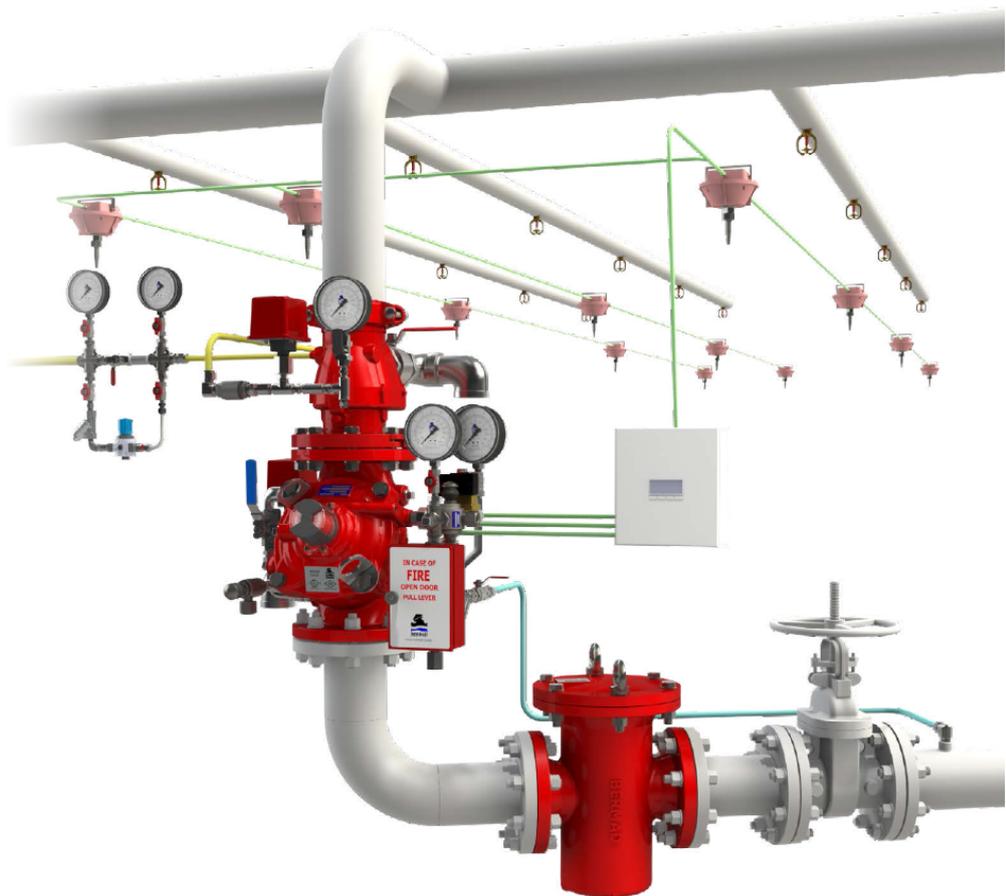
System Installation

A typical installation of the BERMAD model 400Y-7BM features automatic actuation via a solenoid valve and cross-zone releasing control panel. Actuation occurs only when the control panel receives simultaneous electric signals from an electric fire-detection system and a low pressure sensing switch/relay valve.

When 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.

Optional System Items

-  Exd Pressure Switch - Stainless Steel Enclosure for Harsh Environments Rotating Limit Switch Box
-  Visual Position Indicator
-  Basket Strainer - 60F



Suggested Specifications

The pre-action valve shall be UL listed and FM approved, 20 bar/300 psi rated, with a straight-through, Y type body.

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, an automatic drip-check with manual override, and a ball drain valve with a 360 degree swivel.

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:

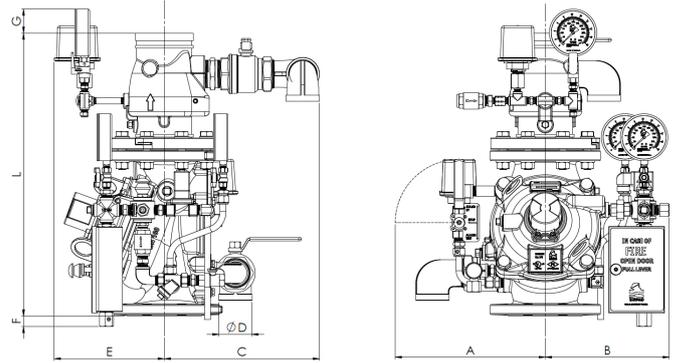
Flanged- 2, 3, 4, 6 & 8"
Grooved- 2, 3, 4, 6 & 8"

Pressure Rating:

ANSI#150 - 17.2 bar | 250 psi
ANSI#300 - 1½" to 10" - 20 bar | 300 psi
Grooved - 20 bar | 300 psi

Elastomer:

HTNR - Fabric Reinforced High Temperature Compound - See engineering data



Valve Size	L #150 mm in	L Grooved mm in	L #300 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"	450 17.7	450 17.7	455 17.9	279 11	191 7.5	276 10.9	3/4"	140 5.5	-	101 4	31 68
DN80 3"	555 21.9	555 21.9	570 22.4	339 13.3	249 9.8	309 12.2	1½"	166 6.5	-	91 3.6	48 106
DN100 4"	595 23.4	595 23.4	612.5 24.1	347 13.7	247 9.7	325 12.8	2"	178 7	-	78 3	60 131
DN150 6"	775 30.5	775 30.5	800.5 31.6	400 15.7	314 12.4	340 13.4	2"	248 9.8	-	30 1.2	112 246
DN200 8"	965 38	965 38	990.5 39	430 16.9	342 13.5	355 14	2"	315 12.4	-	-	179 394

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

