

DOUBLE INTERLOCK PREACTION SYSTEM PNEUMATIC PNEUMATIC RELEASE

Model FP-400Y-7PM

The BERMAD model 400Y-7PM utilizes an elastomeric deluge valve with unique Vulcanized Radial Seal Disk (VRSD) technology, designed specifically for advanced fire protection systems and the latest industry standards.

The Double Interlock Preaction is suitable for use in systems requiring that water be kept out of the sprinkler piping until two fire detection devices have simultaneously reacted.

Pneumatic-Pneumatic Double interlock systems include automatic sprinklers attached to a supervised dry sprinkler piping system and a supplementary pneumatic pilot detection line.

The 400Y-7PM admits water into the sprinkler system piping only when there is a simultaneous loss of pneumatic pressure in both the pneumatic pilot detection line and the system piping pneumatic pressure.

An anti-flooding feature is provided by using 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 elastomeric diaphragm seal - VRSD technology
 - Obstacle-free, uninterrupted flow path
 - No mechanical moving parts
- High performance
 - Very high flow efficiency
 - Efficient Straight through flow
 - Approved for PN25 / 365 psi
- Quick and easy maintenance
 - In-line serviceable
 - Fast and easy cover removal
 - Swivel mounted drain valves (for valves 3" and larger)

Typical Applications

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

Approvals



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



Det Norske Veritas
Type Approval



ABS
American Bureau of Shipping
Type Approval

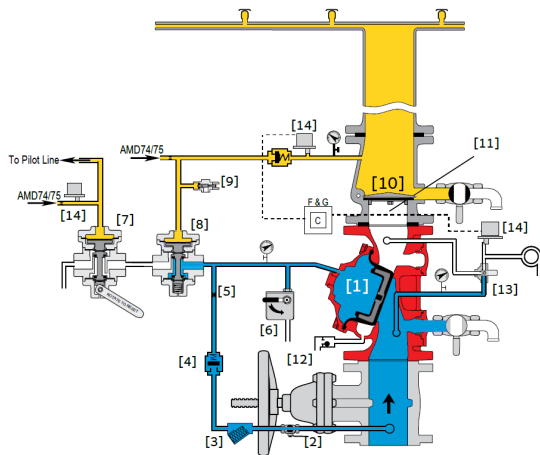


Lloyd's Register
Type Approval

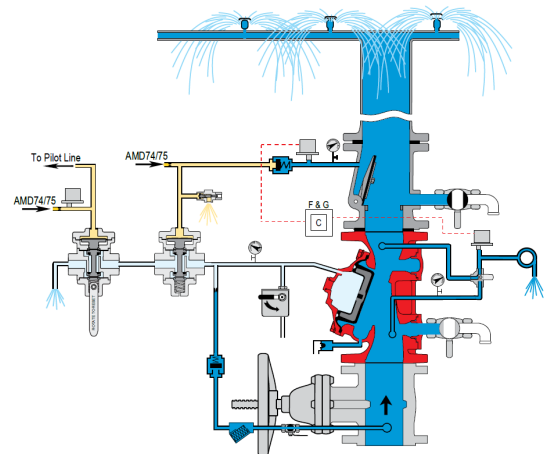
Optional Features

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

Operation



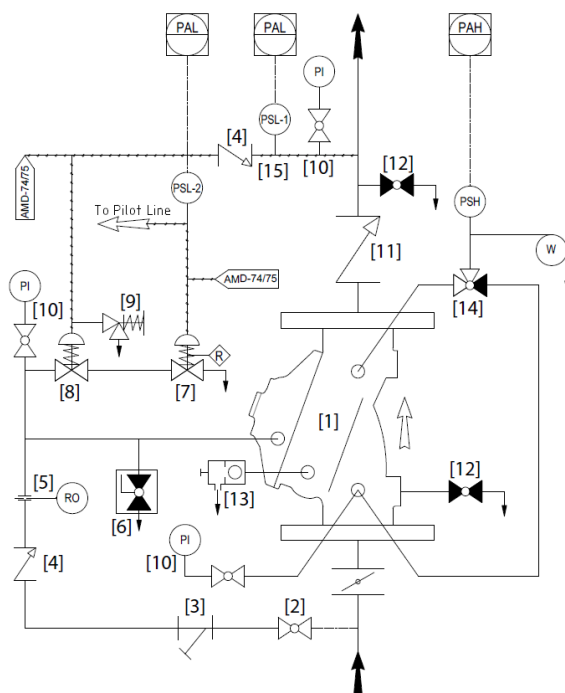
Valve Closed (normal conditions)



Valve Open (fire conditions)

Under NORMAL conditions, the 400Y-7PM is held closed by the water pressure supplied to the control chamber [1] via the priming line [2] strainer [3], and is then trapped in the control chamber by the closed manual emergency release [6] a check valve [4] the URV-2-M relay valve with mechanical latch [7] and URV-2-L Low actuation pressure relay valve [8] that are held closed by pneumatic pressure of both the pilot line and dry sprinkler pipeline. Under FIRE conditions, the main valve may be opened either locally using the manual emergency release valve [6] or by the two URV relay valves opening simultaneously from a fall in pneumatic pressure in both the automatic sprinkler/s and the pilot line. Both URV valves will latch open, URV-2-L [8] by way of the low pressure release valve [9] and URV-2-M [7] by the mechanical latching device falling to a vertical position. When both these relay valves have opened the water pressure will be released from the main valve control chamber, opening the main valve and admitting water into the piping and to the alarm device [13] Closing the main valve can be done only manually and locally by resetting the low pressure release valve and rotating the mechanical latch on URV-2-M [7] with the restored pipeline air pressure.

System P&ID



Components	
1	BERMAD 400Y Deluge Valve
2	Priming ball valve
3	Priming strainer
4	Check valve
5	Restriction orifice
6	Manual emergency release
7	URV-2-M with mechanical Latch
8	URV-2-L Low actuation pressure relay valve
9	Low pressure accelerator
10	Pressure gauge
11	Inline check valve
12	Drain valve
13	Drip Check Valve
14	Alarm test valve
15	PSL-1 Sprinkler Piping Pressure Switch Low

Optional System Items	
PSL-2	Pilot Line Pressure Switch Low
W	Water Motor Alarm
AMD-74/75	Air Maintenance Device

System Installation

A typical installation of the BERMAD model 400Y-7PM, features automatic actuation via two URV pilot control valves opening in response to a fall in pneumatic pressure of the dry sprinkler pipeline and the simultaneous fall in pneumatic pressure of the independent pilot line.

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

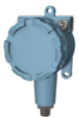
Optional System Items



Air Maintenance Device



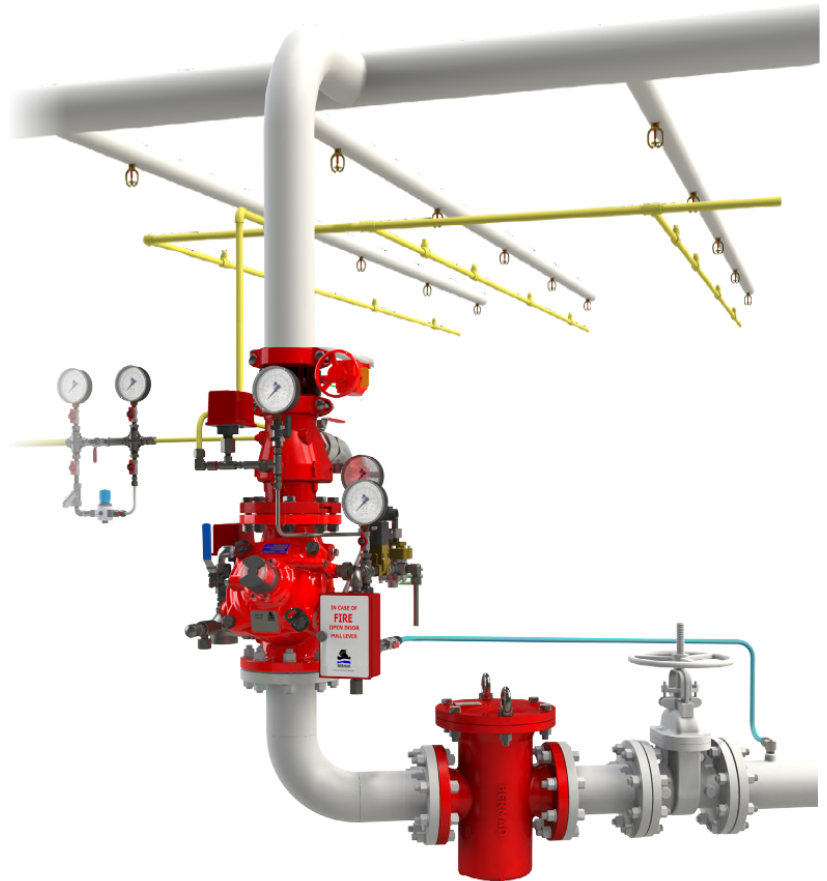
General Purpose Pressure Switch



Ex d Pressure Switch



Basket Strainer - 60F



Suggested Specifications

The preaction valve shall be FM-approved, 365-psi/25-bar 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 valve shall include optional factory supplied Air maintenance devices for the sprinkler and pilot lines with alarm pressure switches.

The control trim shall include two latching relay valves with a low pressure release valve, a manual emergency release unit, 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.

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 preaction 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:

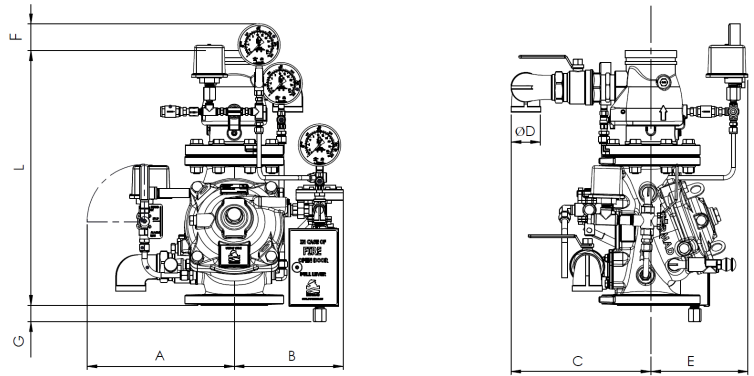
Flanged- 2, 3, 4, 6 & 8"
Grooved- 2, 3, 4, 6 & 8"

Pressure Rating:

ANSI#150 - 17.2 bar | 250 psi
Grooved - 17.2 / 25 bar | 250 / 365 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	293 11.5	232 9.1	178 7	3/4"	249 9.8	78 3	166 6.5	31 68
DN80 3"	555 21.9	555 21.9	570 22.4	313 12.3	246 9.7	221 8.7	1 1/2"	220 8.7	62 2.4	64 2.5	55 121
DN100 4"	594 23.4	594 23.4	613.5 24.2	343 13.5	255 10	287 11.3	2"	233 9.2	63 2.4	37 1.5	73 131
DN150 6"	775 30.5	775 30.5	801 31.5	358 14.1	310 12.2	302 11.9	2"	268 10.6	26 1	-	132 290
DN200 8"	956 37.6	956 37.6	991 39	391 15.4	385 15.2	317 12.5	2"	335 13.2	-	-	226 497

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

