

ELECTRIC PRESSURE CONTROL DELUGE VALVE WITH LOCAL RESET

Model FP-400Y-2MC

The BERMAD model 400Y-2MC is an elastomeric, hydraulic line pressure operated deluge valve. Designed specifically for advanced fire protection systems and the latest industry standards. The 400Y-2MC is activated by a 3-Way solenoid valve, that actuates a latching relay valve opening the main valve. Once open, the valve will not close until locally reset.

An integral pressure reducing pilot ensures a stable and precise preset downstream system water pressure.

The optional valve position indicator can include a limit switch suitable for Fire & Gas monitoring systems.

The 400Y-2MC is ideal for open-nozzle systems with a high pressure water supply and is available with electric components to suit any hazardous location.



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
 - Latches open: remains open until reset locally
 - Ensures precise, stable downstream water pressure
- High performance
 - Very high flow efficiency
 - Straight through Y type body
 - Approved for PN25 / 365 psi
- Specifically-designed for fire protection
 - Face-to-face length standardized to ISO 5752 EN 558-1
 - Meets the requirements of the industry standards
- Quick and easy maintenance
 - In-line serviceable
 - Fast and easy cover removal
 - Swivel mounted drain valves (for valves 3" and larger)

Typical Applications

- Electric fire detection systems with control panels
- Automatic water spray systems
- Foam applications
- Corrosive water systems
- High Pressure Water Supply

Approvals



UL-Listed
Special System Water Control
Valves, Deluge Type (VLFT)
Sizes 1½" - 16"



FM Approved
for Deluge Sprinkler Systems
Sizes 1½" - 8"



Det Norske Veritas
Type Approval
Sizes 1½" to 16"



ABS
American Bureau of Shipping
Type Approval
Sizes 1½" - 12"

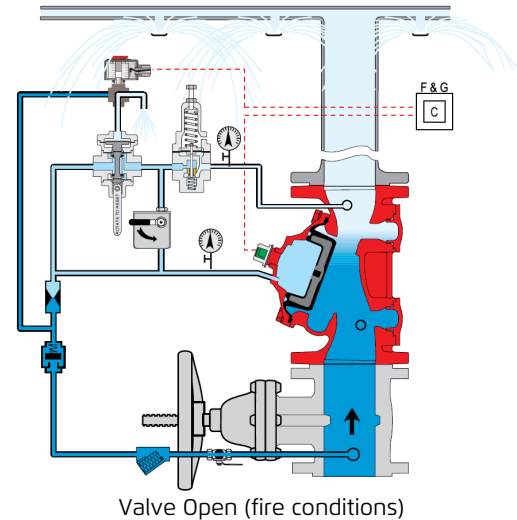
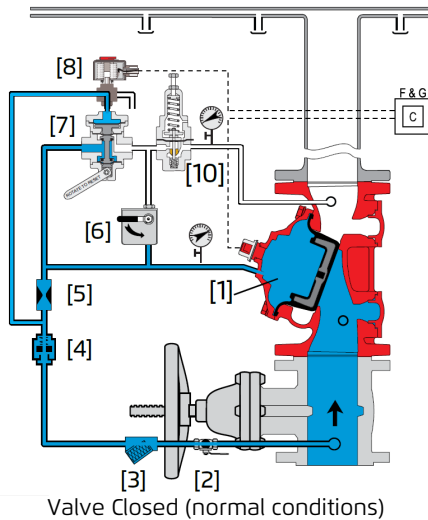


Lloyd's Register
Type Approval
Sizes 1½" - 10"

Additional Features

- Valve position limit switches
- Alarm pressure switch
- Seawater compatibility
- Drain valve/s inlet/outlet
- Corrosion resistant zinc based high build epoxy coating

Operation



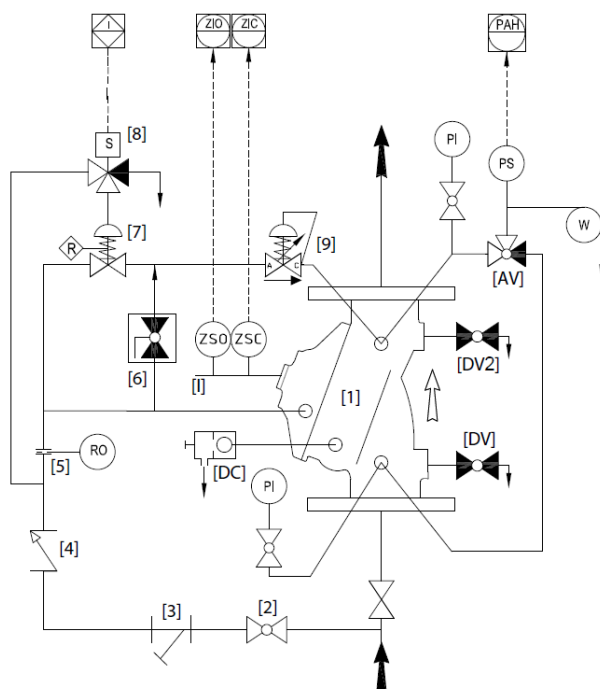
The **BERMAD model 400Y-2MC** is held closed by water pressure in the control chamber [1]. Upon release of pressure from the control chamber, the valve opens.

Under NORMAL conditions, water pressure is supplied to the control chamber via the priming line [2] strainer [3] and restriction orifice [5] it is then trapped in the control chamber by a check valve [4], manual emergency release [6], and a relay valve (URV-M) [7] that is held closed by water pressure supplied through a three-way Normally De-Energized solenoid valve [8]. The water pressure trapped in the main valve 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 URV-M opening in response to the solenoid valve being energized by the fire & gas control system [C]. This latches the 400Y-2MC deluge valve open, allowing water to flow into the system piping and to the alarm device.

The pressure-reducing pilot valve [10] senses changes in outlet pressure and, modulates the main valve to maintain the set downstream 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 Relay Valve
8	3-Way NO Solenoid Valve
9	Pressure reducing pilot valve

Optional System Items	
PS	Pressure Switch
W	Water Motor Alarm
ZS	Limit Switch Assembly
DV2	Downstream Drain valve
I	Visual Valve Position indicator
DV	Drain Valve*
PI	Pressure Gauge*
AV	3-way Alarm Test Valve*
DC	Automatic Drip Check Valve*

* Included with suffix A in valve code (drain and indicating components)
See code designations and "factory supplied additional items" on page 4

System Installation

A typical installation of the BERMAD model 400Y-2MC features automatic actuation via a universal relay valve and a three-way solenoid valve, triggered by a signal from a fire & gas control system or an on-site emergency pushbutton. A pressure reducing pilot within the control trim, ensures a precise and stable set downstream pressure. When fitted with a limit switch the valve can send a feedback signal to a remote valve position monitoring system.

Optional System Items

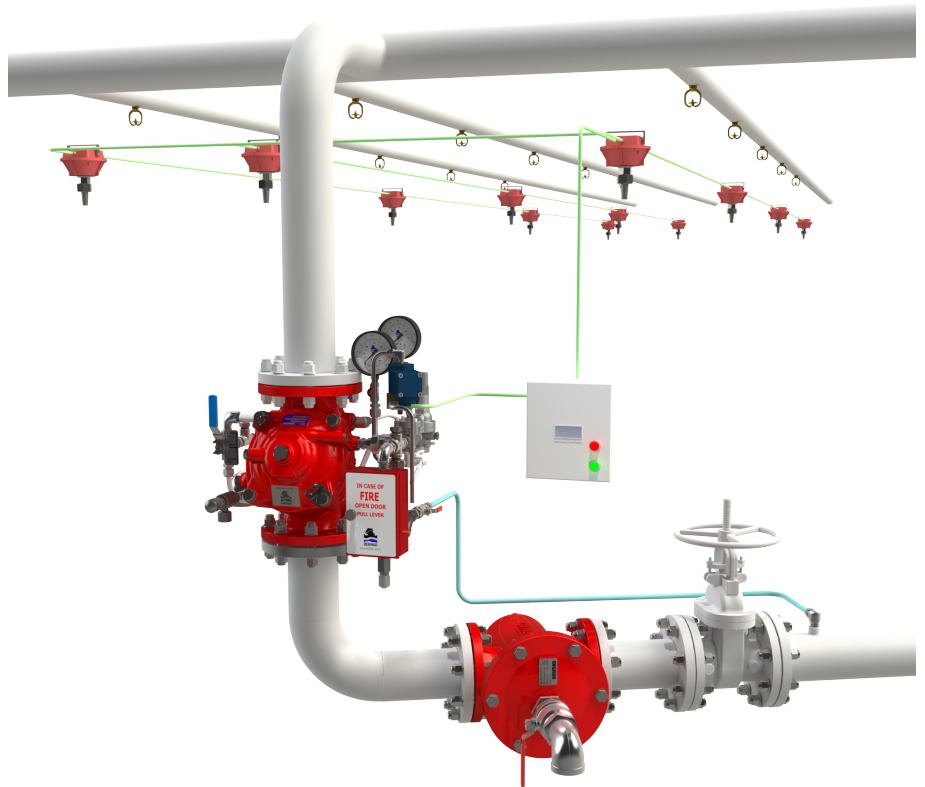


Pressure Gauge


Single Ex d
Proximity S.S.316
Limit Switch

Visual Position
Indicator, Linear

Exd Pressure
Switch - Stainless
Steel Enclosure for
Harsh
Environments

Basket Strainer -
60F


Suggested Specifications

The deluge valve shall be UL-listed, 365-psi/25-bar rated, with a straight-through Ytypebody.

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

The deluge 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 solenoid valve shall be a 3-way FM and UL429A-listed for 365 psi/25 bar with 65% of the rated voltage.

The control trim shall include a pressure control pilot valve, an auxiliary latching relay 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 deluge 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- 1½, 2, 3, 4, 6, 8, 10, 12, 14 & 16"

Grooved- 1½, 2, 3, 4, 6, 8 & 10"

Pressure Rating:

ANSI#150 - 17.2 bar | 250 psi

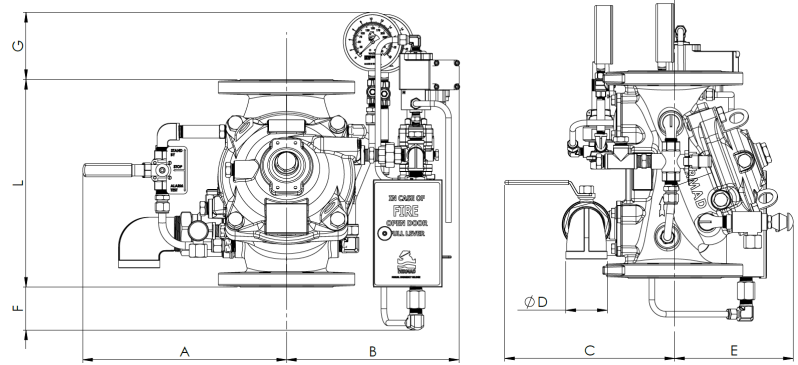
ANSI#300 - 12" to 16" - 20 bar | 300 psi

Grooved - 17.2 / 25 bar | 250 / 365 psi

Setting range: Setting range: 4 - 12 bar | 60 - 175 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	Weight #300 kg lb
DN40 1½"	230 9.1	230 9.1	230 9.1	274 10.8	212 8.3	241 9.5	¾"	180 7.1	160 6.3	141 5.6	18 40	20 45
DN50 2"	230 9.1	230 9.1	235 9.3	330 10.8	212 8.3	241 9.5	¾"	180 7.1	160 6.3	141 5.6	20 43	22 48
DN80 3"	310 12.2	310 12.2	326 12.8	334 13.1	270 10.6	274 10.8	1½"	185 7.3	90 3.5	131 5.2	34 76	35 77
DN100 4"	350 13.8	350 13.8	368 14.5	342 13.5	280 11	290 11.4	2"	195 7.7	63 2.5	118 4.6	44 98	51 113
DN150 6"	480 18.9	480 18.9	506 19.9	395 14.6	335 13.2	305 12	2"	228 9	-	70 2.7	88 193	108 238
DN200 8"	600 23.6	600 23.6	626 24.7	425 16.7	363 14.3	320 12.6	2"	295 11.6	-	45 1.8	151 332	171 376
DN250 10"	730 28.7	730 28.7	730 28.7	425 16.7	363 14.3	320 12.6	2"	295 11.6	-	-	181 398	217 477
DN300 12"	850 33.5	-	888 35	538 21.2	476 18.7	383 15.1	2"	441 17.4	-	-	324 713	364 801
DN350 14"	980 38.6	-	980 38.6	538 21.2	476 18.7	383 15.1	2"	441 17.4	-	-	357 785	429 944
DN400 16"	1100 43.3	-	1100 43.3	538 21.2	476 18.7	408 16.1	2"	415 16.3	-	-	403 887	523 1151

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

FP	6"	400Y-2MC	03	V	C	A5	ER	4DC	NN	N6nW																																																																																																																																																												
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Notes:

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(2) Coated internally and externally

(3) Supplied loose

(4) Consult BERMAD for availability

(5) For valves up to and including 10"

(6) Available in Ductile Iron only

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 (5) For valves up to and including 10"
 (6) Available in Ductile Iron only

* NO or NC refers to the main valve status when the Solenoid is de-energized

Tubing & Fittings	Code
Stainless Steel 316	NN
Monel 400	MM
Super Duplex	DD

*More options available – consult BERMAD