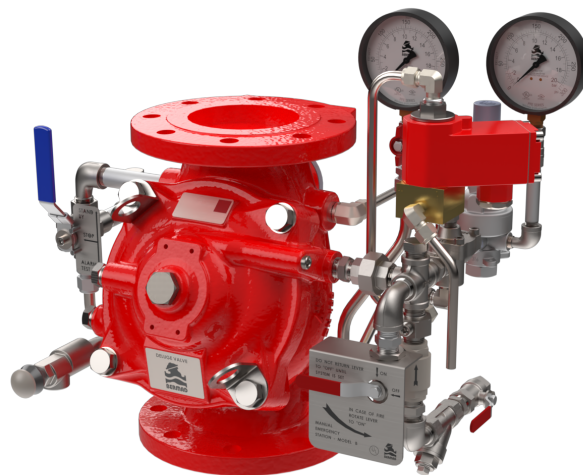


ELECTRIC PRESSURE CONTROL ON-OFF DELUGE VALVE

Model FP-400Y-3DC

The BERMAD model 400Y-3DC is an elastomeric, hydraulic, line pressure operated deluge valve, designed specifically for advanced fire protection systems and the latest industry standards. The 400Y-3DC is activated by a 3-way solenoid valve by which opening and closing of the deluge valve may be controlled remotely.

An integrated pressure control pilot ensures a precise and stable pre-set downstream water pressure. The 400Y-3DC is ideal for open-nozzle systems with a high pressure water supply and is available with electric components to suit any hazardous location. The optional valve position indicator can include a limit switch suitable for Fire & Gas monitoring systems.



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
 - Shuts off on remote command
 - Ensures precise, stable downstream water pressure
 - Valve position limit switches (optional)
- 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

- Remote Control 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"



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



Det Norske Veritas
Type Approval
Sizes 1½" to 16"

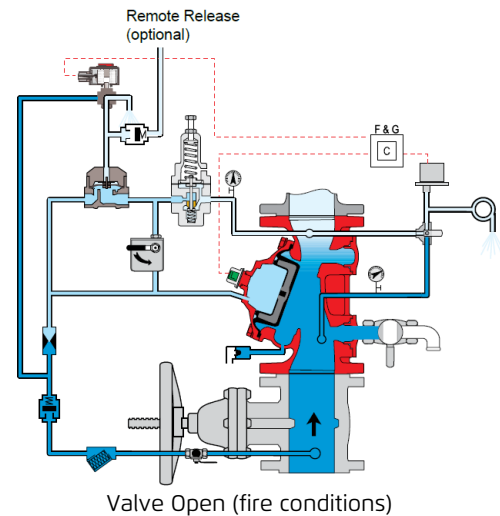
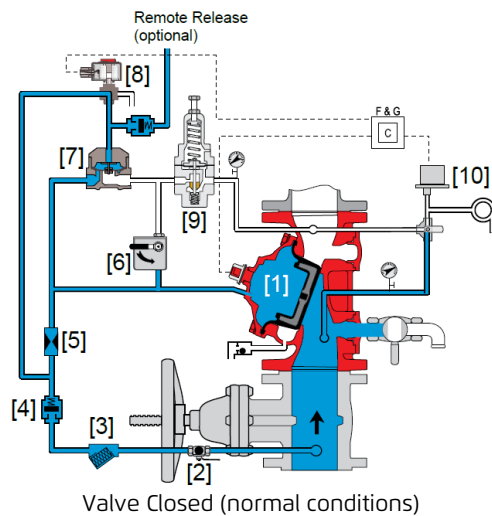


Lloyd's Register
Type Approval
Sizes 1½" - 10"

Additional Features

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

Operation



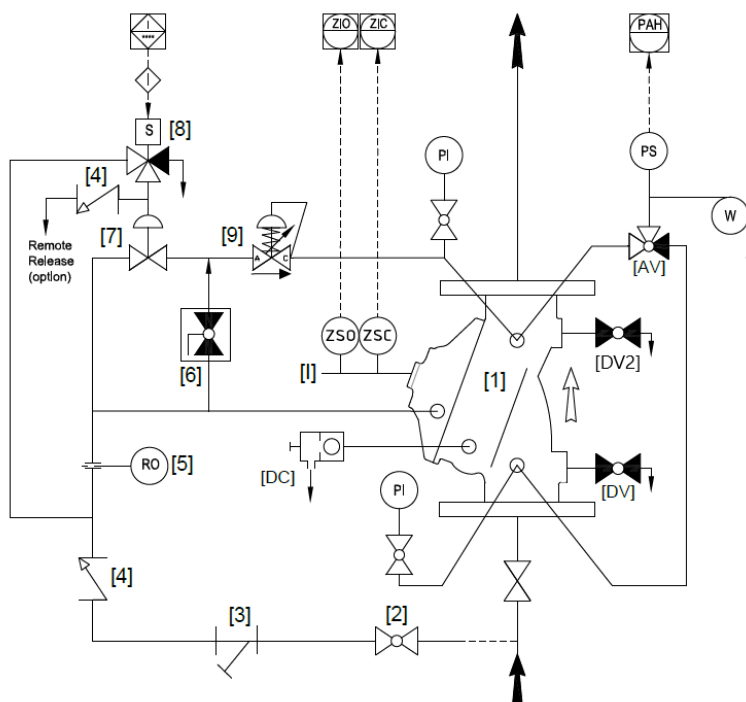
The BERMAD model 400Y-3DC is held closed by water pressure in the control chamber [1]. Upon release of pressure from the control chamber, the valve opens.

Under NORMAL conditions, water pressure is supplied to the control chamber via the priming line [2] restriction orifice [5], and strainer [3], and is then trapped in the control chamber by a check valve [4], manual emergency release [6] and a relay valve (HRV) [7] that is held closed by hydraulic pressure supplied through a three-way Normally De-Energized solenoid valve [8].

Under FIRE conditions, water pressure is released from the control chamber, either with the manual emergency release, or by the HRV opening in response to either the solenoid valve being energized by the fire & gas control system [C] or the by remote release. This opens the 400Y-3DC deluge valve, allowing water to flow into the system piping and to the alarm device [10].

The pressure-control pilot valve [9] 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	HRV-2 Hydraulic Relay Valve
8	3-Way Solenoid Valve
9	Pressure Control 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-3DC features actuation via a hydraulic relay valve and three-way solenoid valve, triggered by a signal from a fire & gas control system or an on-site emergency push-button. When open, and fitted with a limit switch the valve can send a feedback signal to a remote valve position monitoring system.

A pressure control pilot valve integrated in the control trim ensures a precise and stable pre-set downstream water pressure.

Optional System Items



Pressure Gauge



Single Ex d
Proximity S.S.316
Limit Switch



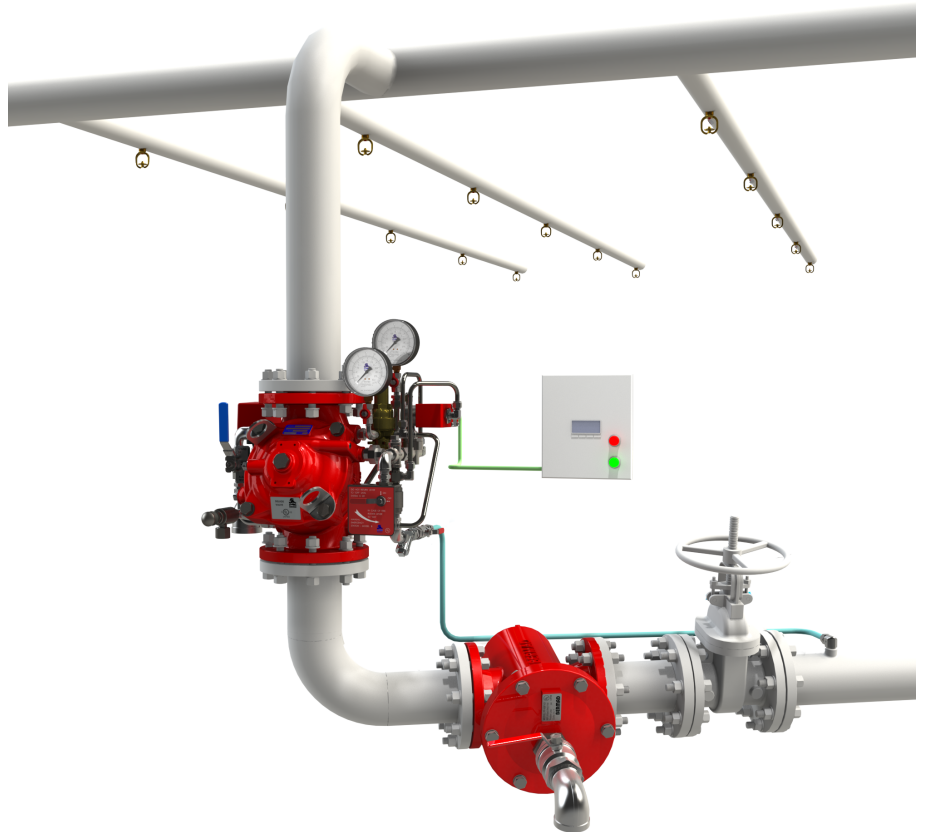
Visual Position
Indicator, Linear



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 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:

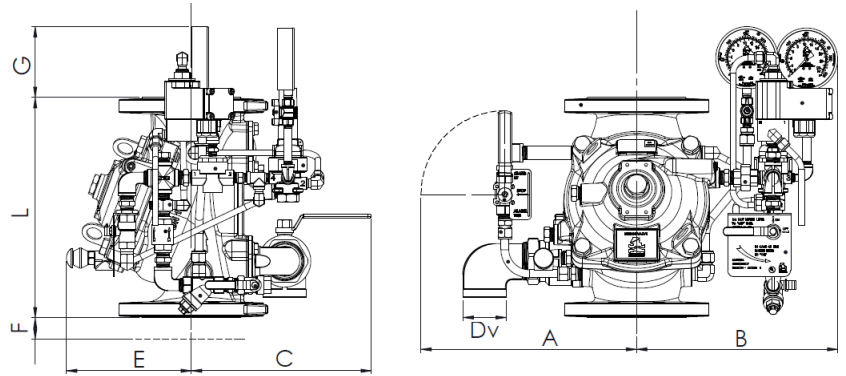
Flanged- 1½, 2, 2½, 3, 4, 6, 8, 10, 12, 14 & 16"
Grooved- 1½, 2, 3, 4, 6, 8 & 10"

Pressure Rating:

ANSI#150 - 17.2 bar | 250 psi
ANSI#300 - 1½" to 10" - 25 bar | 365 psi
ANSI#300 - 12" to 16" - 20 bar | 300 psi
Grooved - 17.2 / 25 bar | 25 / 365 psi
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	293 11.5	282 11.1	177 7.0	¾"	215 8.5	91 3.6	166 6.5	18 40	20 45
DN50 2"	230 9.1	230 9.1	238 9.3	293 11.5	282 11.1	177 7.0	¾"	215 8.5	91 3.6	166 6.5	20 43	22 48
DN80 3"	310 12.2	310 12.2	326 12.8	130 5.1	262 10.3	221 8.7	1½"	186 7.3	21 0.8	124 4.9	39 86	40 88
DN100 4"	350 13.8	350 13.8	368 14.5	343 13.5	320 12.5	287 11.3	2"	199 7.8	-	113 4.4	53 117	60 132
DN150 6"	480 18.9	480 18.9	506 19.9	358 14.1	374 14.7	302 11.9	2"	234 9.2	-	72 2.8	101 222	116 255
DN200 8"	600 23.6	600 23.6	626 24.7	392 15.4	433 17	317 12.5	2"	301 11.8	-	37 1.5	170 374	190 418
DN250 10"	730 28.7	730 28.7	730 28.7	406 16	433 17	317 12.5	2"	301 11.8	-	-	203 447	240 528
DN300 12"	850 33.5	-	888 35	478 18.8	463 18.2	380 15	2"	441 17.4	-	14 0.5	365 803	405 891
DN350 14"	980 38.6	-	980 38.6	478 18.8	463 18.2	379 14.9	2"	441 17.4	-	-	401 882	473 1041
DN400 16"	1100 43.3	-	1100 43.3	478 18.8	463 18.2	405 15.9	2"	417 16.4	-	-	452 994	572 1258

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-3DC	03	V	C	A5	ER	4DC	NN	N6nW																																																																																																																																																																
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Drain Valve	DV																																																																																																																																																																									
Water Motor Alarm Assembly ⁽³⁾	W																																																																																																																																																																									
Large Control Filter	F																																																																																																																																																																									
Valve Position Indicator	I																																																																																																																																																																									
S.S 316 Trim Accessories	N																																																																																																																																																																									
S.S Solenoid Valve	K																																																																																																																																																																									
Pressure Transmitter ⁽³⁾	Q																																																																																																																																																																									
Drain and Indicating Components	A																																																																																																																																																																									

Notes:

(1) Other materials available see engineering data

(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

*More options available – consult BERMAD