

ELECTRO-PNEUMATICALLY CONTROLLED ON-OFF DELUGE VALVE

Model FP-400Y-6D

The BERMAD Model 400Y-6D is an elastomeric, hydraulic line pressure operated deluge valve, designed specifically for advanced fire protection systems and the latest industry standards. The 400Y-6D is suitable for systems that include electric or redundant (electric or pneumatic) fire detection systems. It opens in response to an electric signal and/or a drop in pressure of a pneumatic pilot line.

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

The 400Y-6D is ideal for open-nozzle systems and is available with electrical components to suit any hazardous location.



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
 - Local valve position indicator beacon (optional)
 - Valve position limit switches (optional)
- High performance
 - Very high flow efficiency
 - Approved for PN25 / 365 psi
 - Straight through Y type body
- Specifically-designed for fire protection
 - Face-to-face length standardized to ISO 5752 EN 558-1
 - UL429A Listed 3-Way Solenoid Valve
 - 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
- Dual redundant detection systems

Approvals



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



Det Norske Veritas
Type Approval
Sizes 1½" to 16"



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

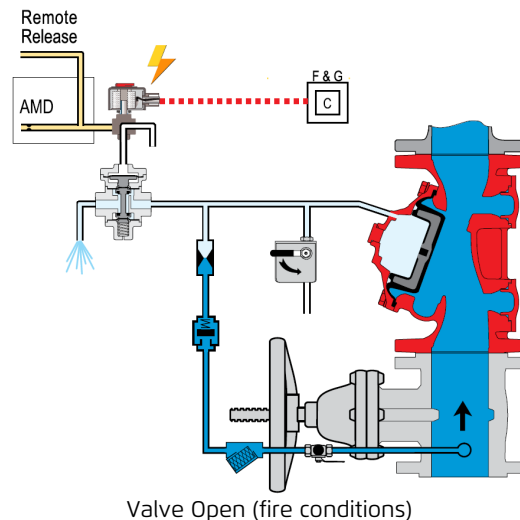
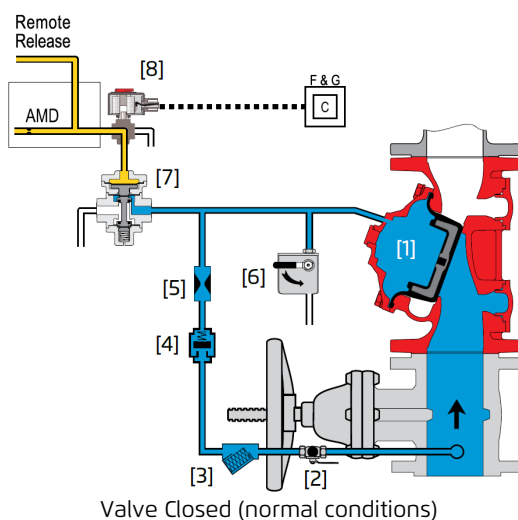


Lloyd's Register
Type Approval
Sizes 1½" - 10"

Additional Features

- Valve position limit switches
- Local valve position indicator beacon
- Alarm pressure switch
- Seawater compatibility
- Drain valve/s inlet/outlet
- Air Maintenance Device
- For "automatic activation" select BERMAD local or remote reset model
- Corrosion resistant zinc based high build epoxy coating

Operation

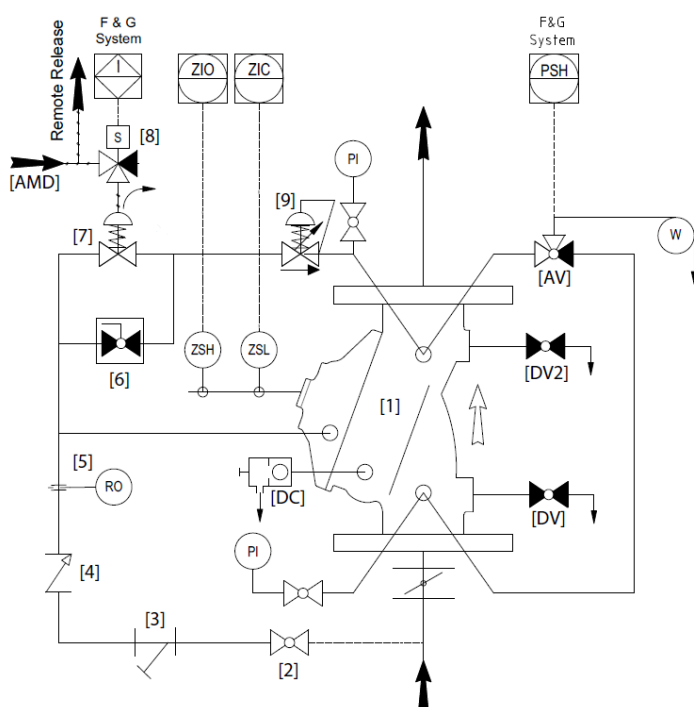


The BERMAD model 400Y-6D is held closed by water pressure in the control chamber [1]. Upon release of pressure from the control chamber, the valve opens.

Under NORMAL conditions, water pressure is supplied to the control chamber via the priming line [2] strainer [3], and restricted orifice [5] it is then trapped in the control chamber by a check valve [4], manual emergency release [6], and a relay valve (URV) [7] that is held closed by pneumatic pressure supplied through a three-way 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 opening. The URV opens in response either to a decrease in pneumatic pilot-line [E] pressure or to the solenoid valve being activated by the fire & gas control system [C]. This opens the 400Y-6D deluge valve, allowing water to flow into the system piping.

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 Relay Valve
8	3-Way NC Solenoid Valve

	Optional System Items
ZS	Limit Switch Assembly
I	Visual Valve Position indicator
PI	Pressure Gauge
DV2	Downstream Drain valve
W	Water Motor Alarm
AMD	Air Maintenance Device
DC	Automatic Drip Check Valve*
DV	Drain Valve*
AV	3-way Alarm Test 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-6D features actuation via a pneumatic universal relay valve. The valve can also be triggered electrically by a signal from a fire & gas control system or an on-site emergency push-button. When fitted with a limit switch the valve can send a feedback signal to a remote valve status monitoring system.

Optional System Items



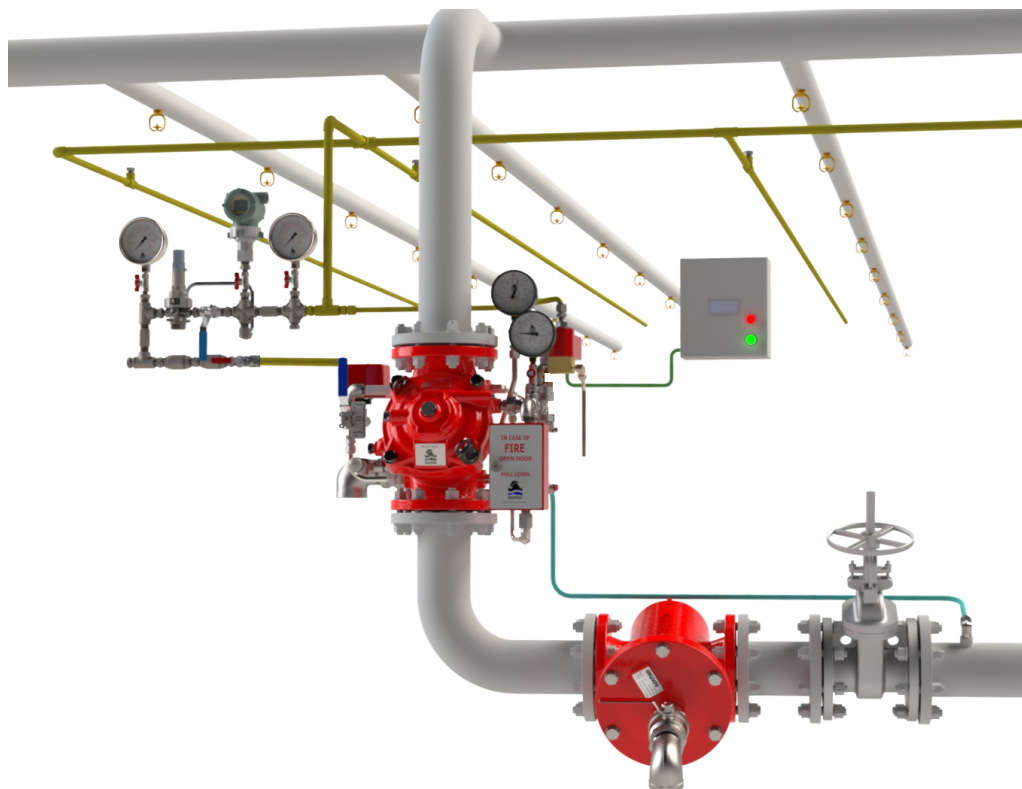
Pressure Gauge



Exd Pressure
Switch - Stainless
Steel Enclosure for
Harsh
Environments
Rotating Limit
Switch Box



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 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, 2½, 3, 4, 6, 8 & 10"

Pressure Rating:

ANSI#150 - 17.2 bar | 250 psi

ANSI#300 - 1½" to 10" - 25 bar | 365 psi

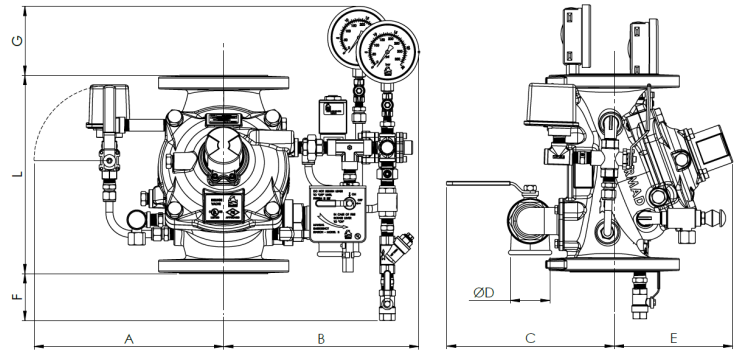
ANSI#300 - 12" to 16" - 20 bar | 300 psi

Grooved - 17.2 / 25 bar | 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
DN40 1½"	230 9.1	230 9.1	230 9.1	293 11.5	-	177 7	¾"	-	-	-
DN50 2"	230 9.1	230 9.1	238 9.4	293 11.5	-	177 7	¾"	-	-	-
DN65 2½"	235 9.3	235 9.3	241 9.5	293 11.6	-	177 7.2	1½"	-	-	-
DN80 3"	310 12.2	310 12.2	326 12.8	313 12.3	-	177 7	1½"	-	-	-
DN100 4"	350 13.8	350 13.8	368 14.5	343 13.5	-	287 11.3	2"	-	-	-
DN150 6"	480 18.9	480 18.9	506 19.9	358 14	-	302 11.9	2"	-	-	-
DN200 8"	600 23.6	600 23.6	626 24.7	392 15.4	-	317 12.5	2"	-	-	-
DN250 10"	730 28.7	730 28.7	730 28.7	406 16	-	317 12.5	2"	-	-	-
DN300 12"	850 33.5	-	888 35	478 18.8	-	380 15	2"	-	-	-
DN350 14"	980 38.6	-	980 38.6	478 18.8	-	379 14.9	2"	-	-	-
DN400 16"	1100 43.3	-	1100 43.3	478 18.8	-	405 16.1	2"	-	-	-

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-6D	03	V	C	A5	ER	4DC	NN	N6nW																																																																																																																																							
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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

Notes:

(1) Other materials available see engineering data

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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

*More options available – consult BERMAD