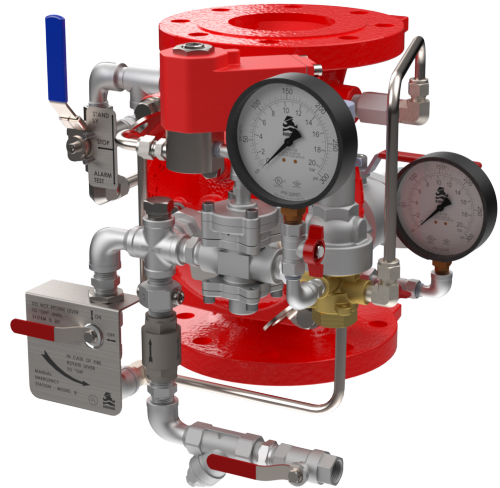


ELECTRO-PNEUMATIC, PRESSURE CONTROL ON-OFF DELUGE VALVE

Model FP-400E-6DC

The BERMAD Model 400E-6DC is an elastomeric, hydraulic line pressure operated deluge valve, designed specifically for advanced fire protection systems and the latest industry standards. The 400E 6DC is activated by a fall in pneumatic pressure to the relay valve on the control trim. A fall in pneumatic pressure can be from a dry pilot line, a remote pneumatic release, or from an electric signal to the 3- 3Way solenoid. When open an integrated pressure control pilot valve regulates the main valve to maintain a precise, stable, pre-set downstream pressure. An optional valve position indicator can include a limit switch suitable for Fire & Gas monitoring systems. The 400E-6DC is ideal for open-nozzle systems with a high pressure water supply 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 elastomer, VRSD technology
 - Obstacle-free, uninterrupted flow path
 - No mechanical moving parts
 - UL429A Listed 3-Way Solenoid Valve
 - Valve position limit switches (optional)
 - Meets the requirements of the industry standards
- Quick and easy maintenance
 - Designed for high reliability and easy maintenance
 - In-line serviceable
 - Fast and easy cover removal

Typical Applications

- Remote Control Water Spray Systems
- Foam applications
- Corrosive water systems
- High Pressure Water Supply
- Dual redundant detection systems

Approvals



UL-Listed
Special System Water Control
Valves, Deluge Type (VLFT)
Sizes 1½" - 10"



Det Norske Veritas
Type Approval
Sizes 1½" to 12"



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

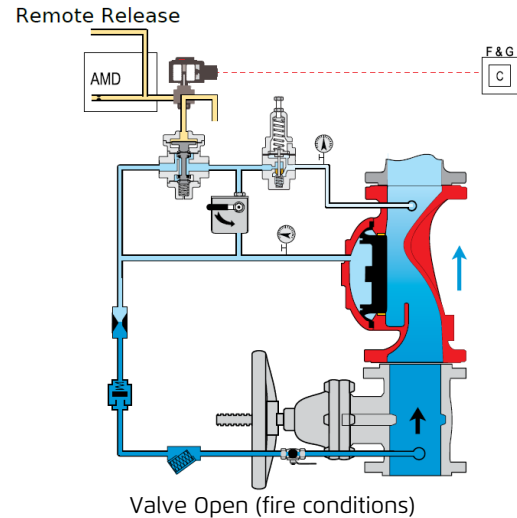
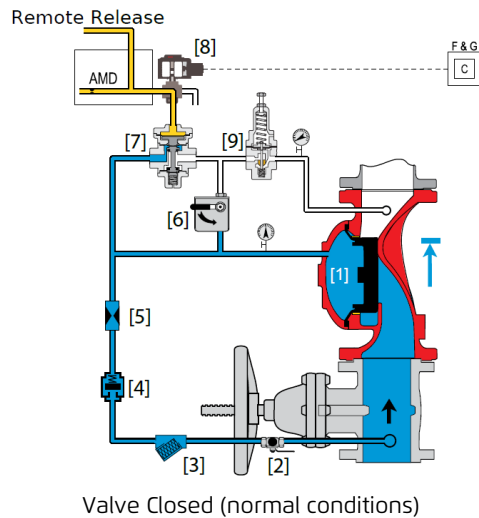


Lloyd's Register
Type Approval
Sizes 1½" - 10"

Additional Features

- Valve position limit switches
- Alarm pressure switch
- Seawater compatibility
- Air Maintenance Device
- Corrosion resistant zinc based high build epoxy coating

Operation

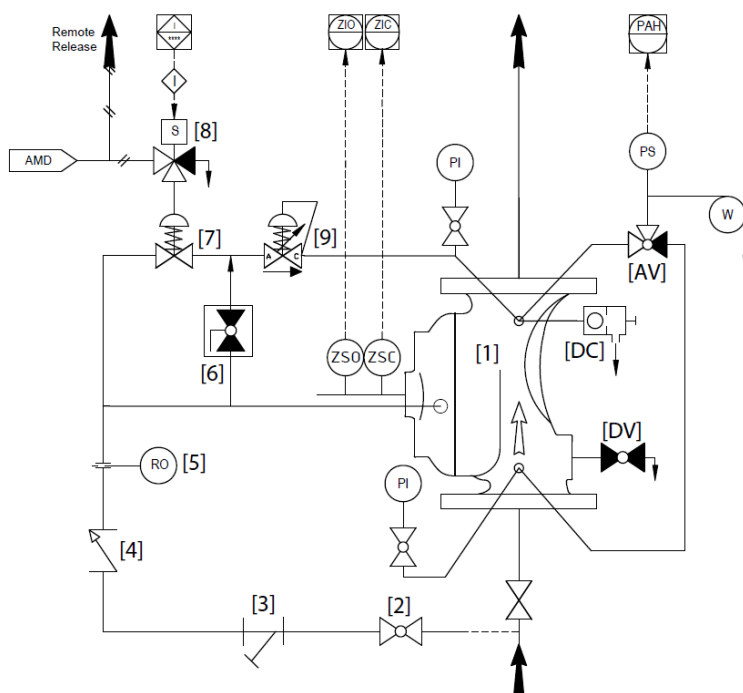


The BERMAD model 400E-6DC is held closed by water pressure in the control chamber [1]. Upon release of pressure from the control chamber, the valve opens.

Under NORMAL conditions, water pressure is supplied to the control chamber via the priming line [2] and strainer [3], restriction orifice [5] and 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 pressure [E] or to the solenoid valve being activated by the fire & gas control system [C]. This opens the 400E-6DC deluge valve, allowing water to flow into the system piping and to the alarm device/s. The pressure-control pilot valve [9] modulates the main valve to maintain the set outlet pressure.

System P&ID



Components	
1	BERMAD 400E Deluge Valve
2	Priming Ball Valve
3	Priming Strainer
4	Check Valve
5	Restriction Orifice
6	Manual Emergency Release
7	URV, Pilot Valve
8	3-Way NC Solenoid Valve
9	Pressure Control Pilot Valve

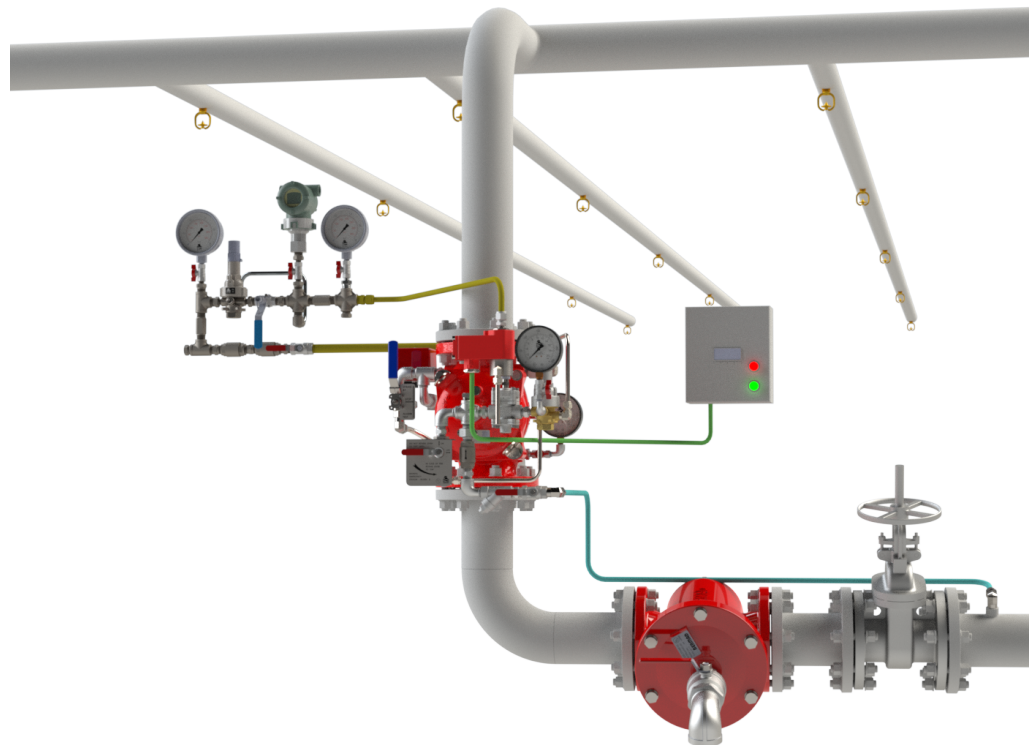
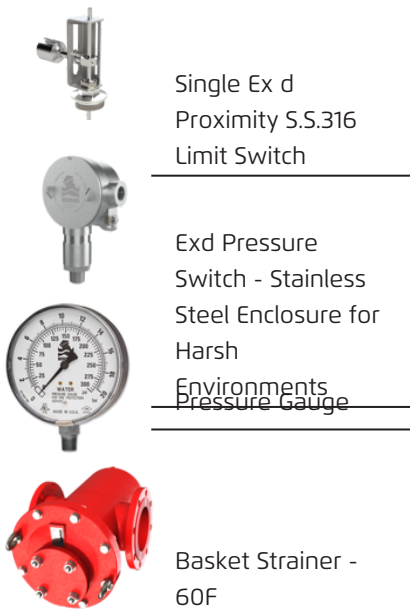
Optional System Items	
PS	Pressure Switch
W	Water Motor Alarm
ZS	Limit Switch Assembly
AMD	Air Maintenance Device
I	Visual Valve Position indicator
DV	Drain Valve*
PI	Pressure Gauge*
AV	3-Way Alarm Test Valve*
DC	Automatic Drip Check Valve*

* 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 400E-6DC features actuation by way of a fall in pneumatic pressure to the control chamber of the 2-Way Universal Relay Valve. It can also be actuated electrically by a signal from a fire & gas control system or an on-site emergency pushbutton. A pressure control pilot valve integrated in the control trim ensures a precise and stable pre-set downstream water pressure. When open, and fitted with a limit switch the valve can send a feedback signal to a remote valve position monitoring system.

Optional System Items



Suggested Specifications

The deluge valve shall be UL-listed, 250 psi/17.2 bar rated.

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, and an automatic drip-check with manual override.

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 valve from the pipeline.

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"

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

Pressure Rating:

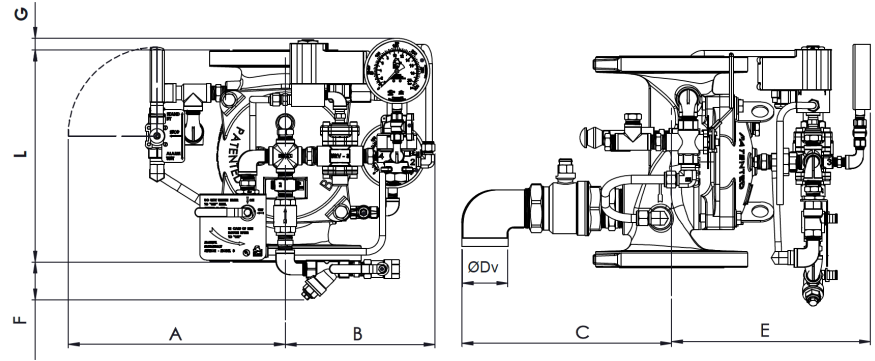
ANSI#150 - 17.2 bar | 250 psi

Grooved - 17.2 bar | 250 psi

Elastomer:

HTNR - Fabric Reinforced High Temperature

Compound - See engineering data



Valve Size	L #150 mm in	L Grooved 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
DN40 1½"	205 8.1	-	313 12.3	225 8.9	199 7.8	¾"	245 9.6	115 4.5	50 2	18 40
DN50 2"	205 8.1	205 8.1	313 12.3	225 8.9	199 7.8	¾"	245 9.6	115 4.5	50 2	19 42
DN65 2½"	205 8.1	-	325 12.8	225 8.9	253 10	1½"	247 9.7	115 4.5	50 2	22 49
DN80 3"	257 10.1	250 9.8	345 13.6	225 8.9	266 10.5	1½"	280 11	89 3.5	49 2	30 66
DN100 4"	320 12.6	320 12.6	328 12.9	225 8.9	316 12.4	2"	300 11.8	57 2.2	18 0.7	44 97
DN150 6"	415 16.3	415 16.3	349 13.7	215 8.5	347 13.7	2"	377 14.8	10 0.4	-	88 194
DN200 8"	500 19.7	500 19.7	383 15.1	245 9.6	364 14.3	2"	427 16.8	-	-	150 331
DN250 10"	605 23.8	-	396 15.6	255 10.4	384 15.1	2"	425 16.7	-	-	167 368
DN300 12"	725 28.5	-	438 17.2	308 12.1	422 16.6	2"	522 20.6	-	-	255 562

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"	400E-6DC	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 BERMAID for availability

(5) For valves up to and including 10"

Notes:
 (1) Other materials available see engineering data
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* NO or NC refers to the main valve status when the Solenoid is de-energized

*More options available – consult BERMAD