

ELECTRICALLY CONTROLLED DELUGE VALVE WITH LOCAL RESET - 3-WAY SOV

Model FP-400E-3UM

The BERMAD model 400E-3UM is an elastomeric, hydraulic, line pressure operated deluge valve, designed for advanced fire protection systems, and the latest industry standards.

The 400E-3UM is activated by a 3-way solenoid valve, which actuates a latching relay valve, to open the main valve. Once open the main valve will not close until locally reset.

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

The 400E-3UM is ideal for systems with open nozzles for water or foam discharge, 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 elastomeric diaphragm seal - VRSD technology
 - Obstacle-free, uninterrupted flow path
 - No mechanical moving parts
 - UL429A Listed 3-Way Solenoid Valve
 - Latches open: remains open until reset locally
 - 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

- Automatic water spray systems
- Electric fire detection systems with control panels
- Foam applications
- Remote Control Monitors

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"

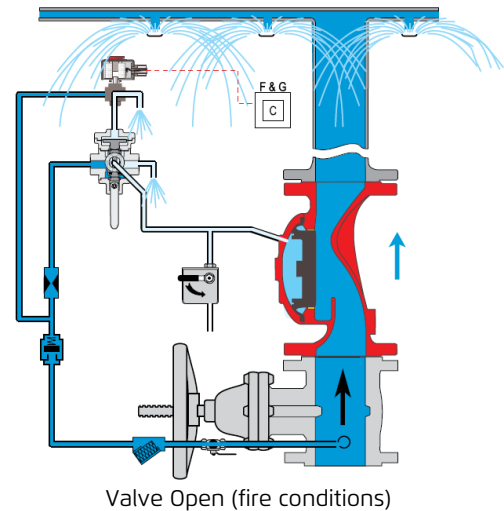
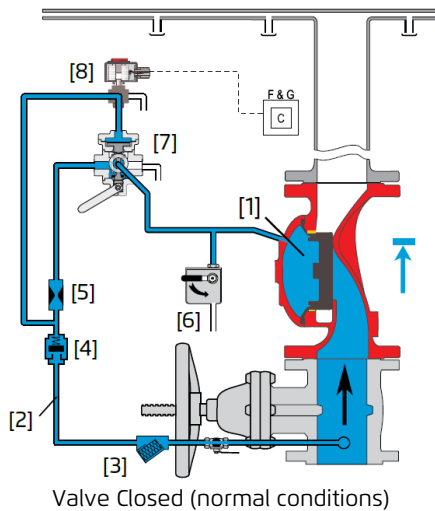


Lloyd's Register
Type Approval
Sizes 1½" - 10"

Additional Features

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

Operation

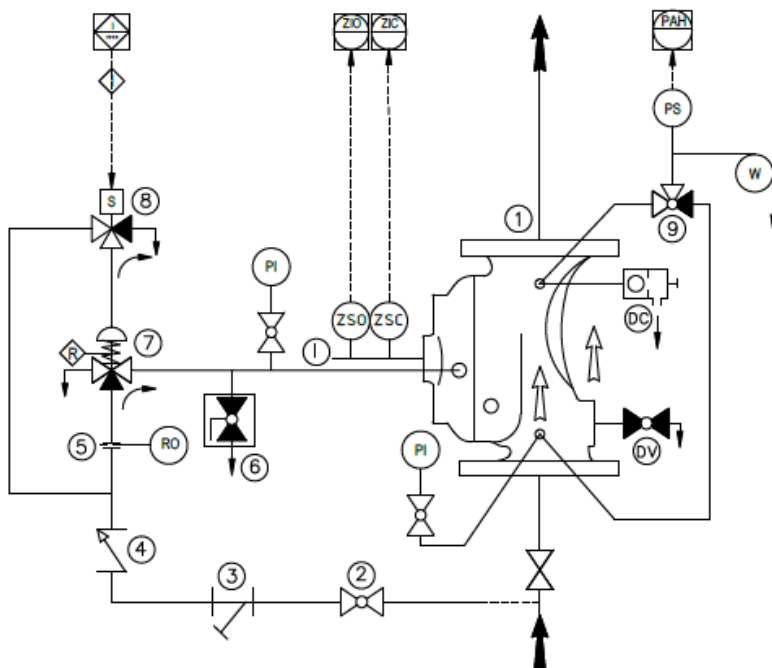


The BERMAD model 400E-3UM is held closed by water pressure in the control chamber [1]. Upon release of pressure from the control chamber, the valve opens.

Under NORMAL conditions, water pressure is supplied to the control chamber via the priming line [2] strainer [3] and restriction orifice [5] and 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 in the supply position by hydraulic pressure supplied through a three-way solenoid valve [8]. The water pressure trapped in the control chamber keeps the valve closed by holding 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 switching to the release position in response to the solenoid valve being activated by the fire & gas control system [C]. This latches the 400E-3UM deluge valve open, allowing water to flow into the system piping and the alarm device.

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-3-M Relay Valve

Optional System Items	
W	Water Motor Alarm
ZS	Limit Switch Assembly
I	Visual Valve Position indicator
PS	Pressure Switch
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-3UM features automatic actuation via a relay valve and three-way solenoid valve, triggered by a signal from a fire & gas control system or an on-site emergency pushbutton. When fitted with a limit switch, the valve can send a feedback signal, indicating the valve's status to a remote valve position monitoring system.

Optional System Items



Water Motor Alarm



Pressure Gauge



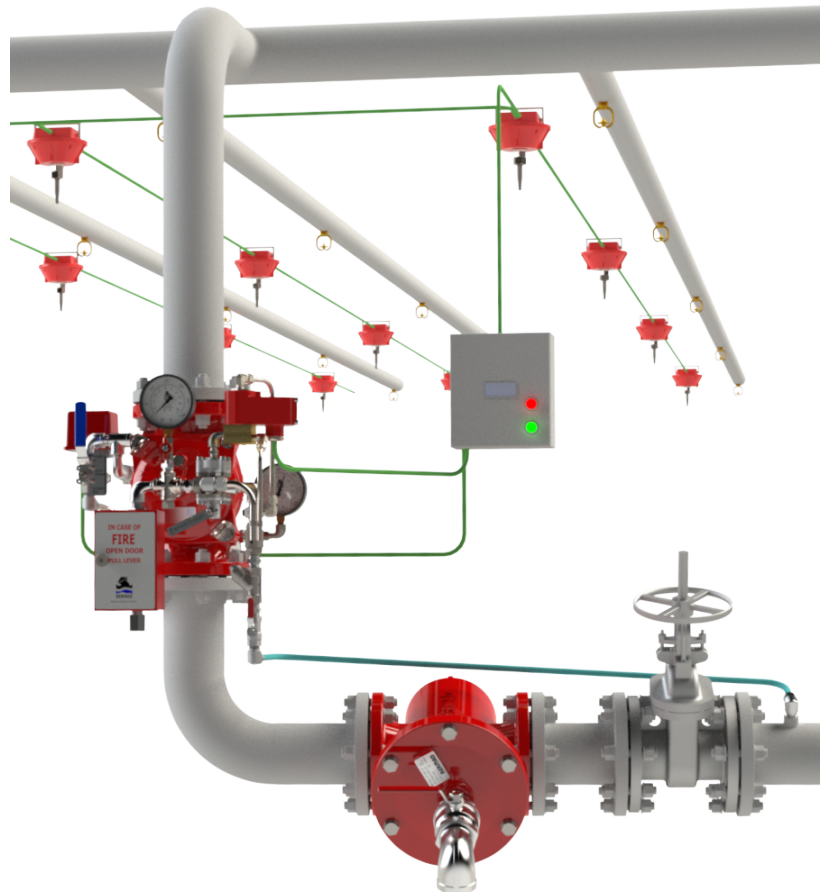
Exd Pressure
Switch - Stainless
Steel Enclosure for
Harsh
Environments



Single Exd
Proximity S.S.316
Limit Switch



Basket Strainer -
60F



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 an auxiliary latching 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:

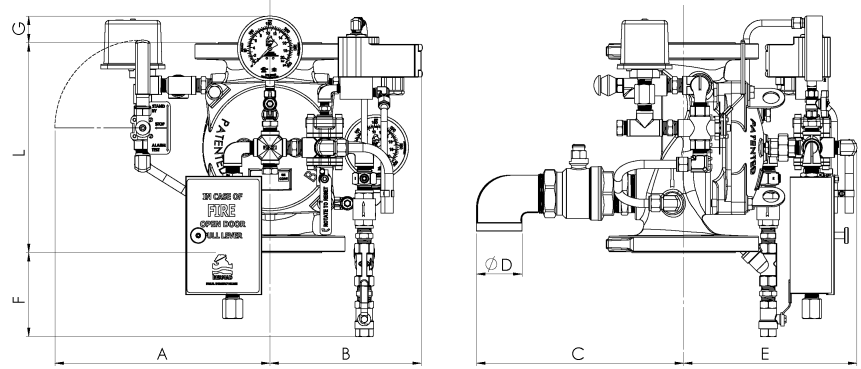
ANSI#150 - 17.2 bar | 250 psi

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	235 9.3	199 7.8	¾"	229 9	185 7.3	98 3.9	17 38
DN50 2"	205 8.1	205 8.1	313 12.3	235 9.3	199 7.8	1½"	229 9	185 7.3	98 3.9	18 40
DN65 2½"	205 8.1	-	325 12.8	235 9.3	253 10	1½"	230 9.1	186 7.3	98 3.9	21 45
DN80 3"	257 10.1	250 9.8	358 14.1	235 9.3	266 10.5	1½"	264 10.4	160 6.3	72 2.8	29 64
DN100 4"	320 12.6	320 12.6	328 12.9	234 9.2	316 12.4	2"	283 11.1	128 5	41 1.6	42 93
DN150 6"	415 16.3	415 16.3	349 13.7	240 9.4	347 13.7	2"	360 14.2	81 3.2	-	87 192
DN200 8"	500 19.7	-	383 15.1	270 10.6	264 10.4	2"	411 16.2	38 1.5	-	149 329
DN250 10"	605 23.8	-	383 15.1	270 10.6	264 10.4	2"	411 16.2	-	-	166 366
DN300 12"	725 28.5	-	438 17.2	333 13.1	422 16.6	2"	539 21.2	-	-	254 560

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-3UM	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"

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

*More options available – consult BERMAD