

Electrically Controlled On-Off Deluge Valve

Model: FP 400E-3D



UL LISTED

Typical Applications



Water/foam fire systems



Deluge & spray systems



Petrochemical facilities



Flammable materials storage



Marine environments



Gas storage tanks

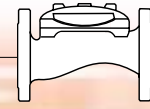
Features and Benefits

- **3-way solenoid valve** – Flexible configuration
- **Remote reset** – Shut-off on remote command
- **One-piece molded diaphragm-Only moving part** – No maintenance required
- **Simple design** – Cost effective
- **Obstacle free Full bore** – Uncompromising reliability
- **Factory pre-assembled trim** – Out-of-box quality
- **In-line serviceable** – Minimal down time

Optional Features

- **Alarm pressure switch** (code: P or P7)
- **Explosion-proof** for hazardous locations (code: 7 or 8)
- **Fail safe open** (energized to close main valve)
- **Seawater service** (add FS as prefix to model)

BERMAD Fire Protection



Model: FP 400E-3D

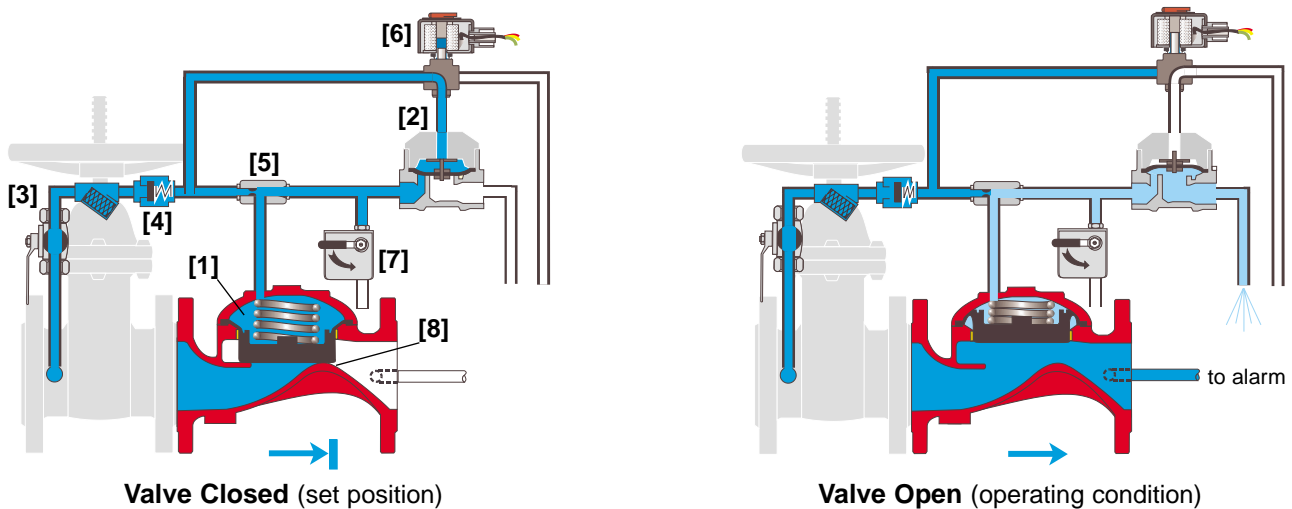
400 Series

Operation

The BERMAD Model 400E-3D is suitable for systems that include electric fire detection and a piping system with a wide variety of open nozzles.

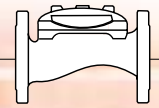
In the SET position, the line pressure, which is supplied to both the main valve control chamber [1] and a Hydraulic Relay Valve (HRV) [2], through the priming line [3], a Check Valve [4], an Accelerator [5] with priming restriction and a 3-Way Solenoid [6], is trapped by the Check Valve, by the closed HRV, and by a closed Manual Emergency Release [7]. The trapped pressure holds the main valve's diaphragm and plug against the valve seat [8], sealing it drip tight and keeping the system piping dry. The HRV is held closed by the line pressure through the solenoid.

Under FIRE or TEST conditions, an electric detection system working through a control panel, triggers the solenoid to open the HRV, causing water to exit through the Accelerator faster than it can be supplied. Pressure is then released from the main valve control chamber by the opened HRV or the Manual Emergency Release, allowing the main valve to open and water to flow into the system piping and to the alarm device (if mounted).



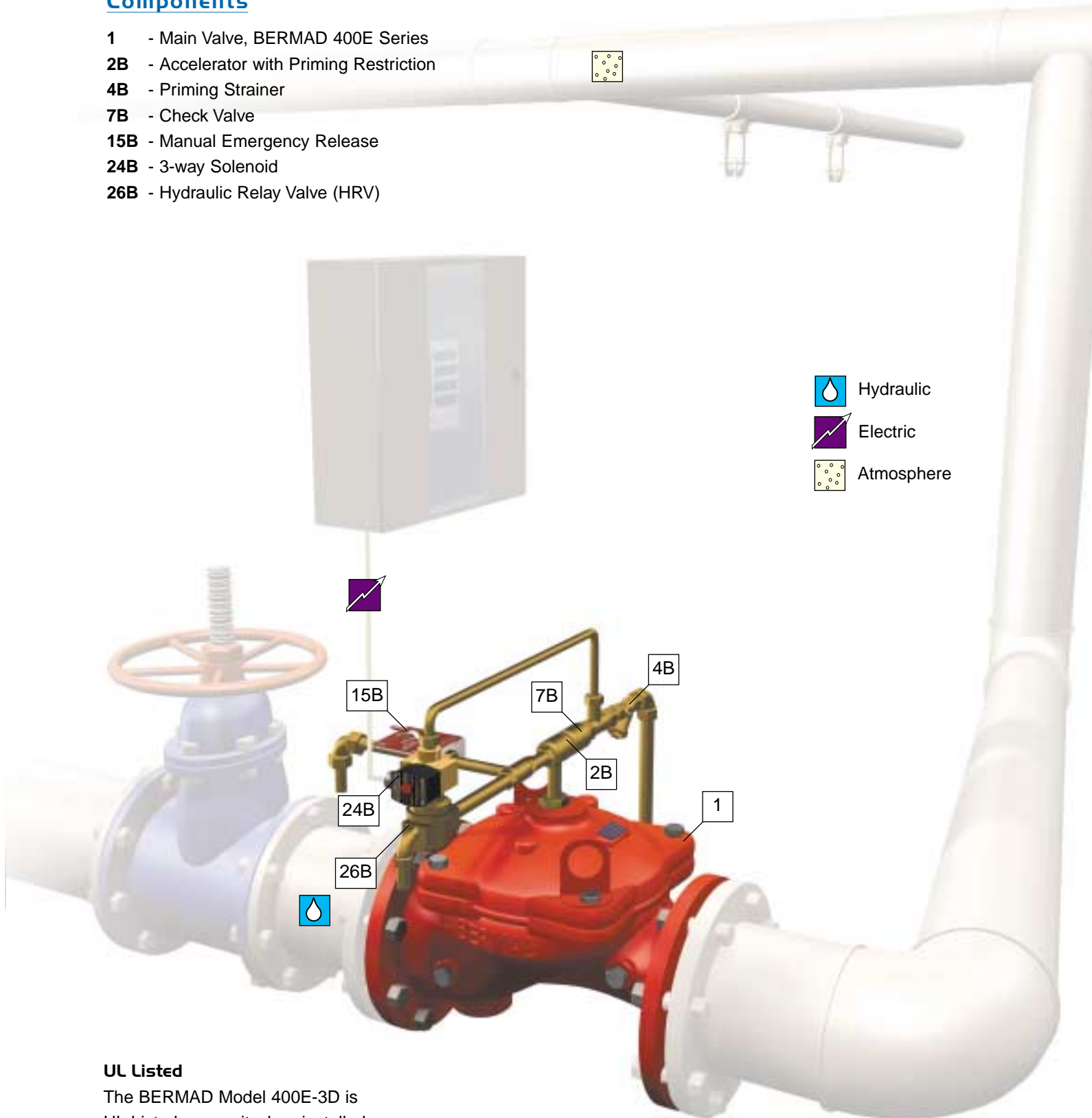
Engineer Specifications




- The deluge valve shall be a UL Listed, electrically controlled elastomeric type globe valve with a **rolling-diaphragm**.
- The valve shall have an **unobstructed flow path**, with no stem guide or **supporting ribs**.
- Valve actuation shall be accomplished by a fully peripherally supported, one-piece balanced rolling-diaphragm, vulcanized with metal insert. The diaphragm assembly shall be the only moving part.
- The valve shall have removable cover for quick in-line service enabling all necessary inspection and servicing.
- The control trim materials shall be S.S.316 tubing and fittings and plated brass accessories, including, Y strainer, 3-way Solenoid, Accelerator, Hydraulic Relay Valve and Manual Emergency Release.
- The Trim shall be supplied as an assembly, pre-assembled and hydraulically tested at an ISO 9000 and 9001 certified factory.
- The Electrically Controlled On-Off Deluge Valve shall open in response to an electric signal.



Components

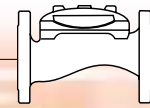
- 1 - Main Valve, BERMAD 400E Series
- 2B - Accelerator with Priming Restriction
- 4B - Priming Strainer
- 7B - Check Valve
- 15B - Manual Emergency Release
- 24B - 3-way Solenoid
- 26B - Hydraulic Relay Valve (HRV)



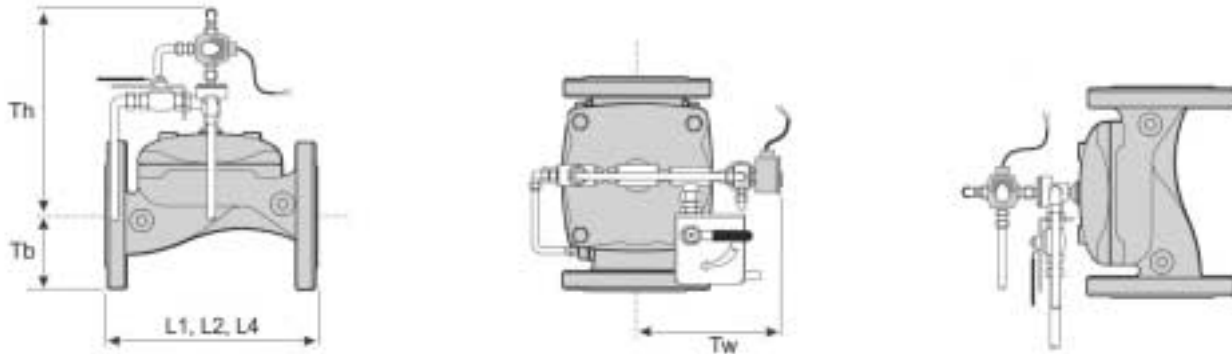
-  Hydraulic
-  Electric
-  Atmosphere

UL Listed

The BERMAD Model 400E-3D is UL Listed as a unit when installed with specific components and accessories.



Technical Data



Valve Size		2"		2½"		3"		4"		6"		8"		10"		12"	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
Dimensions	(1)L1	205	8 ¹ / ₁₆	205	8 ¹ / ₁₆	250	9 ¹³ / ₁₆	320	12 ⁵ / ₈	415	16 ⁵ / ₁₆	500	19 ¹¹ / ₁₆	605	23 ¹³ / ₁₆	725	28 ¹ / ₂
	(2)L2	180	7 ¹ / ₁₆	210	8 ¹ / ₄	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	(3)L4	205	8 ¹ / ₁₆	N/A	N/A	250	9 ¹³ / ₁₆	320	12 ⁵ / ₈	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Tw	318	12 ¹ / ₂	329	12 ¹⁵ / ₁₆	340	13 ³ / ₈	352	13 ¹³ / ₁₆	393	15 ½	423	16 ⁵ / ₈	443	17 ⁷ / ₁₆	481	18 ¹⁵ / ₁₆
	Th	255	10 ¹ / ₁₆	263	10 ³ / ₈	272	10 ¹¹ / ₁₆	282	11 ¹ / ₈	315	12 ⁷ / ₁₆	332	13	330	13	368	14 ¹ / ₂
	Tb	78	3 ¹ / ₁₆	89	3 ¹ / ₂	100	4	112	4 ⁷ / ₁₆	140	5 ¹ / ₂	170	6 ¹¹ / ₁₆	202	8	240	9 ¹ / ₂

Notes:

- L1 is for flanged ANSI #150 and ISO PN16.
- L2 is for threaded female, NPT or BSP.
- L4 is for grooved end connections.
- Provide adequate space around valve for maintenance.
- Data is for envelope dimensions, specific component positioning may vary.

Connection Standard

- Flanged: ANSI B16.42 (Ductile Iron), B16.5 (Steel & Stainless Steel), B16.24 (Bronze) or ISO PN16
- Threaded: NPT or BSP for 2 & 2½"
- Grooved: ANSI/AWWA C606 for 2, 3, 4 & 6"

Water Temperature

- 0.5 – 50°C (33 – 122°F)

Available Sizes

- 2, 2½, 3, 4, 6, 8, 10 & 12"
- UL Listed for sizes 2, 2½, 3, 4, 6, & 8"

Pressure Rating*

- Max. working pressure: 250 psi (17 bar)

* Pressure rating might be limited due to solenoid valve rating

Manufacturers Standard Materials

Main valve body and cover

- Ductile Iron ASTM A-536

Main valve internals

- Stainless Steel 304 & Cast Iron

Control Trim System

- Brass control components/accessories
- Stainless Steel 316 tubing & fittings

Elastomers

- Nylon fabric reinforced polyisoprene

Coating

- Electrostatic Powder Coating Poleyester
- Red (RAL 3000)

Optional Materials

Main valve body

- Carbon Steel ASTM A-216 WCB
- Stainless Steel 316
- Ni-Al-Bronze ASTM B-148

Control Trim

- Stainless Steel 316
- Monel® and Al-Bronze
- Hastalloy C-276

Elastomers

- NBR
- EPDM

Coating

- High Built Epoxy Fusion-Bonded with UV Protection, Anti-Corrosion

Solenoid Pilot Valve

Standard

- 3-way Brass body
- Main Valve closed when de-energized
- Enclosure: General purpose watertight, NEMA 4 and 4X / IP65
- Optional: Explosion-proof NEMA 6, 6P, 7 & 9

Voltage

- 24, 120, DC
- 24, 110, 220, AC 50 Hz (or 24, 120, 240, AC 60 Hz)
- Continuous duty-molded Class F
- Wattage rating: 10.6 DC, 9.5 AC

Approvals

- UL Listed, CSA Certified
- Alternative: ATEX / IEC certified
- Other solenoids available on request

