

Electrically Controlled Deluge Valve with EasyLock Manual Reset

Model: FP 400E-2M



UL LISTED

Typical Applications



Automatic spray or foam systems



Petrochemical facilities



Tunnels



Power plants & transformers



Flammable materials storage



Aviation & airports



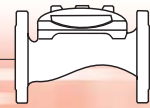
Marine environments

Features and Benefits

- **Latch open** – Closes upon local reset only
- **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

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

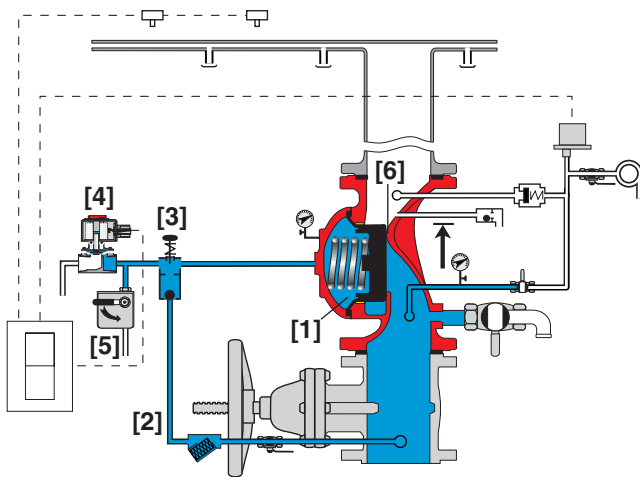


Operation

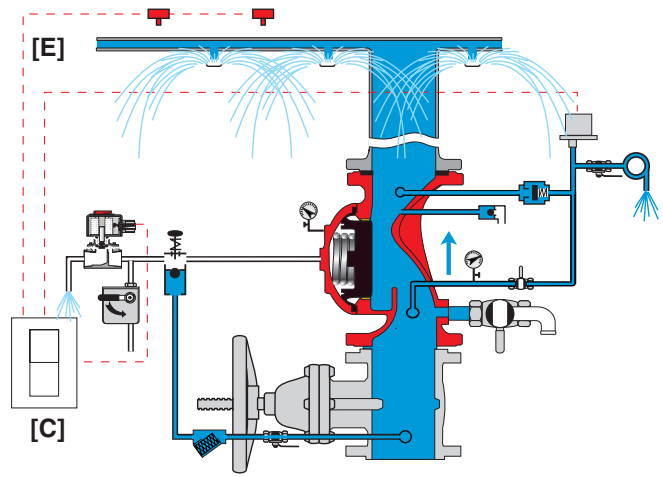
The BERMAD Model 400E-2M is suitable for systems that include electric fire detection and a piping system with a wide variety of open nozzles.

In the SET position, the line pressure supplied to the main valve's control chamber [1] via the priming line [2] and through an EasyLock Manual Reset device (EMR) [3], is trapped by the EMR's internal check valve, by a closed 2-Way Solenoid Valve [4], and by a closed Manual Emergency Release [5]. The trapped pressure holds the main valve's diaphragm and plug against the valve seat [6], sealing it drip tight and keeping the system piping dry.

Under FIRE or TEST conditions, an electric detection system [E], through a control panel [C], triggers the Solenoid Valve to open. Pressure is released from the control chamber by the opened Solenoid Valve, or the Manual Emergency Release. The EMR prevents line pressure from entering the control chamber, allowing the main valve to latch open and water to flow into the system piping and to the alarm device.



Valve Closed (set position)

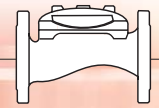


Valve Open (operating condition)

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 a removable cover for quick in-line service, enabling all necessary inspection and servicing.
- The control trim materials shall consist of S.S.316 tubing and fittings, and plated brass accessories including local "EasyLock Manual Reset" (EMR), 2-way Solenoid Pilot Valve, Y strainer 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 Deluge Valve shall latch open in response to an electric signal. The valve shall reset to a closed position only upon local manual activation of the reset device.

BERMAD Fire Protection



Model: FP 400E-2M

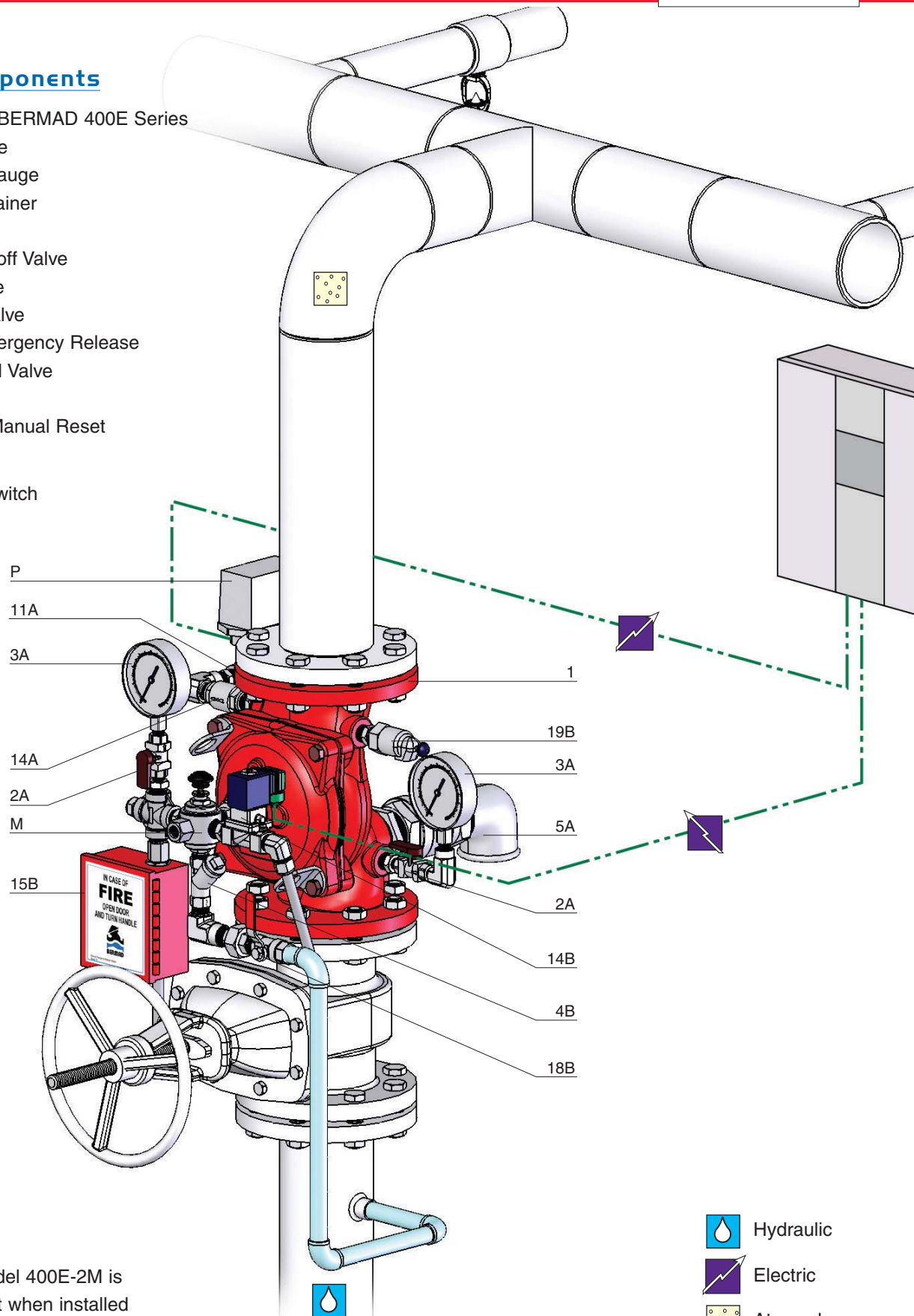
400 Series

System Components

- 1 - Main Valve, BERMAD 400E Series
- 2A - Gauge Valve
- 3A - Pressure Gauge
- 4B - Priming Strainer
- 5A - Drain Valve
- 11A - Alarm Shutoff Valve
- 14A - Check Valve
- 14B - Solenoid Valve
- 15B - Manual Emergency Release
- 18B - Priming Ball Valve
- 19B - Drip Check
- M - EasyLock Manual Reset




Optional

- P - Pressure Switch



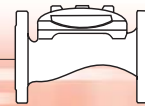
UL Listed

The BERMAD Model 400E-2M is UL Listed as a unit when installed with specific components and accessories.

-  Hydraulic
-  Electric
-  Atmosphere



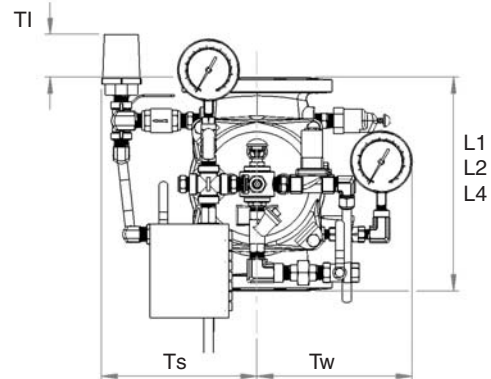
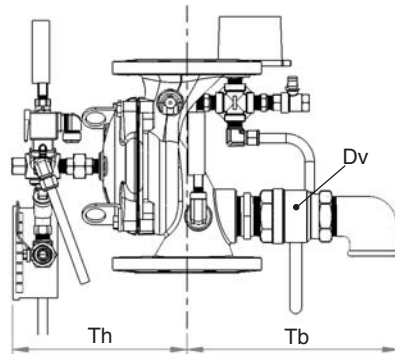
BERMAD Fire Protection



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400 Series

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 ⁹ / ₁₆
	(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	415	16 ⁵ / ₁₆	N/A	N/A	N/A	N/A	N/A	N/A
	TI	142	5 ⁵ / ₈	142	5 ⁵ / ₈	119	4 ¹¹ / ₁₆	84	3 ⁵ / ₁₆	57	2 ¹ / ₄	—	—	—	—	—	—
	Tw	228	9	220	8 ¹¹ / ₁₆	243	9 ⁹ / ₁₆	253	10	312	12 ⁵ / ₁₆	326	12 ¹³ / ₁₆	346	13 ⁵ / ₈	391	15 ³ / ₈
	Ts	228	9	220	8 ¹¹ / ₁₆	243	9 ⁹ / ₁₆	253	10	318	12 ¹ / ₂	191	7 ¹ / ₂	326	12 ¹³ / ₁₆	391	15 ³ / ₈
	Th	305	12	242	9 ¹ / ₂	262	10 ⁵ / ₁₆	261	10 ⁵ / ₁₆	356	14	407	16	407	16	546	21 ¹ / ₂
	Tb	278	10 ¹ / ₁₆	289	11 ³ / ₈	300	11 ¹³ / ₁₆	337	13 ¹ / ₄	378	14 ⁷ / ₈	405	15 ¹⁵ / ₁₆	413	16 ¹ / ₄	473	18 ⁵ / ₈
	Dv Ø	¾"		1½"		1½"		2"		2"		2"		2"		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

Wet Pilot-Line Length

When used, refer to "Maximum Elevation Above Valve" chart, Model 400E-1M

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, Polyester
- 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

- 2-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



info@bermad.com • www.bermad.com

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