

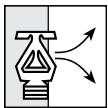
## Electrically Controlled Deluge Valve

with EasyLock™ Manual Reset

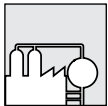
Model: FP 400E-2M



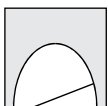
### Typical Applications



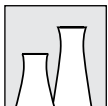
Automatic spray or foam systems



Petrochemical facilities



Tunnels



Power plants & transformers



Flammable materials storage



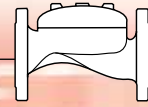
Aviation & airports

### Features and Benefits

- **Latch open** – Closes upon local reset only
- **One-piece molded elastomeric 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: 7/8/9)
- **Seawater service** (add FS as prefix to model)
- **Hydraulic release**
- **Valve Position Single/Double Limit Switches**

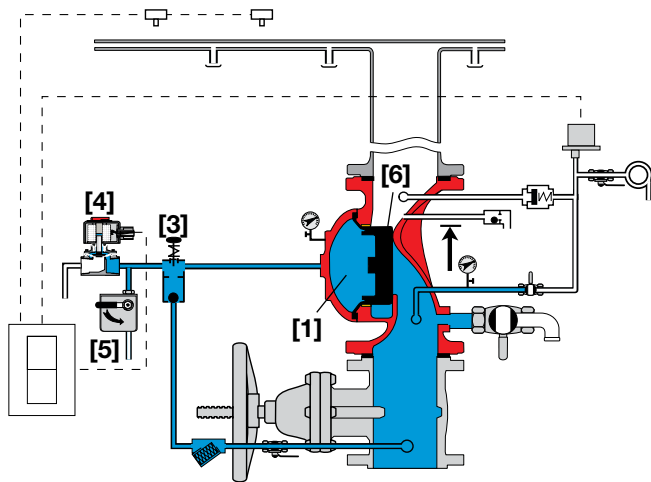


## Operation

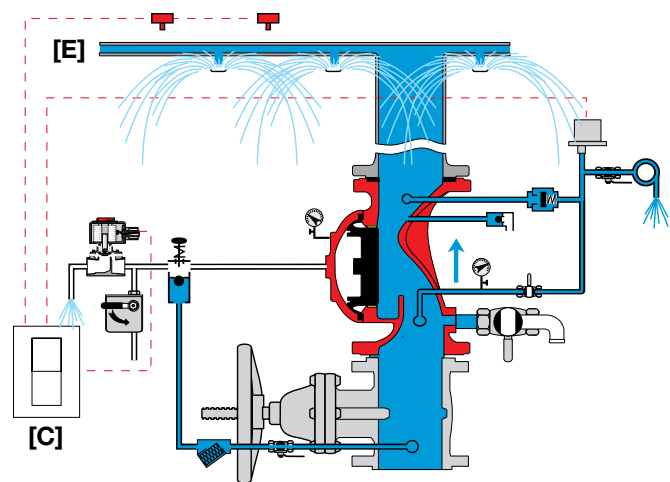
The BERMAD Model FP 400E-2M is suitable for systems that include electric fire detection and a piping system with a wide variety of open nozzles.

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 [3], is trapped by the EasyLock 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 EasyLock 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.



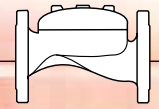
Valve Closed (set position)



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 a rugged radial seal disk. 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, 2-way Solenoid Pilot Valve, Y strainer and Manual Emergency Release.
- The control 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 the closed position only upon local manual activation of the reset device.

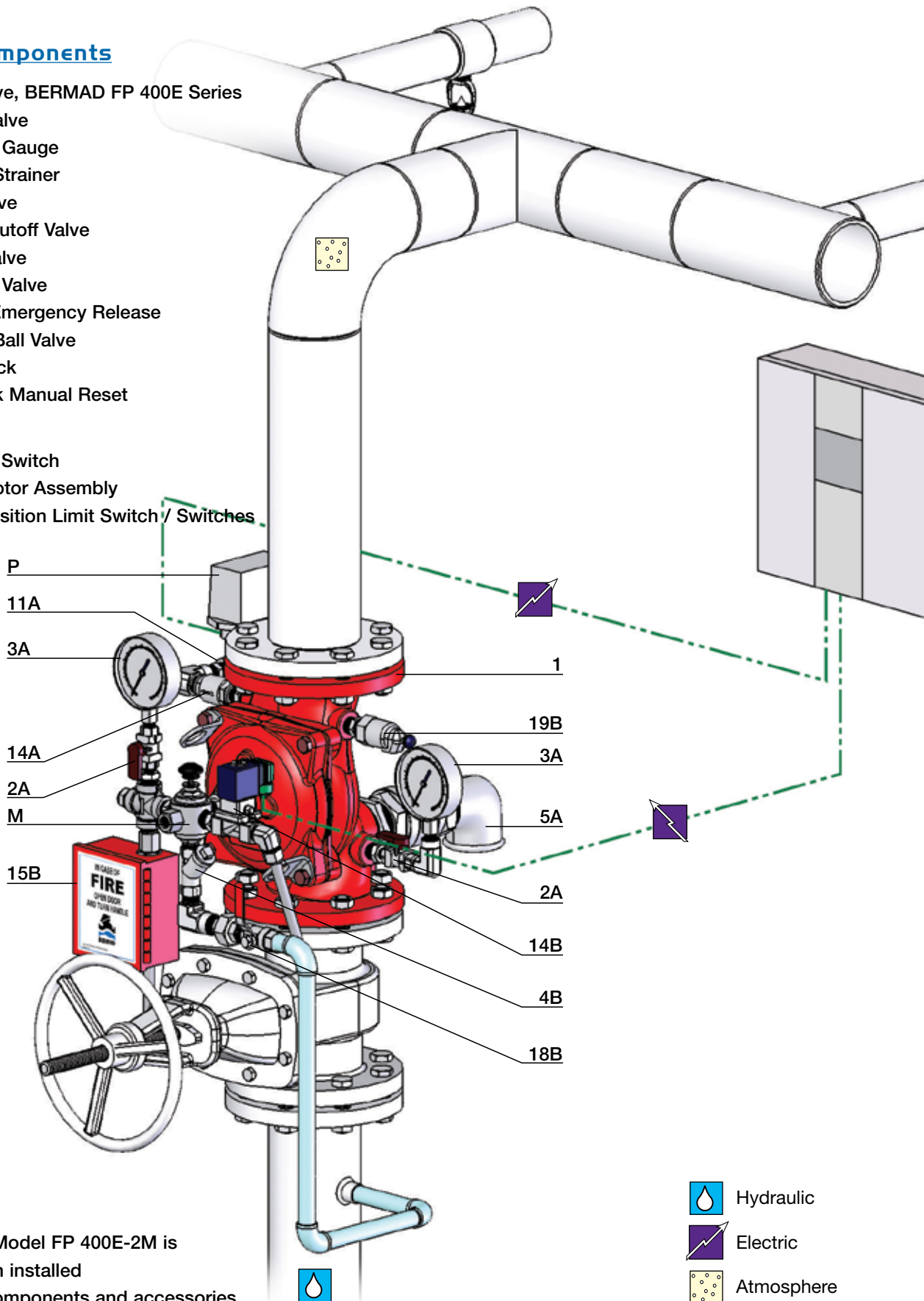


## System Components

- 1 - Main Valve, BERMAD FP 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

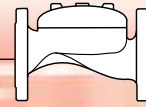
- P - Pressure Switch
- W - Water Motor Assembly
- S - Valve Position Limit Switch / Switches



### UL Listed

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

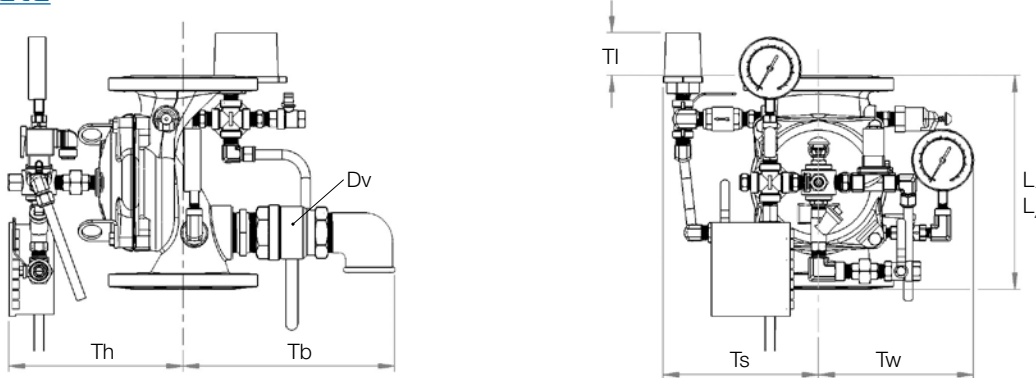
# BERMAD Fire Protection



Model: FP 400E-2M

400 Series

## Technical Data



Size	1½", 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	L <sub>1</sub> <sup>(1)</sup>	205	8 1/16	205	8 1/16	257	10 1/8	320	12 5/8	415	16 5/16	500	19 11/16	605	23 13/16	725	28 9/16
	L <sub>2</sub> <sup>(2)</sup>	205	8 1/16	N/A	N/A	250	9 13/16	320	12 5/8	415	16 5/16	500	19 11/16	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	326	12 13/16	326	12 13/16	391	15 3/8
	Th	226	8 7/8	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"		1 ½"		1 ½"		2"		2"		2"		2"		2"	

- Notes:**
- L<sub>1</sub> is for flanged ANSI #150 and ISO PN16.
  - L<sub>2</sub> is for grooved end connections (Ductile Iron Only).
  - 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)
- ISO PN16
- Grooved: ANSI/AWWA C606 for 2, 3, 4, 6 & 8"

### Water Temperature

- 0.5 – 50°C (33 – 122°F)

### Manufacturers Standard Materials

#### Main valve body and cover

- Ductile Iron ASTM A-536

#### Main valve internals

- Stainless Steel & Elastomer

#### Control Trim System

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

#### Elastomers

- Nylon fabric reinforced polyisoprene NR

#### Coating

- Electrostatic Powder Coating Red (RAL 3002)

### Available Sizes

- 1½, 2, 2½, 3, 4, 6, 8, 10 & 12"
- UL-Listed for sizes 1½, 2, 2½, 3, 4, 6, 8 & 10"

### Pressure Rating\*

- Max. working pressure: 250 psi (17 bar)
- \* Pressure rating might be limited due to solenoid valve rating

### 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 Ni-Al-Bronze
- Hastalloy C-276

#### Elastomers

- NBR
- EPDM

#### Coating

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

### Wet Pilot Line Elevation

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

### Solenoid Pilot Valves

#### Standard

- 2-Way Pilot Operated type
- Brass body
- Main valve closed when de-energized
- Enclosure: General purpose watertight, NEMA 4 and 4X / IP65, Class F
- Power: 24VDC, 8 watts
- UL – Listed
- Options (see also ordering guide)**
- Hazardous locations:
- Class I Division 1, Gr. A, B, C, D, T4 (code 7)
- ATEX, EEx em IIC T4 (code 8)
- ATEX, EEx d IIC T4/5 (code 9)
- Voltage: see ordering guide (voltage options)
- Stainless Steel 316 body material (code K)



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