

## Double Interlock Pre-action, Electric-Electric Release System

Model: FP 400E-7BM



### Description

The BERMAD Model FP 400E-7BM Double Interlock Pre-Action, Electric-Electric Release System is suitable for use in systems requiring that water be kept out of the sprinkler piping until an electric detecting device and a sprinkler have both been activated. Electric-Electric double interlock systems include automatic sprinklers attached to a dry sprinkler piping system, along with a supplementary electric detection system wired to a Cross-Zone releasing control panel, and an Electric Supervised System of low air pressure in the sprinkler system piping. The Double Interlock Pre-Action System admits water into the sprinkler piping only when both the detection device and the supervised systems simultaneously signal the control panel to trigger the solenoid valve.

An anti-flooding feature is provided by utilizing an in-line check valve, which creates an intermediate vented chamber using a Normally Open drip-check.

### Typical Applications



Water damageable material storage:

- Computer & Electronics Rooms
- Libraries, Museums & Archives
- Telecommunications equipment
- Cable spreading rooms
- Oil-filled-transformer rooms



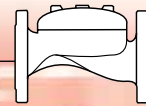
Freezing conditions

### Features and Benefits

- **Latch open** - Closes only upon local reset
- **Factory pre-assembled trim** – Out-of box-quality
- **In-line serviceable** – Minimal down time
- **In-line Check Valve** – intermediate vented chamber- Anti flooding
- **One-piece molded elastomeric moving part** – No maintenance required

### Optional Features

- **Air Maintenance Device (AMD)**
- **Water motor alarm**
- **Valve Position Single/Double Limit Switches**

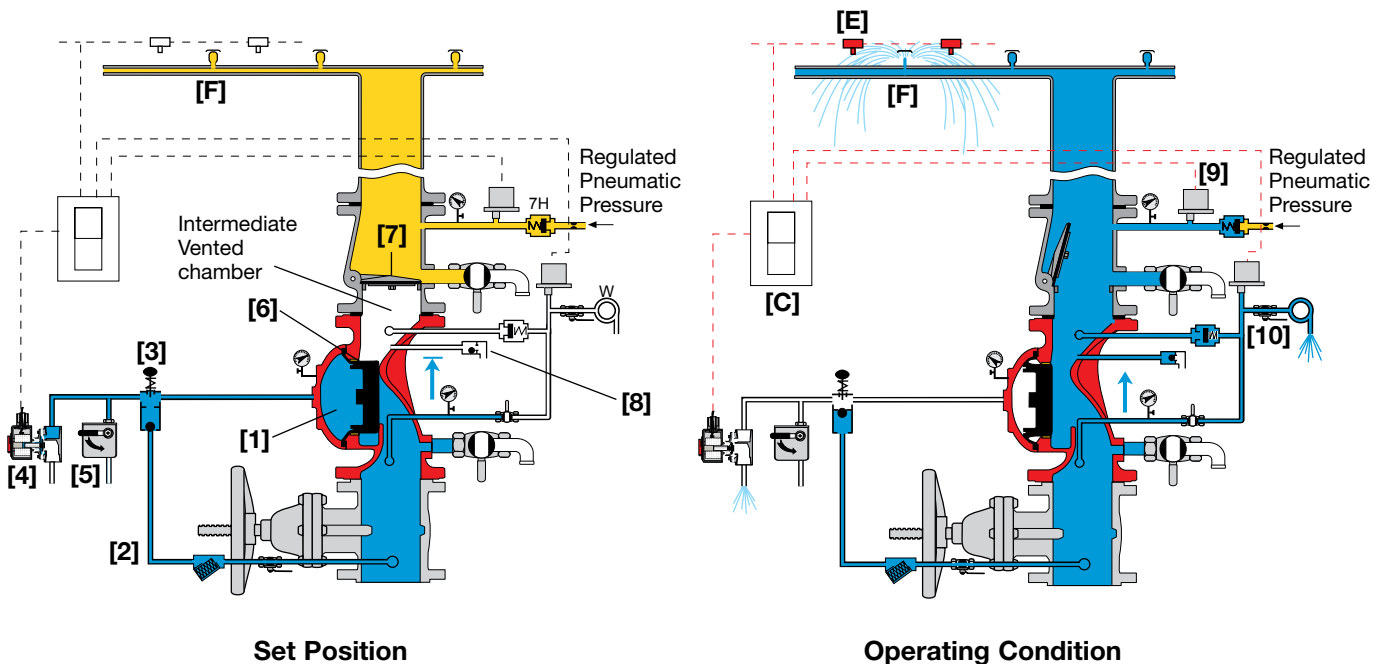


## Operation

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 Easy Lock internal check valve, by a closed 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 bubble tight. The piping system is filled with supervised low air pressure to ensure all automatic sprinklers [F] are sealed. An intermediate vented chamber is created by an in-line swing check valve [7], and a Normally Open drip-check [8].

In the event of FIRE, upon activation of both the electric detection system (E) and the low-air pressure switch [9], that is activated by the air pressure drop in the system piping due to opened sprinkler head (F).

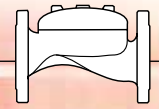
The Cross-Zone Releasing control panel [C] triggers the Solenoid Valve to open, water pressure is then released from the main valve's control chamber. The EasyLock prevents line pressure from entering the control chamber, allowing the pre-action valve to latch open and water to flow into the system piping and to alarm device [10].



## Engineer Specifications

- The pre-action 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 St.St. 316 tubing and fittings, and plated brass accessories, including in line swing check valve with resilient seal, local **EasyLock** Manual Reset, 2-Way Solenoid Pilot Valve, Y strainer, Automatic drip check with manual knob 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 Double Interlock Pre-action, Electric-Electric Release System shall consist of pressure switch low and shall be wired to a Cross-Zone releasing panel.

# BERMAD Fire Protection



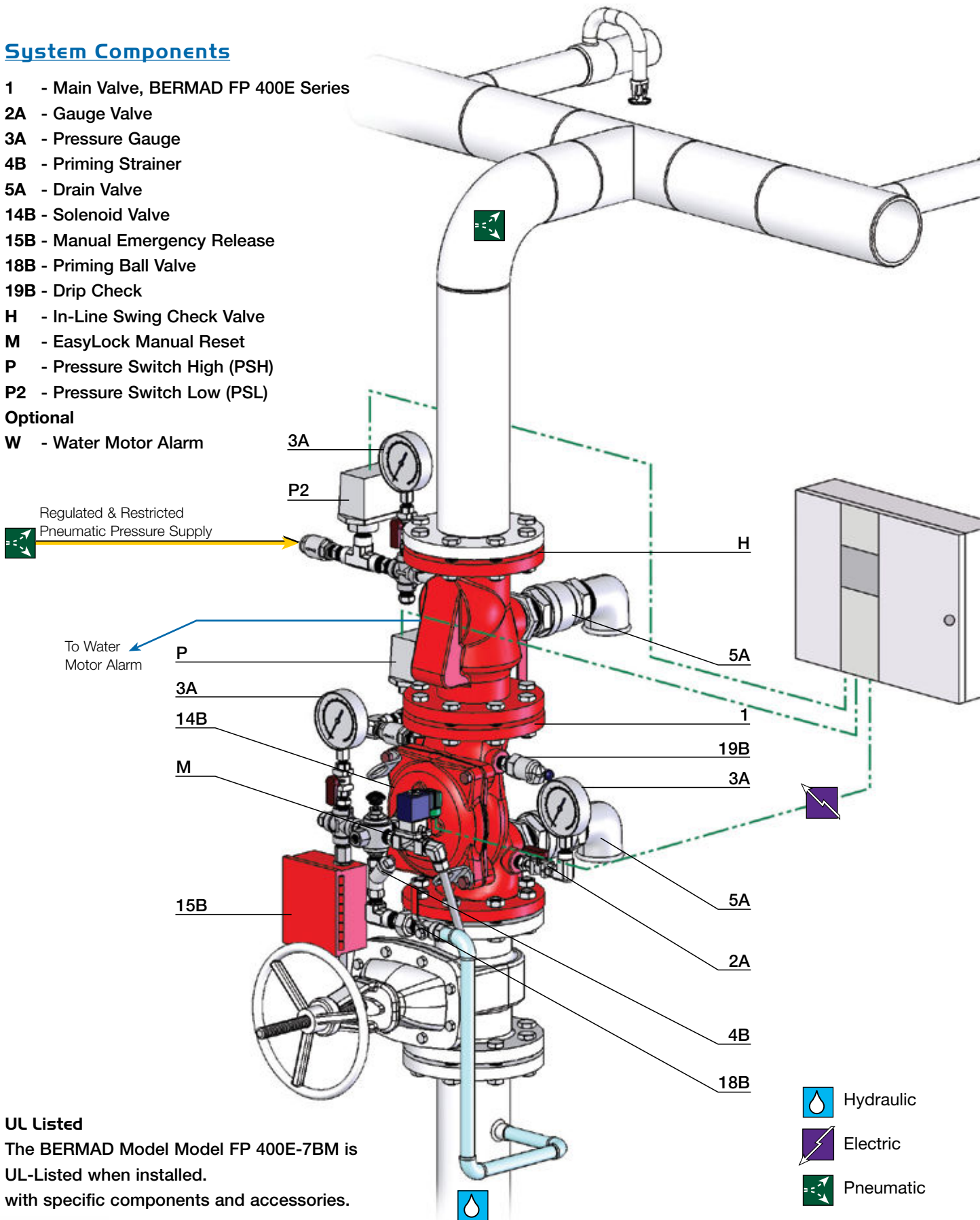
Model: FP 400E-7BM

400 Series

## System Components




- 1 - Main Valve, BERMAD FP 400E Series
- 2A - Gauge Valve
- 3A - Pressure Gauge
- 4B - Priming Strainer
- 5A - Drain Valve
- 14B - Solenoid Valve
- 15B - Manual Emergency Release
- 18B - Priming Ball Valve
- 19B - Drip Check
- H - In-Line Swing Check Valve
- M - EasyLock Manual Reset
- P - Pressure Switch High (PSH)
- P2 - Pressure Switch Low (PSL)
- Optional**
- W - Water Motor Alarm

Regulated & Restricted  
Pneumatic Pressure Supply



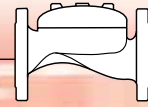
### UL Listed

The BERMAD Model Model FP 400E-7BM is UL-Listed when installed with specific components and accessories.

-  Hydraulic
-  Electric
-  Pneumatic



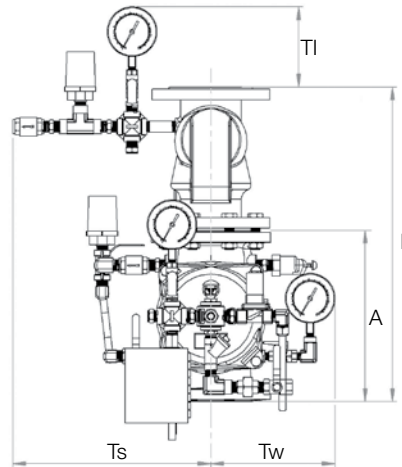
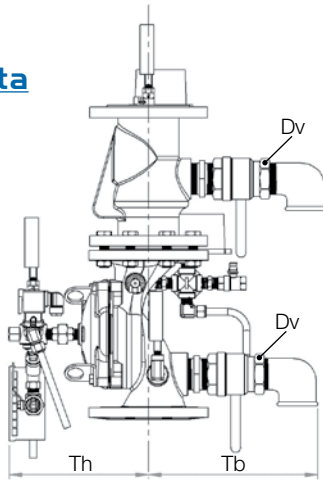
# BERMAD Fire Protection



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## Technical Data



Size	2"		3"		4"		6"		8"		
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
Dimensions	L <sub>1</sub> <sup>(1)</sup>	377	14 <sup>13</sup> / <sub>16</sub>	450	17 <sup>3</sup> / <sub>4</sub>	536	21 <sup>3</sup> / <sub>16</sub>	720	28 <sup>6</sup> / <sub>16</sub>	865	34 <sup>1</sup> / <sub>16</sub>
	L <sub>4</sub> <sup>(1)</sup>	377	14 <sup>13</sup> / <sub>16</sub>	443	17 <sup>7</sup> / <sub>8</sub>	536	21 <sup>3</sup> / <sub>16</sub>	720	28 <sup>6</sup> / <sub>16</sub>	N/A	34 <sup>1</sup> / <sub>16</sub>
	TI	150	5 <sup>7</sup> / <sub>8</sub>	149	5 <sup>7</sup> / <sub>8</sub>	150	5 <sup>7</sup> / <sub>8</sub>	135	5 <sup>5</sup> / <sub>16</sub>	135	5 <sup>5</sup> / <sub>16</sub>
	Tw	208	8 <sup>3</sup> / <sub>16</sub>	223	8 <sup>3</sup> / <sub>4</sub>	233	9 <sup>3</sup> / <sub>16</sub>	272	10 <sup>11</sup> / <sub>16</sub>	326	12 <sup>13</sup> / <sub>16</sub>
	Ts	363	14 <sup>1</sup> / <sub>4</sub>	367	14 <sup>7</sup> / <sub>16</sub>	371	14 <sup>5</sup> / <sub>8</sub>	398	15 <sup>11</sup> / <sub>16</sub>	428	16 <sup>7</sup> / <sub>8</sub>
	Th	205	8 <sup>1</sup> / <sub>16</sub>	241	9 <sup>1</sup> / <sub>2</sub>	261	10 <sup>1</sup> / <sub>4</sub>	336	13 <sup>1</sup> / <sub>4</sub>	407	16
	Tb	230	9 <sup>1</sup> / <sub>16</sub>	300	11 <sup>13</sup> / <sub>16</sub>	317	12 <sup>1</sup> / <sub>2</sub>	338	13 <sup>5</sup> / <sub>16</sub>	405	15 <sup>15</sup> / <sub>16</sub>
	Dv Ø	3/4"		1 1/2"		1 1/2"		2"		2"	

### Notes:

1. L<sub>1</sub> and L<sub>4</sub> are for flanged ANSI #150 and ISO PN16.
2. Provide adequate space around valve for maintenance.
3. 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"

### Leakage Class

- Class VI (ANSI B16.104)

### Sizes

- UL-Listed for sizes 1 1/2, 2, 2 1/2, 3, 4, 6, 8 & 10"

### Water Temperature

- 0.5 – 50°C (33 – 122°F)

### Pressure Rating\*

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

\* Pressure rating might be limited due to solenoid valve rating

### Air Pressure Requirements

- Valve opens on pneumatic pressure drop
- Working pressure 7 – 10psi (0.5 – 0.7 bar)
- Air must be regulated and continually compressed
- Low-pressure alarm switch is factory set to operate at 6psi (0.4 bar)

### 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 Poleyester, Red (RAL 3002)

### 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

#### Elastomers

- NBR
- EPDM

#### Coating

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

### Solenoid Pilot Valve

#### Standard model

- 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 option table)
  - Stainless steel 316 body material (code K)



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