

## Electro-Pneumatically Controlled On-Off Deluge Valve

Model: FP 400E-6D

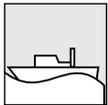


UL LISTED

### Typical Applications



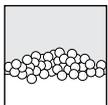
Offshore platforms



Marine environments



Sea water/corrosive water supplies



Foam fire systems



Increased reliability of dry solenoid response



Dual redundant detection systems

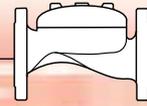
### Features and Benefits

- **Dry solenoid** – Suitable for corrosive water or foam
- **Remote reset** – Shut-off on remote command
- **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

- **Alarm pressure-switch** (code: P or P7)
- **Explosion-proof for hazardous locations** (code: 7/8/9)
- **Fail-safe open** (Energized to close main valve)
- **Seawater service** (add FS as prefix to model)
- **Valve Position Single/Double Limit Switches**

# BERMAD Fire Protection



Model: FP 400E-6D

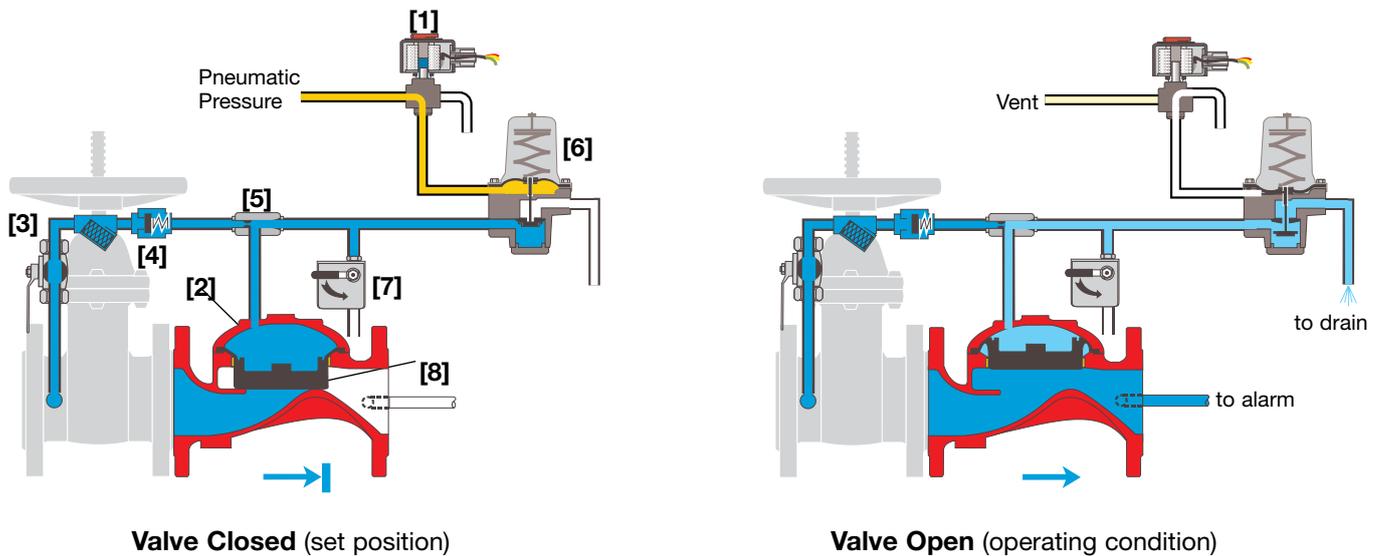
400 Series

## Operation

The BERMAD Model FP 400E-6D is suitable for systems that include electric fire detection and piping systems with a wide variety of open nozzles. Being pneumatically controlled, the Model FP 400E-6D is recommended for those cases, such as seawater installations, where it is advantageous to keep the solenoid [1] dry.

In the SET position the line-pressure, which is supplied to the main valve's control chamber [2] through the priming line [3], a Check Valve [4], and an Accelerator [5] with priming restriction, is trapped by the Check Valve, by a closed Pneumatic Pressure Operated Relief Valve (PORV) [6] and 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 PORV is held closed by the dry pilot line pneumatic pressure through the Solenoid.

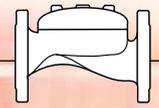
Under FIRE or TEST conditions, a dry pilot line pneumatic pressure drop, or an electric signal that triggers the Solenoid, opens the PORV causing water to exit through the Accelerator faster than it can be supplied. Pressure is then released from the main valve's control chamber through the opened PORV or the Manual Emergency Release, allowing the main valve to fully open, and water to flow into the system piping and to the alarm device (if mounted).



## Engineer Specifications

- The On-Off deluge valve shall be a UL-Listed, electro-pneumatically 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 be S.S.316 tubing and fittings and plated brass accessories, including Y strainer, Accelerator, 3-way Solenoid, PORV, pneumatic pilot valve 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 Electro-Pneumatically Controlled, On-Off Deluge Valve shall open in response to an electric signal or to a dry pilot line pneumatic pressure drop.

# BERMAD Fire Protection

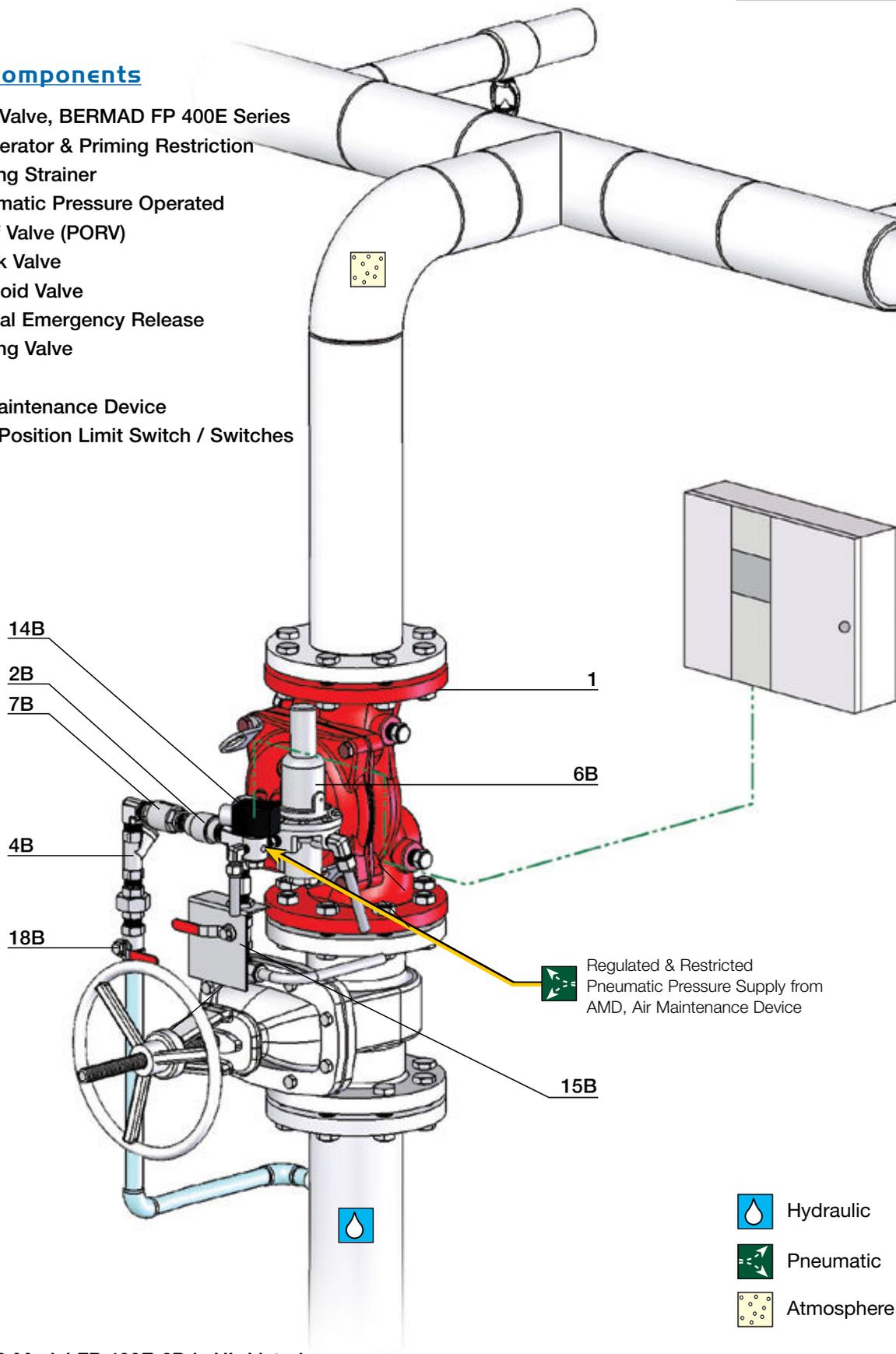


Model: FP 400E-6D

400 Series

## System Components

- 1 - Main Valve, BERMAD FP 400E Series
  - 2B - Accelerator & Priming Restriction
  - 4B - Priming Strainer
  - 6B - Pneumatic Pressure Operated Relief Valve (PORV)
  - 7B - Check Valve
  - 14B - Solenoid Valve
  - 15B - Manual Emergency Release
  - 18B - Priming Valve
- Optional
- AMD - Air Maintenance Device
  - S - Valve Position Limit Switch / Switches



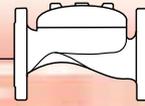
### UL Listed

The BERMAD Model FP 400E-6D is UL-Listed.

The installation shall include Indicating and Drain Components.



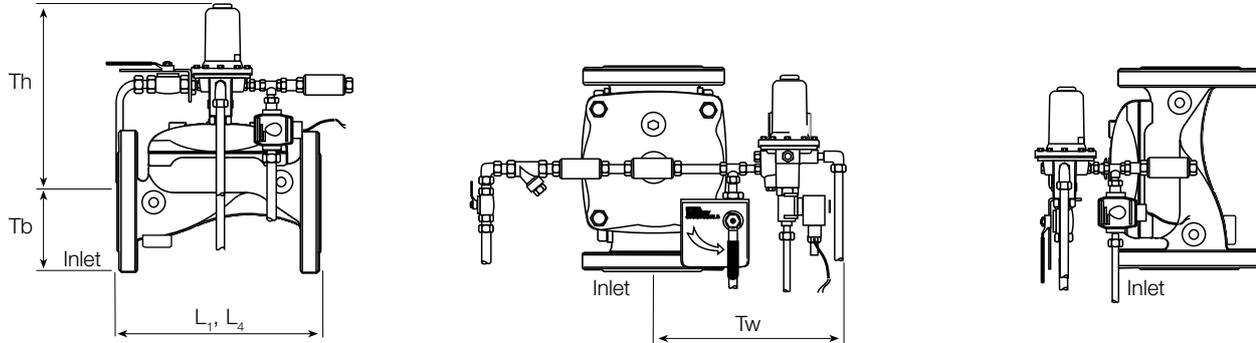
# BERMAD Fire Protection



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## 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	mm	inch	
Dimensions	L <sub>1</sub> <sup>(1)</sup>	205	8 <sup>1</sup> / <sub>16</sub>	205	8 <sup>1</sup> / <sub>16</sub>	205	8 <sup>1</sup> / <sub>16</sub>	257	10 <sup>2</sup> / <sub>16</sub>	320	12 <sup>10</sup> / <sub>16</sub>	415	16 <sup>5</sup> / <sub>16</sub>	500	19 <sup>11</sup> / <sub>16</sub>	607	23 <sup>14</sup> / <sub>16</sub>	725	28 <sup>9</sup> / <sub>16</sub>
	L <sub>4</sub> <sup>(2)</sup>	205	8 <sup>1</sup> / <sub>16</sub>	205	8 <sup>1</sup> / <sub>16</sub>	N/A	N/A	257	10 <sup>2</sup> / <sub>16</sub>	320	12 <sup>10</sup> / <sub>16</sub>	N/A	N/A	500	19 <sup>11</sup> / <sub>16</sub>	N/A	N/A	N/A	N/A
	Tw	255	10 <sup>1</sup> / <sub>16</sub>	255	10 <sup>1</sup> / <sub>16</sub>	255	10 <sup>1</sup> / <sub>16</sub>	255	10 <sup>1</sup> / <sub>16</sub>	255	10 <sup>1</sup> / <sub>16</sub>	255	10 <sup>1</sup> / <sub>16</sub>	255	10 <sup>1</sup> / <sub>16</sub>	255	10 <sup>1</sup> / <sub>16</sub>	255	10 <sup>1</sup> / <sub>16</sub>
	Tb	64	2 <sup>8</sup> / <sub>16</sub>	78	3 <sup>1</sup> / <sub>16</sub>	89	3 <sup>8</sup> / <sub>16</sub>	100	3 <sup>15</sup> / <sub>16</sub>	115	4 <sup>8</sup> / <sub>16</sub>	140	5 <sup>8</sup> / <sub>16</sub>	172	6 <sup>12</sup> / <sub>16</sub>	204	8 <sup>1</sup> / <sub>16</sub>	242	9 <sup>8</sup> / <sub>16</sub>
	Th	289	11 <sup>6</sup> / <sub>16</sub>	289	11 <sup>6</sup> / <sub>16</sub>	301	11 <sup>14</sup> / <sub>16</sub>	325	12 <sup>13</sup> / <sub>16</sub>	345	13 <sup>9</sup> / <sub>16</sub>	420	16 <sup>9</sup> / <sub>16</sub>	471	18 <sup>9</sup> / <sub>16</sub>	471	18 <sup>9</sup> / <sub>16</sub>	588	23 <sup>2</sup> / <sub>16</sub>

- Notes:**
- L<sub>1</sub> is for flanged ANSI #150 and ISO PN16.
  - L<sub>4</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)

### 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)

### PORV Setting

- Valve opens on pilot line pressure drop factory set: 20 psi (1.5 bar)

### 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 NR

#### Coating

- Electrostatic Powder Coating Polyester, 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
- Monel) and Al-Bronze
- Hastalloy C-276

#### Elastomers

- NBR
- EPDM

#### Coating

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

### Solenoid Pilot Valve

#### Standard

- 3-Way, direct actuated 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)
  - Class I Division 2, Gr. A, B, C, D, T4
  - ATEX, EEx d IIC T5 (code 9)
- Voltage: see ordering guide (voltage options)
- Stainless steel 316 body material (code K)



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