

## Pneumatically Operated, Remote Controlled Monitor Valve

Model: FP 400E-4X



### Description

The Bermad Remote Controlled On-Off valves replace motor driven valves or actuated quarter turn valves. They are especially suitable for oscillating or remote controlled Monitors, and for installation in modern foam systems where a shut-off function is required. The Pneumatically actuation provides maximum safety also in seawater and foam concentrate applications.

### Typical Applications



Remote monitor



Foam systems



Zone isolating, on-off remote control



Offshore platforms / marine vessels



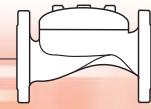
Seawater/corrosive water supply

### Features and Benefits

- **3-Way control system** – Avoids continuous releasing
- **Smooth opening and closing characteristics** – Prevents water surge
- **One-piece vulcanized diaphragm** – Reliability
- **Quick cover removal** – Minimal downtime

### Optional Features

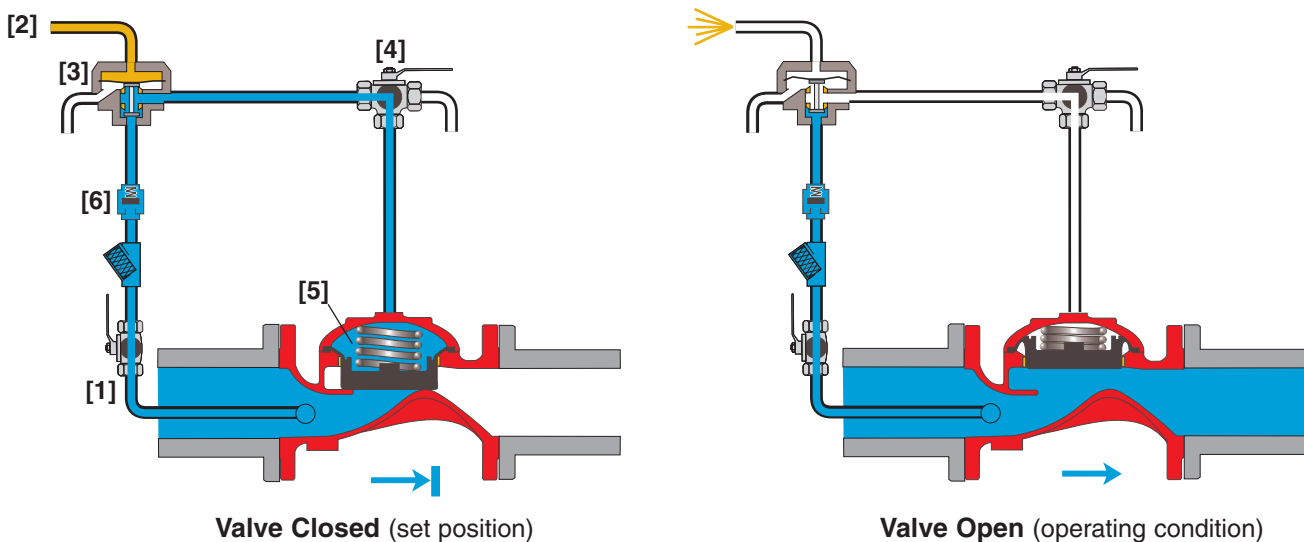
- **Seawater service** (add FS as prefix to model)
- **Foam concentrate service** (add FC as prefix to model)
- **Electric indication** (Limit Switch or Pressure Switch)



## Operation

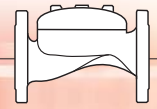
The Model FP 400E-4X is an on/off pneumatic remote controlled valve designed to open and close drip-tight in response to an external pneumatic pressure command. It is a line pressure driven, diaphragm actuated globe valve, which harnesses line pressure [1] to develop maximum hydraulic power. Dry pilot line pneumatic pressure [2] is applied, to a 3-way Relay Valve (HRV-3) [3], opening it. Through the override cock valve [4], the HRV-3 applies upstream pressure to the valve's control chamber [5] closing the main valve.

Under FIRE condition, a dry pilot line pneumatic pressure drop, closes the ARV-3, which then vents the valve's control chamber allowing the main valve to open. The Check Valve [6] traps high pressure peaks, ensuring that the valve remains locked in the closed position to maintain drip-tight sealing.



## Engineer Specifications

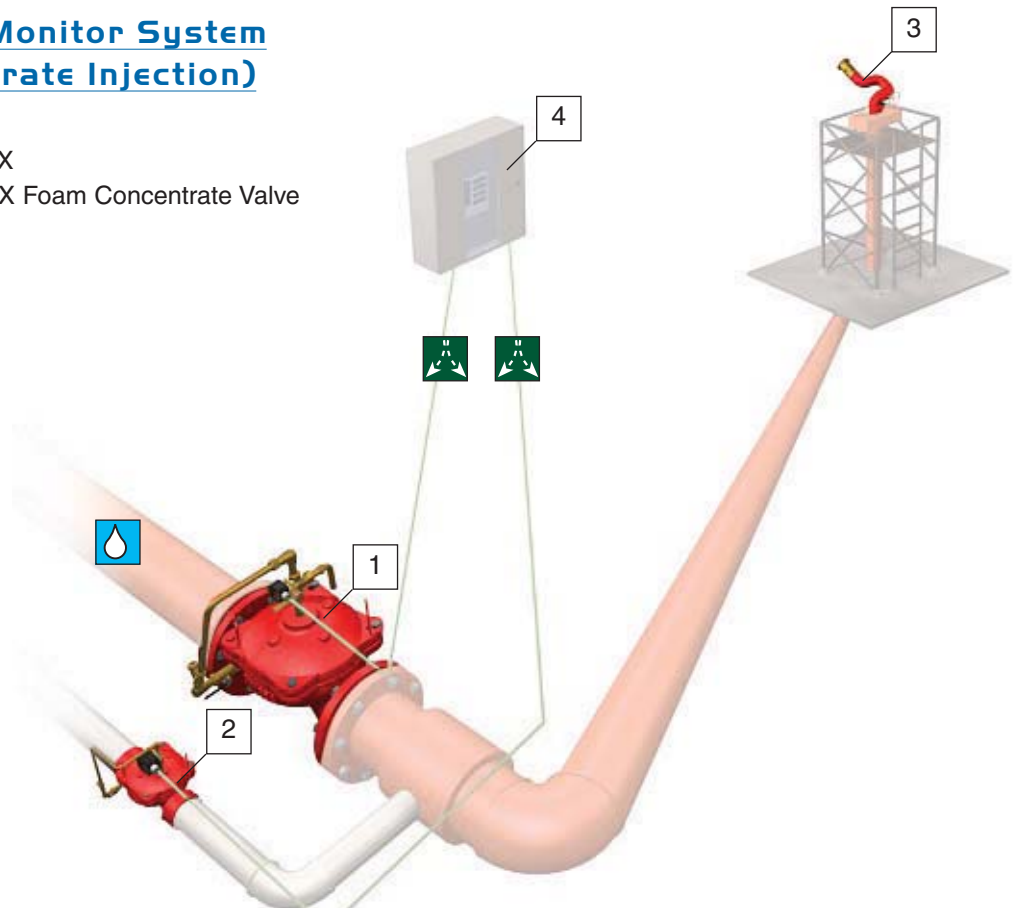
- The valve shall be pneumatically operated elastomeric type globe valve with a **rolling-diaphragm**.
- The valve shall have an **unobstructed flow path**, with no stem guide or **supporting ribs**.
- Valve actuation shall be accomplished by a fully peripherally supported, one-piece balanced rolling-diaphragm, 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 shall consist of non-corrosive tubing and fittings, and plated brass accessories, including 3-way Relay Valve (ARV-3), Y strainer, 3-Way Manual Override Valve and check valve.
- The control trim shall be supplied as an assembly, pre-assembled and hydraulically tested at an ISO 9000 and 9001 certified factory.
- The Pneumatically Controlled Valve shall open and close in response to a dry pilot line pneumatic pressure drop.



## Remote Controlled Monitor System (with Foam Concentrate Injection)

### System Components

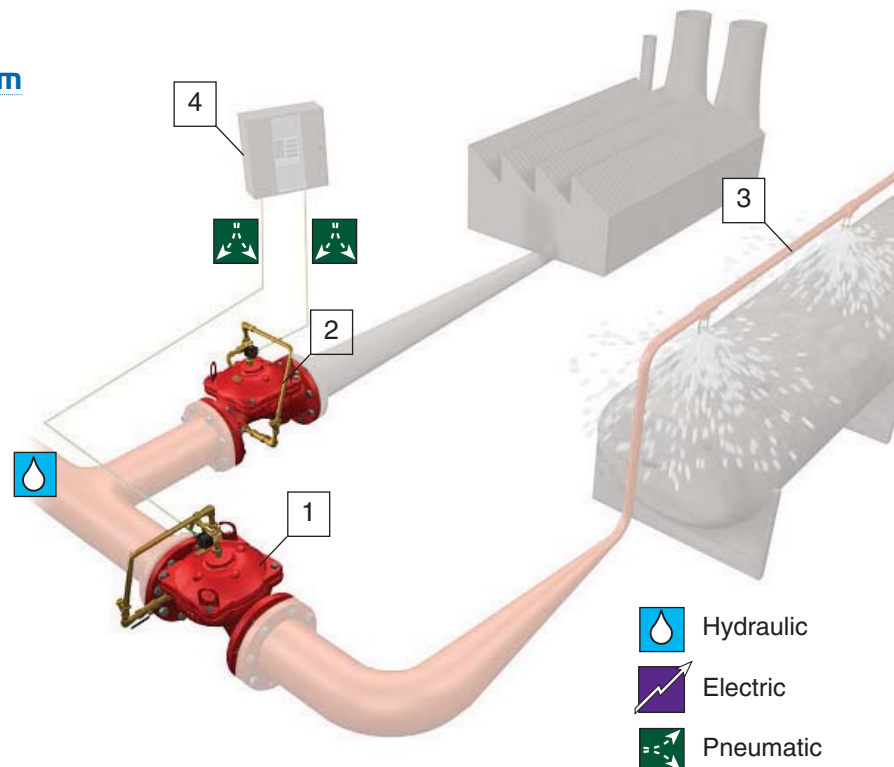
- 1 - BERMAD Model FP 400E-4X
- 2 - BERMAD Model FC 400E-4X Foam Concentrate Valve
- 3 - Remote Controlled Monitor
- 4 - Pneumatic Control Panel






## Emergency Zone Isolation System

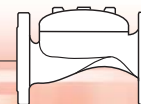
### System Components

- 1 - BERMAD FP 400E Deluge Valve
- 2 - BERMAD Model FP 400E-4X Remote Controlled Shut-off Valve
- 3 - Deluge Spray System
- 4 - Pneumatic Control Panel



-  Hydraulic
-  Electric
-  Pneumatic

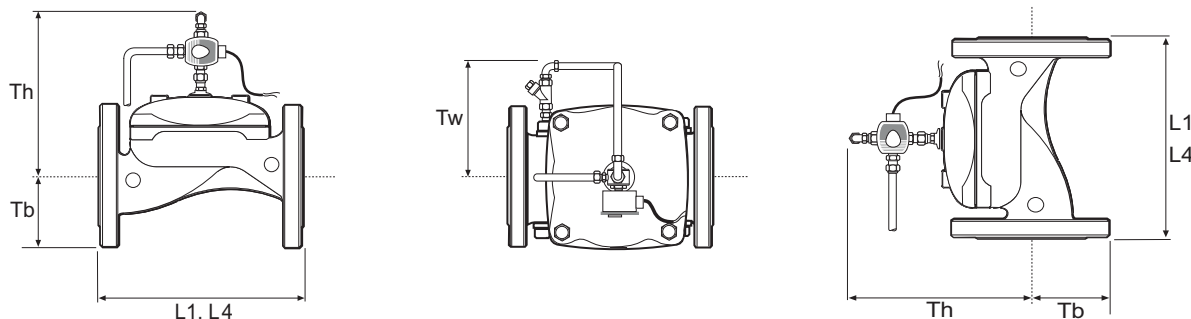
# BERMAD Fire Protection



Model: FP 400E-4X

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	mm	inch	
Dimensions	(1)L1	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>
	(2)L4	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	N/A	N/A	N/A	N/A	N/A	N/A
	Tw	133	5 <sup>4</sup> / <sub>16</sub>	133	5 <sup>4</sup> / <sub>16</sub>	139	5 <sup>8</sup> / <sub>16</sub>	142	5 <sup>9</sup> / <sub>16</sub>	163	6 <sup>7</sup> / <sub>16</sub>	211	5 <sup>9</sup> / <sub>16</sub>	225	8 <sup>14</sup> / <sub>16</sub>	225	8 <sup>4</sup> / <sub>16</sub>	289	11 <sup>6</sup> / <sub>16</sub>
	Tb	64	2 <sup>9</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	150	5 <sup>14</sup> / <sub>16</sub>	150	5 <sup>14</sup> / <sub>16</sub>	162	6 <sup>6</sup> / <sub>16</sub>	186	7 <sup>5</sup> / <sub>16</sub>	206	8 <sup>2</sup> / <sub>16</sub>	281	11 <sup>1</sup> / <sub>16</sub>	332	13 <sup>1</sup> / <sub>16</sub>	332	13 <sup>1</sup> / <sub>16</sub>	449	17 <sup>11</sup> / <sub>16</sub>

### Notes:

- L1 is for flanged ANSI #150 and ISO 16
- L4 is for grooved end connections.
- Provide adequate clearance 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"

### Water Temperature

- 0.5 – 50°C (33 – 122°F)

### Available Sizes

- 1½, 2, 2½, 3, 4, 6, 8, 10 & 12"

### Pressure Rating

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

### Air Pressure Supply

- Valve opens on pneumatic pressure drop
- Minimum Pneumatic pressure – 5 bar
- Pneumatic Pilot line must be continually pressurized to keep the main valve closed.
- Optional: Fail Safe Close (pressure to open)

## Materials

### 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

- Polyamide 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
- Hastelloy C-276

#### Elastomers

- NBR
- EPDM

#### Coating

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



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