

Electro-Pneumatically Operated, Remote Controlled Monitor Valve

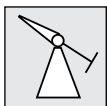
Model: FP 400E-6X



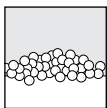
Description

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 Electro-Pneumatically actuation by a compact solenoid is resource saving, while providing maximum safety also in seawater and foam concentrate applications.

Typical Applications



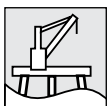
Remote monitor



Foam systems



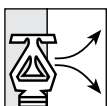
Zone isolating, on-off remote control



Offshore platforms / marine vessels



Sea water/corrosive water supplies



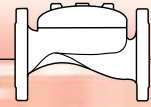
Increased reliability of dry solenoid

Features and Benefits

- **3-Way control system** – Avoids continuous releasing
- **Simple design** – Cost effective
- **Smooth opening and closing characteristics** – Prevents water surge
- **One-piece molded elastomeric moving part** – No maintenance required
- **Quick cover removal** – Minimal downtime
- **Remote reset** – Shut-off on remote command

Optional Features

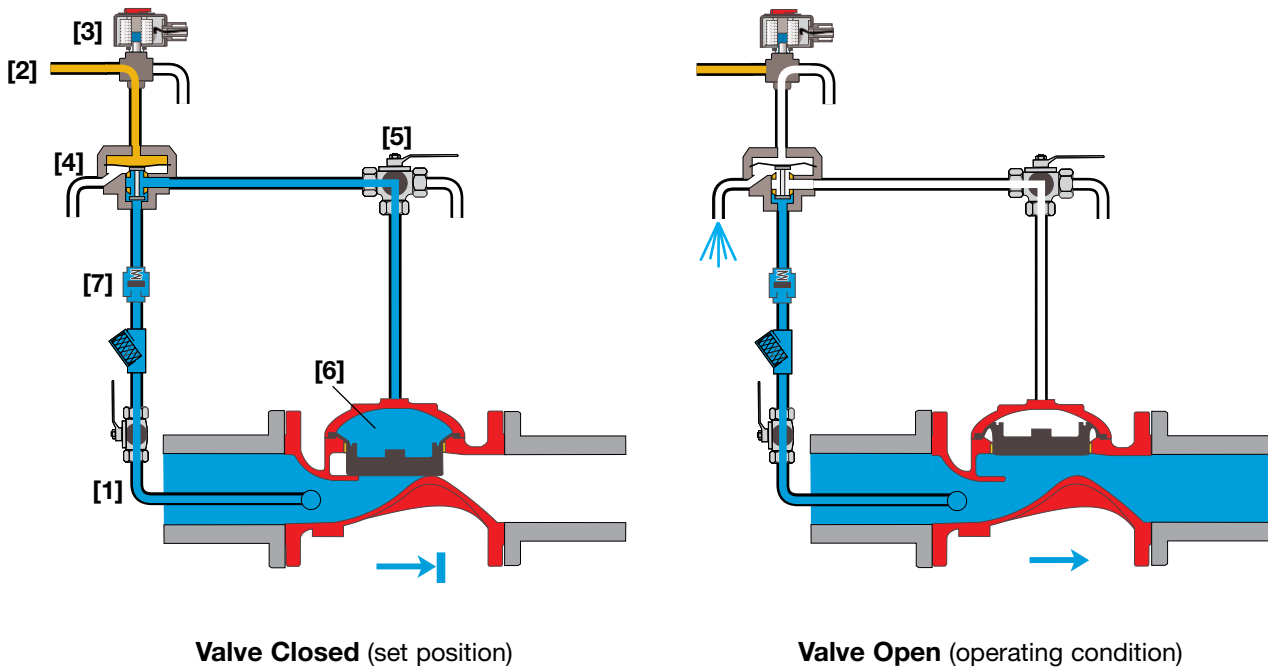
- **Seawater service** (add FS as prefix to model)
- **Foam concentrate service** (add FC as prefix to model)
- **Explosion-proof for hazardous locations** (code: 7/8/9)
- **Dry solenoid pilot valve** (for corrosive media)
- **Electric indication** (Limit Switch or Pressure Switch)
- **Valve Position Single/Double Limit Switches**



Operation

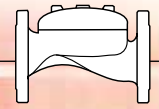
The Model FP 400E-6X is an on/off solenoid controlled valve designed to open and close drip-tight in response to an electric signal, using external pneumatic pressure (see data for minimum air pressure supply). It is a line pressure driven, diaphragm actuated globe valve, which harnesses line pressure [1] to develop maximum hydraulic power. Dry pilot line pneumatic pressure [2] is applied, through a 3-Way Solenoid [3], to a 3-way Relay Valve (HRV-3) [4], opening it. Through the override cock valve [5], the HRV-3 applies upstream pressure to the valve's control chamber [6] closing the main valve.

The Model FP 400E-6X can be supplied in either the standard normally closed (energize to open) or the optional fail safe open (energize to close) configuration. The solenoid can be supplied in various voltages and specifications. The Check Valve [7] traps high pressure peaks, ensuring that the valve remains locked in the closed position to maintain drip-tight sealing.



Engineer Specifications

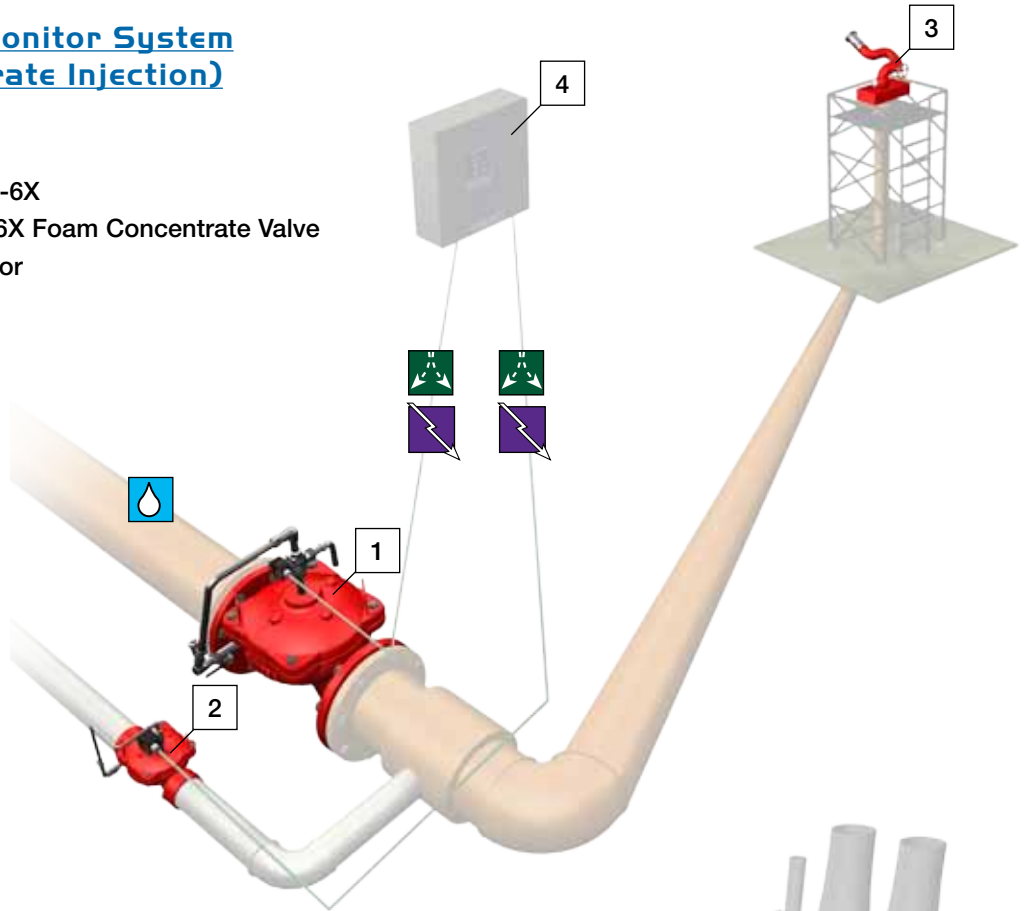
- The valve shall be electro-pneumatically operated elastomeric type globe valve with a **rolling-diaphragm**.
- The valve shall have an **unobstructed flow path**, with no stem guide or **supporting ribs**.
- Valve actuation shall be accomplished by a fully peripherally supported, one-piece balanced 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 Solenoid Valve, 3-Way Relay Valve HRV-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 Electro-Pneumatically Controlled Valve shall open and close in response to an electric signal or to a dry pilot line pneumatic pressure drop.



Remote Controlled Monitor System (with Foam Concentrate Injection)

System Components

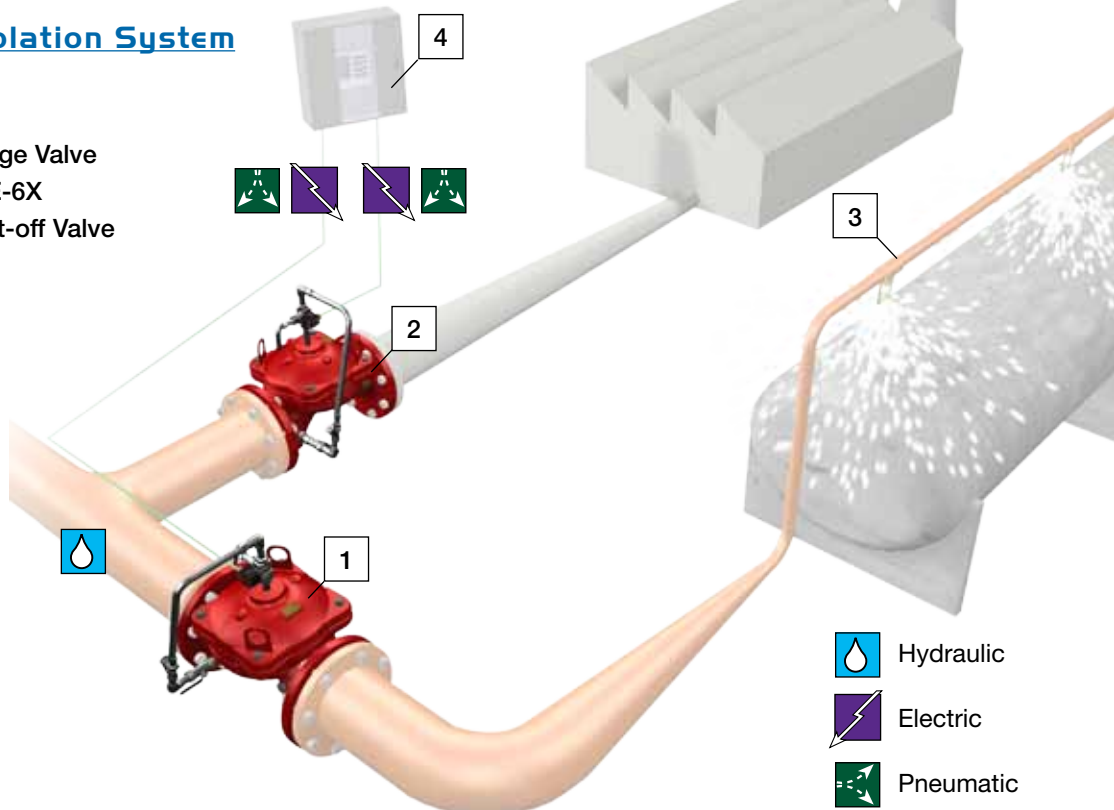
- 1 - BERMAD Model FP 400E-6X
- 2 - Bermad Model FC 400E-6X Foam Concentrate Valve
- 3 - Remote Controlled Monitor
- 4 - Control Panel






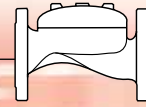
Emergency Zone Isolation System

System Components

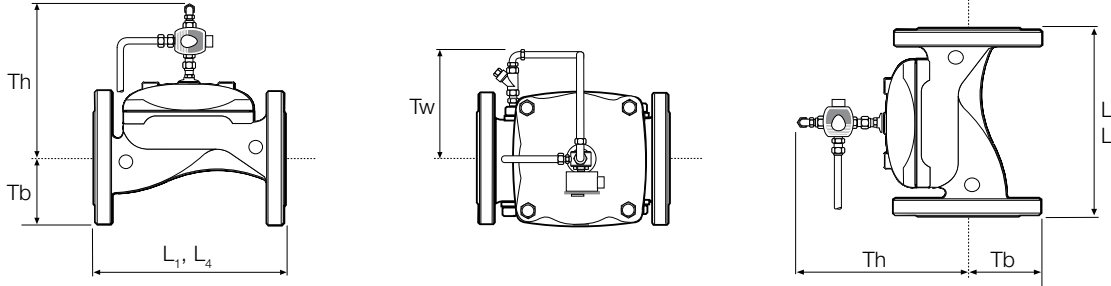
- 1 - BERMAD FP 400E Deluge Valve
- 2 - Bermad Model FP 400E-6X Remote Controlled Shut-off Valve
- 3 - Deluge Spray System
- 4 - Control Panel



-  Hydraulic
-  Electric
-  Pneumatic



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

- Notes:**
- L₁ is for flanged ANSI #150 and ISO PN16.
 - L₄ 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"

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)

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

