

Zero Pressure, Solenoid Activated, Foam-Concentrate Valve

Model: FC 700E-3X-BO



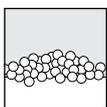
Description

The BERMAD FC 700E-3X-N-BO is a Double Chambered hydraulically powered Foam-concentrate valve, which is electrically activated by a solenoid valve. The valve is actuated by fire water from the Main, which makes it independent from the foam concentrate line's pressure. Hence it may operate when line pressure is low or even in non-pressurized systems. This makes it best suited for installation at the discharge of atmospheric tanks.

The valve is Fail-safe Close and designed with an "over the seat flow" opening to ensure drip-tight sealing and safe operation.

The FC 700E-3X-N-BO replaces mechanical actuated valves or pilot-operated solenoid valves, providing safer operation of modern foam systems, thus assuring maximum reliability of the entire fire-fighting system.

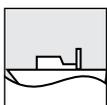
Typical Applications



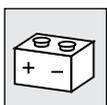
Foam systems



Zone isolating, on-off remote control



Marine environments



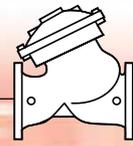
Emergency low DC power activation

Features and Benefits

- **Double chambered Actuation** – Zero Line Pressure
- **Obstacle free full bore** – Uncompromising reliability
- **In line serviceable** – Minimum downtime and easy maintenance
- **Electric Remote Opening** – Automatically controlled
- **3-Way control system** – avoids continuous releasing

Optional Features

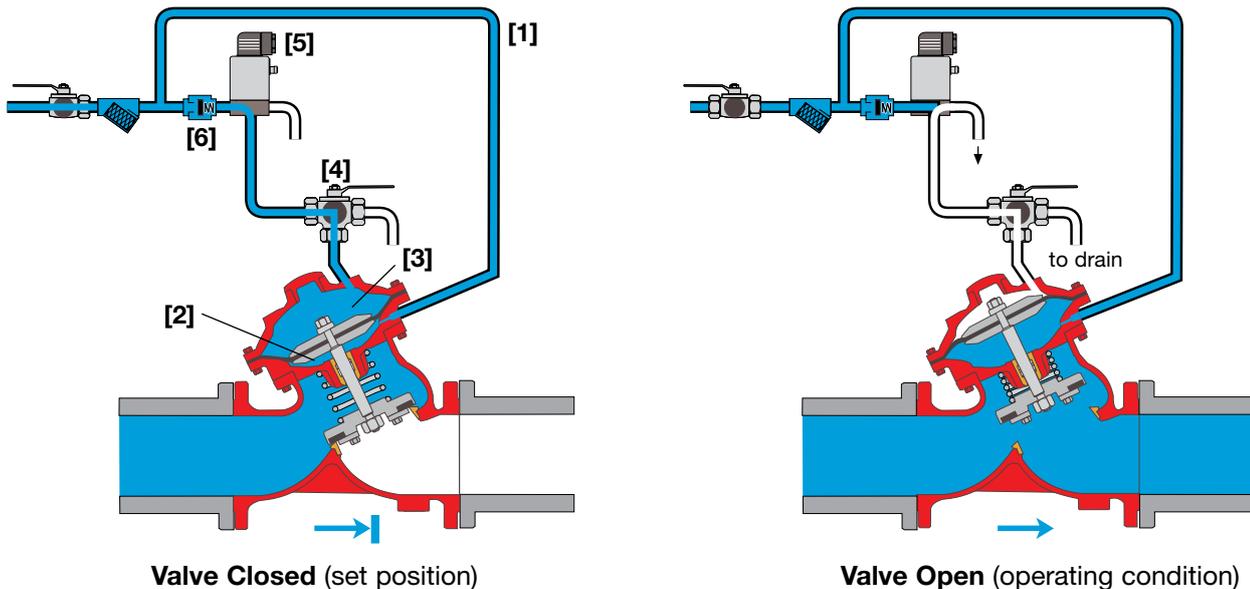
- **Explosion-proof for hazardous locations** (code: 7/8/9)
- **Valve position indicator**
- **Electric indication** (Limit Switch or Pressure Switch)



Operation

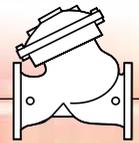
The BERMAD FC 700E-3X-N-BO is a Water Actuated Foam-concentrate valve, it is double chambered actuated valve, hydraulically powered opening and “over the seat flow” with Fail safe Close feature. The FC-700E-3X-BO is a “Y” pattern, diaphragm actuated, double chambered, water driven valve that required firewater external source, as a priming pressure to be able to activate. The water priming line pressure [1] is connected to both Lower [2] and Upper [3] control chambers. The pressure to the upper chamber is provided through a manual override valve [4] and through the 3-Way solenoid valve [5]. The check valve [6] traps high pressure peaks in the main line ensuring that the main valve remains locked in the closed position to maintain a drip tight sealing.

The 3-Way solenoid valve applies water pressure to the upper control chamber balancing the diaphragm and enable the spring to push the seal disc to the seat thus holding the main valve closed and sealed. When the solenoid is energized the valve upper chamber is vented while lower chamber is fully pressurized, the actuator is hydraulically powered, allowing the valve seal disc to open and fluid to flow through the valve discharge to the system.



Engineer Specifications

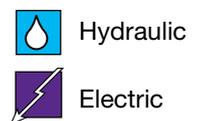
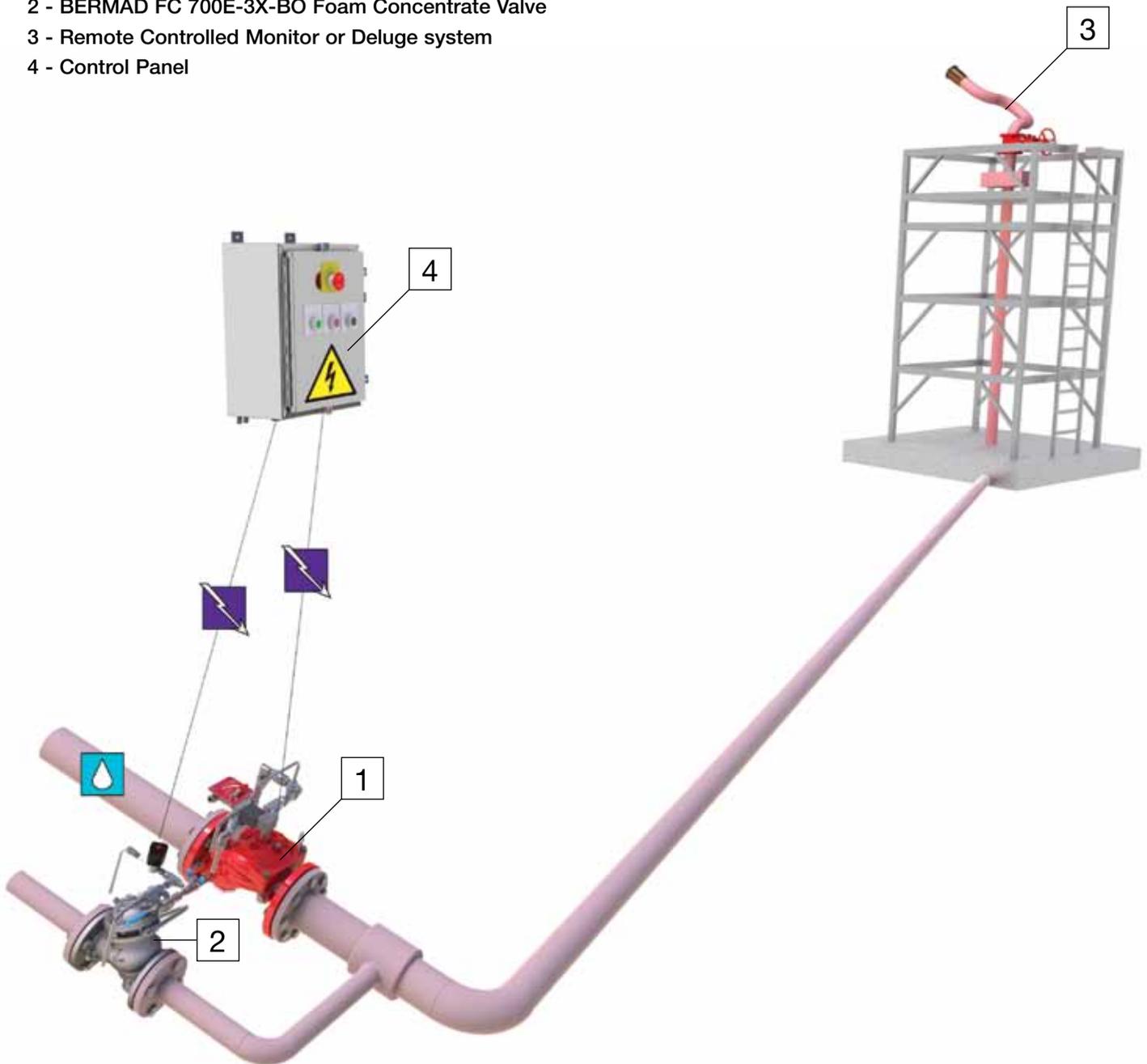
- The valve shall be a solenoid controlled “Y” pattern body with **integral unitized double chamber actuator**.
- Valve actuation shall be accomplished by one moving assembly, which shall include the diaphragm assembly, a flat seal disk and a stainless steel stem.
- All valve body and internal parts shall be of stainless steel and have an **unobstructed flow path**, with no stem guide or **supporting ribs**.
- The valve actuator shall be removable for quick in-line service enabling all necessary inspection and servicing.
- The control trim shall consist of stainless steel 316 tubing, fittings and accessories, including stainless steel 3-Way
- The control Trim shall be supplied as an assembly, pre-assembled and hydraulically tested at an ISO 9000 and 9001 certified factory.
- The Solenoid Controlled Valve shall open and close in response to an electric signal.

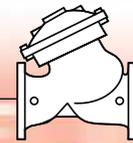


Remote Controlled Monitor System (with Foam Concentrate Injection)

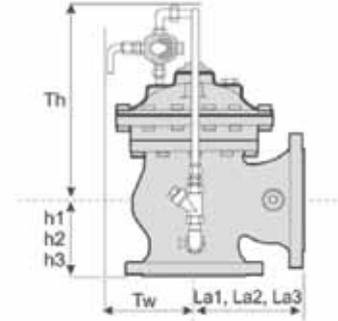
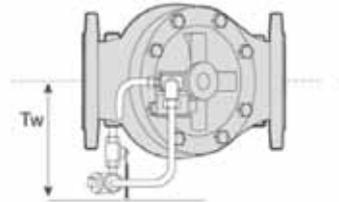
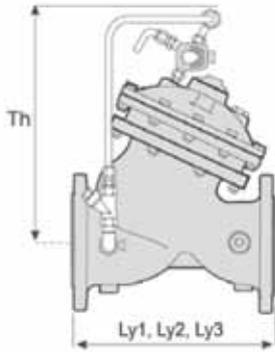
System Components

- 1 - BERMAD Deluge valve
- 2 - BERMAD FC 700E-3X-BO Foam Concentrate Valve
- 3 - Remote Controlled Monitor or Deluge system
- 4 - Control Panel





Technical Data



Size	1½"		2"		2½"		3"		4"		
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
Dimensions	Ly ₁ ⁽¹⁾	205	8 ¹ / ₁₆	205	8 ¹ / ₁₆	209	8 ¹ / ₄	250	9 ⁷ / ₈	320	12 ⁵ / ₈
	Ly ₂ ⁽²⁾	155	6 ¹ / ₈	155	6 ¹ / ₈	212	8 ³ / ₈	250	9 ¹³ / ₁₆	N/A	N/A
	Ly ₃ ⁽³⁾	210	8 ¹ / ₄	210	8 ¹ / ₄	212	8 ³ / ₈	264	10 ⁷ / ₁₆	335	13 ¹ / ₄
	La ₁ ⁽¹⁾	121	4 ³ / ₄	121	4 ³ / ₄	140	5 ¹ / ₂	152	6	190	7 ¹ / ₂
	La ₂ ⁽²⁾	120	4 ³ / ₄	120	4 ³ / ₄	140	5 ¹ / ₂	159	6 ¹ / ₄	N/A	N/A
	La ₃ ⁽³⁾	127	5	127	5	149	5 ⁷ / ₈	159	6 ¹ / ₄	200	7 ⁷ / ₈
	Tw	191	7 ¹ / ₂	191	7 ¹ / ₂	191	7 ¹ / ₂	207	8 ¹ / ₁₆	242	9 ¹ / ₂
	Th	312	12 ⁵ / ₁₆	312	12 ⁵ / ₁₆	312	12 ⁵ / ₁₆	364	14 ¹ / ₂	405	15 ¹⁵ / ₁₆
	h ₁ ⁽¹⁾	82	3 ¹ / ₄	82	3 ¹ / ₄	102	4	102	4	127	5
	h ₂ ⁽²⁾	82	3 ¹ / ₄	82	3 ¹ / ₄	102	4	114	4 ¹ / ₂	N/A	N/A
	h ₃ ⁽³⁾	89	3 ¹ / ₂	89	3 ¹ / ₂	109	4 ⁵ / ₁₆	108	4 ¹ / ₄	135	5 ⁵ / ₁₆

Notes:

1. Ly₁, La₁ & h₁ for flanged ANSI #150 and ISO PN16
2. Ly₂, La₂ & h₂ for threaded female, NPT or BSP
3. Ly₃, La₃ & h₃ for flanged ANSI #300 and ISO PN25

4. Dimensions are maximum
5. Provide adequate clearance around valve for maintenance

Connection Standard

- B16.5 Stainless Steel
- B16.24 Bronze

Fluid Temperature

- 0.5 – 80°C (33 – 180°F)

Sizes ("Y", "G" & Angle)

- "Y" or Angle: 1½, 2, 2½, 3 & 4

Pressure Rating

- Max. for Class #150/PN16: 250 psi (17 bar)
- Max. for Class #300/PN25: 400 psi (28 bar)

Manufacturers Standard Materials

Main valve body and cover

- Stainless Steel 316 CF8M

Main valve internals

- Stainless Steel 316

Control Trim

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

Elastomers

- NBR (Buna-N)

Coating

- Externally, Electrostatic Powder Polyester, Red (RAL 3002)

Optional Materials

Main valve body/internals

- Ni-Al-Bronze ASTM B-148

Solenoid Pilot Valve

Standard

- 3-Way, direct actuated type
- Stainless Steel body
- Main valve closed when de-energized
- Enclosure: General purpose watertight, IP65, Class F
- Power: 24VDC, 8 watts

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)

