S.S.316 ZERO PRESSURE, HYDRAULICALLY REMOTE CONTROLLED FOAM CONCENTRATE VALVE

Model FC-700E-5X-BO-N

The BERMAD FC 700E-5X-BO is a Double Chambered hydraulically powered Foam-concentrate valve, controlled by a 3-Way hydraulic relay valve.
The FC 700E-5X-BO is hydraulically actuated by existing fire water pressure, independent from the foam pressure enabling functionality at very low pressure or even non-pressurized foam concentrate. This makes it highly
suited for installation at the discharge of atmospheric tanks.
The hydraulic opening command can be shared with that of a main deluge valve, enabling a simple and perfect opening synchronization of both valves. This assures an immediate foam solution supply to the system.
The valve is "Fail Safe Close" and designed with an "Over the Seat" flow direction to ensure drip-tight sealing and safe operation.
The BERMAD FC 700E-5X-BO replaces mechanically actuated valves or pilot-operated solenoid valves, providing safer operation for modern foam systems, assuring maximum reliability of the entire fire-fighting system.

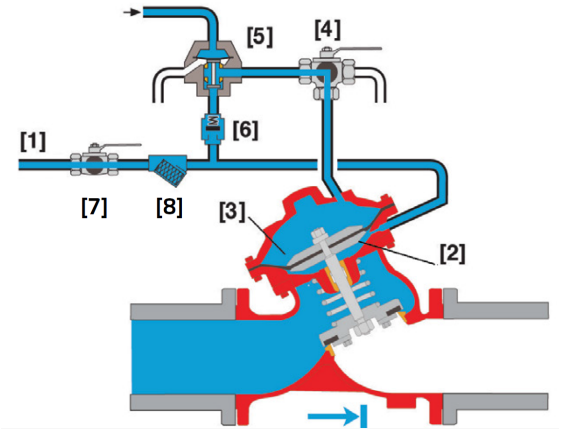
Features & Benefits

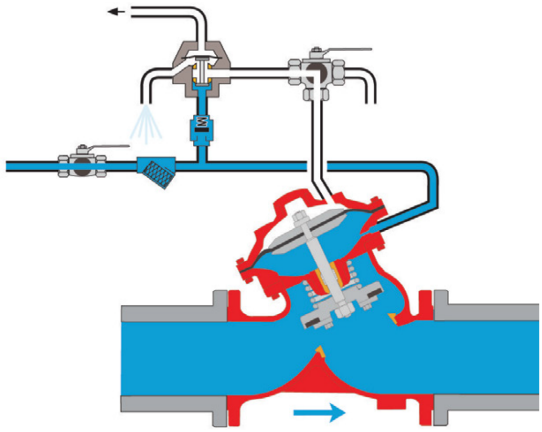
- Features
  - Double chambered Actuation – Zero Line Pressure
  - Fail Safe Close – Safe operation and drip tight sealing
  - In-line serviceable
  - Obstacle-free, uninterrupted flow path
  - Simultaneous opening with the main deluge valve – immediate Foam supply

Typical Applications

- Foam applications
- Fire monitor installations
- Oil & Gas storage tanks
- Remote Control Monitors
- Power plants and transformers

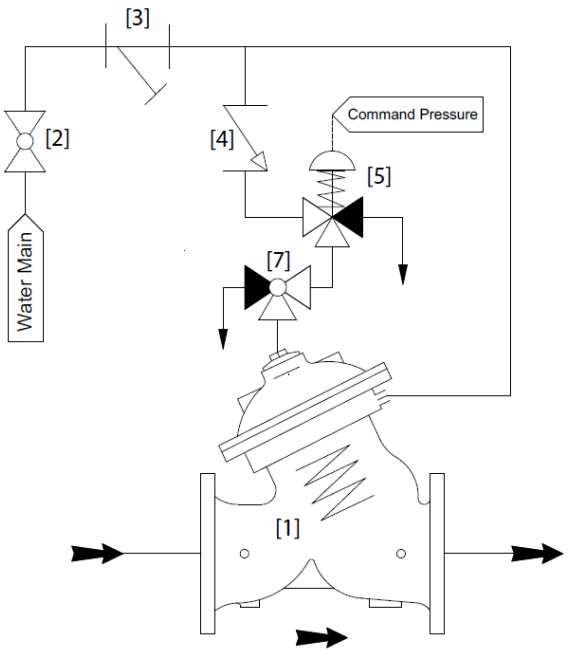
Operation





The BERMAD FC-700E-3X-BO is a "Y" pattern, Fail Safe Close, diaphragm actuated, double chambered, water pressure driven hydraulic valve, that requires existing firewater for a priming pressure source for valve activation.
In the set position: The control chamber of the 3-Way relay valve [5] is pressurized. The priming line [1] constantly supplies pressure to the valve's lower chamber [2] by way of the Y filter [8] and the 2-Way priming line ball valve [7]. Pressure to the upper chamber is provided through a manual override valve [4] and via the pressurized 3-Way relay valve valve. The check valve [6] retains pressure in the upper control chamber ensuring that the main valve remains with a drip tight seal until activated.
In the operating position: The control chamber of the 3-Way relay valve is de pressurized. The valve upper chamber is vented while the lower chamber remains pressurized, this imbalance of hydraulic forces, lifts the valve seal disc assembly to open the valve and allow fluid to flow to the system.
Alternatively the valve may be opened by use of the 3-Way manual override valve [4]

System P&ID



	Components
1	Main Valve
2	2-Way Priming Valve
3	Y Filter
4	Check Valve
5	3-Way Hydraulic relay Valve
6	Manual Override

System Installation

Optional System Items

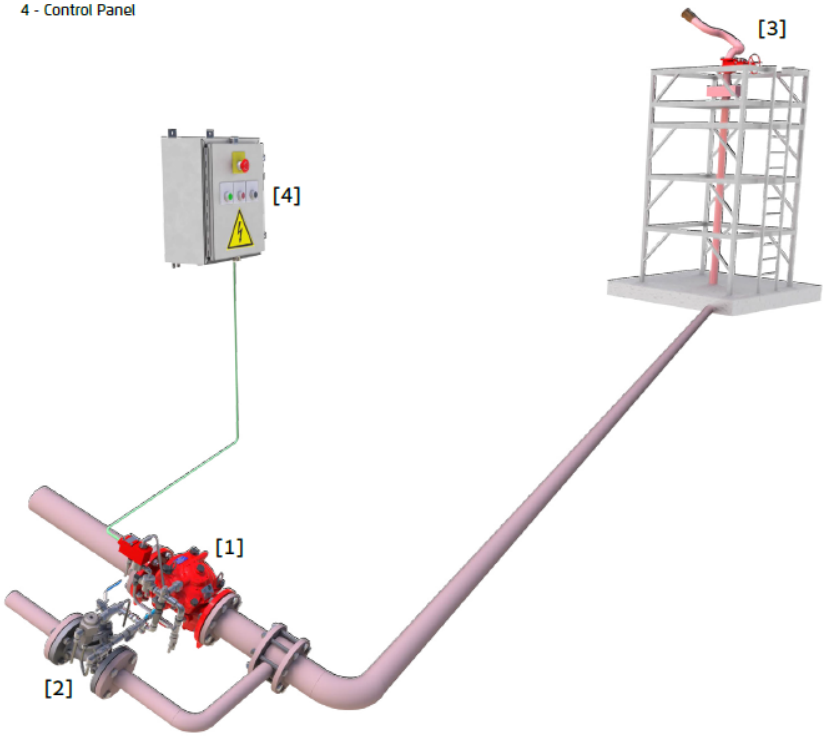
Pressure Gauge

Exd Pressure Switch - Stainless Steel Enclosure for Harsh Environments

Remote Controlled Monitor System
(with Foam Concentrate Injection)

System Components

1 - BERMAD Deluge valve
2 - BERMAD FC 700E-5X-BO Foam Concentrate Valve
3 - Remote Controlled Monitor
4 - Control Panel



Suggested Specifications

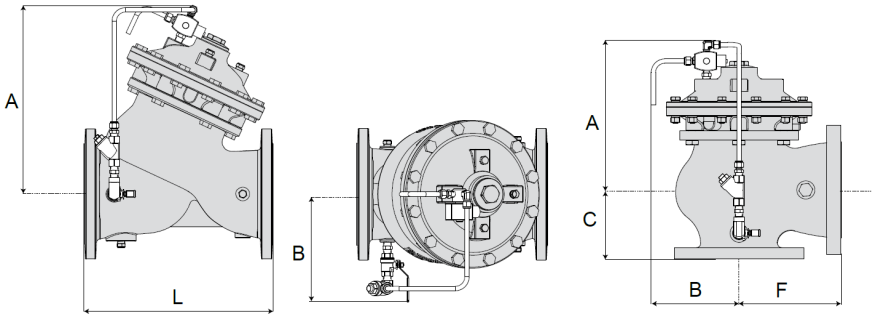
■ The valve shall be a hydraulically operated "Y" pattern body with integral unitized double chamber actuator.
■ Valve actuation shall be accomplished by one moving assembly, which shall include the diaphragm assembly, a flat seal disk and a stainless steel stem.
■ All valve body and internal parts shall 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 HRV-3 (3-Way Relay Valve), 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 Hydraulically Operated Valve shall open and close in response to the dry pilot line hydraulic pressure status.

Technical Data

Available Sizes:
Flanged- 1½, 2, 2½, 3 & 4"
Threaded- 1½, 2, 2½ & 3"

Pressure Rating:
ANSI#150 - 17.2 bar | 250 psi
ANSI#300 - 1½" to 10" - 28 bar | 400 psi

Elastomer:
Nitrile Butadiene Rubber (NBR)



Valve Size	L #150 mm | in	L Grooved mm | in	L #300 mm | in	A mm | in	B mm | in	C mm | in	øD in	E mm | in	F mm | in	G mm | in	Weight #150 kg | lb	Weight #300 kg | lb
DN40 | 1½"	205 | 8.1	-	-	312 | 12.3	191 | 7.5	82 | 3.2	-	-	121 | 4.8	-	-	-
DN50 | 2"	205 | 8.1	-	-	312 | 12.3	191 | 7.5	82 | 3.3	-	-	121 | 4.8	-	-	-
DN65 | 2½"	209 | 8.3	-	-	312 | 12.3	191 | 7.5	102 | 4	-	-	140 | 5.5	-	-	-
DN80 | 3"	250 | 9.8	-	-	364 | 14.3	207 | 8.1	102 | 4	-	-	152 | 6	-	-	-
DN100 | 4"	320 | 12.6	-	-	405 | 16	242 | 9.5	127 | 5	-	-	200 | 7.9	-	-	-

IMPORTANT: Dimensions for the trim envelope or extents refer to a vertical orientation and may vary with specific component positioning -Apart from the "L" dimension, allow a tolerance of at least ±15%

Valve Code Designations

FP | 4" | 700E-5X-BO | V | C | A5 | ER | NN | N6nW

Category	Code
Standard	FP
Seawater	FS
Foam	FC

Valve Size	
1½"	40 mm
2"	50 mm
2½"	60 mm
3"	80 mm
4"	100 mm

Installation	Code
Vertical	V
Horizontal	H

Material Body & Cover (1)	Code
Ductile Iron A356 (2)	C
Steel ASTM A216 WCB (2)	S
Stainless Steel 316	N
Nickel Al Bronze C95800	U
Super Duplex Grade 5A	D

End Connections	Code
ANSI#150RF	A5
ANSI#150FF	a5
ISO PN16	16
Grooved ANSI	VI

Coating	Code
High Build Epoxy	ER
Zinc Based High Build Epoxy (5)	ZR
Uncoated	UC

Tubing & Fittings	Code
Stainless Steel 316	NN
Monel 400	MM
Super Duplex	DD

Factory Supplied Additional Items	Code
General Purpose NEMA-4 Pressure Switch	P
Ex Proof NEC, Div.1 Pressure Switch (3)	P7
Ex d ATEX Pressure Switch (3)	P9
Ex d Pressure Switch, SS316 Enclosure (3)	P9Jn
Ex d Pressure Switch, SS316 Enclosure, Monel Sensor (3)	P9mJn
Single Limit Switch, General Purpose	S
Single Ex d Proximity limit Switch	S9
Double Ex d Proximity Limit Switch	SS9
Double Ex d Proximity Limit Switch with SS316 Junction Box	SS9Jn
Pressure Gauge Assembly (3)	6
S.S Glycerin Pressure Gauge Assembly (3)	6n
Monel Pressure Gauge Assembly (3)	6m
Stainless steel 316 Solenoid Valve	K
Special Elastomer	E
Large Control Filter	F
Valve Position Indicator	I
Pressure Transmitter (3)	Q

*More options available – consult BERMAD

Notes:
(1) Other materials available see engineering data
(2) Coated internally and externally
(3) Supplied loose
(4) Consult BERMAD for availability
(5) For valves up to and including 10"