



Pressure Relief Valve

with Electric Override

Model: FP 730-59



Description

The BERMAD Model FP 730-59 combines fire pump relief with a pre-opening feature to anticipate pump start-up surge. The valve opens fully by means of an electric override upon the start-up and continues to perform as a pressure relief valve.

The valve offers reliable performance for high capacity fire pump systems.

Typical Applications



Individual high capacity fire pumps



Petrochemical complexes and refineries



Harbors and airports



Large scale industrial plants

Features and Benefits

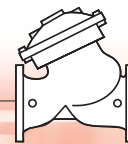
- **Hydraulically powered valve design** –
 - Eliminates jamming problems
- **Dual parallel pilot valve system, hydraulic & electric**
- **Continues to act as relief valve upon electric failure**
- **Quick response with minimal power requirement**
- **Hydro-efficient body design**
 - Wide rangeability
 - Unrestricted flow path
- **Double chambered unitized actuator**
 - Easy, inline inspection ensures minimal down time
 - Quick and smooth valve action

Optional Features

- Hazardous locations solenoid
- Electric limit switch and/or valve position flow indicator
- Large control filter (code: F)
- Seawater service construction

Note: Optional features can be mixed and matched.

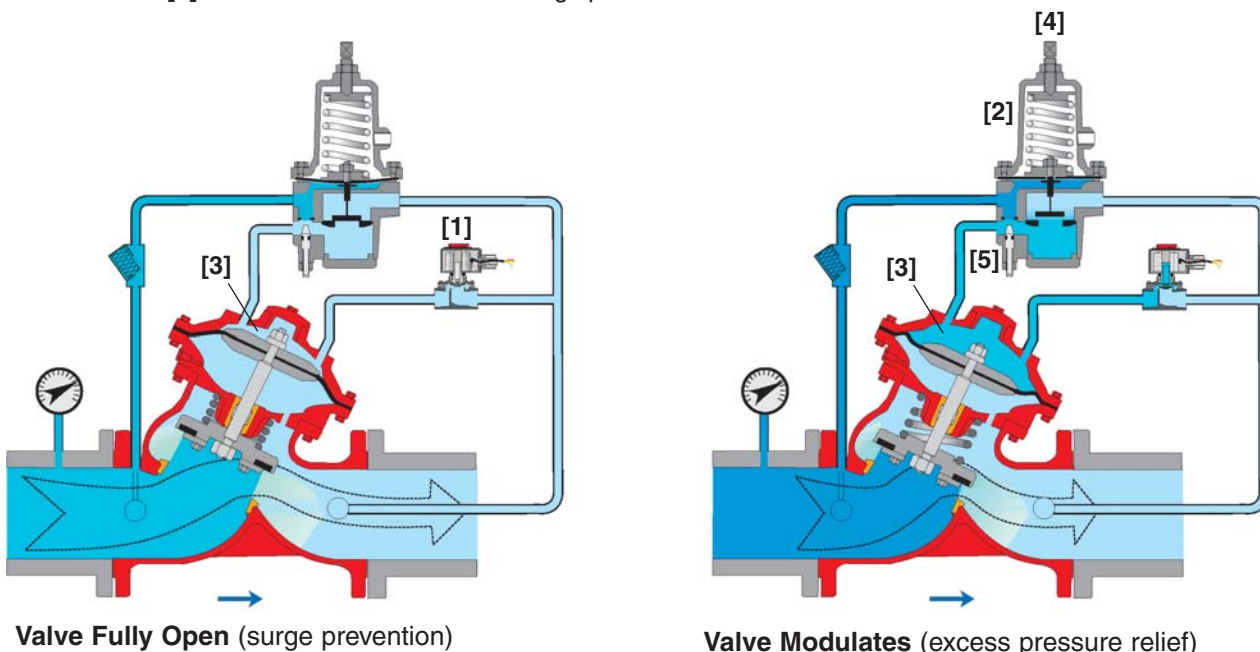
Consult your local BERMAD representative for full details.



Operation

The BERMAD Model FP 730-59 is equipped with 2 parallel control systems to provide both pressure-relief (via hydraulic pilot valve) and pump start-up surge anticipation (via solenoid valve):

- Simultaneously with electrically powering the pump to start, an electric command is sent to the Solenoid Valve [1], opening it. This immediately releases pressure from the control chamber, fully opening the main valve, ensuring that sudden flow and pressure surge from pump start-up will be relieved and will not cause a water hammer effect. A timer keeps the electric power active long enough to ensure functionality. After the electric command is turned off, the pump pressure relief feature remains active.
- When the Pressure Relief Pilot [2] senses inlet pressure that is higher than its set point, it acts upon the main valve control chamber [3] causing the main valve to modulate open, relieving excess pressure to either a reservoir or sump. The pilot valve is equipped with an adjusting screw [4] to preset the desired inlet pressure, and an internal adjustable needle valve [5] to control the main valve closing speed.



Engineer Specifications

The Pressure Relief Valve shall be both solenoid pilot and hydraulic pilot controlled. The main valve shall be an angle or "Y" pattern. All necessary inspection and servicing of the main valve shall be possible in-line.

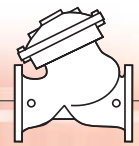
Valve actuation shall be accomplished by a double chambered actuator, which shall include a stainless steel stem and a flat seal disk creating a drip-tight seal.

The valve seat shall be made of stainless steel and have an unobstructed flow path, with no stem guide or supporting ribs.

The pilot system shall be field adjustable, with adjustable valve closing speed integrated into the main valve, hydraulically tested and supplied as an assembly consisting of:

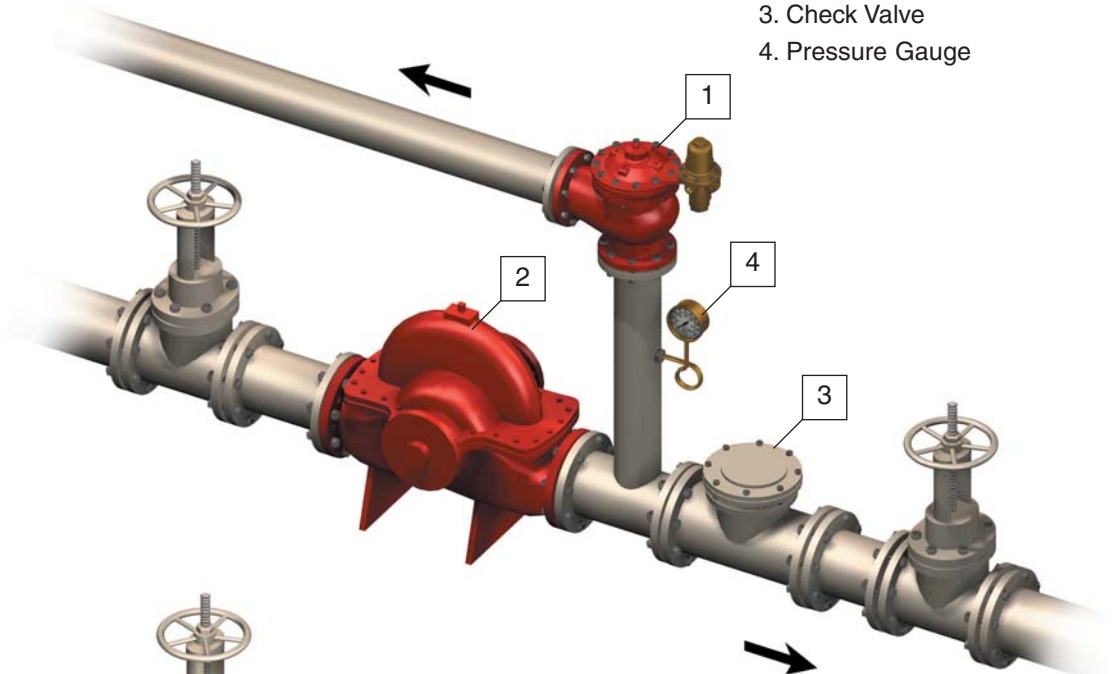
- Relief pilot valve with built-in internal needle valve
- N.C. solenoid pilot valve, 1/2" size, 2-way
- "Y" strainer

The control trim shall be supplied as an assembly, pre-assembled and hydraulically tested at an ISO 9000 and 9001 certified factory.

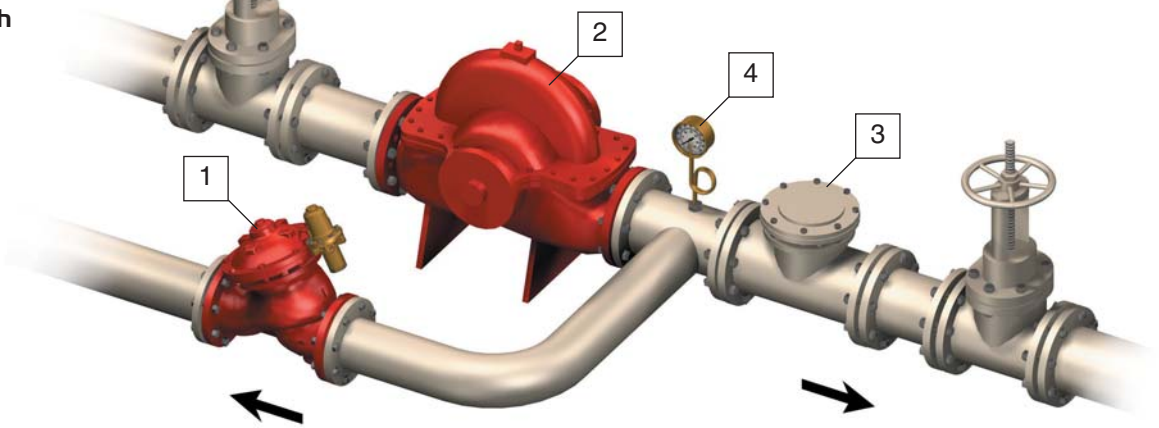


Typical Installations

Installation with
Angle Pressure
Relief Valve



Installation with
“Y” Pattern
Pressure
Relief Valve



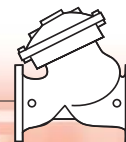
System Components

1. BERMAD Model FP 730-59
2. Fire Pump
3. Check Valve
4. Pressure Gauge

Installation Considerations

- Valve size should be no less than NFPA-20 requirements.
- Provide adequate clearance around valve for maintenance, ensuring that the actuator can be easily removed.
- Design installation with the valve cover up for best performance.
- Ensure that before the valve is installed, instructions are given to flush the pipeline at full flow.

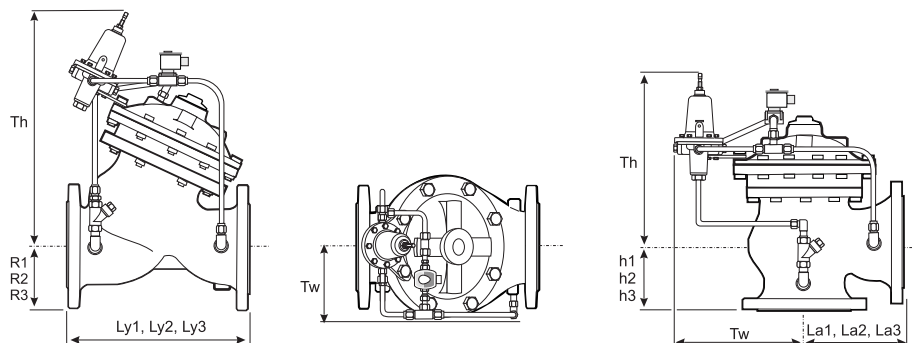
BERMAD Fire Protection



Model: FP 730-59

700 Series

Technical Data



Valve Size		1 1/2"		2"		2 1/2"		3"		4"		6"		8"		10"		12"		14"		16"	
Dimensions	(1)Ly1	205	8 1/16	205	8 1/16	209	8 1/4	250	9 7/8	320	12 5/8	415	16 3/8	500	19 11/16	605	23 19/16	725	28 9/16	733	28 7/8	990	39
	(2)Ly2	155	6 1/8	155	6 1/8	212	8 3/8	250	9 13/16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	(3)Ly3	210	8 3/4	210	8 3/4	212	8 3/8	264	10 7/16	335	13 1/4	433	17 1/16	524	20 5/8	637	25	762	30	767	30 3/16	1024	40 3/4
	(1)La1	121	4 3/4	121	4 3/4	140	5 1/2	152	6	190	7 1/2	225	8 7/8	265	10 7/16	320	12 5/8	396	15 9/16	400	15 3/4	450	17 3/4
	(2)La2	120	4 3/4	120	4 3/4	140	5 1/2	159	6 1/4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	(3)La3	127	5	127	5	149	5 7/8	159	6 1/4	200	7 7/8	234	9 9/16	277	10 7/8	336	13 1/4	415	16 5/16	419	16 1/2	467	18 3/8
	(1)h1	82	3 1/4	82	3 1/4	102	4	102	4	127	5	152	6	203	8	219	8 5/8	275	10 9/16	275	10 9/16	369	14 1/2
	(2)h2	82	3 1/4	82	3 1/4	102	4	114	4 1/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	(3)h3	89	3 1/2	89	3 1/2	109	4 5/16	108	4 1/4	135	5 5/16	165	6 1/2	216	8 1/2	235	9 1/4	294	11 1/2	294	11 1/2	386	5 3/16
	(1)R1	75	2 15/16	83	3 1/4	93	3 5/8	100	3 15/16	114	4 1/2	140	5 1/2	171	6 3/4	203	8	241	9 1/2	267	10 1/2	298	11 3/4
	(2)R2	40	1 9/16	40	1 9/16	48	1 7/8	55	2 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	(3)R3	78	3 1/16	83	3 1/4	95	3 3/4	108	4 1/4	127	5	159	6 1/4	191	7 1/2	222	8 3/4	260	10 1/4	292	11 1/2	324	12 3/4
	Tw	191	7 1/2	191	7 1/2	191	7 1/2	207	8 1/16	242	9 1/2	290	11 7/16	325	12 13/16	370	14 9/16	515	20 1/4	525	20 11/16	610	24
	Th	312	12 5/16	312	12 5/16	312	12 5/16	364	14 1/2	405	15 15/16	505	20	566	22 5/16	639	25 3/16	449	17 11/16	449	17 11/16	541	21 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. Data is for maximum envelope dimensions, component positioning may vary.
5. Provide adequate space around valve for maintenance.

Connection Standard

- Flanged: ANSI B16.42 (Ductile Iron), B16.5 (Steel & Stainless Steel), B16.24 (Bronze), ISO PN16
- Threaded: NPT or BSP 2, 2 1/2 & 3"

Water Temperature

- 0.5 - 80°C (33 - 180°F)

Manufacturers Standard Materials

Main valve body and cover

- Ductile Iron ASTM A-536

Main valve internals

- Stainless Steel, Bronze and coated Steel

Control Trim

- Brass components/accessories
- Forged Brass fittings & Copper tubing

Elastomers

- NBR (Buna-N)

Coating

- Electrostatic Powder Coating Polyester, Red (RAL 3002)

Sizes ("Y" & Angle)

- Available Y: 1 1/2 - 20"
- Angle: 1 1/2 - 18"

Pressure Rating*

- Max. for Class #150/PN16: 200 psi (15 bar)
- Test: 450 psi (31 bar)

* Pressure rating might be limited due to solenoid valve rating

Approvals

- ABS
- Lloyd's Registered

Optional Materials

Main valve body/internals

- Carbon Steel ASTM A-216-WCB
- Stainless Steel 316
- Ni-Al-Bronze ASTM B-148
- Titanium
- Duplex
- Hastalloy

Control Trim

- Stainless Steel 316
- Monel® and Al-Bronze
- Hastalloy C-276

Coating

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

Solenoid Pilot Valve

Standard model

- 2-way Pilot Operated 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)
 - ATEX, EEx em IIC T4 (code 8)
 - ATEX, EEx d IIC T4/5 (code 9)
- Voltage: see ordering guide (voltage option table)
- Stainless steel 316 body material (code K)



bermadfire@bermad.com • www.bermad.com

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