Single Interlock Pre-action, Electric Release System

Model: FP 400E-7M

Description

The BERMAD Model FP 400E-7M Single Interlock Pre-Action Release System is suitable for use in systems requiring that water be kept out of the sprinkler piping until an electric detecting device has been activated. Single Interlock Pre-Action Systems include automatic sprinklers attached to a dry sprinkler piping system, with a supplementary electric detection system installed in the same area. This system admits water into the sprinkler piping upon activation of the detection system. Water is discharged only through sprinklers that have been opened due to excessive heat. When a Supervised System is required, a pneumatic low pressure supply shall be provided.
An anti-flooding feature is provided by utilizing an in-line check valve, which creates an intermediate vented chamber using a Normally Open drip-check.

Typical Applications

Water damageable material storage:
- Computer & Electronics Rooms
- Libraries, Museums & Archives
- Telecommunications equipment
- Cable spreading rooms
- Oil-filled-transformer rooms

Freezing conditions

Features and Benefits

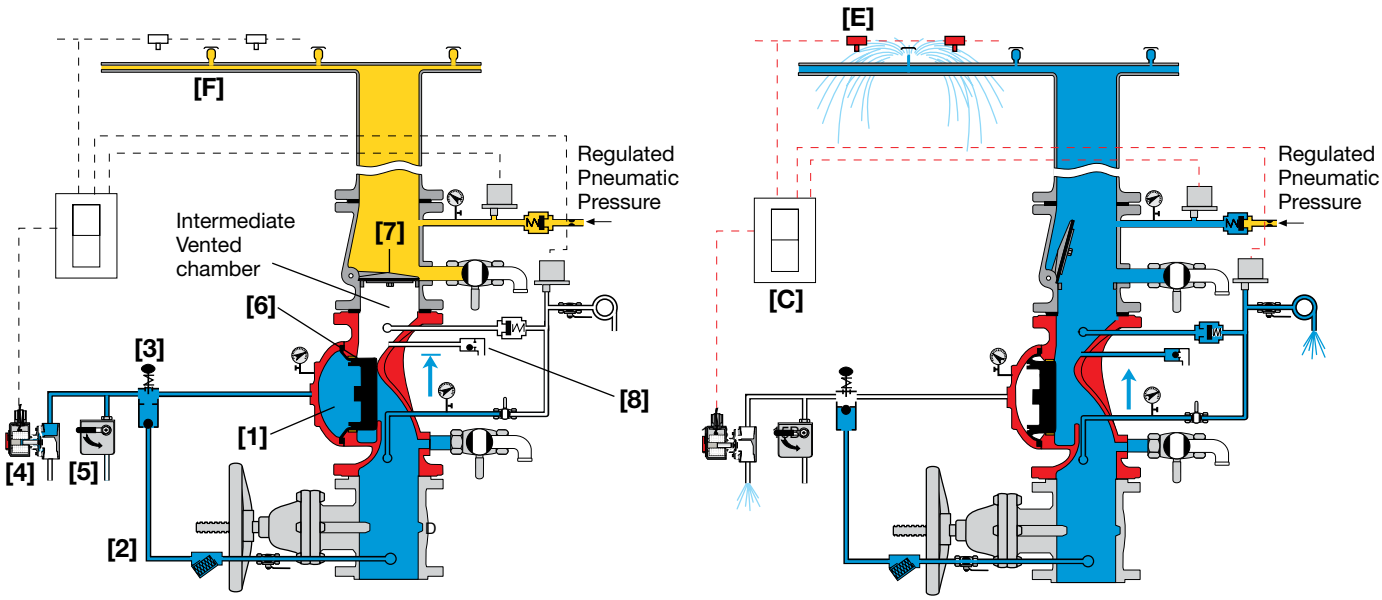
- **Latch open -** Closes only upon local reset
- **Factory pre-assembled trim –** Out-of box-quality
- **In-line serviceable –** Minimal down time
- **In-line Check Valve –** intermediate vented **chamber-** Anti flooding
- **One-piece molded elastomeric moving part –** No maintenance required

Optional Features

- **Air Maintenance Device** (AMD)
- **Water motor alarm**
- **Valve Position Single/Double Limit Switches**

Operation

In the SET position, the line pressure supplied to the main valve's control chamber **[1]** via the priming line **[2]** and through an EasyLock Manual Reset **[3]**, is trapped by the Easy Lock internal check valve, by a closed Solenoid Valve **[4]** and by a closed Manual Emergency Release **[5]**. The trapped pressure holds the main valve's diaphragm and plug against the valve seat **[6]**, sealing it bubble tight. The piping system is filled with supervised low air pressure to ensure all sprinklers **[F]** are sealed. An intermediate vented chamber is created by an in-line swing check valve **[7]**, and a Normally Open drip-check **[8]**. When sprinklers are activated, the lower air pressure is detected by an electric air pressure monitor, which activates the alarm, while the main valve remains closed.
In the event of FIRE, an electric detection system **[E]**, working through a control panel **[C]**, triggers the Solenoid Valve to open. Pressure is then released from the main valve's control chamber through the opened Solenoid Valve (or the Manual Emergency Release). The EasyLock prevents line pressure from entering the control chamber, allowing the pre-action valve to latch open and water to flow into the system piping.



Set Position **Operating Condition**

Engineer Specifications

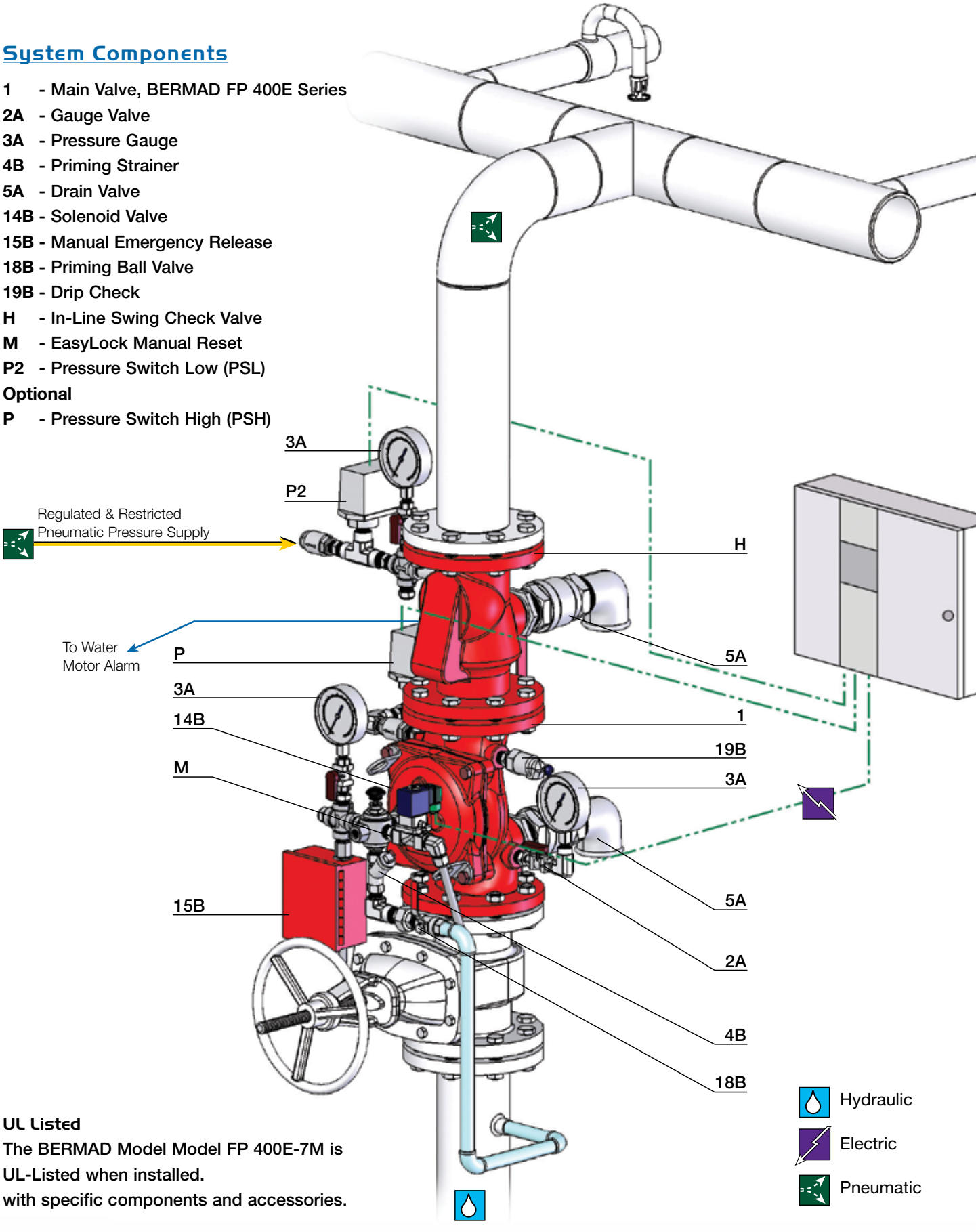
- The pre-action valve shall be a UL-Listed, electrically controlled elastomeric type globe valve with a **rolling-diaphragm**.
- The valve shall have an **unobstructed flow path**, with no stem guide or **supporting ribs**.
- Valve actuation shall be accomplished by a fully peripherally supported, one-piece balanced rolling-diaphragm, vulcanized with a rugged radial seal. 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 materials shall consist of St.St. 316 tubing and fittings, and plated brass accessories, in line swing check valve with resilient seal, local **EasyLock** Manual Reset, 2-Way Solenoid Pilot Valve, Y strainer, Automatic drip check with manual knob and Manual Emergency Release.
- The control trim shall be supplied as an assembly, pre-assembled and hydraulically tested at an ISO 9000 and 9001 certified factory.
- The Single Interlock Pre-action, Electric Release System shall latch open in response to the solenoid activation. The valve shall reset to the closed position only upon local manual activation of the reset device.

System Components

1 - Main Valve, BERMAD FP 400E Series
2A - Gauge Valve
3A - Pressure Gauge
4B - Priming Strainer
5A - Drain Valve
14B - Solenoid Valve
15B - Manual Emergency Release
18B - Priming Ball Valve
19B - Drip Check
H - In-Line Swing Check Valve
M - EasyLock Manual Reset
P2 - Pressure Switch Low (PSL)

Optional

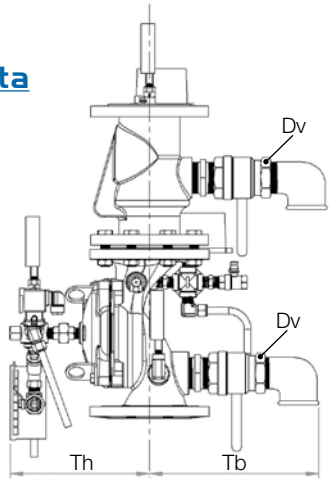
P - Pressure Switch High (PSH)

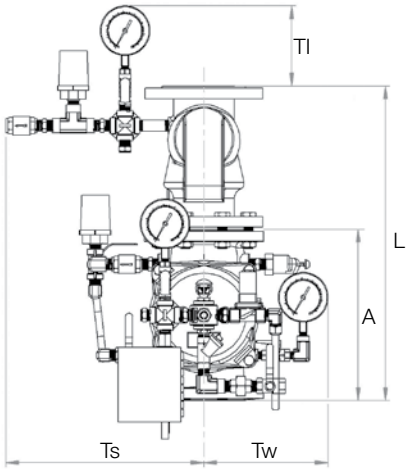


UL Listed

The BERMAD Model Model FP 400E-7M is UL-Listed when installed.
with specific components and accessories.

Technical Data





Size		2”		3”		4”		6”		8”	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
Dimensions	L_1 (1)	377	14 13/16	450	17 3/4	536	21 3/16	720	28 6/16	865	34 1/16
	L_4 (1)	377	14 13/16	443	17 7/8	536	21 3/16	720	28 6/16	865	34 1/16
	Tl	150	5 7/8	149	5 7/8	150	5 7/8	135	5 5/16	135	5 5/16
	Tw	208	8 3/16	223	8 3/4	233	9 3/16	272	10 11/16	326	12 13/16
	Ts	363	14 1/4	367	14 7/16	371	14 5/8	398	15 11/16	428	16 7/8
	Th	205	8 1/16	241	9 1/2	261	10 1/4	336	13 1/4	407	16
	Tb	230	9 1/16	300	11 13/16	317	12 1/2	338	13 5/16	405	15 15/16
	Dv Ø	3/4”		1 1/2”		1 1/2”		2”		2”	

Notes:
1. L_1 and L_4 are for flanged ANSI #150 and ISO PN16.
2. Provide adequate space around valve for maintenance.
3. 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”

Leakage Class
- Class VI (ANSI B16.104)

Sizes
- UL-Listed for sizes 1½, 2, 2½, 3, 4, 6, 8 & 10”

Water Temperature
- 0.5 – 50°C (33 – 122°F)

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

* Pressure rating might be limited due to solenoid valve rating

Air Pressure Requirements
- Valve opens on pneumatic pressure drop
- Working pressure 7 – 10psi (0.5 – 0.7 bar)
- Air must be regulated and continually compressed
- Low-pressure alarm switch is factory set to operate at 6psi (0.4 bar)

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
- Nylon fabric reinforced polyisoprene NR

Coating
- Electrostatic Powder Coating Poleyester, 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

Elastomers
- NBR
- EPDM

Coating
- High Build 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)