Hydraulically Controlled, Anti-Columning Deluge Valve

With EasyLock Manual Reset

Model: FP 700E-5M

UL LISTED

Typical Applications

- Automatic spray or foam systems
- Petrochemical facilities
- Power plants & transformers
- Flammable materials storage
- Aviation & airports
- Gas storage tanks

Features and Benefits

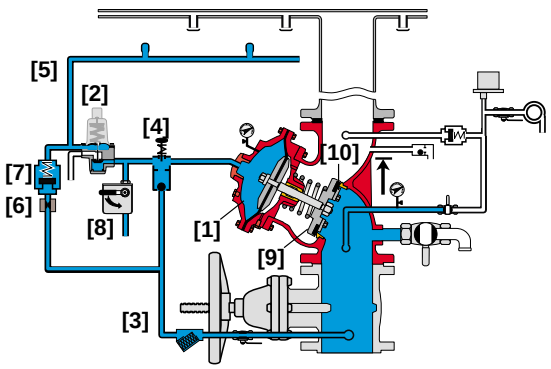
- **PORV –** Local release adjustable device for anti-columning of high pilot lines
- **Latch open –** Closes upon local reset only
- **Robust structure –** High pressure service
- **Double chambered diaphragm actuator**
  - Reliable drip tight, leak proof
  - Hammer-free opening
  - Hydraulically powered positive closure
- **Simple design –** Cost effective
- **Obstacle free full bore –** Uncompromising reliability
- **Factory pre-assembled trim** – Out-of-box quality
- **In-line serviceable** – Minimal down time

Optional Features

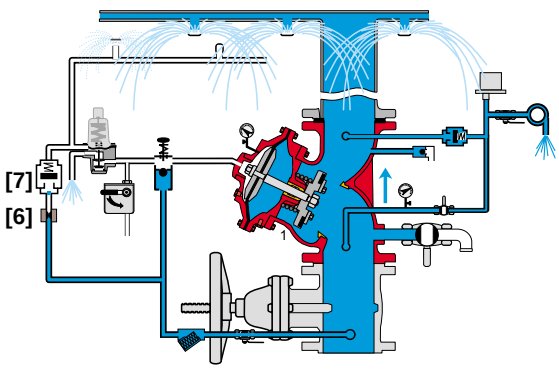
- **Water motor alarm**
- **Alarm pressure switch** (code: P or P7)
- **Seawater service** (add FS as prefix to model)

Operation

The BERMAD Model 700E–5M is suitable for systems that include wet pilot lines with closed fusible plugs (thermal releases), and piping systems with a wide variety of open nozzles. Providing boosted local pressure release from its control chamber, Model 700E–5M is recommended for systems with a remote and/or elevated fusible plugs line.
In the SET position, line pressure supplied to both the main valve's upper control chamber **[1]** and to a Pressure Operated Relief Valve (PORV) **[2]** via the priming line **[3]**, an EasyLock Manual Reset (EMR) **[4]**, the wet pilot line **[5]** restriction **[6]**, and a check valve **[7]** is trapped by the EMR's internal check valve, by the closed PORV, and a closed Manual Emergency Release **[8]**. The trapped pressure holds the main valve's seal disk **[9]** against the valve seat **[10]**, sealing it drip tight and keeping the system piping dry. The PORV is held closed by the line pressure in the wet pilot line.
Under FIRE or TEST conditions, a pilot line hydraulic pressure drop opens the PORV. Pressure is then released from the main valve's upper control chamber through the opened PORV, or the Manual Emergency Release. The EMR prevents line pressure from entering the control chamber, allowing the main valve to latch open and water to flow into the system piping and to the alarm device.



Valve Closed (set position)



Valve Open (operating condition)

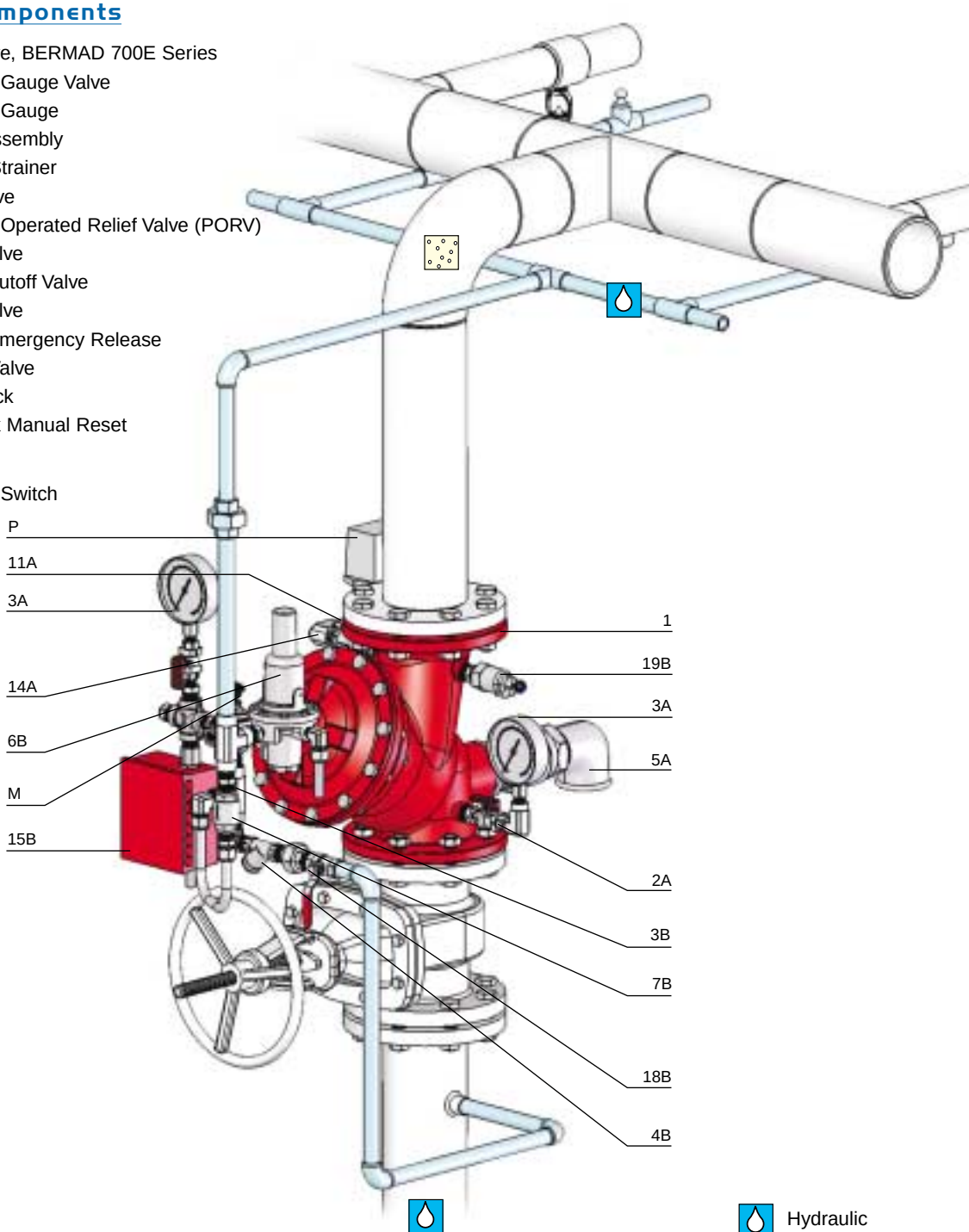
Engineer Specifications

- The deluge valve shall be a UL Listed, hydraulically controlled globe 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.
- The valve seat shall be made 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 materials shall consist of S.S.316 tubing and fittings, and plated brass accessories, including local **"EasyLock Manual Reset" (EMR)**, PORV pneumatic pilot valve, Y strainer and Manual Emergency Release.
- The Trim shall be supplied as an assembly, pre-assembled and hydraulically tested at an ISO 9000 and 9001 certified factory.
  The Hydraulically Controlled, Anti-Columning Deluge Valve shall latch open in response to activation of a releasing device. The valve shall reset to the closed position, only upon local manual activation of the reset device.

System Components

1 - Main Valve, BERMAD 700E Series
2A - Pressure Gauge Valve
3A - Pressure Gauge
3B - Orifice Assembly
4B - Priming Strainer
5A - Drain Valve
6B - Pressure Operated Relief Valve (PORV)
7B - Check Valve
11A - Alarm Shutoff Valve
14A - Check Valve
15B - Manual Emergency Release
18B - Priming Valve
19B - Drip Check
M - EasyLock Manual Reset

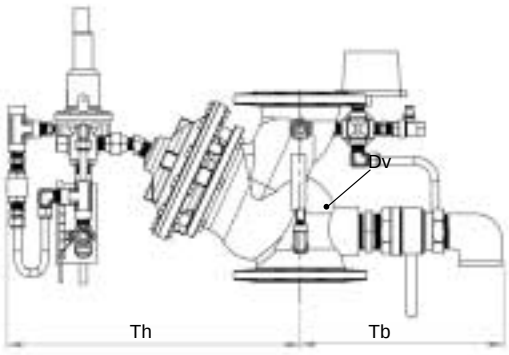
Optional
P - Pressure Switch

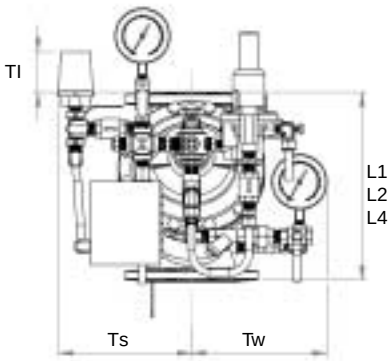


UL Listed
The BERMAD Model 700E-5M is UL Listed when installed with specific components and accessories.

Hydraulic
Atmosphere

Technical Data





Valve Size		2"		2½"		3"		4"		6"		8"		10"		12"	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
Dimensions	(1)L1	205	8 1/16	205	8 1/16	250	9 13/16	320	12 5/8	415	16 5/16	500	19 11/16	605	23 13/16	725	28 9/16
	(2)L2	180	7 1/16	210	8 1/4	N/A	N/A6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	(3)L4	210	8 1/4	212	8 3/8	264	10 7/16	335	13 1/4	433	17 1/16	524	20 5/8	637	25	762	30
	TI	–	–	150	5 7/8	149	5 7/8	150	5 7/8	135	5 5/16	–	–	–	–	–	–
	Tw	208	8 3/16	199	7 13/16	223	8 3/4	233	9 3/16	272	10 11/16	326	12 13/16	346	13 5/8	391	15 3/8
	Ts	–	–	363	14 1/4	367	14 7/16	371	14 5/8	398	15 11/16	428	16 7/8	460	18 1/8	498	19 5/8
	Th	205	8 1/16	221	8 11/16	241	9 1/2	261	10 1/4	336	13 1/4	559	22	667	26 1/4	749	29 1/2
	Tb	230	9 1/16	290	11 7/16	300	11 13/16	317	12 1/2	338	13 5/16	405	15 15/16	413	16 1/4	473	18 5/8
	Dv Ø	3/4"		1 1/2"		1 1/2"		2"		2"		2"		2"		2"	

Notes:
1. L1 is for flanged ANSI #150 and ISO PN16.
2. L2 is for threaded female, NPT or BSP.
3. L4 is for flanged ANSI #300 and ISO PN25.
4. Provide adequate space around valve for maintenance.
5. 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) or ISO PN16 & PN25
- Threaded: NPT or BSP for 2 & 2½"

Water Temperature
- 0.5 – 80°C (33 – 180°F)

Available Sizes
- 2, 2½, 3, 4, 6, 8, 10 & 12"
- UL Listed for sizes 2, 2½, 3, 4, 6, 8 & 10"

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

PORV Setting
Valve opens on pilot line pressure drop
- Factory Set: 72 psi (5 bar)
- Adjustable Range: 10-115 psi (0.7-8 bar)

Warning: The release point must be set at the maximum elevation of the highest wet pilot line release device above the main valve plus at least 10 psi (0.7 bar).

Manufacturers Standard Materials

Main valve body and cover
- Ductile Iron ASTM A-536

Main valve internals
- Stainless Steel, Bronze and coated Steel

Control Trim System
- Brass control components/accessories
- Stainless Steel 316 tubing & fittings

Elastomers
- NBR (Buna-N)

Coating
- Electrostatic Powder Coating Polyester, Red (RAL 3000)

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
- Hastalloy C-276

Elastomers
- EPDM

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