

Hydraulically-Controlled, Anti-Columing Deluge Valve With EasyLock Manual Reset

Model - FP 400E - 5M



UL LISTED

Typical Applications



Automatic spray or foam systems



Petrochemical facilities



Power plants & Transformers



Flammable materials storage



Aviation & Airports



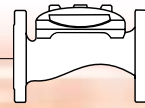
Gas storage tanks

Features and Benefits

- **PORV** – local release adjustable device for anti-columing of high pilot lines
- **Latch open** – closes upon local reset only
- **One-piece molded single moving part** – no maintenance required
- **Simple design** – cost effective
- **Obstacle-free full-bore** – uncompromising reliability
- **Fully 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)



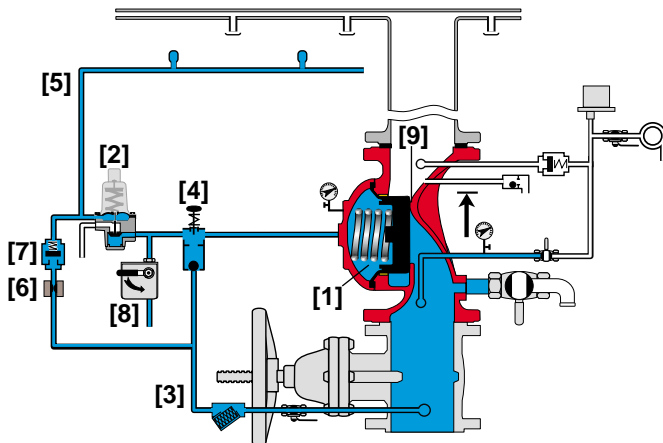
Operation

The BERMAD Model 400E–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 400E–5M is recommended for systems with remote and/or elevated fusible plugs line.

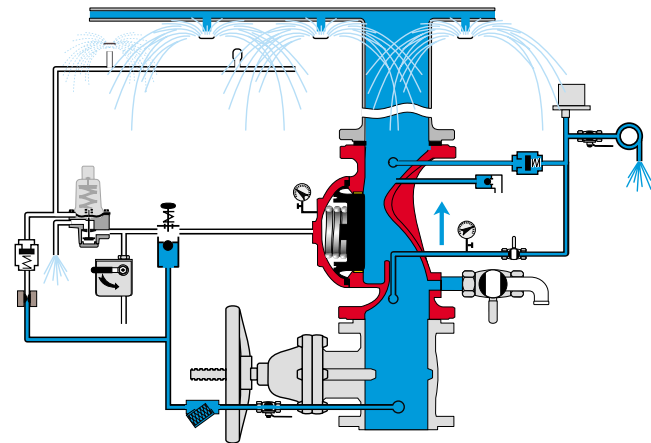
In the SET position, line-pressure supplied to both the main valve's control chamber [1] and to a Pressure Operated Relief Valve (PORV) [2] via the priming line [3], through an EasyLock Manual Reset (EMR) [4], and the wet-pilot-line [5] restriction [6], and a check valve [7] is trapped by the EMR's internal check valve, by the PORV held closed, and by a closed Manual Emergency Release [8]. The trapped pressure holds the main valve's diaphragm and plug against the valve seat [9], 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 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)

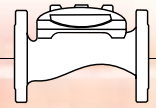


Valve Open (operating condition)

Engineer Specifications

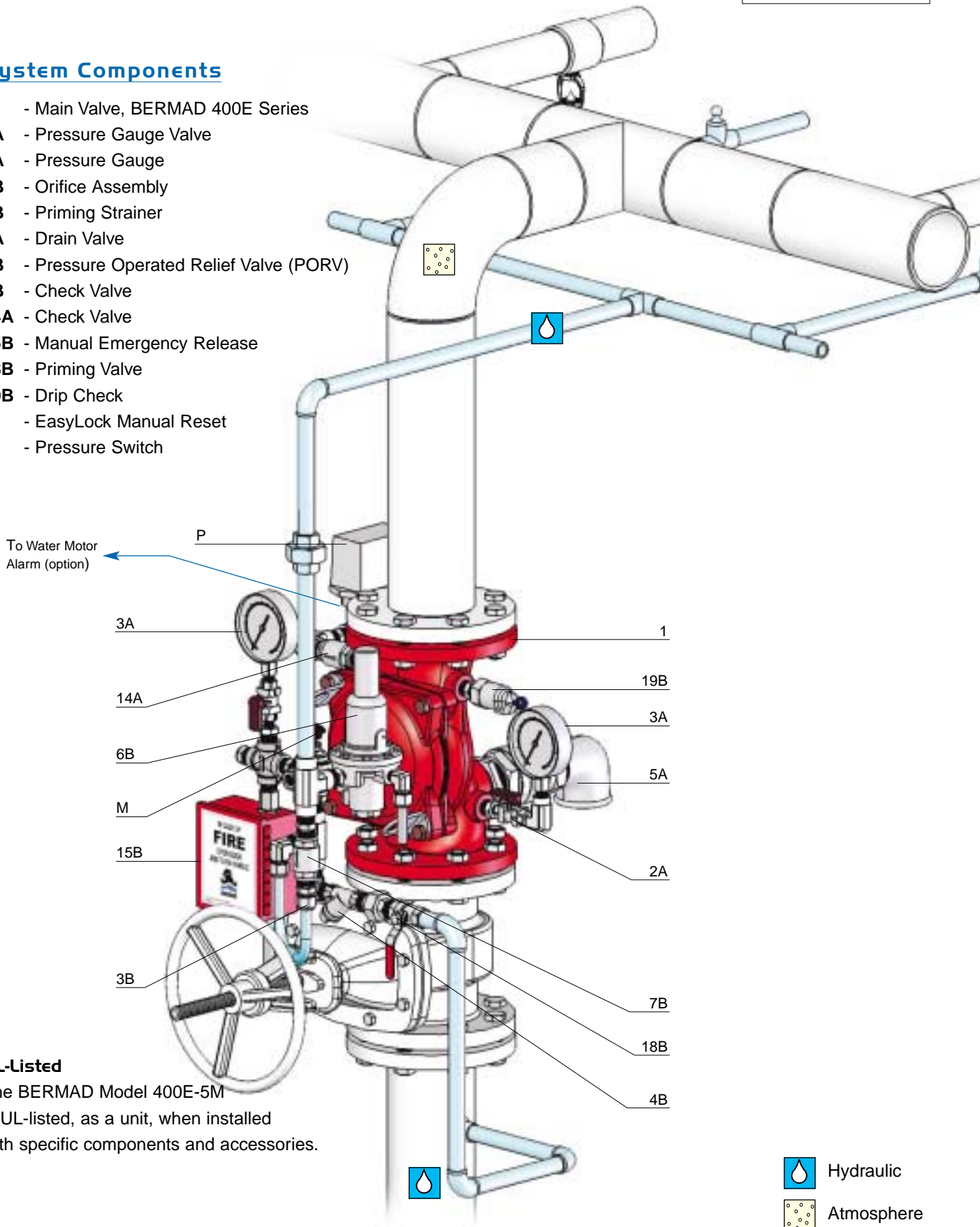
- The deluge valve shall be UL-Listed, pneumatically-controlled, elastomeric globe with a **rolling-diaphragm**.
- The valve shall have an **unobstructed flow path**, with no stem guide or **supporting ribs**.
- Valve actuation shall be accomplished by a fully peripherally supported, one-piece balanced rolling-diaphragm, vulcanized with metal insert. 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 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 & 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 close only upon local manual activation of the reset device.





System Components

- 1 - Main Valve, BERMAD 400E 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
- 14A - Check Valve
- 15B - Manual Emergency Release
- 18B - Priming Valve
- 19B - Drip Check
- M - EasyLock Manual Reset
- P - Pressure Switch

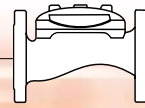


UL-Listed

The BERMAD Model 400E-5M is UL-listed, as a unit, when installed with specific components and accessories.

-  Hydraulic
-  Atmosphere

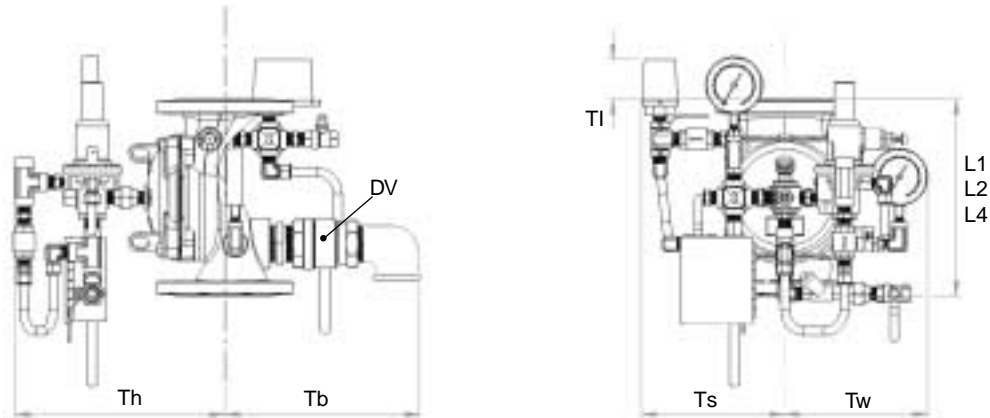
BERMAD Fire Protection



Model - FP 400E - 5M

400 Series

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 ³ / ₁₆	725	28 ⁹ / ₁₆
	(2) L2	180	7 ¹ / ₁₆	210	8 ¹ / ₄	255	10 ¹ / ₁₆	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	(3) L4	205	8 ¹ / ₁₆	N/A	N/A	250	9 ¹³ / ₁₆	320	12 ⁵ / ₈	415	16 ⁵ / ₁₆	N/A	N/A	N/A	N/A	N/A	N/A
	Tl	142	5 ⁵ / ₈	142	5 ⁵ / ₈	119	4 ¹¹ / ₁₆	84	3 ⁵ / ₁₆	57	2 ¹ / ₄	N/A	N/A	N/A	N/A	N/A	N/A
	Tw	228	9	220	8 ¹¹ / ₁₆	243	9 ⁹ / ₁₆	253	10	312	12 ⁵ / ₁₆	326	12 ¹³ / ₁₆	346	13 ⁵ / ₈	391	15 ³ / ₈
	Ts	228	9	220	8 ¹¹ / ₁₆	243	9 ⁹ / ₁₆	253	10	319	12 ⁹ / ₁₆	191	7 ¹ / ₂	329	12 ¹⁵ / ₁₆	391	15 ³ / ₈
	Th	305	12	321	12 ⁵ / ₈	341	13 ⁷ / ₁₆	361	14 ³ / ₁₆	456	17 ¹⁵ / ₁₆	507	20	507	20	646	25 ⁷ / ₁₆
	Tb	278	10 ¹ / ₁₆	289	11 ³ / ₈	300	11 ¹³ / ₁₆	337	13 ¹ / ₄	378	14 ⁷ / ₈	585	23	413	16 ¹ / ₄	473	18 ⁵ / ₈
Dv	¾"		1.5"		1.5"		2"		2"		2"		2"		2"		

Notes:

- L1 is for flanged ANSI #150 and ISO PN16.
- L2 is for threaded female, NPT or BSP.
- L4 is for grooved.
- Provide adequate space around valve for maintenance.
- Data is for envelope dimensions, specific component positioning may vary.

Connection Standard

- Flanged: ANSI B16.42 (Ductile Iron), B16.5 (Steel & Stainless), B16.24 (Bronze) or ISO PN16
- Threaded: NPT or BSP for 2 & 2½"
- Grooved: ANSI/AWWA C606 for 2, 3, 4 & 6"

Water Temperature

- 0.5 – 50°C (33 – 122°F)

Manufacturers Standard Materials

Main valve body and cover

- Ductile iron ASTM A-536

Main valve internals

- Stainless steel 304 & Cast iron

Control Trim System

- Brass control Components/Accessories
- Stainless Steel 316 tubing & fittings

Elastomers

- Nylon fabric reinforced polyisoprene

Coating

- Electrostatic Power Coating Poleyester
- Red (RAL 3000)

Available Sizes

- 2, 2½, 3, 4, 6, 8, 10 & 12"
- UL-listed for sizes 2, 2½, 3, 4, 6, & 8"

Pressure Rating

- Max working pressure: 250 psi (17 bar)

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
- Mone®
- Hastalloy C-276

Elastomers

- NBR
- EPDM

Coating

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

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 max elevation of the highest wet pilot line release device above the main valve plus at least 10 psi (0.7 bar).



info@bermad.com • www.bermad.com

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