Hydraulically Controlled Deluge Valve

with EasyLock™ Manual Reset

Model: FP 400E-1M

UL LISTED

Typical Applications

- Automatic spray or foam systems
- Petrochemical facilities
- Flammable materials storage
- Gas storage tanks
- Hydraulic remote controlled systems

Features and Benefits

- **Latch open –** Closes upon local reset only
- **One-piece molded elastomeric moving part –** No maintenance required
- **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

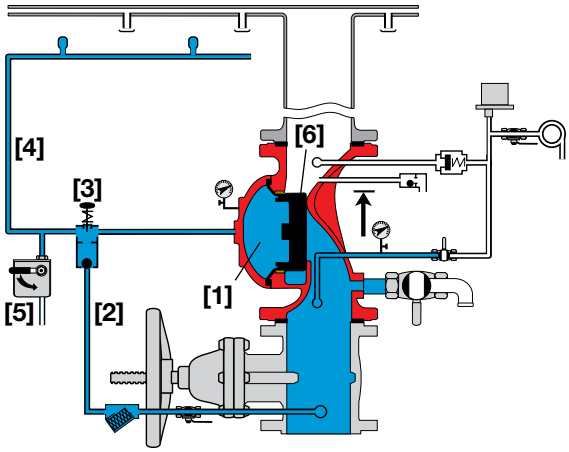
- **Water motor alarm**
- **Alarm pressure-switch** (code: P or P7)
- **Seawater service** (add FS as prefix to model)
- **Valve Position Single/Double Limit Switches**

Operation

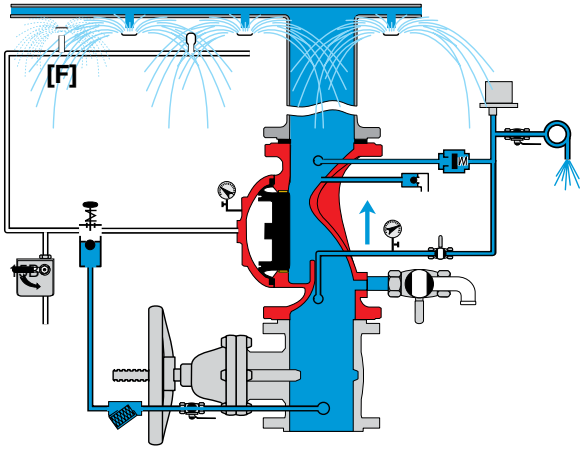
The BERMAD Model FP 400E-1M is suitable for systems that include wet pilot lines with closed fusible plugs (thermal releases), and piping systems with a wide variety of open nozzles. The typical wet pilot line is installed in a covered area and connected to the valve trim.

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 EasyLock internal check valve, by the closed wet pilot line **[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 drip-tight and keeping the system piping dry.

Under FIRE or TEST conditions, water is released from the control chamber through the opened thermal release **[F]** of the wet pilot line, or the Manual Emergency Release. The EasyLock 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

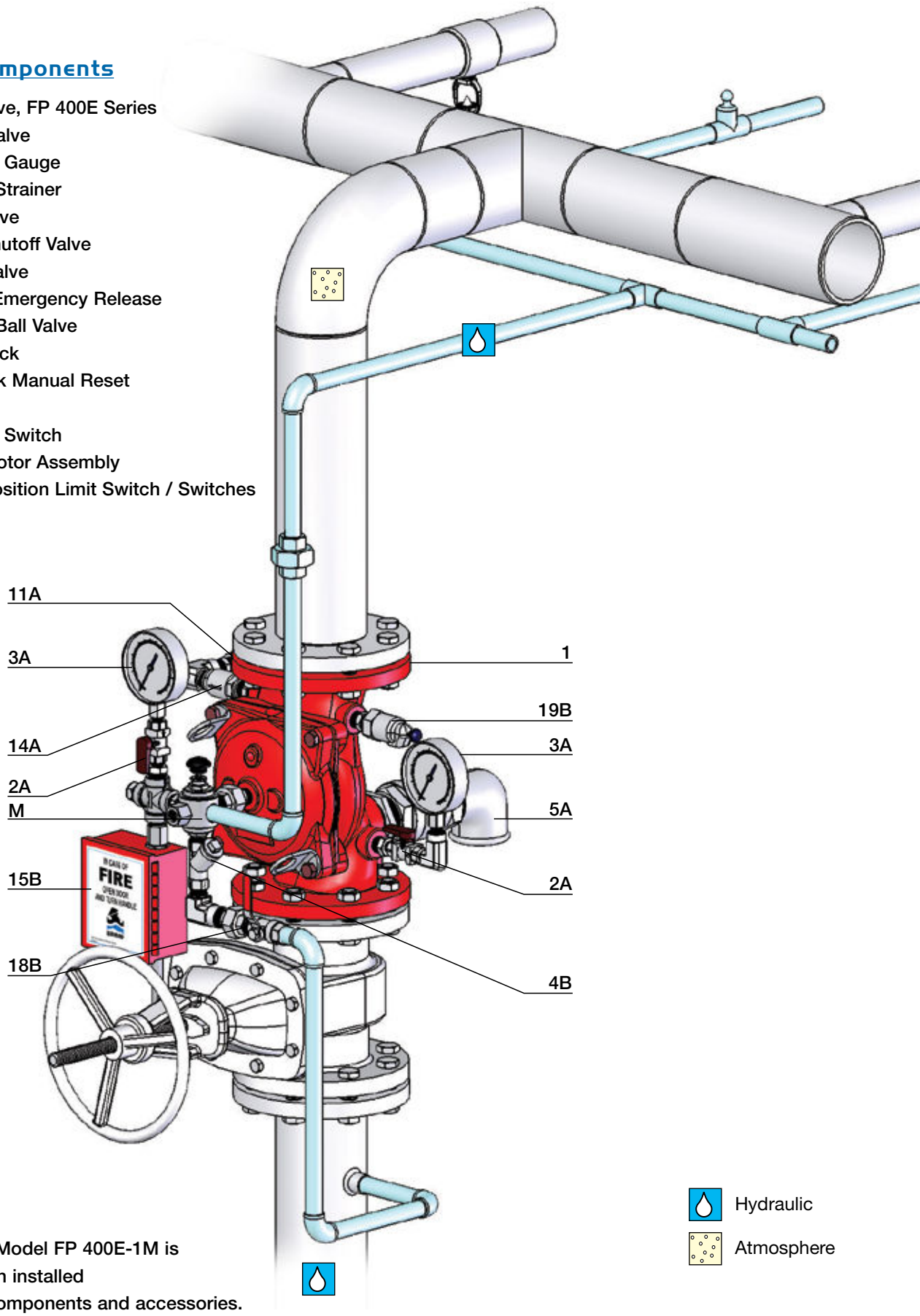
- The deluge valve shall be a UL-Listed, hydraulically controlled, elastomeric type globe valve with a **rolling-diaphragm**.
- The valve shall have an **unobstructed flow path** with no stem guide or **supporting ribs**.
- Valve actuation shall be accomplished by a fully peripherally supported, one-piece balanced rolling-diaphragm, vulcanized with a rugged radial seal disk. 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, Y Strainer 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 Hydraulically Controlled 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, FP 400E Series
2A - Gauge Valve
3A - Pressure Gauge
4B - Priming Strainer
5A - Drain Valve
11A - Alarm Shutoff Valve
14A - Check Valve
15B - Manual Emergency Release
18B - Priming Ball Valve
19B - Drip Check
M - EasyLock Manual Reset

Optional

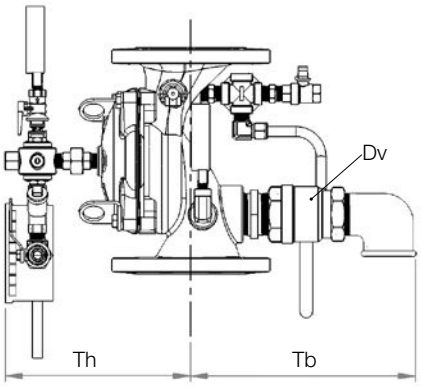
P - Pressure Switch
W - Water Motor Assembly
S - Valve Position Limit Switch / Switches

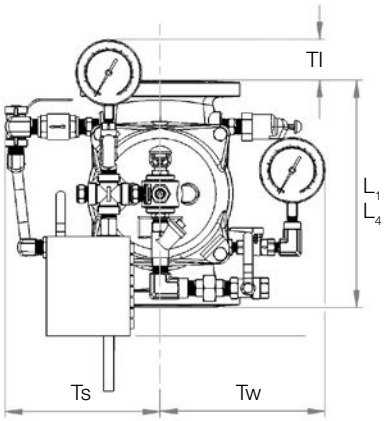


UL Listed
The BERMAD Model FP 400E-1M is UL-Listed when installed with specific components and accessories.

Hydraulic
Atmosphere

Technical Data





Size		1½", 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	L_1 (1)	205	8 1/16	205	8 1/16	257	10 1/8	320	12 5/8	415	16 5/16	500	19 11/16	605	23 13/16	725	28 9/16
	L_4 (2)	205	8 1/16	N/A	N/A	250	9 13/16	320	12 5/8	415	16 5/16	500	19 11/16	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	-	-	-	-	-	-
	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	318	12 1/2	326	12 13/16	326	12 13/16	391	15 3/8
	Th	226	8 7/8	242	9 1/2	262	10 5/16	261	10 5/16	356	14	407	16	407	16	546	21 1/2
	Tb	278	10 1/16	289	11 3/8	300	11 13/16	337	13 1/4	378	14 7/8	405	15 15/16	413	16 1/4	473	18 5/8
	Dv Ø	¾"		1½"		1½"		2"		2"		2"		2"		2"	

Notes:
1. L_1 is for flanged ANSI #150 and ISO PN16.
2. L_4 is for grooved end connections (Ductile Iron Only).
3. Provide adequate space around valve for maintenance.
4. Data is for envelope dimensions, specific component positioning may vary.

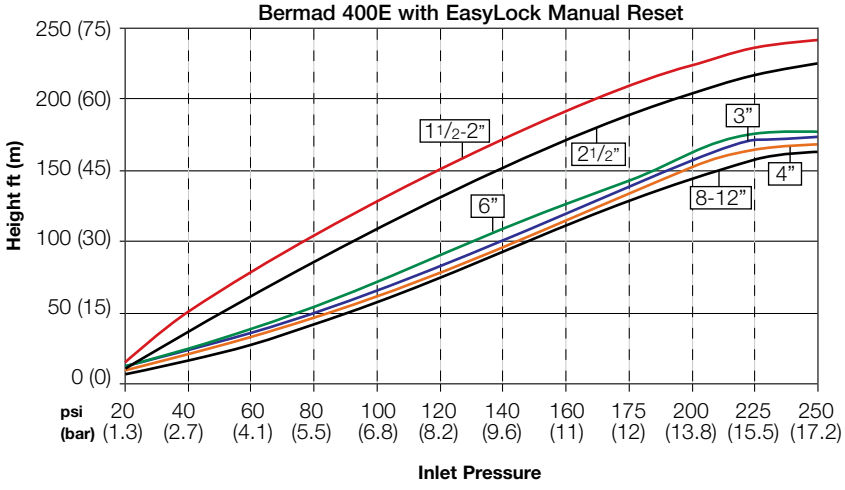
Connection Standard
- Flanged: ANSI B16.42 (Ductile Iron), B16.5 (Steel & Stainless Steel), B16.24 (Bronze) or ISO PN16
- Grooved: ANSI/AWWA C606 for 2, 3, 4, 6 & 8"

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

Available Sizes
- 1½, 2, 2½, 3, 4, 6, 8, 10 & 12"
- UL-Listed for sizes 1½, 2, 2½, 3, 4, 6, 8 & 10"

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

Wet Pilot line Maximum Elevation Above Valve
Bermad 400E with EasyLock Manual Reset



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 NR

Coating
- Electrostatic Powder Coating Polyester, 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
- Monel® and Ni-Al-Bronze
- Hastalloy C-276

Elastomers
- NBR
- EPDM

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