

400 Series

# Hydraulically Controlled Deluge Valve

with €asyLock™ Manual Reset

Model: FP 400E-1M





#### **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





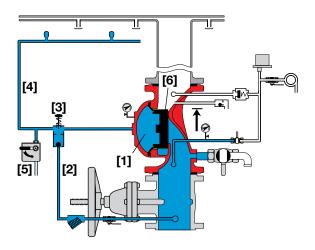
Model: FP 400E-1M 400 Series

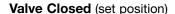
#### **Operation**

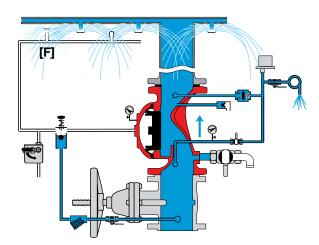
The BERMAD Model FP 400E-1M is suitable for systems that include wet pilot lines with closed fusible plugs (thermal releases), and piping systems with a wide variety of open nozzles. The typical wet pilot line is installed in a covered area and connected to the valve trim.

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 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.



The BERMAD Model FP 400E-1M is

with specific components and accessories.

**UL-Listed when installed** 



Model: FP 400E-1M 400 Series System Components - Main Valve, FP 400E Series 2A - Gauge Valve 3A - Pressure Gauge 4B - Priming Strainer 5A - Drain Valve 11A - Alarm Shutoff Valve 14A - Check Valve 000 15B - Manual Emergency Release 18B - Priming Ball Valve 19B - Drip Check M - EasyLock Manual Reset **Optional** - Pressure Switch W - Water Motor Assembly S - Valve Position Limit Switch / Switches 11A 1 3A 19B 3A <u>14A</u> 2A <u>5A</u> M 15B 2A 18B 4B Hydraulic **UL Listed** 

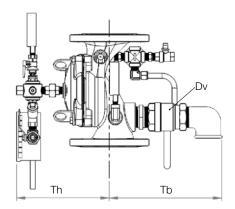


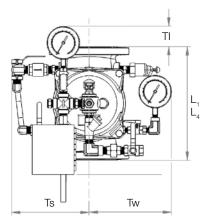
Atmosphere



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#### 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 <sub>1</sub> (1)	205	81/16	205	81/16	257	101//s	320	125/8	415	165/16	500	1911/16	605	2313/16	725	289/16
	L <sub>4</sub> (2)	205	81/16	N/A	N/A	250	913/16	320	125/8	415	165/16	500	1911/16	N/A	N/A	N/A	N/A
	TI	142	55/8	142	55/8	119	411/16	84	35/16	57	21/4	-	-	-	-	-	-
	Tw	228	9	220	811/16	243	99/16	253	10	312	125/16	326	1213/16	346	135/8	391	153/8
	Ts	228	9	220	811/16	243	99/16	253	10	318	121/2	326	1213/16	326	1213/16	391	153/8
	Th	226	87/8	242	9½	262	105/16	261	105/16	356	14	407	16	407	16	546	211/2
	Tb	278	101/16	289	11³/ <sub>8</sub>	300	1 1 <sup>13</sup> / <sub>16</sub>	337	131/4	378	14 <sup>7</sup> /8	405	15 <sup>15</sup> /16	413	161/4	473	185/8
	DvØ	3/4"		1½"		1½"		2"		2"		2"		2"		2"	

#### Notes:

- 1. L<sub>1</sub> is for flanged ANSI #150 and ISO PN16.
- 2.  $L_4^1$  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)

# ### 250 (75) | Sermad 400E with EasyLock Manual Reset | 250 (75) | 3" | 11/2-2" | 150 (45) | 150 (30) | 50 (15) | 50 (15) | 200 40 60 80 100 120 140 160 175 200 225 250 (bar) (1.3) (2.7) (4.1) (5.5) (6.8) (8.2) (9.6) (11) (12) (13.8) (15.5) (17.2)

Inlet Pressure

#### 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

