

MANUALLY OPERATED MONITOR / DELUGE VALVE - UL LISTED

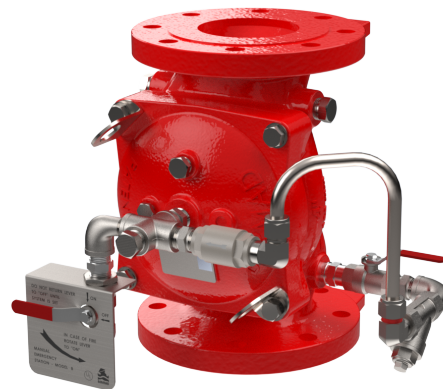
Model FP-400E-1D

The BERMAD model 400E-1D is an elastomeric hydraulic, line pressure operated deluge valve, designed specifically for advanced fire protection systems and the latest industry standards. The 400E-1D is activated manually by opening the local Manual Release Valve attached to the valve valve's control. The 400E-1D is ideal for use as a locally operated deluge valve for water spray or foam system nozzles.

It is also well suited for installation directly before high capacity water/foam monitors as a UL- Listed, quick opening control valve.

As standard the release valve is positioned locally on the valve, optionally the release valve can be positioned remotely.

The optional valve position indicator can include a limit switch suitable for Fire & Gas monitoring systems.



Features & Benefits

- Safety and reliability
 - Time proven, simple design with a fail safe actuation
 - Single piece, rugged elastomeric diaphragm seal - VRSD technology
 - Obstacle-free, uninterrupted flow path
 - No mechanical moving parts
 - Valve position limit switches (optional)
 - Meets the requirements of the industry standards
- Quick and easy maintenance
 - Designed for high reliability and easy maintenance
 - In-line serviceable
 - Fast and easy cover removal

Approvals



UL-Listed
Special System Water Control
Valves, Deluge Type (VLFT)
Sizes 1½" - 10"



Det Norske Veritas
Type Approval
Sizes 1½" to 12"



ABS
American Bureau of Shipping
Type Approval
Sizes 1½" - 12"



Lloyd's Register
Type Approval
Sizes 1½" - 10"

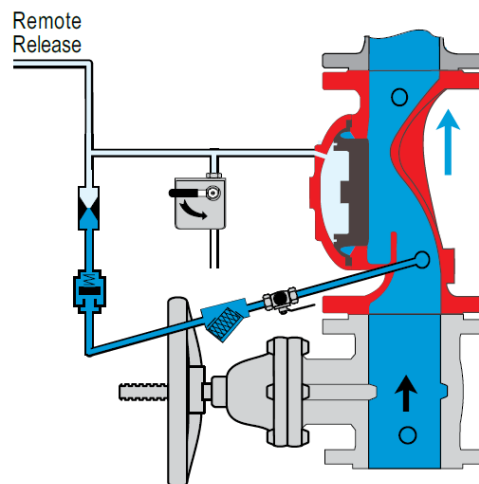
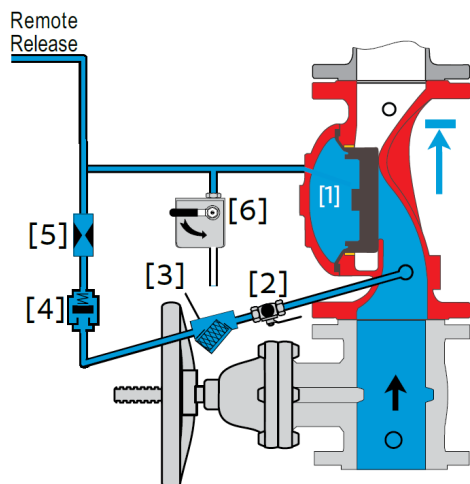
Typical Applications

- Automatic water spray systems
- Electric fire detection systems with control panels
- Foam applications
- Fire monitor installations
- Hydraulic remote controlled systems

Additional Features

- Seawater compatibility
- Alarm pressure switch
- Valve position limit switches
- Corrosion resistant zinc based high build epoxy coating

Operation

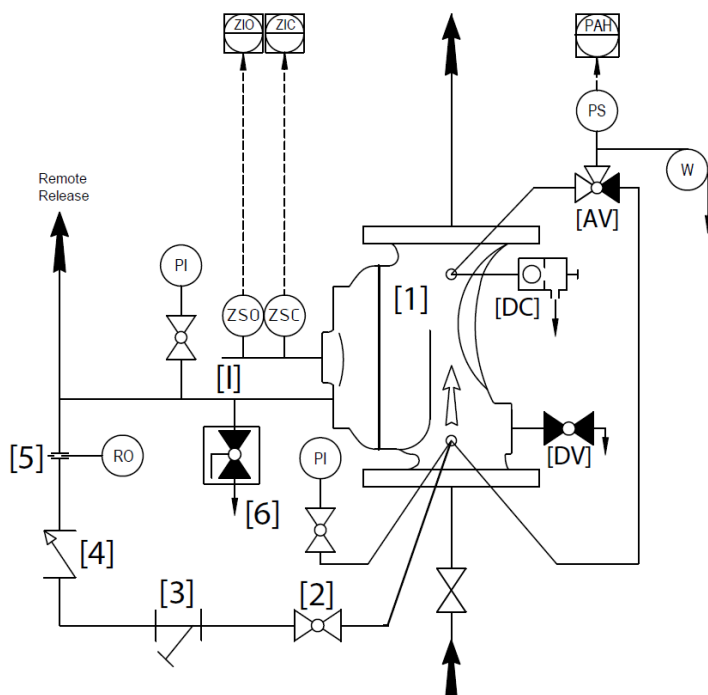


The BERMAD model 400E-1D is held closed by water pressure in the control chamber [1]. Upon release of pressure from the control chamber, the valve opens.

Under NORMAL conditions, water pressure is supplied to the control chamber via the priming line [2] strainer [3], and a restriction orifice [5]. The water pressure is then trapped in the control chamber by the check valve [4], and a manual release valve [6].

Under FIRE conditions, water pressure is released from the control chamber, by opening the local manual release or, when fitted, by opening the hydraulic remote Manual Release [7]. This opens the deluge valve allowing water to flow into the system piping and to the fire extinguishing devices.

System P&ID



Components	
1	BERMAD 400E deluge valve
2	Priming ball valve
3	Priming strainer
4	Check valve
5	Restriction orifice
6	Manual release

Optional System Items	
ZS	Limit Switch Assembly
PS	Pressure Switch
W	Water Motor Alarm
I	Visual Valve Position indicator
AV	3-way Alarm Test Valve*
DC	Automatic Drip Check Valve*
PI	Pressure Gauge*
DV	Drain Valve*

* Included with suffix A in valve code (drain and indicating components)
See code designations and "factory supplied additional items" on page 4

System Installation

A typical installation of the BERMAD model 400E-1D features manual actuation via a 2 way release valve positioned either remotely or on the main valve's trim.

The model 400E-1D performs equally well installed in a deluge system or as a monitor valve.

When fitted with a limit switch the valve can send a feedback signal to the remote valve position monitoring system.

Optional System Items



Water Motor Alarm



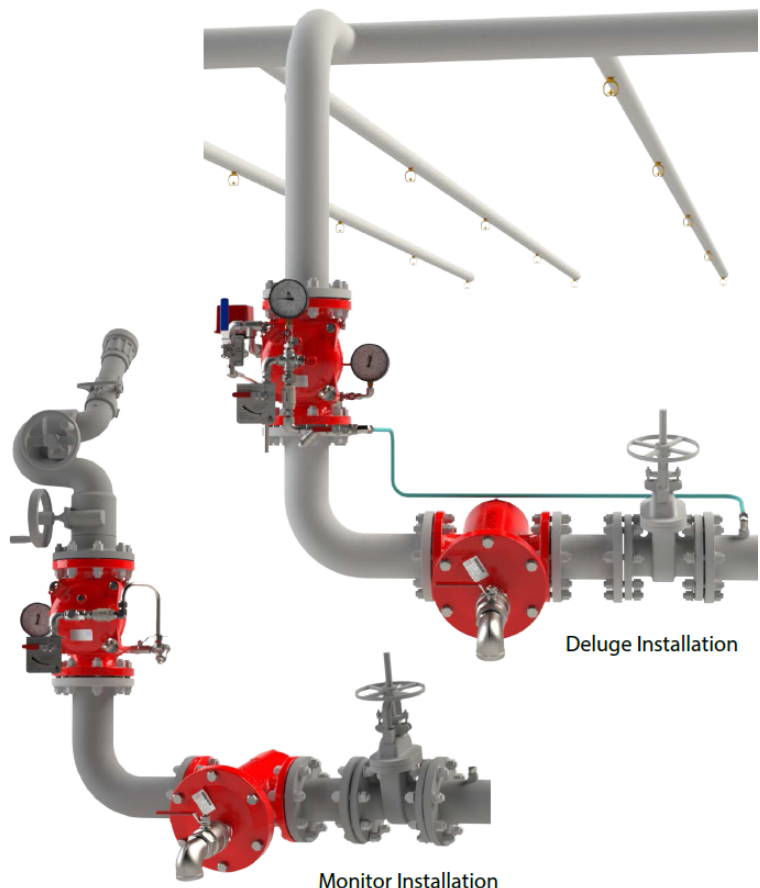
Exd Pressure
Switch - Stainless
Steel Enclosure for
Harsh
Environments
Pressure Gauge



Single Ex d
Proximity S.S.316
Limit Switch



Basket Strainer -
60F



Suggested Specifications

The valve shall be UL-listed, 250 psi/17.2 bar rated.

The valve shall have an unobstructed flow path, with no stem guide or supporting ribs.

The deluge valve shall have no mechanical moving parts, and the actuation shall utilize a single-piece diaphragm assembly of VRSD technology.

The valve shall be coated internally and externally with UV protection. Optional: C5-VH grade of ISO-12944 standard against corrosive conditions.

The control trim shall include a manual emergency release unit, a Y-type strainer, two 4-inch pressure gauges, and an automatic drip-check with manual override.

A valve position indicator shall be provided, and equipped with two proximity limit switches.

Removing the valve cover for full inspection and maintenance shall be in-line, and not require removal of the valve from the pipeline.

The deluge valve and control trim shall be pre-assembled and hydraulically tested by a UL/FM and ISO 9000, 9001 certified factory.

Technical Data

Available Sizes:

Flanged- 1½, 2, 2½, 3, 4, 6, 8, 10 & 12"

Grooved- 2, 3, 4, 6, & 8"

Pressure Rating:

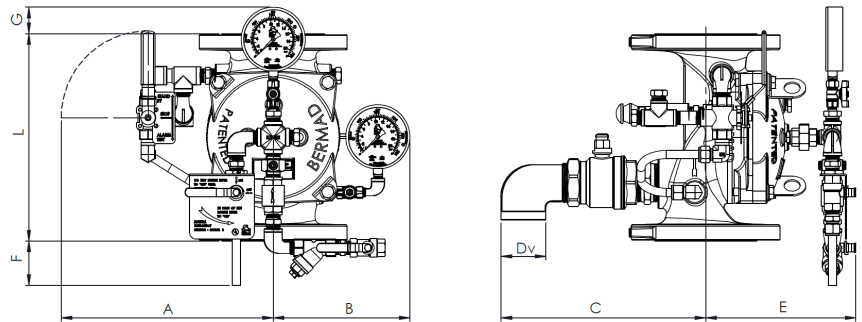
ANSI#150 - 17.2 bar | 250 psi

Grooved - 17.2 bar | 250 psi

Elastomer:

HTNR - Fabric Reinforced High Temperature

Compound - See engineering data



Valve Size	L #150 mm in	L Grooved mm in	A mm in	B mm in	C mm in	øD in	E mm in	F mm in	G mm in	Weight #150 kg lb
DN40 1½"	205 8.1	-	313 12.3	167 6.6	199 7.8	¾"	177 7	126 5	100 3.9	14 31
DN50 2"	205 8.1	205 8.1	313 12.3	167 6.6	199 7.8	¾"	177 7	126 5	100 3.9	15 33
DN65 2½"	205 8.1	-	325 12.8	172 6.7	253 10	1½"	179 7	126 5	100 3.9	17 37
DN80 3"	257 10.1	250 9.8	345 13.6	180 7	266 10.5	1½"	232 9.1	100 3.9	74 2.9	26 57
DN100 4"	320 12.6	320 12.6	328 12.9	212 8.3	316 12.4	2"	232 9.1	69 2.7	43 1.7	38 84
DN150 6"	415 16.3	415 16.3	349 13.7	204 8	347 13.7	2"	309 12.2	21 0.8	-	82 181
DN200 8"	500 19.7	-	383 15.1	270 10.6	364 14.3	2"	359 14.1	-	-	145 320
DN250 10"	605 23.8	-	-	396 15.6	384 15.1	2"	357 14	-	-	161 354
DN300 12"	725 28.5	-	438 17.2	333 13.1	422 16.6	2"	488 19.2	-	-	249 549

IMPORTANT: Dimensions for the trim envelope or extents refer to a vertical orientation and may vary with specific component positioning -Apart from the "L" dimension, allow a tolerance of at least ±15%

Valve Code Designations

