

HYDRAULICALLY CONTROLLED DELUGE VALVE WITH LOCAL RESET

Model FP-400Y-1M

The BERMAD model 400Y-1M is an elastomeric, hydraulic, line pressure operated deluge valve, designed specifically for advanced fire protection systems and the latest industry standards.

The 400Y-1M is activated by a pressure drop in a fusible plug wet pilot line. Once open the 400Y-1M latches open until locally reset.

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

The 400Y-1M is ideal for systems with open nozzles for water or foam discharge.



Features & Benefits

- Safety and reliability
 - Time proven, simple design with a fail safe actuation
 - Single piece rugged elastomer, VRSD technology
 - Obstacle-free, uninterrupted flow path
 - No mechanical moving parts
 - Latches open: remains open until reset locally
 - Valve position limit switches (optional)
 - Local valve position indicator beacon (optional)
- High performance
 - Very high flow efficiency
 - Straight through Y type body
 - Approved for PN25 / 365 psi
- Specifically-designed for fire protection
 - Face-to-face length standardized to ISO 5752 EN 558-1
 - Meets the requirements of the industry standards
- Quick and easy maintenance
 - In-line serviceable
 - Fast and easy cover removal
 - Swivel mounted drain valves (for valves 3" and larger)

Typical Applications

- Hydraulic remote controlled systems
- Automatic water spray systems
- Foam applications
- Corrosive water systems

Approvals



UL-Listed
Special System Water Control
Valves, Deluge Type (VLFT)
Sizes 1½" - 16"



FM Approved
for Deluge Sprinkler Systems
Sizes 1½" - 8"



Det Norske Veritas
Type Approval
Sizes 1½" to 16"



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

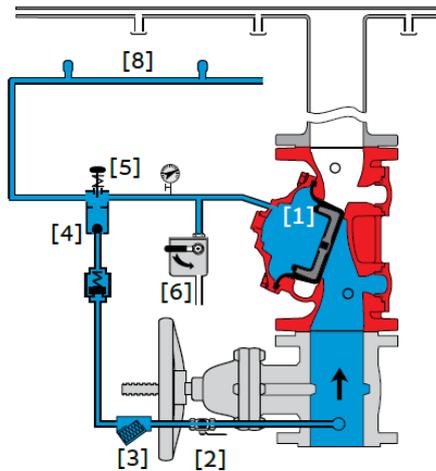


Lloyd's Register
Type Approval
Sizes 1½" - 10"

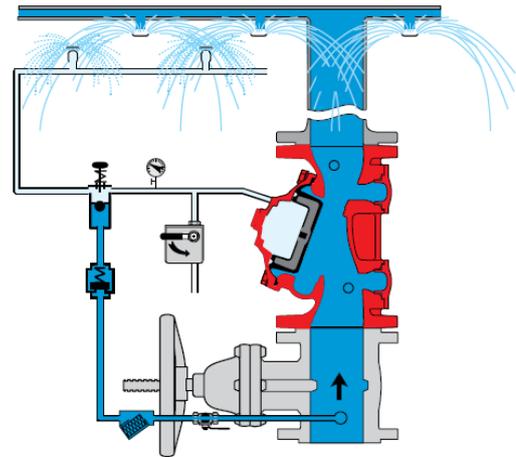
Additional Features

- Valve position limit switches
- Local valve position indicator beacon
- Seawater compatibility
- Drain valve/s inlet/outlet
- Corrosion resistant zinc based high build epoxy coating

Operation



Valve Closed (normal conditions)



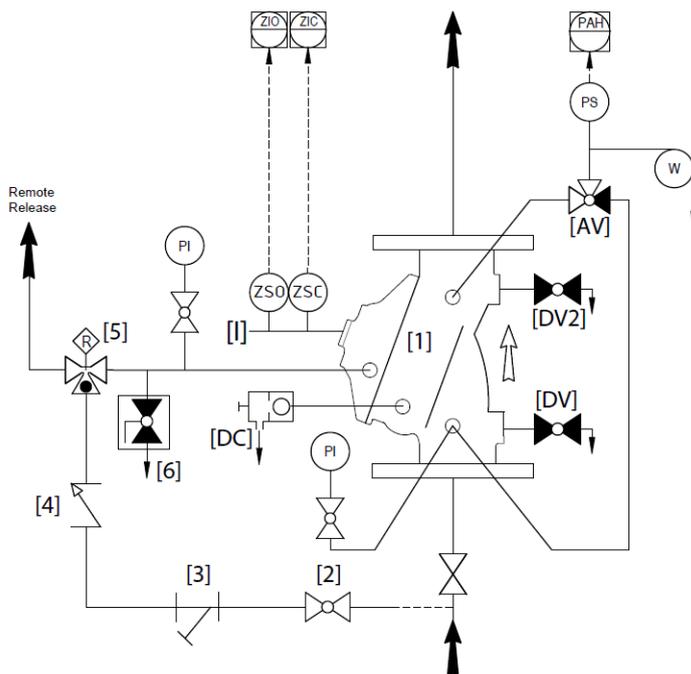
Valve Open (fire conditions)

The BERMAD model 400Y-1M 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 is then trapped in the control chamber by the closed manual emergency release [6] and the check feature [4], of the easy-lock manual reset valve [5]. The water pressure trapped in the control chamber of the deluge valve holds the diaphragm against the valve seat, sealing it drip-tight and keeping the system pipes dry.

Under FIRE conditions, water pressure is released from the control chamber, either with the manual emergency release, or by a release of water pressure of the hydraulic fusible plug pilot line [8], this increase in flow switches the easy-lock to close releasing pressure from the valve control chamber and thereby opening the deluge valve, allowing water to flow into the system piping and to the alarm devices. Once open the 400Y-1M latches open and can only be closed locally by manually depressing the easy-lock reset button.

System P&ID



Components	
1	BERMAD 400Y Deluge Valve
2	Priming Ball Valve
3	Priming Strainer
4	Check valve
5	Easy-Lock – Manual Reset
6	Manual Emergency Release

Optional System Items	
PS	Pressure Switch
W	Water Motor Alarm
ZS	Limit Switch Assembly
DV2	Downstream Drain valve
I	Visual Valve Position indicator
DV	Drain Valve*
PI	Pressure Gauge*
AV	3-way Alarm Test Valve*
DC	Automatic Drip Check Valve*

* Included with suffix A in valve code and mandatory for FM approval (drain and indicating components) See code designations on page 4 "Factory Supplied Additional Items"

System Installation

A typical installation of the BERMAD model 400Y-1M, features automatic actuation by way of a fall in pressure of a fusible plug wet pilot line. It can also be triggered manually using the local manual emergency release, or by using a remote hydraulic release.

When open and fitted with a limit switch the valve can send a feedback signal to a remote valve status monitoring system. **IMPORTANT:** Check the "Maximum Wet Pilot Line Height Above the Valve Vs Service or Inlet Pressure " on page 13 of the 400Y Engineering brochure.

Optional System Items



Pressure Gauge



Visual Position Indicator



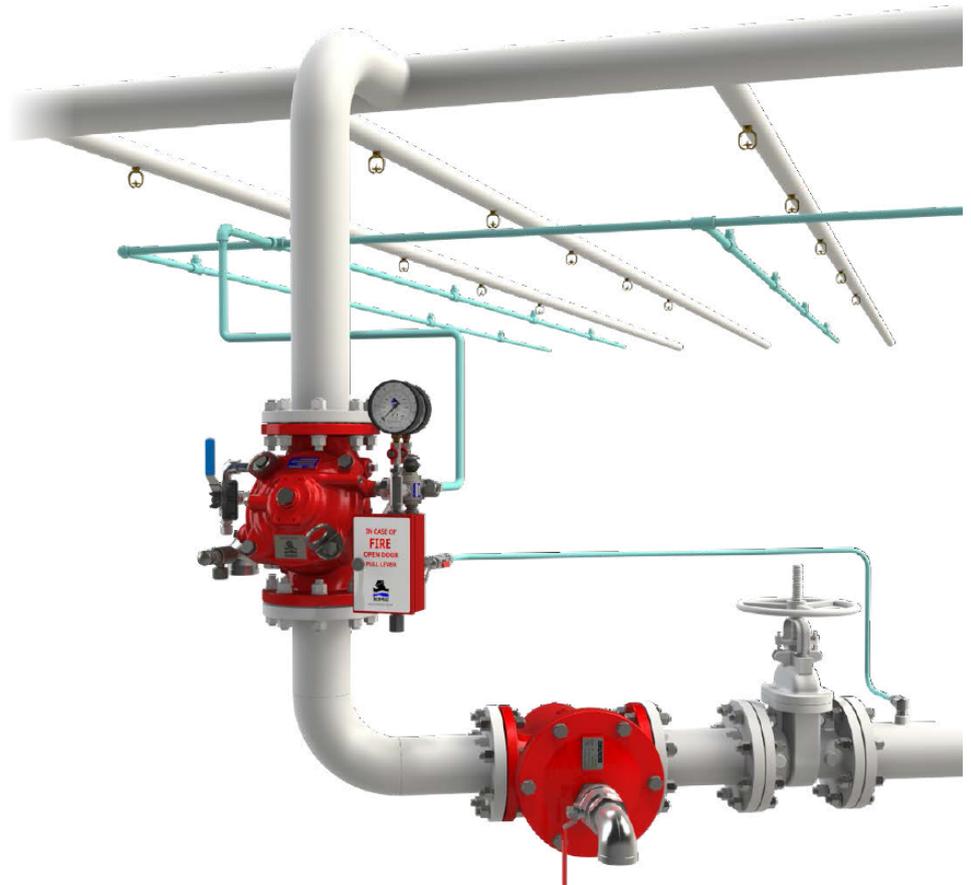
Rotating Limit Switch Box



Exd Pressure Switch - Stainless Steel Enclosure for Harsh Environments



Basket Strainer - 60F



Suggested Specifications

The deluge valve shall be UL-listed and FM-approved, 365-psi/25-bar rated, with a straight-through Ytypebody.

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, an Easy-Lock latching valve, a Y-type strainer, two 4-inch pressure gauges, an automatic drip-check with manual override, and a ball drain valve with a 360 degree swivel.

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 control trim.

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:

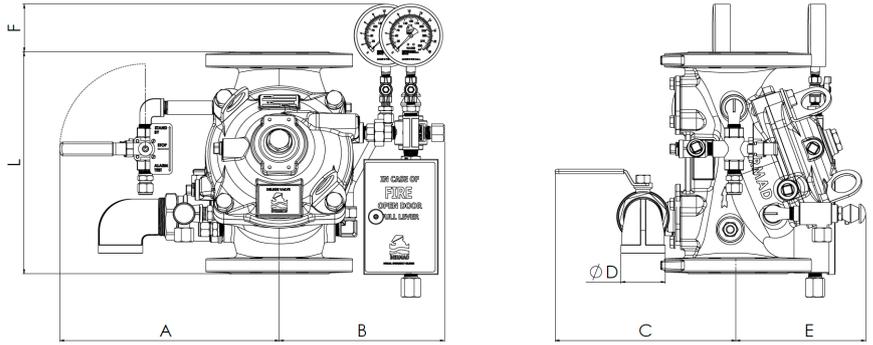
Flanged- 1½, 2, 2½, 3, 4, 6, 8, 10, 12, 14 & 16"
Grooved- 1½, 2, 2½, 3, 4, 6, 8 & 10"

Pressure Rating:

ANSI#150 - 17.2 bar | 250 psi
ANSI#300 - 1½" to 10" - 25 bar | 365 psi
ANSI#300 - 12" to 16" - 20 bar | 300 psi
Grooved - 17.2 / 25 bar | 250 / 365 psi

Elastomer:

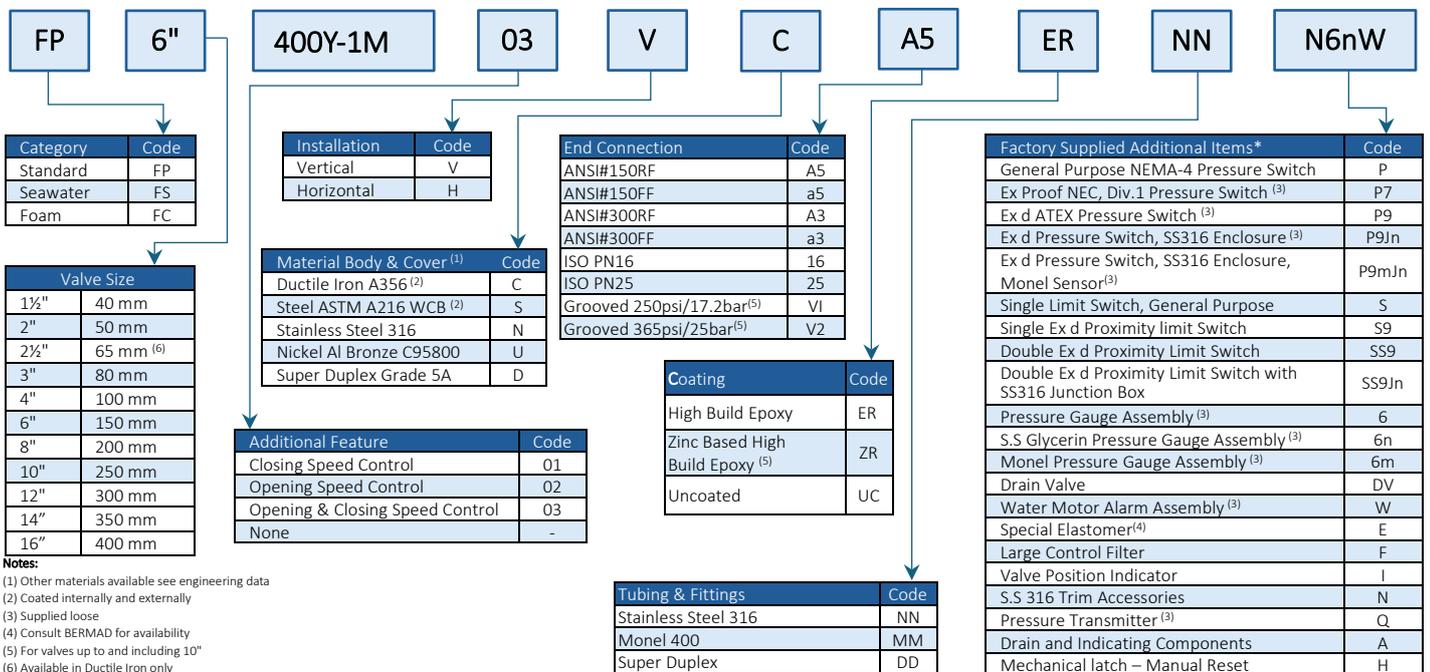
HTNR - Fabric Reinforced High Temperature Compound - See engineering data



Valve Size	L #150 mm in	L Grooved mm in	L #300 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	Weight #300 kg lb
DN40 1½"	230 9.1	230 9.1	230 9.1	259 10.2	167 6.6	241 9.5	¾"	180 7.1	101 4	-	18 40	20 45
DN50 2"	230 9.1	230 9.1	235 9.4	259 10.2	167 6.6	241 9.5	¾"	180 7.1	101 4	-	20 43	22 48
DN65 2½"	235 9.3	235 9.3	241 9.5	259 10.2	167 6.6	177 9.5	1½"	180 7.1	101 4	-	22 48	24 52
DN80 3"	310 12.2	310 12.2	326 12.8	313 12.3	-	177 7	1½"	-	-	-	-	-
DN100 4"	350 13.8	350 13.8	368 14.5	343 13.5	-	287 11.3	2"	-	-	-	-	-
DN150 6"	480 18.9	480 18.9	506 19.9	358 14	-	302 11.9	2"	-	-	-	-	-
DN200 8"	600 23.6	600 23.6	626 24.7	392 15.4	-	317 12.5	2"	-	-	-	-	-
DN250 10"	730 28.7	730 28.7	730 28.7	406 16	-	317 12.5	2"	-	-	-	-	-
DN300 12"	850 33.5	-	888 35	478 18.8	-	380 15	2"	-	-	-	-	-
DN350 14"	980 38.6	-	980 38.6	478 18.8	-	379 14.9	2"	-	-	-	-	-
DN400 16"	1100 43.3	-	1100 43.3	478 18.8	-	405 16.1	2"	-	-	-	-	-

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



Notes:
(1) Other materials available see engineering data
(2) Coated internally and externally
(3) Supplied loose
(4) Consult BERMAD for availability
(5) For valves up to and including 10"
(6) Available in Ductile Iron only

*More options available – consult BERMAD