

ELECTRICALLY CONTROLLED DELUGE VALVE WITH LOCAL RESET

Model FP-400Y-3UM

The BERMAD model 400Y-3UM is an elastomeric, hydraulic, line pressure operated deluge valve, designed specifically for advanced fire protection systems, and the latest industry standards. The 400Y-3UM is activated by a 3-way solenoid valve, which actuates a latching relay valve, to open the main valve. Once open the main valve will not close until locally reset.

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

The 400Y-3UM is ideal for systems with open nozzles for water or foam discharge, available with electric components to suit any hazardous location.



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
 - Latches open: remains open until reset locally
 - Valve position limit switches (optional)
- High Performance
 - Very high flow efficiency
 - Straight through flow Y- type body
 - Approved for PN25 / 365 psi
- Quick and easy maintenance
 - Face-to-face length standardized to ISO 5752, EN 558-1
 - UL429A Listed 3-Way Solenoid Valve
 - Meets the requirements of industry standards
- Quick and easy maintenance
 - In-line serviceable
 - Fast and easy cover removal
 - Swivel mounted drain valves for quick and efficient installation (not including 1½" & 2" valves)

Typical Applications

- Automatic water spray systems
- Foam applications
- Electric fire detection systems with control panels

Approvals



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



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



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



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

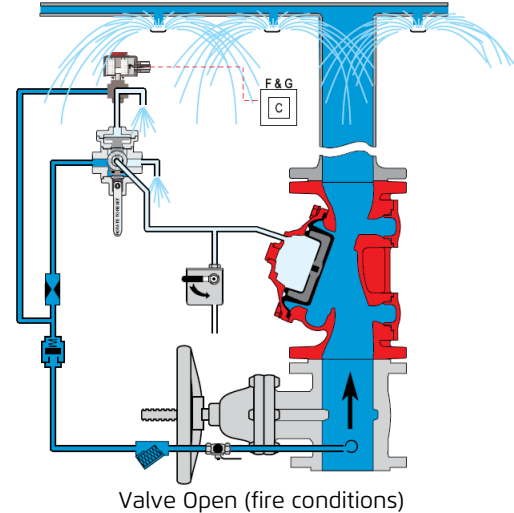
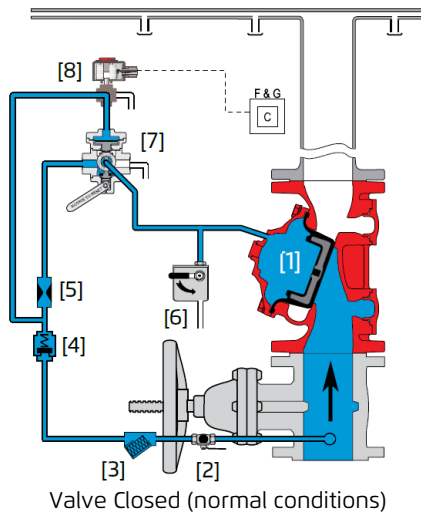


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Type Approval
Sizes 1½" to 16"

Additional Features

- Valve position limit switches
- Local valve position indicator beacon
- Seawater compatibility
- Drain valve/s inlet/outlet

Operation

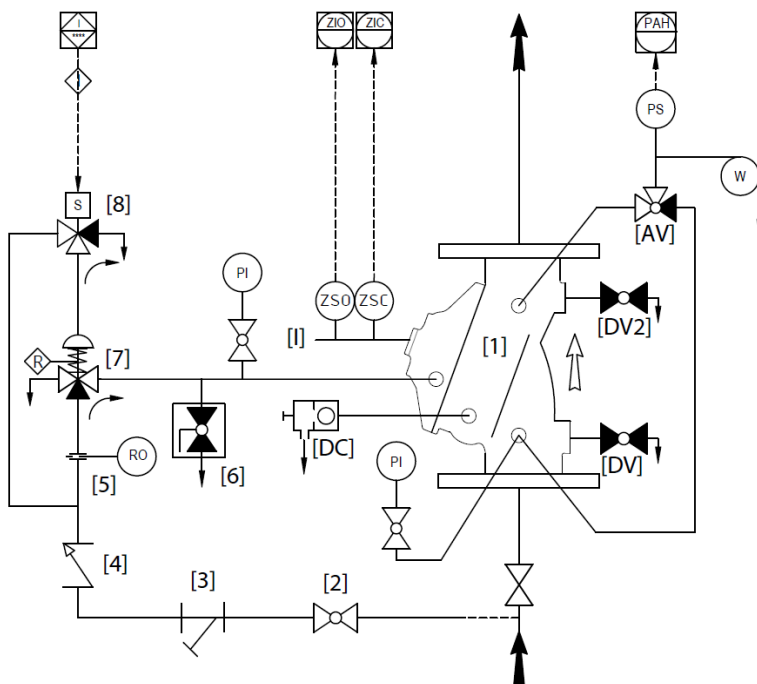


The BERMAD model 400Y-3UM is held closed by water pressure in the control chamber [1]. Upon release of pressure from the control chamber, the valve opens.

Under NORMAL conditions, water pressure is supplied to the control chamber via the priming line [2] strainer [3] and restriction orifice [5] and is then trapped in the control chamber by a check valve [4], manual emergency release [6], and a relay valve (URV-M) [7] that is held in the supply position by hydraulic pressure supplied through a three-way solenoid valve [8]. The water pressure trapped in the control chamber 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 the URV-M switching to the release position in response to the solenoid valve being activated by the fire & gas control system [C]. This latches the 400Y-3UM deluge valve open, allowing water to flow into the system piping and the alarm device.

System P&ID



Components	
1	BERMAD 400Y Deluge Valve
2	Priming Ball Valve
3	Priming Strainer
4	Check Valve
5	Restriction Orifice
6	Manual Emergency Release
7	URV-3-M Relay Valve
8	3-Way NO Solenoid Valve

Optional System Items	
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-3UM features automatic actuation via a relay valve and three-way solenoid valve, triggered by a signal from a fire & gas control system or an on-site emergency push-button. When fitted with a limit switch, the valve can send a feedback signal to a remote valve position monitoring system.

Optional System Items

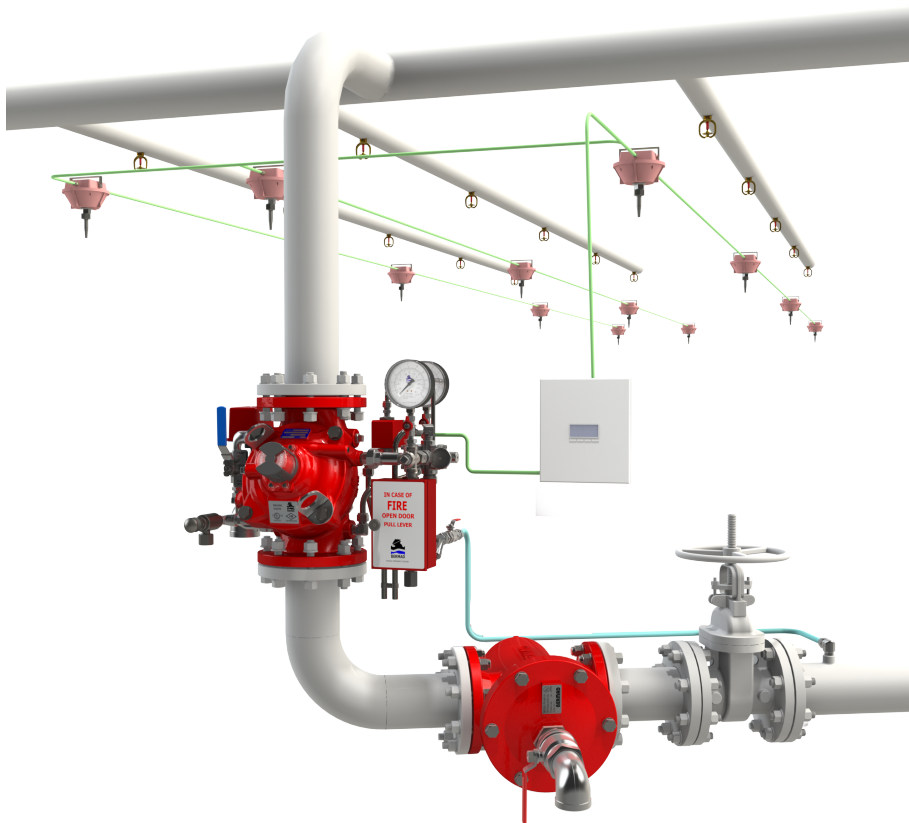


Pressure Gauge



Exd Pressure
Switch - Stainless
Steel Enclosure for
Harsh
Environments
Visual Position
Indicator


Rotating Limit
Switch Box

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 solenoid valve shall be a 3-way FM and UL429A-listed for 365 psi/25 bar with 65% of the rated voltage.

The control trim shall include an auxiliary latching relay valve, a manual emergency release unit, 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

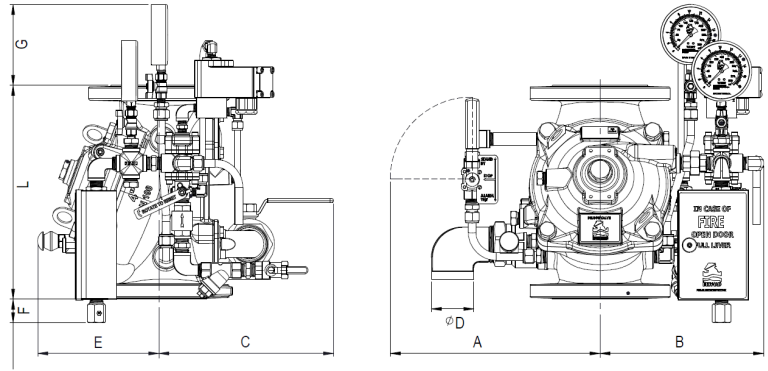
ANSI#300 - 1½" to 10" - 25 bar | 365 psi

ANSI#300 - 12" to 16" - 20 bar | 300 psi

Grooved - 17.2 / 25 bar | 250 / 365 psi

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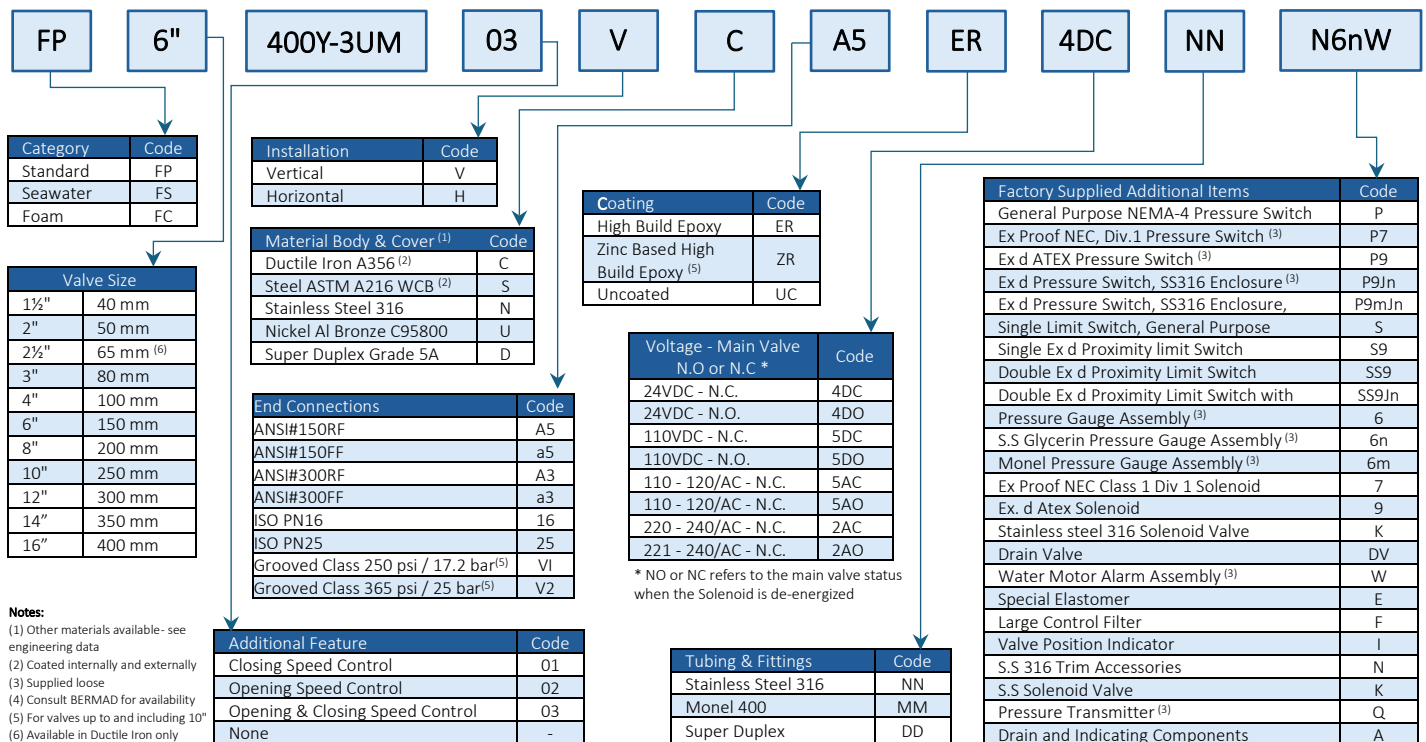
HTNR - Fabric Reinforced High Temperature Compound - See engineering data



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	293 11.5	210 8.3	177 7	¾"	215 8.5	133 5.2	178 7	19 35.2	21 46.2
DN50 2"	230 9.1	230 9.1	238 9.3	293 11.5	210 8.3	177 7	¾"	215 8.5	133 5.2	178 7	20 44	22 48
DN65 2½"	235 9.3	235 9.3	241 9.5	279 11	221 8.7	241 9.5	1½"	120 4.7	119 4.6	98 3.9	25 55	30 66
DN80 3"	310 12.2	310 12.2	326 12.8	313 12.3	269 10.6	221 8.7	1½"	186 7.3	64 2.5	88 3.5	37 81	42 92
DN100 4"	350 13.8	320 12.6	368 14.5	343 13.5	278 11	287 11.3	2"	199 7.8	37 1.5	135 5.3	51 112	58 128
DN150 6"	480 18.9	480 18.9	506 19.9	358 14	331 13	302 11.9	2"	234 9.2	-	27 1	99 218	119 262
DN200 8"	600 23.6	600 23.6	626 24.6	392 15.4	390 15.3	317 12.5	2"	301 11.9	-	2 1	168 370	188 414
DN250 10"	730 28.7	730 28.7	730 28.7	406 16	390 15.4	317 12.5	2"	301 11.9	-	-	201 442	236 519
DN300 12"	850 33.5	-	888 35	478 18.8	473 18.6	380 15	2"	441 17.4	-	-	358 788	408 898
DN350 14"	980 38.6	-	980 38.6	478 18.8	473 18.6	379 14.9	2"	441 17.4	-	-	394 867	473 1041
DN400 16"	1100 43.3	-	1100 43.3	478 18.8	473 18.6	405 15.9	2"	417 16.4	-	-	445 979	565 1243

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