

## Electrically Controlled Deluge Valve

### Model: FP 400Y-3UH

The BERMAD model 400Y-3UH is an elastomeric, hydraulic, line pressure operated deluge valve, designed specifically for advanced fire protection systems, and the latest industry standards.

The 400Y-3UH is activated by a 3-way solenoid valve, which actuates a latching relay valve, opening the main valve. Once open, the main valve will not close until locally reset. The valve's position monitoring device features a visual position indicator, that can interface with any fire & gas control system.

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



### Benefits and Features

- **Safety and reliability**
  - Time proven, Simple, 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
  - Local valve position indicator beacon
- **High performance**
  - Very high flow efficiency
  - Straight through flow 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 industry standards
- **Quick and easy maintenance**
  - In-line serviceable
  - Quick cover removal without detaching control trim\*
  - Swivel mounted drain valves\*, for quick and efficient installation

\* not including 1½" & 2" valves

### Typical Applications

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

### Approvals



UL-Listed  
Special System Water Control  
Valves Deluge Type (VLFT)



FM Approved  
for Deluge Sprinkler Systems



Det Norske Veritas  
Type Approval



ABS  
American Bureau of Shipping  
Type Approval

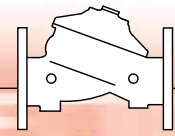


Lloyd's Register  
Type Approval

### Factory Fitted Options

- Valve position limit switches
- Local valve position indicator beacon
- Stainless steel seat ring
- Alarm pressure switch
- Sea water compatibility
- Downstream drain valve

# BERMAD Fire Protection

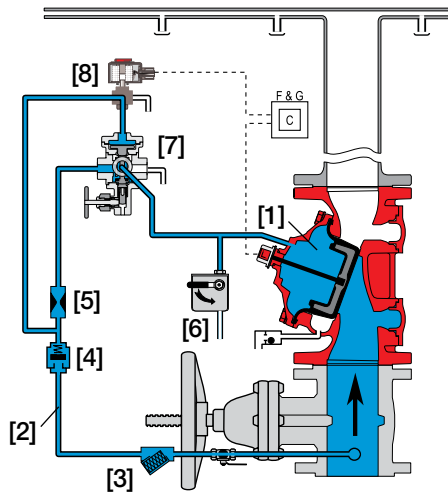


Model: FP 400Y-3UH

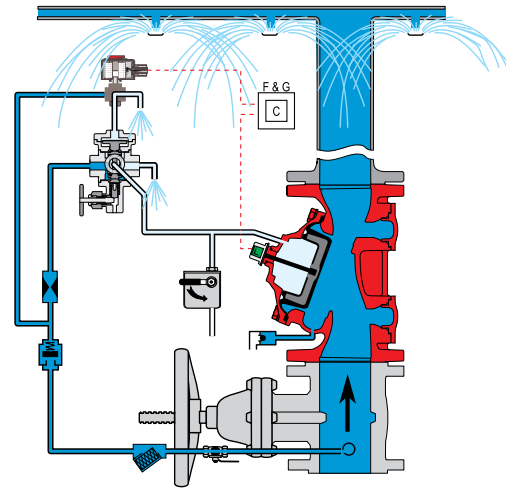
400Y Series

## Operation

(for Illustration Only)



**Valve Closed** (normal conditions)

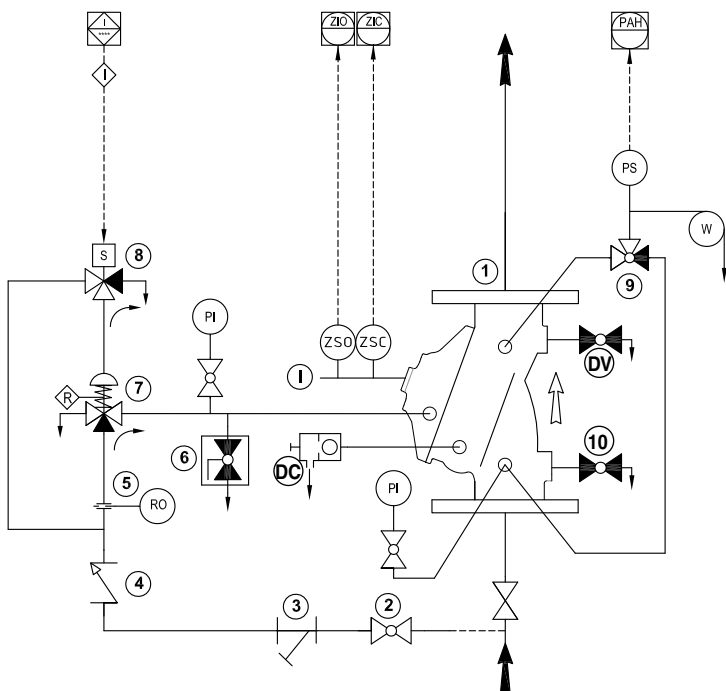


**Valve Open** (fire conditions)

The BERMAD model 400Y-3UH 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-3UH deluge valve open, allowing water to flow into the system piping and the alarm device.

## System P&ID

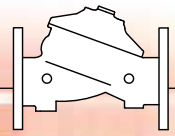


### Components

- 1 BERMAD 400Y Deluge Valve
- 2 Priming Ball Valve
- 3 Priming Strainer
- 4 Check valve
- 5 Restriction Orifice
- 6 Manual Emergency Release
- 7 URV-M, Latching Pilot Valve
- 8 3-Way NO Solenoid Valve
- 9 3-Way Alarm Valve
- 10 Drain Valve

### Factory Fitted Options

- ZS Limit Switch Assembly
- I Visual Indicator
- DC Automatic Drip Check Valve
- DV Additional Drain Valve
- PI Pressure Indicator
- PS Pressure Switch
- W Water Motor Alarm



## System Installation

A typical installation of the BERMAD model 400Y-3UH 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 pushbutton. When fitted with a limit switch, the valve sends a feedback signal to the remote valve position monitoring system.

## Factory Fitted Options



Water Motor Alarm



Pressure Switch



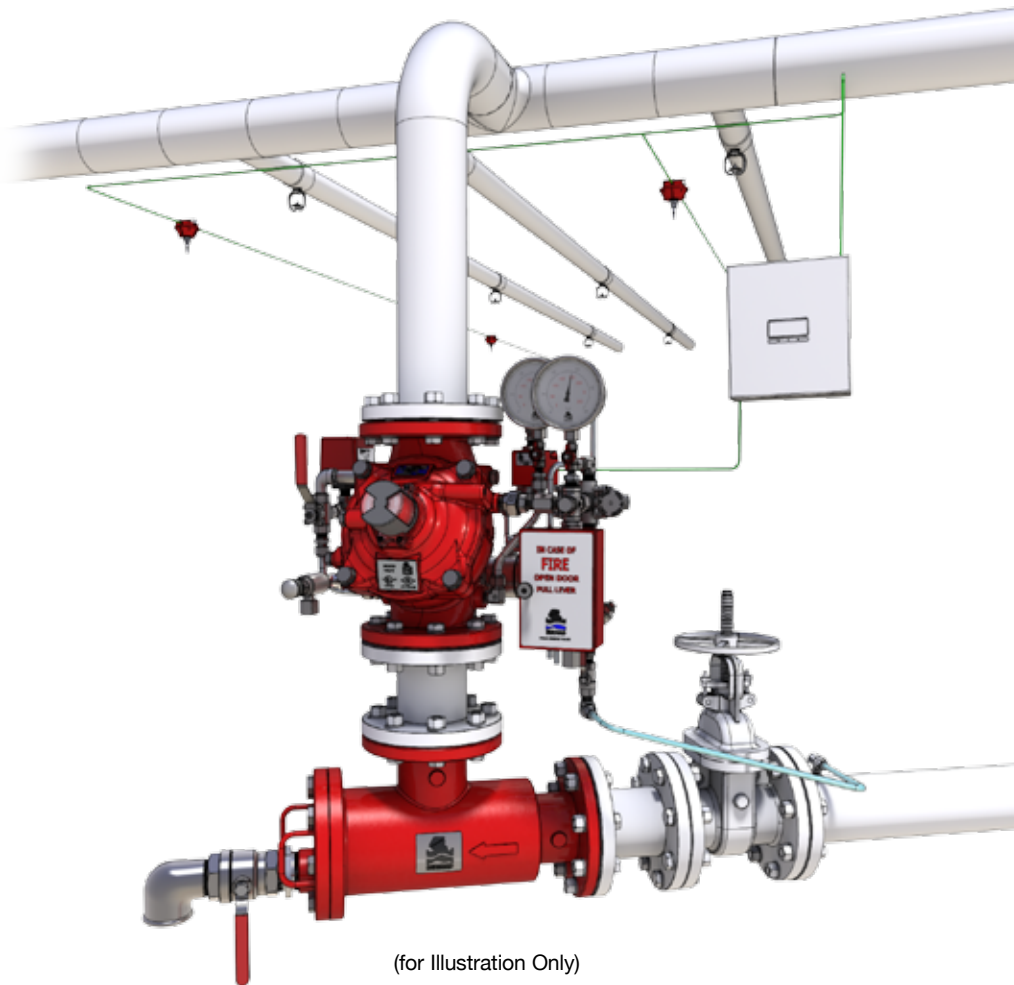
Valve Position Indicator



Limit Switch



Strainer



## Suggested Specifications:

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

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

Valve actuation shall be accomplished by a single-piece, rolling diaphragm bonded with a rugged radial seal disk.

The diaphragm assembly shall be the only moving part.

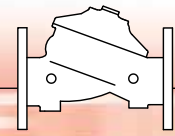
The deluge valve shall include a latching relay pilot valve, a 3-Way solenoid valve FM approved for 25 bar/365 psi working pressure with a tolerance of 35% below of the rated voltage, a Y-type strainer, a ball drain valve, an automatic drip-check with manual override, 4-inch pressure gauges, and a manual emergency release housed in a stainless steel box.

The valve shall be equipped with a protective-covered, dual-color, rotational position indicator visible readable 50 meters, and with two limit switches enclosed in a protective switch box.

Removing the valve cover for inspection and maintenance shall be in-line and not require removal of the control trim.

The deluge valve and its entire control trim shall be supplied pre-assembled and hydraulically tested by a factory certified to ISO 9000 and 9001 quality assurance standards.

# BERMAD Fire Protection



Model: FP 400Y-3UH

400Y Series

## Technical Data

### Available Sizes (inch)

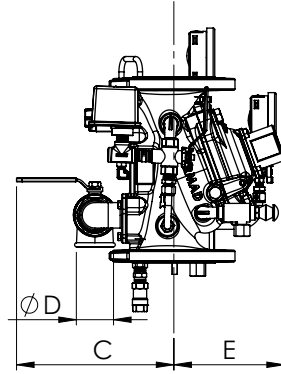
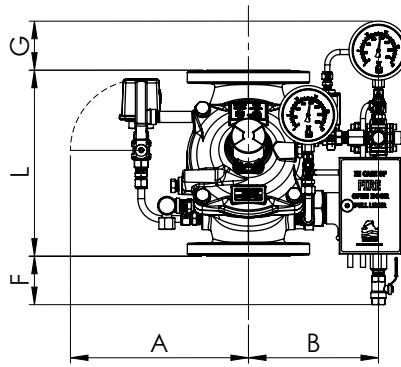
- Flanged - 1½, 2, 3, 4, 6, 8, 10, 12, 14 & 16"
- Grooved - 2, 3, 4, 6 & 8"
- Threaded - 1½ & 2"

### Pressure Rating

- ANSI#150 - 16 bar / 235
- ANSI#300 - 25 bar / 365 psi
- Grooved - 25 bar / 365 psi
- Threaded - 25 bar / 365 psi

### Temperature Rating

- 60°C / 140°F with NR elastomers (standard)
- 90°C / 194°F with EPDM elastomers

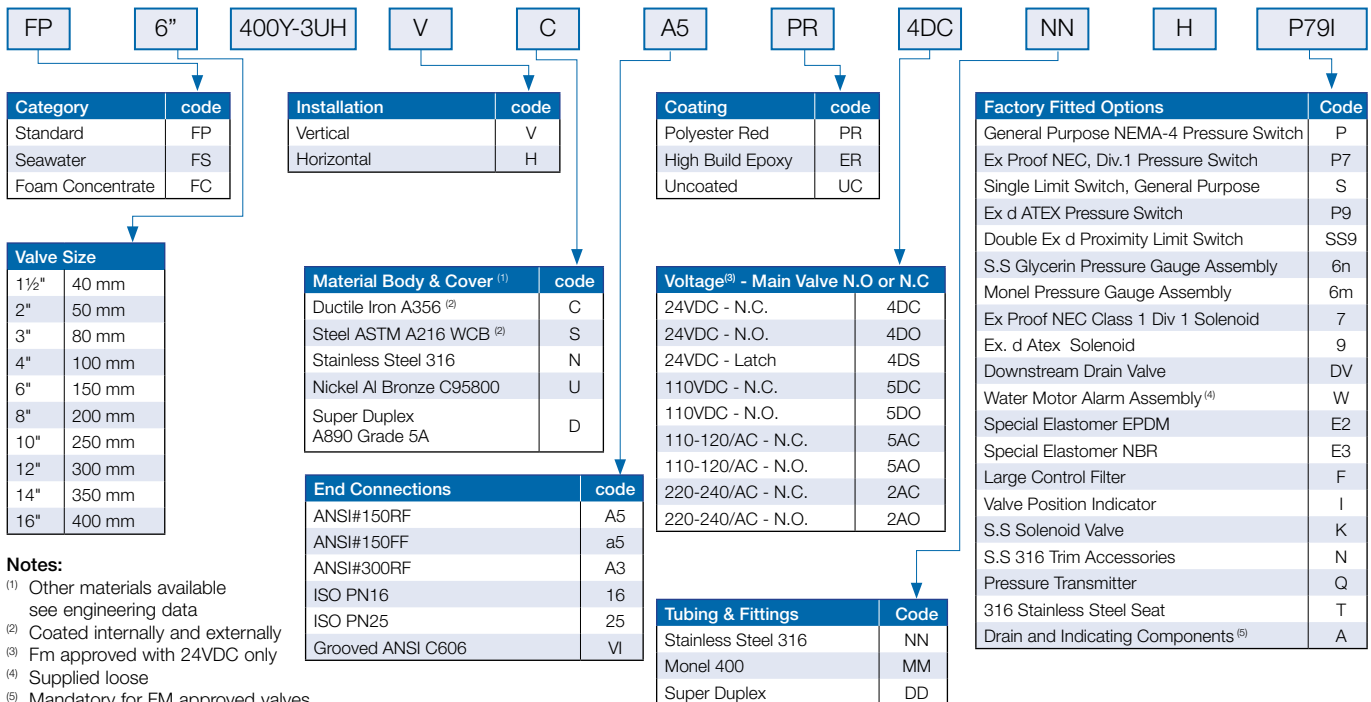


Valve Size	1½" DN40	2" DN50	3" DN80	4" DN100	6" DN150	8" DN200	10" DN250	12" DN300	14" DN350	16" DN400
<sup>(1)</sup> L <sup>1</sup> ANSI #150 mm (in.)	230(9.06)	230(9.06)	310(12.21)	350(13.79)	480(18.91)	600(23.64)	730(28.76)	850(33.49)	980(38.61)	1100(43.34)
L <sup>2</sup> ANSI #300 mm (in.)	230(9.06)	235(9.25)	326(12.84)	368(14.50)	506(19.94)	626(24.66)	730(28.76)	850(33.49)	980(38.61)	1100(43.34)
A mm (in.)	330(13.0)	330(13.0)	390(15.4)	398(15.7)	451(17.8)	481(18.9)	481(18.9)	594(23.4)	594(23.4)	594(23.4)
B mm (in.)	249(9.8)	249(9.8)	307(12)	317(12.5)	372(14.64)	400(15.7)	400(15.7)	513(20.2)	513(20.2)	513(20.2)
C mm (in.)	241(9.5)	241(9.5)	274(10.8)	290(11.4)	304(12.0)	320(12.6)	320(12.6)	383(15.1)	383(15.1)	408(16.1)
D mm (in.)	¾"	¾"	1½"	2"	2"	2"	2"	2"	2"	2"
E mm (in.)	167(6.6)	167(6.6)	191(7.5)	205(8.1)	273(10.7)	338(13.3)	338(13.3)	490(19.3)	490(19.3)	465(18.3)
F mm (in.)	189(7.4)	189(7.4)	119(4.7)	92(3.6)	10(0.4)	-	-	-	-	-
G mm (in.)	121(4.8)	121(4.8)	111(4.4)	98(3.8)	49.5(1.9)	25(1)	-	-	-	-
Kv m <sup>3</sup> /h (Cv gpm)	68(79)	80(92)	190(219)	345(398)	790(912)	1160(1340)	1355(1652)	2600(3040)	2950(3450)	3254(3801)
<sup>(2)</sup> Leq m (ft)	2(6)	4(14)	8(25)	8(25)	13(43)	27(89)	55(179)	40(128)	66(215)	127(413)
Weight, flanged kg (lbs)	15.26(33.5)	16.66(36.6)	31.36(69.0)	41.36(91.0)	84.66(186.3)	147.86(325.3)	177.86(391.3)	320.86(705.9)	353.86(778.5)	399.86(879.7)

Notes: <sup>(1)</sup> L<sup>1</sup> Dimensions are for grooved, threaded and raised face flanged valves

<sup>(2)</sup> Leq: Equivalent pipe length for turbulent flow in clean commercial steel pipe (SCH 40)

## Valve Code Designations



### Notes:

- <sup>(1)</sup> Other materials available see engineering data
- <sup>(2)</sup> Coated internally and externally
- <sup>(3)</sup> Fm approved with 24VDC only
- <sup>(4)</sup> Supplied loose
- <sup>(5)</sup> Mandatory for FM approved valves



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