

Electrically Controlled On-Off Deluge Valve

Model: FP 400Y - 3D

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

The 400Y-3D is activated by a 3-way solenoid valve. Opening and closing of the valve can be controlled remotely. The valve's position monitoring device features a visual position indicator that can interface with any fire & gas control system.

The 400Y-3D 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
- Shuts off on remote command

■ High performance

- Very high flow efficiency
- Approved for PN25 / 365 psi
- Straight through flow Y-type body

■ 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*

* 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)



Det Norske Veritas
Type Approval



ABS
American Bureau of Shipping
Type Approval

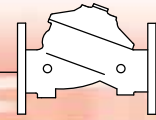


Lloyd's Register
Type Approval

Factory Fitted Options

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

BERMAD Fire Protection

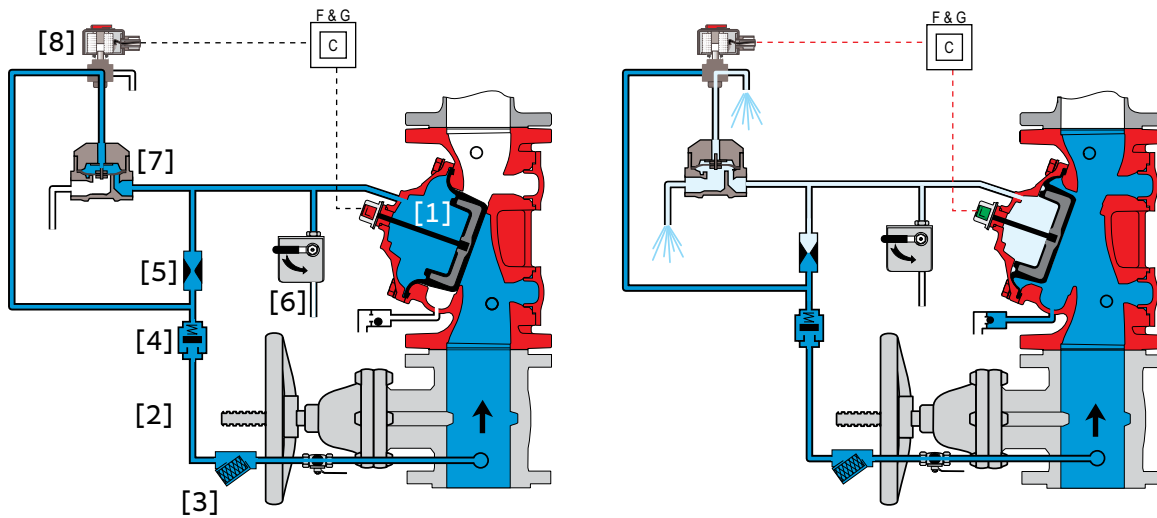


Model: FP 400Y - 3D

400Y Series

Operation

(for illustration only)



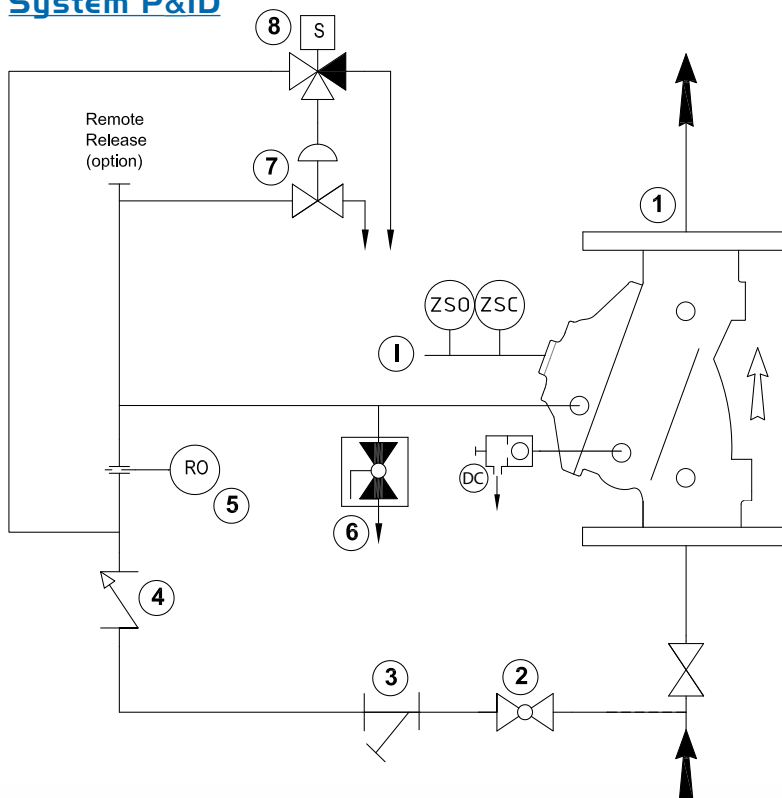
Valve Closed (normal conditions)

Valve Open (fire conditions)

The BERMAD model 400Y-3D 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], restriction orifice [5] and strainer [3], and is then trapped in the control chamber by a check valve [4], manual emergency release [6], and a relay valve (HRV) [7] that is held closed by hydraulic pressure supplied through a three-way solenoid valve [8]. The water pressure trapped in the main valve 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 HRV opening in response to the solenoid valve being activated by the fire & gas control system [C]. This opens the 400Y-3D deluge valve, allowing water to flow into the system piping.

System P&ID

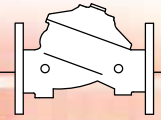


Components

- 1 BERMAD 400Y Deluge Valve
- 2 Priming Ball Valve
- 3 Priming Strainer
- 4 Check valve
- 5 Restriction Orifice
- 6 Manual Emergency Release
- 7 HRV-Hydraulic Relay Valve
- 8 3-Way NC Solenoid Valve

Factory fitted options

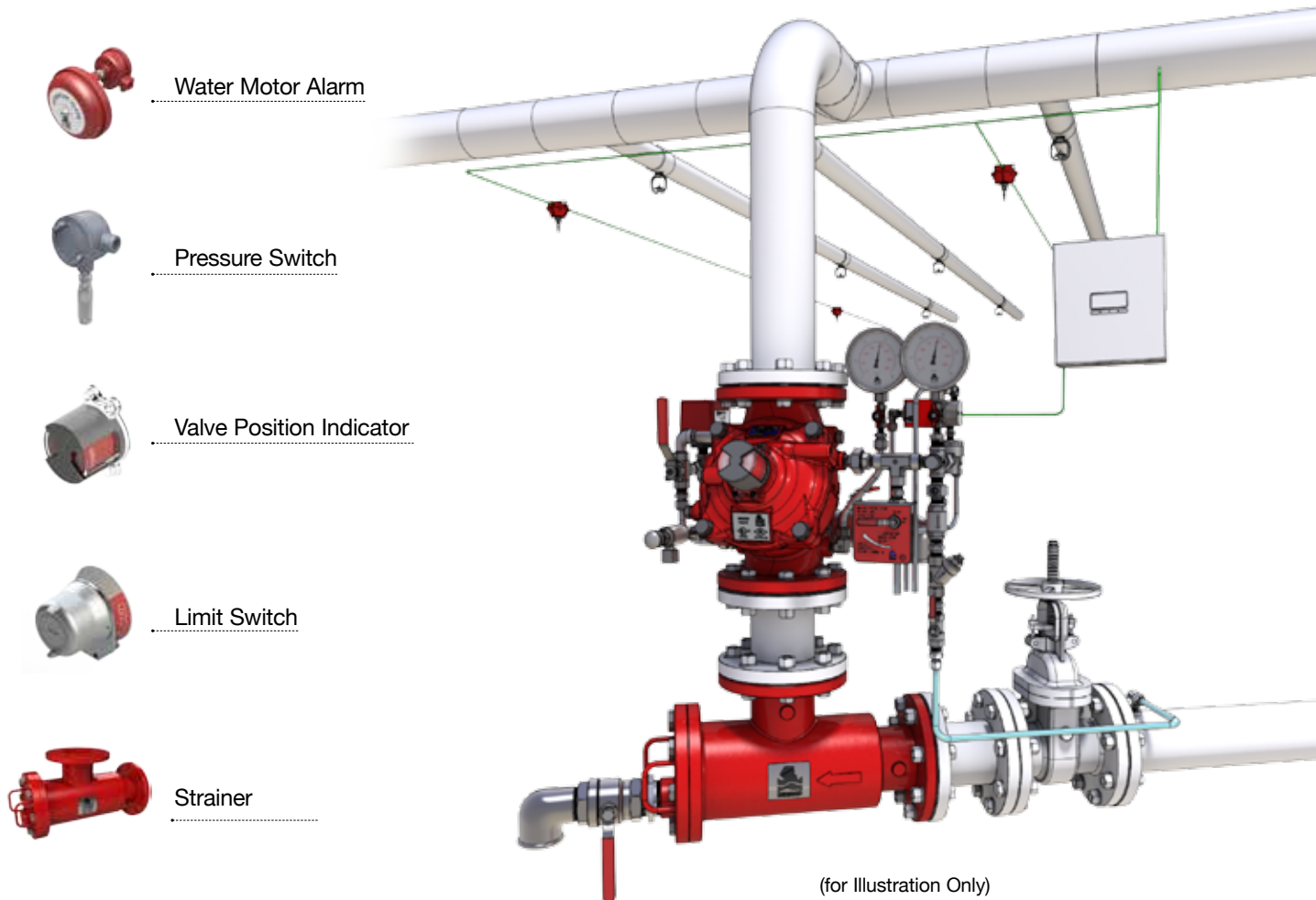
- ZS Limit Switch Assembly
- I Visual Indicator
- DC Drip Check Valve



System Installation

A typical installation of the BERMAD model 400Y-3D features automatic actuation via a hydraulic relay valve and three-way solenoid valve, triggered by a signal from a fire & gas control system or an on-site emergency pushbutton. When open and fitted with a limit switch, the valve sends a feedback signal to the remote valve position monitoring system.

Factory Fitted Options



(for Illustration Only)

Suggested Specifications:

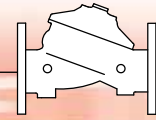
The deluge valve shall be an UL listed, 25 bar/365 psi rated, elastomeric-type, straight-through, Y-type-body valve. The valve shall have an unobstructed flow path, with no stem guide or supporting ribs.

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 relay pilot valve, a 3-Way solenoid valve with approval for 25 bar/365 psi and a tolerance of 35% below 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 drain socket shall be flanged and have 360-degree swivel.

The valve shall be equipped with a dual-colour, rotational position indicator, readable from 50 meters, and with two limit switches enclosed in a protective switch box. Removing the valve cover for inspection or maintenance shall be in line and not require removing 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 standards.

BERMAD Fire Protection



Model: FP 400Y - 3D

400Y Series

Technical Data

Available Sizes (inch)

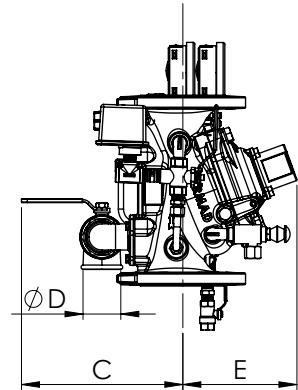
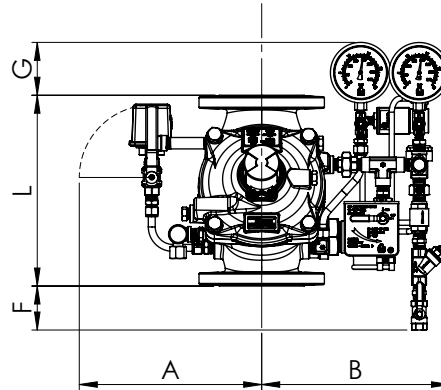
- Flanged - 1½, 2, 3, 4, 6, 8, 10, 12*, 14* & 16"
- Grooved - 2, 3, 4, 6 & 8"
- Threaded - 1½ & 2"

Pressure Rating

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

Temperature Rating

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

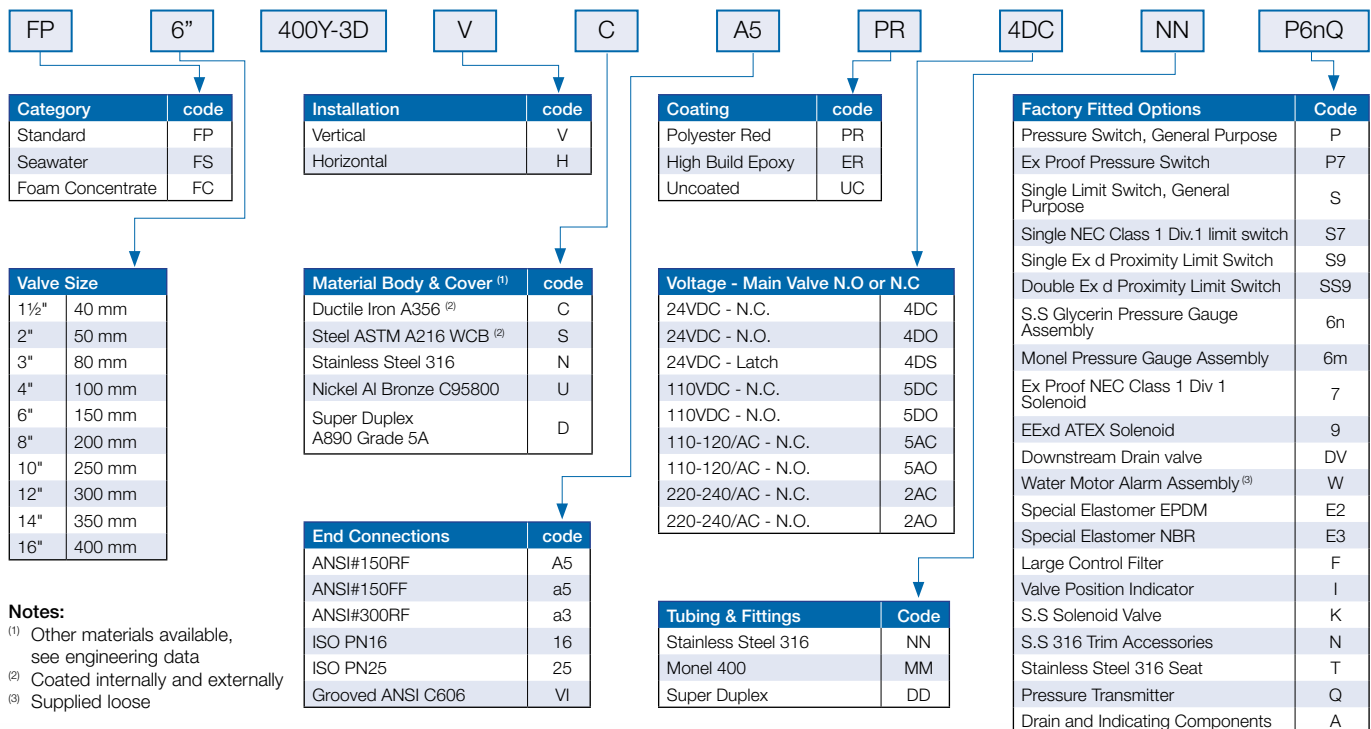


Valve Size	1½" DN40	2" DN50	3" DN80	4" DN100	6" DN150	8" DN200	10" DN250	12" DN300	14" DN350	16" DN400
⁽¹⁾ L ¹ ANSI #150 mm (in.)	230(9.06)	230(9.06)	310(12.21)	350(13.79)	480(18.91)	600(23.64)	730(28.76)	850(33.49)	980(38.61)	1100(43.34)
L ² ANSI #300 mm (in.)	230(9.06)	235(9.25)	326(12.84)	368(14.50)	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.)	269(10.6)	269(10.6)	327(12.9)	337(13.26)	392(15.4)	420(16.5)	420(16.5)	533(21)	533(21)	533(21)
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"	½"	2"	2"	2"	2"	2"	2"	2"
E mm (in.)	120(4.7)	120(4.7)	146(5.7)	158(6.2)	228(9.0)	295(11.6)	295(11.6)	441(17.4)	441(17.4)	415(16.3)
F mm (in.)	179(7)	179(7)	109(4.3)	82(3.2)	0.5(0.01)	-	-	-	-	-
G mm (in.)	111(4.4)	111(4.4)	101(4)	88(3.46)	39.5(1.6)	15(0.6)	-	-	-	-
Kv m ³ /h (Cv gpm)	68(79)	80(92)	190(219)	345(398)	790(912)	1160(1340)	1355(1652)	2600(3040)	2950(3450)	3254(3801)
⁽²⁾ Leq m (ft)	2(6)	4(14)	8(25)	8(25)	13(43)	27(89)	55(179)	40(128)	66(215)	115(370)
Weight, flanged kg (lbs)	10.4(23)	11.8(26)	26.5(58)	36.5(80)	79.8(174)	143(314)	173(380)	316(695)	349(768)	395(870)

Notes: ⁽¹⁾ L¹ Dimensions are for grooved, threaded and raised face flanged valves

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

Valve Code Designations



Notes:

- ⁽¹⁾ Other materials available, see engineering data
- ⁽²⁾ Coated internally and externally
- ⁽³⁾ Supplied loose



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