

Electrically Controlled Magna-Latch Deluge Valve

Model: FP 400Y-3U-H2

The BERMAD model 400Y-3U-H2 is an elastomeric, hydraulically self-actuated deluge valve specifically designed for advanced fire protection systems and the latest industry standards

The 400Y-3U-H2 is activated by a 3-way solenoid valve, which latches open and therefore remains open in the event of an electricity failure. Opening and closing of the deluge valve can be controlled remotely.

The 400Y-3U-H2 is suitable for systems with open nozzles for water or foam discharge.

The valve's proprietary position monitoring device features a visual position indicator and can interface with any fire & gas control system.



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

■ Designed for fire protection

- Face-to-face length standardized to ISO 5752
- Latching solenoid
- Designed to meet the requirements of the industry standards

■ Quick and easy maintenance

- In-line serviceable
- Quick cover removal without detaching control trim
- Swivel mounted drain valves

Typical Applications

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

Approvals



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



FM Approved
for Deluge Sprinkler Systems

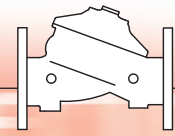


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Factory Fitted Options

- Valve position limit switches
- Local valve position indicator beacon
- Sea water compatibility
- Stainless steel seat ring

BERMAD Fire Protection

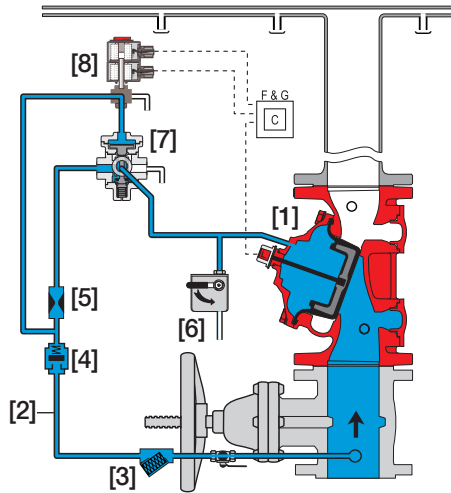


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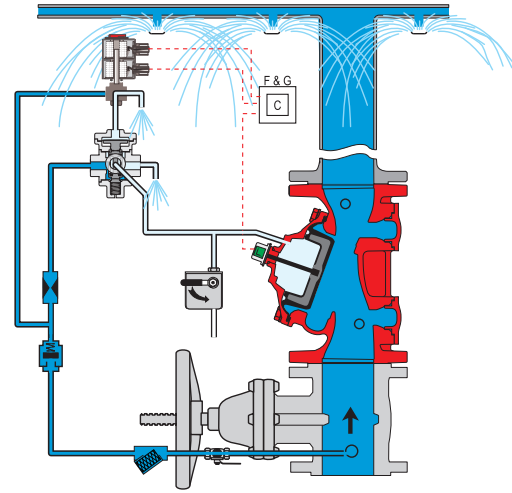
400Y Series

Operation

(for Illustration Only)



Valve Closed (normal conditions)

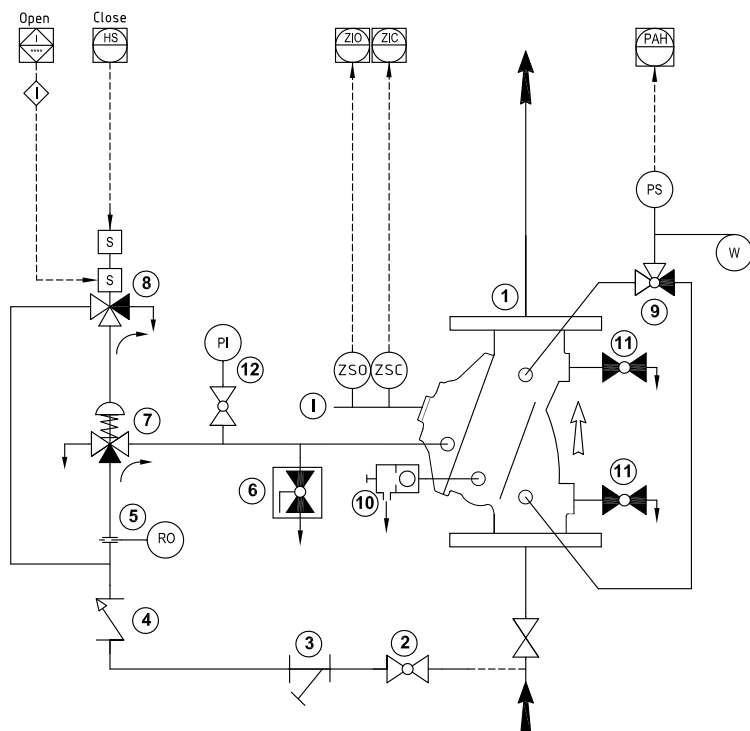


Valve Open (fire conditions)

The BERMAD model 400Y-3U 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], it is then trapped in the control chamber by a check valve [4], manual emergency release [6], and a relay valve (URV) [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 switching to the release position in response to the solenoid valve being activated by the fire & gas control system [C]. This latches the 400Y-3U deluge valve open, allowing water to flow into the system piping and to the alarm device.

System P&ID

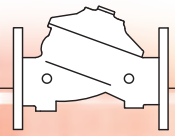


Components

- 1 BERMAD 400Y Deluge Valve
- 2 Priming Ball Valve
- 3 Priming Strainer
- 4 Check valve
- 5 Restriction Orifice
- 6 Manual Emergency Release
- 7 URV-Universal Relay Valve
- 8 3 way Magna Latch Solenoid Valve
- 9 3Way Alarm Valve
- 10 Drip Check
- 11 Drain Valve
- 12 Pressure Gauge

Factory Fitted Options

- ZS Limit Switch Assembly
- I Visual Indicator



System Installation

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

Factory Fitted Options



Water Motor Alarm



Pressure Switch



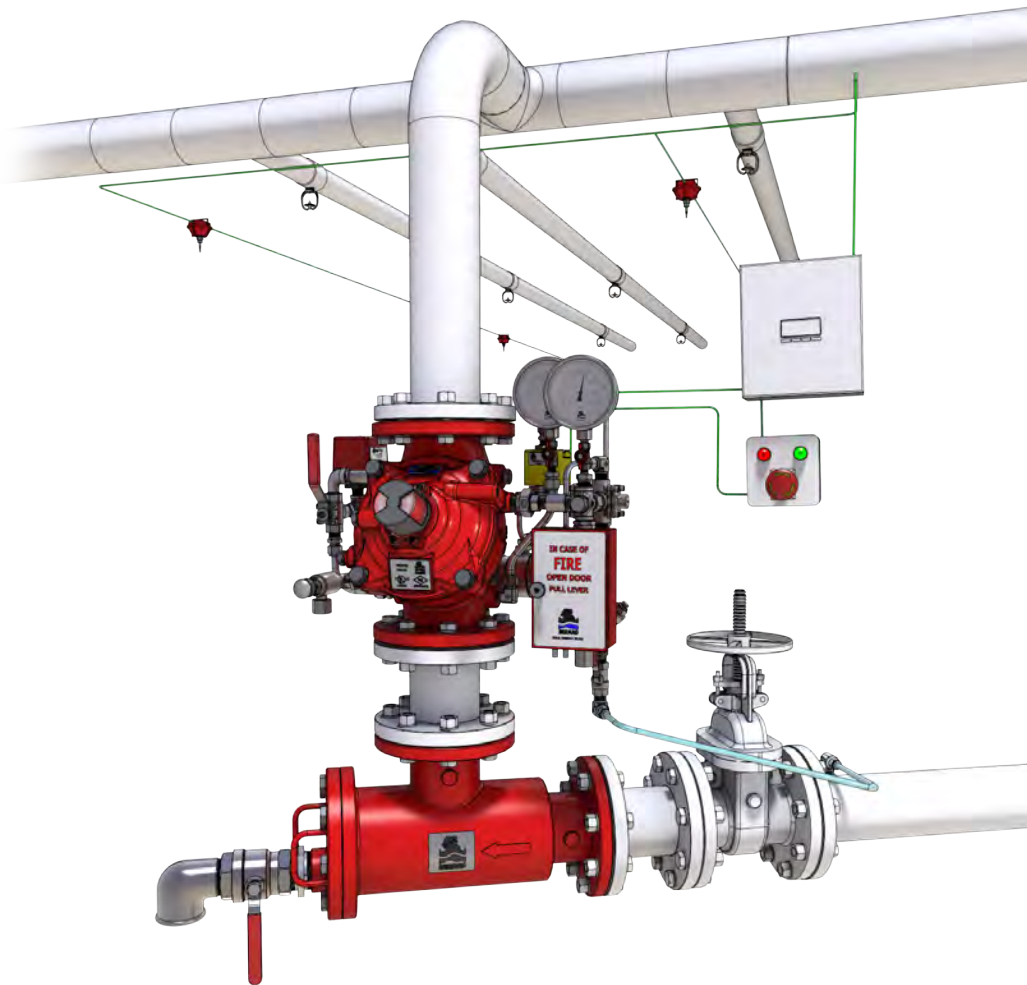
Valve Position Indicator



Limit Switch



Strainer



Suggested Specifications:

The deluge valve shall be a UL-listed, 25-bar (365-psi), straight-through, Y-type-body valve with a rolling diaphragm. 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.

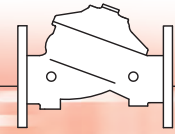
The diaphragm assembly shall be the only moving part.

The deluge valve shall include a relay pilot valve, a latching 3-way solenoid valve approved for 21-bar (300-psi) working pressure, with 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 protective-covered, dual-color, rotational position indicator, readable from 50 meters, and with two limit switches enclosed in a protective switch box. Removing the valve cover for inspection and maintenance shall 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-3U-H2

400Y Series

Technical Data

Available Sizes (inch)

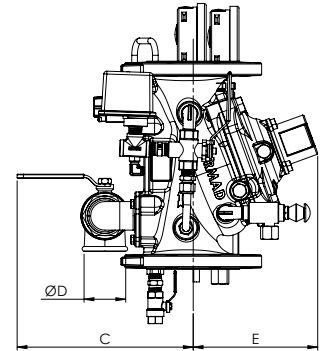
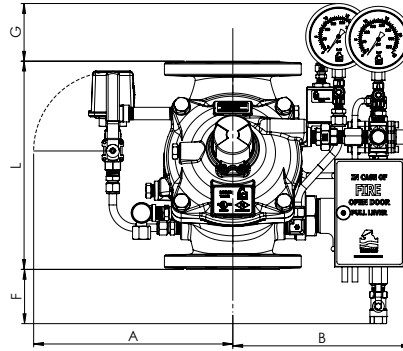
- Flanged - 1½, 2, 3, 4, 6, 8, 10, 12, 14 & 16"
- Grooved - 2, 3, 4, 6 & 8"
- Threaded - 1½ & 2"
- UL listed - 3, 4, 6, 8 & 10"
- FM Approved - 3, 4, 6 & 8"

Pressure Rating

- ANSI#150 - 17.2 bar / 250psi
- ANSI#300 - 25 bar / 365 psi
- Grooved - 25 bar / 365 psi
- Threaded - 25 bar / 365 psi

Temperature Rating

- 50°C / 122°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 (12.2)	350 (13.78)	480 (18.9)	600 (23.62)	730 (28.74)	850(33.49)	980(38.61)	1100(43.34)
L ₂ ANSI #300 mm (in.)	230(9.06)	235(9.26)	325(12.81)	367.5(14.48)	505.5(19.92)	625(24.64)	730 (28.74)	888(33.99)	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.)	234(9.2)	234(9.2)	292(11.5)	302(11.9)	357(14)	385(15.2)	385(15.2)	498(19.6)	498(19.6)	498(19.6)
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)	10.5(0.4)	-	-	-	-	-
G mm (in.)	121(4.8)	121(4.8)	111(4.3)	98(3.9)	49.5(1.9)	25(1)	-	-	-	-
Kv m ³ /h (Cv gpm)	68 (79)	80 (92)	190 (219)	345 (398)	790 (912)	1160 (1340)	1430(1671)	2600(3040)	2600(3040)	2600(3040)
² Leq m (ft)	2 (6)	4 (14)	8 (25)	8 (25)	13 (43)	27 (89)	55 (179)	40(128)	84(270)	161(515)
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: ¹ L₁ Dimensions are for grooved, threaded and raised face flanged valves
² Leq for pipe length coefficient for turbulent flow in clean commercial steel pipe (SCH 40)

Valve Code Designations

FP 6" 400Y-3U V C A5 PR 4DS NN H2 7WK

Category	code
Standard	FP
Seawater	FS
Foam Concentrate	FC

Installation	code
Vertical	V
Horizontal	H

Coating	code
Polyester Red	PR
High Build Epoxy	ER
Uncoated	UC

Factory Fitted Options	Code
General Purpose NEMA-4 Pressure Switch	P
Ex Proof NEC, Div.1 Pressure Switch	P7
Ex d ATEX Pressure Switch	P9
Single Limit Switch, General Purpose	S
Single Ex d Proximity Limit Switch	S9
Double Ex d Proximity Limit Switch	SS9
S.S Glycerin Pressure Gauge Assembly	6n
Monel Pressure Gauge Assembly	6m
Ex d ATEX Solenoid	9
Water Motor Alarm Assembly	W
Downstream Drain valve	DV
Special Elastomer EPDM	E2
Special Elastomer NBR	E3
Large Control Filter	F
Valve Position Indicator	I
S.S Solenoid Valve	K
S.S 316 Trim Accessories	N
316 Stainless Steel Seat	T
Pressure Transmitter	Q

Valve Size	code
1½"	40 mm
2"	50 mm
3"	80 mm
4"	100 mm
6"	150 mm
8"	200 mm
10"	250 mm
12"	300 mm
16"	400 mm

Material Body & Cover ⁽²⁾	code
Ductile Iron A356 ⁽¹⁾	C
Steel ASTM A216 WCB ⁽¹⁾	S
Stainless Steel 316	N
Nickel Al Bronze C95800	U
Super Duplex A890 Grade 5A	D

End Connections	code
ANSI#150RF	A5
ANSI#150FF	a5
ANSI#300RF	A3
ISO PN16	16
ISO PN25	25
Grooved ANSI C606	VI

Voltage	code
24VDC - Latch Last Position	4DS

Tubing & Fittings	Code
Stainless Steel 316	NN
Monel 400	MM
Super Duplex	DD

Note:
⁽¹⁾ Internally and externally coated
⁽²⁾ Other materials available, see engineering data



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