

Deluge Systems

Hydraulic Actuated, Local reset Deluge Valve

FDV - DH0

The FDV is a Fire Protection control valve for Deluge fire sprinkler systems, designed for installations in hazardous environments.

The FDV-DH0 Deluge system is actuated hydraulically and resets locally.

When a hydraulic detection system, a Wet Pilot detection line, is exposed to a predetermined temperature level, its automatic fire sprinklers shatter open and commanding the FDV-DH0 deluge valve to open.

The Deluge system incorporates an emergency valve, bypassing the fire detection system for manual operation. Designed for vertical or horizontal installation, a globe pattern, line pressure operated FDV-DH0 valve features a direct elastomeric diaphragm Seal. It has No balancing spring or internal metallic wet components in the valve body.

The hydrodynamic pattern design, ensures high flow rates with minimum head loss.



MARKETS



Commercial



Marine



Residential

TECHNICAL DATA

FLUID:

Water, Brackish water, Sea water, Foam

SIZE RANGE:

40mm to 250mm (1½" to 10")

AVAILABLE CONNECTIONS ENDS:

Flange*Flange, Groove*Groove,
Flange*Groove, Groove*Flange,
Thread*Thread

PRESSURE NOMINAL:

250 psi (17.2 bar)

APPROVALS



ADVANTAGES

- Only three parts: body, diaphragm & cover plate. No wet metal spring inside the control chamber
- Full bore unobstructed
- Simple manual reset of the valve to standby position without draining or opening the valve itself, neither closing OS&Y or other valves in the system
- Open fail safe valve, maintained in stand-by closed position
- Low maintenance cost: the valve is serviced in-line with only one replaceable part which is long life elastomeric diaphragm
- Conforms with inspection, testing and maintenance standard of water-based fire protection systems, NFPA 25

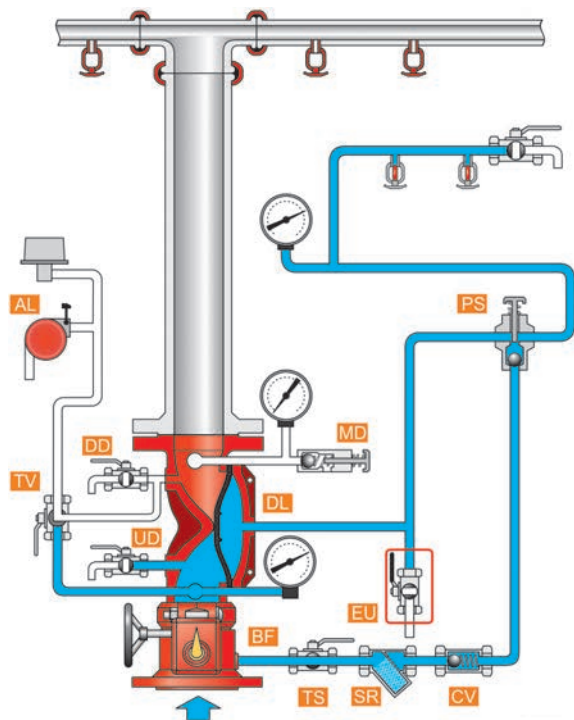
CHARACTERISTICS

- Hydro-dynamic pattern design ensures high flow rates with minimum head loss
- The valve trips open automatically upon a gradual release of water pressure from its control chamber. The trip is actuated by a Wet Pilot Line's hydraulic pressure release due to its exposure to flame heat
- Soft closing upon pressurization of the valve's control chamber, by line pressure or other independent water source to prevent surges

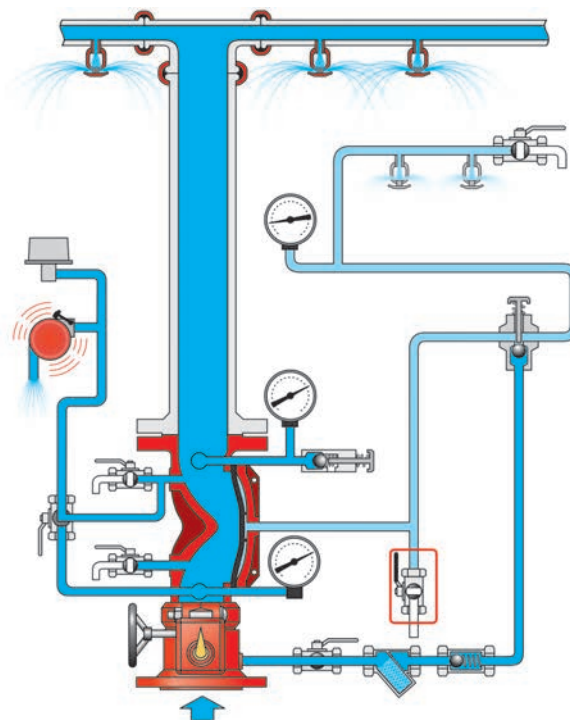
The FDV-DH0 resets to stand-by close position by pressurizing the Dry Pilot Line and manually operating the PSA device.

Schematic drawing

Set position



Fire position



BF - Butterfly valve

DL - FDV Deluge valve

UD - Upstream drain valve

DD - Downstream drain valve

AL - Acoustic & Electric alarms

TS - Trim supply valve

SR - "Y" strainer

CV - Check valve

PS - PSA - Pressure Supply Arrestor

MD - MADV - Man/Auto Drain Valve

TV - Alarm test valve

EU - Emergency Manual Unit

OPERATION

SET position

Pressurized water in the valve's control chamber [DL] is trapped by the closed PSA [PA], the closed emergency valve [EU] and by the closed automatic Wet Pilot detection Line.

The hydraulic pressure that is accumulated in the Wet pilot detection line, maintains the FDV deluge valve [DL] closed.

FIRE situation

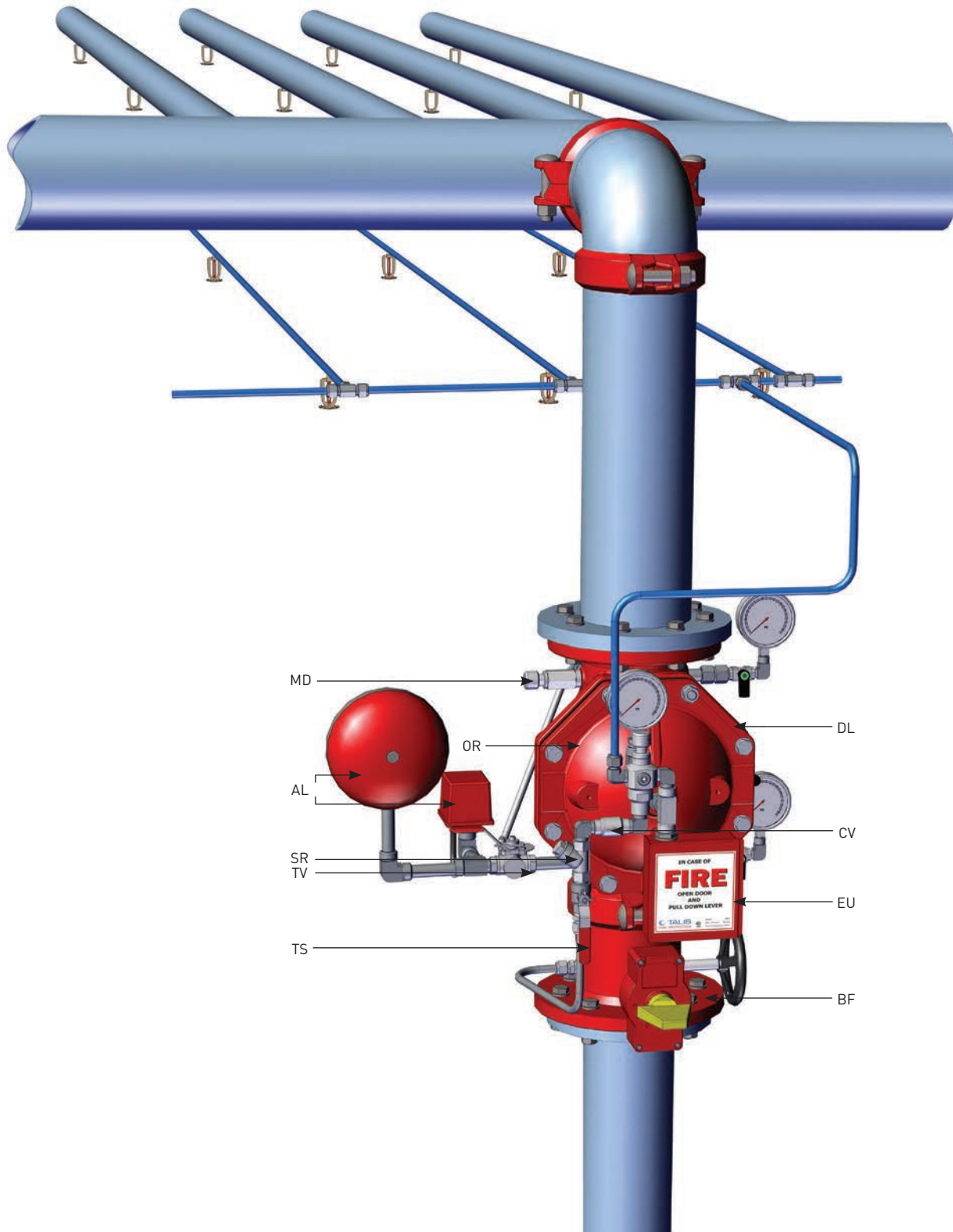
When the Wet pilot detection line's automatic fire sprinklers are subjected to flame heat and shatter-open, it enables the FDV control chamber to drain and de-pressurize, opening of the deluge valve and admitting water into the spray sprinkler system. The Deluge system incorporates an emergency valve, bypassing the fire detection system for manual operation.

RESET position

System reset requires a replacement replacement of all shattered-open wet pilot detection line's automatic fire sprinklers. The wet pilot line is then pressurized by the upstream pressure. The PSA [PS] push button should be pressed to enable upstream pressure passage to close the FDV's main valve.

FDV - DH0

Typical installation



- BF** - Butterfly valve
- DL** - FDV Deluge valve
- UD** - Upstream drain valve
- DD** - Downstream drain valve

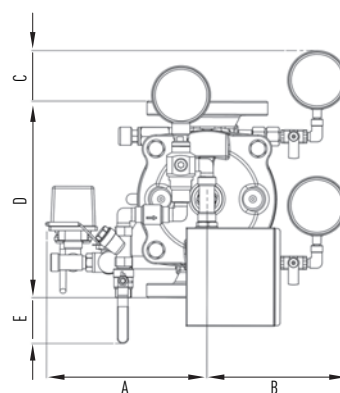
- AL** - Acoustic & Electric alarms
- TS** - Trim supply valve
- SR** - "Y" strainer
- CV** - Check valve

- PS** - PSA - Pressure Supply Arrestor
- MD** - MADV - Man/Auto Drain Valve
- TV** - Alarm test valve
- EU** - Emergency Manual Unit

Dimensions Table

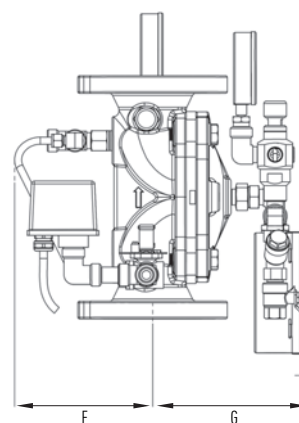
Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	195	7.8	261	10.3	276	10.9	300	11.8	327	12.9
B	268	10.6	231	9	246	9.7	269	10.6	295	11.6
C	109	4.3	59	2.3	73	2.9	67	2.6	61	2.4
D	22.4	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	187	7.4	47	1.8	12	0.5	10	0.4	-	-
F	98	3.9	185	7.3	208	8.2	232	9.1	257	10.1
G	170	6.7	200	7.9	239	9.4	302	11.9	374	14.7
Kg/lb	16.1	35.6	28.4	62.7	45.2	99.7	63.9	140.9	103.3	227.8



Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	314	12.4	261	10.3	276	10.9	300	11.8	327	12.9
B	189	7.4	201	7.9	215	8.5	240	9.5	266	10.5
C	-	-	-	-	-	-	-	-	-	-
D	22.4	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	98	3.9	47	1.9	12	0.5	-	-	-	-
F	156	6.1	179	7	207	8.2	231	9	255	10
G	209	8.2	239	9.4	278	10.9	341	13.4	374	14.7
Kg/lb	16	35.3	28.5	63	45.1	99.5	63.8	140.8	103.4	228



Factory Standard

MAIN VALVE:

BODY & COVER

- Ductile iron
- Cast Steel WCB
- Stainless Steel CF8
- Stainless Steel CF8M
- Nickel Aluminum Bronze

ELASTOMERS:

- NR, fabric reinforced Natural Rubber
- EPDM, fabric reinforced
- NBR, fabric reinforced Nitrile Rubber

COATING:

- Rilsan Polyamide based (Nylon 11)
- Polyester based EPC
- High built Epoxy FBE
- Vitreous Enamel (internal only)

TRIM

PIPING & TUBING:

- Stainless Steel 316
- Copper/Brass
- Cupro-Nickel
- Monel®

FITTINGS:

- Stainless Steel 316
- Brass
- Super Duplex
- Cupro-Nickel
- Monel®

ACCESSORIES:

- Brass Nickel plated
- Nickel Aluminium bronze
- Stainless steel CF8M
- Monel®
- Cupro-Nickel

PLEASE SPECIFY

- Working Media
- Ambiental conditions
- Min/Max operating flow
- Min/Max operating pressure
- Energize to Open/Close valve
- Wet Pilot's height.
- System installation orientation
- Additional accessories needed

For more detailed technical information, please refer to chapter Engineering Data.