

Deluge systems

Hydraulic Actuated with Remote Reset Deluge Valve

FDV - DH1

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

The FDV-DH1 Deluge system is actuated hydraulically and resets remotely.

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.

Designed for vertical or horizontal installation, a globe pattern, line pressure operated FDV-DH1 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



Marine



P.O.G.



Airports

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 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 and 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

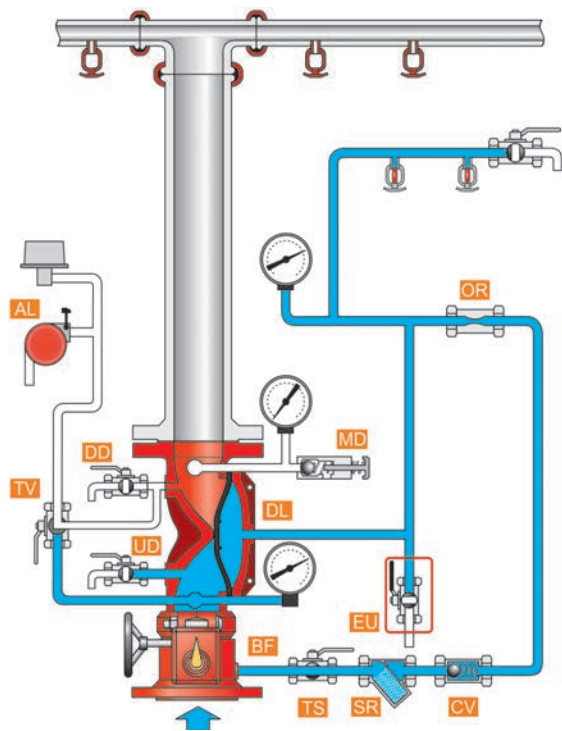
CHARACTERISTICS

- 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, prevents surges

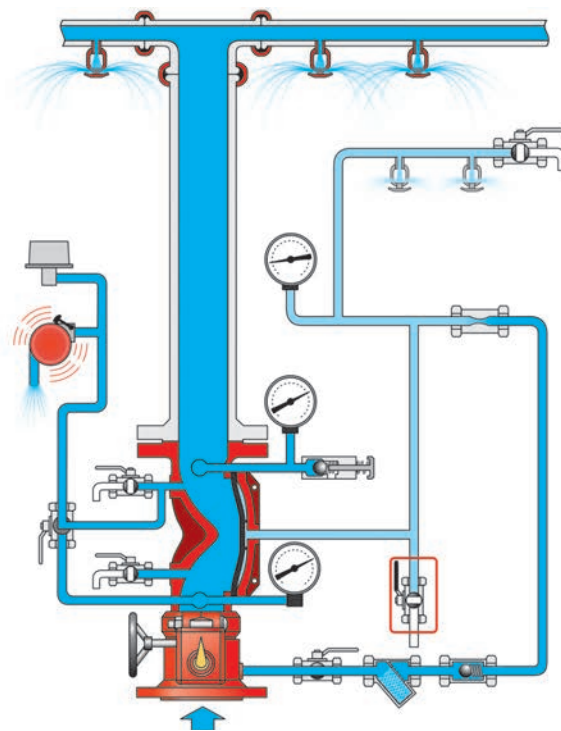
The FDV-DH1 resets to stand-by close position by pressurizing the Wet Pilot Line.

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

OR - Orifice

MD - MADV - Manual Automatic Drain Valve

TV - Alarm test valve

EU - Emergency Manual Unit

PC - PA-PTC - Pneumatic Actuator-Pressure to Close

OPERATION

SET position

Pressurized water in the valve's control chamber (DL) is trapped by check valve (CV), the closed PA-PTC actuator (PC) and by the closed emergency valve (EU), maintaining the FDV deluge valve (DL) closed.

FIRE situation

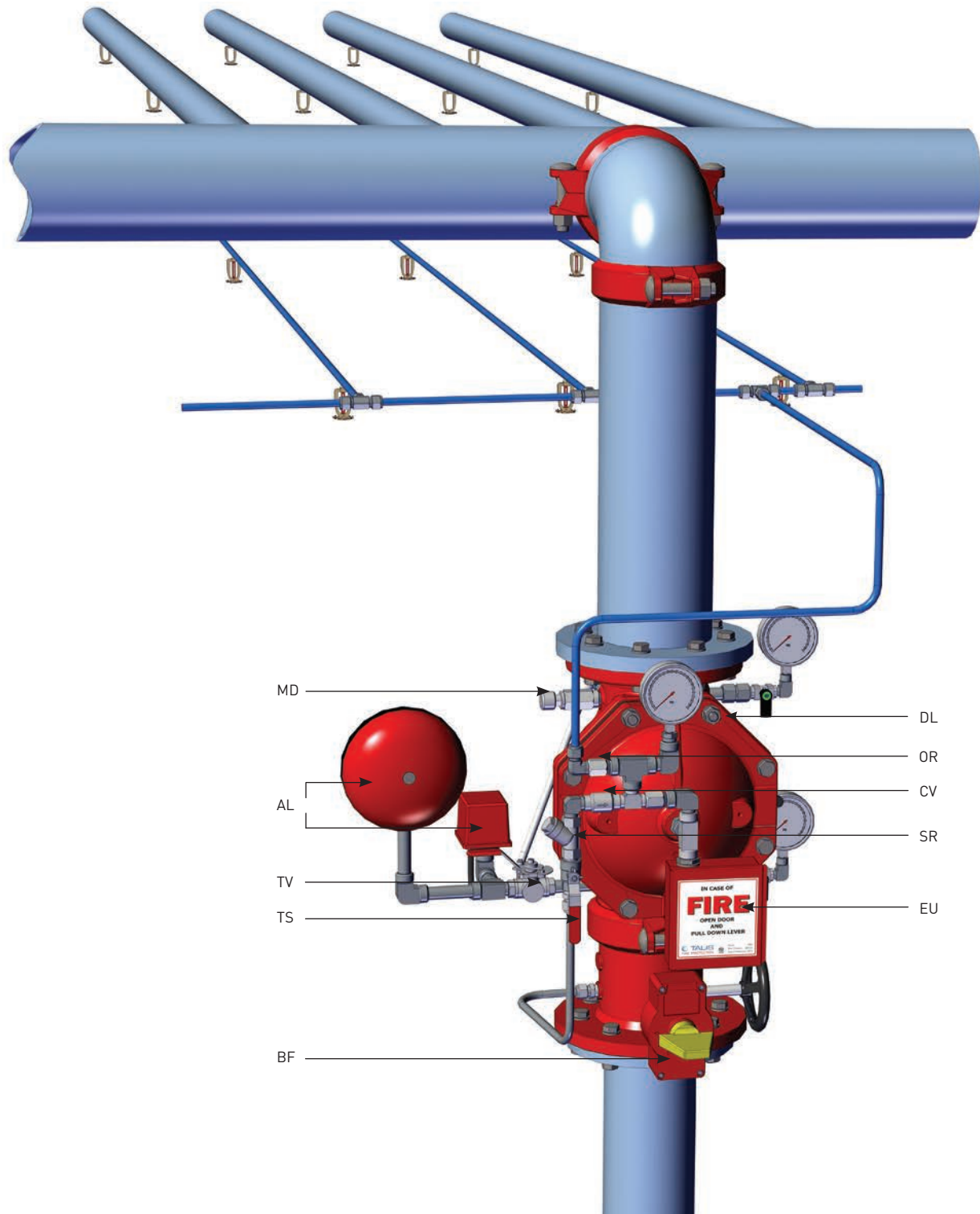
When some of the Dry pilot detection line's automatic fire sprinklers are subjected to flames heat and shatter-open, the pilot detection line depressurizes and the PA-PTC control chamber. The PA-PTC (PC) opens and drains the deluge valve's control chamber. The FDV deluge valve opens and admits water to the spray sprinklers line.

RESET position

System reset requires the replacement of all of the dry pilot detection Line's shattered-open automatic fire sprinklers. The detection line is then pressurized, the PA-PTC actuator, to reset it to closed position. The FDV valve control chamber pressurizes as well and the valve closes.

FDV - DH1

Typical installation



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

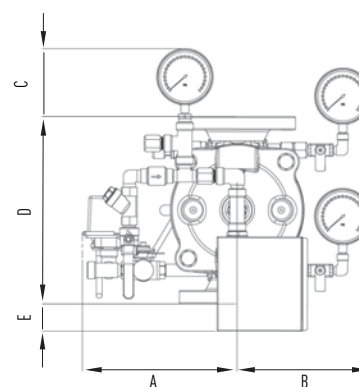
AL - Acoustic & Electric alarms
TS Trim supply valve
SR - "Y" strainer
CV - Check valve

OR - Orifice
MD - MADV - Manual Automatic Drain Valve
TV - Alarm test valve
EU - Emergency Manual Unit

Dimensions Table

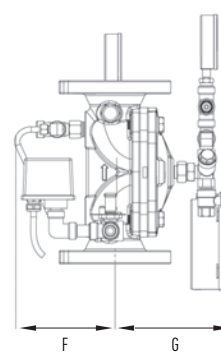
Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	315	12.4	265	10.4	299	11.8	304	12	335	13.2
B	189	7.4	202	7.9	196	7.7	240	9.5	262	10.3
C	52	2	-	-	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18	580	22.8
E	98	3.8	47	1.8	12	0.5	-	-	-	-
F	155	6.1	172	6.8	219	8.6	238	9.4	258	10.1
G	308	12.1	337	13.3	367	14.5	431	17	460	18.1
Kg/lb	15.7	34.6	27.8	61.3	44.6	98.3	63.6	140.2	102.7	226.4



Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	315	12.4	265	10.4	299	11.8	304	12	335	13.2
B	189	7.4	202	7.9	196	7.7	240	9.5	262	10.3
C	52	2	-	-	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18	580	22.8
E	98	3.8	47	1.8	12	0.5	-	-	-	-
F	155	6.1	172	6.8	219	8.6	238	9.4	258	10.1
G	308	12.1	337	13.3	367	14.5	431	17	460	18.1
Kg/lb	15.8	34.8	28.2	62.2	44.9	99	63.6	140.2	102.9	226.8



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.