

Deluge Systems

Electric Actuated with Local Reset Deluge Valve

FDV - DEO

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

The FDV-DEO Deluge system is actuated electrically and resets locally.

An electric detection system activates a solenoid valve through a control panel to open the FDV deluge valve. The Deluge system incorporates an emergency valve, bypassing the fire detection systems for manual operation. Designed for vertical or horizontal installation, a globe pattern, line pressure operated FDV-DEO 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



Industry

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

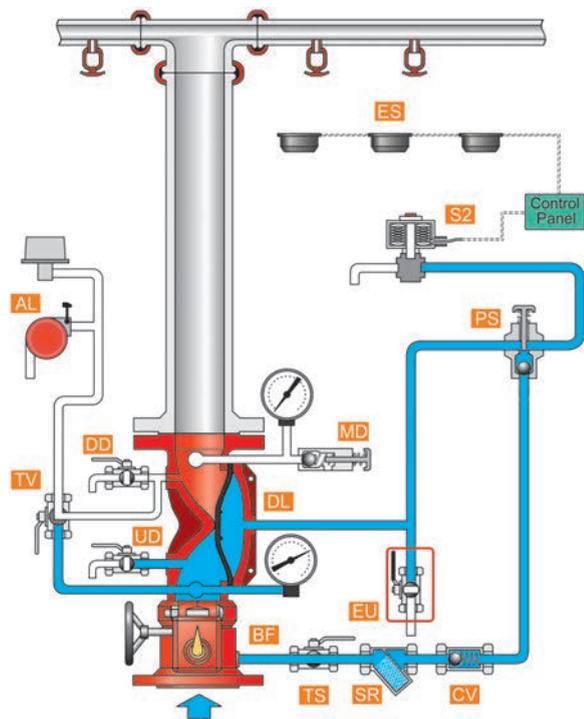
CHARACTERISTICS

- Hydro-dynamic pattern design ensures high flowrates 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 an electric signal transmitted to the valve's solenoid from the main control panel, due to a flame heat exposure of a sensors detection system
- Soft closing upon pressurization of the valve's control chamber, by line pressure or other independent water source, prevents surges

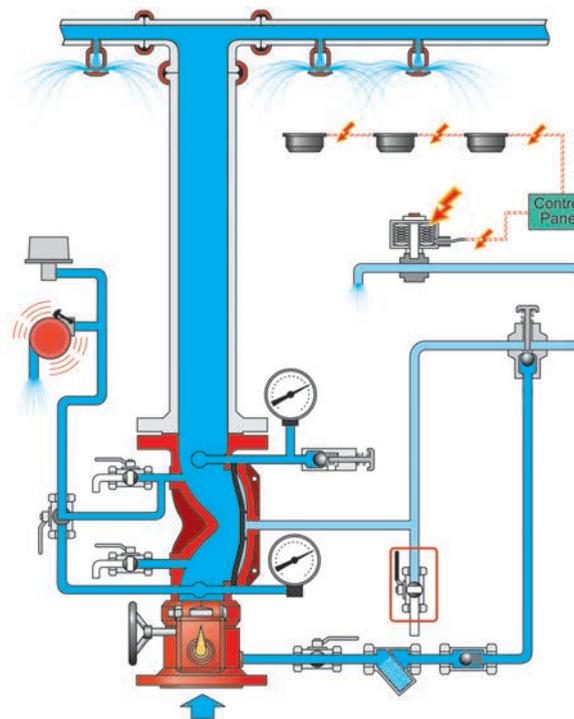
The FDV-DEO resets to stand-by close position by pressurizing the Dry Pilot Line and manually operating the PSA device.

Schematic drawing

Set position



Fire position



BF - Butterfly valve

DL - FDV Deluge valve

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

S2 - Solenoid 2 way

ES - Electric Sensors

OPERATION

SET position

Pressurized water in the valve's control chamber (DL) is trapped by the closed PSA (PA), the closed 2 way solenoid valve (S2) and by the closed emergency valve (EU), maintaining the FDV deluge valve (DL) closed.

FIRE situation

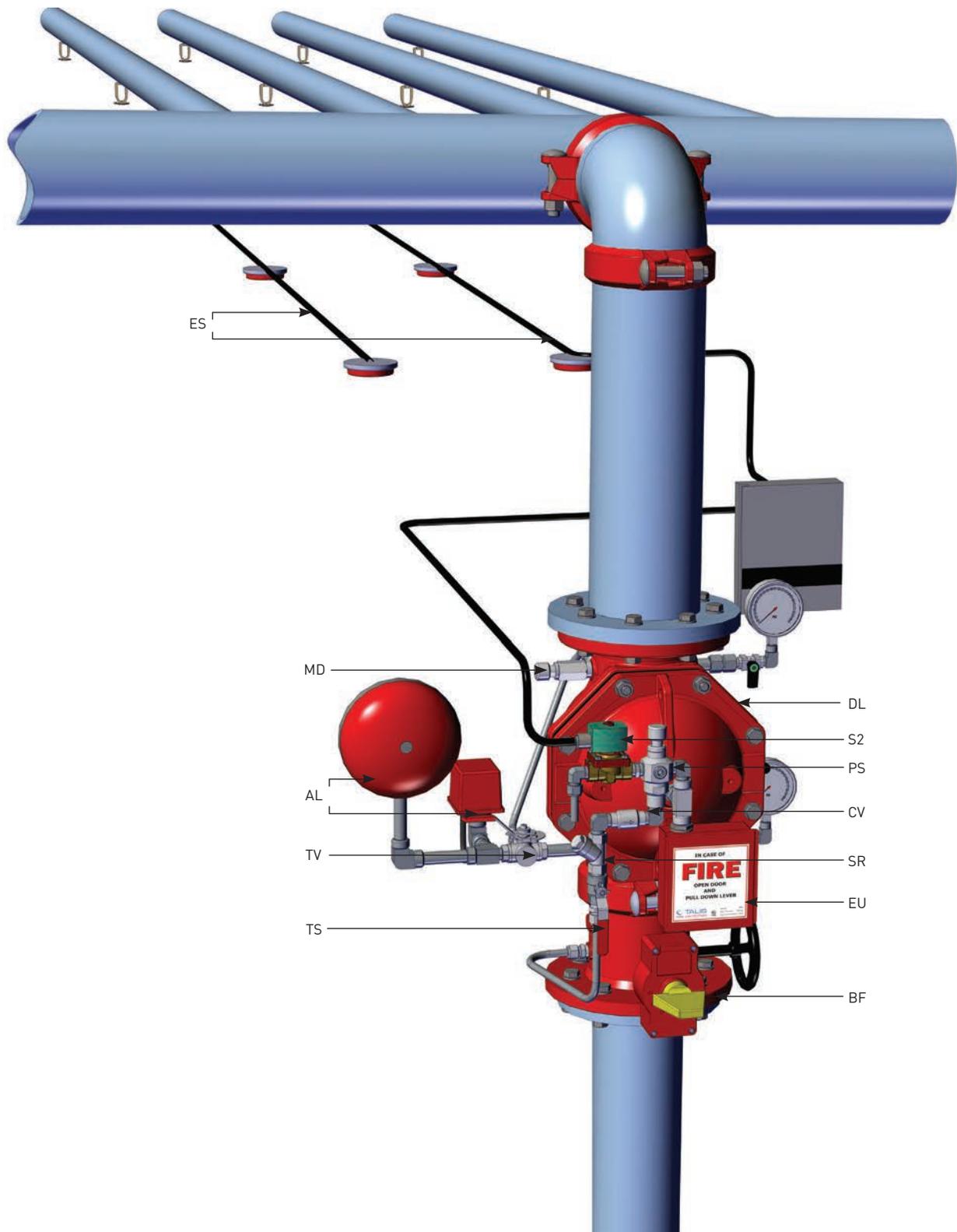
When an electric detection system senses flame heat, it triggers the main control panel that in turn, transmits an electric signal, commanding the 2 way solenoid valve (S2) to open and drain the deluge valve's control chamber. The FDV Deluge valve opens and admits water to the spray sprinklers line.

RESET position

System reset requires the reset of the electrical alarm system to de-energize and close the solenoid valve, not allowing the FDV control chamber to drain. The PSA (PS) push button should be pressed to enable upstream pressure passage to close the FDV main valve.

FDV - DE0

Typical installation



- BF** - Butterfly valve
- DL** - FDV Deluge valve
- AL** - Acoustic & Electric alarms
- TS** - Trim supply valve

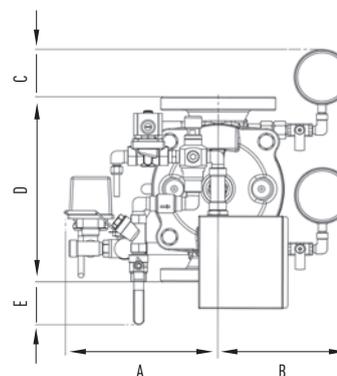
- SR** - "Y" strainer
- CV** - Check valve
- PS** - PSA - Pressure Supply Arrestor
- MD** - MADV - Man/Auto Drain Valve

- TV** - Alarm test valve
- EU** - Emergency Manual Unit
- S2** - Solenoid 2 way
- ES** - Electric Sensors

Dimensions Table

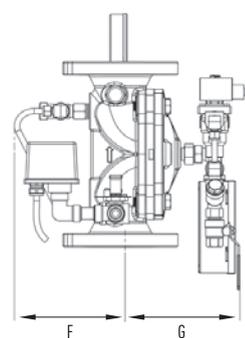
Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	172	6.8	265	10.4	280	11	304	11.9	335	13.2
B	244	9.6	230	9.0	245	9.7	267	10.5	294	11.6
C	26.4	1	84	3.3	73	2.9	69	2.7	63	2.5
D	224	8.82	325	12.8	400	15.8	462	18.2	580	11
E	128	5	76	2.9	41	1.6	12	0.5	-	-
F	168	6.6	178	7	209	8.2	237	9.3	265	10.4
G	170	6.7	200	7.8	240	9.5	302	11.9	342	13.4
Kg/lb	16.9	37.3	29.2	64.4	46	101.5	64.6	142.6	104	229.5



Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	290	11.4	265	10.4	280	11	304	12	330	13
B	188	7.4	201	7.9	215	8.4	240	9.5	266	10.5
C	-	-	-	-	-	-	-	-	-	-
D	244	8.8	325	12.8	400	15.8	465	18.2	580	11
E	98	3.9	47	1.8	12	0.5	-	-	-	-
F	157	6.2	171	6.7	208	8.2	231	9	266	10.5
G	209	8.2	238	9.3	277	10.9	341	13.4	373	14.7
Kg/lb	16.7	36.8	29.2	64.4	45.8	101	64.6	142.6	104.2	229.7



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
- Solenoid Voltage
- Solenoid Enclosure
- Solenoid Protection
- Pneumatic working pressure
- System installation orientation
- Additional accessories needed

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