

Modulating Deluge systems

Hydraulic Actuated with Local Reset, Pressure Reducing Deluge Valve **FDV - PH0**

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

The FDV-PH0 is a pressure control Deluge system, 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, commanding the FDV-PH0 deluge valve to open. Once open, the valve reduces the inlet high pressure to a predetermined fixed outlet pressure. 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-PH0 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)

REGULATION RATIO: 5:1

SENSITIVITY: 1.45 psi (0.1 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 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

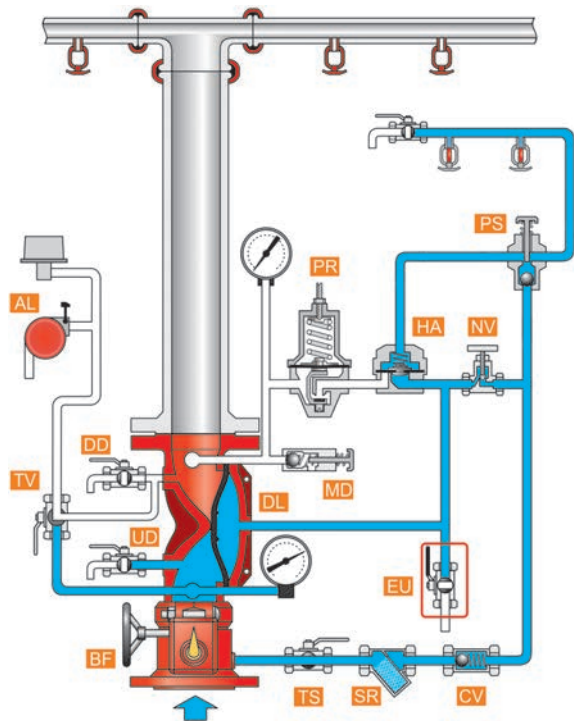
CHARACTERISTICS

- Hydro-dynamic pattern design ensures high flowrates with minimum head loss
- The valve trips open automatically upon a gradual release of water pressure from its control chamber. The valve 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
- A pressure reducing pilot enables a full control over the downstream pressure and ensures a steady set in a wide pressure range

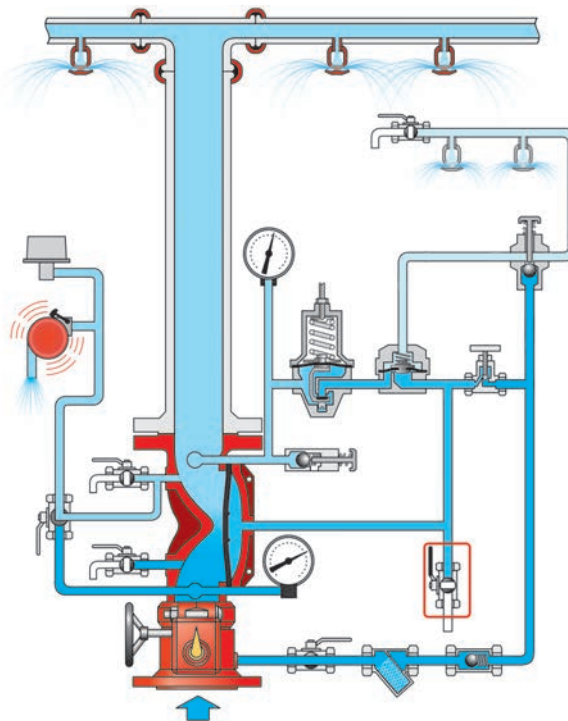
The FDV-PH0 resets to stand-by close position by pressurizing the Dry Pilot Line and manually operating the PSA device.

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

NV - Needle valve

PS - PSA - Pressure Supply Arrestor

MD - MADV - Manual Automatic Drain Valve

TV - Alarm test valve

EU - Emergency Manual Unit

HA - HAV-2 Hydraulic Actuator Valve

PR - PRPV - Pressure Reducing Pilot Valve

OPERATION

SET position

Pressurized water in the valve's control chamber (DL) is trapped by the check valve (CV), the closed emergency valve (EU) and by the closed hydraulic drain actuator HAV-2 (HA). The hydraulic pressure accumulated in the Wet Pilot detection line keeps this device in its closed position, maintaining the FDV deluge valve (DL) close.

FIRE situation

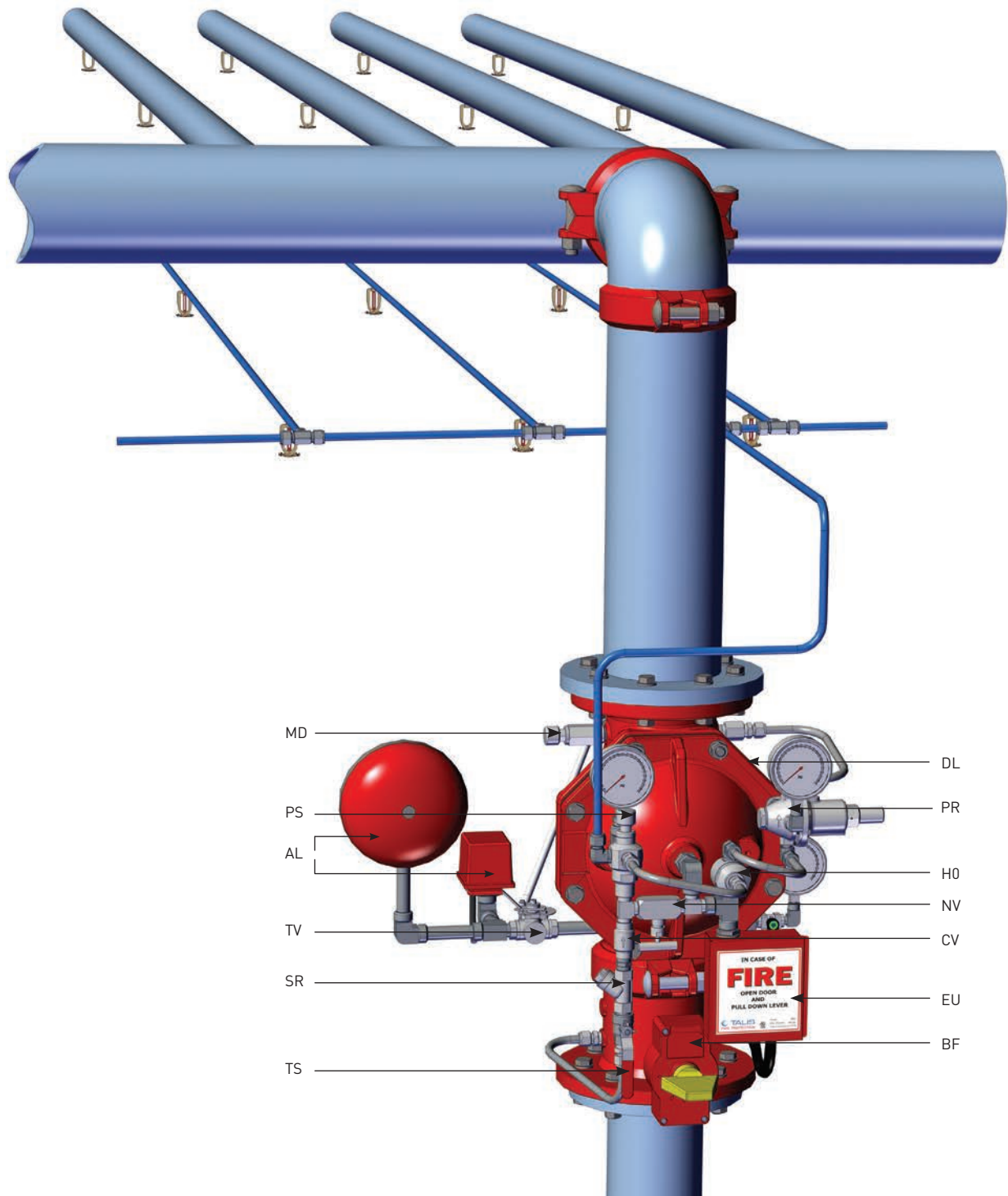
When the Wet Pilot detection line's automatic fire sprinklers are subjected to flame heat and shatter-open, the HAV-2 depressurizes and drains the deluge valve's control chamber through the pressure reducing pilot (PR). The FDV deluge valve opens, admitting water to the spray sprinklers line at a steady preset pressure.

RESET position

Initiating a system reset requires the replacement of all shattered-open fire sprinklers in the Wet Pilot detection line. The PSA (PS) push button is then pressed, to enable air supply intake to pressurize the Wet Pilot detection Line. Consequently, the HAV-2 actuator closes, commanding the FDV deluge valve to close.

FDV - PH0

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

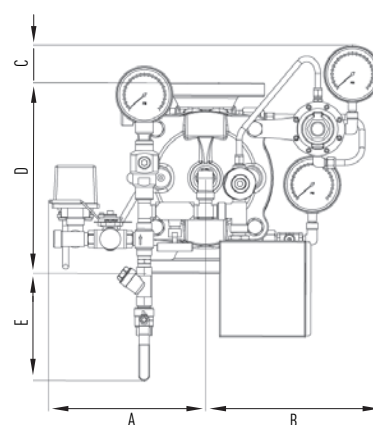
- SR** - "Y" strainer
- CV** - Check valve
- NV** - Needle valve
- PS** - PSA - Pressure Supply Arrestor
- MD** - MADV - Manual Automatic Drain Valve

- TV** - Alarm test valve
- EU** - Emergency Manual Unit
- HA** - HAV-2 Hydraulic Actuator Valve
- PR** - PRPV - Pressure Reducing Pilot Valve

Dimensions Table

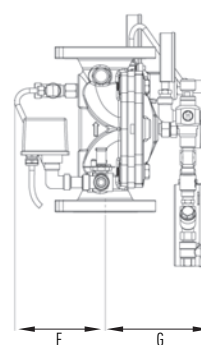
Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	235	9.2	267	10.5	281	11	306	12	338	13.3
B	267	10.5	300	11.8	283	11.1	311	12.2	361	14.2
C	82	3.2	64	2.5	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	234	9.2	183	7.2	148	5.8	118	4.6	58	2.3
F	210	8.3	172	6.8	208	8.2	232	9.1	257	10.1
G	259	10.2	219	8.6	346	13.6	411	16.2	436	17.2
Kg/lb	20.4	45	32.5	71.6	49.9	110.1	68.6	151.2	108	238.1



Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	235	9.2	267	10.5	281	11.1	306	12.0	336	13.2
B	189	7.4	271	10.7	316	12.4	343	13.5	402	15.8
C	4.2	0.2	32	1.3	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	234	9.2	183	7.2	148	5.8	118	4.6	58	2.3
F	150	5.9	172	6.8	208	8.2	232	9.1	257	10.1
G	431	17	460	18.1	451	17.8	515	20.3	544	21.4
Kg/lb	20.8	45.9	33.1	72.9	50.2	110.7	68.9	151.9	108.2	238.5



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
- Downstream set pressure
- Energize to Open/Close valve
- Wet Pilot's hieght.
- System installation orientation
- Additional accessories needed

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