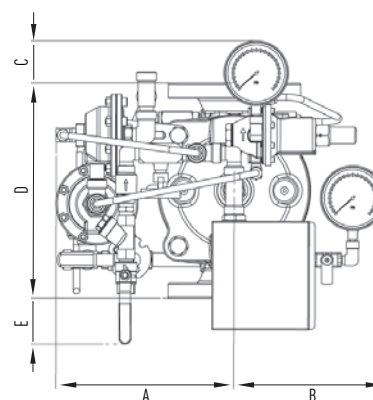


## Dimensions Table

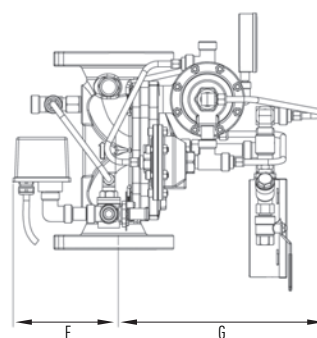
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	368	14.5	269	10.6	315	12.4	341	13.4	396	15.6
B	266	10.5	228	9	243	9.5	266	10.5	304	12
C	94	3.7	75	2.9	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	195	7.7	69	2.7	32	1.3	-	-	-	-
F	125	4.9	204	8	207	8	230	9	259	10.2
G	301	11.8	367	14.4	355	14	400	15.7	430	16.9
Kg/lb	24.6	54.2	36.7	80.9	54.1	119.2	72.4	159.6	112.2	247.4



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	368	14.5	381	15	296	11.6	428	16.8	430	16.9
B	236	9.3	199	7.8	267	10.5	296	11.6	344	13.5
C	6.5	0.3	75	3	5	0.2	-	-	-	-
D	224	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	204	8	69	2.7	22	0.9	6	0.2	-	-
F	163	6.4	187	7.4	207	8.1	220	8.7	256	10
G	301	11.8	389	15.3	361	14.2	400	15.7	430	16.9
Kg/lb	24.5	54	36.9	81.3	53.8	118.6	72.4	159.6	112.3	247.6



## 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
- Pneumatic working pressure
- System installation orientation
- Additional accessories needed

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

## Modulating Deluge systems

### Electro-Pneumatic Actuated with Local reset, Pressure Reducing Deluge Valve

## FDV - PCO

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

The FDV-PCO is a pressure control Deluge system, actuated electrically or pneumatically and resets locally.

Two fire detection systems, can independently activate an actuator to open the deluge valve: a pneumatic Dry Pilot detection Line and/or an electric solenoid, connected to sensors through a control panel.

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 systems for manual operation.

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



Industry



Storage



P.O.G.

#### TECHNICAL DATA

##### FLUID:

Water, Brackish water, Sea water, Foam

**PNEUMATICS:** Air, Nitrogen

##### 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

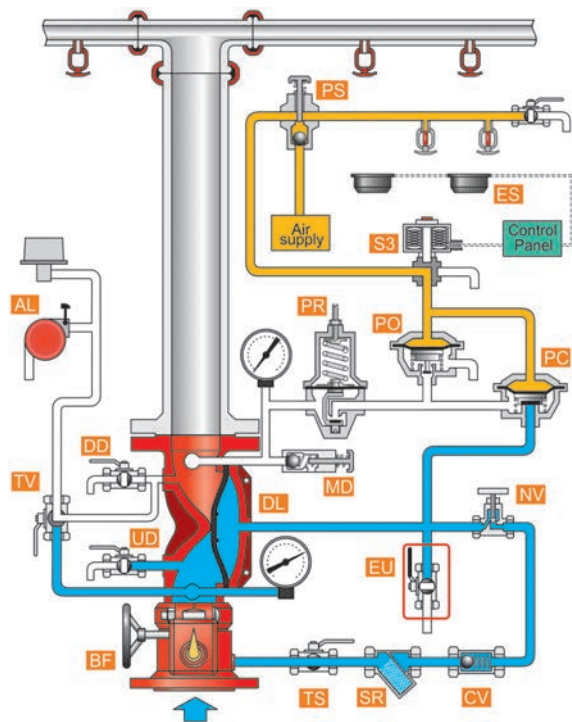
#### CHARACTERISTICS

- 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 an electric signal conveyed to the valve's solenoid or by Dry Pilot Line's pneumatic 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

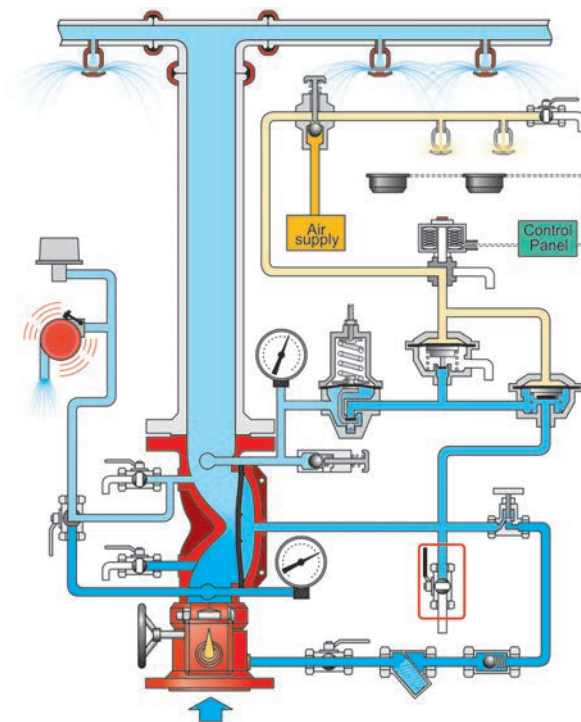
The FDV-PCO resets to stand-by close position by de-energizing the alarm system solenoid's coil through the main control panel or, pressurizing the Dry Pilot Line and manually operating the PSA device - in accordance with the relevant triggered alarm system.

## Schematic drawing

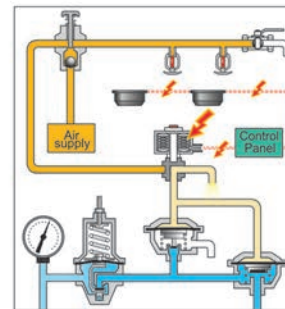
### Set position



### Fire position



- |  |   |
|--|---|
| <b>BF</b> - Butterfly valve                | <b>MD</b> - MADV – Manual Automatic Drain Valve           |
| <b>DL</b> - FDV Deluge valve               | <b>TV</b> - Alarm test valve                              |
| <b>UD</b> - Upstream drain valve           | <b>EU</b> - Emergency Manual Unit                         |
| <b>DD</b> - Downstream drain valve         | <b>PC</b> - PA-PTC – Pneumatic Actuator-Pressure To Close |
| <b>AL</b> - Acoustic & Electric alarms     | <b>PO</b> - PA-PTO – Pneumatic Actuator-Pressure To Open  |
| <b>TS</b> - Trim supply valve              | <b>PR</b> - PRPV – Pressure Reducing Pilot Valve          |
| <b>SR</b> - "Y" strainer                   | <b>S3</b> - Solenoid 3 way                                |
| <b>CV</b> - Check valve                    | <b>ES</b> - Electric Sensors system                       |
| <b>NV</b> - Needle valve                   |   |
| <b>OR</b> - Orifice                        |   |
| <b>PS</b> - PSA - Pressure Supply Arrestor |   |



## OPERATION

### SET position

Pressurized water in the valve's control chamber (DL) is trapped by Closed PSA (PA), the closed PA-PTC actuator (PC) and by the closed emergency valve (EU). The pneumatic pressure accumulated in the Dry pilot line is conveyed to the PA-PTC control chamber through the 3 way solenoid (S3), maintaining the deluge valve in its closed position.

### FIRE situation

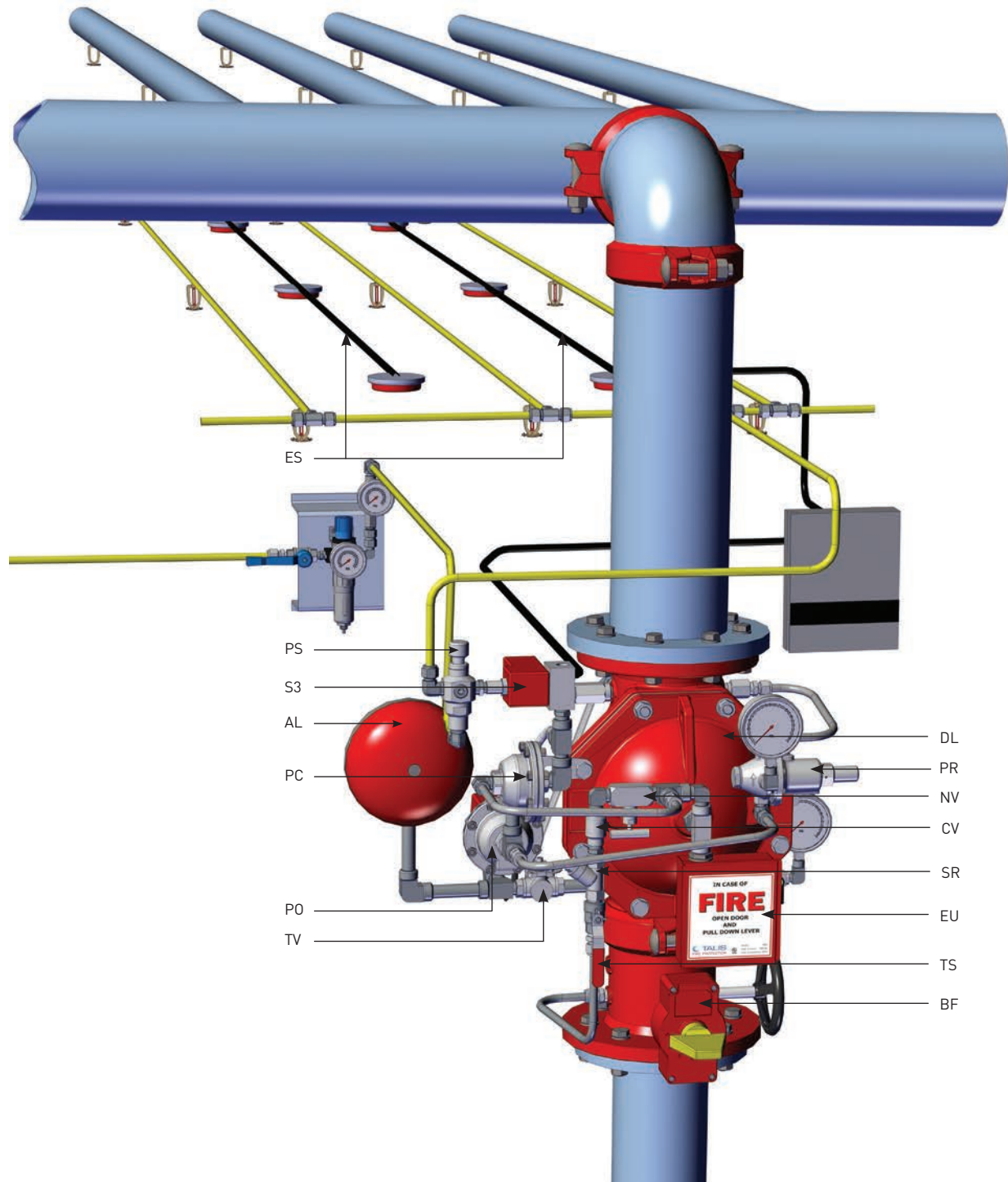
When some of the Dry pilot detection line's automatic fire sprinklers are subjected to the predetermined temperature levels and shutter-open, the pilot line and the PA-PTC control chamber depressurize. Alternatively, an electric detection system senses heat and triggers the main control board that in turn, energizes the 3 way solenoid valve (S3). The solenoid valve bypasses the dry pilot detection line depressurizing the PA-PTC. The FDV-DC's control chamber is then drained and the Deluge valve opens through the pressure reducing pilot (PR), 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. Alternatively, the electrical alarm system has to be reset and the solenoid de-energized. The PSA (PS) push button should be pressed and the Dry Pilot Valve pressurized. Consequently, The PA-PTC pressurizes and closes the FDV deluge valve.

# FDV - PC0

## 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

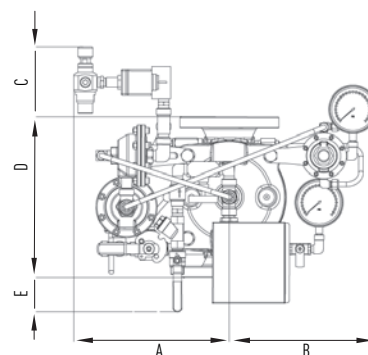
- NV** - Needle valve
- OR** - Orifice
- PS** - PSA - Pressure Supply Arrestor
- MD** - MADV - Manual Automatic Drain Valve
- TV** - Alarm test valve
- EU** - Emergency Manual Unit

- PC** - PA-PTC - Pneumatic Actuator-Pressure To Close
- PO** - PA-PTO - Pneumatic Actuator-Pressure To Open
- PR** - PRPV - Pressure Reducing Pilot Valve
- S3** - Solenoid 3 way
- ES** - Electric Sensors system

## Dimensions Table

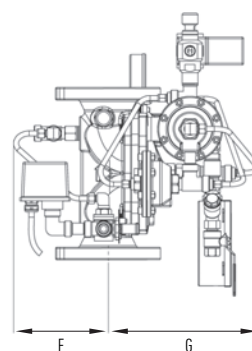
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	283	11.1	315	12.4	393	15.5	388	15.3	442	17.4
B	268	10.5	300	11.8	284	11.2	269	10.6	304	12
C	121	4.8	141	5.5	71	2.8	54	2.1	16	0.6
D	224	8.8	325	12.8	401	15.8	462	18.2	580	22.8
E	205	8	69	2.7	118	4.6	3	0.1	-	-
F	145	5.7	172	6.8	206	8.1	232	9.1	258	10.1
G	306	12	300	11.8	345	13.6	400	15.7	430	16.9
Kg/lb	26.9	59.3	39.1	86.2	56.4	124.3	75	165.3	114.5	252.4



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	369	14.5	359	30.7	373	14.7	420	16.5	453	17.8
B	239	9.4	271	10.7	274	10.8	301	11.8	349	13.7
C	64	2.5	102	4	32	1.2	19	0.7	-	-
D	224	8.8	325	12.8	401	15.8	462	18.2	580	22.8
E	205	8	69	2.7	32	1.2	3	0.1	-	-
F	160	6.3	172	6.8	207	8.1	232	9.1	258	10.2
G	300	11.8	367	14.5	361	14.2	400	15.7	430	17
Kg/lb	26.8	59	39.6	87.3	56.1	123.7	75	165.3	114.6	256.6



## 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
- 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.