

Deluge Systems



On/Off Valves



Service Valves



Tagua



Engineering Data



Product Selection Guide



# Fire Protection

## CATALOGUE

Fire Protection

TALIS

TALIS

ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ

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ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ

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**ATPLAS RANGE**

**BAYARD RANGE**

**BELGICAST RANGE**

**ERHARD RANGE**

**FRISCHHUT RANGE**

**RAPHAEL RANGE**

**SCHMIEDING RANGE**

**STRATE RANGE**

**TALIS FP RANGE**

**UNIJOINT RANGE**

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Product Selection Guide

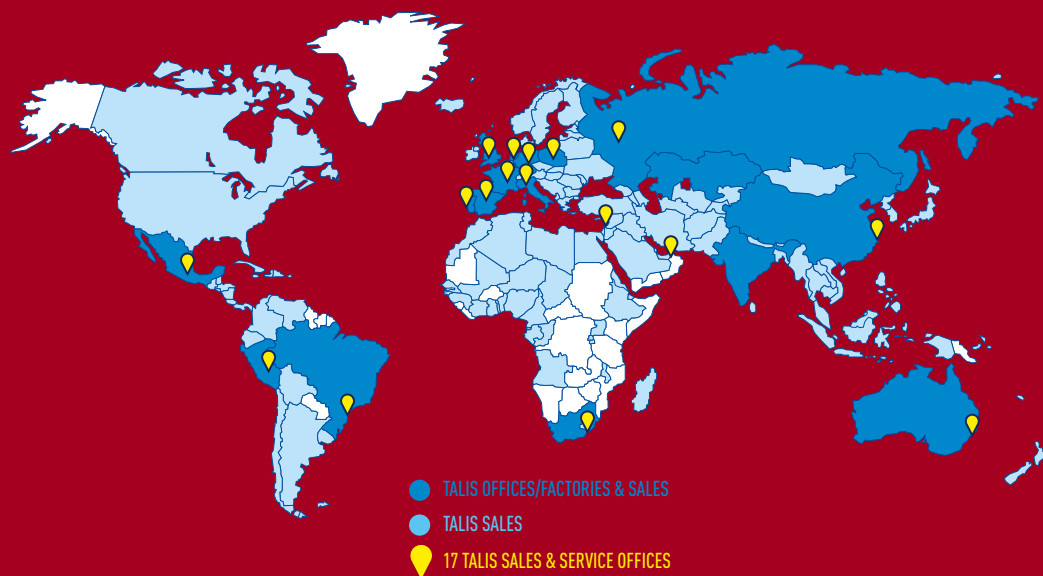


# WHO ARE WE

TALIS is a leading global provider of premium valves, hydrants and other solutions for water flow control.

With a varied range of products, we offer comprehensive solutions for the entire water cycle, from hydrants to butterfly valves, from knife-gate valves to needle valves. Our experience, innovative technology, global expertise and individual consultation process, form the basis for developing sustainable solutions for the efficient handling of the vital resource "water".

With over nine strong brands and 28 entities in Germany, France, Spain, Portugal, Italy, Great Britain, the Netherlands, Russia, Poland, Israel, China, the Middle East, Mexico, India, South Africa, Kazakhstan, Peru and Brazil, TALIS is the largest supplier of valve technology and first choice when it comes down to water valves and services for the whole water cycle.



Deluge  
Systems



On/Off  
Valves



Service  
Valves



Tagua



Engineering  
Data



Product  
Selection Guide





**WE STRIVE TO MAKE THE WORLD A BETTER PLACE BY BEING THE BEST WATER FLOW CONTROL SOLUTIONS COMPANY WORLDWIDE.** We protect water, one of the world's most vital resources, and thereby improve the living conditions of millions of people worldwide



Mr. Christoph Gusenleitner  
Chief Executive Officer

29 000

DIFFERENT  
PRODUCTS IN  
CATALOGUE

Over  
50

SALES  
PARTNERS

SALES IN  
**186**  
COUNTRIES

**13**

FACTORIES  
WORLDWIDE

19 000

CUSTOMERS

**1400**

EMPLOYEES



# OUR VISION OF SUSTAINABLE DEVELOPMENT



780 M

PEOPLE WORLDWIDE CURRENTLY DO NOT  
HAVE ACCESS TO DRINKING WATER

There is not enough water to go round, and yet it is one of our most essential resources.

At TALIS we strive to develop highly reliable solutions incorporating the smartest technologies available to improve network performance and save water resources. Beyond this commitment to the excellence of our products, we are also responsible for upholding the highest standards with regard to safety and respect for people and the environment.

This is how we can make the world a better place.



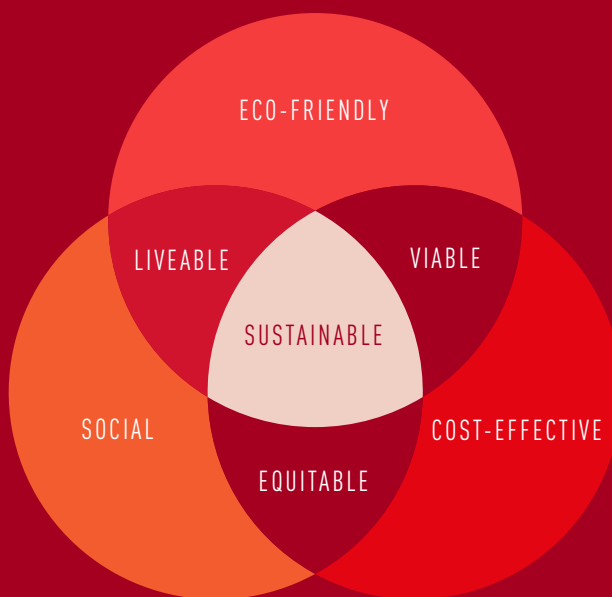
80 %

OF WASTEWATER ON THE PLANET  
IS NOT RETREATED



50

COUNTRIES  
WHERE OUR FIRE CONTROL  
VALVES ARE IN OPERATION







## « THE QUALITY AND SUSTAINABILITY OF OUR PRODUCTS CHARACTERIZES OUR OFFER. IT COMES DOWN TO MAKING CHOICES. »

Choices with respect to materials used, the quality of components and their impact on the environment. Beyond design however, it is above all a question of effectiveness when it comes to protecting water resources.

We make sustainable products, but first and foremost we assist our customers in improving their own practices in terms of water management, from catchment to the release of treated effluents. »



Christophe Busson  
TALIS Marketing Technical Leader

### TAKING CARE OF ENVIRONMENT

In all its activities, TALIS is committed to being a good employer, neighbour and a fair business partner:

- └ ISO 14001 certified (environmental management)
- └ DIN ISO 50001 certified (the company's energy performance)
- └ Active participation in water focused NGO
- └ Participant since 2012 (BELGICAST ) of United Nations Global Compact



### PROVIDING SUSTAINABLE PRODUCTS

Our valve solutions facilitate highest customer benefit whilst being uncompromising in terms of product safety and sustainability.

- └ High efficiency products with lower pressure drop limiting energy needs
- └ Addressing the global issue of water shortage with products reducing water leakage
- └ Keeping water clean by safe coatings



### WORKING FOR HEALTH AND SAFETY

Health and safety of our employees and stakeholders is high priority at TALIS.

- └ Group wide health and safety policy deployed globally
- └ Proactive detection and elimination of potential risks
- └ 0 % accident policy
- └ Continuous improvement of working conditions at all of our sites



### WORKING WITH A COMPLIANCE CULTURE

Business Integrity as company culture.

- └ E-Learning on compliance mandatory for all employees
- └ Compliance officer at group level
- └ 4-eyes-principle for all decisions

# HOW WE WORK

We achieve results by bringing together teams of experts and specialists who travel and encourage the acquisition of knowledge by all stakeholders and interested parties.

We establish research programs to accelerate progress in R&D. We enhance the technical expertise of our employees and customers in the various product ranges we offer, while encouraging networking between specialists and our own customers.

## LONG-TERM SUPPORT

### BEFORE SALES

- ▮ Specification
- ▮ Custom solutions
- ▮ Design
- ▮ Technical studies

### AFTER SALES

- ▮ Commissioning
- ▮ Technical assistance
- ▮ Manufacturer warranty
- ▮ Asset management
- ▮ Maintenance contract
- ▮ Spare parts



## WE

share and cultivate trust, respect for transparency and honesty in all our actions worldwide.



## YOU

are our customers, our partners, the inspiration behind our innovations and the drivers of our performance.



## TOGETHER

we develop and support the talent that invents and deploys cutting-edge solutions, with a view to improving quality of life for all.





« To become the first truly global leader in water flow control solutions, **WE PROVIDE CUSTOMER BENEFIT WITH A HIGHER QUALITY OF SERVICE**, shorter response times and a better understanding of local needs and best-in-class sales processes. »

 Steffen Lange  
Chief Sales Officer

## THE TALIS ACADEMY

Available to our employees and customers to help them grow their knowledge and improve their command of our products, TALIS ACADEMY offers comprehensive theoretical and practical training solutions.

- └ At TALIS: customer training in our brand new TALIS Academy in Meyzieu, France, and Heidenheim, Germany.
- └ On-site: training at the client's premises with a mobile bench dedicated to hydraulic control valves, or using the client's own equipment.



Our programmes are run by various trainers and specialists. For example, the TALIS ACADEMY offer training measures in areas including security and control valves, isolation valves, couplings and fittings, hydrants.



### MEYZIEU (FR)

2015

**745**

PARTICIPANTS

**6200h**

OF TRAINING

1 400h  
in-house training

4 800h  
customer training

### HEIDENHEIM (D)

2015

**1100**

PARTICIPANTS

**9800h**

OF TRAINING

7000h  
in-house training

2800h  
customer training







# DELUGE SYSTEMS

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## DELUGE SYSTEMS

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# Deluge Systems

## Electric Actuated with Local Reset Deluge Valve

## FDV - DE0

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

The FDV-DE0 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-DE0 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

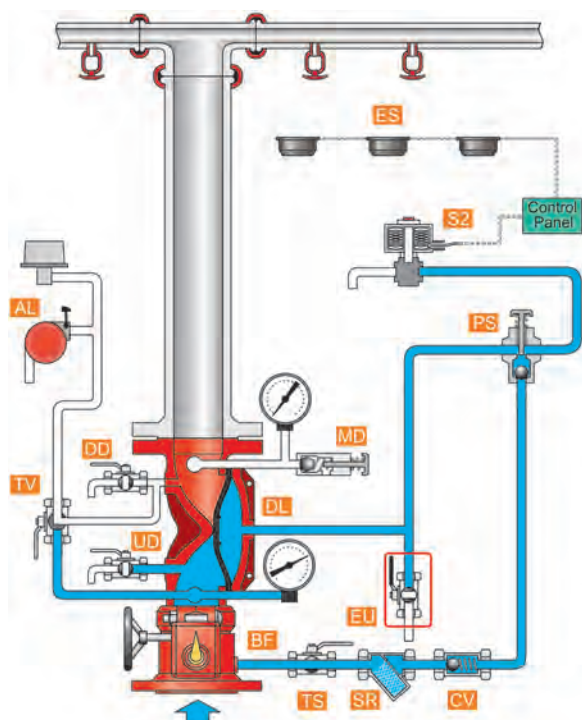
- Hydro-dynamic pattern design ensures high flowrates with minimum head loss
- The valve trips open automatically upon a gradual release of water pressure from its control chamber. The trip is actuated by an electric signal transmitted to the valve's solenoid from the main control panel, due to a flame 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-DE0 resets to stand-by close position by pressurizing the Dry Pilot Line and manually operating the PSA device.

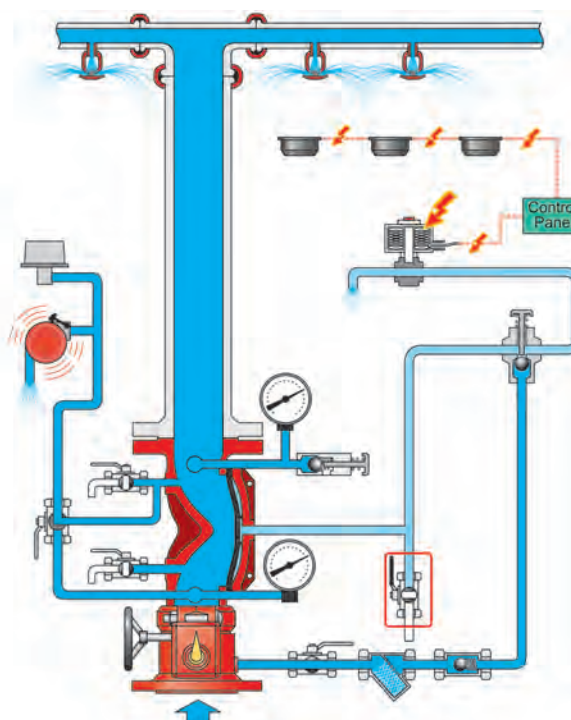


## Schematic drawing

### 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

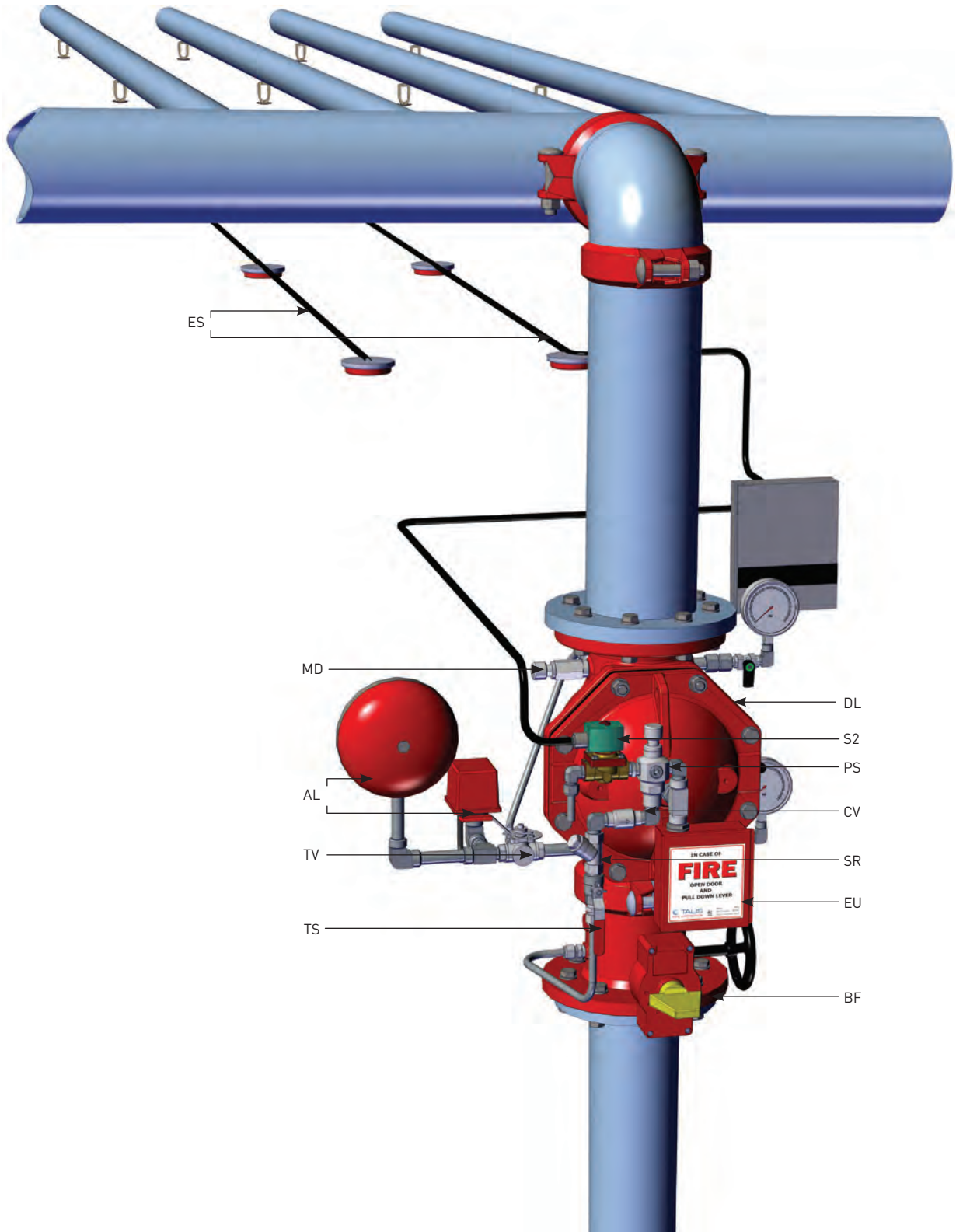
When an electric detection system senses flame heat, it triggers the main control panel that in turn, transmits an electric signal, commanding the 2 way solenoid valve (S2) to open and drain the deluge valve's control chamber. The FDV Deluge valve opens and admits water to the spray sprinklers line.

### 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 - DEO

## 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

ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ

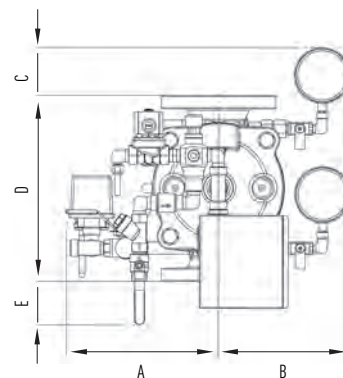
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## Dimensions Table

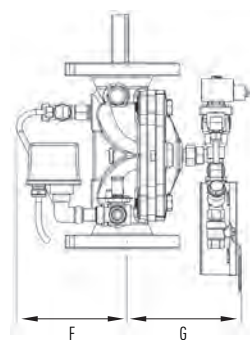
### Vertical

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.

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## Deluge systems

### Electric Actuated with Remote Reset Deluge Valve

### FDV - DE1

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

The FDV-DE1 Deluge system is actuated electrically and resets remotely.

An electric detection systems 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-DE1 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



Storage



P.O.G.



Tunnels



Airports

#### 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)

#### 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

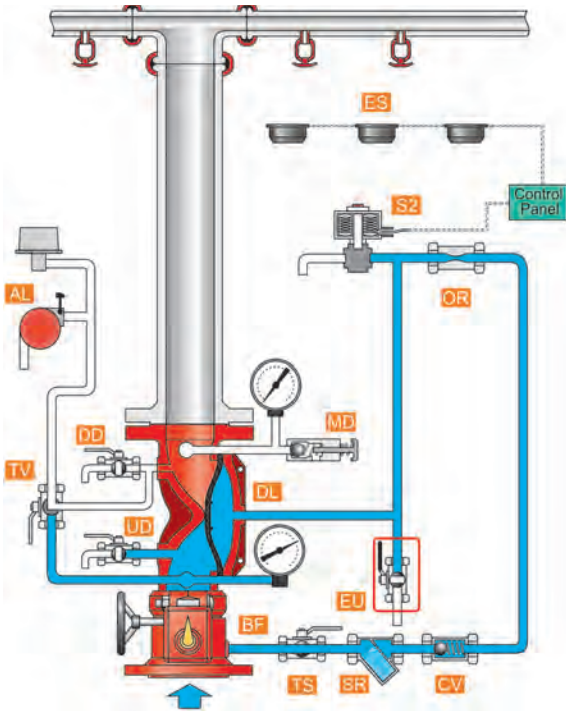
#### CHARACTERISTICS

- 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 valve 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

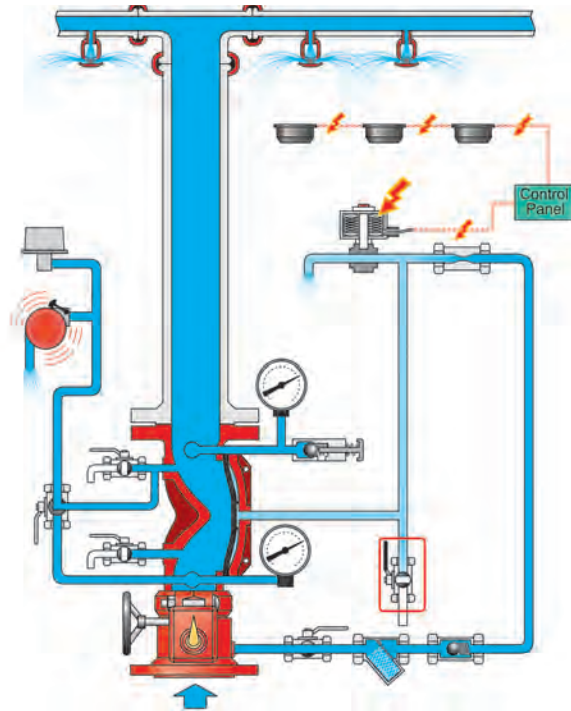
The FDV-DE1 resets to stand-by close position by de-energizing the alarm system solenoid's coil through the main control panel.

## Schematic drawing

Set position



Fire position



**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

**S2** - Solenoid 3 way

**ES** - Electric Sensors system

## OPERATION

### SET position

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

### FIRE situation

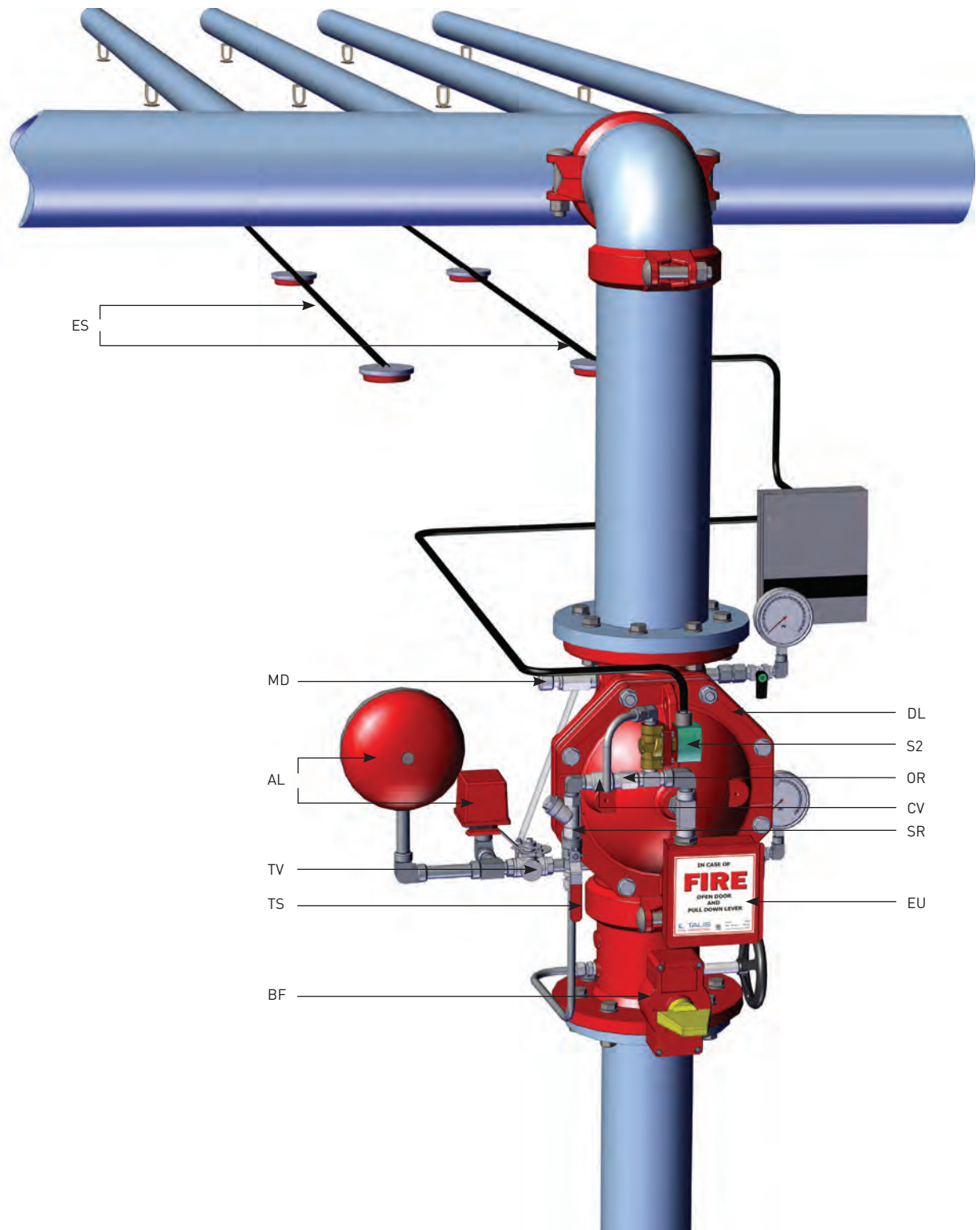
When an electric detection system senses flame heat, it triggers the main control panel that in turn, transmits an electric signal commanding the 2 way solenoid valve (S2) to open and drain the deluge valve's control chamber. The FDV Deluge valve opens and admits water to the spray sprinklers line.

### 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. Upstream water ingresses the FDV Deluge control chamber through the orifice (OR), and the valve closes.

# FDV - DE1

## Typical installation



**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

**S2** - Solenoid 3 way

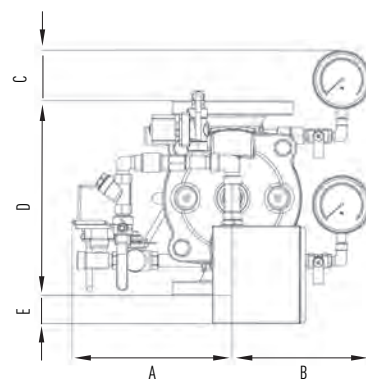
**ES** - Electric Sensors system



## Dimensions Table

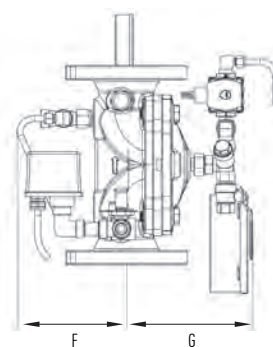
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	249	9.8	265	10.4	275	10.8	374	14.7	308	12
B	271	10.7	231	9	246	9.7	269	10.6	269	10.6
C	93	3.7	84	3.3	73	2.8	68	2.7	62	2.4
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	98	3.8	47	1.8	12	0.5	-	-	-	-
F	160	6.3	170	6.6	207	8	232	9	258	10
G	225	8.8	258	10	291	11	317	12.5	357	14
Kg/lb	16	35.2	28.3	62.4	45.2	99.6	64	141.1	103.8	228.8



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	369	14.5	381	15	279	11	304	12	307	12
B	189	7.4	202	7.9	216	8.5	240	9.5	241	9.5
C	74	2.9	24	0.9	-	-	-	-	-	-
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	160	6.3	172	6.8	207	8	232	9	264	10.4
G	187	7.4	216	8.5	247	9.7	310	12.2	340	13.4
Kg/lb	16	35.2	28.4	62.6	45.2	99.6	64.3	141.7	103.8	228.8



## 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
- 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.

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# Deluge Systems

## Pneumatic Actuated with Local Reset Deluge Valve

## FDV - DP0

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

The FDV-DP0 Deluge system is actuated pneumatically and resets locally.

When the pneumatic dry pilot detection line is exposed to flame heat, its automatic fire sprinklers shatter-open, while venting the air pressure from the FDV-DP0's actuator, commanding the deluge valve to open.

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-DP0 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



P.O.G.



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

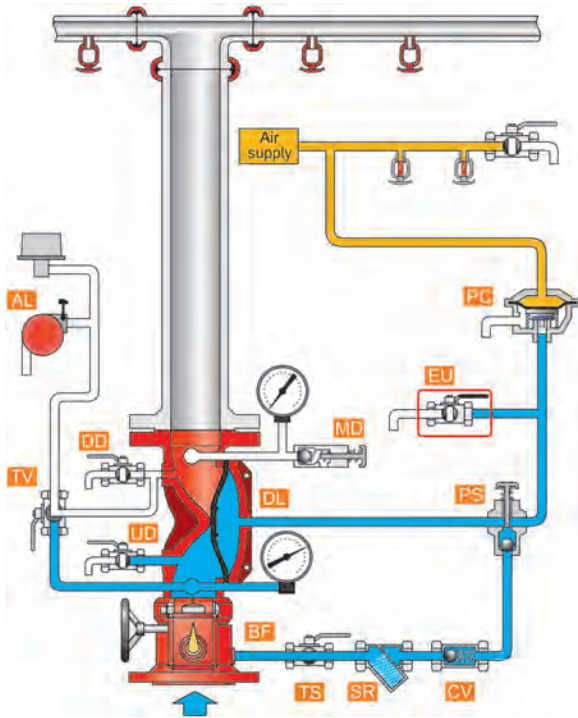
### CHARACTERISTICS

- Hydro-dynamic pattern design ensures high 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 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

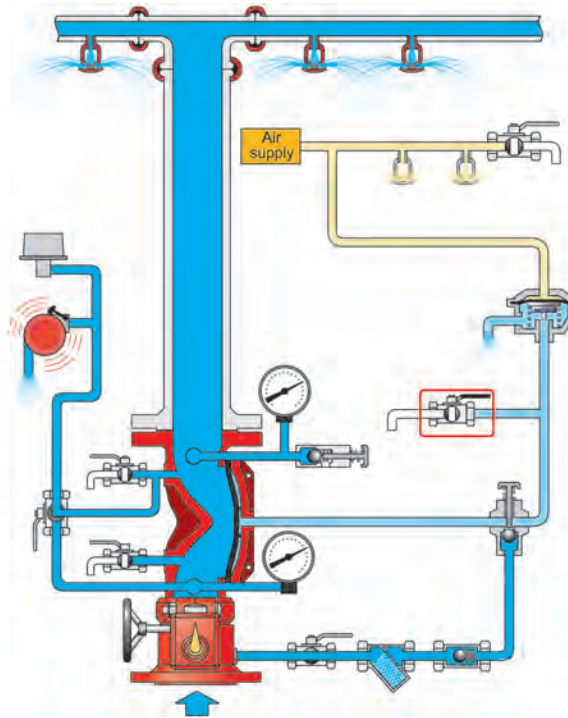
The FDV-DP0 resets to stand-by close position by pressurizing the Dry Pilot Line and manually operating the PSA device.

## 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

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

## OPERATION

### SET position

Pressurized water in the valve's control chamber (DL) is trapped by the closed PSA (PA), 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 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

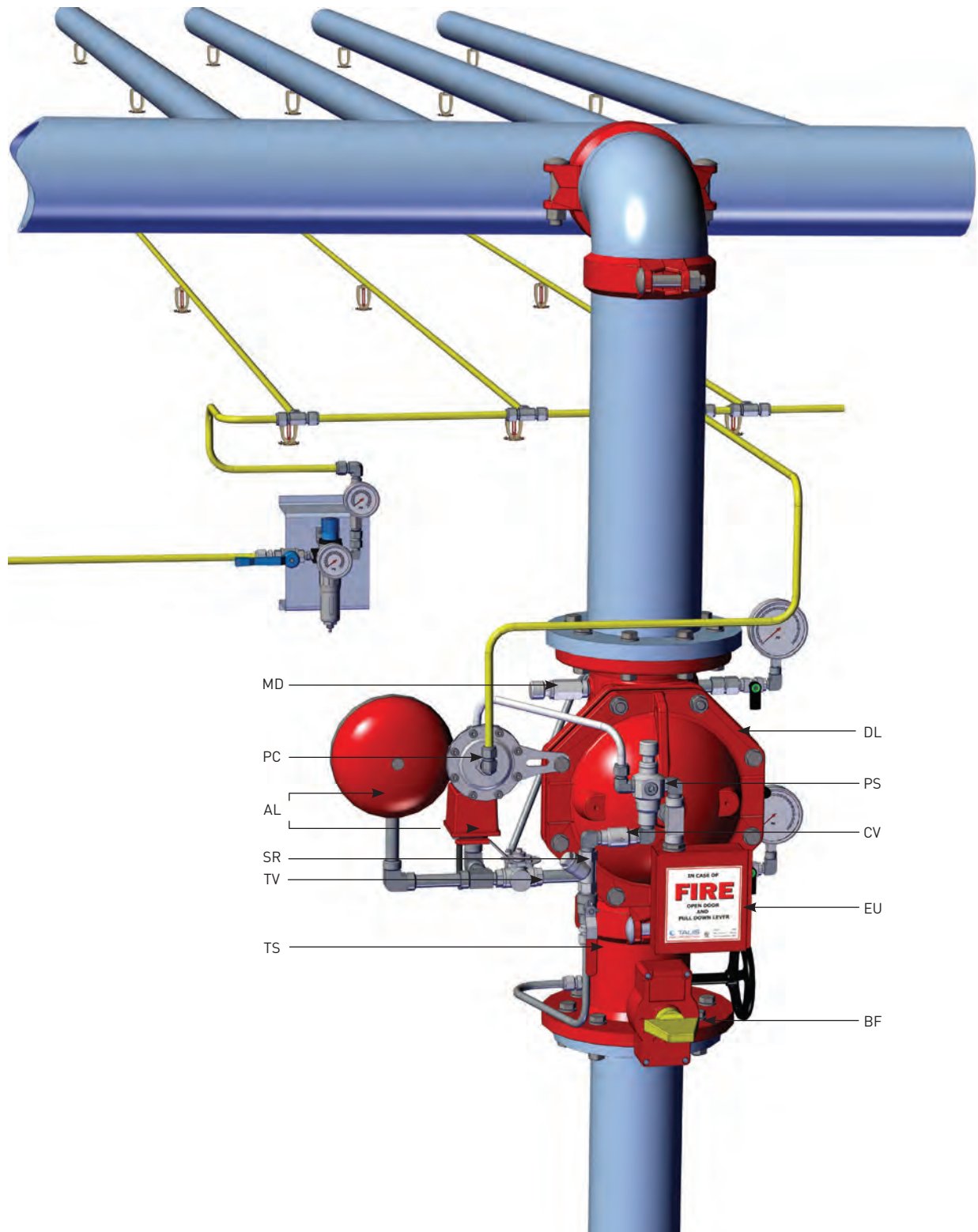
System reset requires the replacement of all the Dry Pilot detection Line's shattered-open automatic fire sprinklers.

The detection line is then pressurizing together with the PA-PTC actuator, to reset it to closed position.

The PSA (PS) push button should be pressed to enable the control chamber filling, closing the FDV deluge valve.

# FDV - DP0

## 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

**PC** - PA-PTC - Pneumatic

Actuator-Pressure to Close

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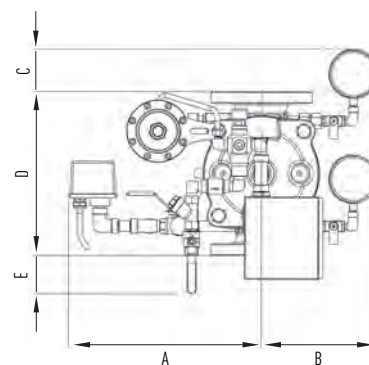
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## Dimensions Table

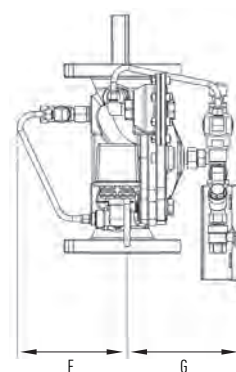
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	314	12.4	384	15.2	395	15.5	300	11.8	327	12.9
B	268	10.5	231	9	244	9.6	220	0.8	296	11.7
C	94	3.7	84	3.3	73	2.9	63	2.5	61	2.4
D	224	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	117	4.6	66	2.6	40	1.6	-	-	-	-
F	164	6.5	180	7	206	8.1	230	9	254	10
G	170	6.7	200	7.9	240	9.5	302	11.9	335	13.2
Kg/lb	18.5	40.7	30.8	68	47.7	105.2	66.2	146	105.8	233.3



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	314	12.4	381	15	395	15.6	420	16.5	398	15.7
B	189	7.4	201	7.9	215	8.5	240	9.5	268	10.5
C	-	-	31	1.2	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	127	5	47	1.9	13	0.5	-	-	-	-
F	164	6.5	180	7	207	8.5	231	9	257	10.2
G	209	8.2	239	9.4	278	10.9	341	13.4	374	14.7
Kg/lb	19	42	30.8	68	47.7	105.2	66.4	146.5	105.7	223.2



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

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

## Deluge systems

### Pneumatic Actuated with Remote Reset Deluge Valve

### FDV - DP1

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

The FDV-DP1 Deluge system is actuated pneumatically and resets remotely.

When the pneumatic dry pilot detection line is exposed to flame heat, its automatic fire sprinklers shatter-open, venting the air pressure from the FDV-DP1's actuator, commanding the deluge valve to open. 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-DP1 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



Industry



Marine



Storage



P.O.G.



Tunnels



Airports

#### 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)

#### 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

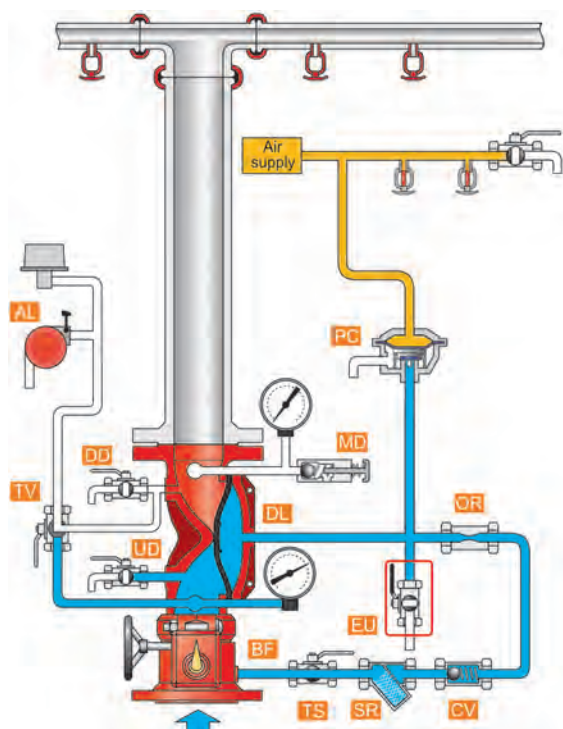
#### CHARACTERISTICS

- 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 valve is actuated by a 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

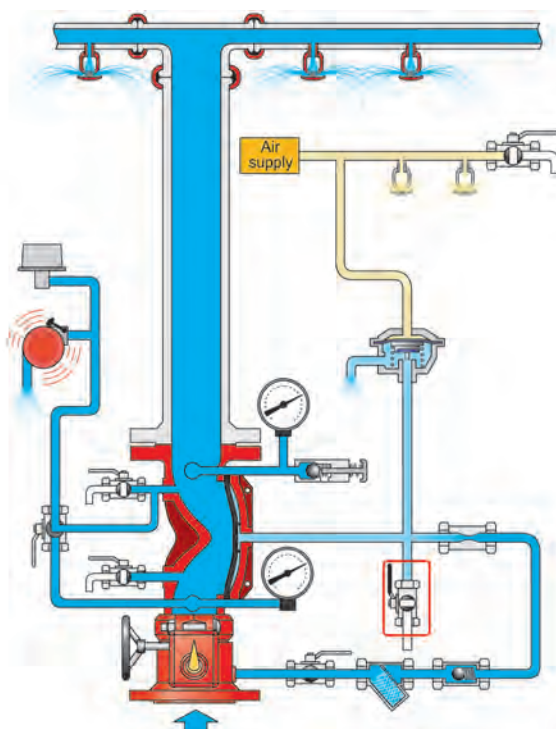
The FDV-DP1 resets to stand-by close position by pressurizing the Dry Pilot.

## 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

## 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 automatic Wet Pilot Line sprinklers. The hydraulic pressure accumulated in the Wet pilot detection line maintains the FDV deluge valve (DL) closed.

### FIRE situation

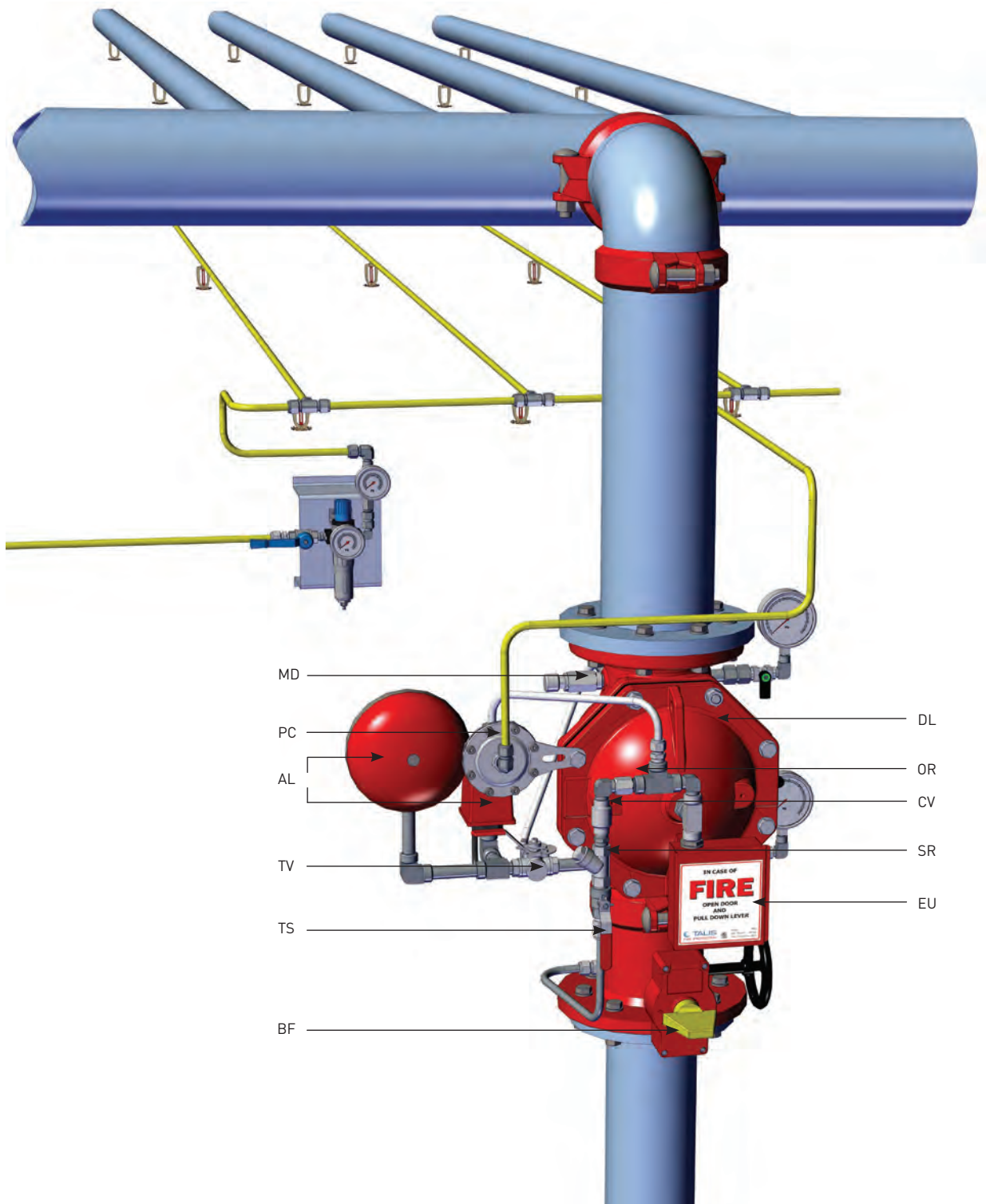
When the Wet pilot detection line's automatic fire sprinklers are subjected to flame heat and shatter-open, it enables the FDV control chamber to drain and de-pressurize, opening of the deluge valve and admitting water into the spray sprinkler system. The Deluge system incorporates an emergency valve,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

### RESET position

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.

# FDV - DP1

## 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

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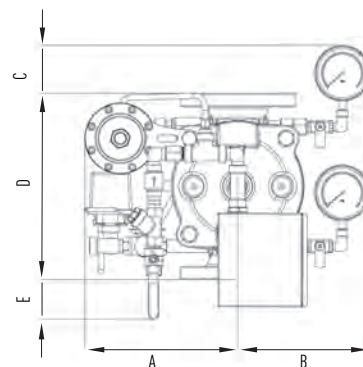
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## Dimensions Table

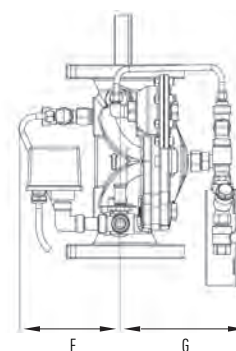
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	315	12.4	381	15	395	15.5	420	16.5	403	15.9
B	189	7.4	202	7.9	216	8.5	240	9.4	262	10.3
C	-	-	-	-	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	154	6	69	2.7	34	1.4	4	0.1	-	-
F	154	6	172	6.8	206	8.1	232	9.1	264	10.4
G	187	7.4	216	8.5	247	9.7	311	12.2	340	13.4
Kg/lb	17.9	39.5	30.1	66.4	47	103.6	65.6	78.5	105.1	231.7



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	315	12.4	381	15	395	15.5	420	16.5	403	15.9
B	189	7.4	202	7.9	216	8.5	240	9.4	262	10.3
C	-	-	-	-	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	154	6	69	2.7	34	1.4	4	0.1	-	-
F	154	6	172	6.8	206	8.1	232	9.1	264	10.4
G	187	7.4	216	8.5	247	9.7	311	12.2	340	13.4
Kg/lb	17.8	39.2	30.2	66.6	47.2	104	65.8	145	105.1	231.7



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

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

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## Deluge systems

### Electric-Pneumatic Actuated with Local Reset Deluge Valve

### FDV - DC0

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

The FDV-DC0 Deluge system is actuated electrically or pneumatically and resets locally.

Two 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. 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-DC0 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)

#### 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 service valves in the system
- Open fail safe valve, maintained in stand-by closed position
- Low maintenance cost: the main 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

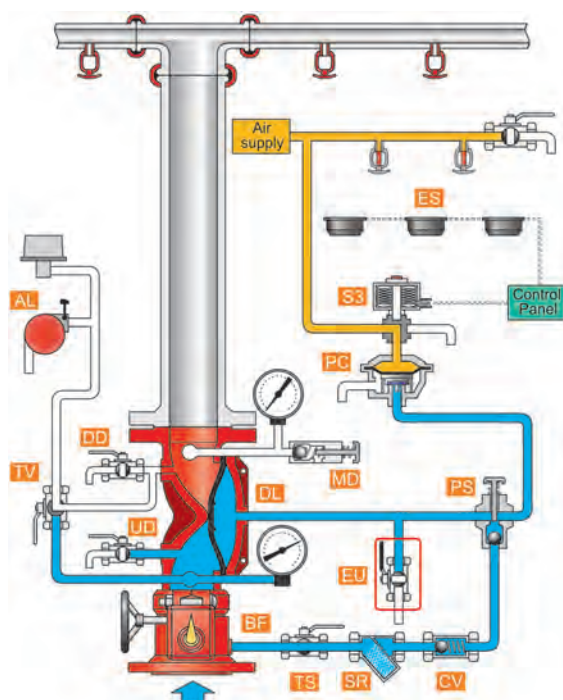
#### CHARACTERISTICS

- 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

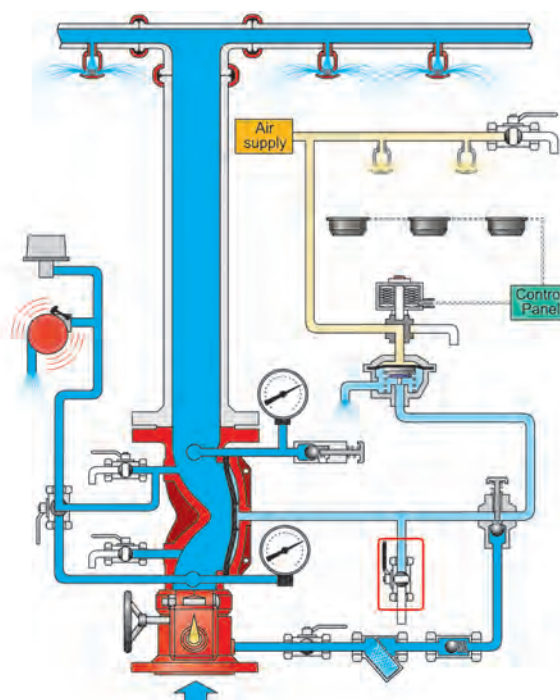
The FDV-DC0 resets to stand-by close position by de-energizing the alarm system solenoid's coil through the main control panel or, pressurizing the Dry Pilot Line and manually operating the PSA device.

## Schematic drawing

### Set position



### Fire position



**DL** - FDV Deluge valve

**UD** - Upstream drain valve

**DD** - Downstream drain valve

**AL** - Acoustic & Electric alarms

**TS** - FDV Deluge valve

**SR** - "Y" strainer

**CV** - Check valve

**PS** - PSA – Pressure Supply Arrestor

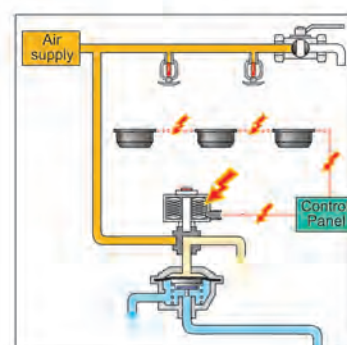
**MD** - MADV – Manual Automatic Drain Valve

**TV** - Alarm test valve

**EU** - Emergency Manual Unit

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

**S3** - Solenoid 3 way



## OPERATION

### SET position

Pressurized water in the valve's control chamber is trapped by the check-valve (5), by the closed PA-PTC actuator (9) and by the closed emergency valve (8), maintaining the deluge valve in its closed position.

The air pressure accumulated in the Dry pilot Detection line is conveyed to the PA-PTC actuator, through a 3 way solenoid valve, maintaining the Deluge valve closed.

### FIRE situation

When some of the Wet pilot detection line's automatic fire sprinklers are subjected to the predetermined temperature levels and shutter-open, the pilot line de-pressurizes, tripping open the PA-PTC. Alternatively, an electric detection system senses heat and triggers the main control board that in turn, energizes the 3 way solenoid valve.

The solenoid valve bypasses the Dry pilot detection line depressurizing the PA-PTC. The FDV-DC0's control chamber is then drains and the Deluge valve opens.

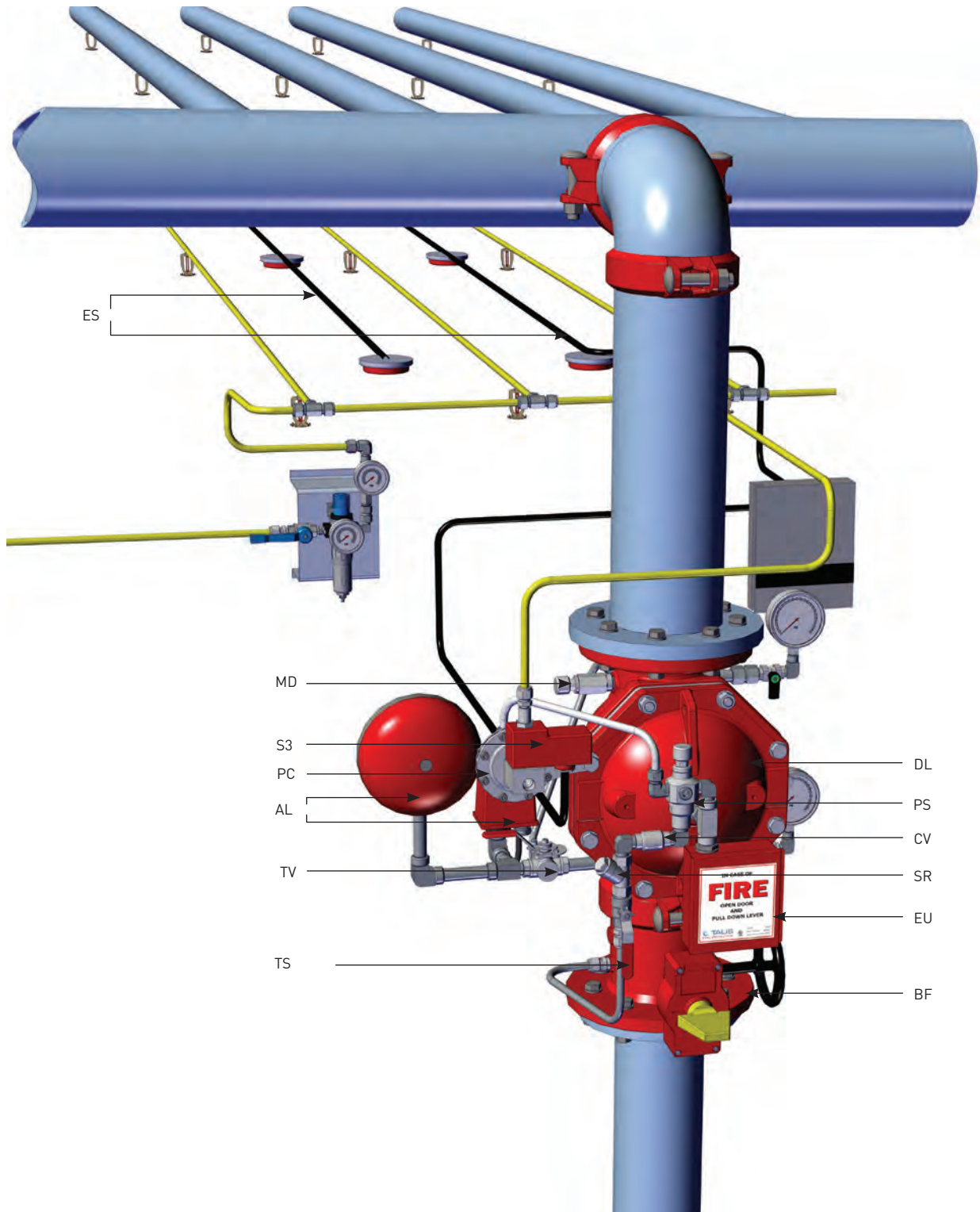
### RESET position

System reset requires the replacement of all Shattered-open Fire sprinklers in the Detection pilot line.

Alternatively, the electrical alarm system has to be reset and the solenoid de-energized. Resetting both Detection line and solenoid valve, the PA-PTC actuator pressurizes and closes the FDV deluge valve.

# FDV - DCO

## Typical installation



DL - FDV Deluge valve  
 UD - Upstream drain valve  
 DD - Downstream drain valve  
 AL - Acoustic & Electric alarms  
 TS - FDV Deluge valve

SR - "Y" strainer  
 CV - Check valve  
 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  
 S3 - Solenoid 3 way

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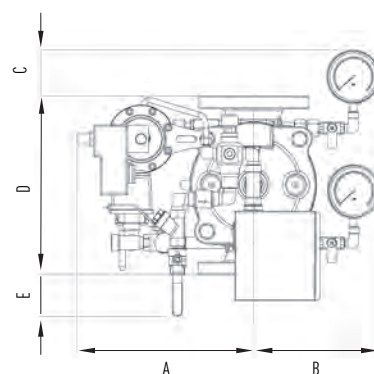
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## Dimensions Table

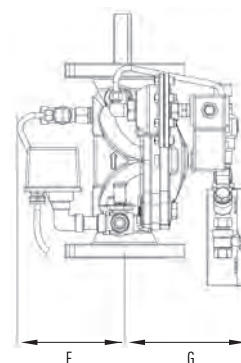
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	235	9.25	327	12.87	280	11	340	13.4	253	9.96
B	268	10.55	231	9	246	9.7	270	10.6	296	11.6
C	94	3.7	84	3.31	73	2.87	70	2.76	63	2.5
D	24	8.8	325	12.8	400	15.75	462	18.2	580	22.8
E	128	5	76	3	41	1.6	12	0.47	-	-
F	169	6.65	172	6.77	208	8.2	232	9.13	255	10
G	227	8.94	216	8.5	240	9.45	302	11.9	336	13.23
Kg/lb	19.9	44	32	70.7	49	108	67.6	149.2	107	236



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	314	12.6	381	15	395	15.5	415	16.3	438	17.24
B	190	7.48	201	7.9	217	8.54	240	9.45	266	10.47
C	95	3.7	23.5	0.93	-	-	-	-	-	-
D	224	8.82	325	12.8	400	15.75	462	18.2	580	11
E	99.6	3.92	47	1.85	12	0.47	-	-	-	-
F	164	6.46	194	7.6	208	8.2	252	9.9	256	10.08
G	250	9.8	231	9	313	12.3	341	13.4	409	16.1
Kg/lb	20.5	45.2	32.1	70.9	49	108	67.7	149.2	107	236



## 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.

## Deluge systems

### Electric-Pneumatic Actuated with Remote Reset Deluge Valve

### FDV - DC1

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

The FDV-DC1 Deluge system is actuated electrically or pneumatically and can be reset from a remote location. Two 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. 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-DC1 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



Industry



Marine



Storage



P.O.G.



Airports

#### 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)

#### 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

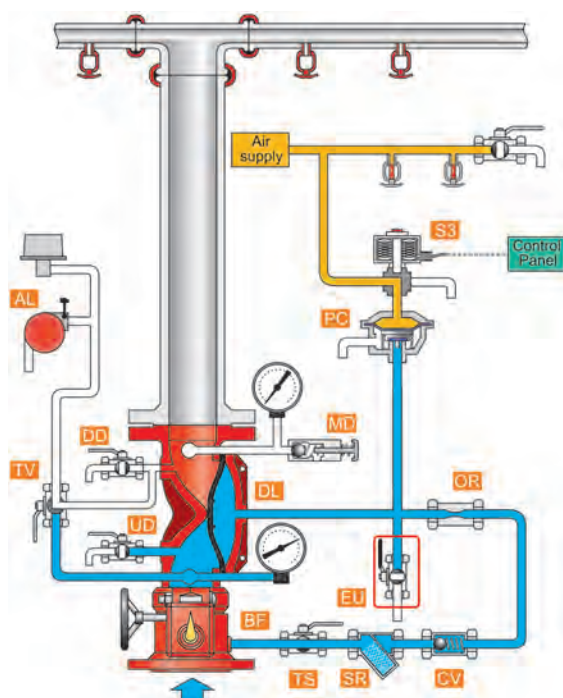
#### CHARACTERISTICS

- Hydro-dynamic pattern design ensures high 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

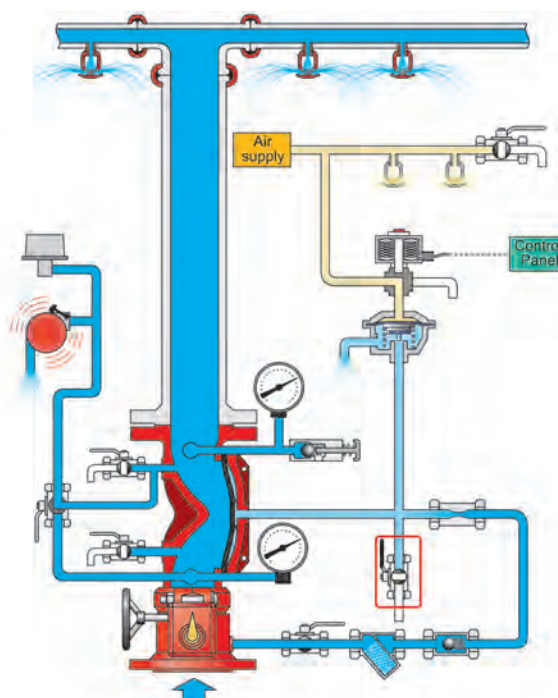
The FDV-DC1 resets to stand-by close position by de-energizing the alarm system solenoid's coil through the main control panel or, pressurizing the Dry Pilot Line.

## Schematic drawing

### Set position

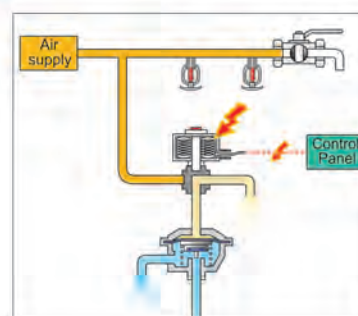


### Fire position



**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** - PTC – Pneumatic Actuator- Pressure To Close  
**S3** - Solenoid 3 way



## 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 deluge valve in closed position. The air pressure accumulated in the Dry pilot Detection line is conveyed to the PA-PTC actuator, through a 3 way solenoid (S3) valve, maintaining the Deluge valve closed.

### FIRE situation

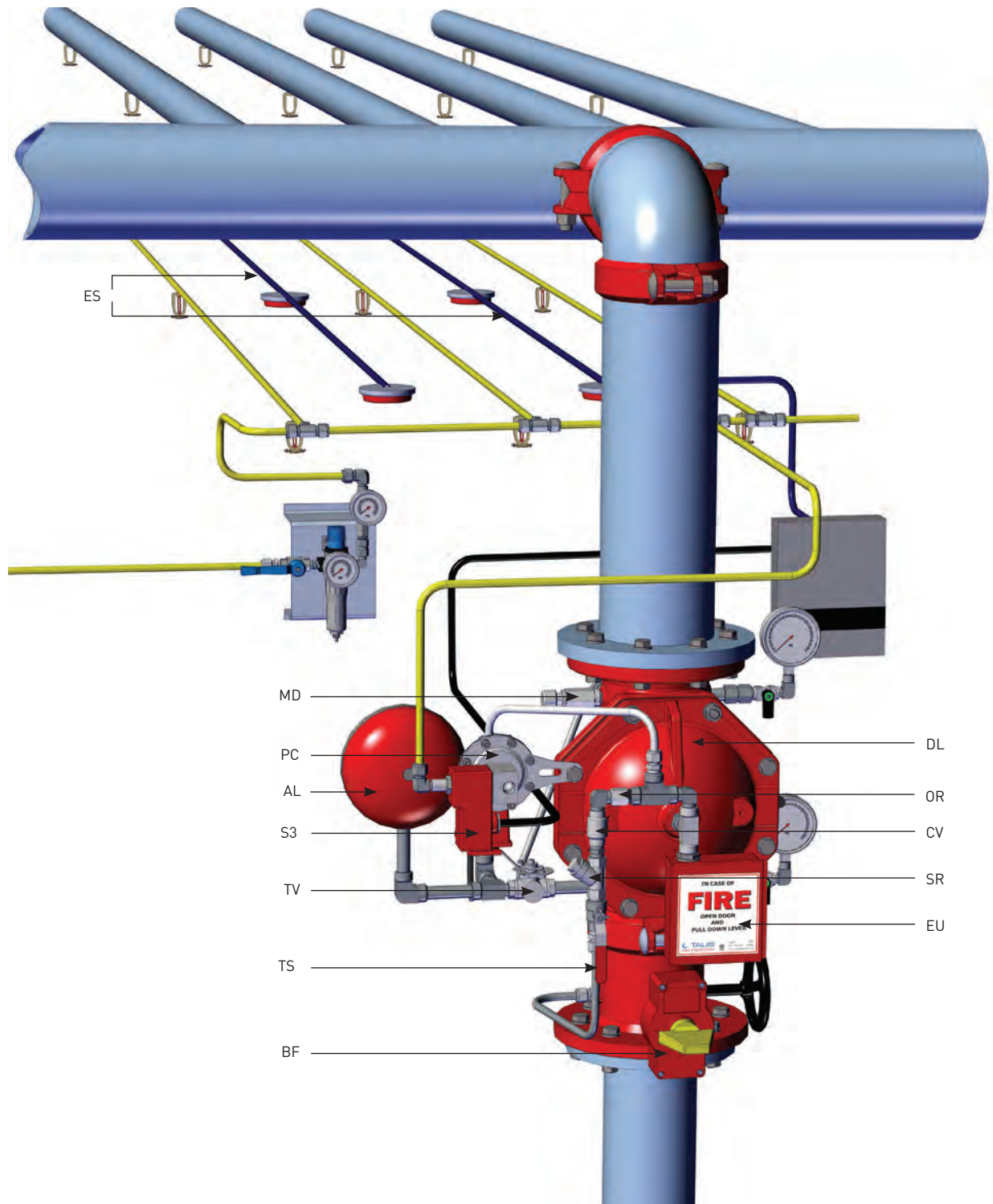
When some of the Wet pilot detection line's automatic fire sprinklers are subjected to the predetermined temperature levels and shutter-open, the pilot line de-pressurizes, tripping open the PA-PTC. Alternatively, an electric detection system senses heat and triggers the main control board that in turn, energizes the 3 way solenoid valve. The solenoid valve bypasses the Dry pilot detection line depressurizing the PA-PTC. The FDV-DC0's control chamber is then drains and the Deluge valve opens.

### RESET position

System reset requires the replacement of all shattered-open fire sprinklers in the Detection pilot line. Alternatively, the electrical alarm system has to be reset and the solenoid de-energized. By this, the PA-PTC actuator pressurizes and closes the FDV deluge valve's drain. Upstream water passing through the orifice (OR), pressurizes the FDV Deluge control chamber and the valve closes.

# FDV - DC1

## 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

**PC** - PTC - Pneumatic Actuator-  
Pressure To Close

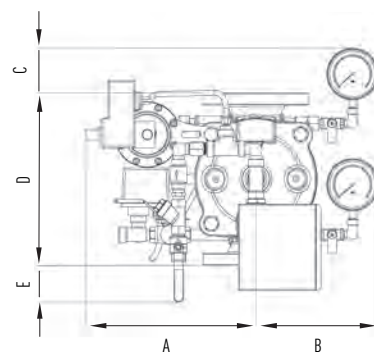
**S3** - Solenoid 3 way



## Dimensions Table

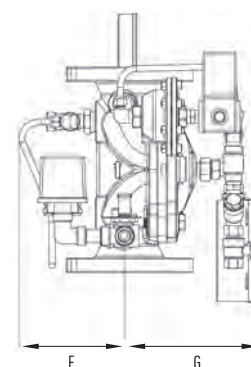
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	214	8.4	321	12.6	367	14.5	394	15.5	432	17
B	277	10.9	231	9	246	9.7	269	10.6	269	10.6
C	94	3.7	85	3.3	73	2.9	68	2.7	61	2.4
D	224	8.8	325	12.8	400	15.7	462	18	580	22.8
E	154	6	68	2.7	34	1.3	4	0.1	-	-
F	159	6.2	166	6.5	207	8	248	9.7	259	10.2
G	259	10	216	8.5	247	9.7	311	12.2	341	13.4
Kg/lb	19.9	42.1	31.4	69.2	48.3	106.5	66.9	147.5	106.4	234.6



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	315	12.4	381	15	395	15.5	420	16.5	457	17.9
B	188	188	201	7.9	216	8.5	240	9.5	243	9.5
C	-	-	-	-	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18	580	22.8
E	154	6	69	2.7	34	1.4	6	0.2	-	-
F	155	6.1	169	6.6	208	8	232	9	258	10
G	259	10	216	8.5	247	9.7	308	12	340	13.4
Kg/lb	19	41.9	31.5	69.5	48.4	106.7	67.1	147.1	106.5	234.8



## 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
- Energize to Open/Close valve
- Solenoid Enclosure
- Solenoid Protection
- Pneumatic working pressure
- System installation orientation
- Additional accessories needed

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

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# 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

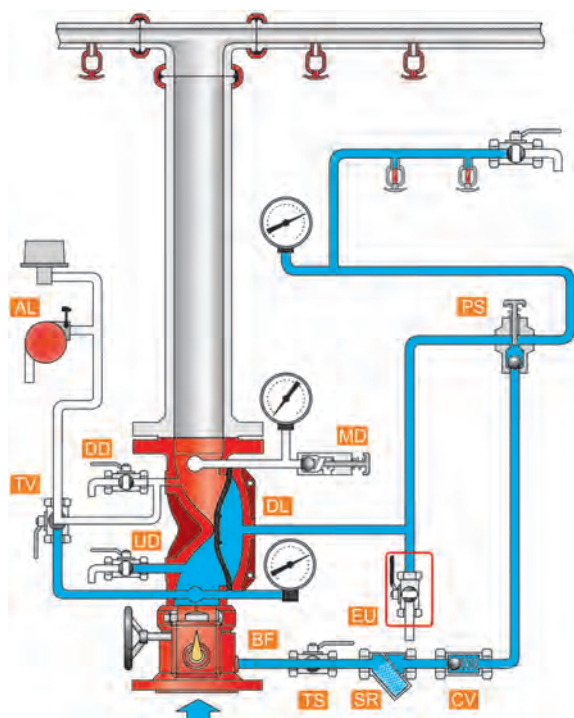
### CHARACTERISTICS

- 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

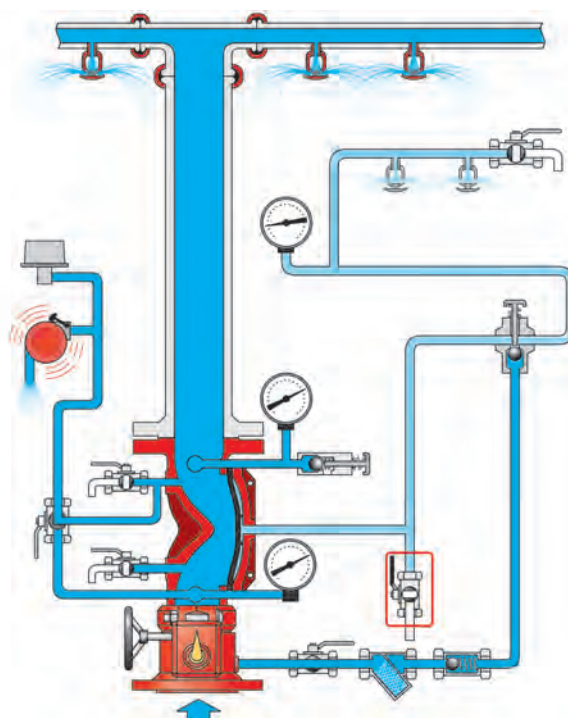
The FDV-DH0 resets to stand-by close position by pressurizing the Dry Pilot Line and manually operating the PSA device.

## 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

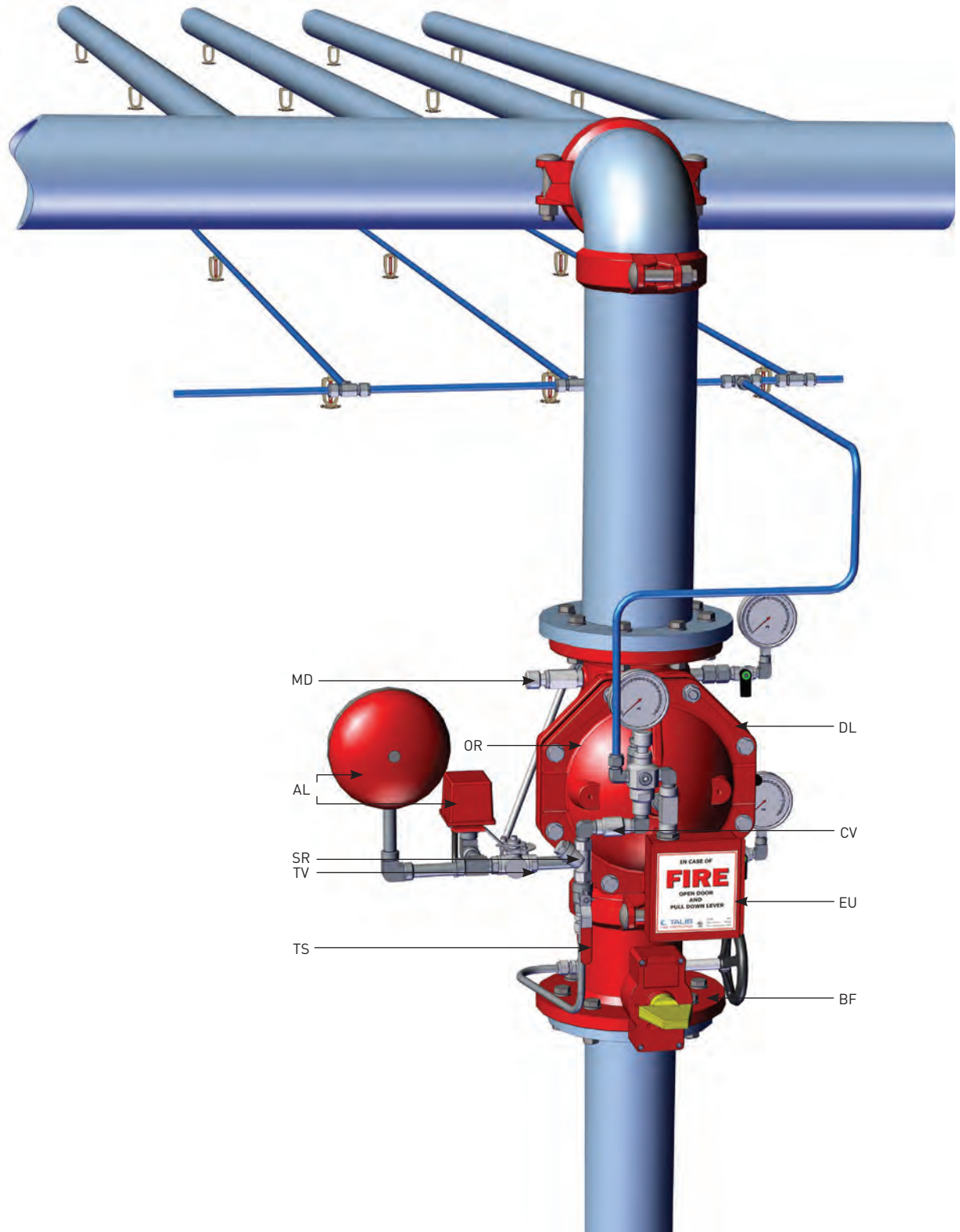
When the Wet pilot detection line's automatic fire sprinklers are subjected to flame heat and shatter-open, it enables the FDV control chamber to drain and de-pressurize, opening of the deluge valve and admitting water into the spray sprinkler system. The Deluge system incorporates an emergency valve,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

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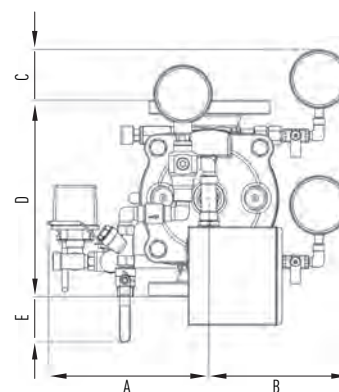
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## Dimensions Table

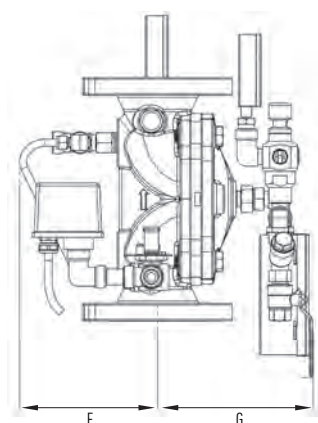
### Vertical

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.

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## 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

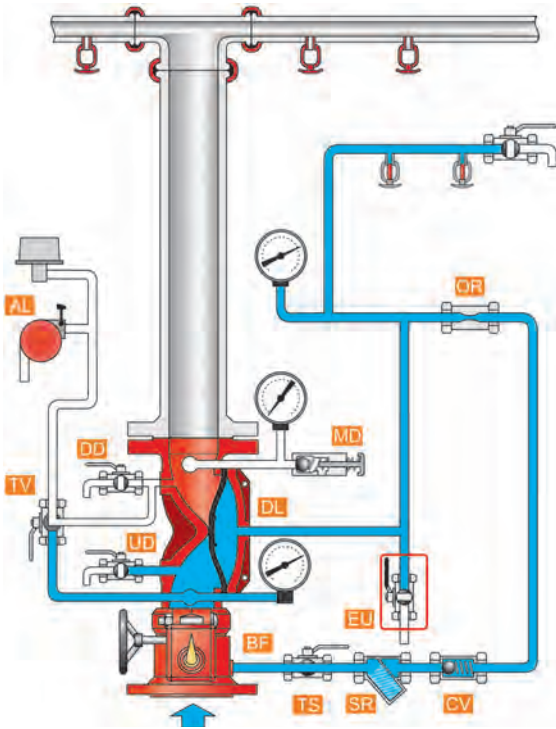
#### CHARACTERISTICS

- 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

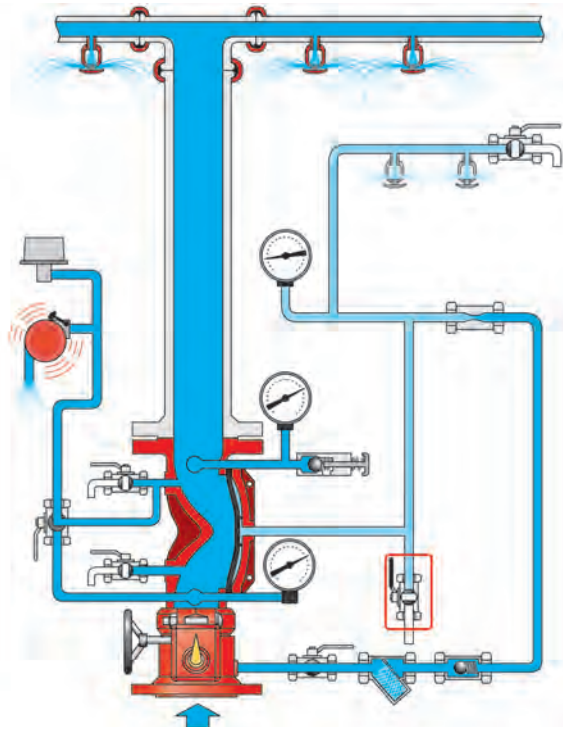
The FDV-DH1 resets to stand-by close position by pressurizing the Wet Pilot Line.

## 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

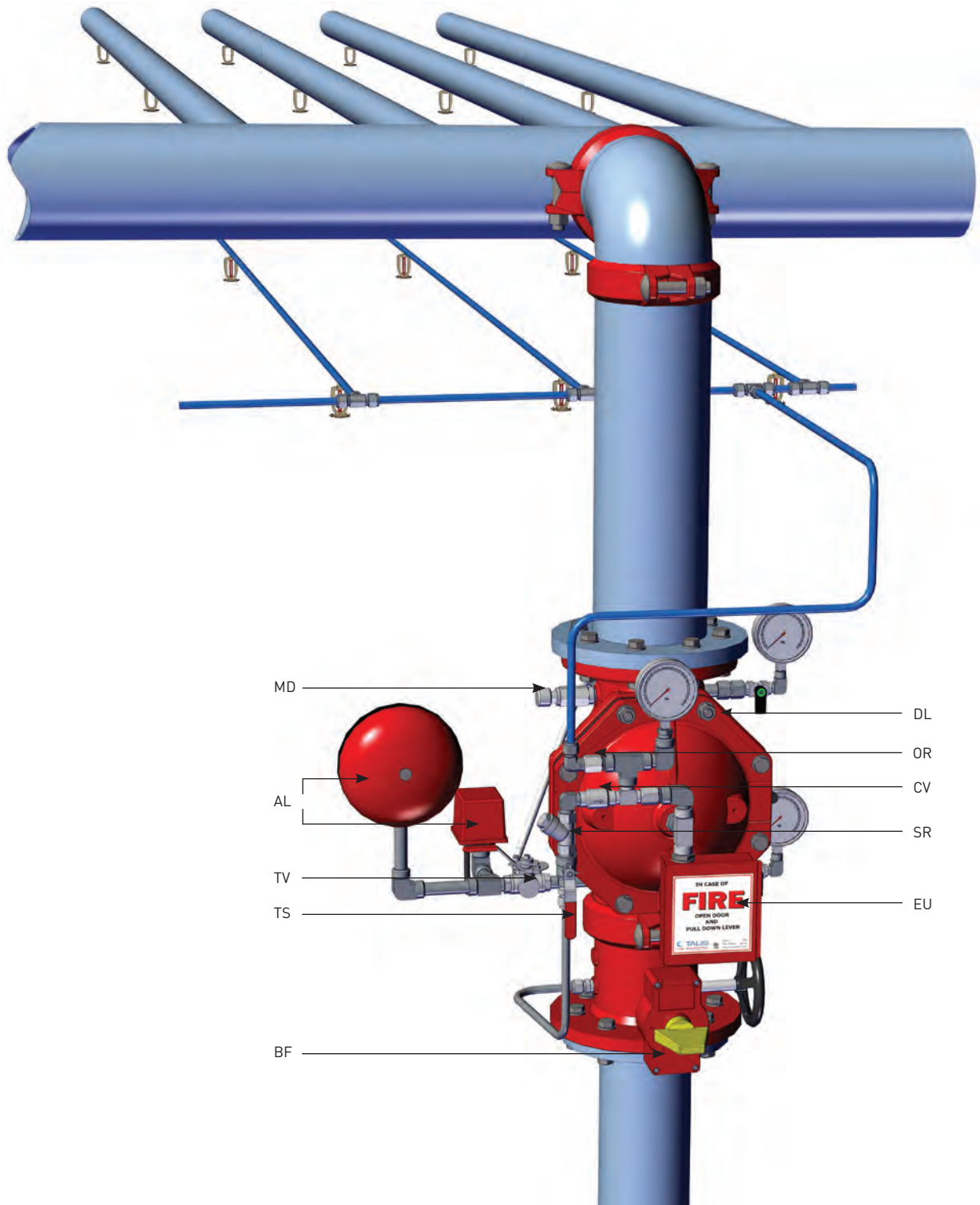
When some of the Dry pilot detection line's automatic fire sprinklers are subjected to flames heat and shatter-open, the pilot detection line depressurizes and the PA-PTC control chamber. The PA-PTC (PC) opens and drains the deluge valve's control chamber. The FDV deluge valve opens and admits water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

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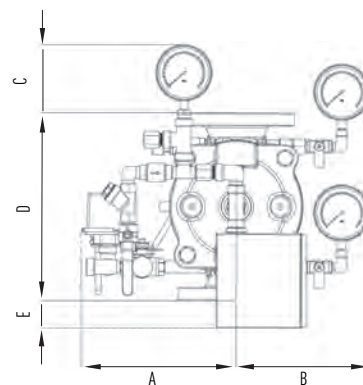
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## Dimensions Table

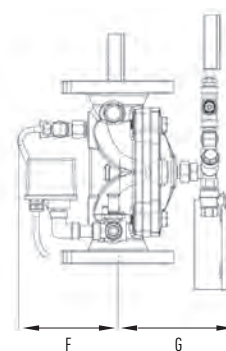
### Vertical

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.

ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ  
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## Deluge systems

### Hydraulic actuated & Anti-Columning Local Reset Deluge Valve

### FDV - DA0

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

The FDV-DA0 Deluge system is actuated hydraulically and resets locally.

When a hydraulic detection system, a Wet Pilot Detection Line, is exposed to predetermined temperature level, automatic fire sprinklers shatter open causing a pressure drop that activate a pilot valve commanding the FDV-DA0 Deluge valve to open.

The Anti Columning feature ensures system operation, regardless of the Detection line's height and distance from the Control 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-DA0 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
- Full Anti Columning property enables a nearly unlimited pilot line height
- 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

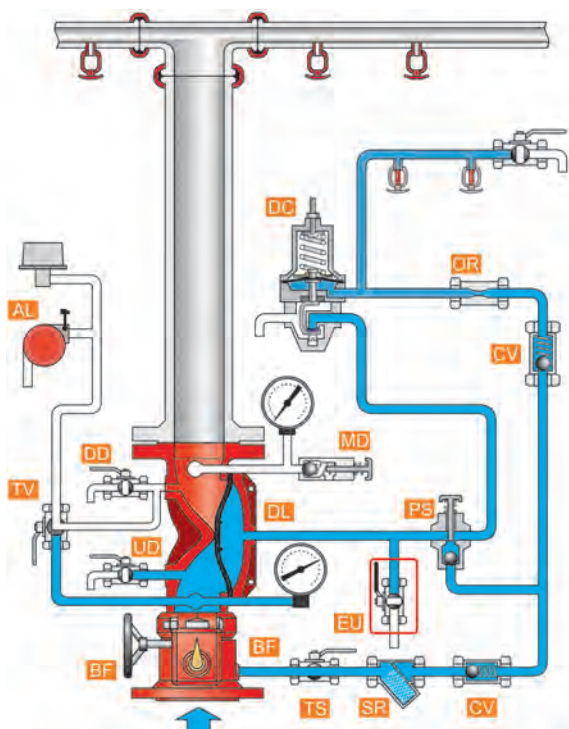
#### CHARACTERISTICS

- 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. The Anti-Columning properties guarantees an immediate system trip, regardless of the Wet Pilot height
- Soft closing upon pressurization of the valve's control chamber, by line pressure or other independent water source to prevents surges

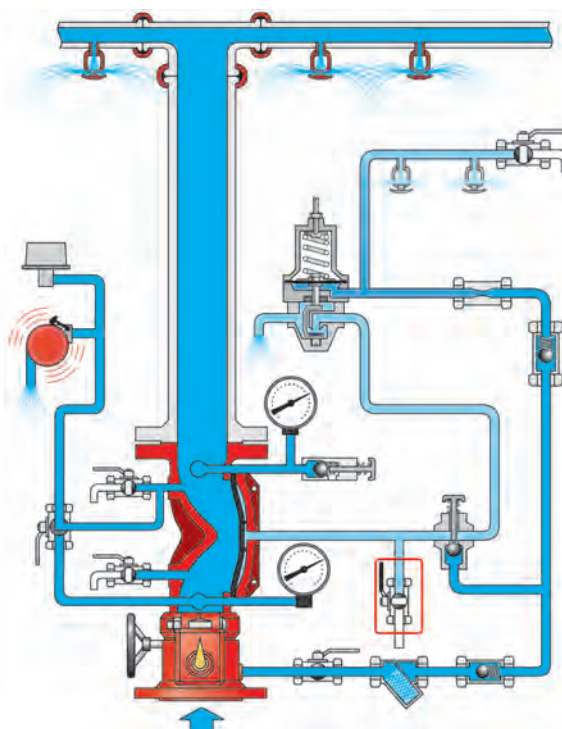
The FDV-DA0 resets to stand-by close position by pressurizing the Dry Pilot Line and manually operating the PSA device.

## 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

**OR** - Orifice

**PS** - PSA – Pressure Supply Arrestor

**MD** - MADV – Manual Automatic  
Drain Valve

**TV** - Alarm test valve

**EU** - Emergency Manual Unit

**DC** - DCPV = Drain Control Pilot Valve

## OPERATION

### SET position

Pressurized water in the valve's control chamber (DL) is trapped by the closed PSA (PA), by the closed emergency valve (EU) and by the closed DCPV drain pilot valve (DC). The hydraulic pressure that is accumulated in the Wet pilot line keeps this device in its close position, maintaining the FDV deluge valve (DL) closed.

### FIRE situation

When some of the Wet pilot detection line's automatic fire sprinklers are subjected to the predetermined temperature levels and shutter-open, the pilot line pressure drops and the DCPV opens its drain port regardless of the residual column pressure.

Opening its drain port, the DCPV releases the FDV control chamber pressure causing it to open and admit water into the spray sprinklers pipeline.

### RESET position

System reset requires the replacement of all Shattered-open Fire sprinklers in the Detection pilot line. The wet pilot line is then pressurized to reset the DCPV to closed position. The PSA (PS) push button should be pressed to enable upstream pressure passage close the FDV's main valve.

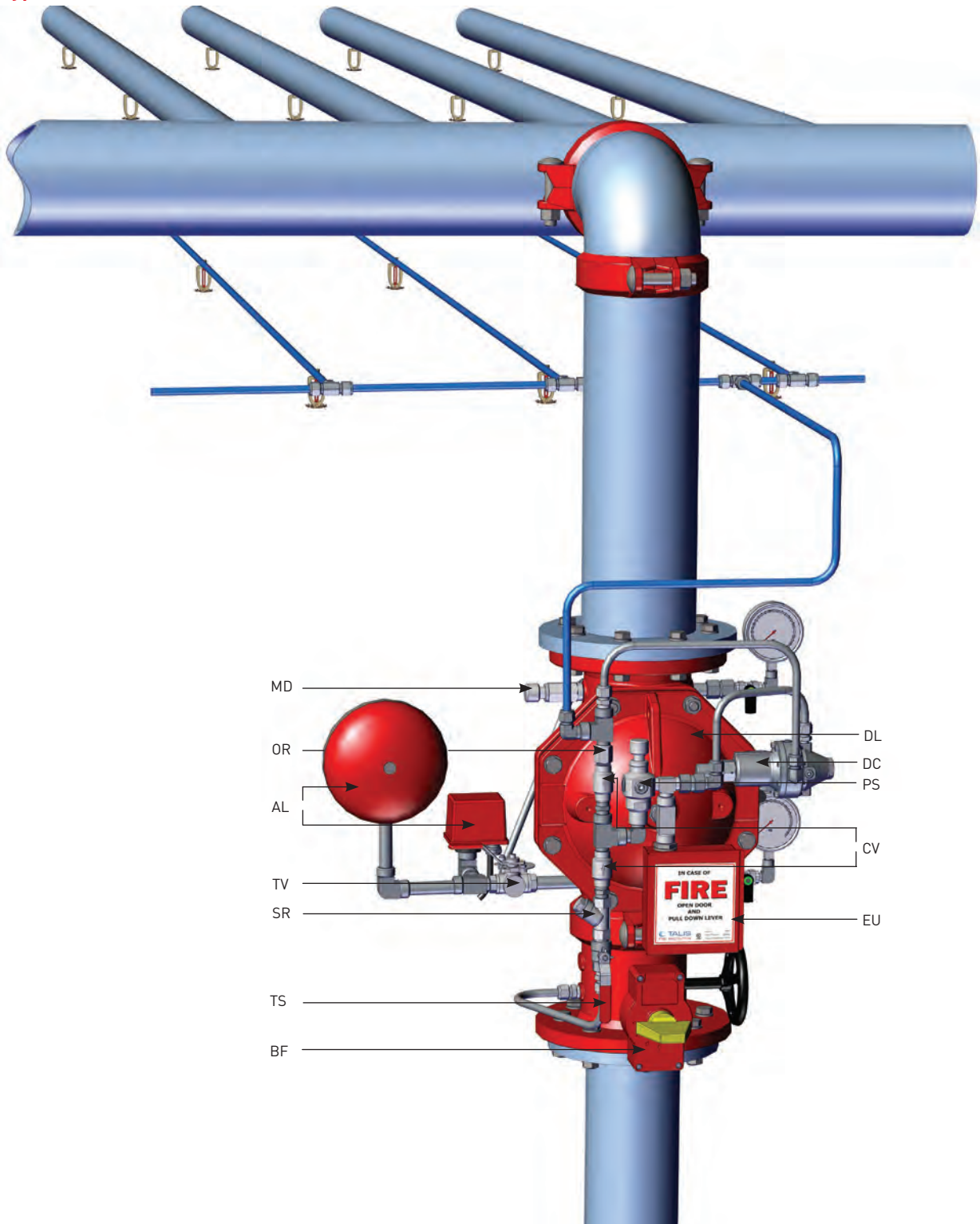
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# FDV - DAO

## 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

**PS** - PSA - Pressure Supply Arrestor

**MD** - MADV - Manual Automatic  
Drain Valve

**TV** - Alarm test valve

**EU** - Emergency Manual Unit

**DC** - DCPV = Drain Control Pilot Valve

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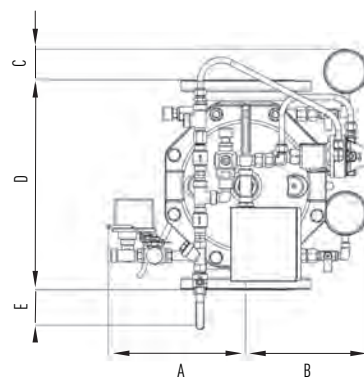
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## Dimensions Table

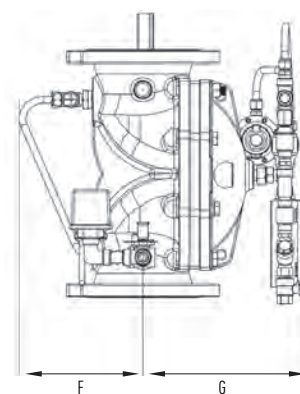
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	251	9.9	262	10.3	297	11.7	303	11.9	355	14.0
B	234	9.2	243	9.6	282	11.1	278	10.9	228	9.0
C	136	5.3	85	3.3	79	3.1	67	2.6	61	2.4
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	69	2.7	150	5.9	115	4.5	69	2.7	27	1.1
F	232	9.1	162	6.4	145	5.7	232	9.1	212	8.3
G	326	12.8	203	8.0	238	9.4	326	12.8	330	13.0
Kg/lb	20.5	45.1	32.9	72.5	49.8	109.7	68.3	150.7	107.9	237.9



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	356	14.0	367	14.4	395	15.6	420	16.5	454	17.9
B	197	7.8	213	8.4	221	8.7	278	10.9	278	10.9
C	151.3	5.9	97	3.8	61	2.4	31	1.2	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	124	4.9	72	2.8	30	1.2	-	-	-	-
F	107	4.2	123	4.8	146	5.7	171	6.7	198	7.8
G	400	15.7	426	16.8	402	15.8	465	18.3	470	19.7
Kg/lb	20.6	45.5	33	72.8	49.9	110	68.5	151.1	108	238.2



## 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.

## Deluge systems

### Hydraulic actuated & Anti-Columning Remote Reset Deluge Valve

### FDV - DA1

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

The FDV-DA1 Deluge system is actuated hydraulically and resets remotely.

When a hydraulic detection system, a Wet Pilot Detection Line, is exposed to a predetermined temperature level, automatic fire sprinklers shatter open causing a pressure drop that activates a pilot valve, commanding the FDV-DA1 Deluge to open. The Anti Columning property enables a system operation, indifferent to the detection line's height and distance from the control valve.

The Deluge system incorporates an emergency valve, by passing the fire detection systems for manual operation. Designed for vertical or horizontal installation, A globe pattern, line pressure operated FDV-DA1 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 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
- Full Anti Columning property enables a nearly unlimited pilot line height
- 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

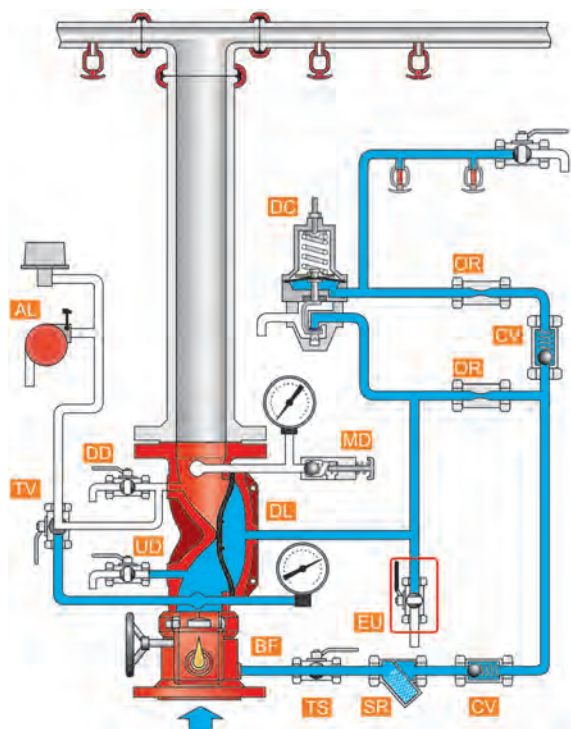
#### CHARACTERISTICS

- 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 trip is actuated by a Wet Pilot Line's hydraulic pressure release due to its exposure to flame heat. The Anti-Columning properties guarantees an immediate system trip, regardless of the Wet Pilot height
- Soft closing upon pressurization of the valve's control chamber, by line pressure or other independent water source, prevents surges

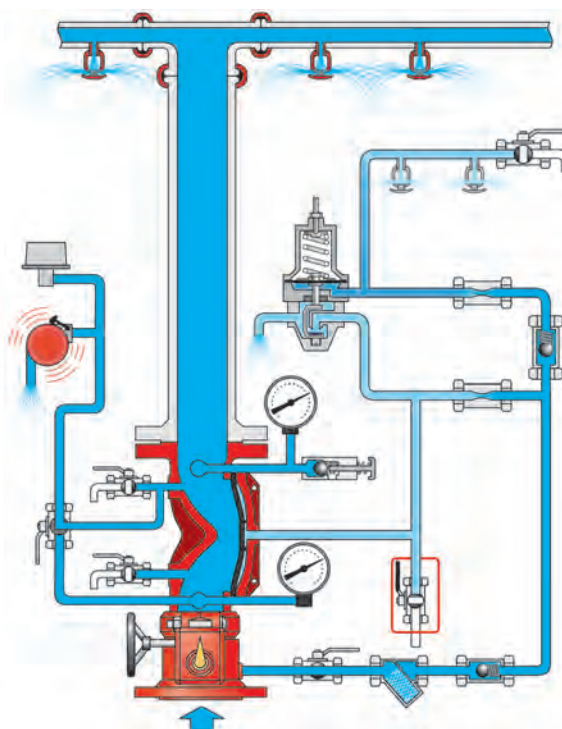
The FDV-DA1 resets to stand-by close position by pressurizing the Wet Pilot Line.

## Schematic drawing

### Set position



### Fire position



**BF** - Butterfly valve

**DL** - FDV Deluge valve

**UD** - Upstream drain valv

**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

**EM** - Emergency valve

**EU** - Emergency Manual Unit

**DC** - Drain Control 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 DCPV drain pilot valve (DC). The hydraulic pressure accumulated in the Wet pilot line keeps this device in its close position, maintaining the FDV deluge valve (DL) closed.

### FIRE situation

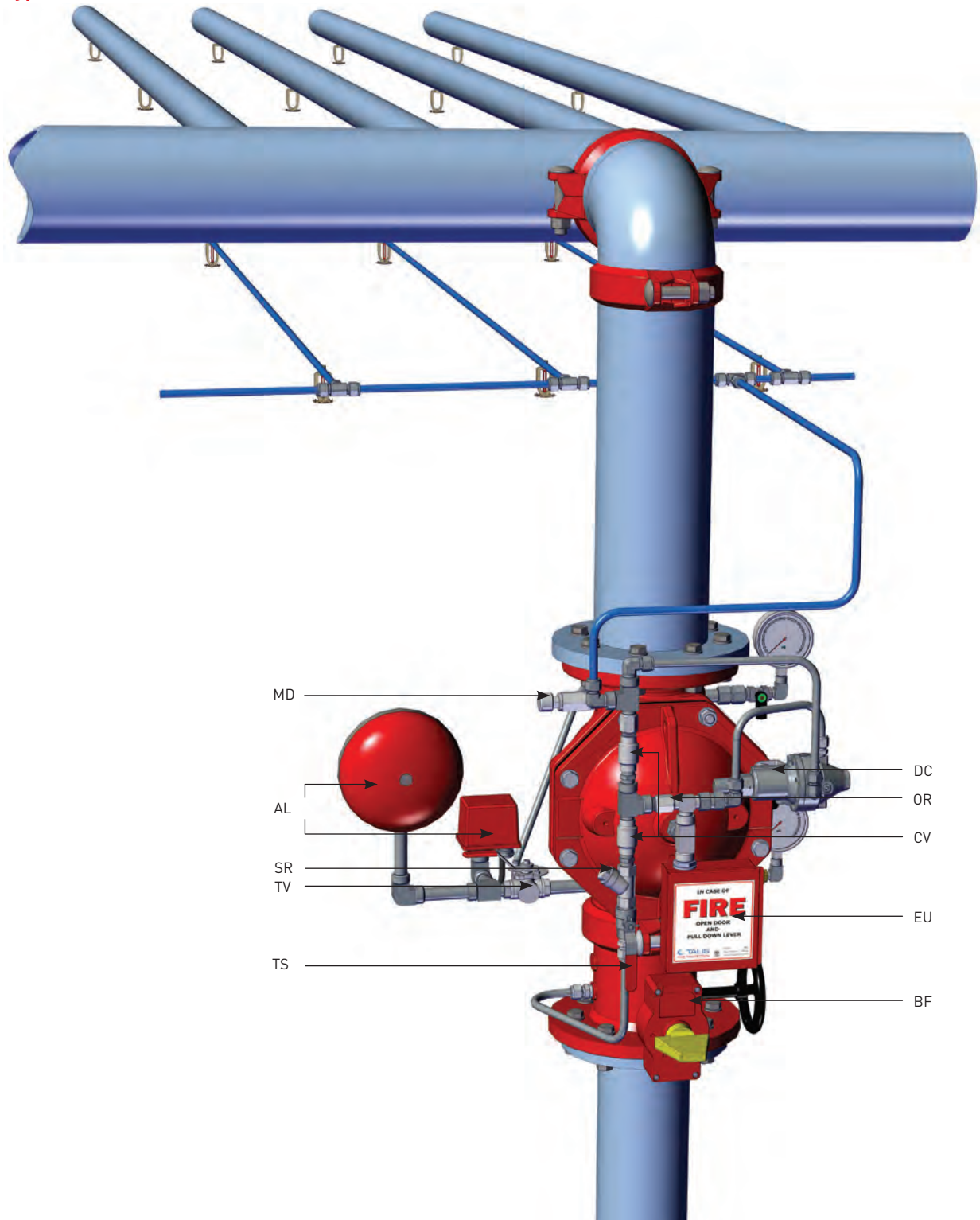
When some of the Wet pilot detection line's automatic fire sprinklers are subjected to the predetermined temperature levels and shatter-open, the pilot detection line pressure drops and the DCPV opens its drain port regardless of the residual column pressure. Opening its drain port, the DCPV releases the FDV control chamber's pressure, causing it to open and admit water into the spray sprinklers pipeline.

### RESET position

System reset requires the replacement of all shattered-open Fire sprinklers in the Detection pilot line. The wet pilot is then pressurized to reset ensures the DCPV to close position. As a result, the FDV valve control chamber pressurizes and the valve closes.

# FDV - DA1

## 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

**EM** - Emergency valve

**EU** - Emergency Manual Unit

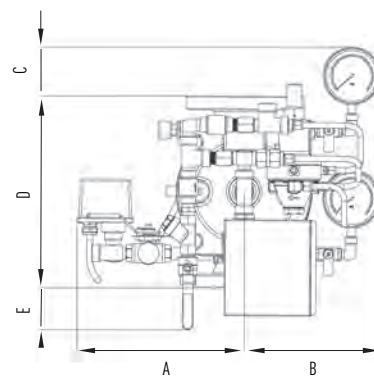
**DC** - Drain Control Pilot Valve



## Dimensions Table

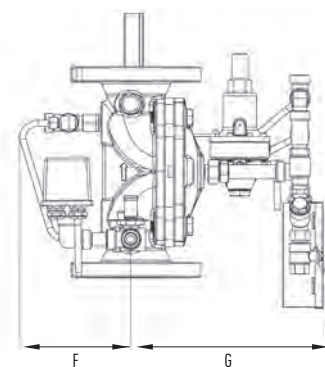
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	259	10.2	270	10.6	297	11.7	306	12	331	13
B	275	10.8	245	9.6	284	11.2	278	10.9	329	12.9
C	105	4.1	83	3.3	94	3.7	67	2.6	61	2.4
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	124	4.9	73	2.8	36	1.4	13	0.5	-	-
F	150	5.9	166	6.5	145	5.7	232	9.1	260	10.2
G	275	10.8	305	12	247	9.7	311	12.2	340	13.4
Kg/lb	19.3	42.6	31.7	69.9	48.7	107.4	67.5	148.8	106.8	235.4



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	359	14.1	375	14.7	395	15.5	421	16.6	450	17.8
B	190	7.5	202	7.9	227	8.9	278	10.9	262	10.3
C	150	5.9	96	3.8	61	2.4	31	1.2	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	124	4.9	73	2.8	36	1.4	5.5	0.2	-	-
F	155	6.1	169	6.6	145	5.7	171	6.7	198	7.8
G	345	13.6	332	13	311	12.2	374	14.7	404	15.9
Kg/lb	19.4	42.7	32	70.5	48.8	107.6	67.7	149.2	106.9	235.7



## 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
- Wet Pilot's height
- System installation orientation
- Additional accessories needed

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

# Modulating Deluge systems

## Electrical Actuated with Local Reset, Pressure Reducing Deluge Valve

## FDV - PE0

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

The FDV-PE0 is a pressure control Deluge system, actuated electrically and resets locally.

An electric detection systems activates a solenoid valve through a control panel, to open the FDV deluge valve. 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-PE0 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



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: up to 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 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
- A pressure reducing pilot enables a full control over the downstream pressure and ensures a steady set in a wide pressure range

The FDV-PE0 resets to stand-by close position by de-energizing the alarm system solenoid's coil through the main control panel and by manually operating the local reset device – the PSA.

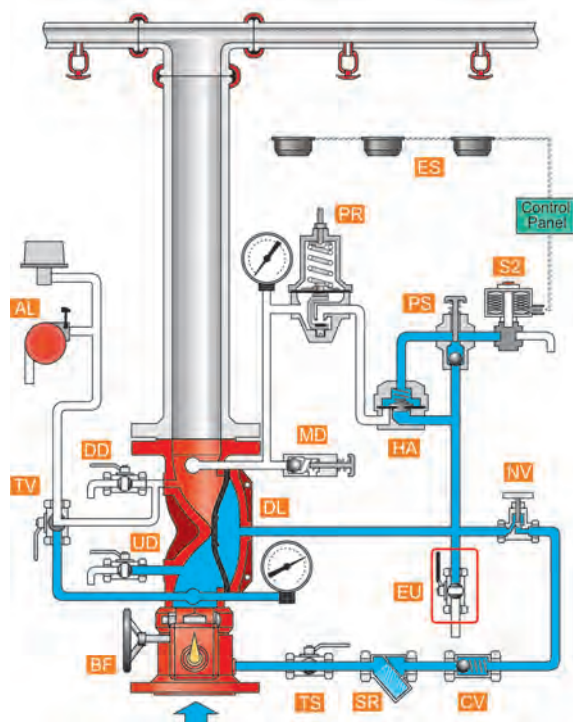
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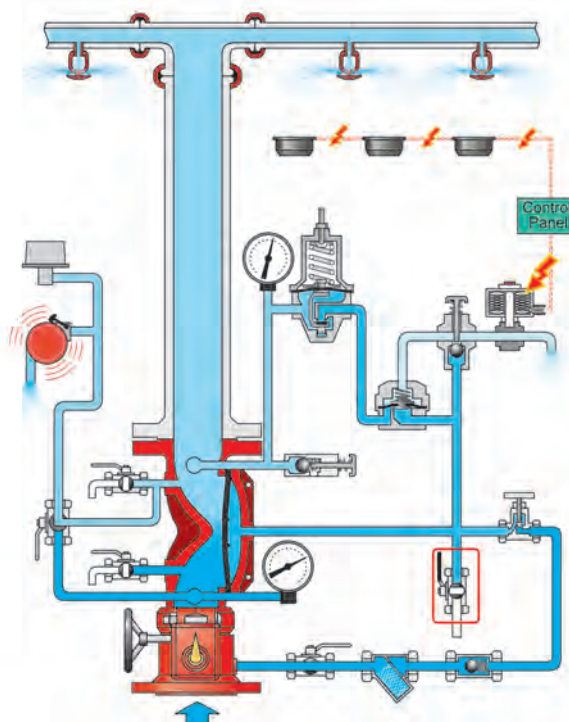
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## Schematic drawing

### 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

**TV** - Alarm test valve

**EU** - Emergency Manual Unit

**HA** - HAV – 2 Hydraulic Actuator Valve

**PR** - PRPV – Pressure Reducing Pilot Valve

**S2** - Solenoid 2 way

**ES** - Electric Sensors system

## OPERATION

### SET position

Pressurized water in the valve's control chamber (DL) is trapped by check valve (CV), the Closed Drain actuator HAV-2 (HA) and by the closed emergency valve (EU), maintaining the FDV deluge valve (DL) closed.

### FIRE situation

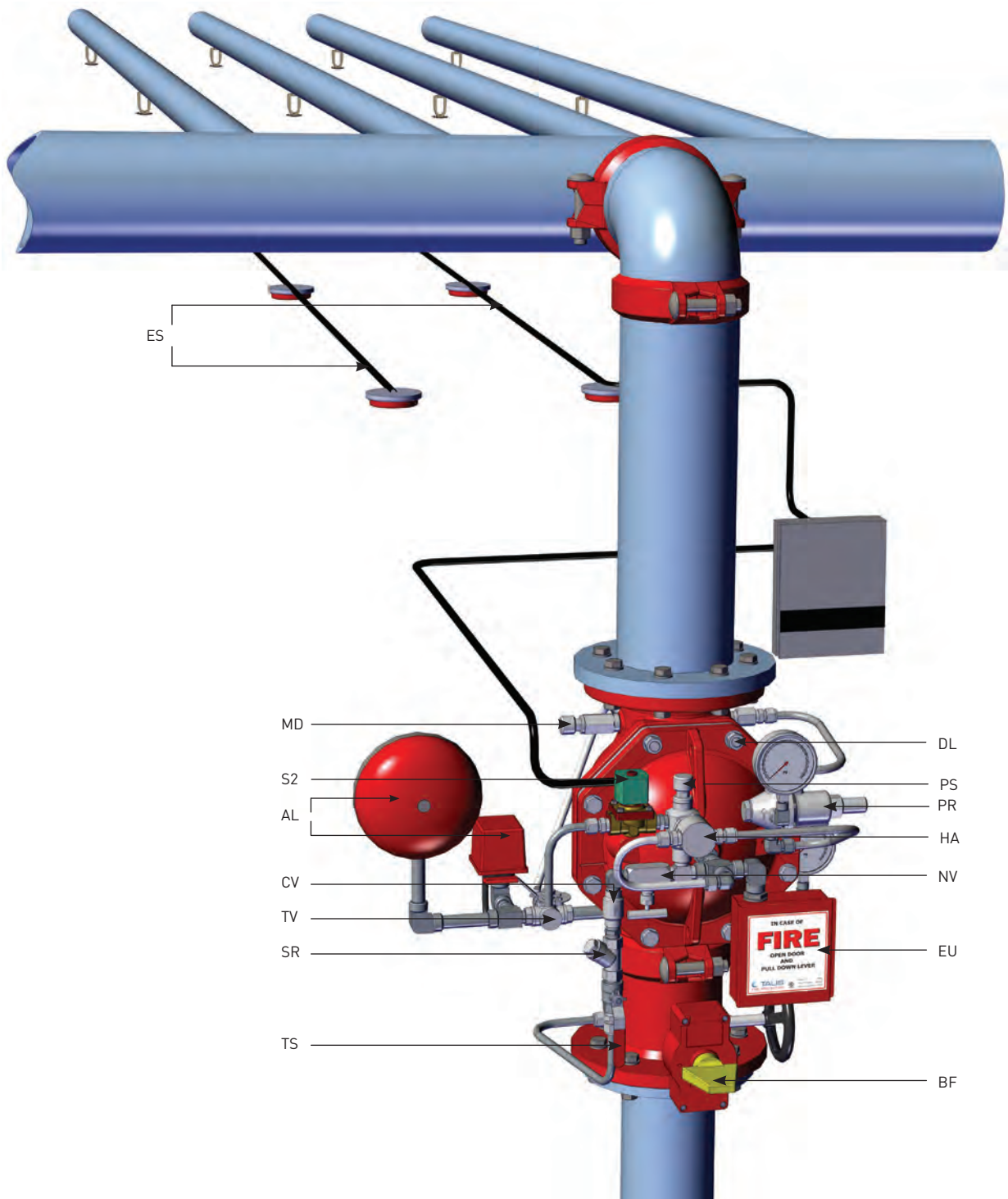
When the electric detection system senses heat, it triggers the main control panel that in turn, transmits an electric signal commanding the 2 way solenoid valve (S2) to open. The solenoid drains the HAV-2's control chamber, commanding the Deluge valve to open through the pressure reducing pilot (PR), admitting water to the spray sprinklers line at a steady, preset pressure.

### RESET position

System reset requires the reset of the electrical alarm system to de-energize and close the solenoid valve. The PSA (PS) push button should be pressed to pressurize the HAV-2's control chamber. When the drain actuator is closed, upstream pressurizes the FDV's control chamber and the valve closes.

# FDV - PEO

## 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

**S2** - Solenoid 2 way

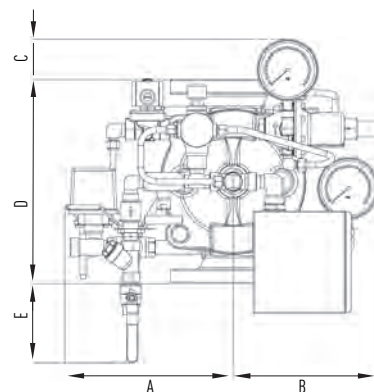
**ES** - Electric Sensors system



## Dimensions Table

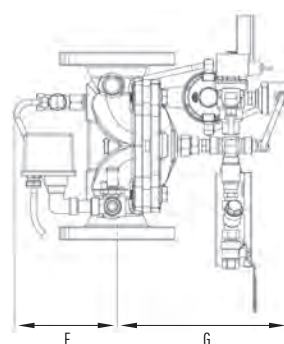
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	240	9.5	267	10.5	279	11	307	12.1	337	13.2
B	268	10.5	237	9.3	284	11.2	258	10.1	362	14.2
C	82	3.2	64	2.5	-	-	-	-	-	-
D	224	8.8	325	12.8	401	15.8	462	18.2	580	22.8
E	177	7	126	5	91	3.6	60	2.3	-	-
F	160	6.3	171	6.7	207	8.1	232	9.1	257	10.1
G	281	11	310	12.2	341	13.4	404	15.9	434	17
Kg/lb	21.5	47.7	33.7	74.3	51	112.4	69.7	153.6	109.1	240.5



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	240	9.4	267	10.5	281	11	307	12.1	337	13.2
B	255	10	271	10.7	284	11.2	314	12.4	349	13.7
C	6	0.2	36	1.4	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	177	7	126	5	91	3.6	60	2.3	-	-
F	155	6.1	172	6.8	208	8.2	232	9.1	257	10.1
G	341	13.4	335	13.2	383	15.1	429	16.9	496	19.5
Kg/lb	21.6	47.6	33.8	74.5	50.9	112.2	69.6	153.4	153.4	240



## 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
- Solenoid Voltage
- Solenoid Enclosure
- Solenoid Protection
- System installation orientation
- Additional accessories needed

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

## Modulating Deluge systems

### Electric Actuated with Remote Reset, Pressure Reducing Deluge Valve **FDV - PE1**

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

The FDV-PE1 is a pressure control Deluge system, actuated electrically and resets remotely.

An electric detection systems activates a solenoid valve through the control panel, to open the FDV deluge valve. 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-PE1 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)

##### 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 transmitted to the valve's solenoid from the main control valve panel, due to a flame heat exposure of heat detection sensors system
- 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-PE1 resets to stand-by close position by de-energizing the alarm system solenoid's coil through the main control panel.

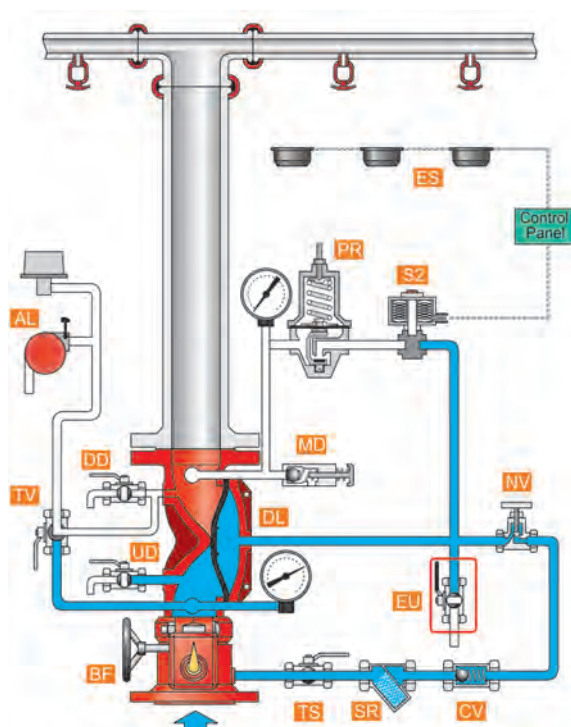
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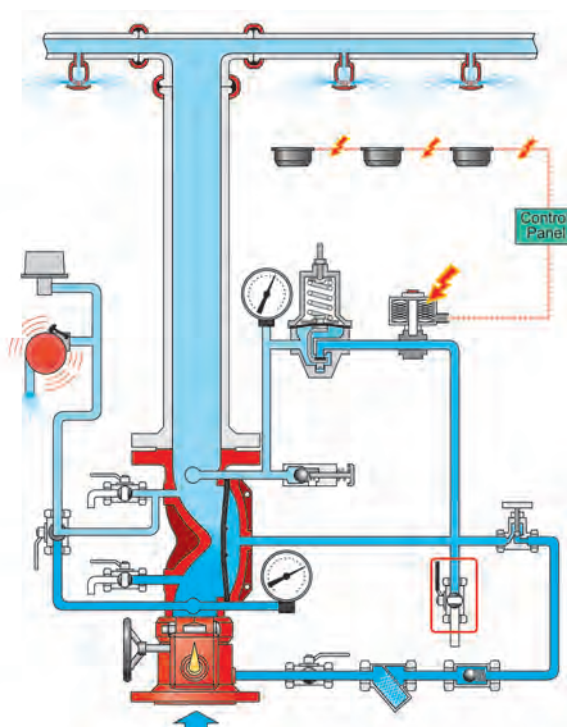
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## Schematic drawing

### 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

**PR** - PRPV – Pressure Reducing  
Pilot Valve

**S3** - Solenoid 2 way

**ES** - Electric Sensors system

## OPERATION

### SET position

Pressurized water in the valve's control chamber [DL] is trapped by the check valve [CV], by the closed 2 way solenoid [S2] and by the closed emergency valve [EU], maintaining the FDV deluge valve [DL] closed.

### FIRE situation

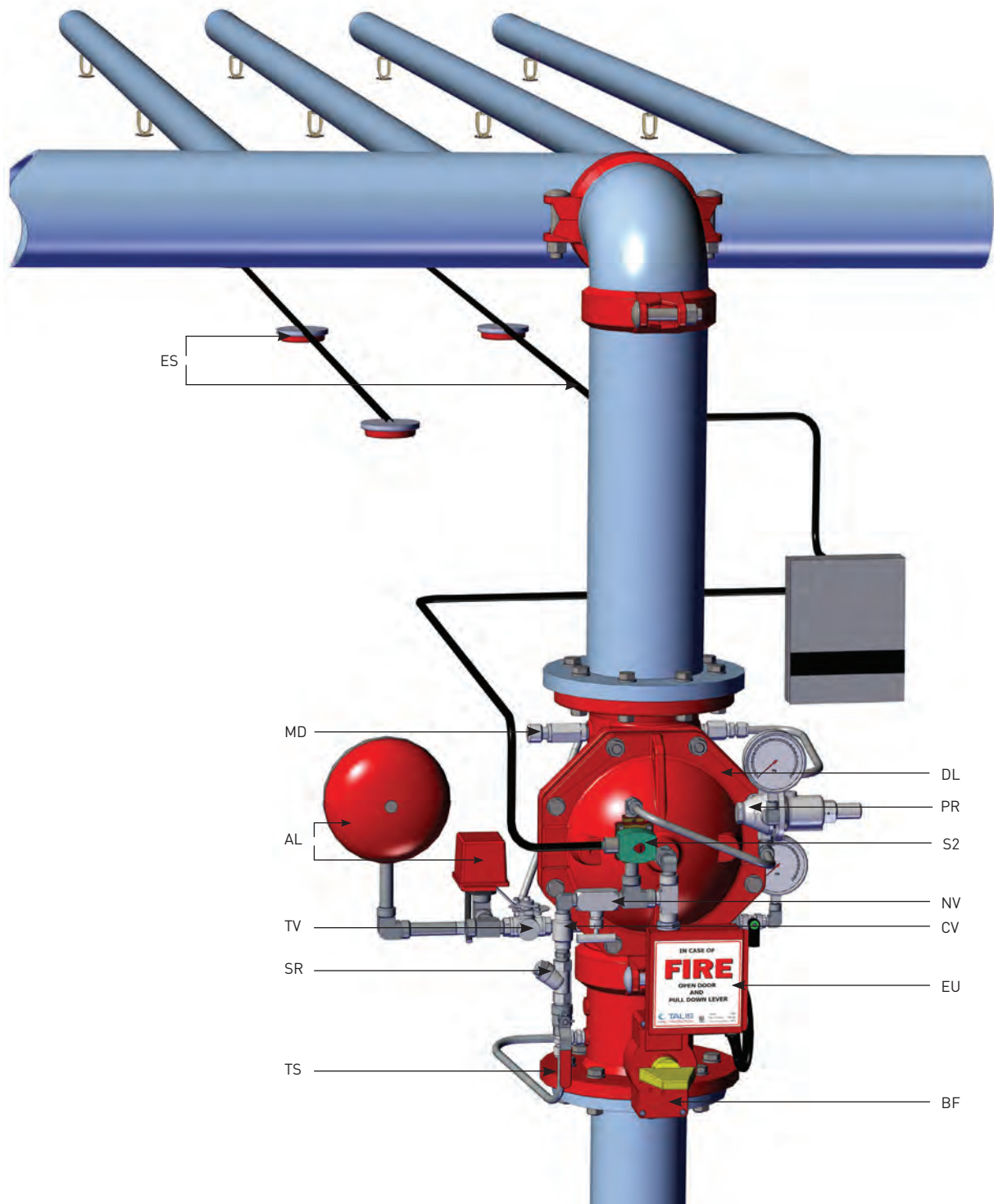
When an electric detection system senses flame heat, it triggers the main control panel that in turn, transmits an electric signal, commanding the 2 way solenoid valve [S2] to open. The deluge valve's control chamber drains through the pressure reducing pilot [PR]. The FDV Deluge valve opens, admitting water to the spray sprinklers line at a steady, preset pressure.

### RESET position

System reset requires the reset of the electric alarm system to de-energize and close the 2 way solenoid valve. The FDV deluge control chamber pressurizes and the valve closes.

# FDV - PE1

## 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

**PR** - PRPV – Pressure Reducing Pilot  
Valve

**S3** - Solenoid 2 way

**ES** - Electric Sensors system

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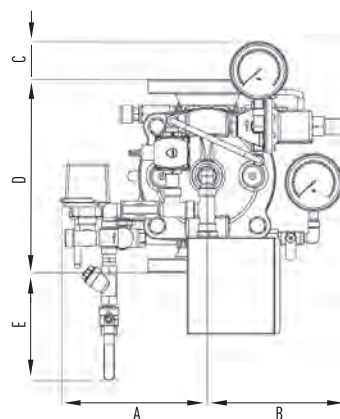
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## Dimensions Table

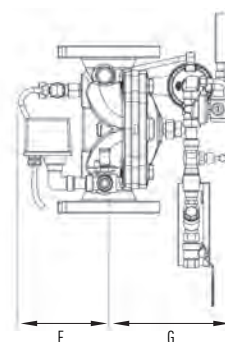
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	254	10.0	231	9.1	281	11.1	289	11.4	318	12.5
B	266	10.5	238	9.4	282	11.1	311	12.2	362	14.3
C	81	3.2	-	-	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	235	9.3	182	7.2	137	5.4	107	4.2	57	2.2
F	160	6.3	172	6.8	207	8.1	232	9.1	263	10.4
G	263	10.4	324	12.8	298	11.7	361	14.2	394	15.5
Kg/lb	19.7	43.4	31.2	68.8	48.9	107.8	67.5	148.8	107.3	236.6



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	255	10.0	247	9.7	281	11.1	289	11.4	422	16.6
B	256	10.1	238	9.4	284	11.2	311	12.2	369	14.5
C	53	2.1	-	-	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	310	12.2	182	7.2	147	5.8	119	4.7	57	2.2
F	155	6.1	172	6.8	209	8.2	231	9.1	263	10.4
G	263	10.4	324	12.8	336	13.2	453	17.8	483	19.0
Kg/lb	19.7	43.4	31.6	69.7	48.6	107.1	67.4	148.6	148.6	235.9



## 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
- 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.

## Modulating Deluge systems

### Pneumatic Actuated with Local Reset, Pressure Reducing Deluge Valve **FDV - PPO**

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

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

When the pneumatic dry pilot fire detection line is exposed to flame heat, its automatic fire sprinklers shatter-open, venting the air pressure from the FDV-PPO's actuator, commanding the 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 systems for manual operation. Designed for vertical or horizontal installation, a globe pattern, line pressure operated FDV-PPO 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



Marine



P.O.G.



Residential

#### 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:** up to 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 Locally 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 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-PPO resets to stand-by close position by pressurizing the Dry Pilot Line and manually operating the PSA device.

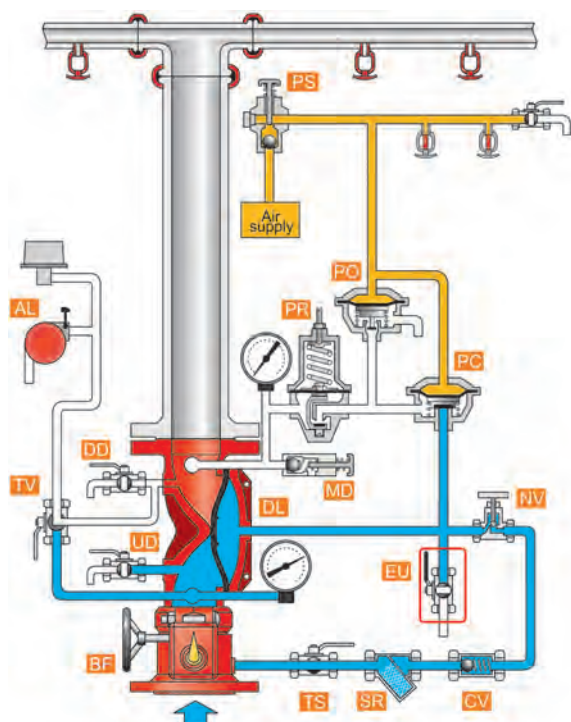
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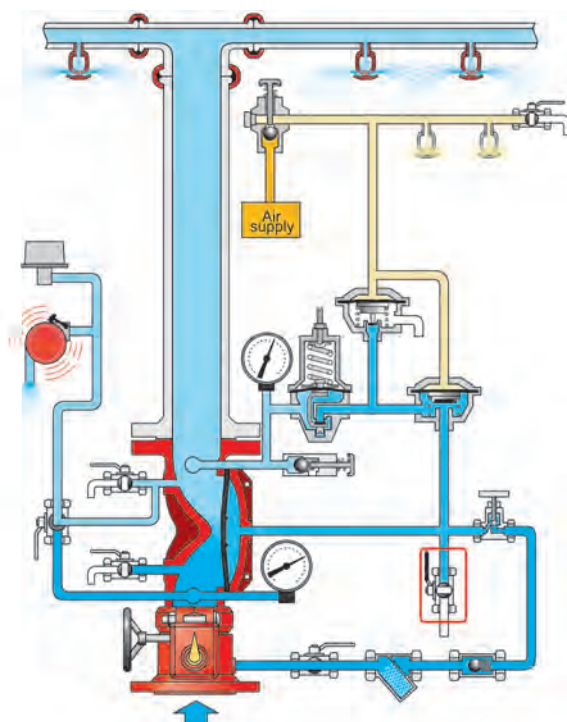
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## Schematic drawing

### 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

**NV** - Needle valve

**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

## OPERATION

### SET position

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

### FIRE situation

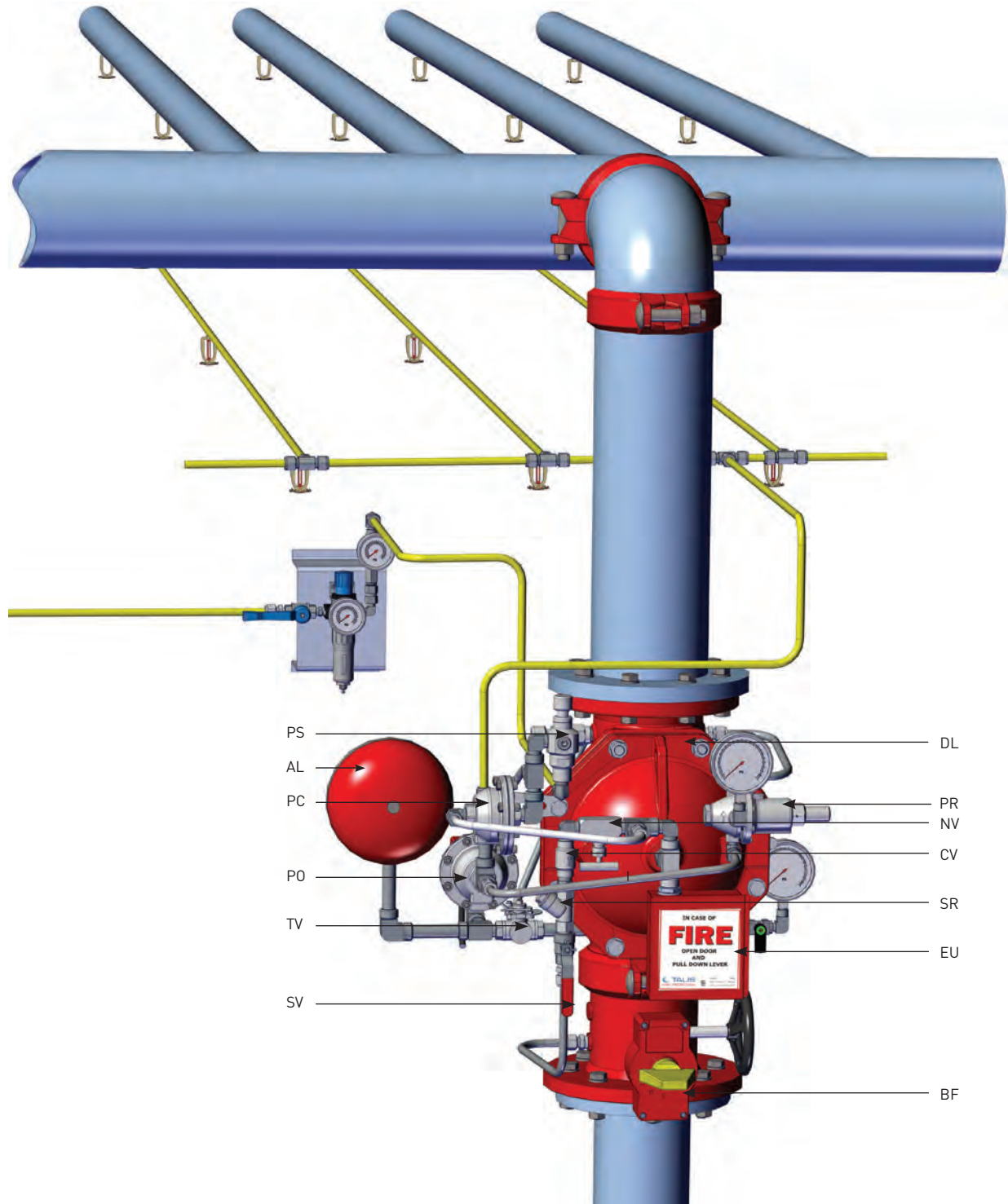
When some of the Dry pilot detection line's automatic fire sprinklers are subjected to flames heat and shatter-open, the pilot detection line depressurizes and the PA-PTC (PC) opens and drains the deluge valve's control chamber through the pressure reducing pilot (PR). The FDV deluge valve opens and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

### RESET position

Initiating a system reset requires the replacement of all the dry pilot detection Line's shattered-open automatic fire sprinklers. The PSA (PS) push button should be pressed, to enable air supply intake to pressurize the Dry Pilot Line. By that, the PA-PTC actuator closes and upstream pressurizes the FDV deluge valve's control chamber through the needle valve (NV). Consequently, The Deluge valve closes and water spray stops.

# FDV - PPO

## 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

**NV** - Needle valve

**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

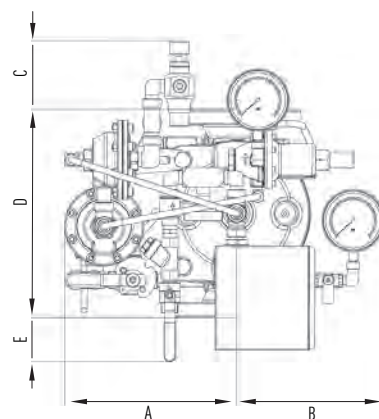
**PR** - PRPV - Pressure Reducing Pilot Valve



## Dimensions Table

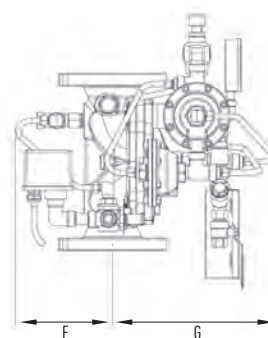
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	272	10.7	267	10.5	315	12.4	343	13.5	397	15.6
B	269	10.6	231	9.1	246	9.7	269	10.6	304	12
C	81	3.2	108	4.2	38	1.5	21	0.8	-	-
D	224	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	120	4.7	69	2.7	32	1.2	4	0.2	-	-
F	160	6.3	171	6.7	208	8.2	238	9.4	264	10.4
G	268	10.5	313	12.3	337	13.2	400	15.7	430	16.9
Kg/lb	25.1	55.3	37.6	82.9	55	121.2	73.6	162.3	113	249.1



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	347	13.7	359	14.1	315	12.4	420	16.5	475	18.7
B	255	10	325	12.8	267	10.5	294	11.6	343	13.5
C	46	1.8	62	2.4	38	1.5	-	-	-	-
D	224	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	204	8	69	2.7	32	1.2	-	-	-	-
F	155	6.1	171	6.7	207	8.1	238	11.7	258	10.1
G	315	12.4	367	14.4	337	13.2	400	15.7	430	16.9
Kg/lb	25.5	56.2	38	83.8	54.8	120.8	73.8	162.7	113.2	249.6



## 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.

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## Modulating Deluge systems

### Pneumatic Actuated with Remote Reset, Pressure Reducing Deluge Valve **FDV - PP1**

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

The FDV-PP1 is a pressure control Deluge system, actuated pneumatically and resets remotely.

When the pneumatic dry pilot fire detection line is exposed to flame heat, its automatic fire sprinklers shatter-open, venting the air pressure from the FDV-PP1's actuators, commanding the 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 systems for manual operation.

Designed for vertical or horizontal installation, a globe pattern, line pressure operated FDV-PP1 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



Industry



Marine



Storage



P.O.G.



Tunnels

#### 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 reset of the valve to standby position without draining or opening the valve itself, neither closing OS&Y nor 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

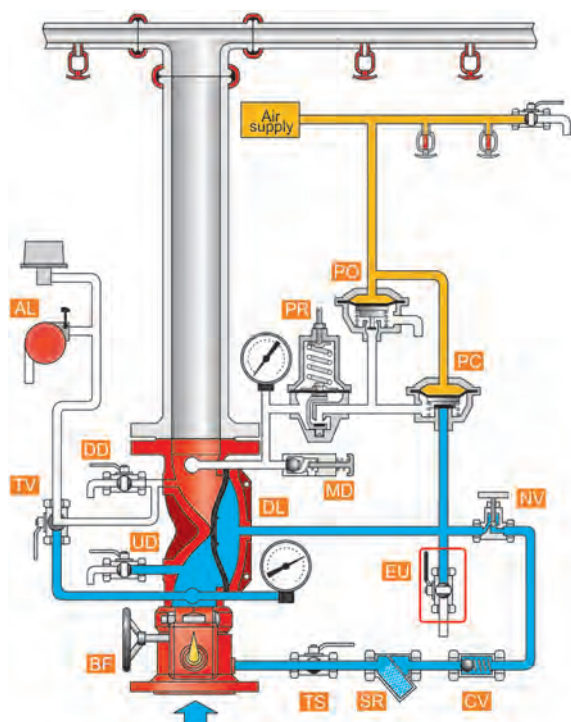
#### CHARACTERISTICS

- 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 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

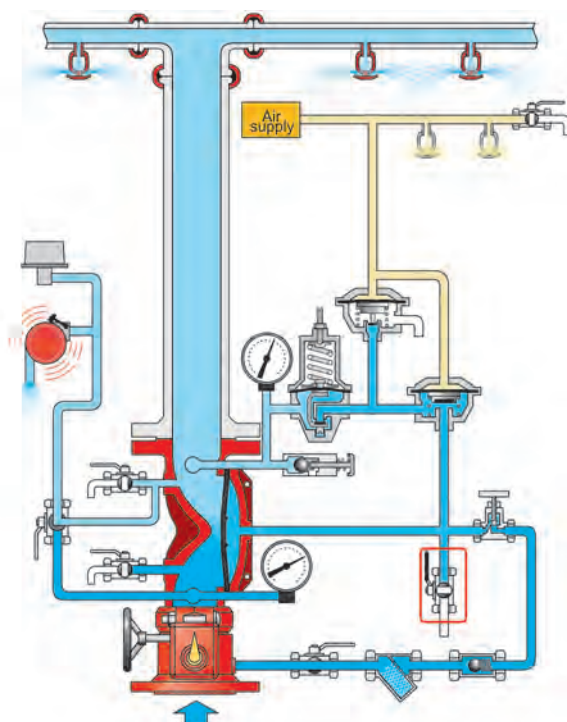
The FDV-PP1 resets to stand-by close position by pressurizing the Dry Pilot.

## 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

**PO** - PA-PTO - Pneumatic Actuator-  
Pressure To Open

**PR** - PRPV – Pressure Reducing  
Pilot Valve

## OPERATION

### SET position

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

### FIRE situation

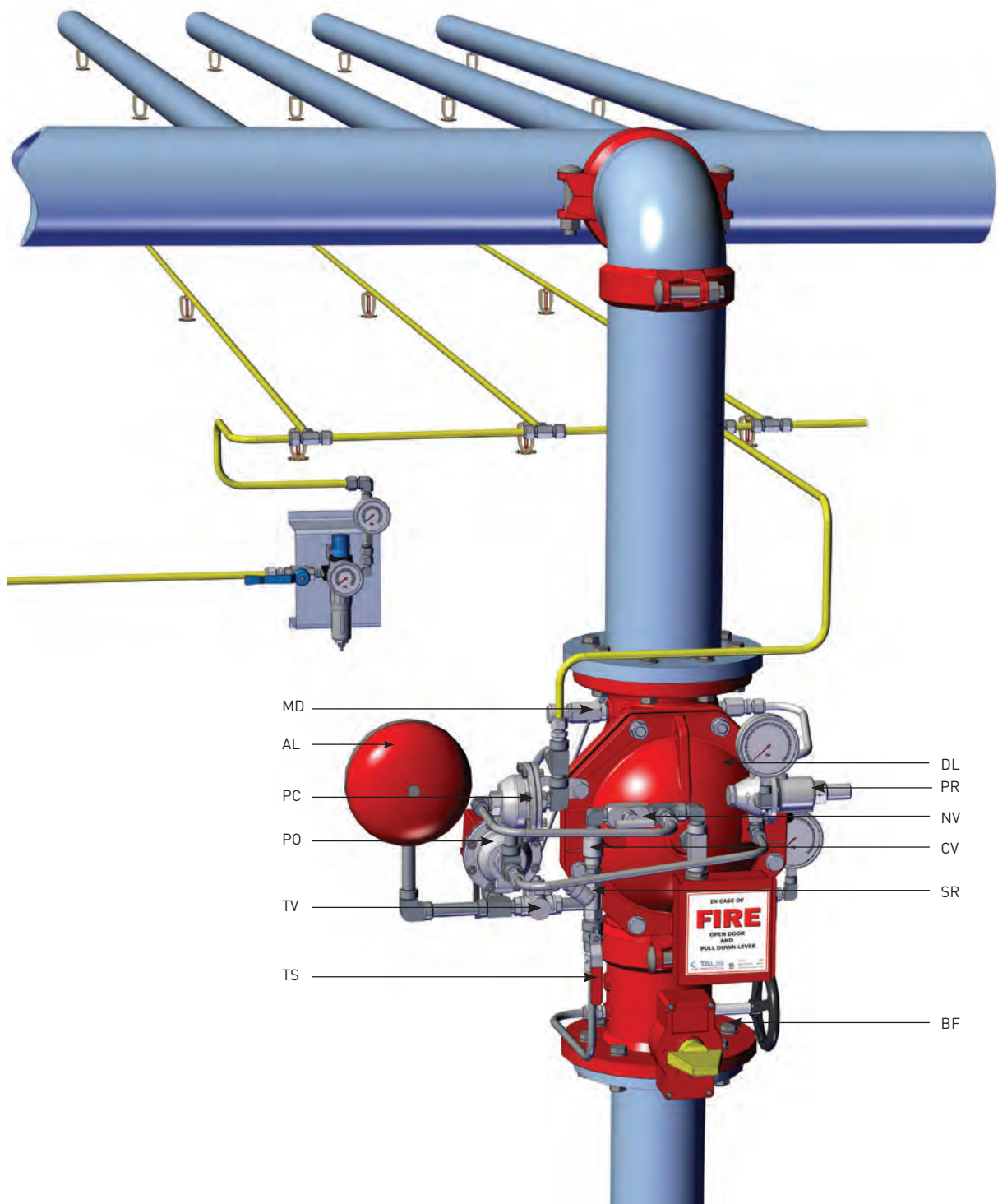
When some of the Dry pilot detection line's automatic fire sprinklers are subjected to flames heat and shatter-open, the pilot detection line depressurizes. Consequently, the PA-PTC (PC) opens and drains the deluge valve's control chamber through the pressure reducing pilot (PR). The FDV Deluge valve opens, admitting water to the spray sprinklers line at a steady preset pressure.

### RESET position

Initiating a system reset requires the replacement of all the dry pilot detection Line's shattered-open automatic fire sprinklers. Then, the Dry Pilot Line need to be pressurized to the desired set pressure. The PA-PTC actuator pressurizes, commanding the FDV deluge valve to close.

# FDV - PP1

## 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

**NV** - Needle valve

**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

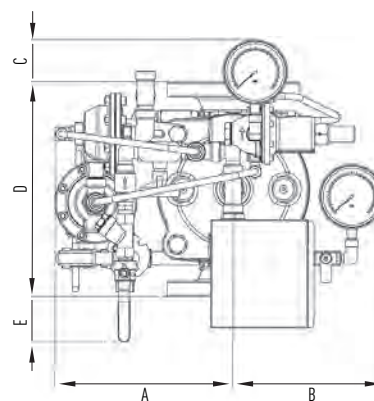
**PR** - PRPV - Pressure Reducing  
Pilot Valve



## Dimensions Table

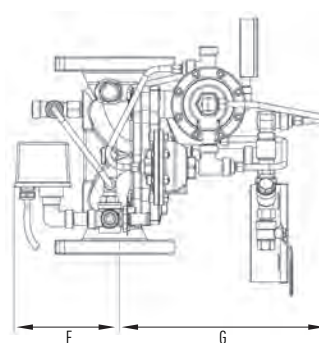
### Vertical

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.

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## 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

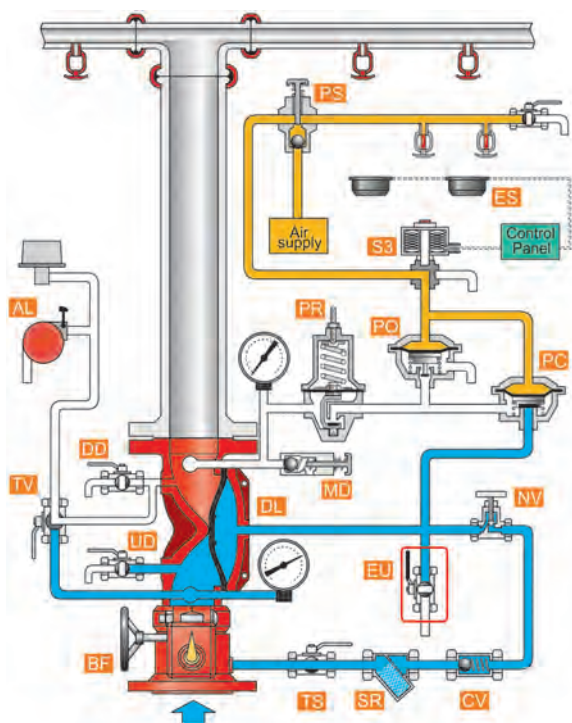
#### CHARACTERISTICS

- 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

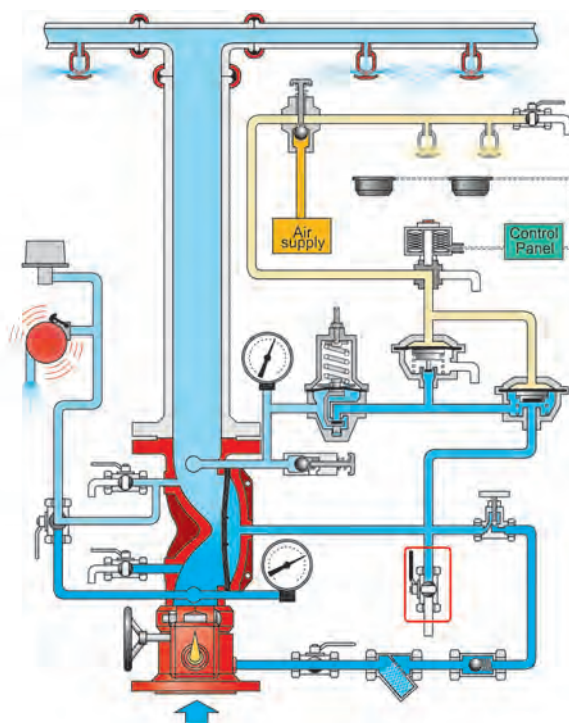
The FDV-PCO resets to stand-by close position by de-energizing the alarm system solenoid's coil through the main control panel or, pressurizing the Dry Pilot Line and manually operating the PSA device - in accordance with the relevant triggered alarm system.

## Schematic drawing

### Set position

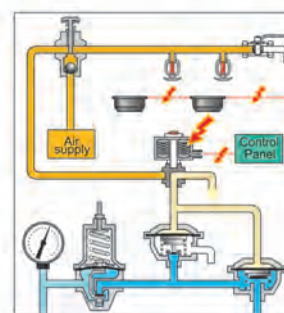


### Fire position



**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



## 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-DC0'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.

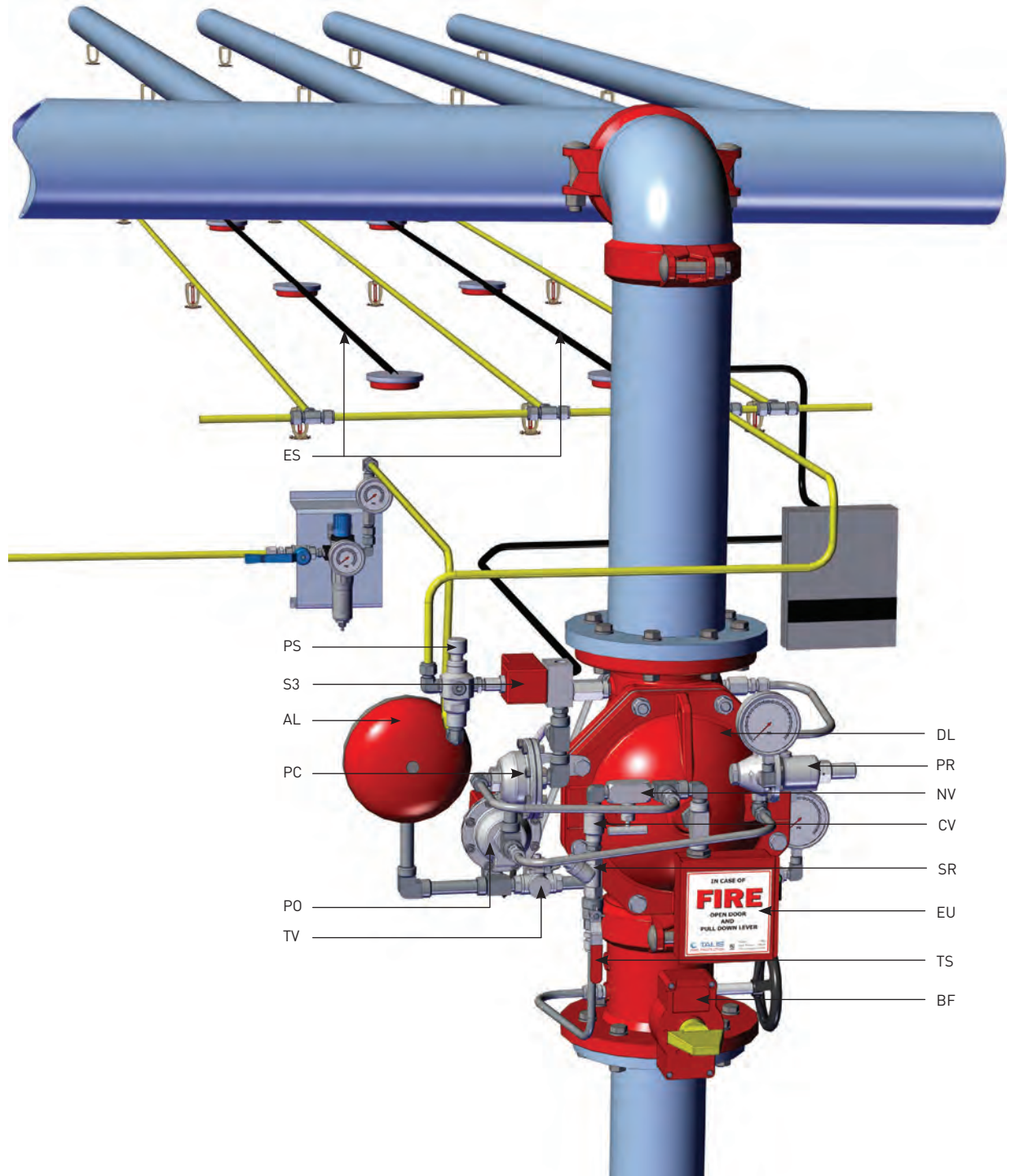
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# FDV - PC0

## 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

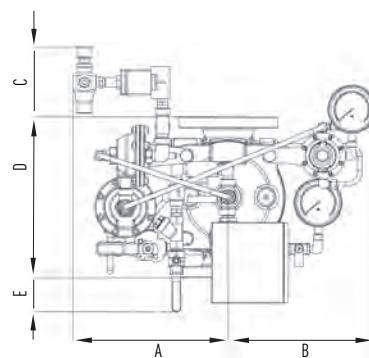
**ES** - Electric Sensors system



## Dimensions Table

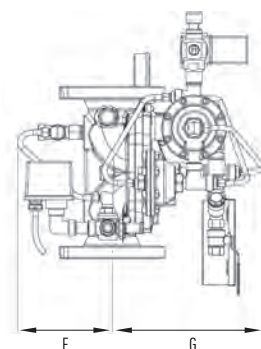
### Vertical

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.

## Modulating Deluge systems

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

## FDV - PC1

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

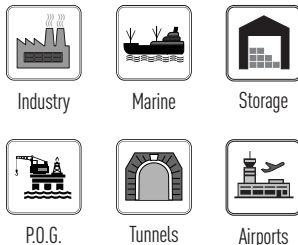
The FDV-PC1 is a pressure control Deluge system, actuated electrically or pneumatically and can be reset from a remote location.

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-PC1 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



#### 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-PC1 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.

ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ

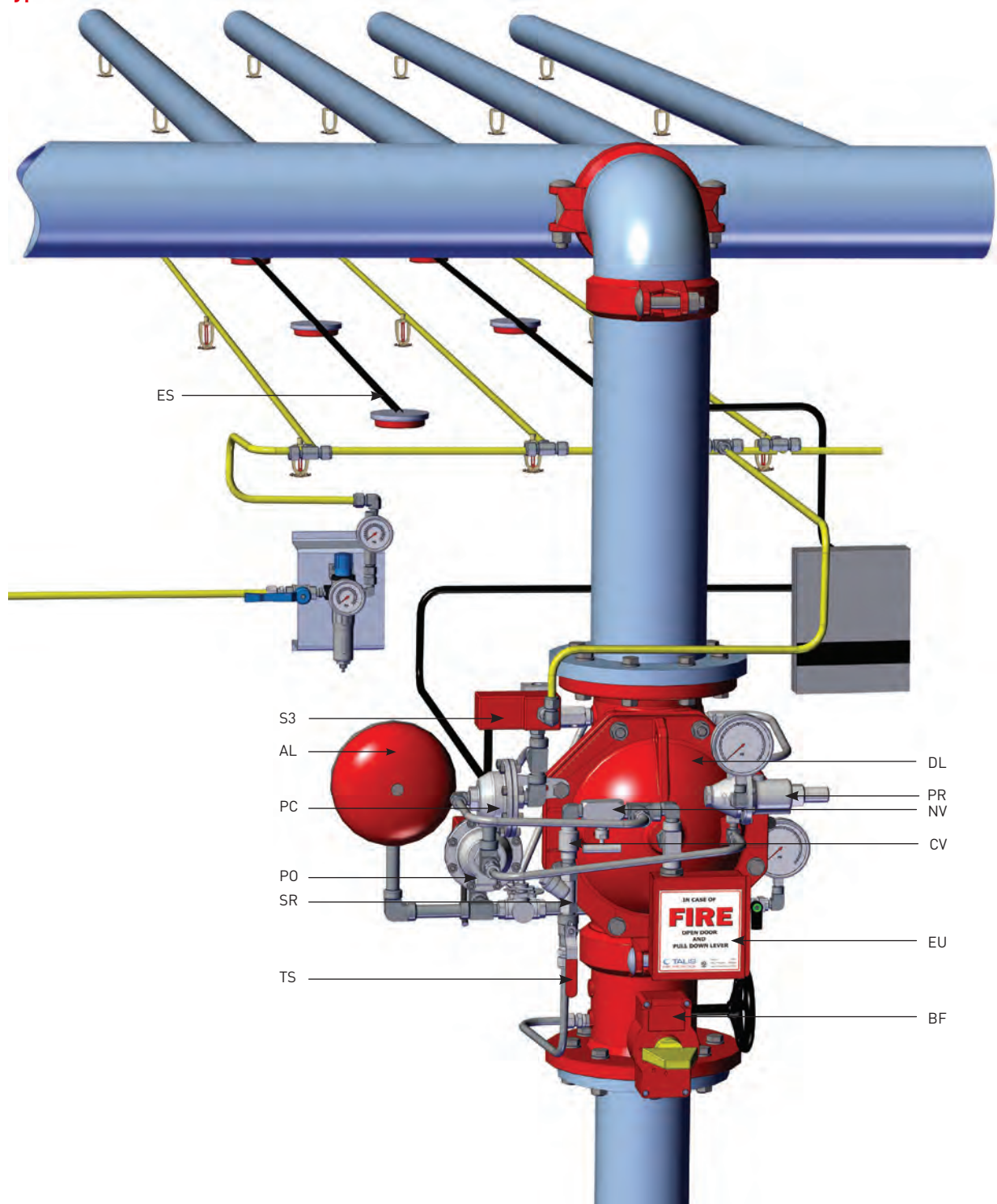
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# FDV - PC1

## 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

**NV** - Needle valve

**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

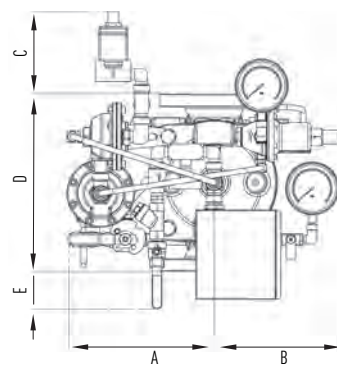
**ES** - Electric Sensors system



## Dimensions Table

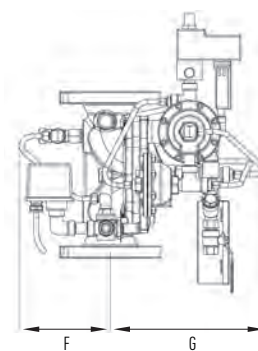
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	346	13.6	270	10.6	322	14	344	13.5	398	15.7
B	268	10.5	238	9.4	284	11.2	266	10.5	280	11
C	95	3.7	151	5.9	31	1.2	-	-	-	-
D	224	8.8	325	12.8	400	15.8	462	18.2	580	11
E	205	8	69	2.7	31	1.2	4	0.1	-	-
F	164	6.5	170	6.7	207	8.1	230	9	255	10
G	299	11.8	367	14.5	354	13.9	400	15.8	429	16.9
Kg/lb	25.9	57.1	37.9	83.6	55.2	121.7	73.6	162.3	113.2	249.6



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	368	14.3	382	15	395	15.5	422	16.6	424	16.7
B	254	10	199	7.8	213	8.4	295	11.6	318	12.5
C	59	2.3	153	6	33	1.3	15	0.6	-	-
D	224	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	207	8.1	68	2.7	31	1.2	6	0.2	-	-
F	163	6.4	190	7.5	208	8.2	232	9.1	260	10.2
G	299	11.8	367	14.5	353	13.9	400	15.7	429	16.9
Kg/lb	25.7	56.7	38.1	84	54.9	121	73.6	162.3	113.4	250



## 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
- 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.

## 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.

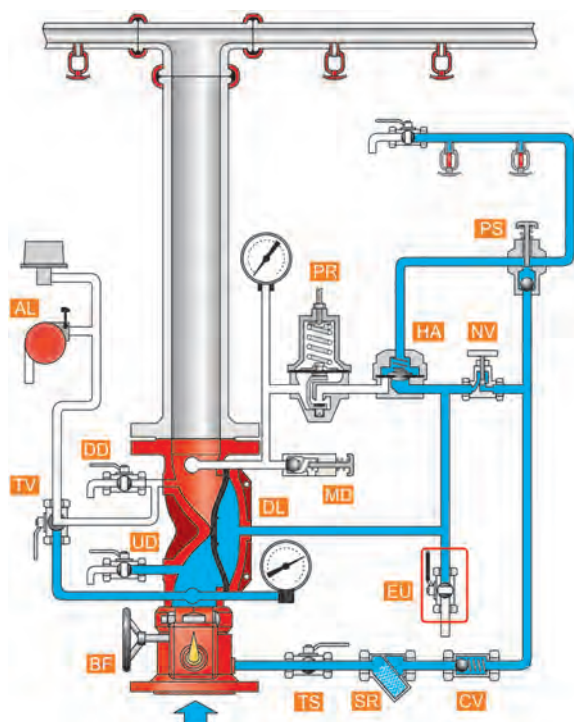
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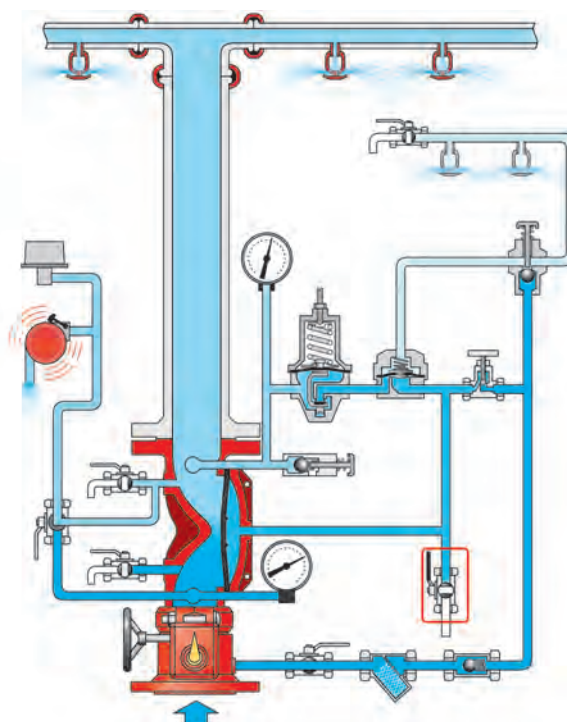
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## Schematic drawing

### 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

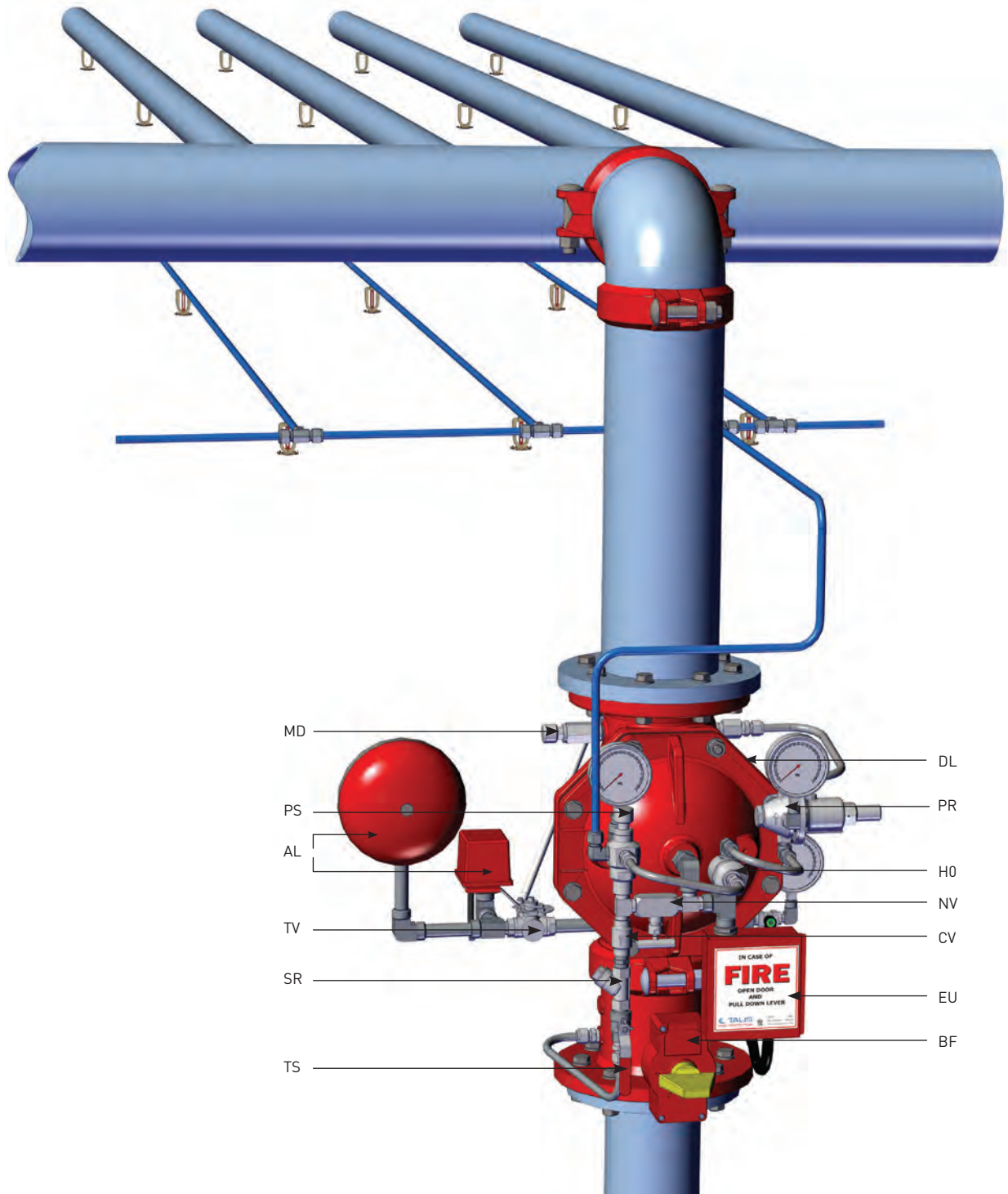
When the Wet Pilot detection line's automatic fire sprinklers are subjected to flame heat and shatter-open, the HAV-2 depressurizes and drains the deluge valve's control chamber through the pressure reducing pilot (PR). The FDV deluge valve opens, admitting water to the spray sprinklers line at a steady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

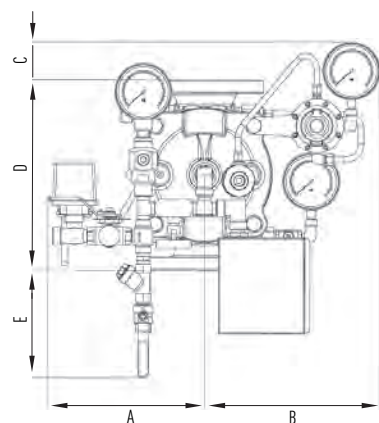
**PR** - PRPV - Pressure Reducing Pilot  
Valve



## Dimensions Table

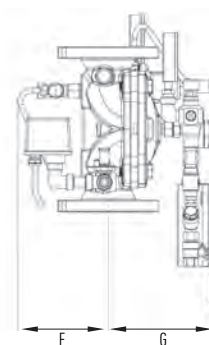
### Vertical

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 height.
- System installation orientation
- Additional accessories needed

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

# Modulating Deluge systems

## Hydraulic Actuated with Remote Reset, Pressure Reducing Deluge Valve

## FDV - PH1

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

The FDV-PH1 is a pressure control Deluge system, 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. 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-PH1 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)

#### 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 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-PH1 resets to stand-by close position by pressurizing the Dry Pilot Line.

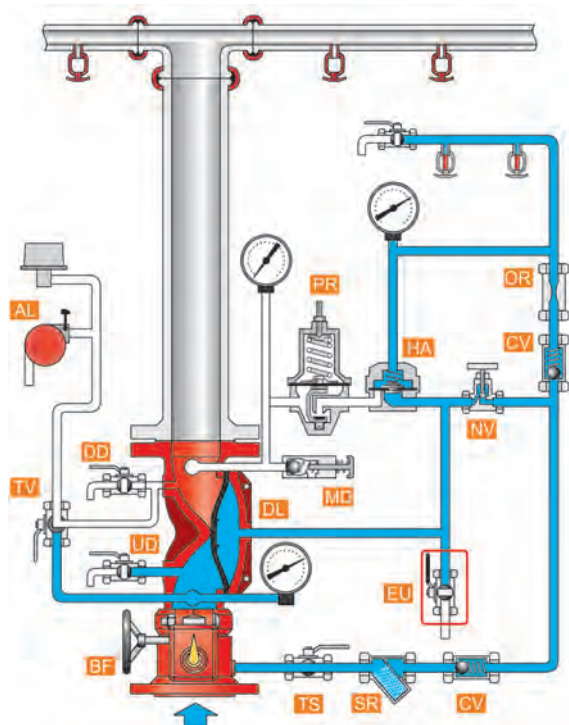
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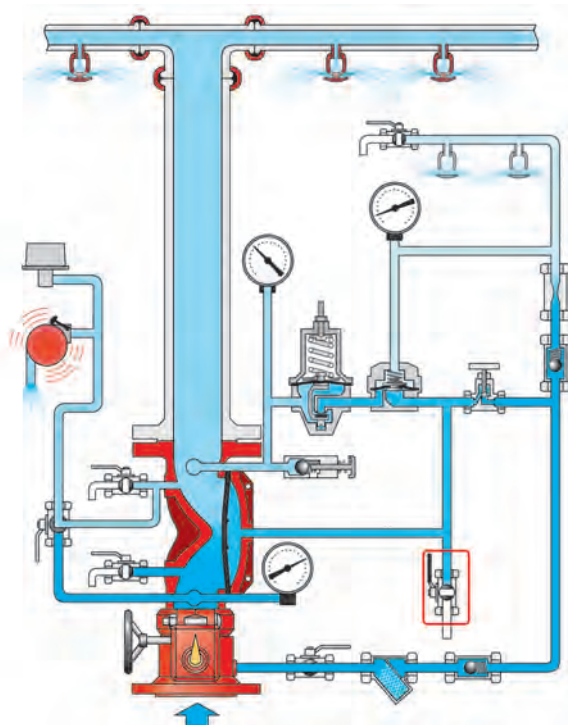
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## Schematic drawing

### 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

**NV** - Needle valve

**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 line keeps this device in closed position, maintaining the FDV deluge valve (DL) close.

### FIRE situation

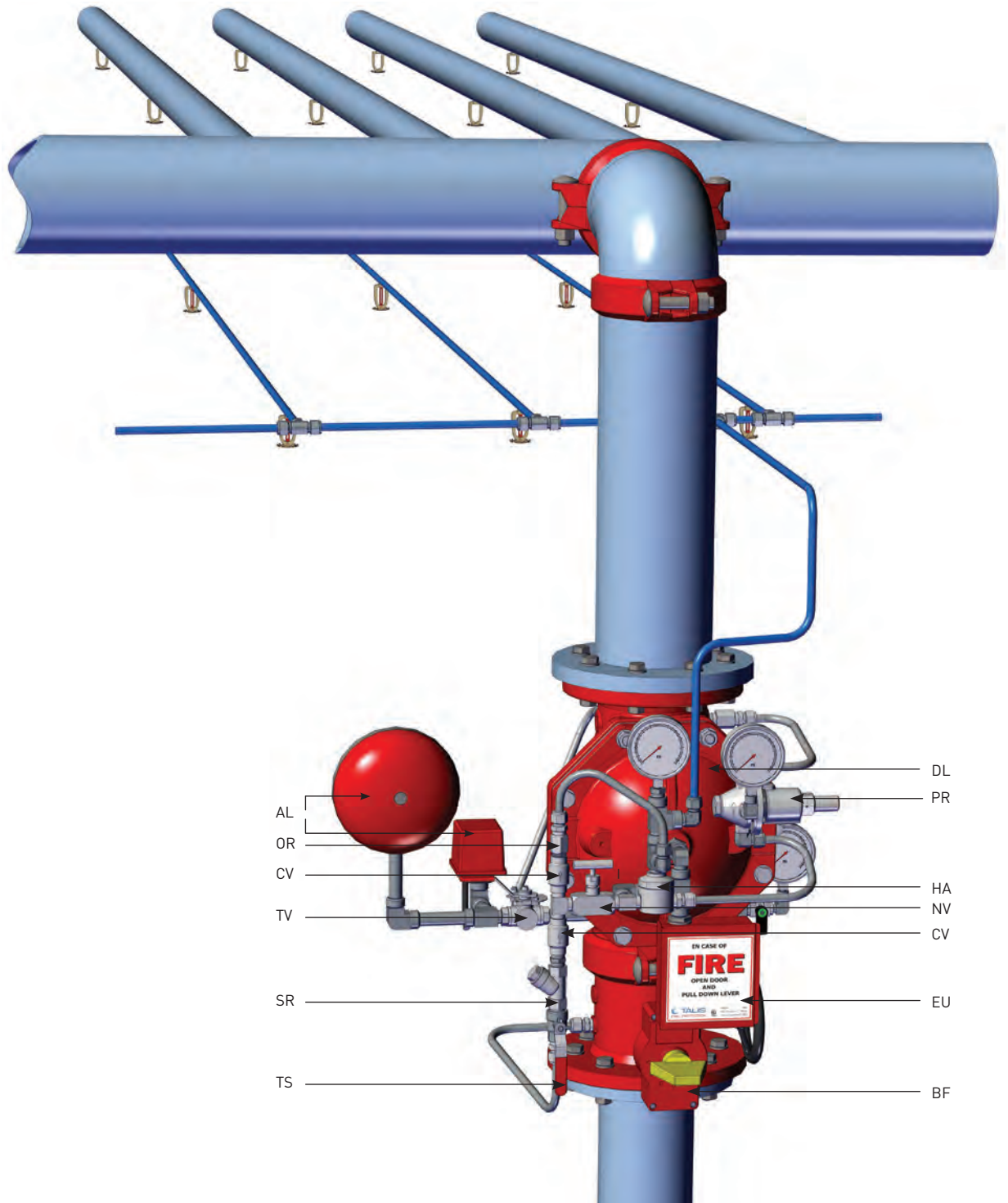
When the Wet Pilot detection line's automatic fire sprinklers are subjected to flame heat and shatter-open, the HAV-2 depressurizes, drains the deluge valve's control chamber through the pressure reducing pilot (PR). The FDV deluge valve opens, admitting water to the spray sprinklers line at a steady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

### RESET position

Initiating a system reset requires the replacement of all Shattered-open fire sprinklers in the Wet Pilot detection line. By that, the HAV-2 actuator closes and upstream pressurizes the FDV Deluge valve's control chamber through the needle valve (NV). Consequently, The Deluge valve closes and water spray stops.

# FDV - PH1

## 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

**NV** - Needle valve

**MD** - MADV – Manual Automatic Drain Valve

**TV** - Alarm test valve

**EU** - Emergency Manual Unit

**HA** - HAV-2 Hydraulic Actuator Valve

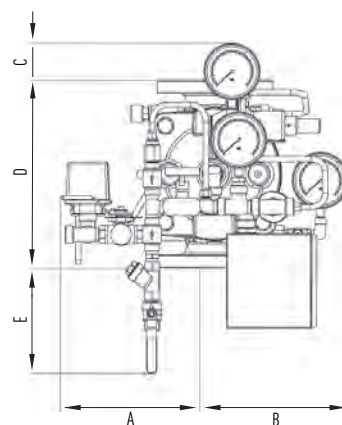
**PR** - PRPV – Pressure Reducing Pilot Valve



## Dimensions Table

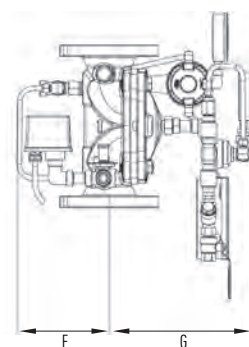
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	200	7.9	245	9.6	297	11.7	340	13.4	314	12.3
B	316	12.4	231	9	335	13.2	266	10.5	290	11.4
C	116	4.6	103	4	73	2.9	58	2.3	44	1.7
D	224	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	233	9.2	182	7.2	92	3.6	62	2.4	-	-
F	160	6.3	161	6.3	214	214	231	9.1	255	10
G	308	12	437	17.2	289	8.4	398	15.7	385	15.1
Kg/lb	20.5	45.2	32.4	71.4	49.4	108.9	68.4	150.8	107.6	237



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	315	12.4	244	9.6	275	10.8	315	12.4	232	9.1
B	285	11.2	199	7.8	334	13.1	256	10	263	11.6
C	107	4.2	102	4	74	2.9	22.5	0.9	44	1.7
D	224	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	234	9.2	182	7.2	82	3.2	52	2	-	-
F	162	6.4	170	6.7	192	7.5	233	9.2	240	9.5
G	406	15.9	437	17.2	433	17	488	19.2	530	20.9
Kg/lb	20.2	44.5	32.7	72	49.6	109.3	68.5	151	107.3	236.6



## 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
- Wet Pilot's hieght.
- System installation orientation
- Additional accessories needed

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

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## Modulating Deluge systems

### Hydraulic actuated, Pressure reducing Local Reset Deluge Valve & Anti-Columning

## FDV - PA0

The FDV is a Fire Protection control valve for Deluge fire sprinkler systems, designed for installations in hazardous environments. The FDV-PA0 is a pressure control deluge system, actuated hydraulically and resets locally. When a hydraulic detection system, a Wet Pilot Detection Line, is exposed to predetermined temperature level, automatic fire sprinklers shatter open causing a pressure drop that activate a pilot valve commanding the FDV-PA0 Deluge valve to open. Once open, the valve reduces the inlet high pressure to a predetermined fixed outlet pressure. The Anti Columning feature ensures system operation, regardless of the Detection line's height and distance from the Control 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-PA0 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. The Anti-Columning properties guarantees an immediate system trip, regardless of the Wet pilot height
- 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-PA0 resets to stand-by close position by pressurizing the Dry Pilot Line and manually operating the PSA device.

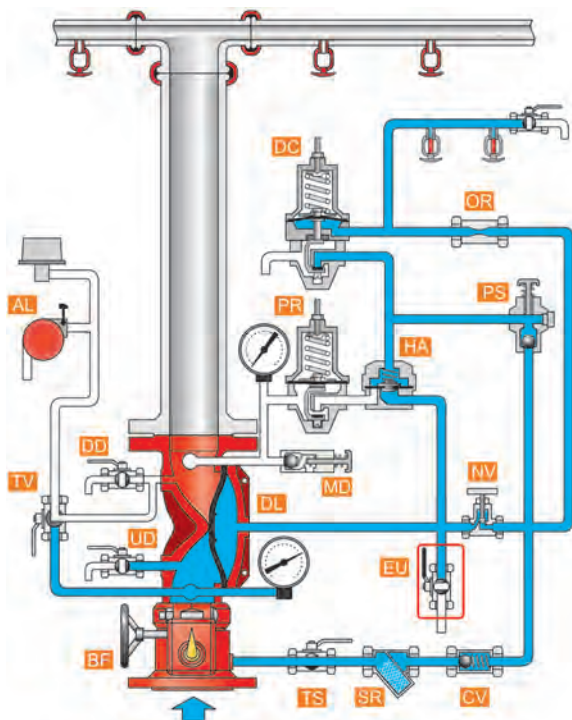
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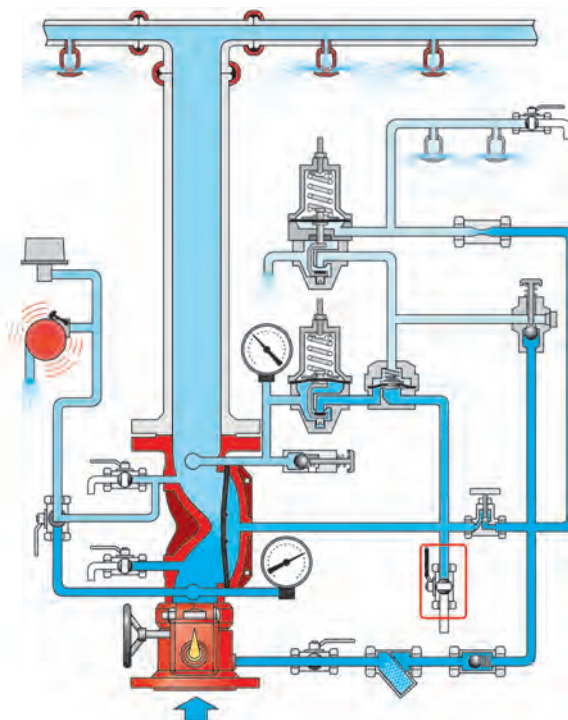
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## Schematic drawing

### 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

**NV** - Needle valve

**PS** - **PSA** - Pressure Supply Arrestor

**MD** - **MADV** - Manual Automatic  
Drain Valve

**TV** - Alarm test valve

**EU** - Emergency Manual Unit

**HA** - **HAV** - Hydraulic Actuator Valve

**PR** - **PRPV** - Pressure Reducing  
Pilot Valve

**DC** - **DCPV** - Drain Control Pilot  
Valve

## OPERATION

### SET position

Pressurized water in the valve's control chamber (DL) is trapped by a check valve (CV), by the closed emergency valve (EU) and by the closed HAV-2 (HA) actuator. The hydraulic pressure accumulated in the wet pilot line, keeps the DCPV drain pilot (DC) in its close position, maintaining the HAV-2 closed and by that, FDV deluge valve (DL) also closes.

### FIRE situation

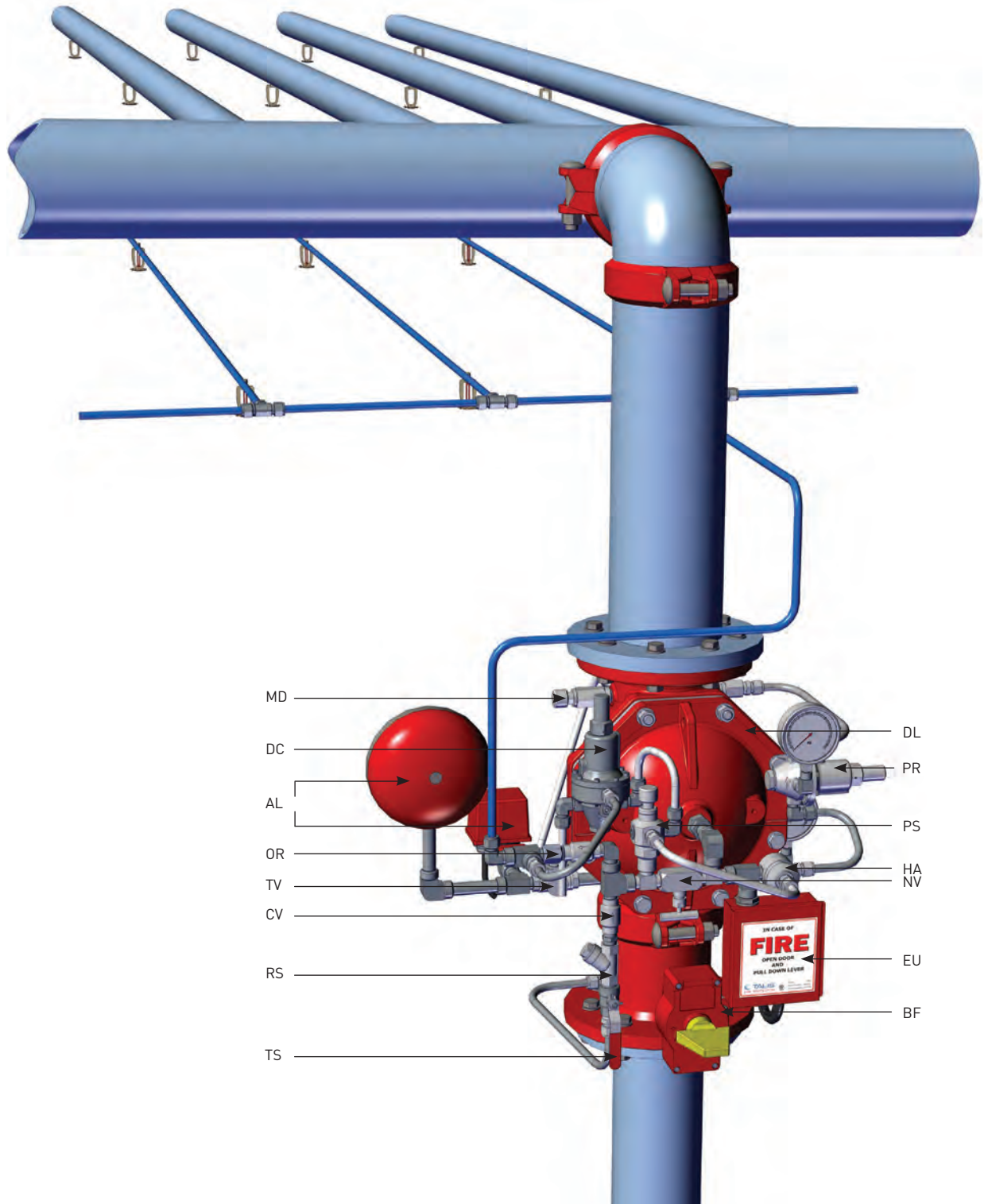
When some of the wet pilot detection line's automatic sprinklers are subjected to the predetermined temperature levels and shutter-open, the pilot Line pressure drops and the DCPV opens its drain port regardless of the residual column pressure. Opening its drain port, the DCPV opens the HAV-2 actuator to drain the FDV's control chamber through the pressure reducing pilot (PR). The FDV deluge valve opens and admits 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 detection pilot line. The Wet Pilot Line is then pressurized to reset the DCPV to its close position. The PSA (PS) push button should be pressed to enable upstream pressure passage to the HAV-2's control chamber and to close the FDV valve.

# FDV - PA0

## 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

**NV** - Needle valve

**PS** - **PSA** - Pressure Supply Arrestor

**MD** - **MADV** - Manual Automatic  
Drain Valve

**TV** - Alarm test valve

**EU** - Emergency Manual Unit

**HA** - **HAV** - Hydraulic Actuator Valve

**PR** - **PRPV** - Pressure Reducing  
Pilot Valve

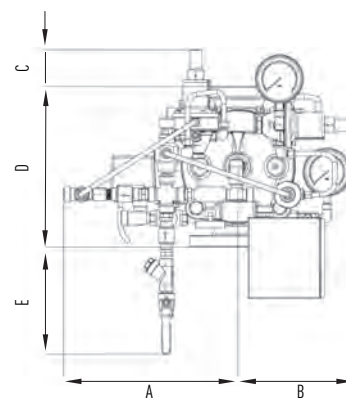
**DC** - **DCPV** - Drain Control Pilot  
Valve



## Dimensions Table

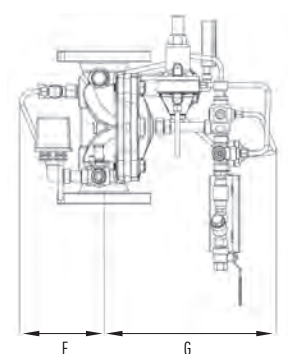
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	294	11.6	275	10.8	294	11.6	294	11.6	331	13
B	267	10.5	238	9.4	284	11.2	311	12.2	364	14.3
C	90	3.5	74	2.9	4.5	0.2	-	-	-	-
D	224	8.8	325	12.8	401	15.8	462	18.2	580	22.8
E	235	9.2	217	8.5	149	5.9	118	4.6	59	2.3
F	154	6	170	6.7	205	8	229	9	255	10
G	350	13.8	381	15	439	17.3	455	17.9	483	19
Kg/lb	24.7	54.5	37	81.6	54.6	120.4	73	160.9	112.5	248



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	348	13.7	359	14.1	373	14.7	297	11.7	430	16.9
B	236	9.3	199	7.8	284	11.2	311	12.2	364	14.3
C	90	3.5	75	2.9	4.5	0.2	-	-	-	-
D	224	8.8	325	12.8	401	15.8	462	18.2	580	22.8
E	235	9.2	184	7.2	149	5.9	118	4.6	59	2.3
F	157	6.2	196	7.7	241	9.5	229	9	291	11.4
G	393	15.5	415	16.4	446	17.6	460	18.1	490	19.3
Kg/lb	24.8	54.7	37	81.6	54.5	120.2	73	160.9	112.6	248.2



## 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
- Wet Pilot's hieght.
- System installation orientation
- Additional accessories needed

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

## Modulating Deluge systems

### Hydraulic actuated, Pressure reducing Remote Reset Deluge Valve & Anti-Columning.

## FDV - PA1

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

The FDV-PA1 is a pressure control Deluge system, actuated hydraulically and resets remotely.

When a hydraulic detection system, a Wet Pilot Detection Line, is exposed to a predetermined temperature level, automatic fire sprinklers shatter open causing a pressure drop that activates a pilot valve, commanding the FDV-PA1 Deluge valve to open. Once open, the valve reduces the inlet high pressure to a predetermined fixed outlet pressure. The Anti Columning property enables a system operation, indifferent to the detection line's height and distance from the control 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-PA1 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)

##### 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. The Anti-Columning properties guarantees an immediate system trip, regardless of the Wet Pilot height
- 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-PA1 resets to stand-by close position by pressurizing the Dry Pilot Line and manually operating the PSA device.

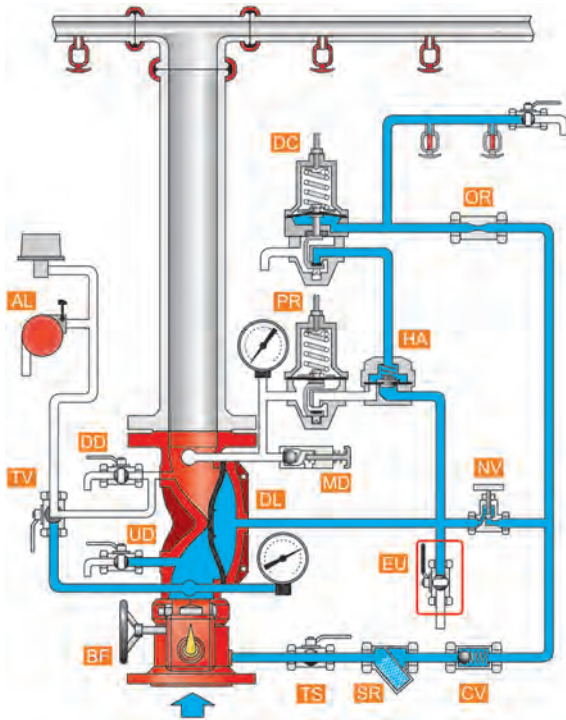
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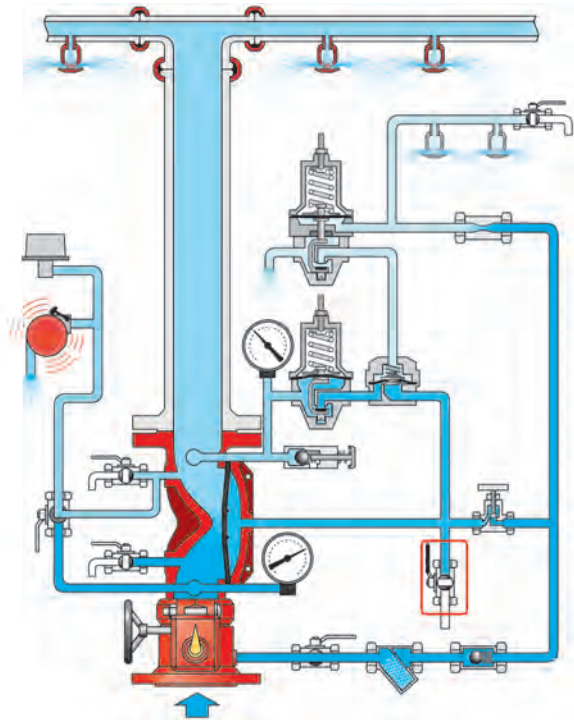
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## Schematic drawing

### 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

**NV** - Needle valve

**MD** - MADV – Manual Automatic  
Drain Valve

**TV** - Alarm test valve

**EU** - Emergency Manual Unit

**PR** - PRPV - Pressure Reducing  
Pilot Valve

**DC** - DCPV - Drain Control 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 DCPV drain pilot actuator (DC). The hydraulic pressure accumulated in the Wet pilot line keeps the DCPV in its close position, maintaining the FDV deluge valve (DL) close.

### FIRE situation

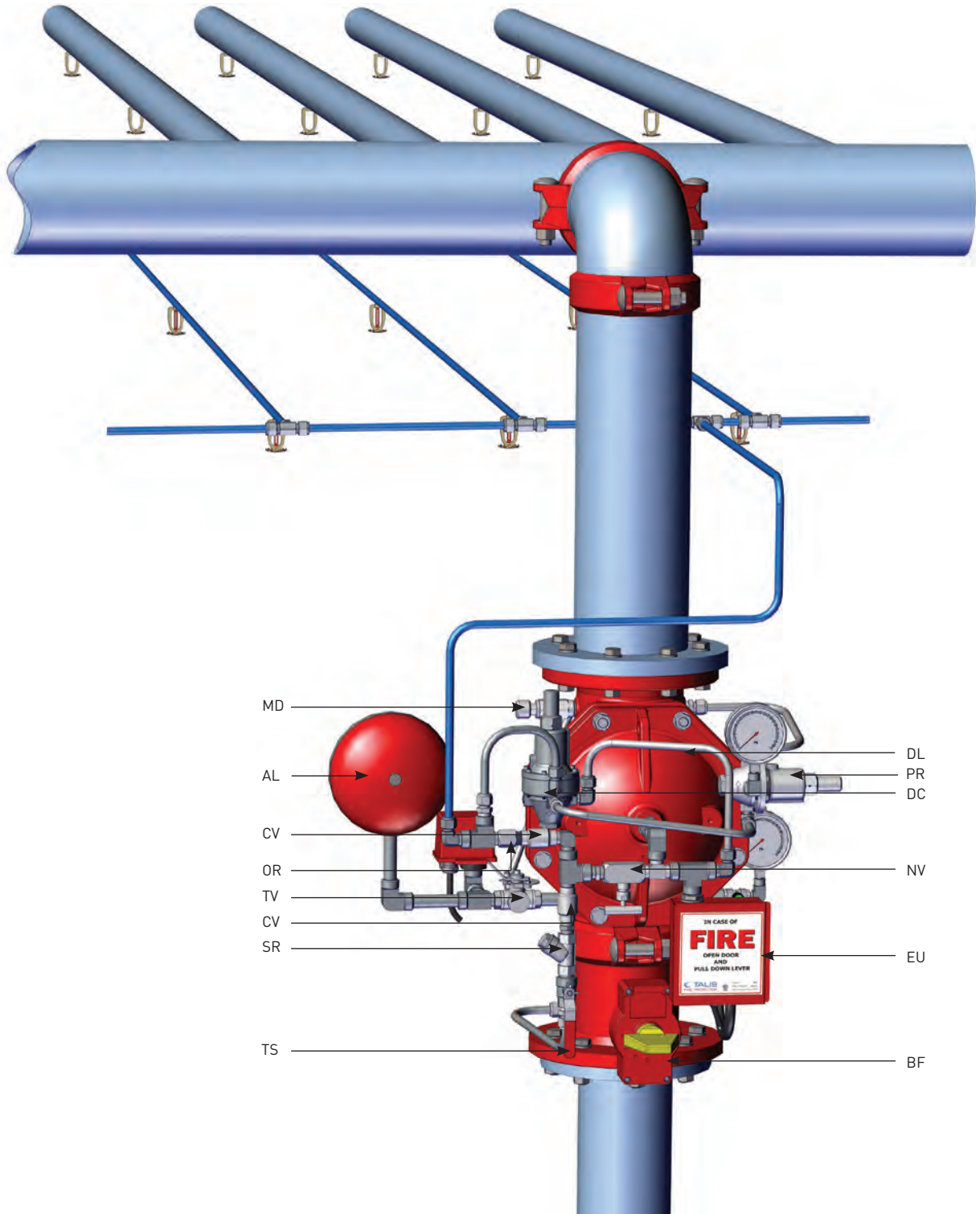
When some of the Wet pilot detection line's automatic sprinklers are subjected to the predetermined temperature levels and shutter-open, the pilot line pressure drops and the DCPV opens its drain port regardless of the residual column pressure. Opening its drain port, the DCPV releases the FDV's control chamber pressure through the 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 Wet Pilot Line is then pressurized to reset the DCPV to its close state. Consequently, The Deluge valve closes and water spray stops.

# FDV - PA1

## 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

**NV** - Needle valve

**MD** - MADV - Manual Automatic  
Drain Valve

**TV** - Alarm test valve

**EU** - Emergency Manual Unit

**PR** - **PRPV** - Pressure Reducing  
Pilot Valve

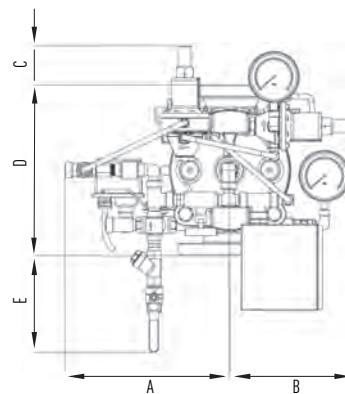
**DC** - **DCPV** - Drain Control  
Pilot Valve



## Dimensions Table

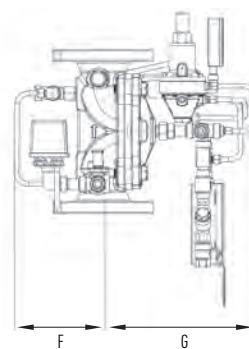
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	168	6.6	239	9.4	276	10.8	286	11.2	291	11.4
B	265	10	237	9.3	284	11.2	311	12.2	337	13.2
C	91	3.6	21	0.8	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.8	462	18.2	580	11
E	234	9.2	103	4	224	8.8	121	4.7	120	4.7
F	168	6.6	179	7	221	8.7	231	9	234	9.2
G	255	10	243	9.5	298	11.7	363	14.3	395	15.5
Kg/lb	22.2	48.9	34.8	76.7	52.1	114.8	70.7	155.8	110	242.5



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	328	12.9	361.5	14.3	355	14	378	14.9	405	15.9
B	234	9.2	234	9.2	280	11	308	12.1	304	12
C	90.5	3.6	74.5	2.9	4	0.16	-	-	-	-
D	224	8.8	325	12.8	400	15.8	462	18.2	580	22.8
E	232	9.1	184	7.2	194	7.6	118	4.6	58	2.3
F	191	7.5	206	8.1	244	9.6	271	10.7	291.5	11.5
G	254	10	317	12.5	373	14.7	368	14.5	466	18.3
Kg/lb	22.2	48.9	34.7	76.5	51.8	116.4	70.5	155.4	110	242.5



## 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 Height
- System installation orientation
- Additional accessories needed

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

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## Basic Deluge systems

### Electric Actuated with Remote Reset Deluge Valve

### FDV - AE1

The FDV-AE1 is a Fire Protection control valve for Deluge fire sprinkler systems, designed for installations in hazardous environments.

The FDV-AE1 Deluge system actuates electrically and resets remotely.

The sensors connected to the fire detection Panel, activate an electric signal transmitted to a solenoid valve and commands the valve to open.

The Deluge system incorporates an emergency valve, bypassing the fire detection panel for manual operation. Designed for vertical or horizontal installation, a globe pattern, line pressure operated FDV-AE1 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



P.O.G.



Marine



Air ports



Tunnels



Storage

#### 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
- 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

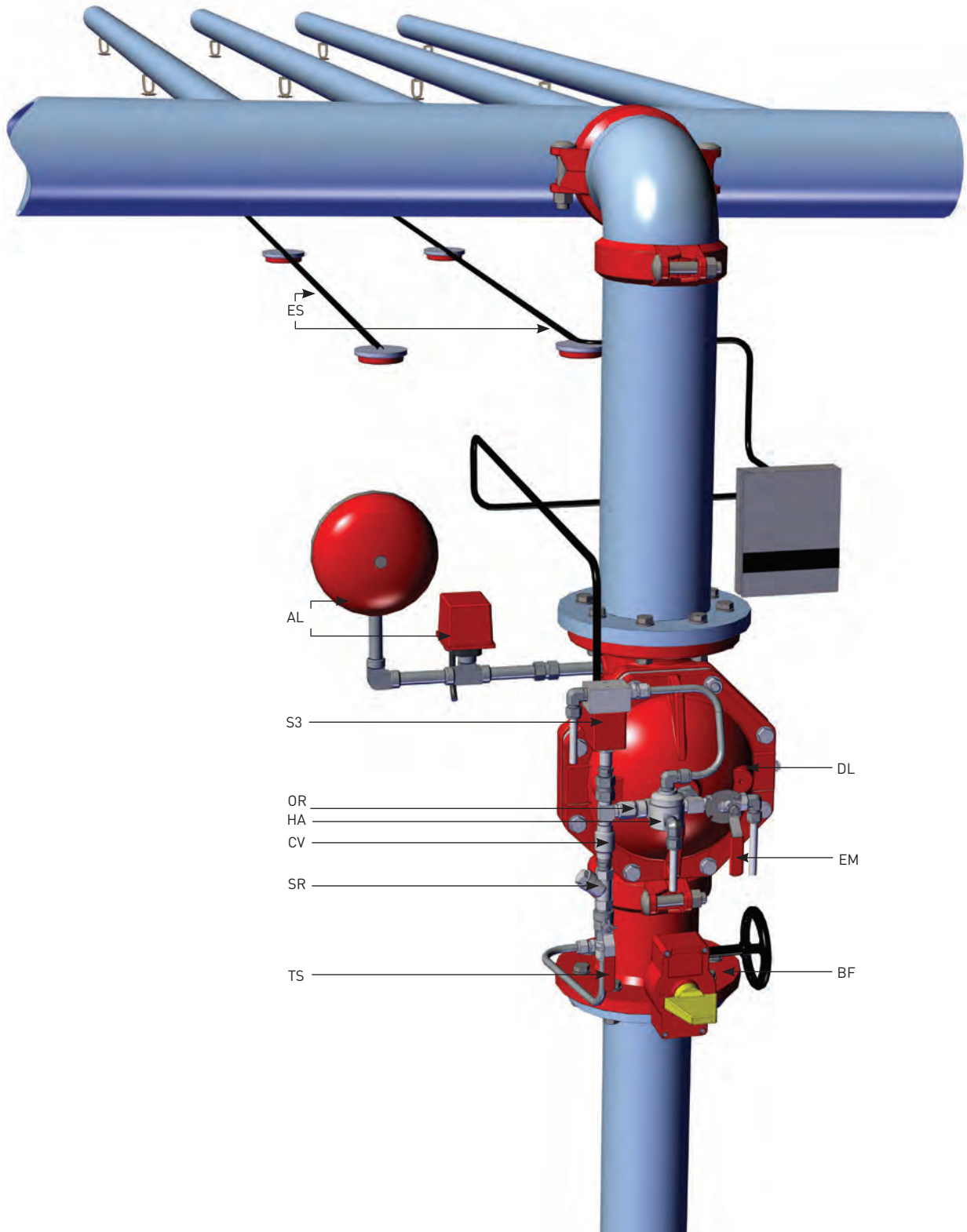
- Hydro-dynamic pattern design ensures high flowrates with minimum head loss
- The valve trips open automatically upon a gradual release of water pressure from its control chamber when electric signal is conveyed to the valve's solenoid
- Soft closing upon pressurization of the valve's control chamber, by line pressure or other independent water source to prevents surges

The FDV-AE1 resets to stand-by close position by de-energizing the alarm system solenoid's coil through the main control panel.



# FDV - AE1

## Typical installation



**BF** - Butterfly valve

**DL** - FDV Deluge valve

**AL** - Acoustic & Electric alarms

**TS** - Trim supply valve

**SR** - "Y" strainer

**CV** - Check valve

**OR** - Orifice

**TV** - Alarm test valve

**EM** - Emergency valve

**HA** - HAV-2 - Hydraulic Actuator Valve (2 way)

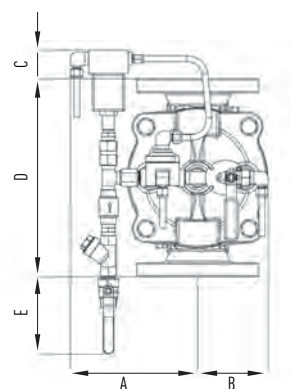
**S3** - Solenoid 3 way



## Dimensions Table

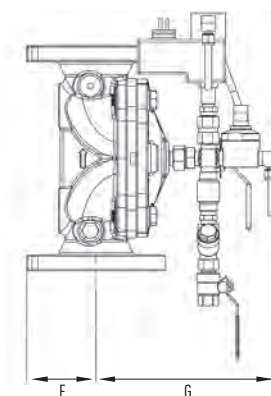
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	209	8.3	208	8.2	208	8.2	209	8.2	251	9.9
B	165	6.5	165	6.5	165	6.5	194	7.6	-	-
C	96	3.8	47	1.8	7	0.3	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	178	7	126	5	91	3.6	61	2.4	-	-
F	74	2.9	92	3.6	113	4.5	143	5.7	174	6.8
G	242	9.5	272	10.7	295	11.6	367	14.5	397	15.7
Kg/lb	14	30.8	26.4	50.2	43.2	95.2	61.8	136.2	101.2	223.1



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	221	8.7	223	8.8	231	9	219	8.6	326	12.8
B	167	6.6	172	6.8	204	8	223	8.8	277	10.9
C	96	3.8	47	1.8	7	0.3	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	178	7	126	5	91	3.6	61	2.4	-	-
F	74	2.9	92	3.6	113	4.5	143	5.6	164	6.4
G	242	9.5	271	10.7	305	12	368	14.5	398	15.7
Kg/lb	14	30.8	26.4	58.2	43	94.8	61.6	135.8	101.3	223.3



## 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 Protection
- System installation orientation
- Additional accessories needed

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

## Basic valve systems

### Pneumatic Actuated with Remote Reset Deluge Valve

### FDV - AP1

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

The FDV-AP1 Deluge system actuates pneumatically and resets remotely. When a pneumatic pressure accumulated in the Dry Pilot detection line is exposed to a predetermined temperature level, the automatic fire sprinklers shatter-open, venting the air pressure from the detection line. The drop in pressure opens the pneumatic actuator that in turn commands the Deluge valve to open.

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-AP1 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



Marine



P.O.G.



Residential



Air ports

#### 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)

#### 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 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

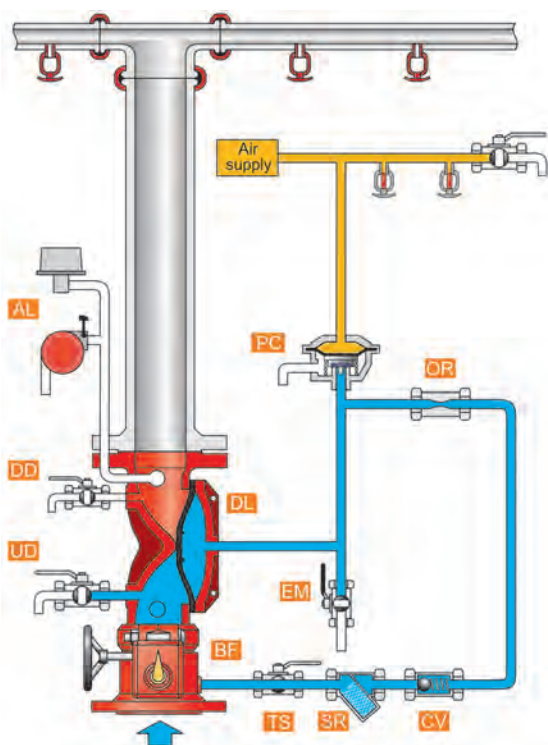
#### CHARACTERISTICS

- 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 valve is actuated by the Dry Pilot Line's pneumatic pressure release due to its automatic sprinklers exposure to flame heat
- Soft closing upon pressurization of the valve's control chamber, by line pressure or other independent water source to prevents surges

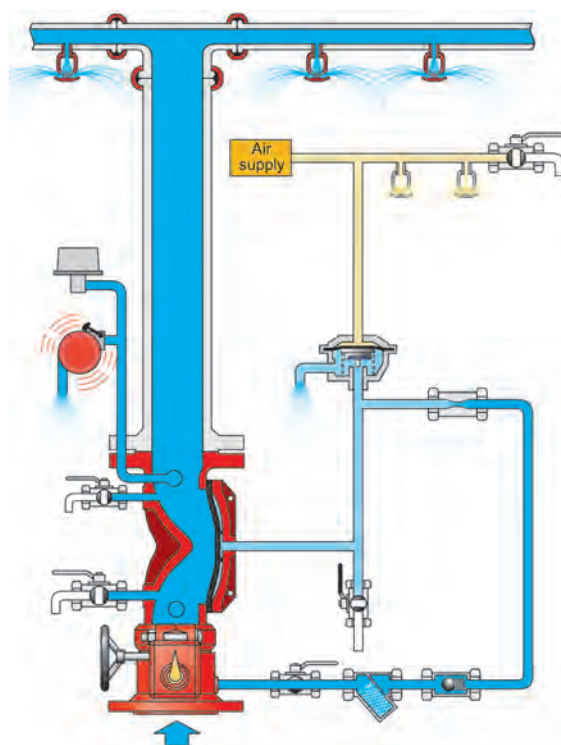
The FDV-AP1 resets to stand-by close position by re-pressurizing the Dry Pilot Line.

## Schematic drawing

### Set position



### Fire position



- |                                        |                             |
|----------------------------------------|-----------------------------|
| <b>BF</b> - Butterfly valve            | <b>SR</b> - "Y" strainer    |
| <b>DL</b> - FDV Deluge valve           | <b>CV</b> - Check valve     |
| <b>AL</b> - Acoustic & Electric alarms | <b>OR</b> - Orifice         |
| <b>TS</b> - Trim supply valve          | <b>EM</b> - Emergency valve |

## OPERATION

### SET position

Pressurized water in the valve's control chamber is trapped by the check-valve (CV), by the closed HAV-2 actuator (HA) and by the closed emergency valve (EM), maintaining the deluge valve in closed position.

The 3 way solenoid pressurizes the HAV-2, holding it in its close position.

### FIRE situation

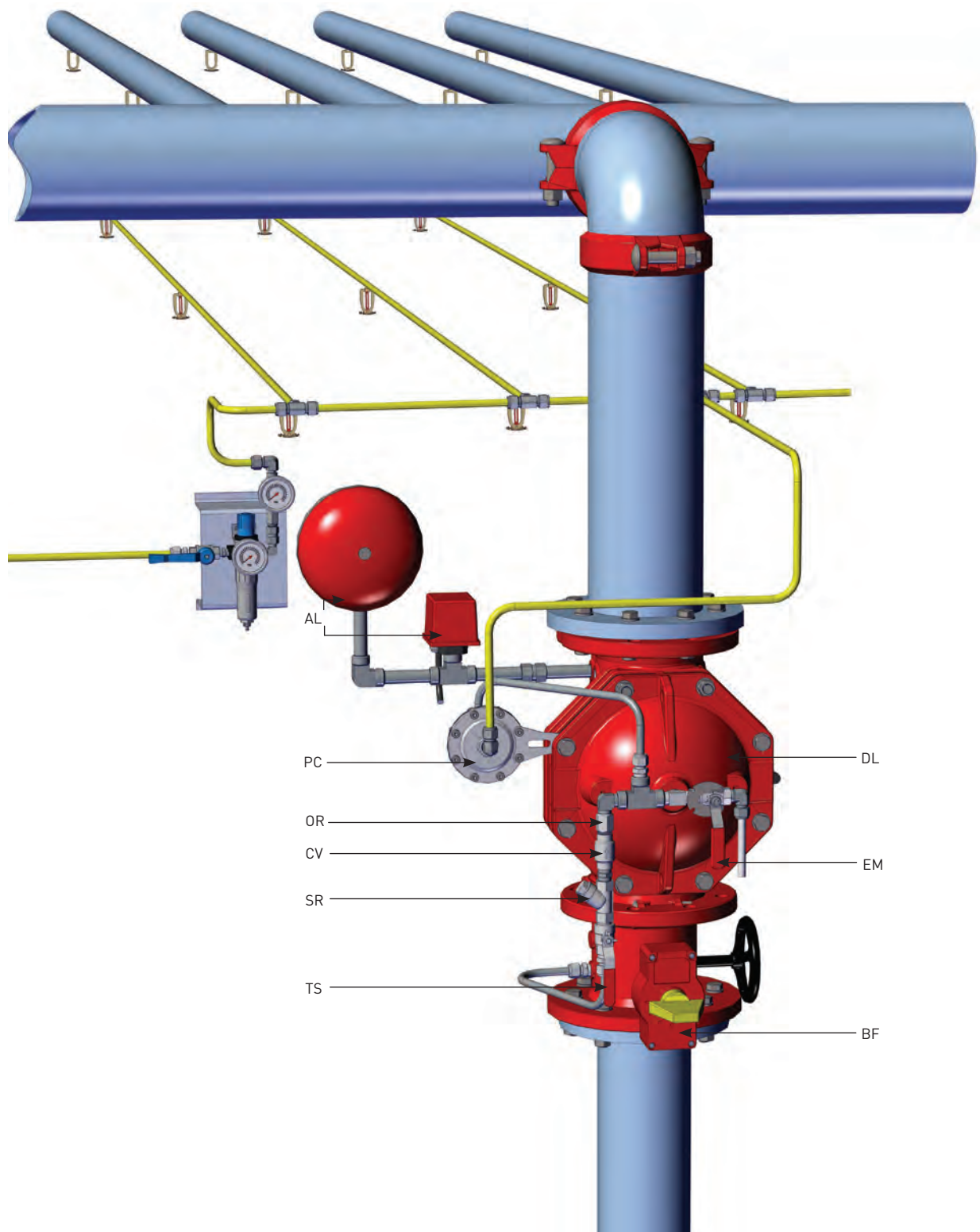
When one or more of the electric heat or flame sensor detects fire, it signals the control panel that in turn, energizes the 3 way solenoid (S3). The solenoid commands the HAV-2 to open and the actuator drains the FDV's control chamber to the atmosphere. The FDV deluge valve opens and water flow into the spray sprinklers pipe line. Manually opening the Emergency valve (EM), drains the FDV control chamber and opens the valve immediately.

### RESET position

When the control panel de-energizes the solenoid, upstream supply pressurizes the HAV-2's control chamber, commanding it to close. The upstream pressure flows through the orifice (OR) to the FDV valve's control chamber and the valve closes, returning to Set Position.

# FDV - AP1

## Typical installation



- |                                        |                             |
|----------------------------------------|-----------------------------|
| <b>BF</b> - Butterfly valve            | <b>SR</b> - "Y" strainer    |
| <b>DL</b> - FDV Deluge valve           | <b>CV</b> - Check valve     |
| <b>AL</b> - Acoustic & Electric alarms | <b>OR</b> - Orifice         |
| <b>TS</b> - Trim supply valve          | <b>EM</b> - Emergency valve |

ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ

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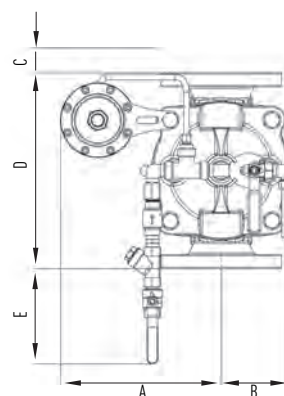
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## Dimensions Table

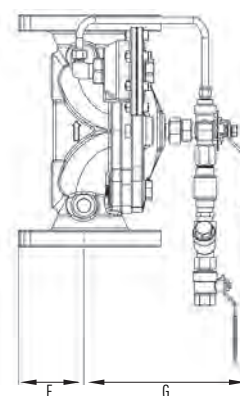
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	208	8.2	267	10.5	312	12.3	340	13.4	403	15.9
B	165	6.5	165	6.5	165	6.5	-	-	-	-
C	-	-	-	-	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	209	8.3	158	6.2	123	4.8	94	3.7	32	1.2
F	74	2.9	92	3.6	113	4.5	143	5.6	174	6.8
G	205	8	234	9.2	265	10.4	328	12.9	361	14.2
Kg/lb	14	30.7	26.2	57.8	43.7	95.2	61.8	136.2	101.2	223.2



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	208	8.2	267	10.5	312	12.3	312	12.3	402	15.8
B	169	6.6	182	7.1	223	8.8	223	8.8	292	11.5
C	-	-	-	-	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	209	8.3	158	6.2	123	4.8	93	3.7	32	1.2
F	74	2.9	92	3.6	113	4.5	143	5.6	174	6.8
G	205	8	234	9.2	265	10.4	328	12.9	360	14.2
Kg/lb	14.1	31	26.2	57.8	43.2	95.4	61.9	136.4	101.4	223.6



## 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
- Energize to Open/Close valve
- Pneumatic working pressure
- System installation orientation
- Additional accessories needed

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

ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ  
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## Basic Deluge systems

### Electro-Pneumatic Actuated with Remote Reset Deluge Valve

### FDV - AC1

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

The FDV-AC1 Deluge system is actuated electrically or pneumatically and resets remotely. Two detection systems operating independently can command the Deluge system to open: a pneumatic pressure accumulated Dry Pilot detection line and an electric control Panel connected to heat or flame sensors. 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-AC1 valve features a direct elastomeric diaphragm seal. It has with 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



Industry



Marine



Storage



P.O.G.



Tunnels



Airports

#### 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)

#### 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 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

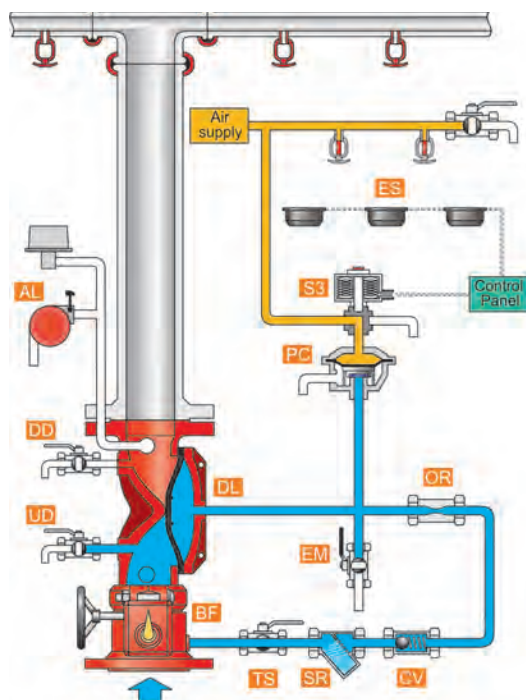
#### CHARACTERISTICS

- 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 valve is actuated by the Dry Pilot Line's pneumatic pressure release due to its automatic sprinklers exposure to flame heat
- Soft closing upon pressurization of the valve's control chamber, by line pressure or other independent water source to prevents surges

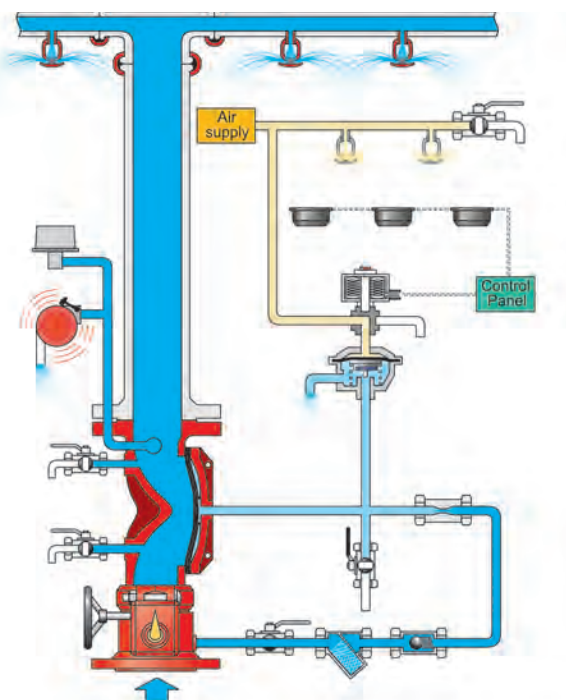
The FDV-AC1 resets to stand-by close position by de-energizing the alarm system solenoid's coil through the main control panel or, pressurizing the Dry Pilot Line.

## Schematic drawing

### Set position

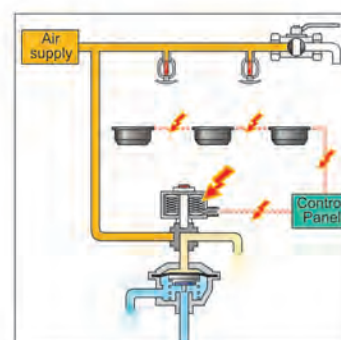


### Fire position



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

**SR** - "Y" strainer  
**CV** - Check valve  
**OR** - Orifice  
**EM** - Emergency valve  
**PC** - PA-PTC - Pneumatic Actuator  
 -Pressure To Close  
**S3** - Solenoid 3 way



## OPERATION

### SET position

Pressurized water in the FDV valve's control chamber is trapped by the check-valve (CV), by the closed PA-PTC actuator (PC) and by the closed emergency valve (EM), maintaining the deluge valve in closed position. The pneumatic pressure accumulated in the Dry pilot line passes through 3 way solenoid (S3), holding the PA-PTC drain actuator in closed position.

### FIRE situation

When one or more dry pilot detection line automatic fire sprinklers are subjected to the predetermined temperature levels and shutter open, the pilot line and the PA-PTC (PC) control chamber depressurizes.

Alternatively, an electric heat or flame sensor detects fire, it signals the control panel that in turn, energizes the 3 way solenoid valve. The solenoid valve drains the Dry pilot line de-pressurizing the PA-PTC actuator's control chamber.

### RESET position

System reset requires the replacement of all shattered to open the fire sprinklers in the detection pilot line.

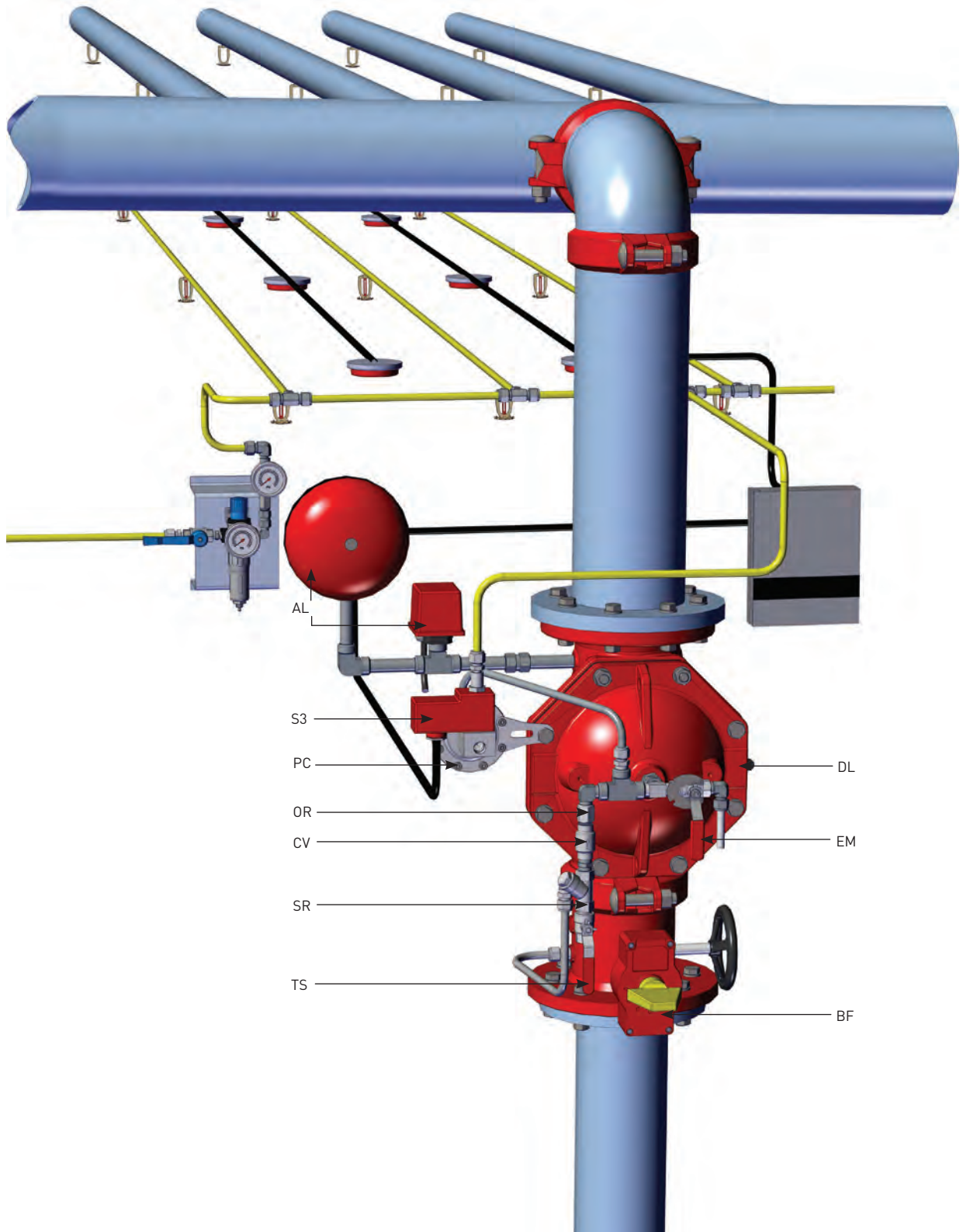
Alternatively, the electrical alarm system has to be reset and the solenoid will be de-energized.

By that, the PA-PTC actuator pressurizes and closes the FDV deluge valve's drain.

Upstream pressure entering the control chamber through an orifice and forces the valve to close.

# FDV - AC1

## Typical installation



**BF** - Butterfly valve

**DL** - FDV Deluge valve

**AL** - Acoustic & Electric alarms

**TS** - Trim supply valve

**SR** - "Y" strainer

**CV** - Check valve

**OR** - Orifice

**EM** - Emergency valve

**PC** - PA-PTC - Pneumatic Actuator  
- Pressure To Close

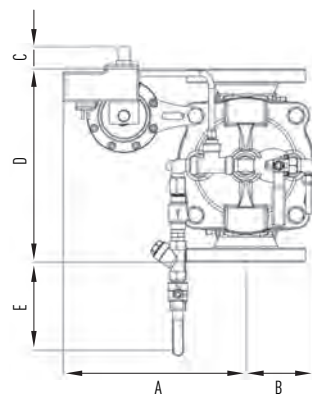
**S3** - Solenoid 3 way



## Dimensions Table

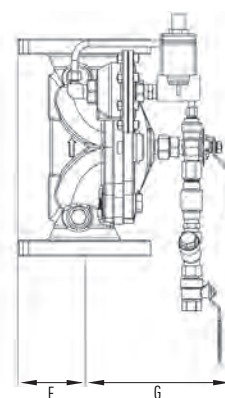
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	230	9	307	12	352	13.8	380	15	442	17.4
B	165	6.5	165	6.5	165	6.5	194	7.6	232	9.1
C	50	2	37	1.5	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	153	6	158	6.2	123	4.8	93	3.7	32	1.2
F	147	5.8	92	3.6	113	4.5	143	5.6	174	6.8
G	211	8.3	234	9.2	265	10.4	328	12.9	362	14.2
Kg/lb	15.5	34.2	27.6	60.8	44	97	63	139	102.5	225.9



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	230	9	307	12	352	13.8	380	15	443	17.4
B	165	6.5	165	6.5	191	7.5	222	8.7	285	11.2
C	50	2	37	1.4	-	-	-	-	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	153	6	158	6.2	123	4.8	93	3.7	32	1.3
F	74	2.9	92	3.6	113	4.5	143	5.6	174	6.8
G	211	8.4	234	9.2	265	10.4	328	12.9	361	14.2
Kg/lb	15.6	34.4	27.6	60.8	44.5	98.2	63.2	139.3	102.6	226.3



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

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

## Basic Deluge systems

### Hydraulic Actuated with Remote Reset Deluge Valve

## FDV - AH1

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

The FDV-AH1 Deluge system actuates hydraulically and resets remotely. When a Wet Pilot detection line is exposed to flame or heat, the automatic fire sprinklers shatter-open. The water pressure in the detection line drops and commands the deluge valve to open.

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-AH1 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 with only one replaceable part which is long life elastomeric diaphragm Conforms with inspection, Testing
- Conforms with inspection, testing and maintenance standard of water-based fire protection systems, NFPA 25

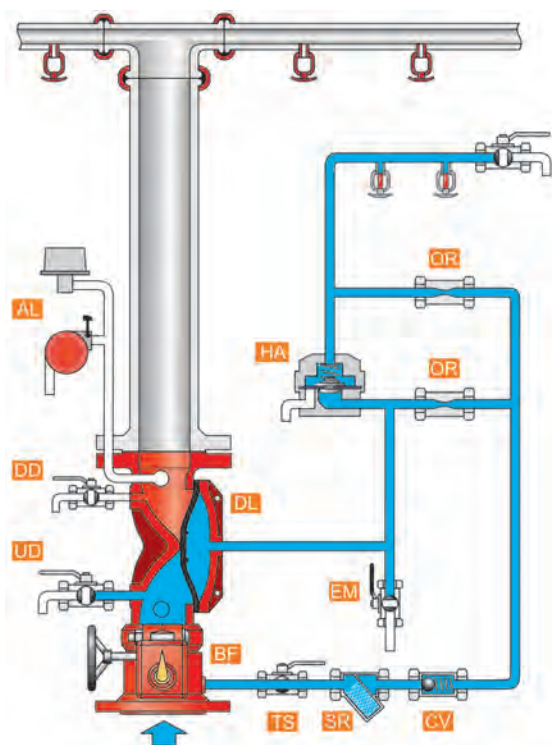
#### CHARACTERISTICS

- 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 when electric signal is conveyed to the valve's solenoid
- Soft closing upon pressurization of the valve's control chamber, by line pressure or other independent water source to prevents surges

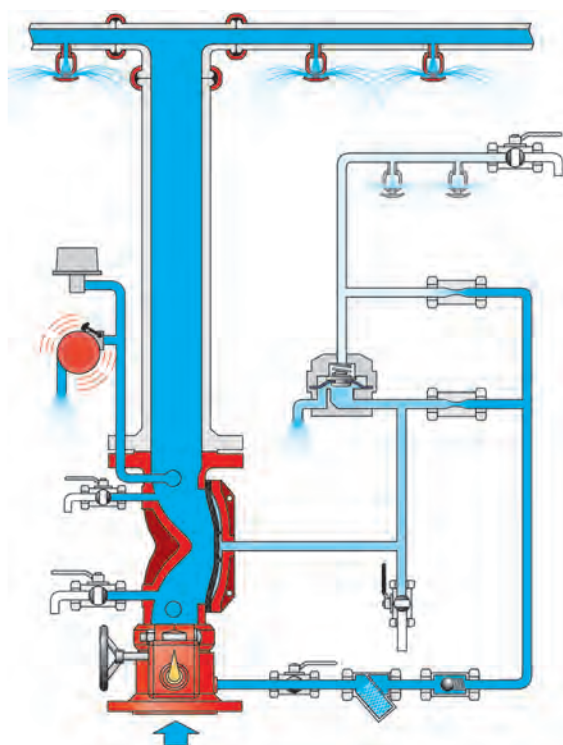
The FDV-AH1 resets to stand-by close position by re-pressurizing the Dry Pilot Line.

## Schematic drawing

### Set position



### Fire position



**BF** - Butterfly valve

**DD** - Downstream drain valve

**AL** - Acoustic & Electric alarms

**TS** - Trim supply valve

**SR** - "Y" strainer

**CV** - Check valve

**OR** - Orifice

**EM** - Emergency valve

**HA** - HAV-2 – Hydraulic Actuator Valve (2 way)

## OPERATION

### SET position

Pressurized water in the valve's control chamber is trapped by the check-valve (CV), by the closed HAV-2 actuator (HA) and by the closed emergency valve (EM). The hydraulic pressure in the Wet pilot detection line, keeps the HAV-2 actuator in closed position maintaining the FDV deluge close.

### FIRE situation

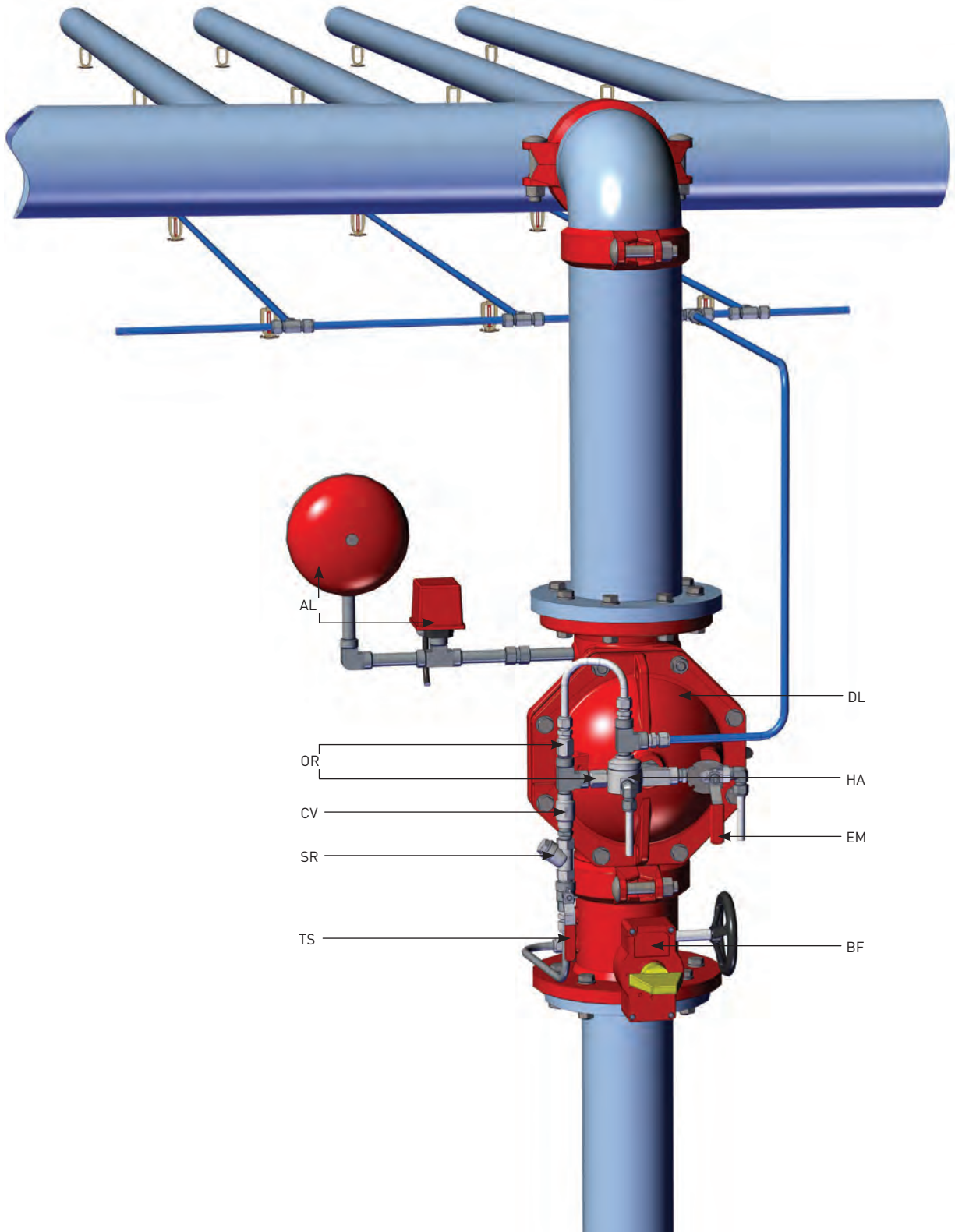
When some of the Wet Pilot detection line automatic fire sprinklers are subjected to the predetermined temperature levels, and shutter open, the pilot detection line depressurizes, opening the HAV-2 actuator. The HAV-2 opens and drains the deluge valve's control chamber. The FDV Deluge valve opens and admits water to the spray sprinklers line.

### RESET position

System reset requires the replacement of all shattered-open Fire sprinklers in the Wet Pilot detection line. The Wet Pilot detection line is then pressurized to reset the HAV-2 actuator commanding the FDV deluge valve to close.

# FDV - AH1

## Typical installation



**BF** - Butterfly valve

**DD** - Downstream drain valve

**AL** - Acoustic & Electric alarms

**TS** - Trim supply valve

**SR** - "Y" strainer

**CV** - Check valve

**OR** - Orifice

**EM** - Emergency valve

**HA** - HAV-2 - Hydraulic Actuator Valve (2 way)

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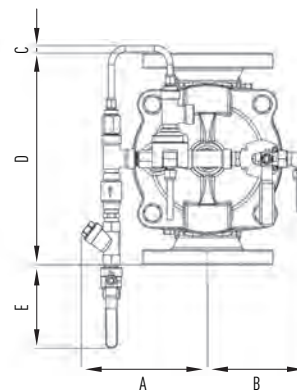
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## Dimensions Table

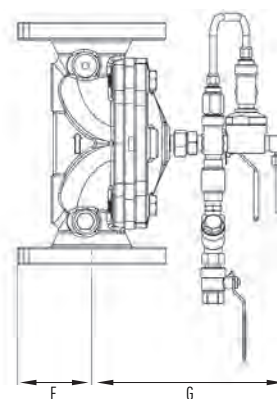
### Vertical

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	196	7.7	196	7.7	196	7.7	195	7.7	251	9.9
B	166	6.5	166	6.5	167	6.6	194	7.6	-	-
C	118	4.6	68	2.7	56	2.2	25	1	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	122	4.8	71	2.8	35	1.4	6	0.2	-	-
F	74	2.9	92	3.6	113	4.5	143	5.6	174	6.8
G	240	9.5	270	10.6	301	11.8	365	14.4	395	15.5
Kg/lb	13	28.6	25.4	56	42.2	93	60.8	134	100.2	220.1



### Horizontal

Size	1 1/2" 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	225	8.8	239	9.4	247	9.7	234	9.2	285	11.2
B	166	6.5	169	6.6	220	8.7	236	9.3	280	11
C	118	4.6	69	2.7	56	2.2	25	1	-	-
D	224	8.8	325	12.8	400	15.7	462	18.2	580	22.8
E	122	4.8	71	2.8	35	1.4	6	0.2	-	-
F	74	2.9	92	3.6	113	4.5	143	5.6	174	6.8
G	240	9.5	269	10.6	303	11.9	366	14.4	396	15.6
Kg/lb	12.9	28.5	25.3	55	42.2	93.1	60.8	134	100	220.6



## 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
- 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.

ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ  
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# ON/OFF VALVES

---

## **MONITOR VALVES**

FDV-R-MH0 - 111

FDV-R-MH1 - 115

FDV-R-ME1 - 119

## **HYDRAULIC HYDRANTS**

FDV-R-HH0 - 123

FDV-R-HHP - 127

## **Mechanical Hydrants**

FDV-HM0 - 131

## Monitor Valves

### Local Hydraulic Actuated Monitor Valve

### FDV-R- MH0

The FDV-R-MH0 is a manually operated On-Off Fire Protection Monitor valve, designed to control the opening and closing of fire Monitors, in special hazard fire protection systems.

Assembled in horizontal or vertical position, the FDV-R-MH0 Monitor valve is locally commanded to open/close by a manual emergency valve.

Operating this valve, commands the main valve by pressurizing or de-pressurizing its control chamber, enabling a quick and effortless operation

The globe pattern, line pressure operated FDV-R-MH0 valve, features a direct elastomeric diaphragm seal, with no balancing spring or internal metallic wet components in the valve body.

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

This valve can be supplied upon request in a PRV configuration, where the monitor's pressure is reduced, to satisfy the system's design.



#### MARKETS



Marine



P.O.G.



Airports



Industry



Storage

#### TECHNICAL DATA

##### FLUID:

Water, Brackish water, Sea water, Foam

##### SIZE RANGE:

50mm to 200mm (2" to 8")

##### AVAILABLE CONNECTIONS ENDS:

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

##### PRESSURE NOMINAL:

250 psi (17.2 bar)

#### ADVANTAGES

- Only three parts: body, diaphragm & cover plate, no wet metal spring inside the control chamber
- 3 way control principle ensure fast and reliable opening
- Open fail safe valve in high ambient temperatures
- Maintained in stand-by closed position
- Low maintenance cost: the valve is serviced in-line and only one replaceable part - the 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 by manually opening a 3 way ball valve and draining the valve's control chamber
- Closing the manual ball valve stops the control chamber's drainage and pressurizes it. By that, the monitor valve closes
- Soft closing controlled pressurization of the valve's control chamber, prevents surges

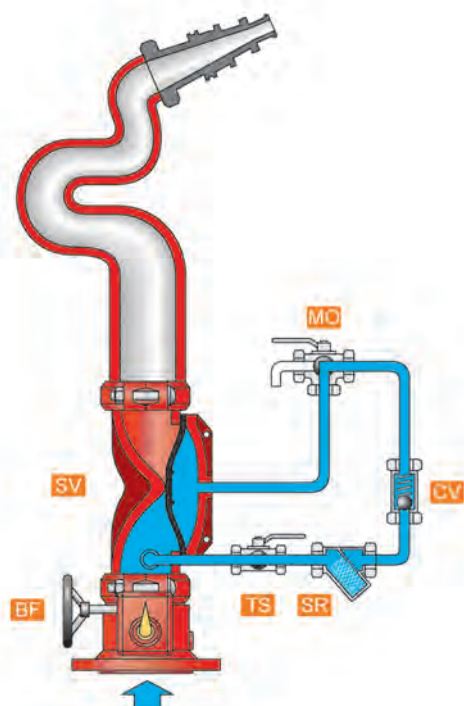
#### APPROVALS



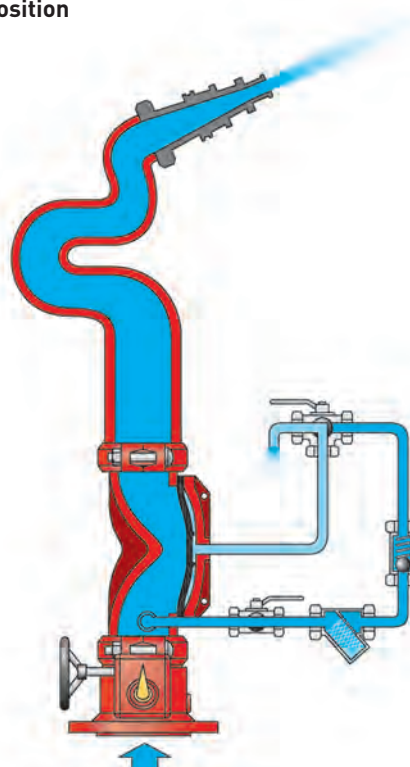


## Schematic drawing

### Set position



### Fire position



**SV** - FDV-R Valve

**TS** - Trim supply valve

**SR** - "Y" strainer

**CV** - Check valve

**MO** - Manual Operation valve (3 way)

**BF** - Butterfly valve

## OPERATION

### SET position

Pressurized water in the valve's control chamber (SV) is trapped by the Check Valve (CV), forces the valve's diaphragm against its seat and maintains the FDV-R valve close.

### FIRE situation

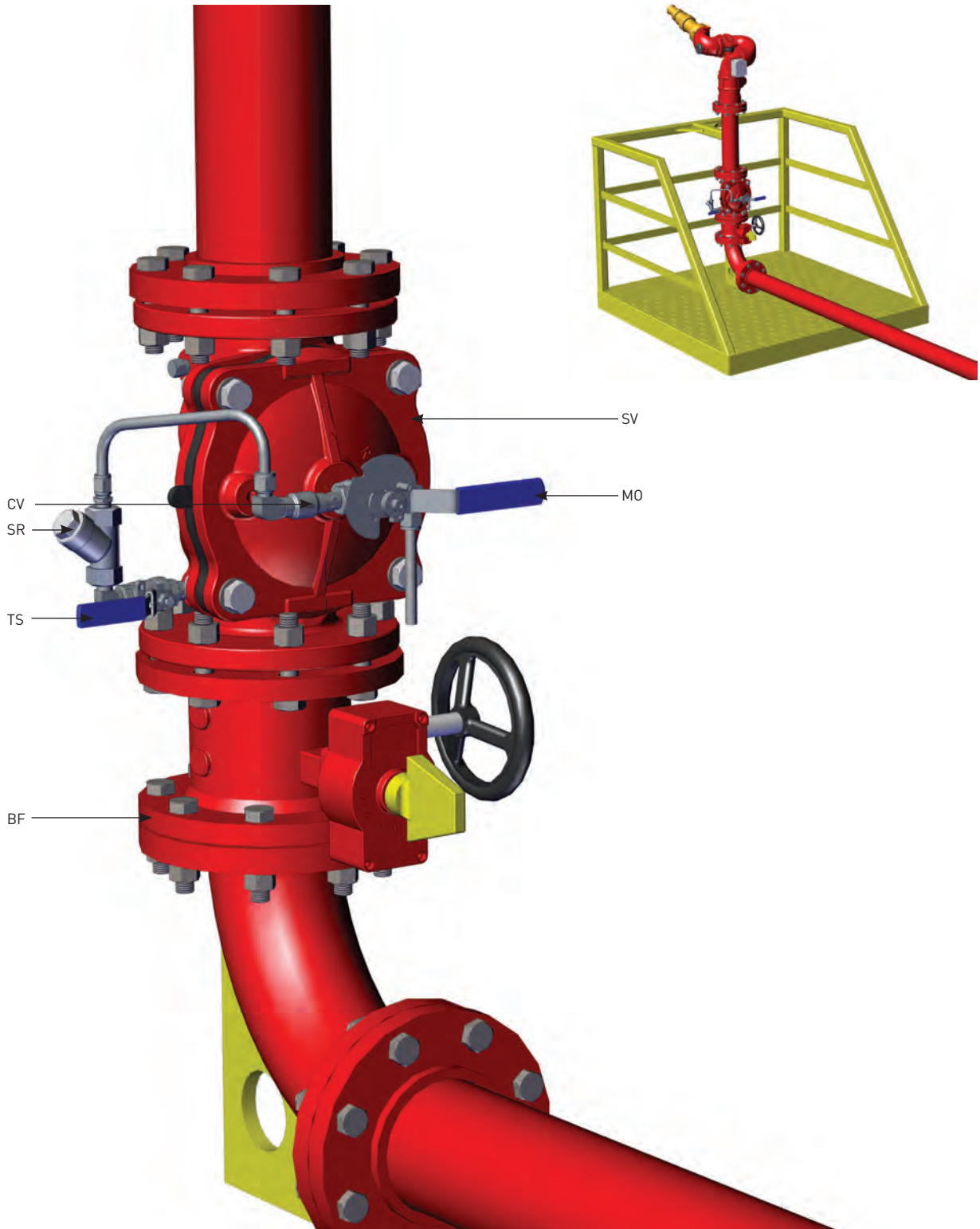
Opening the Manual Operation valve (MO), drains the FDV-R's control chamber and opens the valve.

### RESET position

Closing the Manual Operation valve, stops the FDV-R's control chamber drainage admits upstream pressure and pressurizes it. Consequently, the valve's diaphragm is forced to its seat and the valve closes.

# FDV-R - MH0

## Typical installation



**SV** - FDV-R Valve

**TS** - Trim supply valve

**SR** - "Y" strainer

**CV** - Check valve

**MO** - Manual Operation valve (3 way)

**BF** - Butterfly valve

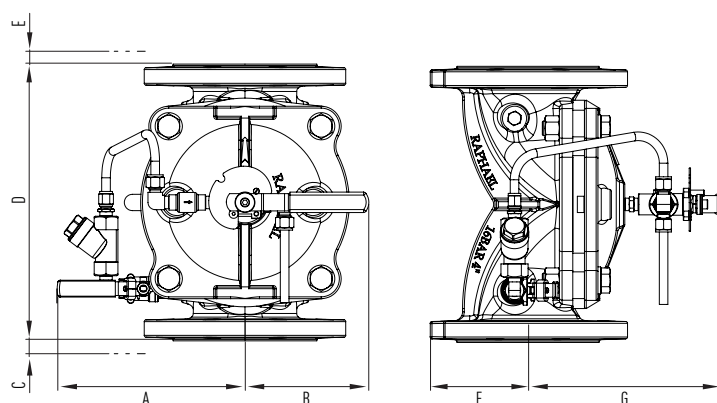
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## Dimensions Table

Size	2"		2.5"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	196	7.7	204	8	212	8.3	231	9.1	282	11.1	283	11.1
B	82	3.2	93	3.7	100	3.9	111	4.4	158	6.2	178	7
C	16	0.6	7	0.3	-	-	-	-	-	-	-	-
D	190	7.5	215	8.5	283	11.1	305	12	406	16	470	18.5
E	8	0.3	-	-	-	-	-	-	-	-	-	-
F	82	3.2	89	3.5	100	3.9	109	4.3	142	5.6	160	6.3
G	187	7.4	201	7.9	214	8.4	233	9.2	288	11.3	356	14
Kg/lb	8.8	19.4	11.1	24.5	17.6	38.8	23.8	52.5	48.5	106.9	106.9	114.8



## 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
- System installation orientation
- Additional accessories needed

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

## Monitor Valves

### Remote Hydraulic Actuated Monitor Valve

# FDV-R- MH1

The FDV-R-MH1 is a hydraulic controlled On-Off Fire Protection Monitor valve, designed to control the opening and closing of fire Monitors, in special hazard fire protection systems.

Assembled in horizontal or vertical position, the FDV-R-MH1 Monitor valve is commanded to open/close from a control panel or control room, by a hydraulic actuator. The actuator in turns, commands the valve bypressurizing or de-pressurizing the main valve's control chamber, enabling a quick and effortless operation.

The FDV-R-MH1 incorporates an emergency valve, bypassing all terms for a manual operation.

The globe pattern, line pressure operated FDV-R-MH1 valve features a direct elastomeric diaphragm seal, with 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



Industry



Storage

#### TECHNICAL DATA

##### FLUID:

Water, Brackish water, Sea water, Foam

##### SIZE RANGE:

50mm to 200mm (2" to 8")

##### AVAILABLE CONNECTIONS ENDS:

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

##### PRESSURE NOMINAL:

250 psi (17.2 bar)

#### ADVANTAGES

- Only three parts: body, diaphragm & cover plate, no wet metal spring inside the control chamber
- 3 way control principle ensure fast and reliable opening
- Open fail safe valve in high ambient temperatures
- Maintained in stand-by closed position
- Low maintenance cost: the valve is serviced in-line and only one replaceable part - the 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 a hydraulic command pressure transferred by a pilot pipeline, operating a 3 way actuator
- Soft closing by controlled pressurization of the valve's control chamber, prevents surges

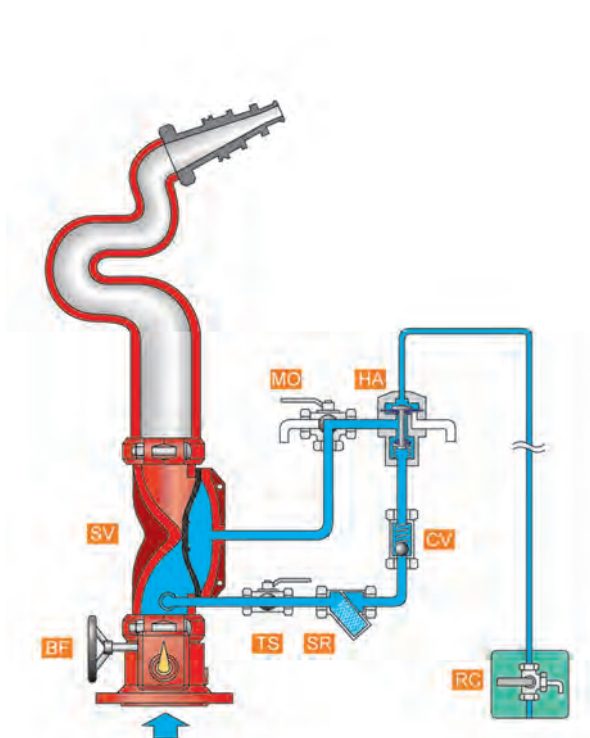
#### APPROVALS



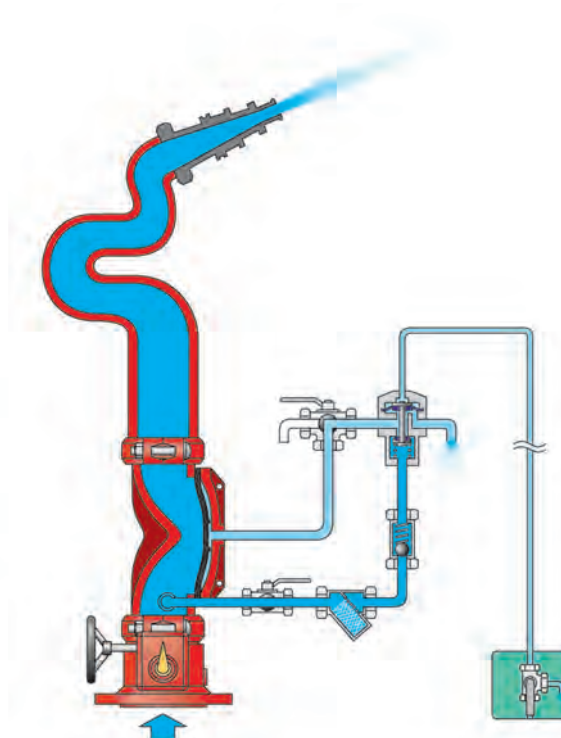


## Schematic drawing

### Set position



### Fire position



**SV** - FDV-R Valve  
**TS** - Trim supply valve  
**SR** - "Y" strainer  
**CV** - Check valve

**MO** - Manual Operation valve (3 way)  
**HA** - Hydraulic Actuator Valve (3 way)  
**BF** - Butterfly valve

## OPERATION

### SET position

Pressurized water in the valve's control chamber (SV) is trapped by the Check Valve (CV), forces the valve's diaphragm against its seat and maintains the FDV-R valve close.

### FIRE situation

A remote hydraulic command transferred by a pilot pipeline, pressurizes the Hydraulic Actuator valve's control Chamber (HA).

Consequently, the actuator changes state and drains the FDV-R's Control Chamber. The valve opens and admits water to the monitor pipeline.

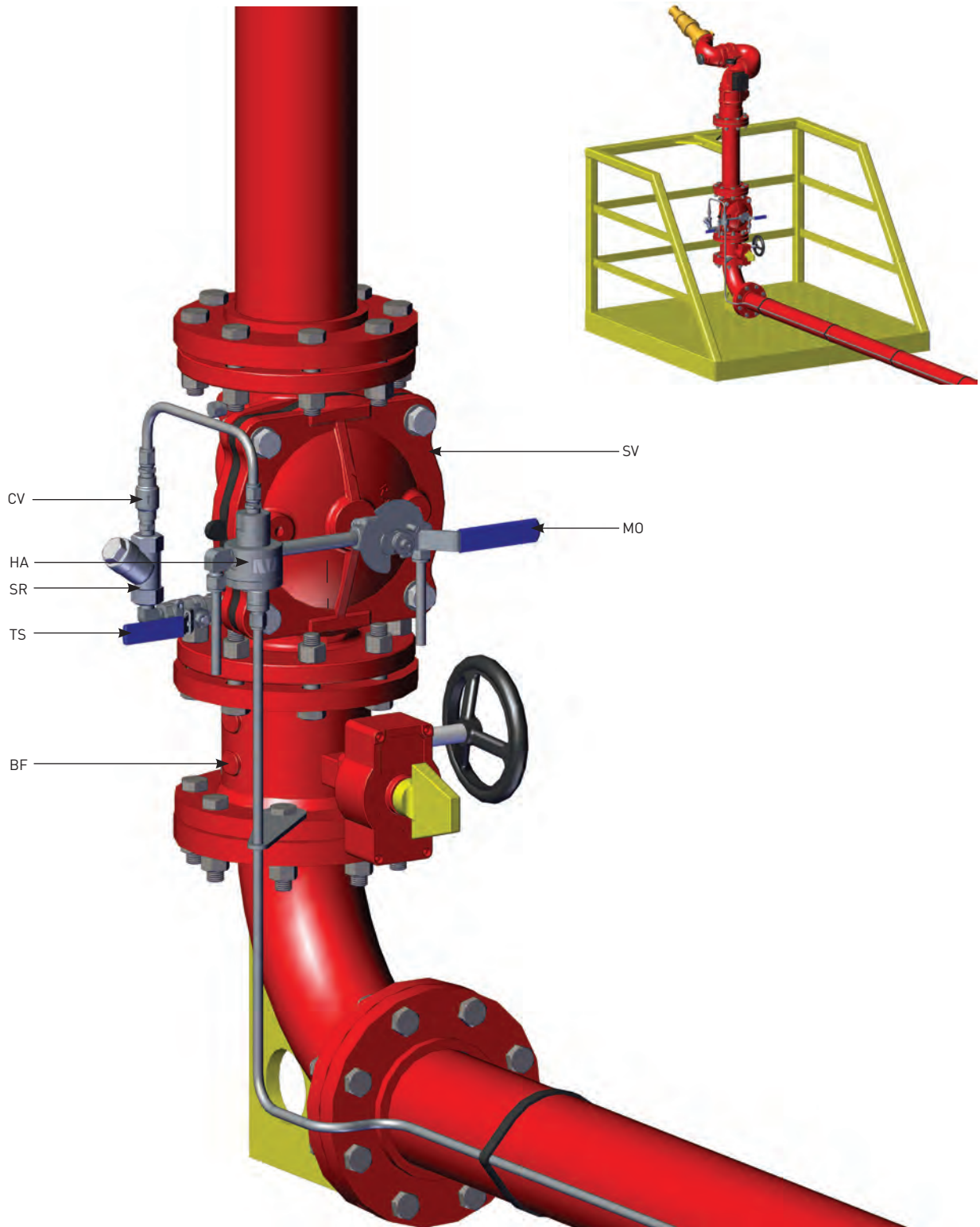
Opening the Manual Operation valve (MO), bypasses all terms, drains the FDV-R's control chamber and opens the valve.

### RESET position

As the pilot pipeline command pressure drops, the Hydraulic Actuator stops the FDV-R's control chamber drainage, admits upstream pressure and pressurizes it. Consequently, the valve's diaphragm is forced against its seat and the valve closes.

# FDV-R - MH1

## Typical installation



**SV** - FDV-R Valve  
**TS** - Trim supply valve  
**SR** - "Y" strainer  
**CV** - Check valve

**MO** - Manual Operation valve (3 way)  
**HA** - Hydraulic Actuator Valve (3 way)  
**BF** - Butterfly valve

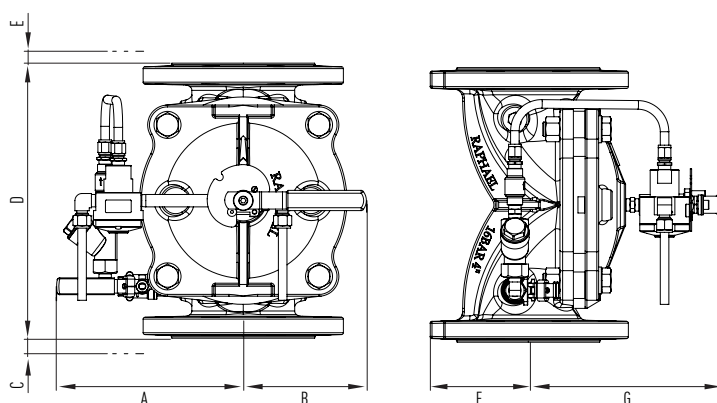
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## Dimensions Table

Size	2"		2.5"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	196	7.37	204	8	212	8.3	232	9.1	216	8.5	242	9.5
B	82	3.2	93	3.7	100	3.9	11	0.4	142	5.6	177	7
C	18	0.7	4	0.2	-	-	-	-	-	-	-	-
D	190	7.5	215	8.5	283	11.1	305	12	406	16	470	18.5
E	90	3.5	77	3	13	0.5	-	-	-	-	-	-
F	82	3.2	89	3.5	106	4.2	109	4.3	142	5.6	160	6.3
G	188	7.4	202	8	208	8.2	232	9.1	288	11.3	356	14
Kg/lb	9.9	21.8	12.3	27.2	18.8	41.5	24.9	54.9	49.4	108.9	66.7	147



## 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
- System installation orientation
- Additional accessories needed

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

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## Monitor Valves

### Remote Electric Actuated Monitor Valve

## FDV-R- ME1

The FDV-R-ME1 is an electric controlled On-Off Fire Protection Monitor valve, designed to control the opening and closing of fire Monitors, in special hazard fire protection systems.

Assembled in horizontal or vertical position, the FDV-R-ME1 Monitor valve is commanded to open/close from a control panel or control room, by a solenoid valve. The Solenoid in turns, commands the valve by pressurizing or de-pressurizing the main valve's control chamber, enabling a quick and effortless operation

The globe pattern, line pressure operated FDV-R-ME1 valve, features a direct elastomeric diaphragm seal, with 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



Industry



Storage

#### TECHNICAL DATA

##### FLUID:

Water, Brackish water, Sea water, Foam

##### SIZE RANGE:

50mm to 200mm (2" to 8")

##### AVAILABLE CONNECTIONS ENDS:

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

##### PRESSURE NOMINAL:

250 psi (17.2 bar)

#### ADVANTAGES

- Only three parts: body, diaphragm & cover plate, no wet metal spring inside the control chamber
- 3 way control principle ensure fast and reliable opening
- Open fail safe valve in high ambient temperatures
- Maintained in stand-by closed position
- Low maintenance cost: the valve is serviced in-line and only one replaceable part - the 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 a solenoid (DN50 - DN100 valves) or indirectly, by a solenoid operating an actuator (DN150 - DN200 valves)
- Soft closing by controlled pressurization of the valve's control chamber, prevents surges

#### APPROVALS

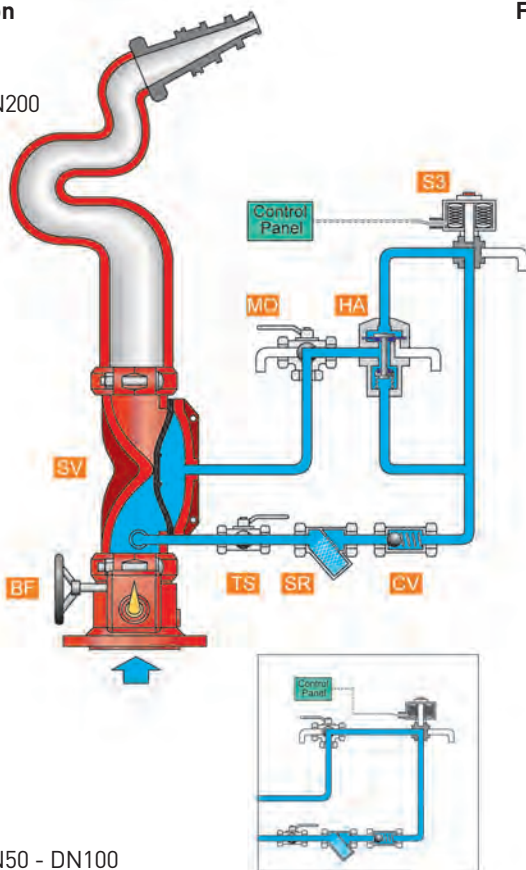




## Schematic drawing

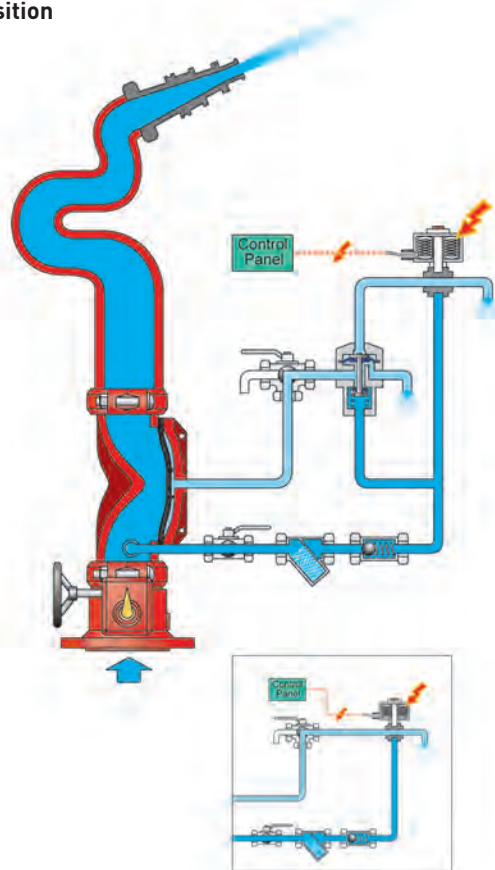
### Set position

DN150 - DN200



DN50 - DN100

### Fire position



**SV** - FDV-R Valve

**TS** - Trim supply valve

**SR** - "Y" strainer

**CV** - Check valve

**S3** - Solenoid valve (3 way)

**MO** - Manual Operation valve (3 way)

**HA** - Hydraulic Actuator Valve (3 way)

**PF** - Butterfly valve

## OPERATION

### SET position

Pressurized water in the valve's control chamber (SV) is trapped by the Check Valve (CV), forces the valve's diaphragm against its seat and maintains the FDV-R valve close.

### FIRE situation

(DN50-DN100 valves) An electric signal transmitted, commands the 3 way solenoid valve (S3) to open and drain the FDV-R's control chamber. The valve opens and admits water to the monitor pipeline.

(DN150-DN200 valves) An electric signal transmitted, commands the 3 waysolenoid valve (S3) to open and drain the Hydraulic actuator's control chamber. Consequently, the actuator change state and drains the FDV-R's Control Chamber. The valve opens and admits water to the monitor pipeline.

Opening the Manual Operation valve (MO), bypasses all term, drains the FDV-R's control chamber and opens the valve.

### RESET position

(DN50-DN100 valves) An electric signal transmitted, commands the 3 way solenoid valve (S3) to open and drain the FDV-R's control chamber. The valve opens and admits water to the monitor pipeline.

(DN150-DN200 valves) An electric signal transmitted, commands the 3 way solenoid valve (S3) to open and drain the Hydraulic actuator's control chamber. Consequently, the actuator change state and drains the FDV-R's Control Chamber. The valve opens and admits water to the monitor pipeline.

Opening the Manual Operation valve (MO), bypasses all term, drains the FDV-R's control chamber and opens the valve.

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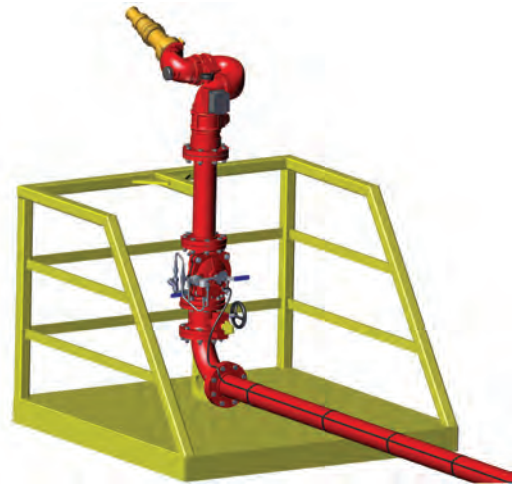
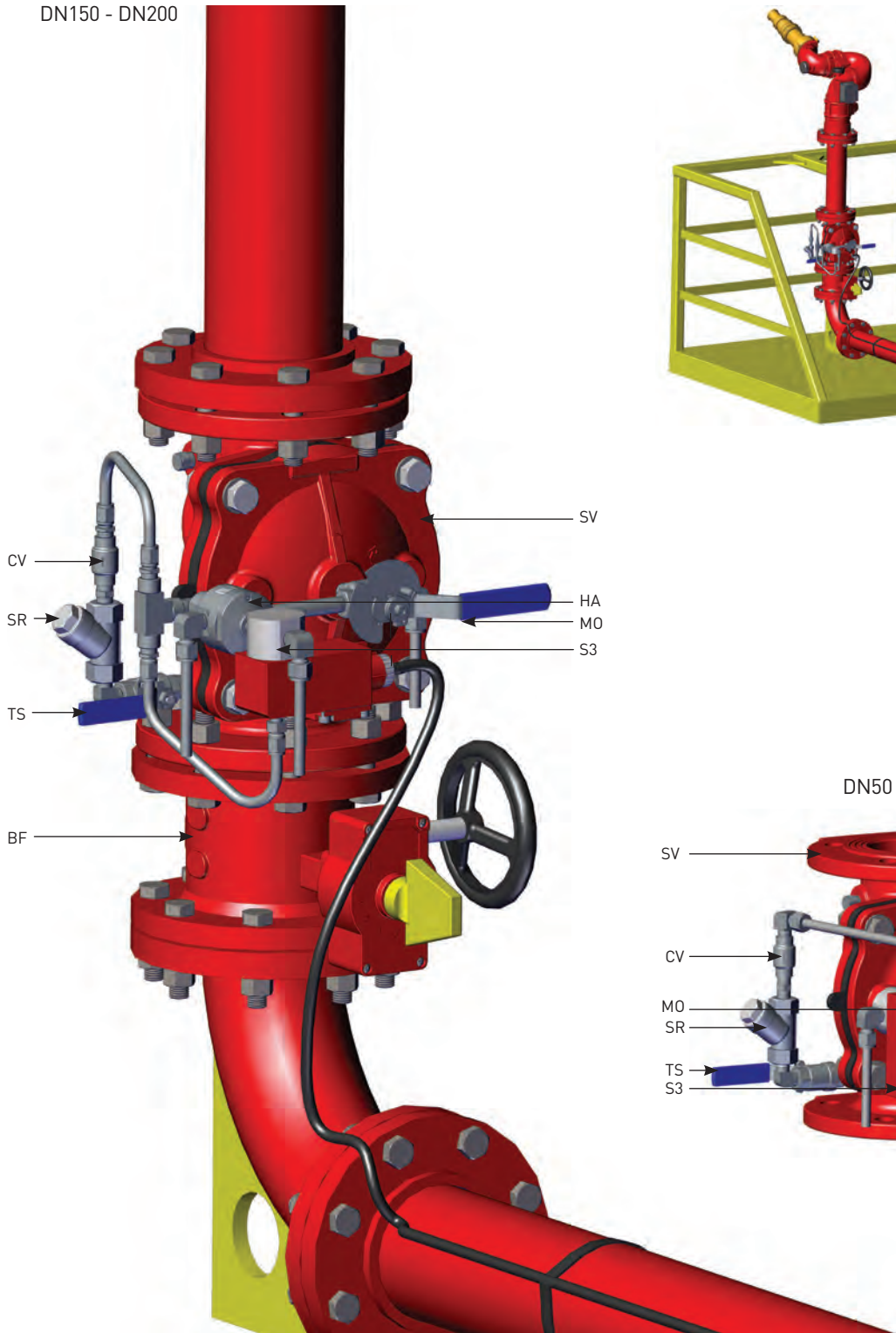
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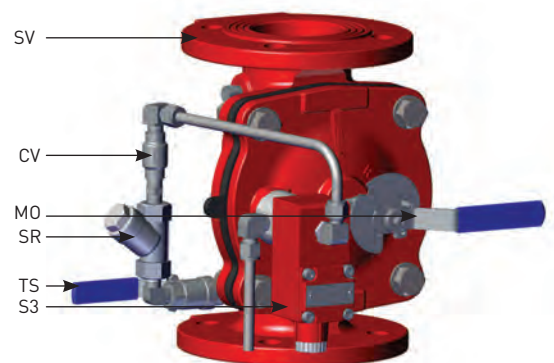
# FDV-R - ME1

## Typical installation

DN150 - DN200



DN50 - DN100



**SV** - FDV-R Valve  
**TS** - Trim supply valve  
**SR** - "Y" strainer

**CV** - Check valve  
**S3** - Solenoid valve (3 way)  
**MO** - Manual Operation valve (3 way)

**HA** - Hydraulic Actuator Valve (3 way)  
**PF** - Butterfly valve

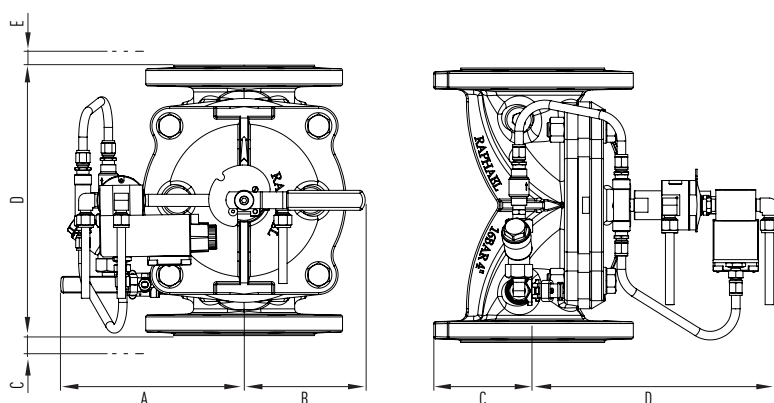
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## Dimensions Table

Size	2"		2.5"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	197	7.8	215	8.5	219	8.6	170	6.7	236	9.3	247	9.7
B	83	3.3	93	3.7	100	3.9	115	4.5	151	5.9	177	7
C	17	0.7	4	0.2	-	-	-	-	-	-	-	-
D	190	7.5	215	8.5	283	11.1	305	12	406	16	470	18.5
E	82	3.2	70	2.8	13	0.5	7	0.3	-	-	-	-
F	82	3.2	8.9	3.5	100	3.9	109	4.3	142	5.6	160	6.3
G	188	7.4	201	7.9	214	8.4	265	10.4	348	13.7	418	16.5
Kg/lb	10.2	22.5	12.6	27.8	19.2	42.3	25.5	56.2	51.4	113.3	68.8	151.7



## 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
- System installation orientation
- Additional accessories needed

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

# Hydraulic Hydrants

## Local Hydraulic Actuated, Hydrant Valve

## FDV-Ra- HH0

The FDV-Ra-HH0 is a hydraulic controlled On-Off Fire Hydrant, designed to connect a pressurized fixed water supply network to a mobile extinguishing unit, through a fire brigade's quick coupling adapter.

Mounted on a breakage device or directly onto a riser, the FDR-Ra-HH0 Hydraulic Hydrant is locally commanded to open/close by a manual emergency valve. The manual emergency command valve by pressurizing or de-pressurizing the main valve's control chamber, enabling a quick and effortless operation of the Hydraulic Hydrant. Designed for vertical installation, the Angle pattern, line pressure operated FDV-Ra-HH0 Hydraulic Hydrant, features a direct elastomeric diaphragm seal with 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



Industry



Storage



Tunnels

### TECHNICAL DATA

#### FLUID:

Water, Brackish water, Sea water

#### SIZE RANGE:

50mm to 200mm (2" to 8")

#### AVAILABLE CONNECTIONS ENDS:

Flange\*Hose Coupling, Groove\*Hose Coupling,  
Thread\*Hose Coupling

#### PRESSURE NOMINAL:

250 psi (17.2 bar)

#### ACCESSORIES UPON REQUEST:

Pressure gauge, Stand pipe, Breakage device

### ADVANTAGES

- Only three parts: body, diaphragm & cover plate, no wet metal spring inside the control chamber
- 3 way control principle ensure fast and reliable opening
- Open fail safe valve in high ambient temperatures
- Maintained in stand-by closed position
- Low maintenance cost: the valve is serviced in-line and only one replaceable part - the long-life elastomeric diaphragm
- Conforms with inspection, Testing and Maintenance Standard of water-based Fire Protection Systems, NFPA 25

Upon request:

A large selection of stand pipes, offered in various sizes, materials and coatings.  
A brakeage device for water outlet prevention, in case of mechanical damage.

### CHARACTERISTICS

- Hydro-dynamic pattern design ensures high flowrates with minimum head loss
- Simple and reliable design
- Quick respond and fast opening of the valve at emergency situation

### APPROVALS



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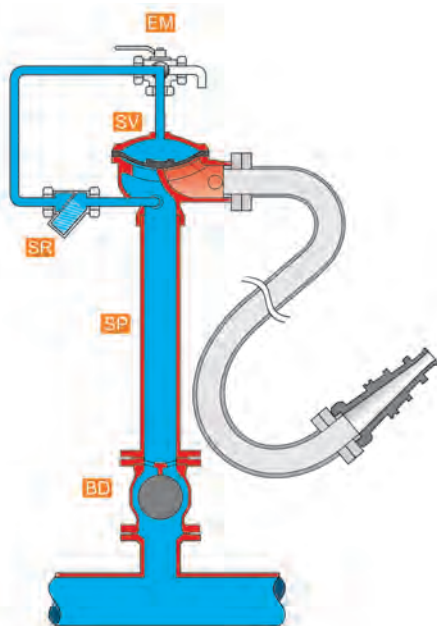
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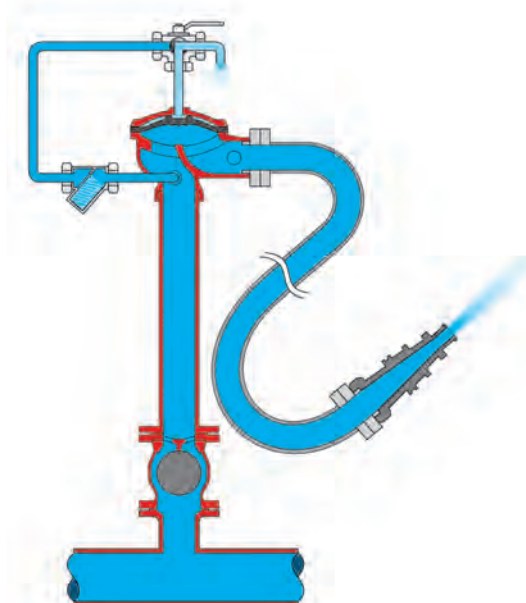


## Schematic drawing

### Set position



### Fire position



**SV** - FDV-R Valve

**MO** - Manual Operation valve (3 way)

**SR** - strainer

**SP** - Stand pipe

**BD** - Breakage device

## OPERATION

### SET position

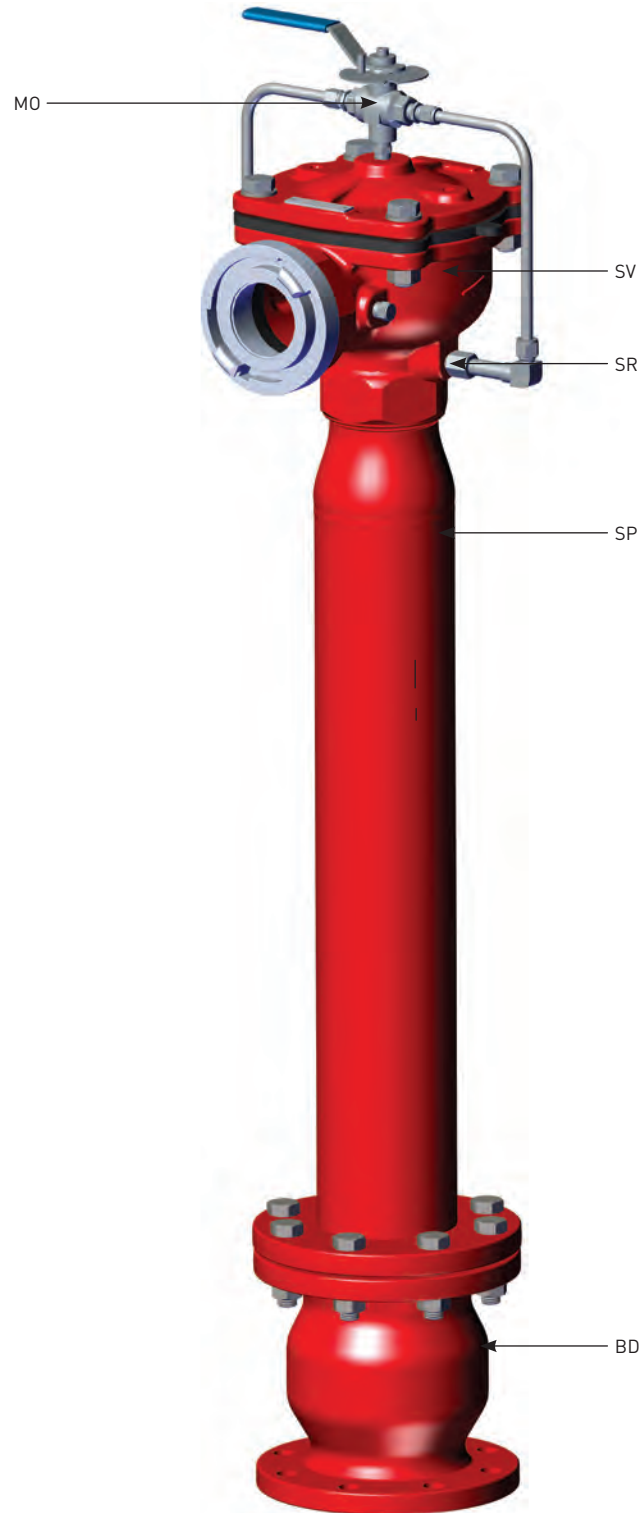
Pressurized water in the valve's control chamber (SV) is trapped by the 3 way manual emergency valve (MO), forces the valve's diaphragm against its seat and maintains the FDV-R valve close.

### FIRE situation

Opening the Manual Operation valve (MO), drains the FDV-R's control chamber and opens the valve.

# FDV-Ra- HH0

## Typical installation



**SV** - FDV-R Valve

**MO** - Manual Operation valve (3 way)

**SR** - strainer

**HA** - Hydraulic Actuator Valve (3 way)

**SP** - Stand pipe

**BD** - Breakage device

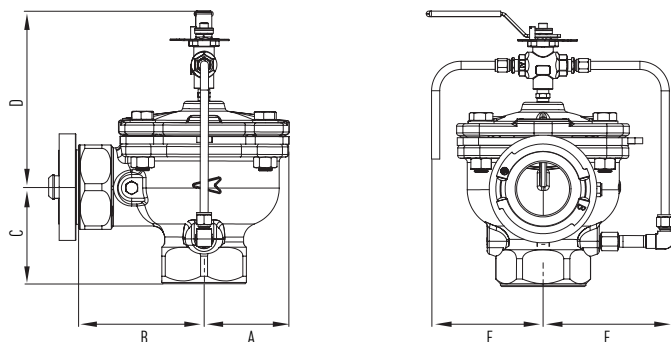
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## Dimensions Table

Size	2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	62	2.4	100.0	3.9	116.0	4.6	136.0	5.4	175.0	6.9
B	87	3.4	171.0	6.7	158.0	6.2	212.0	8.3	221.0	8.7
C	83	3.3	114.0	4.5	108.0	4.3	125.0	4.9	169.0	6.7
D	176	6.9	208.0	8.2	225.0	8.9	282.0	11.1	346.0	13.6
E	106	4.2	151.0	5.9	172.0	6.8	205.0	8.1	245.0	9.6
F	63	2.5	126.0	5.0	150.0	5.9	176.0	6.9	210.0	8.3
Kg/lb	5	11.0	14.0	30.8	25.0	55.0	47.0	103.4	71.0	156.2



## 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
- Hose Connection type
- Additional accessories

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

## Hydraulic Hydrants

### Hydraulic Actuated, Pressure Reducing Hydrant Valve

### FDV-Ra- HHP

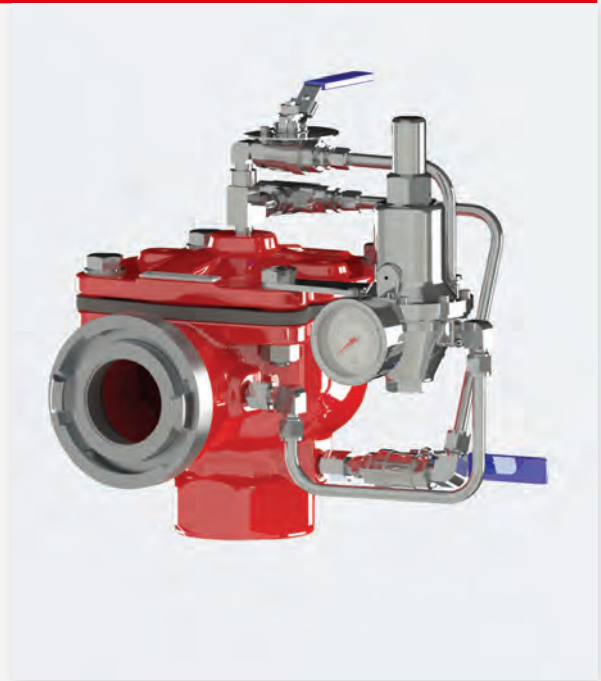
The FDV-R-HHP is a hydraulic controlled On-Off Fire Hydrant, designed to connect a pressurized fixed water supply network to a mobile extinguishing unit, through a fire brigade's quick coupling adapter.

Mounted on a breakage device or directly onto a standpipe, the FDR-R-HHP Hydraulic Hydrant is locally commanded to open/close by a manual emergency valve.

The manual emergency valve commands by pressurizing or de-pressurizing the Hydraulic Hydrant's control chamber, enabling a quick and effortless operation of the Hydraulic Hydrant.

Once commanded to open, the FDR-R-HHP valve acts as a pressure reducing valve, reducing the inlet water pressure to a pre-set desired outlet pressure. The outlet pressure is maintained constant regardless of fluctuations in flow rate and changes in main pipeline pressure.

Designed for vertical installation, the Angle pattern, line pressure operated FDV-R-HHP Hydraulic Hydrant features a direct elastomeric diaphragm seal with 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



Industry



Storage



Tunnels

#### TECHNICAL DATA

##### FLUID:

Water, Brackish water, Sea water

##### SIZE RANGE:

50mm to 200mm (2" to 8")

##### AVAILABLE CONNECTIONS ENDS:

Flange\*Hose Coupling, Groove\*Hose Coupling, Thread\*Hose Coupling

##### PRESSURE NOMINAL:

250 psi (17.2 bar)

##### REGULATION RATIO:

5:1

##### SENSITIVITY:

1.45 psi (0.1 Bar)

##### ACCESSORIES UPON REQUEST:

Pressure gauge, Stand pipe, Breakage device

#### ADVANTAGES

- Only three parts: body, diaphragm & cover plate, no wet metal spring inside the control chamber
- 3 way control principle ensure fast and reliable opening
- Open fail safe valve in high ambient temperatures
- Maintained in stand-by closed position
- Low maintenance cost: the valve is serviced in-line and only one replaceable part - the long-life elastomeric diaphragm
- Conforms with inspection, Testing and Maintenance Standard of water-based Fire Protection Systems, NFPA 25

Upon request:

A large selection of stand pipes, offered in various sizes, materials and coatings.  
A brakeage device for water outlet prevention, in case of mechanical damage.

#### CHARACTERISTICS

- Hydro-dynamic pattern design ensures high flowrates with minimum head loss
- Simple and reliable design
- Quick respond and fast opening of the valve at emergency situation
- Pressure reducing to a predetermined set of outlet pressure

#### APPROVALS



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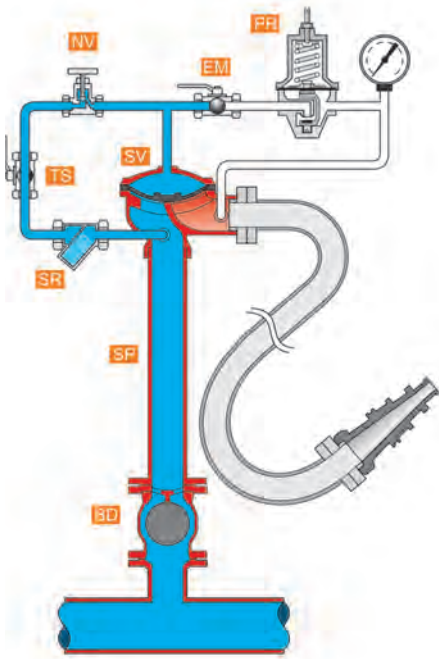
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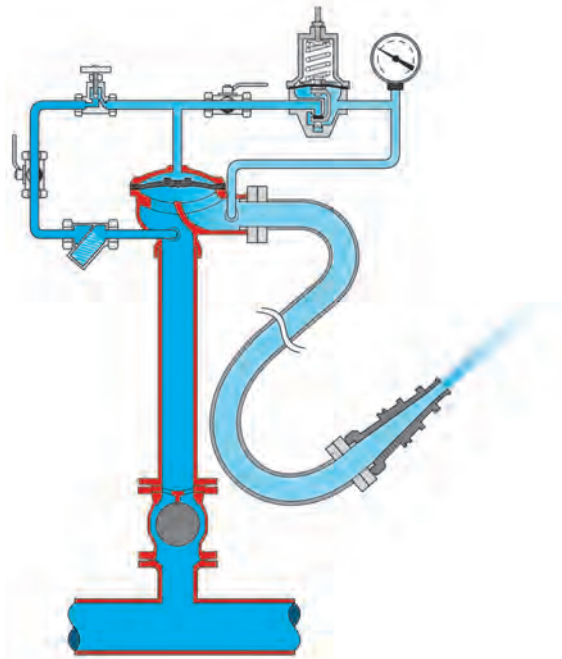


## Schematic drawing

### Set position



### Fire position



**PR** - PRDV-pressure reducing pilot vane

**EM** - Manual Operation valve (2 way)

**NV** - Needle valve

**TS** - Trim supply valve

**SR** - Strainer

**SV** - FDV-R Valve

**SP** - Standpipe

**BD** - Breakage device

## OPERATION

### SET position

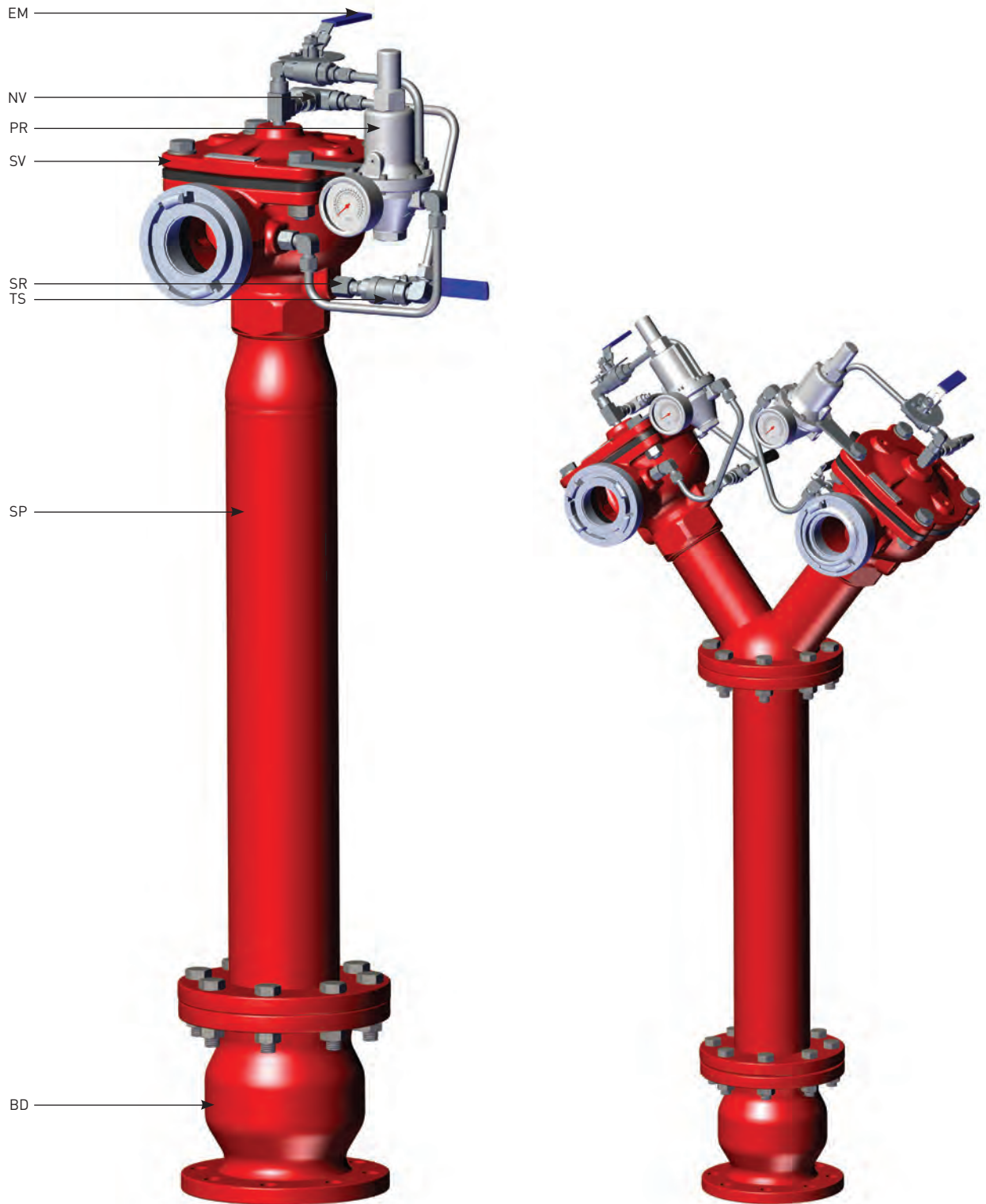
Pressurized water in the valve's control chamber (SV) is trapped by the 2 way manual emergency valve (EM), forces the valve's diaphragm against its seat and maintains the FDV-Ra valve close.

### FIRE situation

Opening the Emergency Manual Operation valve (EM), drains the FDV-Ra's control chamber through the pressure reducing pilot (PR) and opens the valve, maintaining a fixed outlet set pressure.

# FDV-Ra- HHP

## Typical installation



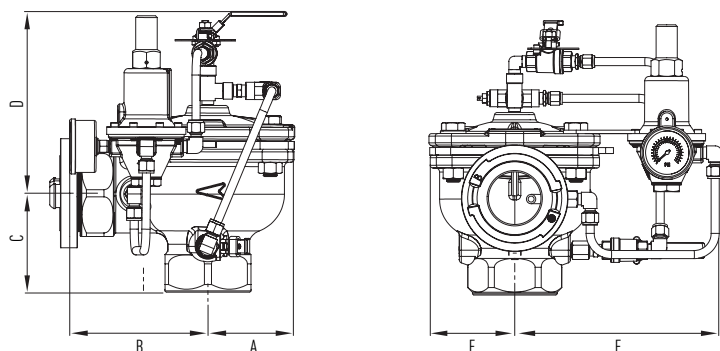
**PR** - PRDV-pressure reducing pilot valve  
**EM** - Manual Operation valve (2 way)  
**NV** - Needle valve

**TS** - Trim supply valve  
**SR** - Strainer  
**SV** - FDV-R Valve

**SP** - Standpipe  
**BD** - Breakage device

## Dimensions Table

Size	2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	98	3.9	100.0	3.9	107.0	4.2	136.0	5.4	175.0	6.9
B	92	3.6	149.0	5.9	175.0	6.9	212.0	8.3	221.0	8.7
C	83	3.3	114.0	4.5	108.0	4.3	142.0	5.6	169.0	6.7
D	178	7.0	210.0	8.3	227.0	8.9	284.0	11.2	348.0	13.6
E	210	8.3	245.0	9.6	257.0	10.1	303.0	11.9	328.0	12.9
F	63	2.5	101.0	4.0	114.0	4.5	151.0	5.9	179.0	7.0
Kg/lb	8.5	18.7	17.0	37.4	28.0	61.6	50.0	110.0	74.0	162.8



## 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
- Downstream set pressure
- Hose Connection type
- Additional needed accessories

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

# MECHANICAL HYDRANTS

THE MAIN PURPOSE OF HYDRANTS IS THE WITHDRAWAL OF WATER FOR EXTINGUISHING FIRES. THEY ARE CONNECTED DIRECTLY TO THE UNDERGROUND DRINKING WATER NETWORK.

THE TALIS HYDRANTS ARE AVAILABLE IN TWO DESIGNS, UNDERGROUND AND STAND POST HYDRANTS, WHICH OFFER SPECIAL ADVANTAGES DEPENDING ON THE AREA OF APPLICATION.

THE WIDE RANGE OF HYDRANTS MEET THE MOST STRINGENT FIRE REQUIREMENTS AND COMPLY WITH ALL INTERNATIONAL STANDARDS, APPROVALS AND TESTING REQUIREMENTS.

**65%**  
OF HYDRANT IN EUROPE ARE  
UNDERGROUND VERSION

**EASY**  
TO INSTAL

**WIDE  
RANGE**  
WITH ALL RELEVANT  
APPROVALS

**50**  
YEARS LIFE SPAN

**SIMPLE**  
FOR MAINTENANCE

**OPTIMUM**  
CORROSION  
PROTECTION



# TALIS' ANSWERS



└ TALIS group has established in France a **hydrant center of competency** which centralizes all new development and oversees three R&D engineering offices in Europe. This organization allows us to share our expertise and pool our technical know-how in order to continually improve our range.

└ Sharing ideas allows us to be more **creative and innovative** to meet the user requirements and anticipate their needs. These smart products are the latest development to help water companies improve their water network efficiency and identify Non-Revenue Water.



└ **A broad range of products in both underground and standpost design**, offers suitable solutions for all areas of application. We provide to our customers with a high degree of flexibility to fulfill their many requirements. The products are provided with the outlet types required by the country's standards, a breakable system to avoid leakage in case of impact and a quick repair kit to reduce the cost of maintenance.

└ **Robust, designed for durability**, the products are made in spheroidal cast iron. The quality of the materials used, that are in contact with water, as well as the coating, increase the lifetime of the products. Some standpost are offered with a protective mantle providing protection to the users from the bayonet connections also protecting the standpost pipe from aggressive climatic conditions. All products have an optimized design to reduce installation, maintenance and operational costs for customers.



└ **Various coating for high level of corrosion protection**, depending the country's requirements, TALIS group is able to supply three different coating types

- Epoxy by cataphoresis: Combining the advantages of both processes (cataphoresis + Epoxy) to ensure effective corrosion protection by limiting the overall coating thickness that can cause a lower impact resistance.
- Enamelled: Enamel is a vitreous, high-strength material, wherein short fibres in the material form a durable and permanent bond with the metallic substrate material, which prevents the enamel from cracking in the event of damage.
- DUPLEX corrosion protection: An innovative corrosion protection system made up of two components: zinc as a basic coat and a topcoat, on an EP/PUR basis, as the second coat.



# BAYARD HYDRANT

SINCE THE BEGINNING OF THE 20<sup>TH</sup> CENTURY, BAYARD HAS ACQUIRED A HUGE KNOW HOW IN THE FIRE PROTECTION SEGMENT AND HAS DEVELOPED A WIDE RANGE OF FIRE HYDRANTS. THEIR INNOVATIONS AND THE QUALITY OF THEIR PRODUCTS HAVE PROPELLED THEM TO NATIONWIDE PROMINANCE. FOR MORE THAN 50 YEARS BAYARD HAS STOOD UP AS A LEADER IN THE FRENCH MARKET WITH A 65% MARKET SHARE AND MORE THAN 700 000 STANDPOSTS AND UNDERGROUNDS INSTALLED IN FRANCE.

## A LEADING RANGE OF HYDRANTS

**complying with the highest customer requirements  
in respect of French regulations**



EMERAUDE RANGE



SAPHIR RANGE

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## WHICH TYPE OF CONNECTION IS IT?

Everywhere in France, all fire hydrants have an identification colour which is helpful for fireman to save precious time on site in order to choose the right type of hose to connect to them.

Two levels of information are given by the product:

- └ Type of water network indicated by colour of product body (SAPHIR range) or protective mantle (EMERAUDE range).
- └ Diameter / flow rate of network indicated by the colour of sticker on protective mantle (EMERAUDE range) or size of product (SAPHIR range).

	RED	BLUE	YELLOW
TYPE OF NETWORK	Under pressure	Suction application	Supressed network
EMERAUDE	 <p>DN80 DN100 DN150</p>		
SAPHIR			

### EMERAUDE installed on the city water network



### Vintage design for old down town installation



### Suction fire hydrant installed when water network is not available



SAPHIR DN150



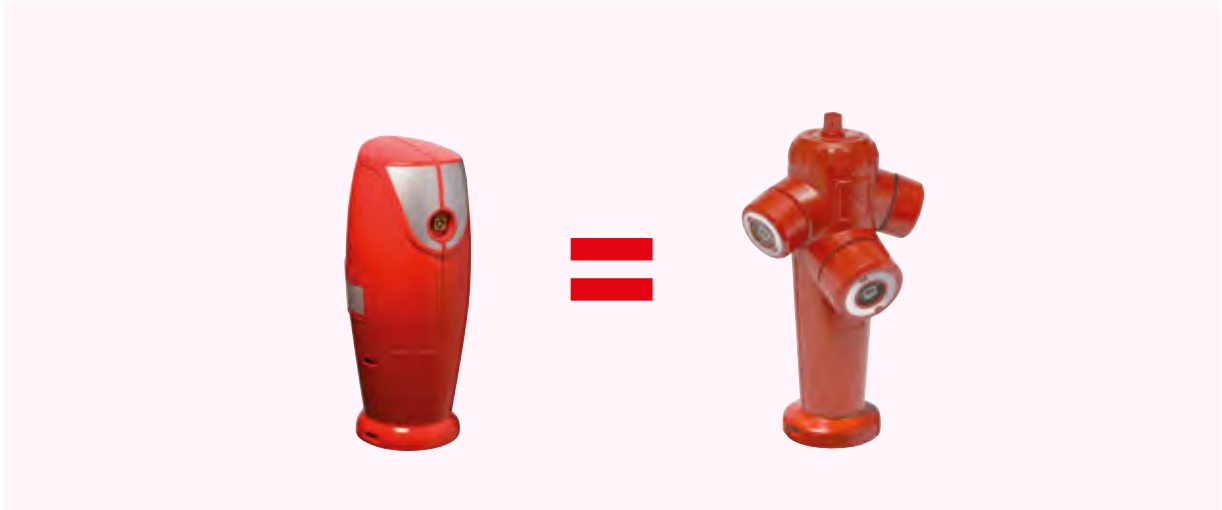
SAPHIR DN100



EMERAUDE DN100

# BAYARD RETHINKS THE FIRE PROTECTION

8 optimized standpost offers with protective mantle or apparent outlets



EACH NEEDS  
IS CORRESPONDING AN OFFER

BRONZE	SILVER	GOLD	SMART
AS SUCCESSFUL AS IT IS ESSENTIAL	OPTIMIZED MAINTENANCE	PREMIUM QUALITY	A REALTIME MONITORING OF THE FIRE HYDRANTS FLEET
	+ product	+ product	+ product
	+ REMOVABLE DRAIN	+ 250µm COATING	+ TAGUA
		+ STAINLESS STEEL AND BRONZE COMPONENTS	+ COPERNIC FACTORY FITTED
		+ EXTENDED WARRANTY	

ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ

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# 3

## CONNECTION POSSIBILITIES



**WEB  
CONNECTION  
WEB 24H/24**

+ *product*

+ TAGUA & COPERNIC  
FACTORY FITTED



**OPTION,  
POSSIBLE  
TO INSTALL  
COPERNIC  
ON**



**CONNECT ALL  
YOUR  
STANDPOSTS  
ALREADY  
INSTALLED**

INTEGRATE  
THE ASSET  
MANAGEMENT  
TAGUA™  
MONITORING  
FIRE HYDRANT  
WITH COPERNIC™  
SOLUTION

BAYARD RANGES HAVE BEEN DEVELOPED TO SAVE MAINTENANCE COST, TO SAFE ITS USAGE BY FIREMEN AND TO PROTECT THE WATER NETWORK.

### EASY FOR THE MAINTENANCE

Among multiple benefits offered by the BAYARD range, one of the most important is the backward compatibility of spare parts. Since 1973 the ranges has been improved in order to retain internal backward compatibility of spare parts for all models, reducing the need for customers to keep spare parts in stock.

The annual maintenance of the valves can be done from above, thus avoiding the need to dig. The spindle can be removed easily for the top of the hydrant.

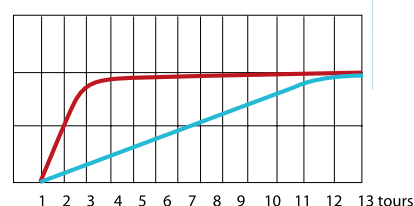


### THE SECURITY FOR USERS

The air clap's function is to decompress the pillar hydrant. In case of wrong handling, the stand post may come under pressure from the residual water inside. Handling the stand post to open an outlet can therefore be dangerous. By pressing the clap air, the air will be dispelled, permitting the outlet to be opened safely. The water will remain in the pillar without being ejected.

### THE PROTECTION OF WATER NETWORK

In case of quick opening and closing fire hydrant, the special design of the shut off valve prevents water hammer, while its shape drastically reduces the vibrations which could damage the water pipe.



Progressive closing, blue curve

### EASY TO INSTALL

Whatever the ground configuration for a primary installation or after works on streets, standposts and undergrounds may be raised and adapted to all heights with **adjustable** pipes.

The product can be handled easily without causing damage thanks to the **polyester packaging**.

Full range from DN65 to DN150 adapted for **freezing and hot climatic** conditions .





# ERHARD HYDRANT

ERHARD HYDRANTS ARE AVAILABLE IN TWO BASIC DESIGNS WHICH OFFER SPECIAL ADVANTAGES DEPENDING ON THE AREA OF APPLICATION:

- └ THE **UNDERGROUND HYDRANT** IS NOT A TRAFFIC OBSTACLE AND, THANKS TO ITS POSITION, SAFE FROM DAMAGE.
- └ IN CONTRAST, THE **POST HYDRANT** IS ALWAYS EASILY VISIBLE, EVEN IN THE DARK OR SNOW. ANOTHER ADVANTAGE IS THAT NO ADDITIONAL STANDPIPE IS NEEDED TO WITHDRAW WATER, WHICH MEANS WATER IS AVAILABLE IMMEDIATELY.

With its broad range of products in both product areas, ERHARD offers suitable solutions for every area of application and has thus been a tried-and-trusted partner to utilities companies and fire brigades all over the world for many years. The range is supplemented by suitable accessories such as extensions, protective covers, bayonet connections and much more besides.

In contrast to valves in systems, hydrants are installed in the public space and have to be able to be operated easily and safely by fire officers in the event of a fire.

Post hydrants are also exposed permanently to the weather, which must not have any limiting effect on function. For this reason, the most stringent requirements are applicable for hydrants in terms of operational safety and durability.



## PROPERTIES AND ADVANTAGES AT A GLANCE

### 1 Maximum tightness long-term

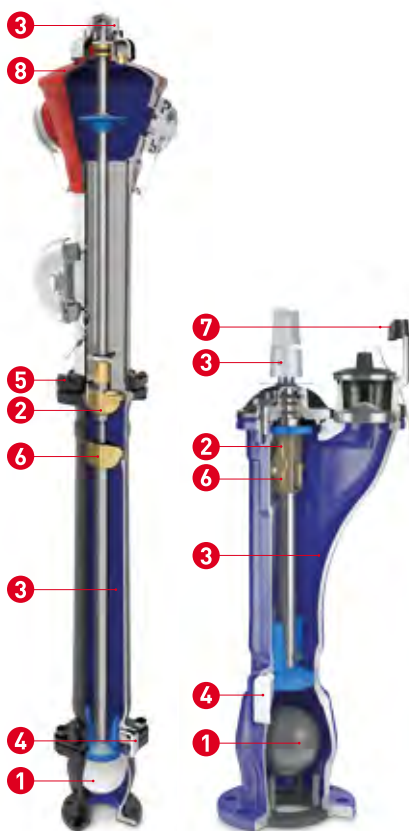
Double cut-off with ball on enamelled seat and PUR shut-off cone

### 2 Inner fittings are not ejected during maintenance or dismantling work

Safety interlock, stop and anti-rotation grip for the inner fittings

### 3 Durability and operational safety even after many years

Top material quality and perfect corrosion protection e.g. through sleeve pipes enamelled on the inside, blind threaded holes, galvanised square caps or bonnets made of cast aluminium



### 4 Hygiene and frost protection

Safe water draining through draining valve and draining pipe with dry section

### 5 Ease of service and repairs

Defined break system on the post hydrants, continuously adjustable rotation

### 6 Low actuating torques during opening

Integrated thrust washers

### 7 Safe vibration-free operation

Bayonet with special lug for anchoring the standpipe hydrant head inside and out- side blue enamelled, outside additionally red enamelled  
Inside: smooth surface, hygienic, against deposits.  
Outside: resis



ERHARD hydrants have numerous well-thought-out design features guarantee users reliable operation and maximum safety.

### CUT-OFF PROVIDES MAXIMUM SAFETY THANKS TO PUR CONE AND MULTI-CHAMBER BALL

The shut-off cone in ERHARD hydrants is connected to the valve insert pipe by a secure compression connection and thus reliably seals the enamelled seat of the bottom part of the post.

### DOUBLE CUT-OFF

The safety system is supplemented by an additional cut-off with a multi-chamber ball or a steel plate ball in the case of underground hydrants. This closes the seal on the inlet fitting solely through water pressure and thus guarantees double safety.



### SOPHISTICATED SAFETY INTERLOCK

ERHARD post hydrants are equipped with a safety interlock directly under the break system. This reliably prevents ejection of the inner set of fittings, should the working pressure be unforeseeably applied at the shut-off cone when the hydrant is dismantled.

### SERVICE-FRIENDLY BREAK SYSTEM AND ROTATION OF THE UPPER PART OF THE POST

The break system can easily be repaired in the event of damage (e.g. if the hydrant is damaged in an accident). The break ring safely protects all the internal drive parts from damage. The design also allows the upper part of the post to be turned continuously through 360° after the connection bolts have been loosened.



### RELIABLE DRAINING

After the hydrant has been used, a draining valve on the hydrant head together with a draining pipe on the main shut-off valve, which has a sufficient dry section, ensures reliable discharge of the residual water. This guarantees reliable hygiene and safe frost protection.

### TOP MATERIAL QUALITY AND OPTIMUM CORROSION PROTECTION

- └ All the casing parts made of ductile cast iron are protected on the inside by ERHARD Pro-Enamel enamelling. Alternatively, stainless steel may be used for the upper parts of the posts.
- └ The drive parts are also made of stainless materials, making them predestined for decades of use in the ground
- └ The outer casing parts underground are coated with an enamel primer and double coating of synthetic resin.
- └ Special protection is required for the outer casing parts above ground, where the DUPLEX system – comprising zinc spraying and a double EP / PUR-based top coating – or full enamelling with ERHARD Pro-Enamel is used.





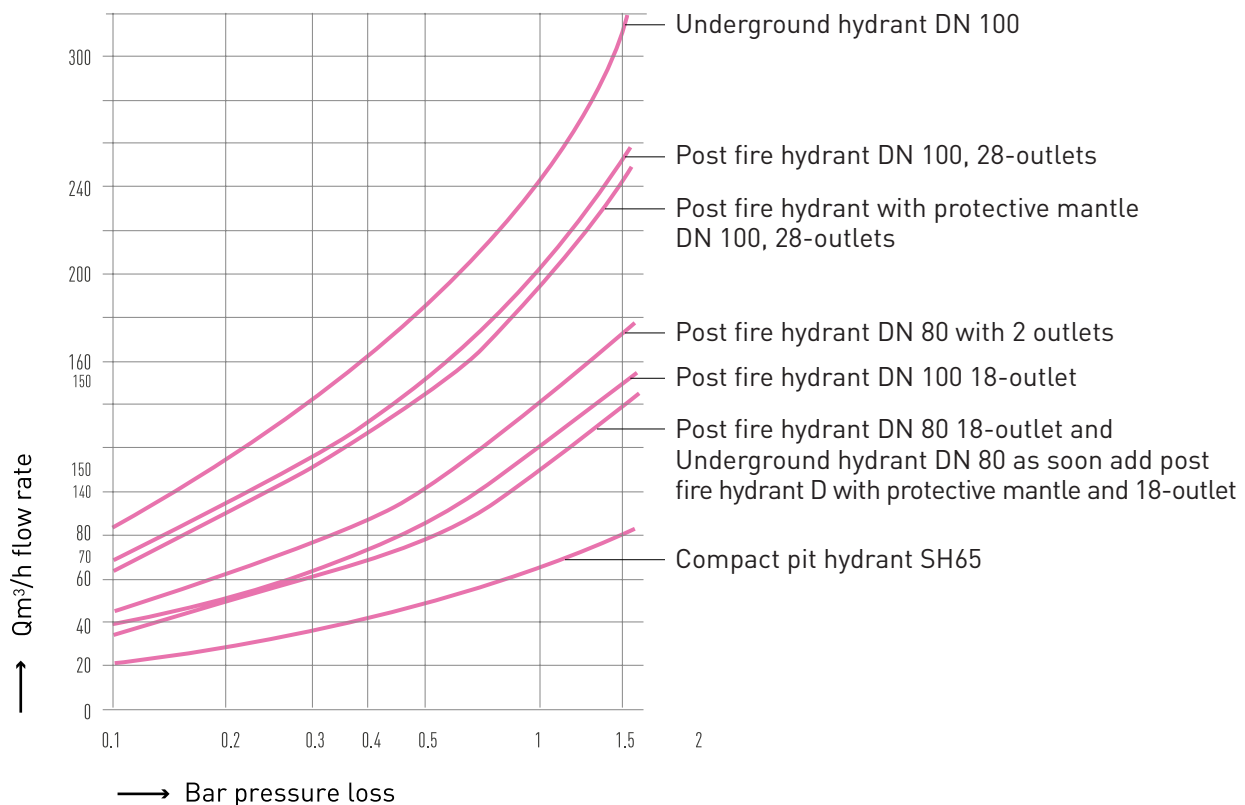
## ERHARD UNDERGROUND HYDRANT

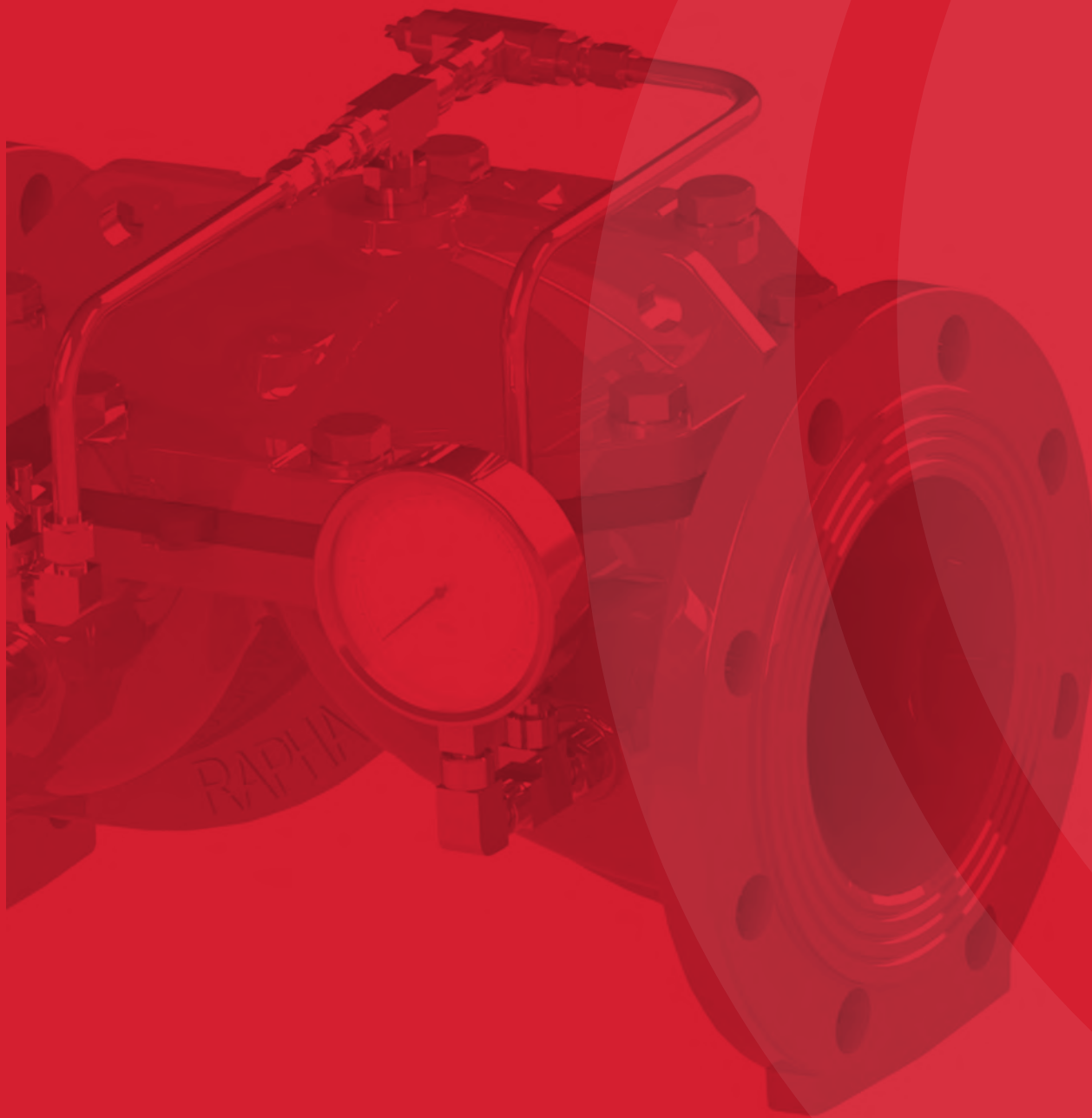
- └ The innovative shut-off cone makes the ERHARD underground hydrant DN80 with PUR cone particularly durable, since the PUR sheathing of the shut-off cone results in very high abrasion resistance and thus low wear. At the same time it is insensitive to dirt and has a very good tear propagation resistance and a high ageing resistance. It goes without saying that the ERHARD underground hydrant with PUR cone is also fitted with a safety interlock for the inner set of fittings which prevents their dangerous ejection during dismantling.
- └ During improper dismantling e.g. in an attempt to remove the inner set of fittings under operational pressure, the pressurised inner set of fittings is not ejected outwards but rather trapped by a safety stop. The underground hydrant is made completely in ERHARD Pro-Enamel for optimum corrosion protection.
- └ The ERHARD underground hydrant with flange connection is available with different claw-covers:
  - Claw-cover made of plastic
  - Self-locking claw-cover made of EN-JS1050
  - Claw-cover which remains open, made of EN-JS1050



An optimized design for all ERHARD ranges in order to minimize the pressure losses

Operation without cavitation to 1,3 times capacity







# SERVICE VALVES

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## CONTROL VALVES

FDV-R-PN2 - 145

FDV-R-RN2 - 149

## Control Valves

### Pressure Reducing Control Valve

### FDV-R-PN2

The FDV-R-PN2 Pressure reducing valve is an automatic hydraulic control service valve, designed to operate in fixed fire protection system.

The FDV-R-PN2 pilot controlled hydraulic valve is activated by line pressure. The pilot valve has a spring-loaded membrane which is sensitive to downstream pressure. The pilot's spring is pre-set to a desired reduced pressure. The pilot valve maintains a constant downstream pressure by gradually opening or closing of the main valve, reducing the inlet water pressure to a pre-set desired outlet pressure. The outlet pressure is maintained constant, regardless of fluctuations in flow rate and changes in main pipeline pressure.

Designed for vertical or horizontal installation, the line pressure operated FDV-R-PN2 Pressure reducing valve features a direct elastomeric diaphragm seal, with 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



Industry



Tunnels



Storage



Residential



Commercial

#### TECHNICAL DATA

##### FLUID:

Water, Brackish water, Sea water, Foam

##### SIZE RANGE:

FDV-R valve (globe) - 40mm to 400mm (1½" to 16")

FDV-Ra valve (angled) - 50mm to 200mm (2" to 8")

##### AVAILABLE CONNECTIONS ENDS:

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

##### PRESSURE NOMINAL:

250 psi (17.2 bar)

##### REGULATION RATIO: 5:1

SENSITIVITY: 1.45 psi (0.1 Bar)

#### APPROVALS



#### ADVANTAGES

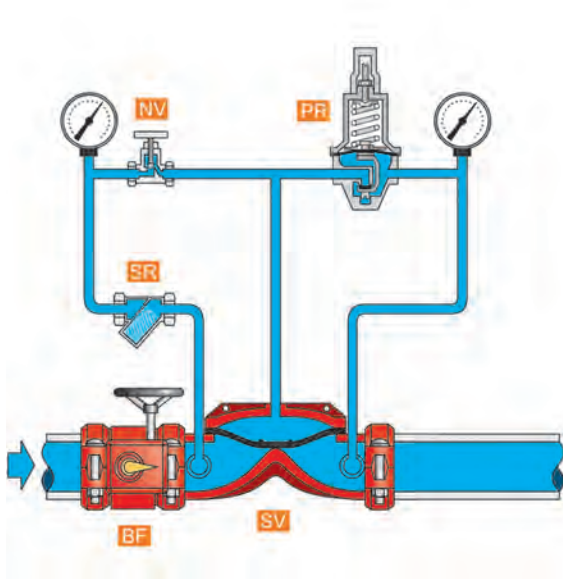
- Only three parts: body, diaphragm & cover plate, no wet metal spring inside the control chamber
- Low maintenance cost: the valve is serviced in-line and only one replaceable part - the long-life elastomeric diaphragm
- Conforms with inspection, Testing and Maintenance Standard of water-based Fire Protection Systems, NFPA 25
- Reduces inlet pressure to a predetermined fixed and constant outlet pressure, regardless of fluctuations or changes in main pipeline pressure and flow rate

#### CHARACTERISTICS

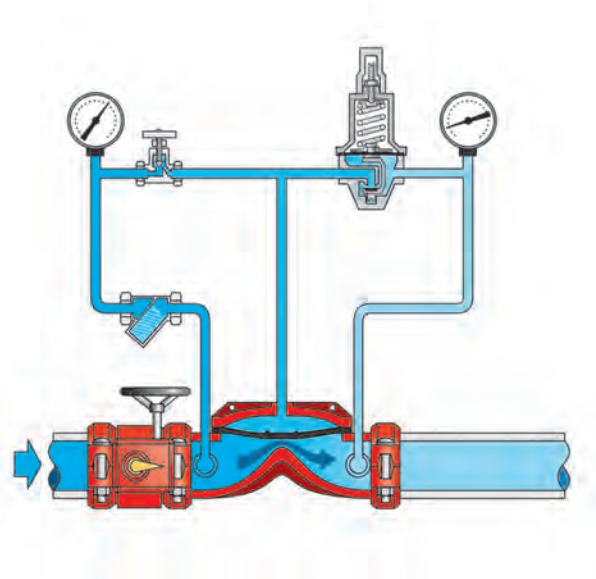
- Hydro-dynamic pattern design ensures high flowrates with minimum head loss
- Simple and reliable design
- Quick respond to downstream pressure changes
- Pressure reducing to a predetermined set of outlet pressure

## Schematic drawing

Set position



Fire position



**PR** - PRPV – Pressure Reducing  
Pilot Valve

**SV** - FDV-R service valve  
**BF** - Butterfly valve

**NV** - Needle valve

**SR** - strainer

### SET Position:

When a fire protection system is in a SET position, there is no flow at the system's piping and the water pressure is at the FDV-R-PN2 Pilot's SET pressure.

The FDV-R-PN2 valve's control chamber is pressurized by the inlet flow, calibrated by the Needle valve **[NV]** forcing the diaphragm against its seat maintaining the valve close.

### OPERATION

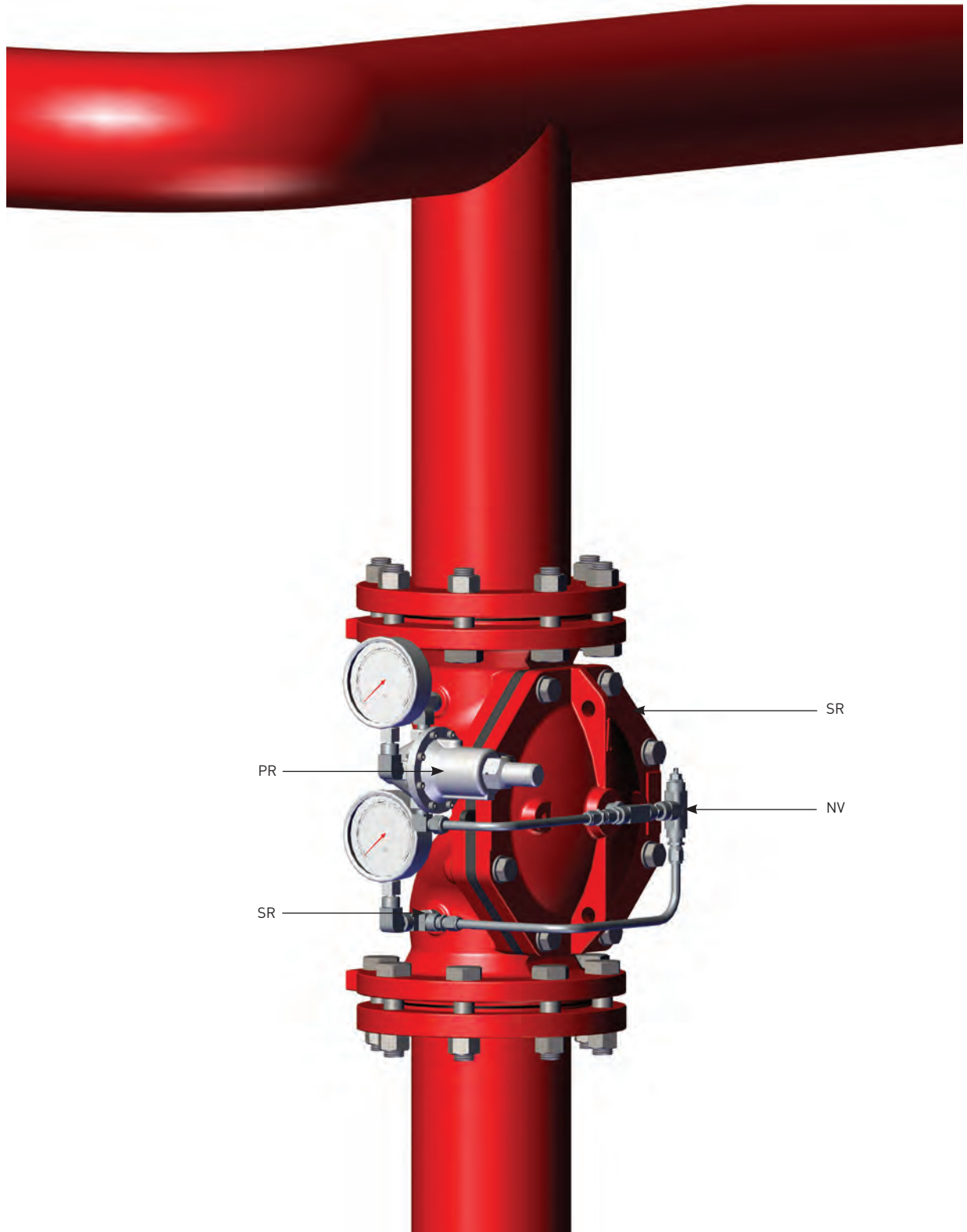
The FDV-R's control chamber is pressurized by a calibrated inlet flow passing through a needle valve **[NV]**, and de-pressurized by the PRPV pressure reducing pilot valve **[PR]**.

The pilot's drain flow volume is controlled by the downstream pressure passing through a sense pipe and manipulating the pilot's diaphragm and the seal mechanism.

Any change at the downstream pressure reflects the ratio between the volume of the control chamber's inlet and outlet flows. Consequently, the FDV-R valve's diaphragm position changes, maintaining the downstream at the pilot's set pressure.

# FDV-R- PN2

## Typical installation



**PR** - PRPV – Pressure Reducing  
Pilot Valve

**NV** - Needle valve

**SR** - Strainer

**SV** - FDV-R service valve

**BF** - Butterfly valve

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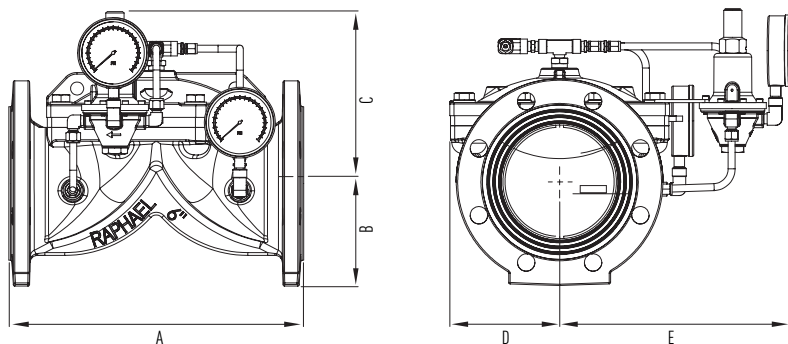
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## Dimensions Table

Size	1.5"-2"		3"		4"		6"		8"		10"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	190	7.5	283	11.1	305	12	470	18.5	406	16	635	25
B	57.5	2.3	100	3.9	109	4.3	160	6.3	142	5.6	198	7.8
C	268.5	10.6	306	12	177	7	308	12.1	195	7.7	317	12.5
D	111.5	4.4	111	4.4	115	4.5	177	7	150	5.9	233	9.2
E	166	6.5	182	7.2	261	10.3	304	13.4	307	12.1	237	10.7
Kg/lb	10.4	22.9	19.3	42.5	25.6	56.4	50.2	110.7	67.6	149	109.5	241.4



## 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
- Additional accessories needed

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

## Control Valves

### Pressure Relief Control Valve

### FDV-R-RN2

The FDV-R-RN2 Pressure Relief valve is an automatic hydraulic control service valve, designed to operate in fixed fire protection system, especially in fire pump units. The FDV-R-RN2 pilot controlled hydraulic valve is activated by line pressure. The pilot valve has a spring-loaded membrane which is sensitive to upstream pressure. The pilot's spring is pre-set to a desired maximum pressure. The pilot valve maintains a maximum pressure in the pipe system by quickly opening the main valve, discharging any excess pressure off the pipe system, preventing any potential damage.

Designed for vertical or horizontal installation, the line pressure operated FDV-R-RN2 Pressure Relief valve features a direct elastomeric diaphragm seal, with 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



Industry



Tunnels



Storage



Residential



Commercial

#### TECHNICAL DATA

##### FLUID:

Water, Brackish water, Sea water, Foam

##### SIZE RANGE:

FDV-R valve (globe) - 40mm to 400mm (1½" to 16")

FDV-Ra valve (angled) - 50mm to 200mm (2" to 8")

##### AVAILABLE CONNECTIONS ENDS:

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

##### PRESSURE NOMINAL:

250 psi (17.2 bar)

##### REGULATION RATIO: 5:1

SENSITIVITY: 1.45 psi (0.1 Bar)

#### APPROVALS



#### ADVANTAGES

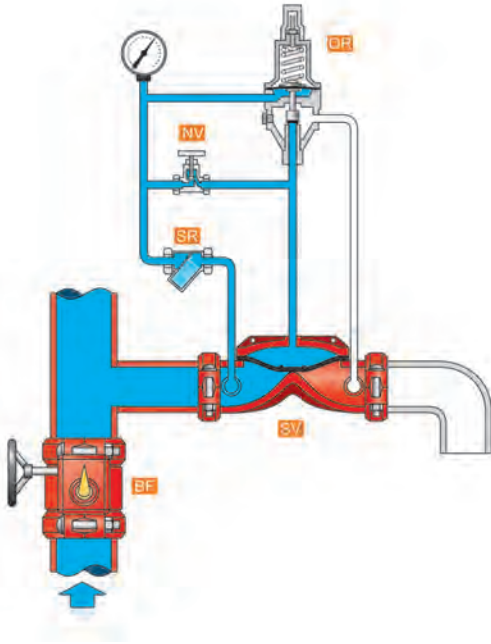
- Only three parts: body, diaphragm & cover plate, no wet metal spring inside the control chamber
- Low maintenance cost: the valve is serviced in-line and only one replaceable part - the long-life elastomeric diaphragm
- Conforms with inspection, Testing and Maintenance Standard of water-based Fire Protection Systems, NFPA 25
- Maintains a constant set upstream pressure securing the system from over pressure

#### CHARACTERISTICS

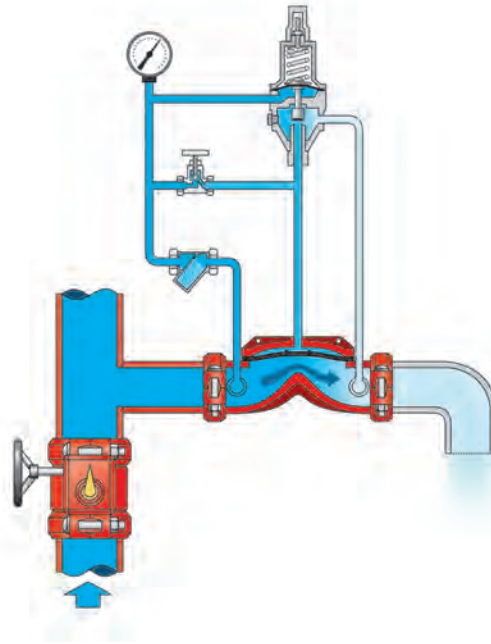
- Hydro-dynamic pattern design ensures high flowrates with minimum head loss
- Simple and reliable design
- Quick respond to downstream pressure changes

## Schematic drawing

Set position



Fire position



**QR** - QRPV – Quick Relief Pilot Valve      **SR** - strainer  
**NV** - Needle valve                                      **SV** - FDV-R service valve

### SET Position:

When a fire protection system is in SET position, and water pressure in the pipe system is maintained within the pre-established pressure range considered safe for operation, the FDV-R-RN2 will remain closed.

The FDV-R-RN2 valve's control chamber is pressurized by the inlet flow, pre calibrated by the Pressure Relief Pilot **[QR]** forcing the diaphragm against its seat, preventing the valve from opening.

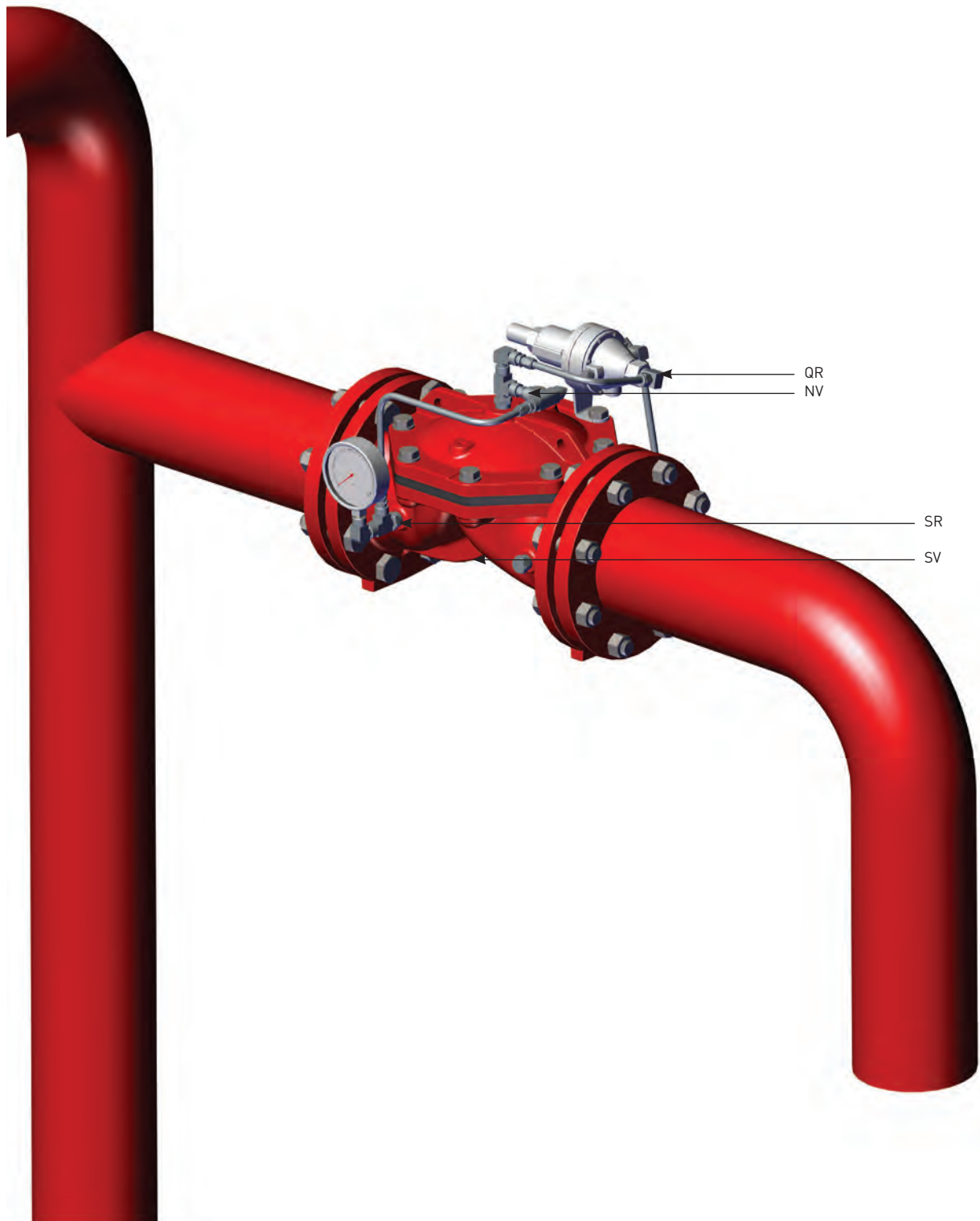
### OPERATION

When the Fire system trips open and Fire pump starts-up and pressure rises in the pipe system surpassing the preset maximum pressure, the FDV-R-RN2 will quickly open, to enable water discharge out of the pipe system to the valve's downstream.

The valve is controlled by the Pressure relief pilot. The pilot's is commanded by a hydraulic sensor port, connected to the pipe system, through the valve's upstream port. The pilot commands the valve to open, proportioning the adequate water passage necessary to maintain the system within the safe maximum required set pressure, regardless of system flow.

# FDV-R- RN2

## Typical installation



**QR** - QRPV – Quick Relief Pilot Valve

**NV** - Needle valve

**SR** - strainer

**SV** - FDV-R service valve

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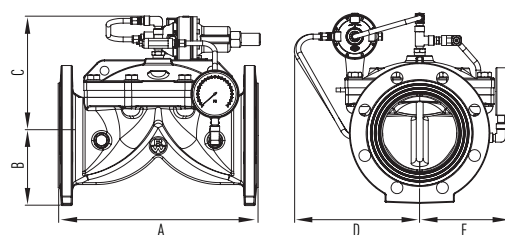
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## Dimensions Table

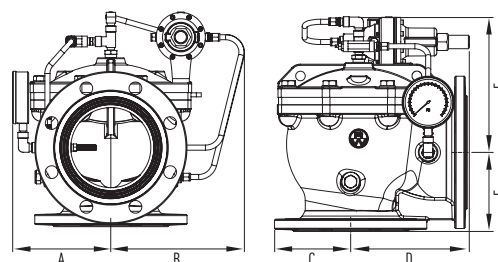
### FDV-R-RN2 Globe

Size	2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	111	4.4	198	7.8	190.6	7.5	184.2	7.3	277.5	10.9
B	176	6.9	162	6.4	176	6.9	352	13.9	245	9.6
C	146	5.7	172.6	6.8	184	7.2	137	5.4	220	8.7
D	120	4.7	154.3	6.1	178	7.0	218	8.6	226.4	8.9
E	83	3.3	116	4.6	113.8	4.5	148	5.8	171.5	6.8
F	229	9.0	208	8.2	220	8.7	253.7	10	314	12.4
Kg/lb	6.2	13.6	20.1	44.2	25.6	56.3	48.1	105.8	71.9	158.2



### FDV-Ra-RN2 Angled

Size	1.5"- 2"		3"		4"		6"		8"	
	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
A	190	7.5	314	12.4	336	13.2	410	16.1	470	18.5
B	82	3.2	100	3.9	109	4.3	142.5	5.6	161	6.3
C	204	8	197.2	7.8	209	8.2	241	9.5	308	12.1
D	211	8.3	163	6.4	177.6	7.0	253.4	10	250	9.8
E	166	6.5	182	7.2	202	8.0	184.2	7.3	451	17.8
Kg/lb	8.6	20	17.5	38.5	23.7	52.3	52.3	115.1	65.8	144.8



## 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

- Pattern: globe or angled
- Working Media
- Ambiental conditions
- Min/Max operating flow
- Min/Max operating pressure
- Upstream set pressure
- Additional accessories needed

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



# TAGUA

---

TAGUA - 155

# Smart Inside

## TAGUA Asset Management

## TAGUA

TAGUA is a 100% web software associated with a mobil application. It is dedicated to asset management for devices requiring a visit or regular maintenance.

On field, the mobil. application Smart-Inside is available for Android platform. The devices managed by TAGUA are equipped with a RFID NFC chip (radio-tag). Reading this TAG allows immediate and unfalsifiable identification. Asset management solution 100% web. TAGUA allows the creation of a database of accumulated Knowledge. It can be interfaced with the master repository (GIS). The software works on a secure web platform. It provides tools to organize maintenance of equipment and create work orders. The users, through a smartphone application, gather and upload data on the cloud. NFC tags are used for the purpose of automatically identifying and tracking attached equipment. They are the key to accessing the database on site and proof that the operator has been on site.



### MARKETS



### TECHNICAL DATA

#### ENVIRONMENT:

All Weather  
20°C to + 90°C

#### SIZE:

40mm in diameter

#### AVAILABILITY:

Applied on any valve metal surface

#### CHIP:

Tags 13.56MHz RFID  
ISO 15693 NFC-enabled

### APPROVALS



### ADVANTAGES

- Any valuable products that need survey / Maintenance during all its life cycle
- TIME SAVING - Identification and exact geolocation of units
- SECURE - The reading of the tag attests that the technician has been on site  
Open fail safe valve, maintained in stand-by closed position
- TOP-NOTCH SERVICE - Real-time data updating, consultation online
- RELIABLE - Unfalsifiable electronic marking device that allows the network managers to guarantee the survey of all valuable equipment in the network (and more) all their life cycle duration
- Associated to our powerful cloud web based secured platform, it provides an unequalled solution to manage the assets
- Every operation can be dealt with TAGUA / www.smart-inside.com: inventory, maintenance operation planning, functional periodical check, etc

### CHARACTERISTICS

- RFID microchip with NFC antenna Asset inventory and management with up to date tools: Detailed inventory of park
- Precise location of each unit  
Planning of work orders  
Time management of the field teams  
Online data archiving
- Reading tag RFID with Android application is the key to accessing the data  
You can consult, change and manage all the location data

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## Schematic Flow chart



### Features

#### Inventory of detailed and updated park

Precise location of products.  
 Planning of maintenance operations.  
 Load management of field teams.  
 Automatic Export updates to GIS.

#### Communication tools

**Issuance** of customized interventions reports  
 Manual or automatic exports.  
 Data transfer by e-mail and/or FTP server.

### Software Features

Accessible via the web platform: [www.smart-inside.com](http://www.smart-inside.com)  
 No installation required on your computer.  
 Connecting using an internet browser type Explorer, Chrome, Firefox, etc...  
 Secure access by login and password.  
 Hyperfile SQL database hosted on Web Server (Cloud).

#### Feature required for Android App

Platform Android 4.2 or more.  
 Connectivity with 3G / HSDPA / 4G.  
 NFC RFID reader head.  
 GPS.  
 Camera.

#### Asset inventory and management with up to date tools:

Cloud web based solution for 24/7 data access from almost anywhere with a single access to the Internet  
 Android application for NFC capable smartphones to work easily on field.  
 Automated exports and reports generation.  
 Alarms sending via SMS or e-mails in real time.  
 Life duration - more than several 10th of thousand reading/writing cycles.  
 Tag material - TPU (Thermoplastic Polyurethane).

#### Unfalsifiable and secured identification solution:

Tagua NFC tag is stuck on your equipment and can't be removed without destruction  
 Highly resistant to mechanical scratch, waterproof.

#### Smart-Inside.com web site:

Life cycle data sheet according to standards and regulation.  
 Secured access by login/password.  
 Complete overview of your assets.  
 Access can be granted to technical departments of municipalities, fire departments, etc...

# TAGUA

## Typical Application

### Operation

TAGUA combines a detailed equipment listing at a precise geolocation with effective entire life cycle management of the equipment and an unfalsifiable NFC chip.

The manager plans operations at identified locations in its asset. These operations are then allocated to field teams called "Operators". On the field, Smartphone for the operator synchronizes daily, or on demand, with the website [www.smart-inside.com](http://www.smart-inside.com). This operation updates the embedded database and sends the result of the last operations carried out by the operator. The equipment is associated with an NFC carried out by the operator. The equipment is associated with an NFC tag; the association between equipment data life cycle sheet and NFC tag is done on field, via the NFC reader of the smartphone

### Asset Management

Asset management is a key element for the functioning and operation application. It consists in sheets location for defining precisely the device (brand, pattern, model, year of installation, etc ...) and locate it. The equipment pool is displayed on a map as an icon. Note that asset is common to all Bayard/Talis applications (TAGUA, CO-PERNIC, Moneca...)

Product code	Number	Location type	DN	Brand	Model	House number	S/A	Street type	Street name
2	2	Fire hydrant	100	BAYARD	Saphir	11		Avenue	Docteur
20081987	99	Fire hydrant	100	BAYARD	Saphir	15		Vie	Situation Grue
2014	2014	Fire hydrant	100	BAYARD	Emeraude	1		Boulevard	de l'Europe
23	23	Fire hydrant	100	BAYARD	Saphir	4		Rue	Lionel Terrie
24	24	Fire hydrant pressure	100	BAYARD	Saphir	12		Rue	de la République

### Custom report edition

TAGUA can edit, manually or automatically at user freely adjustable frequency, reports in customized format such as PDF, csv and xml.

### Notifications sent by email and/or SMS

On a change of operational status, alarms are programmable to notify Status changes of an equipment.

### Installation

The installation time of an NFC tag is rapid (less than 5 min). An individual kit Preparation of the bonding surface is provided with each TAGUA. Implementation exploitation NFC TAG are packaged in the form of board with 10 inseparable elements.

Once stuck on the equipment, a pull-out force over 20 kg is necessary to remove the tag (which in fact destroys it

Product code	Number	Location type	DN	Brand	Model	House number	S/A	Street type	Street name
2	2	Fire hydrant	100	BAYARD	Saphir	11		Avenue	Docteur
20081987	99	Fire hydrant	100	BAYARD	Saphir	15		Vie	Situation Grue
2014	2014	Fire hydrant	100	BAYARD	Emeraude	1		Boulevard	de l'Europe
23	23	Fire hydrant	100	BAYARD	Saphir	4		Rue	Lionel Terrie
24	24	Fire hydrant pressure	100	BAYARD	Saphir	12		Rue	de la République

### Status

This tab is the main screen of TAGUA.

Map display and tabular form of the FUNCTIONAL status of assets

colours used to display the operational status 4

On the map (Fig. 9), the product icon can also be replaced by a round .corresponding to the colour of the operational state.

TAGUA software is an open tool ready to adapt to your habits job. A choice of pre-set operations defined by the standard NFS62-200 is natively available. At all times, the user is able to change or create customized operations according to his needs.

The operations are linked to a notion of time. Thus, a task that would not be carried out in time will change colour to alert its emergency.



Reading the NFC TAG instantly retrieves in the database device location detailed data. There is no more possible identification error Traceability: Reading the NFC TAG is unfalsifiable. Each operation land is registered with the NFC TAG reading information and timestamped when NFC tag is read

Data Backup

Confidential data is automatically backed up on two different servers

via real-time replication system. By single user action, data can be exported at any time in Excel or csv format. Export is also programmable

1

Identify your assets



The field teams use mobile app for:

- Inventory.
- Identification.
- Geolocation.
- Photographs.
- NFC tag/device
- ...

2

Manage & maintain



Upload data to the server => Data are put online without retype and become available to third party users

Create maintenance routines => The field teams are informed in real-time nature of the equipment to maintain and related tasks

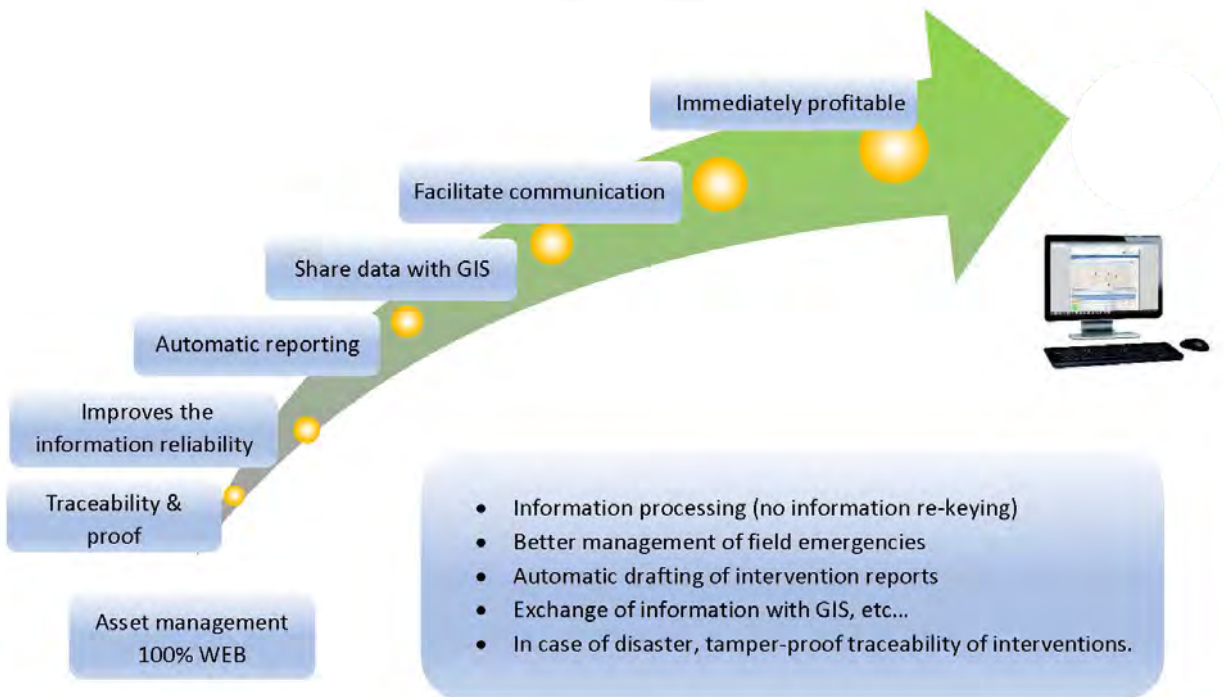
3

Communicate



The software communicates for you:

- automatic alerts (SMS / Email)
- Report in PDF format.
- Synchronizing data with GIS.



For more detailed technical information, please contact us





# ENGINEERING DATA

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## **BASIC VALVES**

FDV - BASIC VALVE - 161

FDV-R BASIC VALVE -167

## Engineering Data

## FDV Basic Valves

## Basic Valves

## General Description

The FDV hydraulic control valve's solid and simple construction, in addition with its hydro-dynamically engineered inner streamlined flow passages, makes it the valve on which a large selection of fire protection application is based on.

The FDV type is a full bore globe patterned valve featuring direct elastomeric diaphragm seal with no balancing spring or inside metallic moving wet components. The valve is designed for vertical or horizontal installation. Its symmetric shape enables a reverse flow without any head loss change.

A selection of cast metals, coatings, diaphragms and fasteners, enables its usage in rough environment and streaming media. The FDV valve is suitable for on-shore as well as off-shore installations and can operate with fresh water, brackish water, foam and seawater.

9 optional ports provide an easy and flexible trim piping and tubing connection.



## MARKETS



Marine



P.O.G.



Airports



Industry



Tunnels



Storage



Residential



Commercial

## 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)

## Advantages

- Simple and robust construction
- No inside metallic moving wet components
- 4 side, 2 bottom and 3 cover ports enable easy trim and accessories connection
- Durable material and coatings enables long lasting usage in rough conditions including off shore and seawater
- Large valve sizes and connection ends selection
- Diaphragm original design enables gradual and precise valve opening or closing
- Maintenance free between the NFPA 25 five years checks
- Stands fully in most strict fire protection design and operation demands



## APPROVALS



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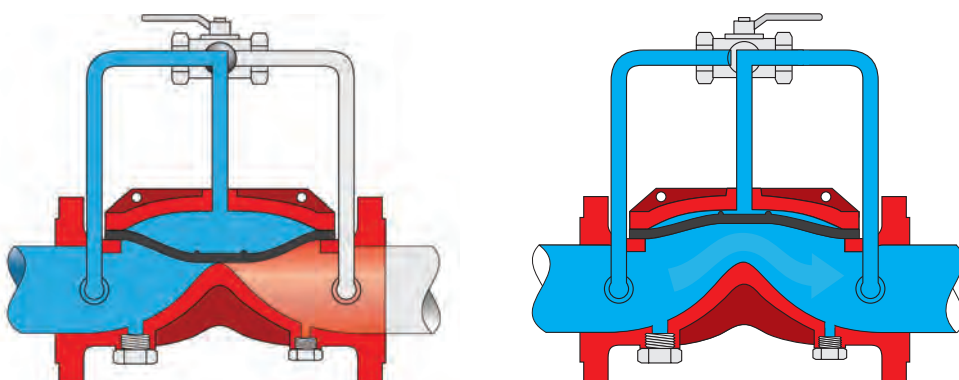
## ON-Off Operation

The FDV is a normally open valve with a very low breaking through pressure of less than 5 psi.

When the valve's control chamber becomes pressurized, the force applied on the upper diaphragm surface, pushes it against the valves seat and holds the valve close. The diaphragm's springiness compensates for the low area/force ratio as the valve need to close although the downstream pressure nearly equalizes the upstream.

When the valve's control chamber is drained and de-pressurizes, the force applied by line pressure raises the diaphragm from its seat, pushes it into the control chamber space and drains the residual water out.

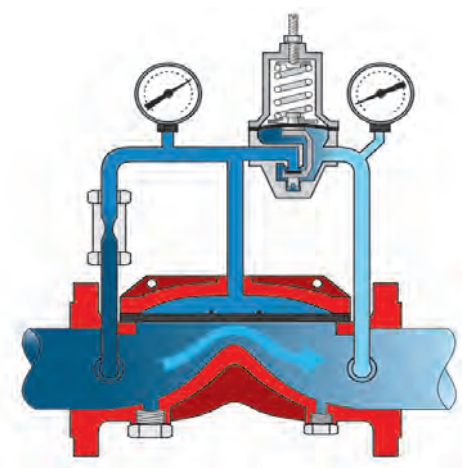
By that, water passage obstruction clears and the valves fully opens. This demonstrate a typical On-Off operation: a pressurized control chamber causes the valve to close while a drainage of this space combined with the valve's internal pressure, causes it to fully open.



## Modulating Operation

Manipulating the control chamber pressure using suitable pilot valves, enables the control of the upstream pressure, downstream pressure and valve's rate of flow.

A change in the control chamber's pressure and as a result, the chamber's water volume, will place the diaphragm at a position that would narrow or enlarge the water passage cross area. Controlled diaphragm moves can be used to regulate gradually valve's flow in regard of line pressure deviation, as demonstrated in the schema below.



# FDV

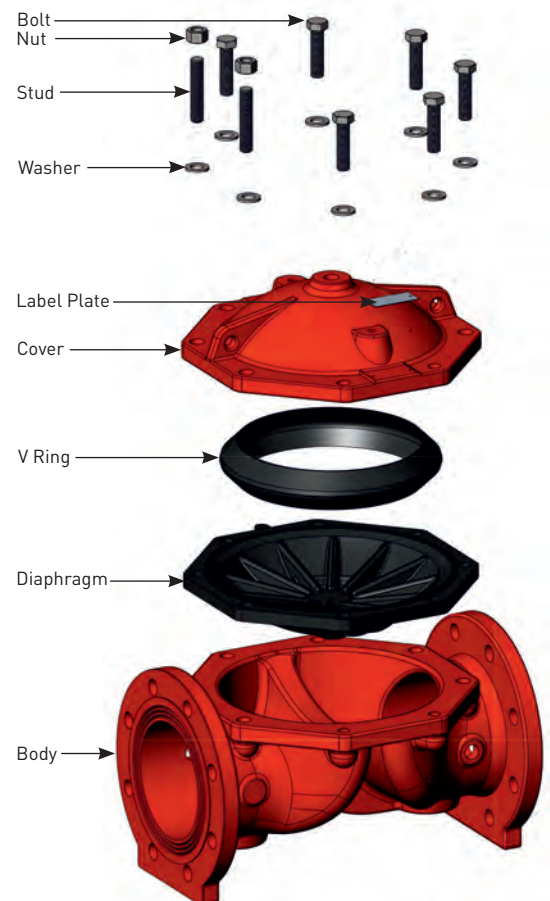
## Optional pattern

Diameter	1.5"	2"	3"	4"	6"	8"	10"
Connection	DN40	DN50	DN80	DN100	DN150	DN200	DN250
TH-TH							
GR-GR							
GR-FL							
FL-GR							
FL-FL							

 Available Option

## Construction Materials & Coatings

Body & Cover	
Ductile Iron	ASTM A-536
Stainless Steel	ASTM A743, CF8M
Stainless Steel	ASTM A743, CF8
Cast Steel	ASTM A-216 Grade WCB
Nickel Aluminum Bronze	ASTM B148 UNS C95800
Diaphragm	
NR	Nylon fabric reinforced natural rubber
EPDM	Nylon fabric reinforced EPDM
NBR	Nylon fabric reinforced Nitrile rubber
Fasteners	
Stainless Steel 304	ASTM F593
Stainless steel 316	ASTM F593
Galvanized steel	ASTM F2329
Nickel Alloys	Monel 400; Cupro-nickel
Coating	
Internal-Rilsan (Nylon 11)	External-Rilsan (Nylon 11)
Internal-Epoxy based Polyurethane	External-Epoxy based Polyurethane
Internal-FBE Phenolic Epoxy+Polyester	External-FBE Phenolic Epoxy+Polyester
Internal-Vitreous Enamel	External-Epoxy based Polyurethane





## Valves Construction and Applications

	Water	Brackish Water	Sea Water	Foam
Body & Cover	Ductile Iron	Stainless Steel CF8M	Ni.AL.Br	Stainless Steel CF8
Fasteners	Galvanized Steel	Stainless Steel 316	Nickel Bronze alloys	Stainless Steel 304
Diaphragm	Natural Rubber	EPDM	EPDM	EPDM
Coating	Rilsan	Un Coated	Un Coated	Un Coated

## FDV valves flow factor

NOMINAL DIAMETER		FLOW FACTOR	
INCH	MM	Kv	Cv
1.5	DN40	59	68
2	DN50	87	101
3	DN80	207	240
4	DN100	345	400
6	DN150	768	891
8	DN200	1290	1496
10"	DN250	1850	2146

Kv = Valve flow coefficient (m<sup>3</sup>/h) / (bar)

Cv = Valve flow coefficient (gpm) / (psi)

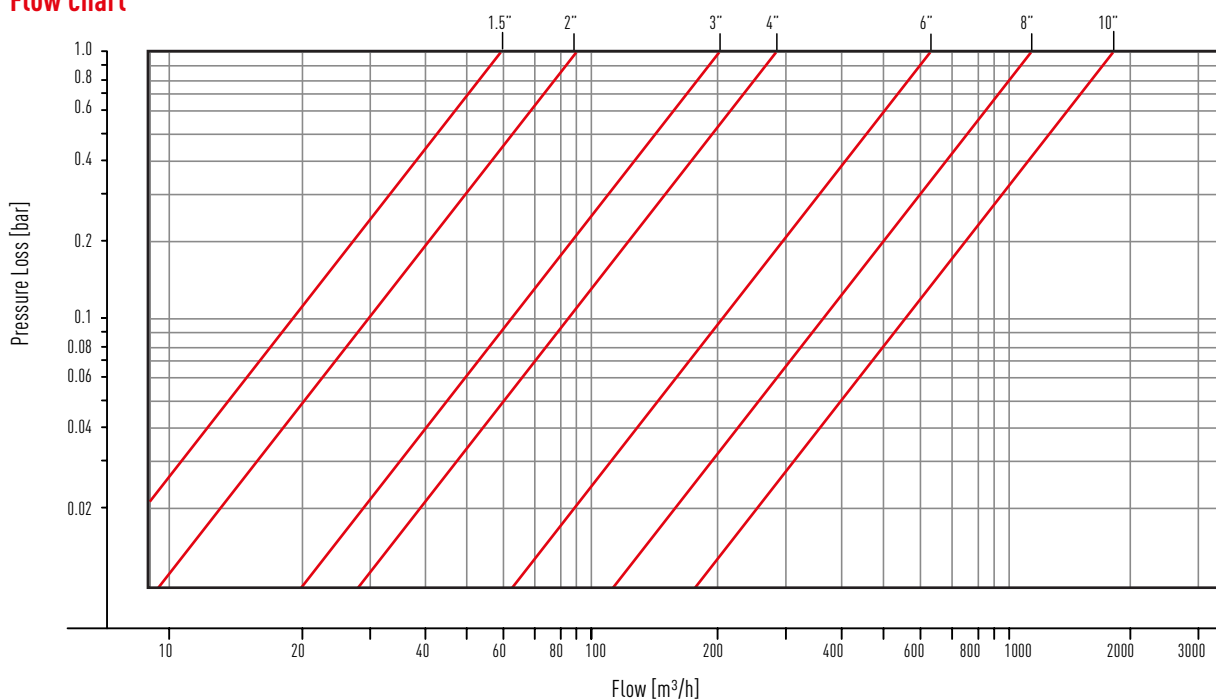
Cv = 1.16 Kv ; Kv = 0.862 Cv

Q = Flow rate in m<sup>3</sup>/h or gpm

Δp = Head loss across the valve in bar or psi

$Q = Kv \sqrt{\Delta p}$

## Flow chart



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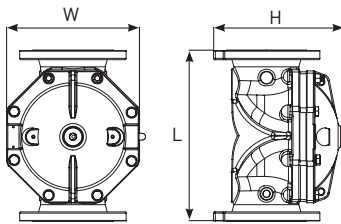
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# FDV

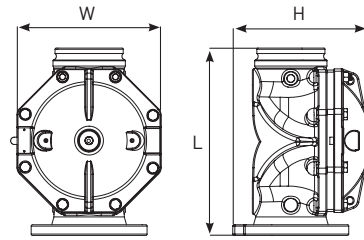
## FDV FL-FL

SIZE (IN)	L	H	W	Kg (lb)
DN 50 (2")	220 (8.6)	165 (6.5)	140 (5.5)	8.9 (19.6)
DN 80 (3")	327 (12.9)	200 (7.9)	230 (9.0)	21.3 (47)
DN 100 (4")	400 (15.7)	227 (8.9)	302 (11.9)	38 (84)
DN 150 (6")	464 (18.3)	365 (14.4)	354 (13.9)	56.6 (127.7)
DN 200 (8")	570 (22.4)	416 (16.4)	466 (18.3)	96 (211.6)
DN 250 (10")	768 (30.20)	638 (25.1)	616 (24.2)	218.6 (482)



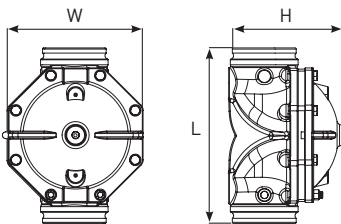
## FDV FL-GR

SIZE (IN)	L	H	W	Kg (lb)
DN 80 (3")	327 (12.9)	200 (7.9)	230 (9.0)	17.6 (39)
DN 100 (4")	400 (15.7)	227 (8.9)	302 (11.9)	34.2 (75.4)
DN 150 (6")	464 (18.3)	365 (14.4)	354 (13.9)	48.8 (107.6)
DN 200 (8")	570 (22.4)	416 (16.4)	466 (18.3)	86 (189.6)



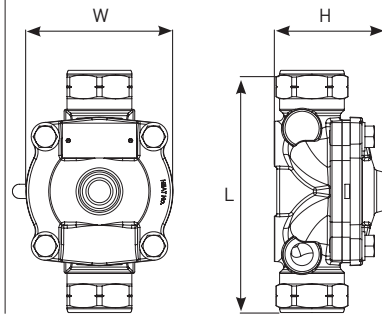
## FDV GR-GR

SIZE (IN)	L	H	W	Kg (lb)
DN 40 (1.5")	205 (8.0)	97 (3.8)	127 (5.0)	2.9 (6.4)
DN 50 (2")	220 (8.7)	112 (4.4)	140 (5.5)	4.5 (9.9)
DN 80 (3")	327 (12.9)	158 (6.2)	230 (9.0)	13.3 (29.3)
DN 100 (4")	400 (15.7)	212 (8.3)	302 (11.9)	27 (59.5)
DN 150 (6")	464 (18.3)	300 (11.8)	354 (13.9)	42.3 (93.6)
DN 200 (8")	570 (22.4)	364 (14.3)	466 (18.3)	75.4 (166.2)



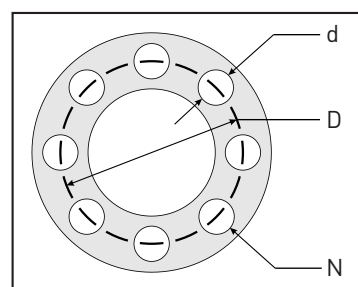
## FDV TH-TH

SIZE (IN)	L	H	W	Kg (lb)
DN 40 (1.5")	204 (8.0)	94 (3.7)	125 (4.9)	2.91 (6.4)
DN 50 (2")	222 (8.7)	113 (4.4)	140 (5.5)	4.97 (11)



## Flange Drilling Specification - Nominal Dimensions in inches & (mm)

Nominal Valve Size	ANSI B16.42 (Class 150)			ISO 7005-2 (PN 16)			ANSI B16.24 (Class 150)			ANSI B16.50 (Class 150)		
	Dim. D	Dim. d	Qty. n	Dim. D	Dim. d	Qty. n	Dim. D	Dim. d	Qty. n	Dim. D	Dim. d	Qty. n
3" (DN 80)	6.00 (152.4)	0.75 (19.0)	4	6.30 (160.0)	0.71 (18.0)	8	6.00 (152.4)	0.75 (19.0)	4	6.00 (152.4)	0.75 (19.1)	4
4" (DN 100)	7.5 (190.5)	0.75 (19.0)	8	7.5 (190.5)	0.71 (18.0)	8	7.5 (190.5)	0.75 (19.0)	8	7.5 (190.5)	0.75 (19.1)	8
6" (DN 150)	9.50 (241.3)	0.88 (22.2)	8	9.50 (241.3)	0.87 (22.0)	8	9.50 (241.3)	0.88 (22.2)	8	9.50 (241.3)	0.88 (22.4)	8
8" (DN 200)	11.75 (298.5)	0.88 (22.2)	8	11.61 (295)	0.87 (22.0)	12	11.75 (298.5)	0.88 (22.2)	8	11.75 (298.5)	0.88 (22.4)	8
10" (DN 250)	14.25 (362)	1 (25.4)	12	14 (355)	1.02 (26)	12	14.25 (362)	1	12	14.25 (362)	1 (25.4)	12



## Port Sizing

Port Description	Port Size in NPT per ANSI B1.20.1						
	DN40 1.5"	DN50 2"	DN80 3"	DN100 4"	DN150 6"	DN200 8"	DN250 10"
Control Chamber Supply	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Bottom Downstream Drain	3/4"	3/4"	3/4"	1"	1"	1"	1"
Side Port	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Bottom Upstream Drain	3/4"	3/4"	1 1/4"	2"	2"	2"	2"

# Engineering Data

## FDV-R Basic Valves

## Basic Valves

### General Description

The FDV-R type is a globe pattern valve featuring direct elastomeric diaphragm seal with no balancing spring or inside metallic moving wet components. The valve is designed for vertical or horizontal installation.

Solid and simple construction, with hydro-dynamically engineered inner streamlined flow passage, makes it the basic valve for large selection of fire protection applications.

A wide selection of cast metals, coatings, diaphragms and fasteners, enables its usage in harsh environment and flow media. The FDV valve is suitable for on-shore as well as off-shore installations and can operate with fresh water, brackish water, foam and seawater. 7 optional trim ports provide an easy and flexible trim piping and tubing connection.



### MARKETS



Marine



P.O.G.



Airports



Industry



Tunnels



Storage



Residential



Commercial

### 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)

### Advantages

- Simple and robust construction
- No inside metallic moving wet components
- 4 side, and 3 cover ports enable easy trim and accessories connection
- Durable material and coatings enables long lasting usage in rough conditions including foam, off shore and seawater
- Large valve sizes and connection ends selection
- Diaphragm original design enables gradual and precise valve opening or closing
- Maintenance free between the NFPA 25 five years checks
- Stands fully in most strict fire protection design and operation demands



### APPROVALS



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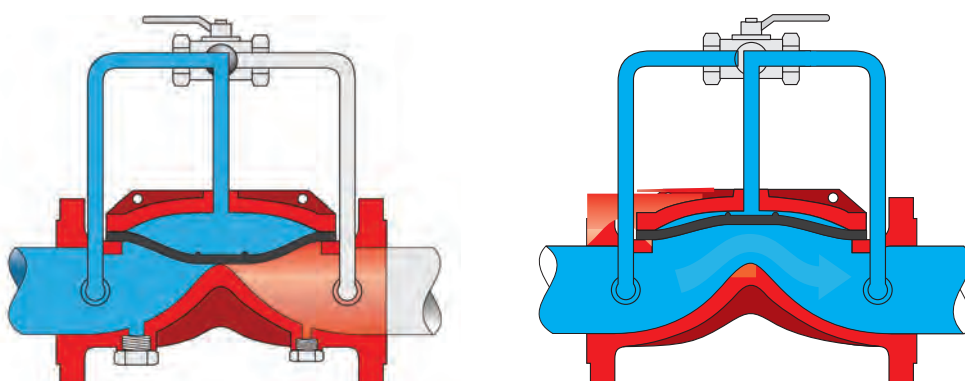
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## ON-Off Operation

The FDV-R is a normally open valve with a very low breaking through pressure of less than 5 psi. When the valve's control chamber becomes pressurized, the force applied on the upper diaphragm surface, pushes it against the valves seat and holds the valve close. The diaphragm's springiness compensates for the low area/force ratio as the valve need to close although the downstream pressure nearly equalizes the upstream.

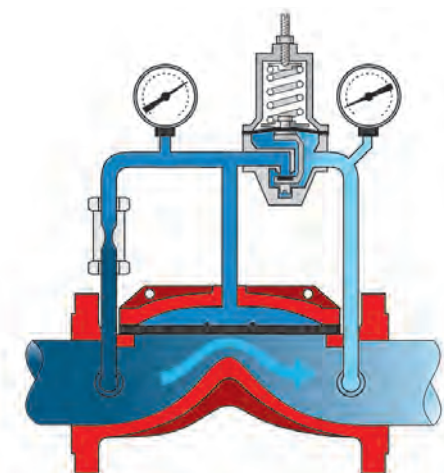
When the valve's control chamber is drained and de-pressurizes, the force applied by the line pressure, raises the diaphragm from its seat, pushes it into the control chamber space and drains the residual water out. By that, water passage obstruction clears and the valves fully opens. This demonstrate a typical On-Off operation: a pressurized control chamber causes the valve to close while a drainage of this space combined with the valve's internal pressure, causes it to fully open.



## Modulating Operation

Manipulating the control chamber pressure using suitable pilot valves, enables the control of the upstream pressure, downstream pressure and valve's rate of flow.

A change in the control chamber's pressure and as a result, the chamber's water volume, will place the diaphragm at a position that would narrow or enlarge the water passage cross area. Controlled diaphragm moves can be used to regulate gradually valve's flow in regard of line pressure deviation, as demonstrated in the schema bellow.



# FDV-R

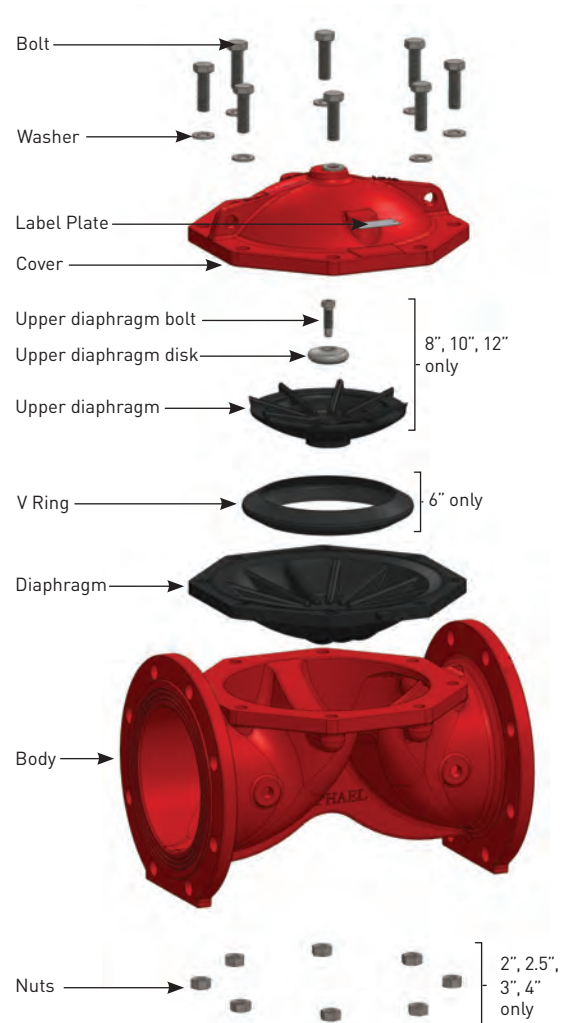
## FDV-R optional Patterns

Valve	Dia. End Conn.	1.5" DN40	2" DN50	2.5" DN65	3" DN80	4" DN100	6" DN150	8" DN200	10" DN250	12" DN300	14" DN350	16" DN400
FDV-R Globe	TH-TH											
	GR-GR											
	FL-FL											

Available Options

## Construction Materials & Coatings

Body & Cover	
Ductile Iron	ASTM A-536
Stainless Steel	ASTM A743, CF8M
Stainless Steel	ASTM A743, CF8
Cast Steel	ASTM A-216 Grade WCB
Nickel Aluminum Bronze	ASTM B148 UNS C95800
Diaphragm	
NR	Nylon fabric reinforced natural rubber
EPDM	Nylon fabric reinforced EPDM
NBR	Nylon fabric reinforced Nitrile rubber
Fasteners	
Stainless Steel 304	ASTM F593
Stainless steel 316	ASTM F593
Galvanized steel	ASTM F2329
Nickel Alloys	Monel 400; Cupro-nickel
Coating	
Internal-Rilsan (Nylon 11)	External-Rilsan (Nylon 11)
Internal-Epoxy based Polyurethane	External-Epoxy based Polyurethane
Internal-FBE Phenolic Epoxy+Polyester	External-FBE Phenolic Epoxy+Polyester
Internal-Vitreous Enamel	External-Epoxy based Polyurethane



## Valves Construction and Applications

FDV-R	Water	Brackish Water	Sea Water	Foam
Body & Cover	Ductile Iron	Stainless Steel CF8M	Ni.AL.Br	Stainless Steel CF8
Fasteners	Galvanized Steel	Stainless Steel 316	Nickel Bronze alloys	Stainless Steel 304
Diaphragm	Natural Rubber	EPDM	EPDM	EPDM
Coating	Rilsan	Un Coated	Un Coated	Un Coated

## FDV valves flow factor

NOMINAL DIAMETER		FLOW FACTOR	
INCH	MM	Kv	Cv
1.5	DN40	40	46.4
2	DN50	70	81.2
2.5	DN65	100	116
3	DN80	170	197
4	DN100	290	336.4
6	DN150	490	568.4
8	DN200	790	916.4
10"	DN250	1400	1624
12"	DN300	1800	2088
14"	DN350	1850	2146
16"	DN400	2000	2320

$K_v$  = Valve flow coefficient (m<sup>3</sup>/h) / (bar)

$C_v$  = Valve flow coefficient (gpm) / (psi)

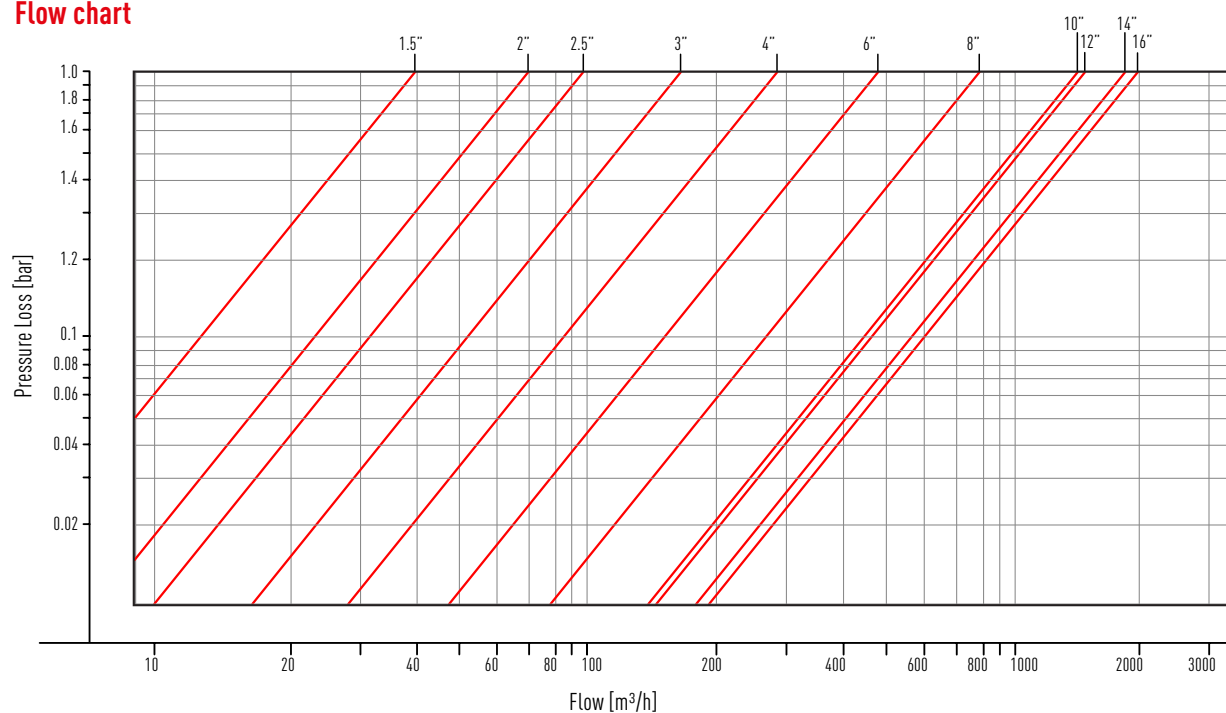
$C_v = 1.16 K_v$  ;  $K_v = 0.862 C_v$

$Q$  = Flow rate in m<sup>3</sup>/h or gpm

$\Delta p$  = Head loss across the valve in bar or psi

$Q = K_v \sqrt{\Delta p}$

## Flow chart



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# FDV-Ra

## FDV-Ra optional Patterns

Valve	Dia. End Conn.	1.5"	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"
		DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300	DN350	DN400
FDV-Ra Angle	TH-TH											
	GR-GR											
	FL-FL											

Available Options

## Construction Materials & Coatings

Body & Cover	
Ductile Iron	ASTM A-536
Stainless Steel	ASTM A743, CF8M
Stainless Steel	ASTM A743, CF8
Cast Steel	ASTM A-216 Grade WCB
Nickel Aluminum Bronze	ASTM B148 UNS C95800
Diaphragm	
NR	Nylon fabric reinforced natural rubber
EPDM	Nylon fabric reinforced EPDM
NBR	Nylon fabric reinforced Nitrile rubber
Fasteners	
Stainless Steel 304	ASTM F593
Stainless steel 316	ASTM F593
Galvanized steel	ASTM F2329
Nickel Alloys	Monel 400; Cupro-nickel
Coating	
Internal-Rilsan (Nylon 11)	External-Rilsan (Nylon 11)
Internal-Epoxy based Polyurethane	External-Epoxy based Polyurethane
Internal-FBE Phenolic Epoxy+Polyester	External-FBE Phenolic Epoxy+Polyester
Internal-Vitreous Enamel	External-Epoxy based Polyurethane



## Valves Construction and Applications

FDV-Ra	Water	Brackish Water	Sea Water	Foam
Body & Cover	Ductile Iron	Stainless Steel CF8M	Ni.AL.Br	Stainless Steel CF8
Fasteners	Galvanized Steel	Stainless Steel 316	Nickel Bronze alloys	Stainless Steel 304
Diaphragm	Natural Rubber	EPDM	EPDM	EPDM
Coating	Rilsan	Un Coated	Un Coated	Un Coated

## FDV-Ra Flow Factor

NOMINAL DIAMETER		FLOW FACTOR	
INCH	MM	Kv	Cv
2	DN50	62	72
2.5	DN65	90	104.4
3	DN80	155	179.8
4	DN100	200	232
6	DN150	470	545.2
8	DN200	750	870

$K_v$  = Valve flow coefficient (m<sup>3</sup>/h) / (bar)

$C_v$  = Valve flow coefficient (gpm) / (psi)

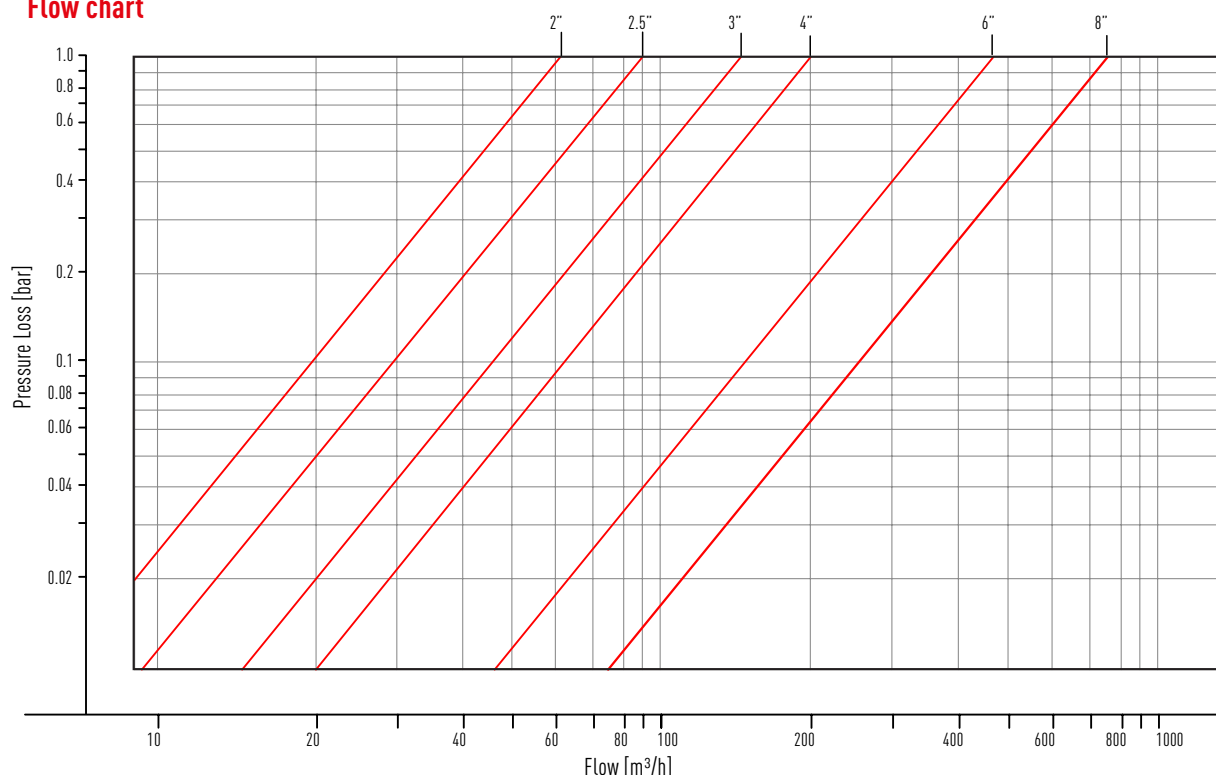
$C_v = 1.16 K_v$  ;  $K_v = 0.862 C_v$

$Q$  = Flow rate in m<sup>3</sup>/h or gpm

$\Delta p$  = Head loss across the valve in bar or psi

$Q = K_v \sqrt{\Delta p}$

## Flow chart



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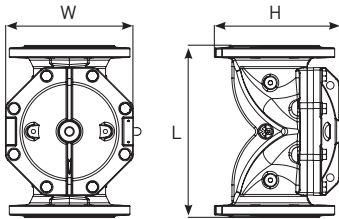
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# FDV-R

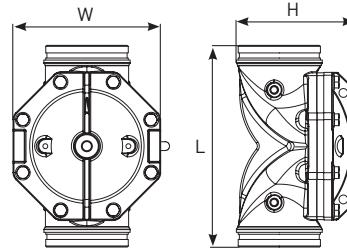
## FDV-R FL-FL

SIZE (IN)	L	H	W	Kg (lb)
DN 50 (2")	190 (7.5)	159 (6.3)	165 (6.5)	7.9 (17.4)
DN 65 (2.5")	216 (8.5)	173 (6.8)	185 (7.3)	9.3 (20.5)
DN 80 (3")	283 (11.1)	200 (7.8)	200 (7.8)	17.5 (35.6)
DN 100 (4")	305 (12.0)	220 (8.6)	230 (9.0)	26 (57.3)
DN 150 (6")	460 (16.0)	295 (11.6)	300 (11.8)	46 (101.4)
DN 200 (8")	470 (18.5)	383 (15.0)	354 (13.9)	67.5 (148.8)
DN 250 (10")	635 (25)	430 (16.9)	464 (18.3)	111 (244.7)
DN 300 (12")	749 (29.5)	474 (18.6)	480 (18.9)	151 (332.9)
DN 350 (14")	749 (29.5)	520 (20.5)	520 (20.5)	177 (390.2)
DN 400 (16")	860 (33.9)	711 (28.0)	616 (24.2)	327 (720.9)



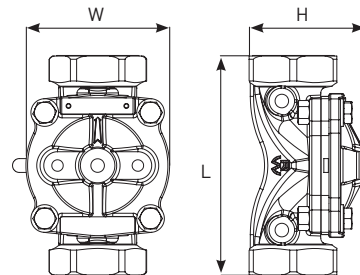
## FDV-R GR-GR

SIZE (IN)	L	H	W	Kg (lb)
DN 40 (1.5")	159 (6.3)	80 (3.1)	96 (3.8)	1.5 (3.3)
DN 50 (2")	190 (7.5)	96 (3.8)	125 (4.9)	3.0 (6.6)
DN 65 (2.5")	225 (8.9)	114 (4.5)	140 (5.5)	4.7 (10.4)
DN 80 (3")	290 (11.4)	140 (5.5)	200 (7.9)	10.8 (20.3)
DN 100 (4")	346 (13.6)	173 (6.8)	230 (9.0)	18.0 (36.7)
DN 150 (6")	412 (16.2)	239 (9.4)	302 (11.9)	33 (72.7)
DN 200 (8")	470 (18.5)	350 (13.8)	354 (13.9)	51 (112.4)



## FDV-R TH-TH

SIZE (IN)	L	H	W	Kg (lb)
DN 40 (1.5")	159 (6.2)	80 (3.1)	96 (3.8)	2.0 (4.4)
DN 50 (2")	190 (7.5)	196 (7.7)	125 (4.9)	3.5 (7.7)
DN 65 (2.5")	225 (8.8)	110 (4.3)	140 (5.5)	5 (11)
DN 80 (3")	290 (11.4)	138 (5.4)	200 (7.9)	24.2 (20.3)
DN 100 (4")	346 (13.6)	220 (8.7)	230 (9.0)	16.5 (36.4)

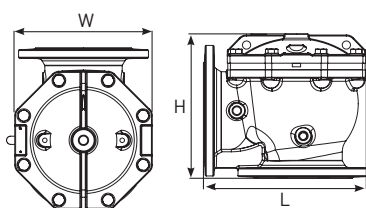


## Port Description

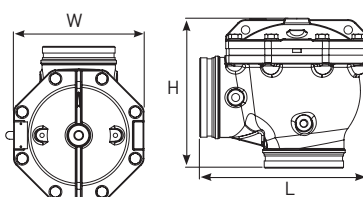
Port Description	DN50 2"	DN65 2.5"	DN80 3"	DN100 4"	DN150 6"	DN200 8"	DN250 10"	DN300 12"	DN350 14"	DN400 16"
Diaphragm Chamber Supply	1/4"	1/4"	1/4"	1/4"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"
Upstream & Downstream side ports	1/4"	1/4"	1/4"	1/4"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"

**FDV-Ra FL-FL**

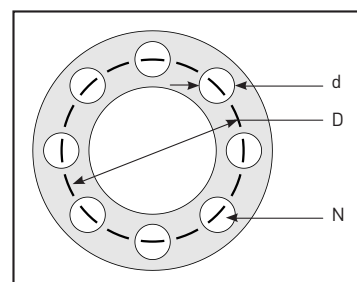
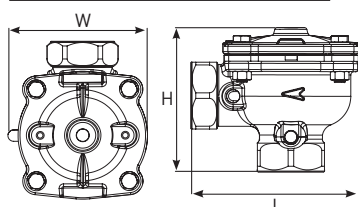
SIZE (IN)	L	H	W	Kg (lb)
DN 50 (2")	112 (4.4)	159 (6.2)	165 (6.5)	8.1 (17.9)
DN 65 (2.5")	122 (4.8)	160 (6.3)	185 (7.2)	11 (24.2)
DN 80 (3")	154 (6.0)	210 (8.2)	200 (7.9)	19 (41.9)
DN 100 (4")	177 (7.0)	230 (9.0)	230 (9.0)	26.5 (58.4)
DN 150 (6")	218 (8.6)	315 (12.4)	300 (11.8)	48.7 (107.4)
DN 200 (8")	225 (8.8)	400 (15.7)	354 (13.9)	62.5 (137.8)

**FDV-Ra GR-GR**

SIZE (IN)	L	H	W	Kg (lb)
DN 50 (2")	90 (3.5)	150 (5.9)	125 (4.9)	3.0 (6.6)
DN 65 (2.5")	117 (4.6)	160 (6.3)	125 (4.9)	4.7 (10.4)
DN 80 (3")	148 (5.8)	205 (8.0)	200 (7.9)	10.8 (23.8)
DN 100 (4")	150 (5.9)	227 (8.9)	230 (9.0)	18.0 (39.7)
DN 150 (6")	206 (8.1)	317 (12.5)	300 (11.8)	33 (72.7)
DN 200 (8")	225 (8.8)	400 (15.7)	354 (13.9)	51 (112.4)

**FDV-Ra TH-TH**

SIZE (IN)	L	H	W	Kg (lb)
DN 50 (2")	90 (3.5)	150 (5.9)	125 (4.9)	4.2 (9.2)
DN 65 (2.5")	117 (4.6)	160 (6.3)	125 (4.9)	7 (15.4)
DN 80 (3")	148 (5.8)	205 (8.0)	200 (7.9)	12 (26.5)
DN 100 (4")	150 (5.9)	227 (8.9)	230 (9.0)	15.9 (35.0)

**Flange Drilling Specification - Nominal Dimensions in inches & (mm)**

Nominal	ANSI B16.42 (Class 150)			ISO 7005-2 (PN 16)		
	Dim. D	Dim. d	Qty. n	Dim. D	Dim. d	Qty. n
3" (DN 80)	6.00 (152.4)	0.75 (19.0)	4	6.30 (160.0)	0.71 (18.0)	8
4" (DN 100)	7.5 (190.5)	0.75 (19.0)	8	7.5 (190.5)	0.71 (18.0)	8
6" (DN 150)	9.50 (241.3)	0.88 (22.2)	8	9.50 (241.3)	0.87 (22.0)	8
8" (DN 200)	11.75 (298.5)	0.88 (22.2)	8	11.61 (295)	0.87 (22.0)	12
10" (DN 250)	14.25 (362)	1 (25.4)	12	14 (355)	1.02 (26)	12
12" (DN 300)	17 (431.8)	1 (25.4)	12	16.14 (410)	1.02 (26)	12
14" (DN 350)	18.75 (476.3)	1.125 (28.57)	12	18.50 (470)	1.02 (26)	16
16" (DN 400)	21.25 (539.8)	1.125 (28.57)	16	20.66 (525)	1.16 (29.5)	16

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# PRODUCT SELECTION GUIDE

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# Product Selection Guide

## Deluge Systems

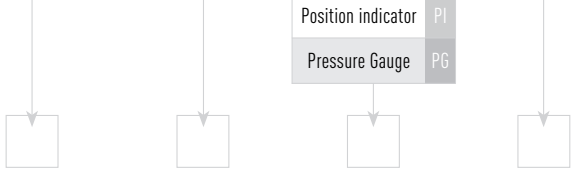
Application					
Type		Actuation		Reset	
Standard	D	Electric	E	Local	0
Modulating	P	Pneumatic	P	Remote	1
Basic	A	Electro pneumatic	C		
		Hydraulic	H		
		Anti Columning	A		



Main Valve											
Valve Size		Connection End		Standard		Construction material		Coating		Elastomer material	
1 1/2"	15	FL*FL	FF	ANSI #150RF	1	Ductile Iron ASTM A-536	DIC	Rilsan	RL	NR	NR
2"	02	GR*GR	GG	PN-16	2	Cast Steel ASTM A-216 Grade WCB	WCB	Polyester	PE	EPDM	DM
3"	03	FL*GR	FG	ANSI #150FF	3	Nickel Aluminum bronze ASTM B148 UNS C95800	NAB	Epoxy FBE-4+Polyester	EP	NBR	NB
4"	04	GR*FL	GF	ASTD	4	Stainless steel ASTM A743, CF8M	SS6	Epoxy + Polyurethane Enamel (int)	PU		
6"	06	TH*TH	TT	BSTD	5	Stainless steel ASTM A743, CF8	SS4	Epoxy + Polyurethane (ext)	EN		
8"	08			NPT	6						
10"	10			BSP	7						



Trim							
Accessories material		Tubing material		Fitted options		Installation orientation	
AISI 304	SS4	Copper	CUB	Pressure Switch	PS	Vertical	V
AISI 316	SS6	AISI 316	SS6	Ex-proof	EX	Horizontal	H
Brass	BRS	Monel® nickel-copper alloy 400	MON	MADV	MD		
Nickel plated Brass	BRP			Drain Valves	DR		
Nickel Aluminum bronze ASTM B148 UNS C95800	NAB			Water motor alarm	WM		
				Position indicator	PI		
				Pressure Gauge	PG		





# On-Off Valves

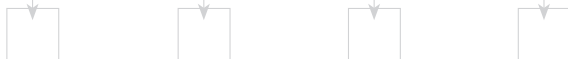
Application							
Type	Actuation	Operation		Pressure Control		Latching	
Hydraulic Hydrant	H	Electric	E	Local	0	No	0
Monitor Valve	M	Pneumatic	P	Local + Remote	1	Yes	1
		Hydraulic	H				



Main Valve													
Valve Size		Valve Pattern		Connection End		Standard		Construction material		Coating		Elastomer material	
1 1/2"	15	Globe	G	FL*FL	FF	ANSI #150RF	1	Ductile Iron ASTM A-536	DIC	Rilsan	RL	NR	NR
2"	02	Angle	A	GR*GR	GG	PN-16	2	Cast Steel ASTM A-216 Grade WCB	WCB	Polyester	PE	EPDM	DM
3"	03			TH*TH	TT	ANSI #150FF	3						
4"	04					ASTD	4	Stainless steel ASTM A743, CF8M	SS6	Epoxy + Polyurethane Enamel (int)	PU		
6"	06					BSTD	5	Stainless steel ASTM A743, CF8	SS4	Epoxy + Polyurethane (ext)	EN		
8"	08					NPT	6						
10"	10					BSP	7						
12"	12												



Trim							
Accessories material		Tubing material		Fitted options		Installation orientation	
AISI 304	SS4	Copper	CUB	Pressure Switch	PS	Vertical	V
AISI 316	SS6	AISI 316	SS6	Ex-proof	EX	Horizontal	H
Brass	BRS	Monel® nickel-copper alloy 400	MON	ADV	AD		
Nickel plated Brass	BRP			Position indicator	PI		
Nickel Aluminum bronze ASTM B148 UNS C95800	NAB			Pressure Gauge	PG		



# Product Selection Guide

## Service Valves

Application			
Type		Pressure Set	
Pressure Reducing	PN2	PN2 Std. (7Bar)	S
Pressure Relief	RN2	RN2 Std. (Loose)	L
		Other	O



Main Valve													
Valve Size		Valve Pattern		Connection End		Standard		Construction material		Coating		Elastomer material	
1 1/2"	15	Globe	G	FL*FL	FF	ANSI #150RF	1	Ductile Iron ASTM A-536	DIC	Rilsan	RL	NR	NR
2"	02			GR*GR	GG	PN-16	2	Cast Steel ASTM A-216 Grade WCB	WCB	Polyester	PE	EPDM	DM
3"	03	Angle	A	TH*TH	TT	ANSI #150FF	3	Nickel Aluminum bronze ASTM B148 UNS C95800	NAB	Epoxy FBE-4 +Polyester	EP	NBR	NB
4"	04					ASTD	4	Stainless steel ASTM A743, CF8M	SS6	Epoxy+Polyurethane	PU		
6"	06					BSTD	5	Stainless steel ASTM A743, CF8	SS4	Enamel (int) Epoxy +Polyurethane (ext)	EN		
8"	08					NPT	6						
10"	10					BSP	7						
12"	12												
14"	14												
16"	16												



Trim			
Accessories material		Tubing material	
AISI 304	SS4	Copper	CUB
AISI 316	SS6	AISI 316	SS6
Brass	BRS	Monel® nickel-copper alloy 400	MON
Nickel plated Brass	BRP		
Nickel Aluminum bronze ASTM B148 UNS C95800	NAB		









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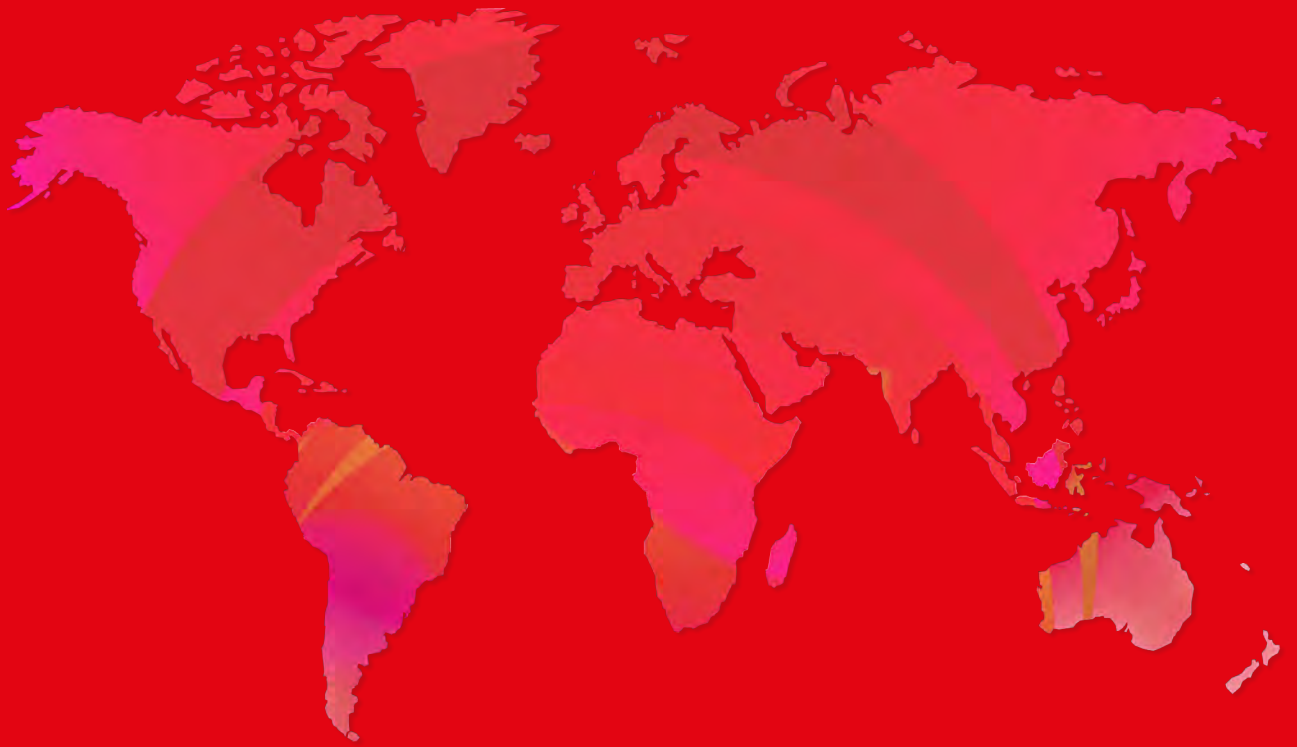
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