

115-4DV

Electrically Actuated Deluge Valve

Electrically controlled deluge valve, actuated by the pipeline pressure. The valve is closed in its normal, set position and opens when a 3-way solenoid valve is energized. It closes drip tight when the solenoid valve is de-energized. An emergency manual release valve is fitted as standard.

CERTIFICATION & COMPLIANCE



- ANSI FCI 70-2 Class VI seat leakage class
- Fire tested to EN ISO 19921
- ABS type approval



* General representation of valve

FEATURES & BENEFITS

- Opens quickly when the solenoid valve is activated (specify energize-to-open or energize-to-close)
- Manual override to open the valve regardless of solenoid valve position
- Visual indicator for indication of valve position
- Large supply drain port to drain inlet side piping - globe only

- Solenoid operated main valve
- No adjustments necessary
- Factory tested
- Sizes 1.25" (DN32) 16" (DN400)
- Wide range of materials available including those for seawater service
- Options available include opening and/or closing speed controls, limit switch assembly and pressure gauge(s)

TYPICAL APPLICATIONS



Automatic or Manual Actuated Fire Suppression Systems

Petrochemical, Oil & Gas Installations



Power Generation, Transformer & Transmission Plants



Flammable Storage

Hangars & Airport Terminals



Onshore / Offshore



Mining



OPERATION

The basic control valve [1] used in this deluge system is a diaphragm actuated globe valve which closes with an elastomer-on-metal seal, hydraulically operated control valve engineered specifically for fire protection systems.

In the standby position, the deluge valve is held closed by the upstream water pressure, trapped in the valve's control chamber. The water pressure enters the control chamber through the priming line ball valve [2], a Y-type strainer [3], a 3/2-way N.C. solenoid [6] and an auxiliary pilot valve [7].

Under fire conditions, a fire alarm control panel energizes the 3/2-way N.C. solenoid (or de-energizes the coil of a continuously energized ED 100% normally open solenoid for SIL 3-4 rated systems). The pressure in the auxiliary pilot valve increases, causing it to shift position allowing the water to drain from the deluge valve's control chamber. The deluge valve opens instantly and allows water to flow into the pipeline and through the open sprinklers over the protected area.

Manual emergency actuation is enabled by opening the emergency manual activation valve [5]. The deluge valve opens instantly and allows water to flow into the pipeline and through the open sprinklers over the protected area.

A visual indicator [4] provides indication of the valve's position at a glance.



Resetting, maintenance and periodic testing instructions must be followed as described in detail in the applicable OCV IOM (Installation, Operation & Maintenance) Manual.



TYPICAL MATERIALS

DESCRIPTION	STANDARD	OPTIONAL
Valve Body	Ductile Iron	Cast Steel, Stainless Steel, NAB, Duplex Stainless Steel
Seat Ring	Bronze	Stainless Steel, NAB, Duplex Stainless Steel
Stem	Stainless Steel	Monel
Spring	Stainless Steel	Elgiloy/MP35N
Diaphragm	Nylon Reinforced Buna-N	E.P.D.M.
Solenoid Valve	Stainless Steel	
Tubing/Fittings	Copper, Bronze/Brass	Stainless Steel, Monel
Pilot	Bronze	Stainless Steel, Monel





BASIC VALVE DIMENSIONS

U.S. DIMENSIONS - INCHES

DIM	END CONN.	1 ¹ / ₄ " - 1 ¹ / ₂ "	2 "	2 ¹ / ₂ "	3 "	4 "	6 "	8 "	10 "	12 "	16 "
А	150# FLGD	8 ¹ / ₂	9 ³ / ₈	10 ¹ / ₂	12	15	17 ³ / ₄	25 ³ / ₈	29 ³ / ₄	34	40 ³ / ₈
	300# FLGD	8 ³ / ₄	9 ⁷ / ₈	11 ¹ / ₈	12 ³ / ₄	15 ⁵ / ₈	18 ⁵ / ₈	26 ³ / ₈	31 ¹ / ₈	35 ¹ / ₂	42
В	150# FLGD	2 ⁵ / ₁₆ - 2 ¹ / ₂	3	3 ¹ / ₂	3 ³ / ₄	4 ¹ / ₂	5 ¹ / ₂	6 ³ / ₄	8	9 ¹ / ₂	11 ³ / ₄
	300# FLGD	2 ⁵ / ₈ - 3 ¹ / ₁₆	3 ¹ / ₄	3 ³ / ₄	4 ¹ / ₈	5	6 ¹ / ₄	7 ¹ / ₂	8 ³ / ₄	10 ¹ / ₄	12 ³ / ₄
С	150# FLGD	4 ¹ / ₄	4 ³ / ₄	6	6	7 ¹ / ₂	10	12 ¹¹ / ₁₆	14 ⁷ / ₈	17	20 ¹³ / ₁₆
	300# FLGD	4 ³ / ₈	5	6 ³ / ₈	6 ³ / ₈	7 ¹³ / ₁₆	10 ¹ / ₂	13 ³ / ₁₆	15 ⁹ / ₁₆	17 ³ / ₄	21 ⁵ / ₈
D	150# FLGD	3	3 ⁷ / ₈	4	4	5 ¹ / ₂	6	8	11 ³ / ₈	11	15 ¹¹ / ₁₆
	300# FLGD	3 ¹ / ₈	4 ¹ / ₈	4 ³ / ₈	4 ³ / ₈	5 ¹³ / ₁₆	6 ¹ / ₂	8 ¹ / ₂	12 ¹ / ₁₆	11 ³ / ₄	16 ¹ / ₂
E	ALL	6	6	7	6 ¹ / ₂	8	10	11 ⁷ / ₈	15 ³ / ₈	17	19
F	ALL	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	6 ³ / ₈	6 ³ / ₈	6 ³ / ₈	6 ³ / ₈
G	ALL	6	6 ³ / ₄	7 ¹¹ / ₁₆	8 ³ / ₄	11 ³ / ₄	14	21	24 ¹ / ₂	28	34 ¹ / ₂
Н	ALL	10	11	11	11	12	13	14	17	18	20

* Approximate dimensions

METRIC DIMENSIONS - M.M.

DIM	END CONN.	DN32-DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300	DN400
Α	150# FLGD	216	238	267	305	381	451	645	756	864	1026
	300# FLGD	222	251	283	324	397	473	670	791	902	1067
D	150# FLGD	59-64	76	89	95	114	140	171	203	241	298
D	300# FLGD	67-78	83	95	105	127	159	191	222	260	324
С	150# FLGD	108	121	152	152	191	254	322	378	432	529
	300# FLGD	111	127	162	162	198	267	335	395	451	549
D	150# FLGD	76	98	102	102	140	152	203	289	279	398
	300# FLGD	79	105	111	111	148	165	216	306	298	419
E	ALL	152	152	178	165	203	254	302	391	432	483
F	ALL	98	98	98	98	98	98	162	162	162	162
G	ALL	152	171	195	222	298	356	533	622	711	876
H	ALL	254	279	279	279	305	330	356	432	457	508

* Approximate dimensions







* General representation of valve



TYPICAL INSTALLATION



FLOW CHARACTERISTICS

VALVE SIZE	1.25" (DN32)	1.5" (DN40)	2" (DN50)	2.5" (DN65)	3" (DN80)	4″ (DN100)
GLOBE Cv	23	27	47	68	120	200
GLOBE Kv	20	23.3	40.6	58.8	103.8	173
ANGLE Cv	30	35	65	87	160	270
ANGLE Kv	26	30.3	56.2	75.2	138.4	233.5

VALVE SIZE	6" (DN150)	8" (DN200)	10" (DN250)	12" (DN300)	14" (DN350)	16" (DN400)
GLOBE Cv	450	760	1250	1940	2200	2850
GLOBE Kv	389.25	657.4	1081.2	1678	1903	2465.2
ANGLE Cv	550	1000	1600	2400		4000
ANGLE Kv	475.8	865	1384	2076		3460

* Approximate dimensions

* Not all items pictured reflect products sold by OCV



TECHNICAL DATA

Temperature:

- Buna-N 32°F to 180°F
- EPDM 32°F to 230°F

Solenoid Valve Voltage:

 24VDC explosion proof standard (all other standard voltages available, AC and DC)

Sizes:

- Globe or Angle: 1.25, 1.5, 2, 2.5, 3, 4, 6, 8, 10", 12", 16" • 14" available in Globe only

End Connections:

• Flanged: ANSI Class # 150 and # 300

Pressure Rating (at 100°F)::

- 250 psi for 150# ANSI flanged Ductile Iron
- 285 psi for Steel and Stainless Steel
- 300# ANSI flanges are available

Body and Cover Material:

- Stainless Steel Ductile Iron
- Cast Steel • Duplex Stainless Steel
- NAB

Trim Material:

- Copper Tubing
- Bronze/Brass Trim Connections
- Stainless Steel
- Monel

Optional Components:

- Alarm Test Trim
- Upstream Drain Valve
- Pressure Switch
- Limit/Proximity Switch

Items to Specify:

- Serial Number
- Valve Size
- Globe or Angle
- Flanged 150# or 300# ANSI
- •Trim Material
- Voltage
- Special Needs/Installation Requirements
- If explosion proof accessories are required, please define classification

ENGINEERING SPECIFICATIONS

The deluge valve shall be a single-seated, line pressure operated, diaphragm actuated, globe valve. The deluge valve shall seal by means of a corrosion resistant seat and resilient, rectangular seat disc. Maintenance, disassembly and reassembly of all the valve's components shall be made possible on-site and in-line, without the need to remove the valve from the line. The stem of the main valve shall be guided top and bottom by integral bushings. Alignment of the body, bonnet and diaphragm assembly shall be by precision dowel pins. The diaphragm shall not be used as a seating surface, nor shall pistons be used as an operating means. The deluge valve shall be fully trimmed, hydrostatically and operationally tested at the factory. The main valve body and bonnet standard material shall be Ductile Iron or Cast Steel. Main valve body and bonnet surfaces shall include a fire red epoxy coating. Other materials and coatings available upon request. The main valve seat ring shall be bronze (other materials available upon request). Elastomers (diaphragms, resilient seats, and O-rings) shall be Buna-N or E.P.D.M. Control pilot shall be bronze or Stainless Steel. The solenoid valve shall be Stainless Steel. The control line tubing shall be copper (other materials available upon request). Additional coatings and special materials are available upon request. The deluge valve shall be a Model 115-4DV as manufactured by OCV Fluid Solutions, Tulsa, OK, USA.

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