



Pre-Action Valves







### Single or Double-Interlock Pre-Action, Electrically Actuated Valve



Electrically controlled, single or double-interlock, pre-action valve, actuated by the pipeline pressure. The valve is closed in its normal, set position and opens when a 2w solenoid valve is energized. The electric interlock functionality is controlled through the fire control panel. An emergency manual release valve is fitted as standard.



### Certification & Compliance

UL Listed under VLFT category



Lloyd's Register Approval

ANSI FCI 70-2 Class VI seat leakage class

Fire tested to EN ISO 6182-5:2006 (2"-6" only)



### Features & Benefits

- High pressure (PN25/375psi), high flow systems
- Automatic or manual emergency actuation
- Industrial & commercial fire suppression
- Hazardous, flammable & explosion classified area fire suppression
- Superior design featuring exceptionally low pressure losses at high flow rates
- Low lifelong maintenance costs due to straightforward design
- Applicable for water, seawater & foam
- Out of box fully assembled & tested valves
- Factory trimmed for vertical & horizontal installations without modification
- Extensive valve & trim materials selection and corrosion protection coating



### Typical Applications

Machine Rooms

Cold Storage Protected Areas

High Rise Buildings & Offices



LISTED



Power Plants

Archives, Museums, Libraries, & Water Sensitive Depots









Pre-Action Valves



The basic control valve [1] used in this pre-action system is a direct-sealing elastomeric diaphragm, hydraulically operated control valve engineered specifically for fire protection systems.

In the standby position, the pre-action 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 check valve [4] and a T-restrictor [5].

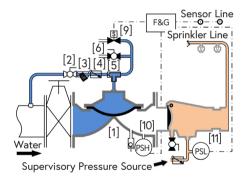
Under fire conditions, a fire alarm control panel (F&G panel) energizes the 2/2-way N.C. Solenoid [9] (or de-energizes the coil of a continuously energized ED 100% normally open solenoid for SIL 3-4 rated systems).

In single-interlock systems the solenoid is energized upon activation of the detection system. In double-interlock systems the solenoid is energized upon activation of the detection system and a drop in supervisory pressure, following bursting of one (or more) of the automatic sprinklers. When this happens, water is drained from the pre-action valve's control chamber through the 2/2-way N.C. Solenoid. The pre-action valve opens instantly and allows water to flow into the pipeline and through any open sprinklers over the protected area.

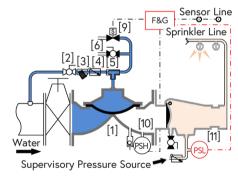
Pressure switches on the pre-action valve's downstream port [10] and the check valve's downstream port [11] provide electrical indication to the fire alarm control panel of rising water pressure (the valve has opened) and drop in air (or gas) pressure (one or more sprinklers have burst).

Manual emergency actuation is enabled by opening the emergency manual activation valve [6]. The pre-action valve opens instantly and allows water to flow into the pipeline and through any open sprinklers over the protected area.

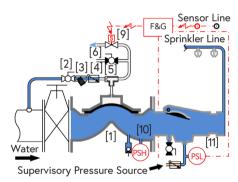
#### Standby Position



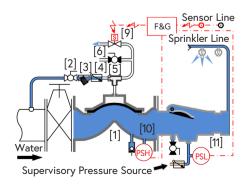
#### Sprinkler Burst (Valve Remains Closed)



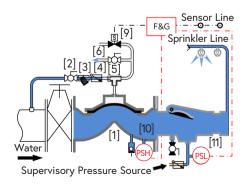
#### Sensor Line Activated - Pipeline Filled (Single-Interlock Only)



#### Sprinkler Burst & Sensor Line Activated



#### Manually Actuated



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

Pre-Action Valves

# △ OCV Model 68 DE\EL △ Aquestia





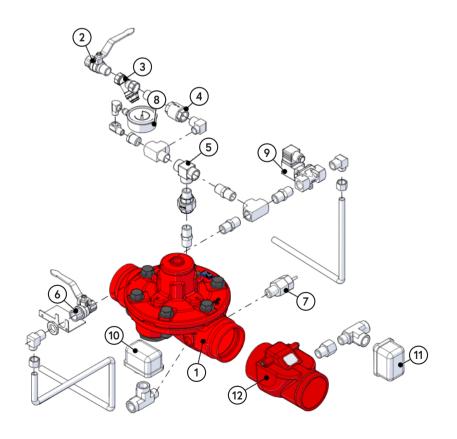
### Components & Typical Materials

The OCV 68 DE\EL consists of the following components, arranged as shown on the schematic diagram below.

ID	Part	Standard Material	Industrial Applications	
1	Valve Body	See OCV S100 Engineering Data (1)		
2	Ball Valve	Bronze, Stainless Steel Ball Stainless Steel 316		
3	Y-Type Strainer	Bronze, Stainless Steel Screen Stainless Steel 316		
4	Check Valve	Bronze Stainless Steel 316		
5	T-Restrictor	Brass	Stainless Steel 316	
6	Manual Emergency Valve	Bronze	Stainless Steel 316	
7	Drip Valve	Brass	Stainless Steel 316	
8	Pressure Gauge	Stainless Steel	Stainless Steel 316	
9	2/2 Way N.C. Solenoid (2)	Brass	Stainless Steel 316	
10	PSH (Pressure Switch High)	Specified Upon Request	Specified Upon Request	
11	PSL (Pressure Switch Low)	Specified Upon Request	Specified Upon Request	
12	Riser Check Valve	Ductile Iron	Ductile Iron	

<sup>(1)</sup> Refer to materials selection guidelines, Engineering Data - Materials: Ductile Iron A-536 65-45-12; Cast Steel A-216 WCB; Cast Steel A-352 LCB; Austenitic Stainless Steel A-351/CF8M; Super Duplex 2507; Nickel-Aluminum-Bronze B-148 UNS C95800

(2) Consult factory





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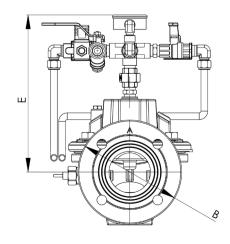
### General Arrangement & Dimensions

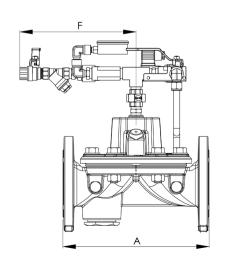
Standard Sizes							
DIM	2"	21/2"	3"	4"	6"	8"	10"
А	9 5/8	9 3/16	12 <sup>3</sup> / <sub>16</sub>	14	17 <sup>3</sup> / <sub>16</sub>	20 7/8	25
A <sub>G</sub> <sup>(1)</sup>	9 5/8	10	13 <sup>3</sup> / <sub>16</sub>	15	17 <sup>5</sup> / <sub>16</sub>	21 <sup>7</sup> / <sub>8</sub>	
В	6 5/8	7 <sup>3</sup> / <sub>8</sub>	7 7/8	9 3/8	12 <sup>1</sup> / <sub>8</sub>	14 <sup>3</sup> / <sub>16</sub>	16 <sup>7</sup> / <sub>8</sub>
С	5	5	6 5/16	6 13/16	7 7/8	9 1/2	11 <sup>1</sup> / <sub>8</sub>
D	6 3/16	6 3/16	6 5/16	6 3/16	6 5/16	7 7/8	9 13/16
Е	9 3/16	9 3/16	11 <sup>13</sup> / <sub>16</sub>	11 <sup>13</sup> / <sub>16</sub>	14 <sup>7</sup> / <sub>8</sub>	15 <sup>11</sup> / <sub>16</sub>	16 <sup>5</sup> / <sub>8</sub>
F	9 11/16	9 11/16	9 11/16	9 11/16	9 11/16	10 <sup>3</sup> / <sub>8</sub>	12 1/2

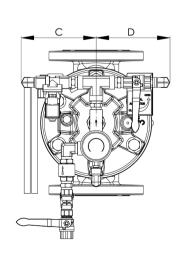
Approximate Dimensions. (1) Grooved model length.

Metric Sizes							
DIM	DN50	DN65	DN80	DN100	DN150	DN200	DN250
А	243	233	310	356	436	530	635
A <sub>G</sub> (1)	243	253	336	380	440	556	
В	168	185	200	238	306	360	430
С	126	126	159	173	202	242	291
D	157	157	157	157	160	200	249
Е	234	234	300	296	379	399	422
F	246	246	246	246	246	265	317

Approximate Dimensions. (1) Grooved model length.











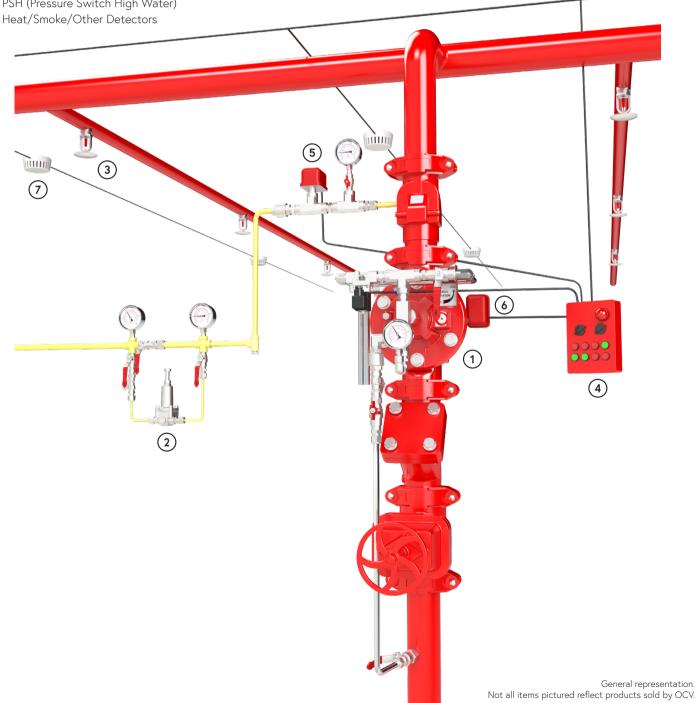
#### Pre-Action Valves

## Typical Installation

The typical installation of the OCV 68 DE\EL is as shown:

- Single or Double-Interlock Pre-Action, Electrically Actuated Valve 1
- 2 PPCS (Pneumatic Pressure Control System)
- Automatic Sprinkler Line
- 4 Fire Alarm Control Panel
- PSL (Pressure Switch Low Air)
- PSH (Pressure Switch High Water)









## Technical Data

Pre-Action Valves

Temperature (Elastomers)					
Media	up to 80°C = 176°F				
Elastomers	suitable for extreme climates (available upon request)				
Sizes					
UL Listed Model 68	2" - 10"				
Straight Flow	2" - 24"				
Pressure Rating (ANSI at 100°F)					
250psi for Class 150#					
375psi for Class 300#					
End Connections					
	ISO-PN16 & ISO-PN25				
Flanged	ANSI B16.42 & B16.5 Class 150# & 300#				
	Additional options available upon request				
Grooved	Sizes: 2"-8"				

Body & Cover Material				
Ductile Iron	Stainless Steel			
Cast Steel	NAB			
Trim Material				
Bronze/Brass - Copper				
Stainless Steel				
Monel				
Optional Components				
Position Indicator				
Alarm Test Trim				
Upstream Drain Valve				
Pressure Switch				
Limit/Proximity Switch				
Spring				
Items to Specify				
Electrical features other than standard (24VDC, IP65/NEMA4)				
If explosion proof accessories are required such as solenoids, pressure switches, etc., please define classification				
Control trim material other than standard				
Required standards, certifications and approvals				



### Engineering Specifications

The pre-action valve shall be hydraulically operated, direct elastomeric diaphragm-seal, single chamber weir type. The valve shall consist of three major components: the body, the cover and the diaphragm assembly. The diaphragm assembly shall be the only moving part. The diaphragm forms a sealed control chamber in the upper portion of the valve, separating operating pressure from line pressure. Packing glands, stuffing boxes and dynamic o-ring seals are not permitted and there shall not be shafts, discs, bearings or pistons operating the valve. No hourglass shaped disc retainers shall be permitted, and no V-type, U-type or other slotted type disc guides shall be used. The valve shall contain a nylon reinforced rubber diaphragm, elastic & resilient through its entire surface without vulcanized radial seals and/or reinforcements. The

diaphragm assembly shall not be guided by any shafts or bearings and shall not be in close contact with other valve parts except for its sealing surface. The pre-action valve shall be fully trimmed, hydrostatically and operationally tested at the factory. 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. 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 pre-action valve shall be an OCV 68 DE\EL, UL Listed under VLFT category, as manufactured by OCV, an Aquestia Ltd. brand, Tulsa, OK, USA.

Aquestia Ltd. reserves the right to make product changes without prior notice. To ensure receiving updated information on parts specifications, please contact us at usa@aquestia.com. Aquestia Ltd. shall not be held liable for any errors.

