OCV Model 77 DE\RC

Deluge Valves

Aquestia
Directing the Flow

General representation

Fire Protection

Electrically Actuated, Remote Reset Deluge Valve 3/2 Solenoid

Description

Electrically controlled deluge/pre-action valve, actuated by the pipeline pressure. The valve is closed in its normal, set position and opens when a 3w solenoid valve is energized. It closes drip-tight when the solenoid valve is de-energized. An emergency manual release valve is fitted as standard. Also available with manual reset: DE\RC-MR.

Certification & Compliance

Lloyd's Register Approval

ANSI FCI 70-2 Class VI seat leakage class

Lloyd's Register

Features & Benefits

–   High pressure, high flow deluge systems

–   Automatic or local manual emergency actuation

–   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 fresh or brackish 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

Automatic or Manual Actuated Fire Suppression Systems

Petrochemical, Oil & Gas Installations

Tunnels

Power Generation, Transformer & Transmission Plants

Flammable Storage

Hangers & Airport Terminals

Onshore/Offshore

Mining

Operation

The basic control valve [1] used in this deluge system is a direct sealing elastomeric diaphragm, hydraulically operated control valve engineered specifically for fire protection systems. The system includes a 3/2-way N.O. solenoid [10] as the interface between the fire alarm control panel - monitoring heat, smoke or flames - and the deluge valve.

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 check valve [4] and a T-restrictor [5].

Under fire conditions, a fire alarm control panel energizes the 3/2-way N.O. solenoid (or de-energizes the coil of a continuously energized ED 100% normally closed solenoid for SIL 3-4 rated systems). The pressure in the relay valve [9] drops, causing it to open and 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 [6]. The deluge valve opens instantly and allows water to flow into the pipeline and through the open sprinklers over the protected area.
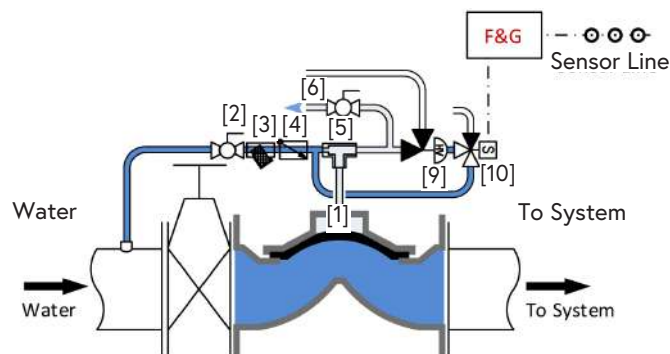
Standby Position
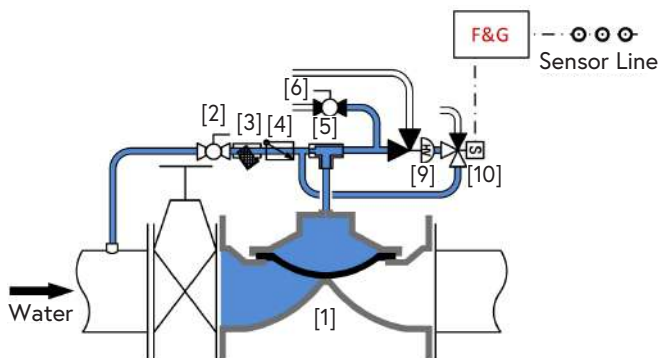
**Electrically Actuated**
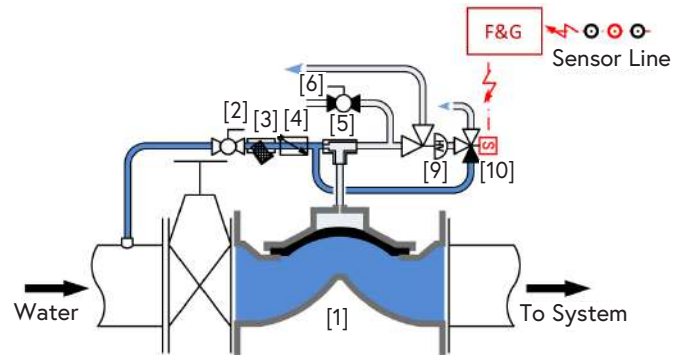
Manually Actuated

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

Typical Installation

The typical installation of the OCV 77 DE\RC is as shown:

1   Electrically Actuated, Remote Reset Deluge Valve
2   Fire Alarm Control Panel
3   3/2-Way N.O. Solenoid
4   Heat/Smoke/Other Detectors
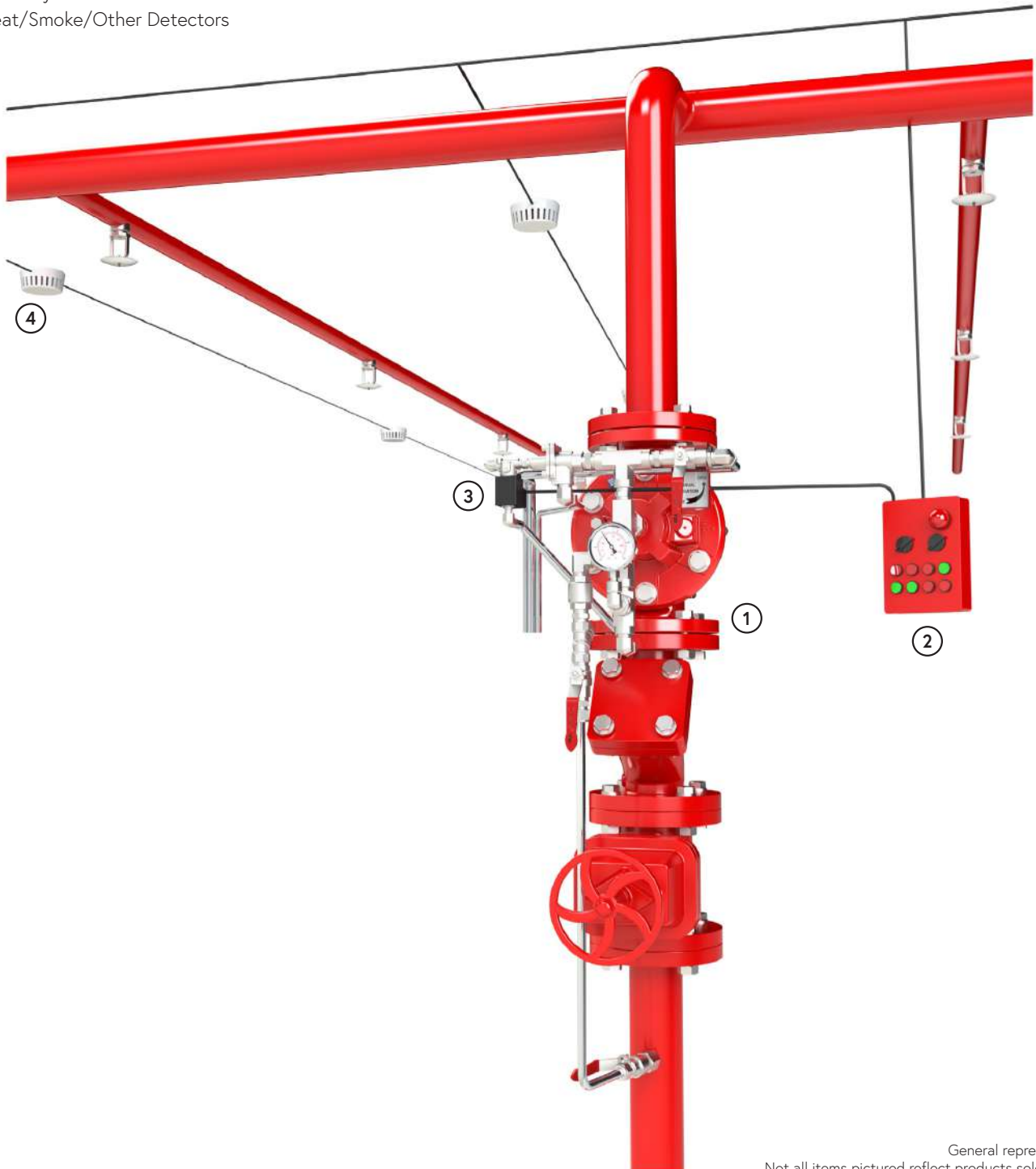
General representation.
Not all items pictured reflect products sold by OCV.

Technical Data

Temperature (Elastomers)	
Media	up to 80°C = 176°F
Elastomers	suitable for extreme climates (available upon request)

Sizes	
Lloyd's Type Approved	2" - 24"

Pressure Rating (ANSI at 100°F)
230psi / 16 bars

End Connections		
Flanged	ISO-PN16	
	ANSI B16.42 & B16.5 Class 150#	
	Additional options available upon request	
Grooved	Sizes: 2"-6"	

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

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 deluge 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 deluge 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 deluge valve shall be a OCV 77 DE\RC, Lloyd's Type Approved, as manufactured by OCV, an Aquestia Ltd. brand, Tulsa, OK, USA.

Aquestia USA

7400 East 42nd Place. Tulsa, Oklahoma 74145. USA | Phone: 1-918-627-1942 | Toll Free: 1-888-OCV-VALV (628-8258) | www.aquestia.com | usa@aquestia.com