

ISOVALVE Automatic valve



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ISOVALVE Automatic valve

One of the main features of the **ISOVALVE** automatic valve is that it uses the pressure of the fluid passing through it, to perform the functions which it has been designed for. The valve shutter is driven by the movement of the diaphragm, actuated through the energy of the process.

Operation

The valve operation is obtained by 2 Ex (24 VDC / 115-230 VAC) solenoid valves one of them normally opened (NO) and one normally closed (NC).

Typically the valve would be situated just downstream of the meter on tank truck loading terminals or transfer pipelines of petroleum or chemicals.

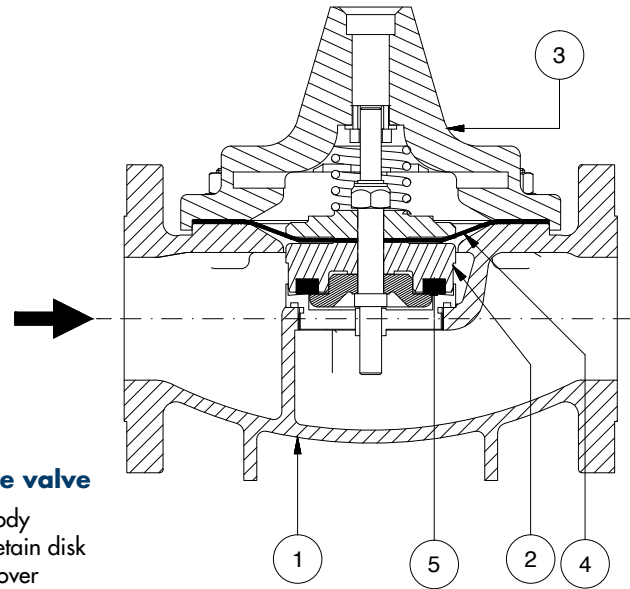
Functions

The valve control circuit may be configured in different ways in order to get several function, with the same kind of valves, as follows:

- » non return identified by (R)
- » flow limiting identified by (L)
- » 1 or 2 step closure/opening identified by (1S or 2S)
- » Multistep closure/opening

On request:

- » driven by pneumatic solenoid valves (P)
- » pressure reducing identified by (RID)
- » differential identified by (D)
- » calibrated flange identified by (FT)
- » special execution for LPG



Base valve

- 1) Body
- 2) Retain disk
- 3) Cover
- 4) Diaphragm
- 5) Gasket

Technical specifications

	STANDARD		ON REQUEST
	ISOVALVE	ISOVALVE/N	
EU Directives complience	ATEX and PED		
Working conditions			
Diameters:	3" e 4"	6", 8", 10"	
Viscosity range:	≤76 cSt	≤76 cSt	76÷300 cSt on request
Working pressure:	1,000 kPa	1,000 kPa	On request till 2,100 kPa
Min. differential pressure(*):	30 kPa	30 kPa	
Max. differential pressure(**):	1,000 kPa	1,000 kPa	
Working temperature:	[-10; +50] °C	[-10; +50] °C	Higher and lower available upon request
Max flow rate:	3": 1,600 l/min 4": 2,600 l/min	6": 6,000 l/min 8": 10,000 l/min 10": 18,000 l/min	
Construction			
Body:	Carbon steel	Carbon steel	
Cover:	Carbon steel	Carbon steel	
Internal parts:	Carbon steel with corrosion prevention treatment	Stainless Steel	Stainless Steel
Fittings:	2SLR: Carbon steel	Multistep: Stainless Steel	
Gaskets:	Viton	Nitrile	Viton
Diaphragm:	Nitrile	Nitrile	Viton
Pilots:	Bronze/Brass (2SLR)	Bronze/Brass (2SLR)	Stainless Steel
Piping:	Acciaio inox	Acciaio inox	
Flanges:	ANSI 150 RF	ANSI 150 RF	ANSI 300 RF
Solenoid valve			
Power supply / execution:	230 VAC 50 Hz / Ex	230 VAC 50 Hz / Ex	24 VDC / 115 VAC
Material:	Brass	Brass	Stainless Steel
Diaphragm and gasket:	Viton	Viton	

*Note 1: Minimum differential pressure is the smallest difference in pressure across the valve needed to ensure the valve works properly.

**Note 2: Maximum differential pressure depends on the model of solenoid valves in use, the value shown here refers to standard solenoid valves.

2SLR version

Automatic valve type 2SLR is regulated through two solenoid valves by a electronic counter (or by a mechanical counter with electrical micro-switches for preset functionality).

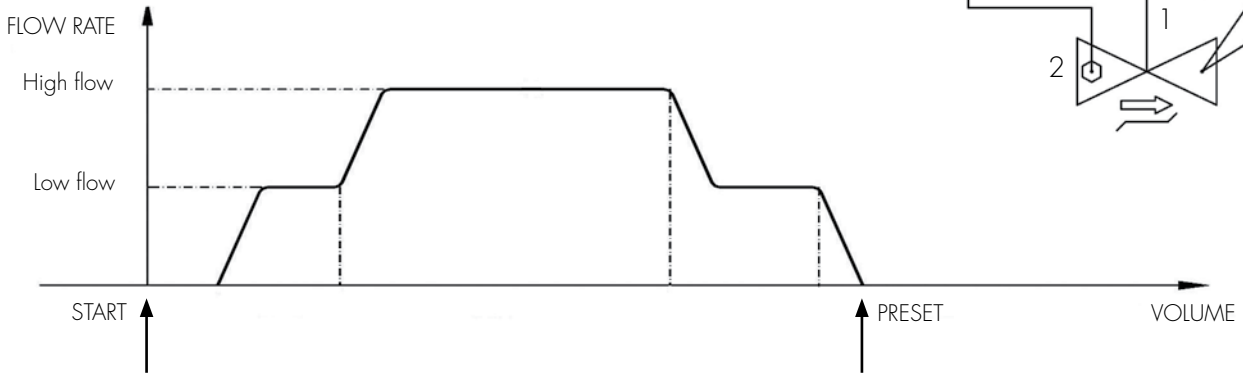
When solenoids valve (NO) and (NC) are both de-energised all flow is diverted to the upper part of the diaphragm causing rapid closing of the seal.

When both solenoids are energised, the valve is completely opened. The maximum opening can be governed by the pressure reducing valve screw (9).

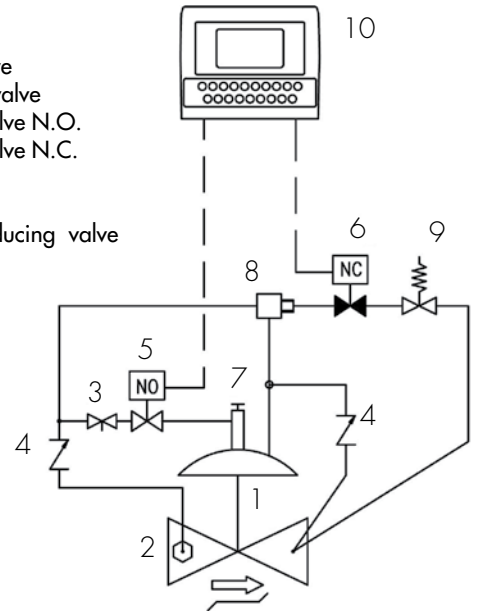
When solenoid valve (NO) is de-energised, and (NC) is energised the valve automatically reduces its flow to the low flow value can be regulated by a stem valve (7).

Control valve (3) allows for changes in velocity to switch from high rate to low rate flow. A strainer (2) filters product before it enters pilot circuits.

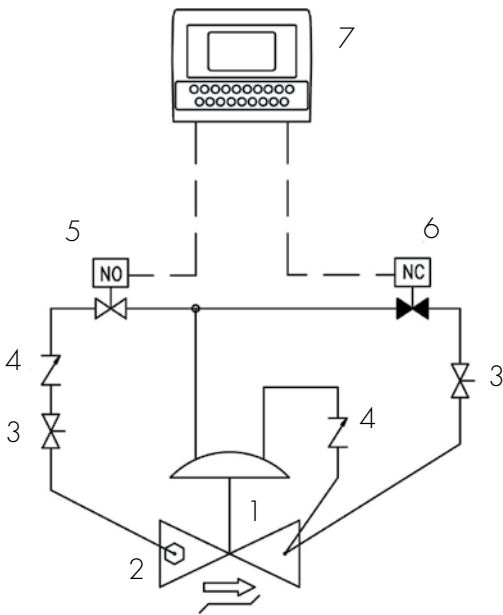
Typical functional diagram of 2SLR valve



- 1) Base valve
- 2) Strainer
- 3) Control valve
- 4) Not return valve
- 5) Solenoid valve N.O.
- 6) Solenoid valve N.C.
- 7) Stem valve
- 8) Eijector
- 9) Pressure reducing valve
- 10) Counter



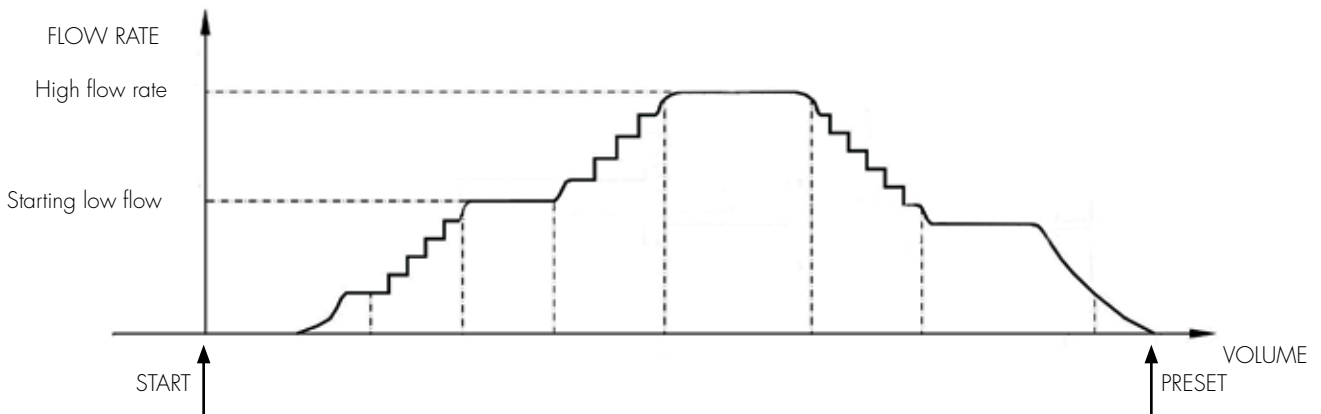
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- 7) Counter



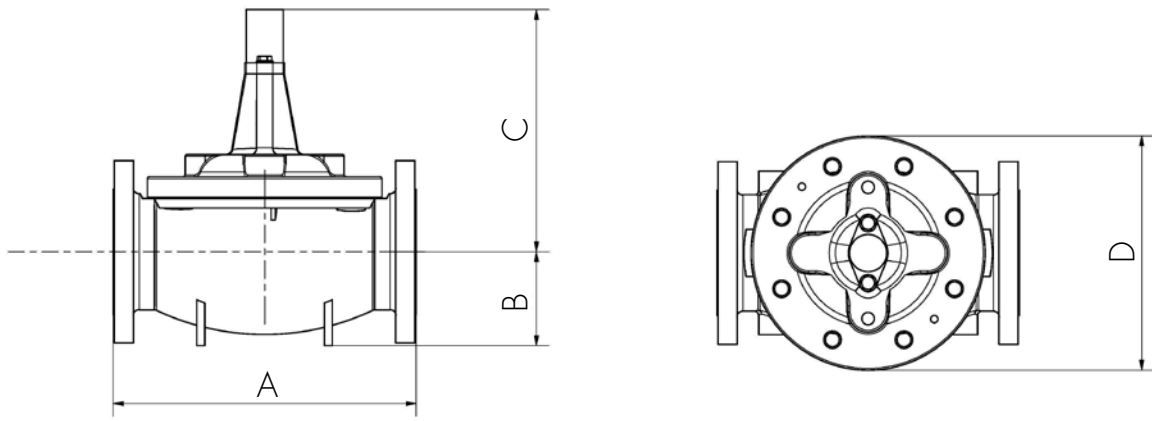
Multistep/R version

The type Multistep/R is a diaphragm automatic valve, controlled by two solenoid valves. The electronic flow computer drives the opening or closing of the solenoid valves causing a step by step opening or closing of the diaphragm. By modifying the frequency and height of the pulses generated by the flow computer, flow rate regulation is obtained. Multistep type can be built without not return valve (R)

Typical functional diagram of Multistep/R valve



Weights and dimensions

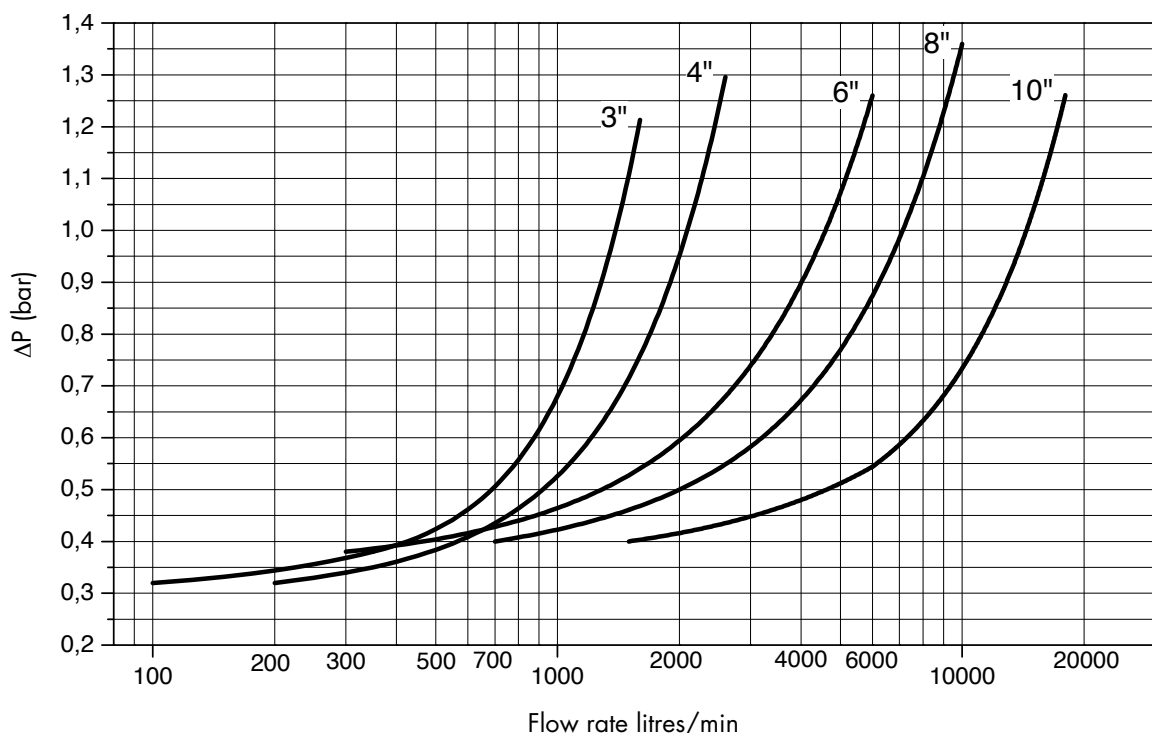


Dimensions	ISOVALVE 3"	ISOVALVE 4"	ISOVALVE/N 6"	ISOVALVE/N 8"	ISOVALVE/N 10"
A	305 mm	380 mm	508 mm	645 mm	755 mm
B	100 mm	118 mm	175 mm	210 mm	250 mm
C	260 mm	290 mm	355 mm	400 mm	480 mm
D	235 mm	294 mm	403 mm	510 mm	610 mm
Weight	41 Kg	65 Kg	115 Kg	185 Kg	375 Kg

Dimensions and weights are not binding
Other diameters on request

Note: control needle valves and related pipes will change according to model of valve (Multistep, 2SLR, etc.), therefore dimensions C and D will vary accordingly.

Diagram pressure drop



Fluid test: Viscosity 5 cSt and density 1,000 kg/m³ at 15°C.
The valve is completely open and not flow limiting.