

Proportional 2/2 Way NC Direct Operated Valve

General Description

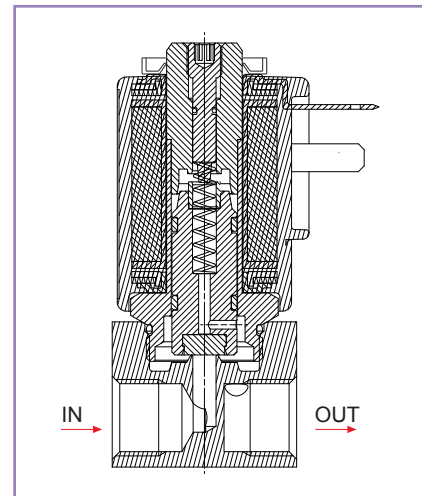
This valve is a 2/2 Way normally closed direct operating solenoid valve and is based on the GEM-SOL solenoid valve. It is used as a control valve in process control, medical systems etc.



Working Principle

The Solenoid Operator is used to create a magnetic force. The balance between this force and the returning spring at any current, is used to control the plunger stroke which determines the valve opening. The magnetic force is directly associated to the current passing in the coil.

The fluid enters the valve below the seat. The fluid pressure together with the magnetic force acts against the return spring. Setting this spring will change the minimum current needed to open the valve, and by that, the minimum flow.



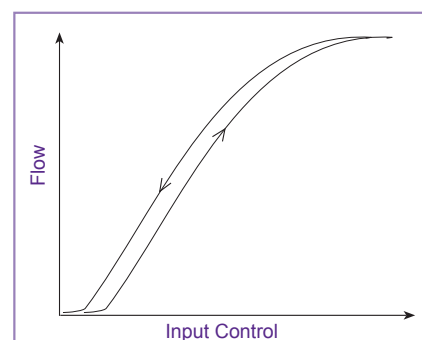
Notes

- Because this is a specialized valve, we recommend that you contact solenoid-valve.world in the planning phase.

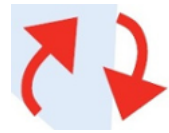
How to Order

Example : GEM-PR-21015N0-1

Is a GEM-SOL Proportional direct operating, Brass, 1/8" BSP 2WNC, 2.4 orifice, NBR, without manual override, with connector.



GEM-PR	Body	Port	Function	Orifice	Seals	Manual Override	Connector
	Brass 2	1/8"BSP 10	2WNC 1	0.8 1	NBR N	None 0	without 0
	St.st 3	1/4"BSP 20		1.2 2	VITON V		with 1
	Alum. 5	1/8"NPT 11		1.6 3	EPDM E		
		1/4"NPT 21		2.0 4			
				2.4 5			
				3.0 6			
				4.0 7			



Technical Specifications

Function:	2/2 Way NC
Ports size:	1/8" and 1/4" BSP & NPT
Orifice:	See table
Kv ⁽²⁾ :	See table
Pressure range:	See table
Temperature range:	Fluid: -10°C to 80°C Ambient: -10°C to 55°C
Materials in contact with fluids	Main valve : Aluminum, Brass, Stainless steel 316 Solenoid Operator: Stainless St. 300/400 series Seals: NBR, Viton or EPDM Guide Rings: PTFE
Weight (with coil):	250 gr (aluminum base)
Media:	Neutral gases, water, oil Max. Viscosity 21mm ² /s
Mounting:	In any position, preferably upright

Electrical Specification:

The Control Parameter is the current in the Coil!

Operating Current:	100-500 [mA] Standard voltage 24 VDC(=)
Protection Class:	IP65 with connector
Coil terminal:	Per DIN 43650-a 2 flying leads 18AWG 300mm length.

Maximum Working Pressure (bar)

	Orifice Size (mm)						
	0.8	1.2	1.6	2.0	2.4	3.0	4.0
Pressure rating [bar] ⁽³⁾	16	12	10	8	6	3.5	2
Kv (l/min)	0.6	1.1	1.7	2.5	3.5	4.5	5

(1) From technical vacuum to max.rating

Flow regulation :

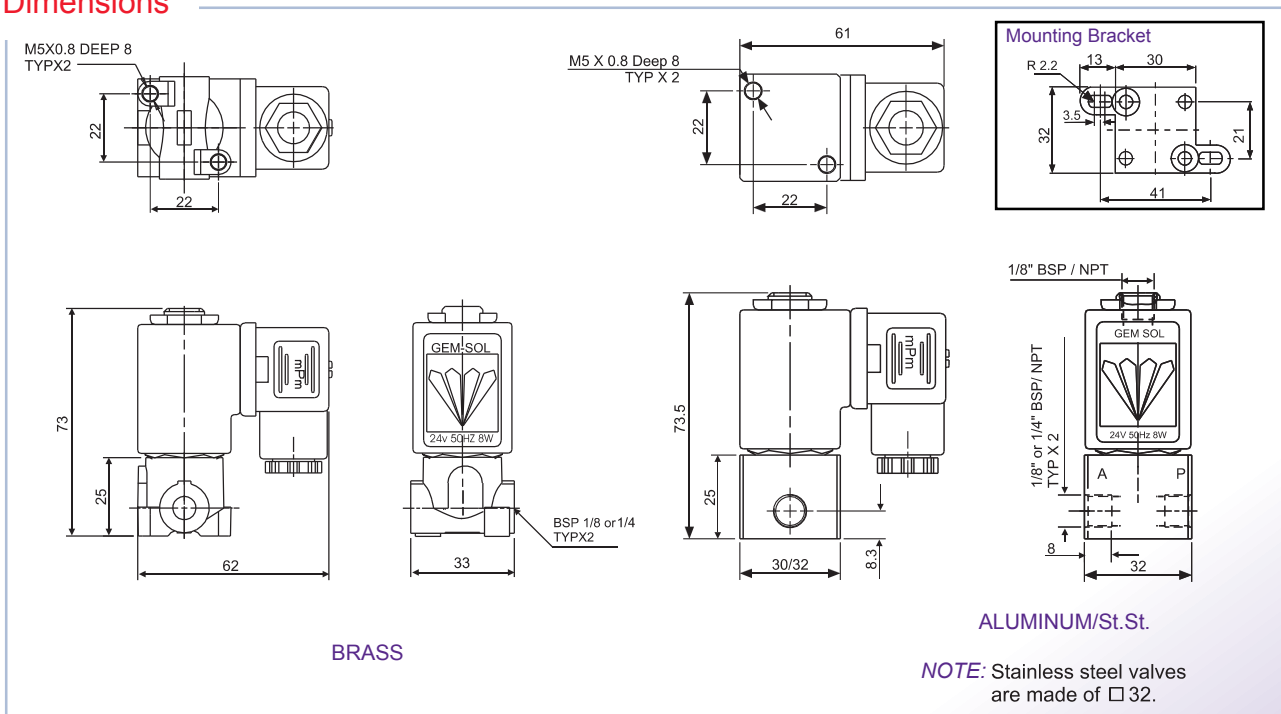
With Control unit P.W.M 500[Hz], measured at constant ΔP (delta P).

Hysteresis	<5% of F.S.
Repeatability	<3% of F.S.
Sensitivity	<2% of F.S.

Guidelines for selection GEM-PR valve

1. The pressure drop (ΔP) on the valve should be 30-50% or higher, of the total pressure drop in the system.
2. Special consideration should be taken in choosing the right Kv of the valve as this factor determines the flow and pressure drop of the valve.
3. To achieve better regulation performance when working without a control unit, the maximum pressure should be 1.2 times the working pressure. The maximum pressure can be adjusted using the upper screw.
4. Inlet pressure should be kept constant during operation.

Dimensions



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