PLAST-O-MATIC

PRODUCT DATA

SERIES PS PILOT OPERATED SOLENOID VALVE

INLET RATING 140 PSI, BACK PRESSURE RATING TO 70 PSI, WITH MINIMUM 5 PSI DIFFERENTIAL REQUIRED



FEATURES:

- Normally closed, in-line design with bubble-tight shut-off.
- Minimum 5 PSI differential required.
- High pressure: Particularly for applications where high back-pressures (up to 70 PSI) are required e.g. controlling flow spray nozzles, high pressure chemical injections, etc. Inlet pressure to 140 PSI.
- High flow rates – Cv's from 5.2 on the 1/2" size to 80 on the 3" size.
- Unique Design: PTFE Bellows barrier-type dynamic seal prevents leaking of fugitive emissions to the atmosphere.
- Safety/Dependability: Patented Fail-Dry® safety design feature provides advance visual warning if seal malfunctions, while permitting valves to continue operating until maintenance can be scheduled.
- Tested to over 1,000,000 cycles in laboratory conditions, with water.
- Versatility: Can be used with all types of solutions including acids, caustics, solvents and chlorine solutions.
- Rugged thermoplastic construction is resistant to both internal and atmospheric corrosion. No metal parts in wetted areas.
- Positive valve closure in the event of electrical failure.
- Energy-efficient 11 watt coil.
- Molded coil and standard DIN connector; designed to meet NEMA 4X.
- Sizes: 1/2", 3/4", 1", 1 1/2", 2 and 3".

MATERIALS OF CONSTRUCTION:

Series PS Pilot Operated Solenoid Valves are available with standard delivery in PVC (Type 1, Grade 1) and with slightly longer delivery in CPVC (Corzan™), Polypropylene and PVDF (Kynar®). Consult factory.

W11 COIL:

This continuous duty NEMA 4X style coil is water and dust tight and is suited for corrosive atmospheres compatible with polyester. Voltage tolerances +10%, -15% @ 104°F.

MEDIA:

Not suitable for liquids containing particulate matter. Liquid should be filtered with 80 Mesh (.007) filter or finer. Liquids prone to crystallization must remain in solution or diaphragm may clog.

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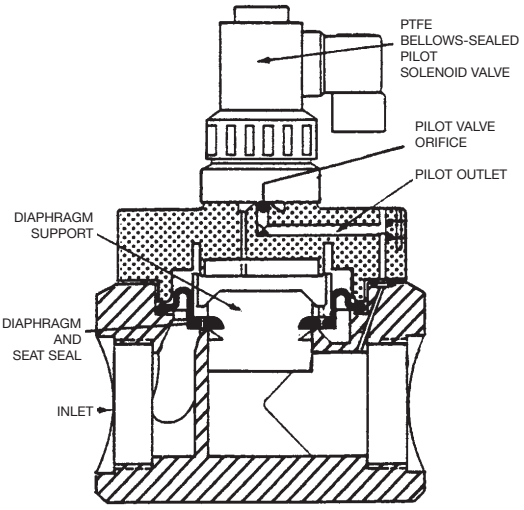
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OPERATION:

The Series "PS" valve illustrated at right is pilot-operated and normally closed by design. It requires line pressure and flow for operating assistance. Under the correct pressure conditions (see chart below) the coil, when energized (power on), creates an electromagnetic field in the top section of the core tube. This force pulls the core and pilot seat upward, opening the pilot valve.

The liquid pressure above the diaphragm is then vented through the open orifice of the pilot valve to the downstream piping. At this moment, the inlet pressure under the diaphragm lifts the diaphragm and opens the main valve orifice, thereby permitting full flow through the valve.

When the coil is de-energized (power off), the pilot solenoid spring (not in the wetted area) pushes the core and pilot seat downward, closing the pilot valve. This causes pressure above the diaphragm to rise to inlet pressure level, forcing the diaphragm downward against the main valve seat sealing the valve. Note - Series "PS" solenoid valves require a minimum differential pressure of 5 PSI to operate properly.



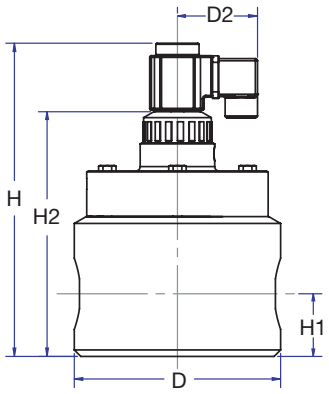
SPECIFICATIONS

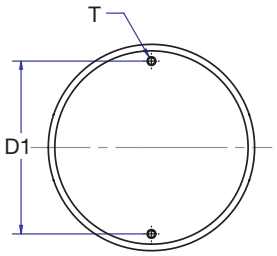
Pressure	PSI	(Bars)
Maximum Inlet @ 75°F (24°C)	140	(9.5)
Maximum Inlet @ 140°F (60°C)*	40	(2.8)
Minimum Inlet	5	(0.4)
Maximum Outlet @ 75°F (24°C)	70	(4.8)
Minimum Differential	5	(0.4)

*This rating is for PVC. For other materials consult factory.

SERIES "PS" MODEL NUMBERS

Valve Size NPT	Cv
1/2"	5.2
3/4"	7.6
1"	9.5
1-1/2"	28.0
2"	35.0
3"	80.0





COIL SPECIFICATIONS

Insulation Class	Coil Surface Temperature	Max. Allowable Ambient Temp.	VA Inrush	VA Holding
F	185°F (85°C)	104°F (40°C)	66	24
VOLTAGE OPTIONS (Most coils CSA certified)				
AC	024/60, 120/60, 240/60, 230/50			
DC	24 VDC, 12 VDC (For 12 VDC, consult factory)			

DIMENSIONAL SPECIFICATIONS

MODEL	PIPE SIZE	H		H1		H2		D		D1		D2		T
		IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	THREAD SIZE
PS050	1/2"	6.63	158.4	0.72	18.3	4.54	115.3	3.50	88.9	2.50	63.5	2.3	58.4	1/4" - 20
PS075	3/4"	7.28	184.9	1.16	29.5	5.20	132.1	4.00	101.6	3.00	76.2	2.30	58.4	1/4" - 20
PS100	1"	7.28	184.9	1.16	29.5	5.30	134.6	4.00	101.6	3.00	76.2	2.3	58.4	1/4" - 20
PS150	11/2"	9.53	242.1	1.81	46.0	7.13	181.1	6.00	152.4	5.00	127.0	2.3	58.4	1/4" - 20
PS200	2"	9.53	242.1	1.81	46.0	7.13	181.1	7.00	177.8	5.00	127.0	2.3	58.4	1/4" - 20
PS300	3"	11.88	301.8	2.50	63.5	9.30	236.2	9.00	228.6	7.50	190.5	2.3	58.4	3/8" - 16

PART NUMBERS

PS — **Model**: PS

200 — **Pipe Size**:
050 – 1/ 2"
075 – 3/4 "
100 – 1"
150 – 1 -1/2"
200 – 2"
300 – 3"

V — **Seals**:
V – Viton
EP - EPDM

W11

120/60 — **Coil Voltage**:
012DC – 12V DC (consult Factory)
024/60 – 24V AC, 60Hz
024DC – 24V DC
120/60 – 120V AC, 60Hz
230/50 – 230 V AC, 50 Hz
240/60 – 240V AC, 60Hz

PV — **Material**:
PV – PVC
CP – CPVC
PP – Natural PolyPropylene
PF – PVDF

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