



PSV
Proportionating
Electromagnetic
Valve

PSV Proportionating Electromagnetic Valves are designed to respond to variable power inputs to proportionately regulate the flow of liquids and gases.

For added safety PSV valves are normally closed (NC) when de-energized. They can also serve as “ON-OFF” valves. For control functions see the PSV-D Driver Module.

Flow is controlled by increasing or decreasing the voltage applied to the coil. This causes a magnetic force which raises the core and allows gas to flow.

PSV valves, constructed of stainless steel are available in five different sizes covering flow ranges from 3.5 L/min - 100 L/min air and 125 mL/min - 2.85 L/min H₂O.

Design Features

- Leak Integrity 1 x 10⁻⁹ mL/sec.
- Rigid metallic construction.
- Gas and liquids.
- Max pressure of 1000 psig (68.9 bars).

Principle of Operation

A variable stroke electromagnetic valve featuring a valve seat design which permits increasing or decreasing flow rates of liquids or gases through it in proportion to variable input power.

Regulator Systems

Complete flow regulating systems include a PSV electromagnetic valve connected to a pulse width modulated PSV-D Driver Module. For details see Driver Module description.

TABLE 87 - MAX FLOW RATES AND CV VALUES FOR PSV

MODEL NUMBER	ORIFICE SIZE		Cv	*MAXIMUM FLOW [mL/min]	
	[in]	[mm]		AIR	WATER
PSV1S-VA	0.02	0.51	0.009	3500	125
PSV2S-VA	0.04	1.02	0.033	13000	400
PSV3S-VA	0.055	1.4	0.055	21500	700
PSV4S-VA	0.063	1.6	0.068	25000	850
PSV5S-VA	0.125	3.18	0.24	100000	2850

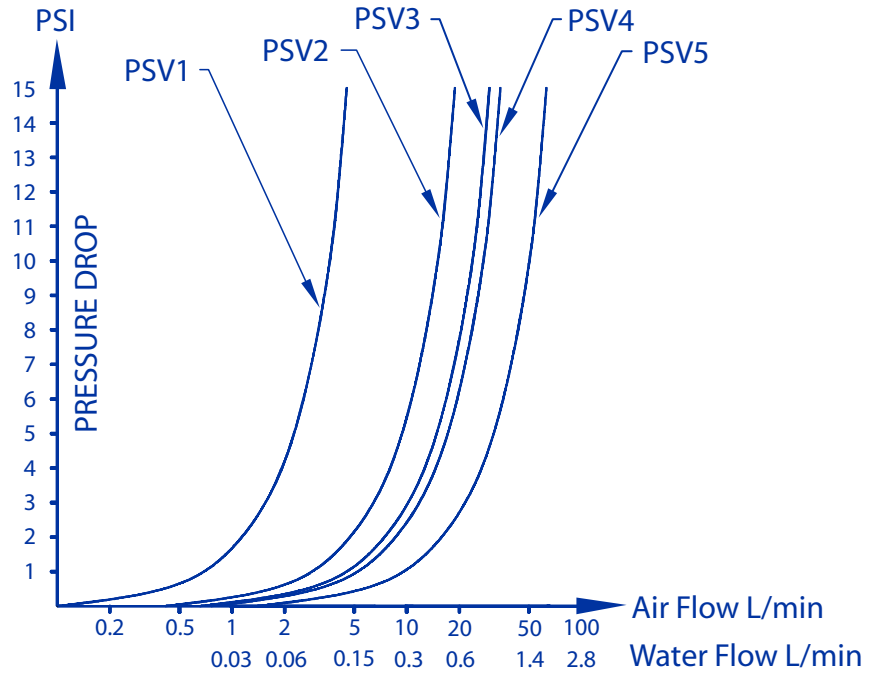
* Based on 10 psig (690 mbar) differential pressure for sizes 1-4 20 PSIG 1380 mBar for size 5.

TABLE 88 - SPECIFICATIONS

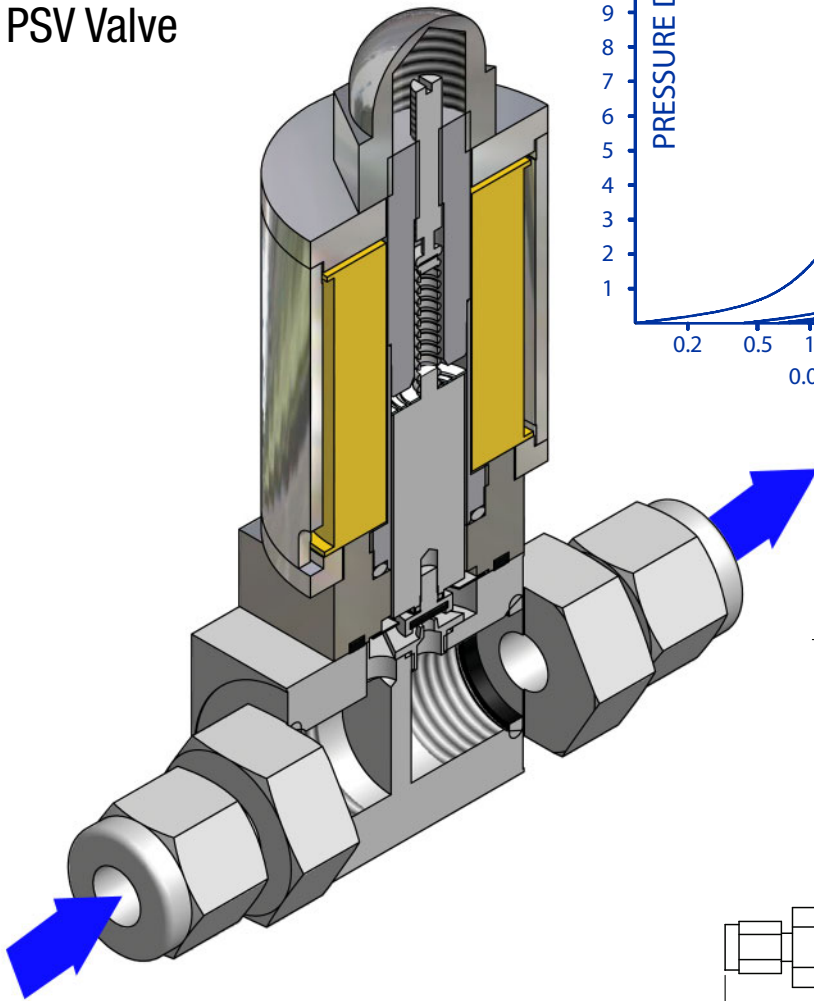
POWER INPUT:	0-30Vdc.
MAXIMUM POWER REQUIRED:	400 mA.
TYPE OF OPERATION:	Normally closed (NC) when de-energized.
CONNECTIONS:	1/4" Compression fittings optional 3/8" (1/8" with PSV1, 2 or 3).
** MATERIALS IN FLUID CONTACT:	Types 316 and 416 stainless steel, Viton® O-rings. Optional O-rings: Buna®, EPR and Kalrez®.
MAXIMUM PRESSURE:	1000 psig (6897 kPa).
MAXIMUM DIFFERENTIAL PRESSURE:	50 psid (345 kPa).
LEAK INTEGRITY:	1 X 10 ⁻⁹ smL/sec Helium individually tested.
FLUID TEMPERATURE:	14 °F to 122 °F (-10 °C to 50 °C).
MAXIMUM TEMPERATURE (typical):	174 °F (79 °C) inside, 130 °F (54 °C) outside surface at 24Vdc.

**The selection of materials of construction, is the responsibility of the customer. The company accepts no liability.

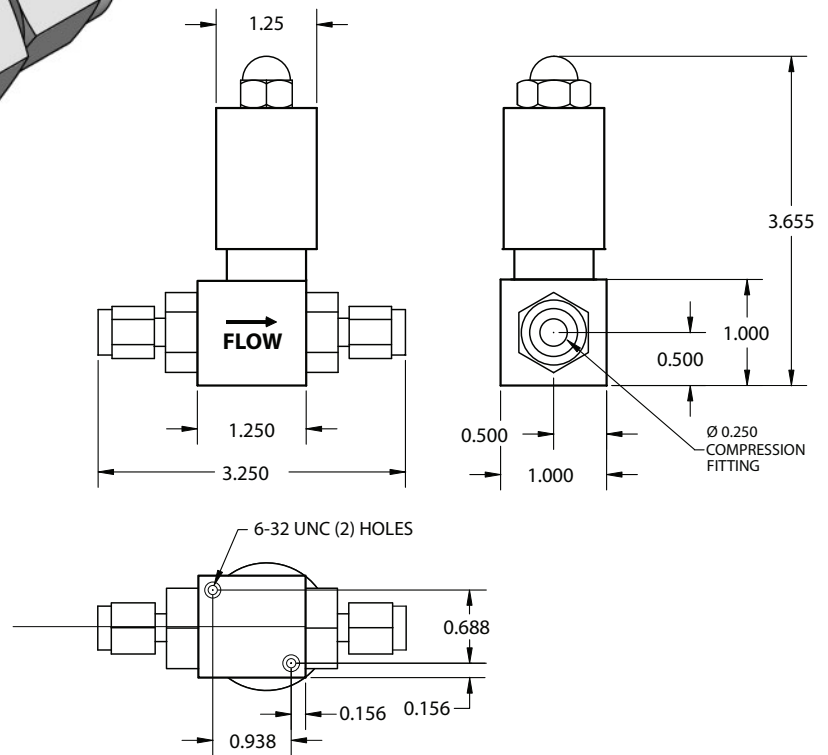
Pressure Drops Across PSV Valves



**Cross Sectional View
PSV Valve**



**PSV Proportionating
Electromagnetic Valves**



PSV	MODEL	
	SERIES	
	1	
	2	
	3	
	4	
	5	
	MATERIAL	
	S	Stainless Steel
	SEALS	
	V	Viton®
	B	Buna®
	E	EPR
	T	PTFE / Kalrez®
	FITTINGS	
	A	1/4" Compression
	B	1/8" Compression (1/8" with PSV1, 2 or 3)
	D	3/8" Compression
	X	Special

PSV	4	S	—	V	A
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EXAMPLE: PSV4S-VA

PSV4 stainless steel, Viton® seals with 1/4" compression fittings.