LIQUIDS AND GAS FLOW REGULATORS





TABLE 51 - MAX FLOW RATES AND CV VALUES FOR PSV

MODEL NUMBER	ORIFICE SIZE			*MAXIMUM FLOW [mL/min]	
	[in]	[mm]	Cv	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.

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

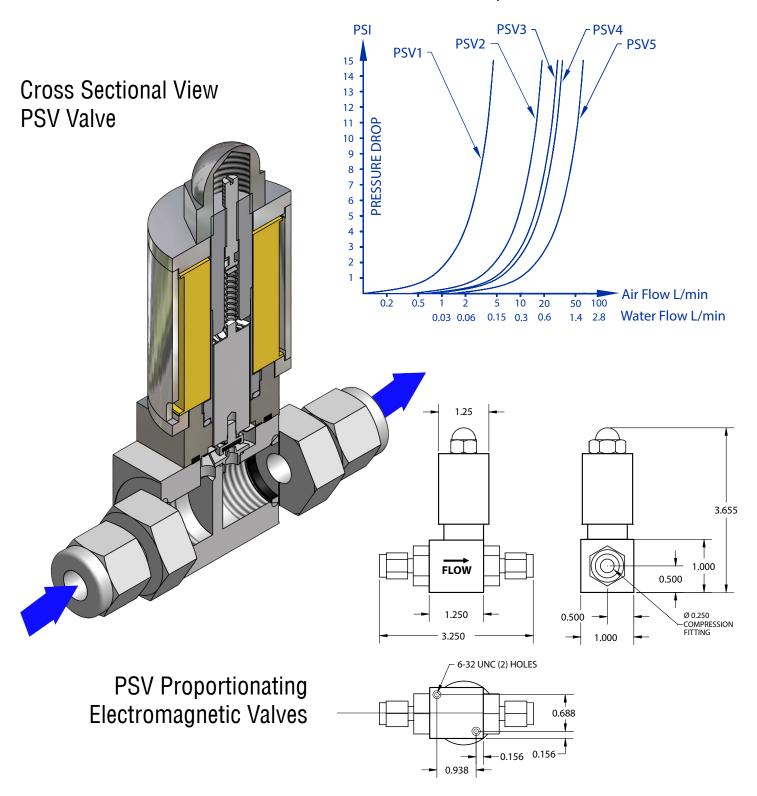
Complete flow regulating systems include a PSV electromagnetic valve connected to a pulse width modulated PSV-D Driver Module. For details see Driver Module description.

TABLE 52 - 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:	MATERIALS IN FLUID CONTACT: Types 316 and 416 stainless steel, FKM O-rings. Optional O-rings: Buna®, EPR and FFKM.	
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



NOTE: Aalborg* reserves the right to change designs and dimensions at its sole discretion at any time without notice. For certified dimensions please contact Aalborg*.

ORDERING INFORMATION LIQUIDS AND GAS FLOW REGULATORS



Configure and Order Online: PSV Proportional Solenoid Valve

PSV	MODEL					
	SERIES					
	1					
	2					
	3					
	4					
	5					
		MATERI	AL			
		S	Stainless St	eel		
				SEALS		
				V	FKM	
				В	Buna®	
				Е	EPR	
				T	PTFE / FF	KM
					FITTING	9
					A	1/4" Compression
					В	1/8" Compression (1/8" with PSV1, 2 or 3)
					D	3/8" Compression
						EVARADIE DOMAGNA
						EXAMPLE: PSV4S-VA
						DOVA stainless start FVAA saats 195
PSV	4	S] —	V	А	PSV4 stainless steel, FKM seals with 1/4" compression fittings.



PSV-D

Pulse width modulated **PSV-D Driver Modules** regulate the power supplied to PSV Regulating valves based on a reference signal.

Set-point signals, 0-5 Vdc or 4-20 mA, input are employed to control the output pulse width modulated voltage at a fixed frequency (»30KHz) and amplitude. Incoming power to the valve coil is applied and discontinued for predetermined periods of time by a low loss solid state switching element.

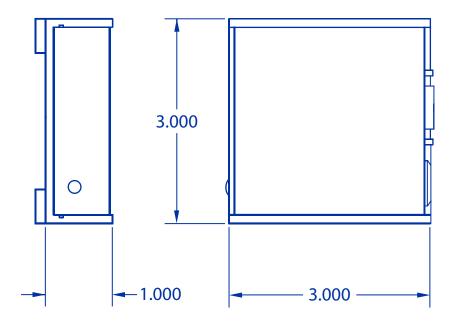
As incoming power is applied, energy in the inductive coils increases and when it is discontinued energy stored in the coil maintains the magnetic flux level required to hold flow at the controlled rate. This cycle takes place many thousands of times per second.

The wide range of power input features conveniently accommodates 12 to 32 Vdc sources.

The Auto-Select feature of the Driver Module recognizes the type of reference signal received and defaults to 0 - 5 Vdc if both signals are provided.



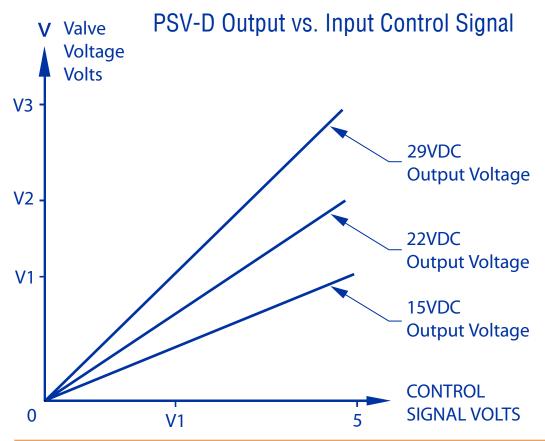
Dimensions Pulse Width Modulated Driver Module



NOTE: Aalborg® reserves the right to change designs and dimensions at its sole discretion at any time without notice. For certified dimensions please contact Aalborg[®].

ORDERING INFORMATION PULSE WIDTH MODULATED DRIVER MODULES





Jumper selectable output power allows a choice of dc voltage range for cooler more efficient operation, as a function of flow rates.

Internal resettable fuse protects electronics and rectifier circuits, prevents polarity reversal damage.

The maximum output voltage supplied to the PSV Valve can be set or changed in the field to allow for optimal use of the input reference signal to output voltage based on the specific flow rate and operating pressure applied to the valve.

TABLE 53 - SPECIFICATIONS				
CONNECTION:	9-pin male "D" subconnector for input/output signals.			
POWER INPUT REQUIRED:	+12 to 30 Vdc 1A @ 12 Vdc, 0.5A (not supplied) @ 24 Vdc via 9-pin "D"-connector or dc power jack (center positive).			
INPUT SIGNAL:	Auto-Select feature allows circuit to recognize which analog input reference (0 to 5 Vdc or 4-20 mA) signal is provided.			
TTL ON/OFF:	Jumper selectable LOW (0 Vdc) OFF-HIGH (5 Vdc) on, or reverse, to select valve ON/OFF status.			
VALVE OUTPUT POWER:	Jumper selectable to +15, +22, and +29 Vdc with adjacent potentiometer to obtain ±2 Vdc.			
FUSE RATING:	POLARITY PROTECTION: Internal rectifier circuit protects from reversed polarity on the power input. 32 °F (0 °C) to 122 °F (50 °C). DIMENSIONS: 3" (7.62mm) wide x 3" (7.62mm) deep x 1" (25.4mm) high.			
POLARITY PROTECTION:				
OPERATING TEMPERATURE:				
DIMENSIONS:				
CE COMPLIANCE :				

ORDERING INFORMATION FOR PSV-D					
MODEL	ODEL				
PSV-D	Proportionating Solenoid Valve Driver				
PSV-D					

TABLE 54- ACCESSORIES FOR FOR PSVD DRIVER MODULE		
PS-PSV-110NA-4	Power Supply, 110vac/24 Vdc /North America	
PS-PSV-230EU-4	Power Supply, 230vac/24 Vdc /Europe	
PS-PSV-240AU-4	Power Supply 240vac/24 Vdc /Australia	
PS-PSV-240UK-4	Power Supply 240vac/24 Vdc /United Kingdom	
CBL-DP9-6	Female 9 pin D-connector with 6 ft.cable	