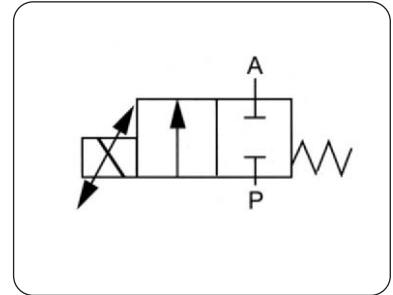


**Description** 2-way proportional flow valve controls the flow from range 0 - 2 l/min to range 0 - 1100 l/min in proportion to the input signal of 0 - 10V or 0/4 - 20 mA. The proportional valve and the electronic control unit are ordered separately.

**Product selection** To achieve the best linear flow characteristics, it is advisable not to reduce the flow too much and to have enough pressure drop at the valve for good control. Reference value: at the valve > 30% of the total pressure drop.

**Installation tip** The nominal orifice size following the proportional valve should not be smaller than the nominal valve size. That means a constriction of the cross-section after the valve should be categorically avoided!



## General technical features

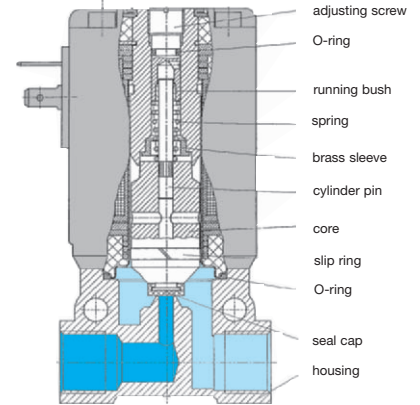
**design** 2-way proportional flow valve, normally closed, with additional control module PVY in cable plug or PVX in housing for DIN rail mounting.

PV1, PV2 and PV3 are directly acting solenoid control valves  
PV40, PV50 and PV60 are servo-assisted solenoid control valves

**materials** Body and seat: brass, stainless steel as option Elastomer: FPM (Viton), EPDM or PTFE as option  
Inner valve: stainless steel Control housing: plastic

**temperature** -10 °C to 90 °C / 14 °F to 194 °F medium temperature -10 °C to 55 °C / 14 °F to 130 °F electronic  
-20 °C to 55 °C / -4 °F to 130 °F ambient temperature -20 °C to 120 °C / -4 °F to 240 °F EPDM

**mounting position** any, but preferably with coil upright **protection class:** IP65 with cable plug



## Pneumatic fluid features

**media** FPM: for neutral media such as compressed air, gas, water, oxygen etc.  
PTFE: for hot compressed air, hot oil, oil with additives etc.

**viscosity** max. 21 mm<sup>2</sup>/s

## Electrical features

**general** Pulse-width modulation of voltage opens permanently the cross-section of the valve in proportion to the standard input signal and guarantees particularly high regulation accuracy.

**supply voltage** 24V DC + 15% - 10% for the electronic control module

**power consumption**

	Electronic	PV 12	PV 12	PV 21	PV 22	PV 34	PV 40-04	PV 40-06	PV 40-08
0.5 W		1 W	4 W	4 W	8 W	14 W	8 W	10 W	15 W
		to DN 0.6	from DN 0.8						

**control signal** Control module PVX with selectable signal input ranges 0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA  
Increased flow with increased signal

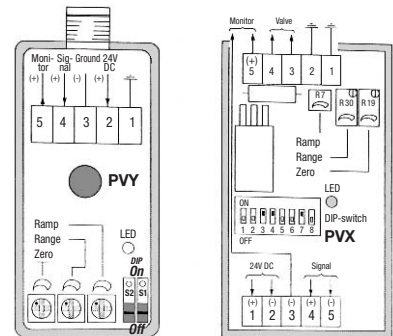
**impedance** 200 Ω for current range 0/4 ... 20 mA  
17 kΩ for voltage range 0 ... 10 V

**zero shut-off** tight or not tight at 0V signal by using the DIP switch

**electrical connection** PV12: wire 30 cm length  
PV21 / PV22: DIN plug as per DIN 43 650 form B  
PV34 / PV40: DIN plug as per DIN 43 650 form A

**security** Protection against incorrect polarity of signal and supply voltage  
100% continuous rating

**monitor signal** 1 mV monitor signal  $\approx$  1mA coil current  
This signal is necessary for an accurate flow setting.



PVX DIP-switch	Control signal PVX			Proportional valve	
switch	0...10 mV	0...20 mA	4...20 mA	PV 1	PV 2, PV 3
1	OFF	ON	ON	ON	OFF
2	OFF	ON	ON	ON	ON
3	ON	ON	OFF		
4	ON	ON	OFF		
5	OFF	OFF	ON		

PVX DIP-switch	Zero point sw. off	
switch	with	without
6	OFF	ON
7	OFF	ON
8	OFF	ON

PVX DIP-switch	Zero point sw. off	
switch	with	without
S1	ON	OFF
S2	OFF	ON

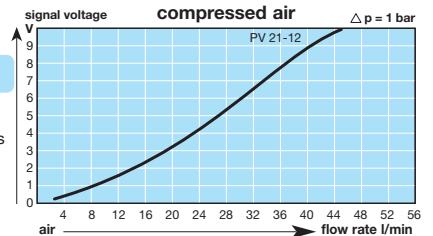
control electronics

## Accuracy

**linearity** < 5% FS **repeatability** < 0.5% FS

**hysteresis** < 5% FS **setting time (90%)** PV12 / PV21: < 20 ms, PV22 / PV34: < 50 ms  
PV40: 200 ms

**response sensitivity** < 0.5% FS **range ratio** PV12 / PV34: 1 : 25  
< 1% FS at PV40 PV40: 1 : 20  
PV21 / PV22: 1 : 10



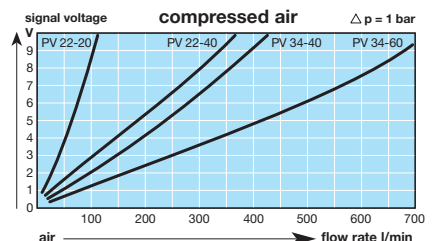
## Adjustment

**zero point** Changing zero point for adjustment to supply pressure and flow rate. Turning potentiometer clockwise increases zero point

**range** Changing range for adjustment to supply pressure and flow rate. Turning potentiometer clockwise increases range.

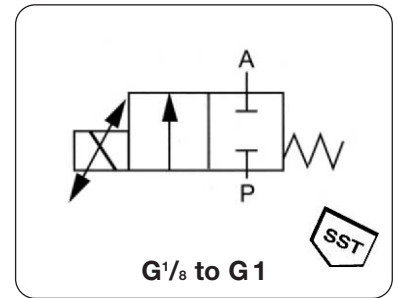
**ramp** The ramping potentiometer adjusts the time delay with a range of 0 - 10 s in order to dampen sudden changes of the setpoint. Increasing and decreasing ramps have the same delay.

**zero point switch** Using a DIP switch, the zero point switch can be activated or deactivated. It is not necessary to have another switch-off valve.



### Description

- For neutral gases and slightly aggressive fluids, exc. PV40
- Good linearity, hysteresis, fast response, especially on PV12
- Standard signal 0 to 10 V, 0 to 20 mA, 4 to 20 mA
- Zero point switch-off to close the valve reliably
- Adjustable ramp 0 to 10 s
- Adjustable zero and range
- Orifice: 0.3 mm up to 20 mm
- Flow rate: 0 - 2 up to 1100 l/min for compressed air  
0 - 0.03 to 83 l/min for water
- Connection: G<sup>1</sup>/<sub>8</sub> to G1
- Pressure range: vacuum, 2 to 25 bar
- Supply voltage: 24V DC
- Impedance: V: 17 kΩ mA: 200 Ω



Dimensions			Pressure	K <sub>v</sub> -	Flow rate		Nominal	Connection	Order
H	W	D	max.	value	water	air	size	thread	number
mm	mm	mm	bar	(m <sup>3</sup> /h)	l/min*1	l/min*1	Ø mm	G	

Proportional flow valve for air, water, vacuum or oxygen w/o electronics, of brass and Viton, with plug										PV
50	25	27	8	0.002	0.03	2	0.3	G <sup>1</sup> / <sub>8</sub>		<b>PV12 - 03</b>
			6	0.004	0.06	4	0.4			<b>PV12 - 04</b>
			4	0.010	0.16	11	0.6			<b>PV12 - 06</b>
			3	0.018	0.30	19	0.8			<b>PV12 - 08</b>
			2	0.027	0.45	29	1.0			<b>PV12 - 10</b>
52	25	60	12	0.02	0.3	22	0.8	G <sup>1</sup> / <sub>8</sub>		<b>PV21 - 08</b>
			8	0.04	0.6	45	1.2			<b>PV21 - 12</b>
			6	0.05	0.8	55	1.6			<b>PV21 - 16</b>
66	33	74	16	0.02	0.3	22	0.8	G <sup>1</sup> / <sub>8</sub>		<b>PV22 - 08</b>
72	49	74	8	0.10	1.6	110	2.0	G <sup>1</sup> / <sub>4</sub>		<b>PV22 - 20</b>
72	49	74	2	0.33	5.5	360	4.0	G <sup>1</sup> / <sub>4</sub>		<b>PV22 - 40</b>
105	56	64	25	0.12	2.0	130	2.0	G <sup>3</sup> / <sub>8</sub>		<b>PV34 - 20</b>
			10	0.25	4.0	270	3.0			<b>PV34 - 30</b>
			8	0.40	7.0	430	4.0			<b>PV34 - 40</b>
			4	0.70	12.0	750	6.0			<b>PV34 - 60</b>
			1.5	1.00	17.0	1100	8.0			<b>PV34 - 80</b>
89	50	86	10	1.4	23.0*2		10	G <sup>1</sup> / <sub>2</sub>		<b>PV40 - 04</b>
110	58	89	10	2.5	42.0*2		13	G <sup>3</sup> / <sub>4</sub>		<b>PV40 - 06</b>
155	80	100	10	5.0	83.0*2		20	G1		<b>PV40 - 08</b>

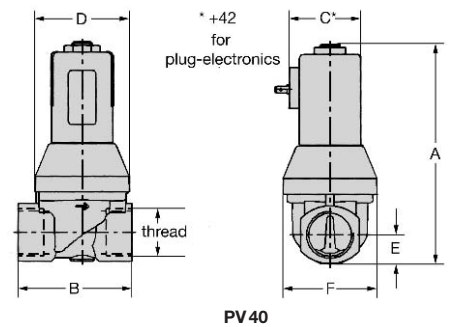
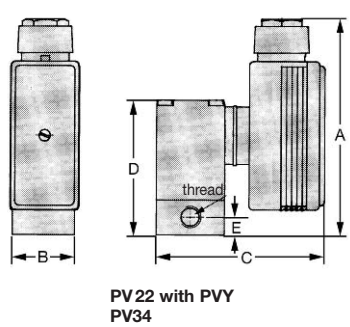
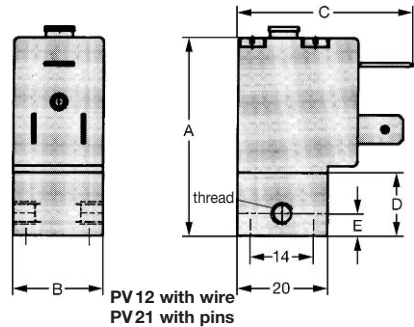


Special options		add the appropriate letter		Accessories	
<b>body</b>	stainless steel 1.4401	only PV12 and PV21	<b>S</b>	PV .. . . S	
		for PV22	<b>S</b>	PV22 - . . S	
<b>plug electronics</b>	supply 24V DC	0...10 V		<b>PVY - 00</b>	
	zero point switch-off,	0...20 mA		<b>PVY - 01</b>	
	ramp, monitor	4...20 mA		<b>PVY - 02</b>	
<b>clip-on electronics</b>	24VDC, 0...10V, 0/4...20 mA			<b>PVX - 00</b>	
	with higher control frequency			<b>PVX - 12</b>	
<b>connector</b>	according to DIN 43 650 form B			<b>2506</b>	
	according to DIN 43 650 form A			<b>2286-0</b>	

type	A	B	C	D	E
<b>PV12</b>	50	25	27	20	7
<b>PV21</b>	52	25	38	20	7

type	thread	A	B	C	D	E
<b>PV22</b>	G <sup>1</sup> / <sub>8</sub>	102	33	78	64	8,5
	G <sup>1</sup> / <sub>4</sub>	108	49	78	70	8,5
<b>PV34</b>	G <sup>3</sup> / <sub>8</sub>	137	56	95	105	11

type	thread	A	B	C	D	E	F
<b>PV40-04</b>	G <sup>1</sup> / <sub>2</sub>	89	50	50	38	12	38
<b>PV40-06</b>	G <sup>3</sup> / <sub>4</sub>	110	58	50	51	14	45
<b>PV40-08</b>	G1	115	80	50	66	16	66



\*1 at 6 bar supply pressure and 5 bar outlet pressure.      \*2 PV40 is not suitable for air and vacuum, because indirectly controlled.

<b>For your information:</b>	1 bar: 14.8 psi	1 l/min: 0.035 scfm	1 mm: 0.039 inch
	1 psi: 0.069 bar	1 scfm: 28.3 l/min	1 inch: 25.4 mm

**Order example:**  
**PV21 - 08**