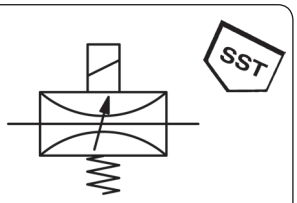
AirProp® Proportional Flow Valve PV12...PV40

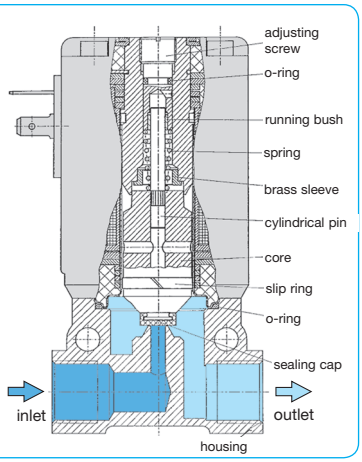
Description	2-way proportional flow valve controls the volume flow of maximum 1185 l/min for air in proportion to the input signal of 0 to 10 V or 0/4 to 20 mA. The proportional valve and the electronic control unit are ordered separately.
Product selection	To achieve the best linear flow characteristics, 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 hint	The nominal width of the orifice following the proportional valve should not be smaller than the nominal width of the valve. A constriction of the cross-section after the valve should be categorically avoided!



G1⁄8 up to G1
compressed air or liquids

General technical features

Design	2-way proportional flow valve, normally closed during absence of current, 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
Mounting position	any, but preferably with coil upright
Protection class	IP 65 with coupling socket, IP 40 for DIN rail version
Temperature range	-10 °C to 90 °C / 14 °F to 194 °F for medium -10 °C to 55 °C / 14 °F to 131 °F for electronics
Material	Body: brass — Inner valve: brass and stainless steel Elastomer: FKM — Control housing: plastic



cross section

Pneumatic features

Media	compressed air, non-corrosive gases or liquids, max. viscosity 21 mm²/s, PV40 for liquids only
Operating pressure	see chart, max. 25 bar
Flow rate	0...2 / 1185 l/min for air, 0...0.03 / 83 l/min for liquids in detail see chart, at max. supply pressure and Δp = 1 bar

Electrical features

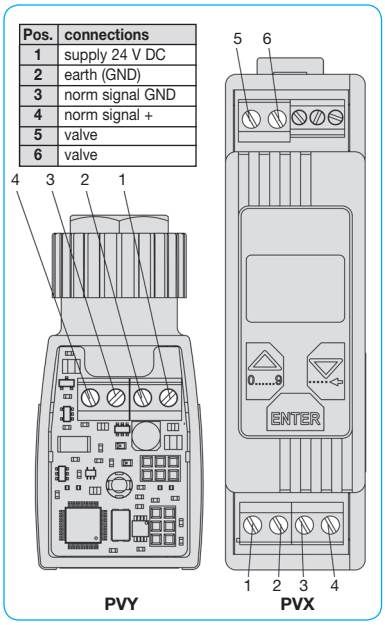
Supply voltage	24 V DC ± 10%, residual ripple max. 5%, with reverse voltage protection

Power consumption

electronic	PV12	PV12	PV21	PV22	PV34	PV40-04	PV40-06	PV40-08
1 W	1 W up to DN 0.4	4 W from DN 0.6 on	5 W	9 W	16 W	8 W	10 W	15 W

Command signal	0…5 V, 0…10 V, 0…20 mA or 4…20 mA selectable
Impedance	> 20 kΩ at voltage signal < 200 Ω at current signal
Electrical connector	PV12: connecting wires, length 30 cm PV21: square connector according to DIN 43650 form B PV22…PV40: square connector according to DIN 43650 form A

Pos.	connections
1	supply 24 V DC
2	earth (GND)
3	norm signal GND
4	norm signal +
5	valve
6	valve



control electronics

Accuracy

Linearity	< 10% FS
Hysteresis	< 5 % FS, for PV12 < 10% FS
Response sensitivity	< 0.1% FS, for PV40 < 1% FS
Repeatability	< 0.25% FS, for PV22 < 0.5% FS
Regulating time	PV12: < 10 ms, PV21/PV22: < 20 ms, PV34: < 50 ms, PV40: < 200 ms each for 90% of the range

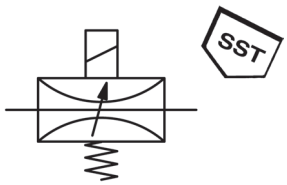
Adjustment

Zero point	The zero point can be decreased or increased.
Range	The range can be decreased or increased.
Ramp	The ramping potentiometer adjusts the time delay with a range of 0 to 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.

AirProp® Proportional Flow Valve PV12...PV40

Technical features

• **Media**	compressed air, non-corrosive gases or liquids, except for PV40	• **Linearity**	< 10% FS
• **Signal range**	0…5 V, 0…10 V, 0…20 mA, 4…20 mA	• **Hysteresis**	< 5% FS, at PV12 < 10% FS
• **Pressure range**	vacuum…2 / 16 bar	• **Response sensitivity**	< 0.1% FS, at PV40 < 1% FS
• **Orifice**	DN 0.3…DN 20	• **Repeatability**	< 0.25% FS, at PV22 < 0.5% FS
• **Flow rate**	max. 1185 l/min for air, max. 83 l/min for liquids	• **Regulating time**	depending on type < 10 ms, < 20 ms, < 50 ms or < 200 ms
• **Adjustment**	zero point, range and ramp	• **Protection class**	IP 65 with plug
• **Zero switch-off**	ensures reliable closure of the valve	• **Impedance**	> 20 kΩ at voltage signal < 200 Ω at current signal



G⅛ up to G1 compressed air or liquids

Dimensions A mm	B mm	C mm	Nominal size DN	K_v value (m^3/h)	Flow rate Water l/min*1	Air l/min*1	Operating pressure max. bar	Connection thread G	Order number
Proportional flow valve without electronics, brass, FKM, for compressed air, vacuum or liquids*2									**PV**
25	50	7	0.3	0.002	0… 0.03	0… 2	10	G⅛	**PV12-03**
			0.4	0.004	0… 0.06	0… 4	8		**PV12-04**
			0.6	0.010	0… 0.16	0… 11	6		**PV12-06**
			0.8	0.018	0… 0.30	0… 19	3		**PV12-08**
			1.0	0.027	0… 0.45	0… 29	2		**PV12-10**
25	50	7	0.8	0.02	0… 0.3	0… 19	12	G⅛	**PV21-08**
			1.2	0.04	0… 0.6	0… 41	8		**PV21-12**
			1.6	0.05	0… 0.8	0… 59	6		**PV21-16**
32	66	8.5	0.8	0.02	0… 0.3	0… 22	16	G⅛	**PV22-08**
32	66	8.5	1.5	0.06	0… 0.3	0… 22	10	G⅛	**PV22-10**
46	72	8.5	2.0	0.10	0… 1.6	0… 110	8	G¼	**PV22-20**
46	72	8.5	4.0	0.33	0… 5.5	0… 360	2	G¼	**PV22-40**
55	105	11	4.0	0.45	0… 7.0	0… 425	8	G⅜	**PV34-40**
			6.0	0.80	0…12.0	0… 860	4	G⅜	**PV34-60**
			8.0	1.10	0…17.0	0…1185	2	G½	**PV34-80**
50	89	12	10	1.4	0…23.0*2	-	10	G½	**PV40-04**
58	110	14	13	2.5	0…42.0*2	-	10	G¾	**PV40-06**
80	155	16	20	5.0	0…83.0*2	-	10	G1	**PV40-08**

PV12 PV21

PV22 PV40

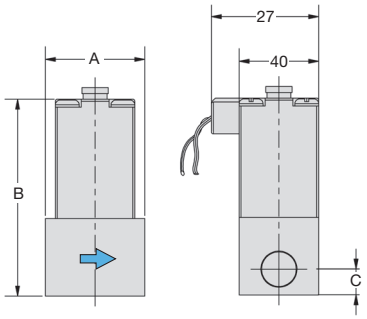
Special options, add the appropriate letter

stainless steel body	SST 316, material no. 1.4401	for PV12 up to PV34	PV . . -. . **S**

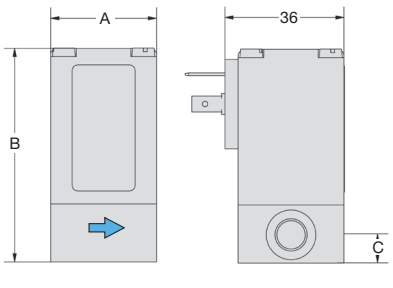
PVY PVX

Accessories, enclosed

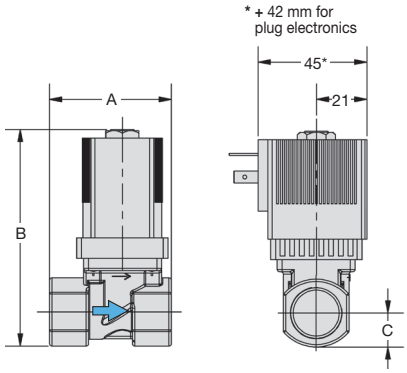
plug electronics	24 V DC, 0…5 V, 0…10 V, 0/4 mA…20 mA	for PV22 up to PV40	**PVY-06**
clip-on electronics	24 V DC, 0…5 V, 0…10 V, 0/4 mA…20 mA	for PV12, PV21	**PVX-01**
		PV22, PV34, PV40	**PVX-02**
coupling socket	according to DIN 43650 form B	for PV21	**2285-0**
	according to DIN 43650 form A	for PV22 up to PV40	**2286-0**



PV12 with wire



PV22



PV40

*1 at max. operating pressure and Δp = 1 bar

*2 PV40 is not suitable for compr. air and vacuum, since pilot-controlled

PDF CAD
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Order example: PV12-03