

**“ADCATROL” PNEUMATIC CONTROL VALVES  
PV253G  
(V253G globe valves series with linear actuators PA series)**

**DESCRIPTION**

The PV253G control valves are three-way valve body both for mixing service or diverting service. The PA pneumatic actuator is rubber diaphragm and multi-springs. Its action can be DA -direct action (air to close) or RA-reverse action (air to open). The PV253G valves have been designed to assure an accurate control in any process condition. Their wide application ranges allows the use of this valve with the most common process fluids such as water, superheated water, diathermic oil, steam, air, gas and other non corrosive fluids.

**MAIN FEATURES**

Mixing or diverting purpose control valve.  
Standard packing or bellows sealed stem sealing.

- OPTIONS:**           Soft sealing  
                          Position transmitter 4-20 mA  
                          Pneumatic or electropneumatic positioner.  
                          Air filter regulator  
                          Top-work manual handwheel
- USE:**                Hot and superheated water  
                          Diathermic oil  
                          Saturated and superheated steam  
                          Air, gases and other noncorrosive fluids.

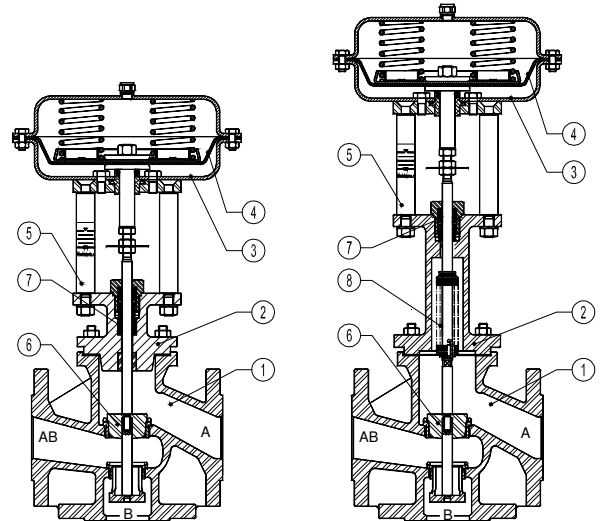
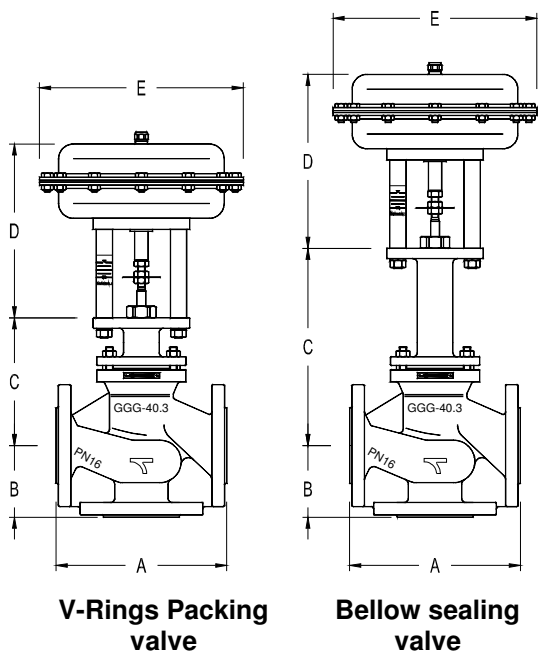
- AVAILABLE MODELS:**       PV253G
- PLUG TYPES:**           Linear (PL)
- PORT:**                 Full port
- STEM SEALING:**       PTFE/GR V-Rings – up to 220°C  
                          (Bellows sealed (extended bonnet))
- VALVE SIZES:**         DN15 to DN150
- CONNECTIONS:**       Flanged EN 1092-2
- PNEUMATIC ACTUATORS:**   PA series
- ACTUATOR CONNECTIONS:** 1/4" NPT-F
- MAX. AIR SUPPLY:**       3,5 bar
- CONTROL SIGNAL:**       0,2– 1bar ; 0,4– 1,2bar ; 0,4 – 2bar.
- AMBIENT TEMP.:**       -20°C ... +70°C
- ELECTRIC ACTUATORS:**   Please consult IS EL20.00 E



V253G LIMITING CONDITIONS PN16 - PN25					
V - Rings Packing			Bellows Sealed		
ALLOWABLE PRESSURES		RELATED TEMP.	ALLOWABLE PRESSURES		RELATED TEMP.
PN 16	PN 25		PN 16	PN 25	
16bar	25bar	-10 <sup>o</sup> -120 <sup>o</sup> C	16bar	25bar	-10 <sup>o</sup> -120 <sup>o</sup> C
15,5bar	24,3bar	150 °C	15,5bar	24,3bar	150°C
14,7bar	23bar	200°C	14,7bar	23bar	200°C
14,3bar	22,5bar	220°C	13,9bar	21,8bar	250°C
/	/	/	12,8bar	20bar	300°C
/	/	/	11,2bar	17,5bar	350°C

CE MARKING (PED - European Directive 97/23/EC)		
PN 16	PN 25	Category
DN15 to DN50	DN15 to DN40	SEP - art. 3, paragraph3
DN65 to DN150	DN50 to DN125	1 (CE Marked)
/	DN150	2(CE Marked)

**HOW TO SELECT:** Never size the valve according to the pipe diameter in which it has to be fitted, but according to the required actual flow. Refer to valve calculation data sheet or consult the factory.



V-Rings Packing valve

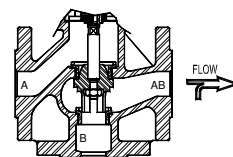
Bellow sealing valve

DIMENSIONS - VALVE BODY						
DN	A mm	B mm	BONNET			
			Std.Packing		Bellow	Bellow
			C mm	Wgt. Kgs	C mm	Wgt. Kgs
15	130	65	145	8	320	10
20	150	70	160	9	335	11
25	160	75	155	10	326	11,5
32	180	80	160	12,5	335	14,5
40	200	90	165	14	338	16
50	230	100	167	16	340	19
65	290	120	210	32	470	36
80	310	130	212	36	472	40
100	350	150	220	51	478	54
125	400	200	373	107	583	95
150	480	210	388	130	603	125

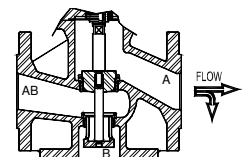
MATERIALS		
POS.	DESIGNATION	MATERIAL
1	Valve Body	GJS-400-18-LT / 0.7043
2	Bonnet	GJS-400-18-LT / 0.7043
3	Actuator (Steel)	S235JRG2 / 1.0038
	Actuator (Stainless steel)	AISI304 / 1.4301
4	Diaphragm	NBR 70
5	Yoke (Steel)	C45E / 1.1191
	Yoke (Stainless steel)	AISI304 / 1.4301
6	Valve Seal	AISI316 / 1.4401
7	Safety Packing	PTFE/GR
8	Bellows	St. Steel

DIMENSIONS - PNEUMATIC ACTUATOR			
Type	ø E (mm)	D (mm)	
		DN15-100	DA/RA
PA-205	210	235	6
PA-280	275	240	8,5
PA-340	335	265	14,5
PA-435	430	295	23

FAILURE POSITION DEPENDING ON VALVE DUTY			
Mixing valve		Diverting valve	
Dir. Action Actuator a)	Rev.Action Actuator b)	Dir. Action Actuator a)	Rev.Action Actuator b)
Port A to AB Closes	Port B to AB Closes	Port AB to B Closes	Port AB to A Closes

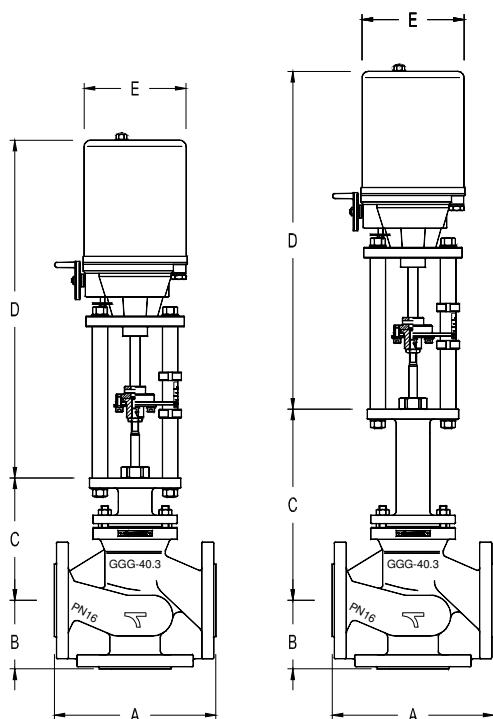


Mixing valve



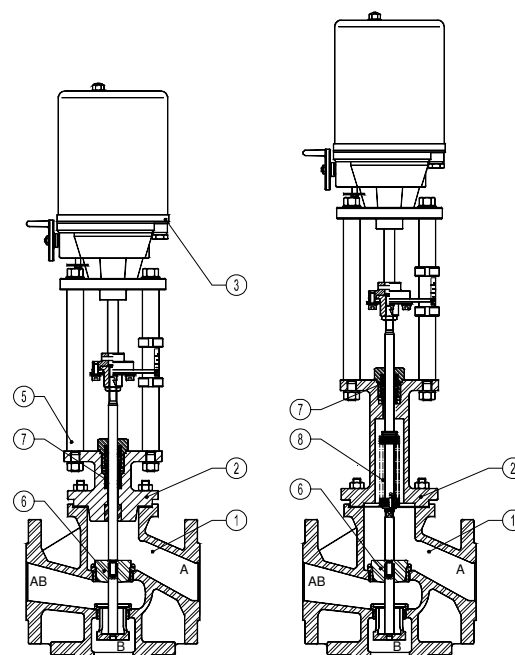
Diverting valve

- a) Retracted stem on air failure
- b) Extended stem on air failure



V-Rings Packing valve

Bellow sealing valve



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			Std.Packing		Bellow	
			C mm	Wgt. Kgs	C mm	Wgt. Kgs
15	130	65	145	8	320	10
20	150	70	160	9	335	11
25	160	75	155	10	326	11,5
32	180	80	160	12,5	335	14,5
40	200	90	165	14	338	16
50	230	100	167	16	340	19
65	290	120	210	32	470	36
80	310	130	212	36	472	40
100	350	150	220	51	478	54
125	400	200	373	107	583	95
150	480	210	388	130	603	125

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DIMENSIONS - ELECTRIC ACTUATOR			
Type	ø E mm	D mm	WEIGHT Kgs
EL-12	130	340	2,1
EL-20	145	458	8
EL-45	145	458	8
EL-80	188	517	13
EL-120	188	517	13



**STEAM EQUIPMENT**

MAX. PERM.PRESS.DROP IN bar - Fluid to open -Reverse or direct action actuator										
ACTUATOR	CONTROL SIGNAL	SIZES								
		DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100
PA-205	0,2 ÷ 1 bar	6	6	5	—	—	—	—	—	—
	0,4 ÷ 1,2 bar	10	10	7	—	—	—	—	—	—
	0,4 ÷ 2 bar	12	12	9	—	—	—	—	—	—
PA-280	0,2 ÷ 1 bar	28	26	16	8	6	3,5	—	—	—
	0,4 ÷ 1,2 bar	40	38	20	12	10	5	—	—	—
	0,4 ÷ 2 bar	50	45	25	16	12	6,5	—	—	—
PA-340A	0,2 ÷ 1 bar	60	60	50	20	12	10	—	—	—
	0,4 ÷ 1,2 bar	80	80	60	30	16	13	—	—	—
	0,4 ÷ 2 bar	100	100	80	40	20	18	—	—	—
PA-340B	0,2 ÷ 1 bar	—	—	—	—	—	—	4	2,5	1
	0,4 ÷ 1,2 bar	—	—	—	—	—	—	5	3,5	1,5
	0,4 ÷ 2 bar	—	—	—	—	—	—	6	4	2
PA435A	0,2 ÷ 1 bar	—	—	—	—	40	25	—	—	—
	0,4 ÷ 1,2 bar	—	—	—	—	48	30	—	—	—
	0,4 ÷ 2 bar	—	—	—	—	55	45	—	—	—
PA435B	0,2 ÷ 1 bar	—	—	—	—	—	—	6	5	3
	0,4 ÷ 1,2 bar	—	—	—	—	—	—	8	7	5
	0,4 ÷ 2 bar	—	—	—	—	—	—	10	8	6

\* For valve size DN125 and above please consult.

The pressure drop values are referred to closed valves. They have been verified by a control signal coming from an electro-pneumatic converter with an enduring minimum signal of 0,2 bar.

The actuator press. drops given with closed valve for the actuator signal 0,4 - 2 bar are also valid for ON-OFF service with air supply at 2,5 bar. Special spring drops available on request.

The pressure drop values must be used within the body rating limits.

For electric actuator selection please consult catalogue IS EL.20.00 E or our technical department.

FLOW RATE COEFFICIENTS												
	SIZES											
	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200
<b>Kvs</b>	4	6,3	10	16	25	40	63	100	160	230	330	-

Kvs in m<sup>3</sup>/h , see data sheet IS PV10.00 E ; For conversion Kvs = Cv(US) x 0,855

ACTUATOR STROKE IN mm												
	SIZES											
	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200
<b>Stroke</b>	20	20	20	20	20	20	30	30	30	35	40	-



ORDERING CODES V253										
<b>VALVE CODES</b>				V	.23	G				.X.
<b>Actuator Type (1)</b>										
Pneumatic Actuator				P						
Electric Actuator				E						
<b>Group Designation</b>										
Globe valve, three way				V						
<b>Valve Model</b>										
GJS-400-18-LT body, stainless still trim					.23G					
<b>Flow</b>										
Mixing							M			
Diverting							D			
<b>Stem Sealing</b>										
PTFE/GR-V-Rings / Standard bonnet								1		
Virgin PTFE V-Rings / Standard bonnet								2		
Graphite / Standard bonnet								3		
Bellows								8		
<b>Valve Plug</b>										
PL (linear) - Soft (PTFE/GR)								6		
PL (linear) - Metal AISI316 / 1.4401								7		
<b>Pipe Connection</b>										
Flanged EN1092-2 PN16									L	
Flanged EN1092-2 PN25									M	
<b>Size</b>										
DN15										15
DN20										20
...										
<b>Actuator</b>										(1)
<b>Extras (3)</b>										E
<b>ACTUATOR CODES ( pneumatic )</b>										
				P.						
<b>Group Designation</b>										
Multi-spring , pneumatic linear actuator				P.						
<b>Actuator Size</b>										
205								1		
280								3		
340 A - From DN15 to DN50								5		
340 B - From DN65 to DN100								6		
435 A - From DN15 to DN50								7		
435 B - From DN65 to DN100								8		
<b>Actuator</b>										
Direct Action									D	
Reverse Action									R	
<b>Actuator Construction</b>										
Steel construction (painted) - standard										(2)
Stainless steel construction										I
<b>Control Signal</b>										
0,2 - 1 bar (3/15 psi)										15
0,4 - 1,2 bar (6/18 psi)										18
0,4 - 2 bar (6/30 psi)										30

→ To be introduced on ".X.", if supplied in combination with the valve.  
 Example:  
 V253G mixing valve model PL metal plug, PTFE/GR stem sealing DN50 complete with reverse action actuator signal 0,4-1,2bar, size340A steel.

Code: PV.23G.M17L50.5R18

**REMARKS:**  
 (1)- Indicate actuator type.  
 (2)- Omitted if the standard actuator is selected.  
 (3)- To be used only when a non-standard combination valve is supplied.  
 ADCATROL control valves are identified by a serial number on a nameplate, located on the actuator yoke.  
 Always order spares by using that serial number. If the valve has non-standard extras the serial number has also an E (extras).