

“ADCATROL” PNEUMATIC CONTROL VALVES PV40



(V40 globe valves series with linear actuators PA or EL series)

DESCRIPTION

The PV40 control valves are single seated, two-way body constructed with in-line straight connections. 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 PV40 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, steam, air, gas and other non corrosive fluids.

MAIN FEATURES

Single seated, two way, direct or reverse action valve.
Valve top flange permanently attached to the body, removal is unnecessary for replacing the actuator.
Metal to metal sealing as standard.



OPTIONS:

Soft sealing
Position transmitter
Pneumatic pilot positioner
Air filter regulator

USE:

Saturated and superheated steam
Hot and superheated water
Diathermic oil
Air, gases and other no corrosive fluids

AVAILABLE MODELS:

PV40S-EV40S – steel construction
PV40I-EV40I – stainless steel

VALVE SIZES: CONNECTION:

DN15 to DN50
Flanged EN 1092-1 or ANSI
Threaded connections on request

PNEUMATIC ACTUATORS:

PA-205,PA-280,PA-340,PA-435

ACTUATOR CONN:

1/4" NPT-F

CONTROL SIGNAL:

0,2 – 1bar; 0,4 – 1,2 bar ; 0,4 – 2 bar

ELECTRIC ACT.:

Consult catalogue IS EL20.00 E

MAX.AIR SUPPLY:

3,5 bar

AMBIENT TEMPERATURE:

-20°C+70°C

STEM SEALING:

PTFE/GR V-Rings-220°C
(Standard bonnet)
Graphite – 300°C
(Extended bonnet)

PLUG CHARACTER.:

EQP – Equal percentage
PL – Linear
PT – On-off

PLUG DESIGN:

Contoured
Perforated
(Low noise, anti-cavitation)
Microflow

PORT:

Full or reduced on request

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 of steam or water. Refer to the valve calculation data sheet or consult the factory.

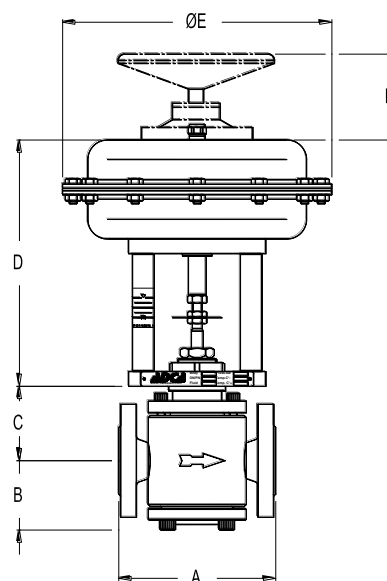
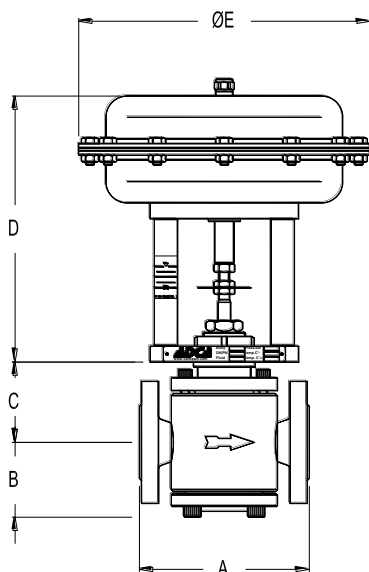
| VALVE LIM. CONDITIONS V40S | | VALVE LIM. CONDITIONS V40I | |
|-------------------------------|----------|-------------------------------|-----------|
| PRESSURE/TEMPERATURE * | | PRESSURE/TEMPERATURE * | |
| 40 bar | -10/50°C | 40 bar | -10/100°C |
| 33,3 bar | 200 °C | 33,7 bar | 200 °C |
| 30,4 bar | 250 °C | 31,8 bar | 250 °C |
| 27,6 bar | 300 °C | 29,7 bar | 300 °C |

Maximum temperature limited to the valve packing selected

Valves with soft seat , maximum allowable temperature: 200°C

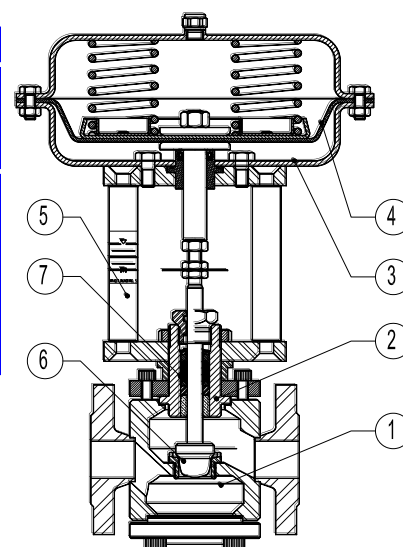
* **PN63 and PN100 design on request**

| CE MARKING (PED - European Directive) | |
|---------------------------------------|---------------|
| PN 40 | Category |
| DN15 to DN32 | SEP |
| DN40 to DN50 | 1 (CE Marked) |



| DIMENSIONS - VALVE BODY | | | | | | | |
|-------------------------|----------------------|----------------------------|----------------------------|--------|------------------|--------|---------|
| DN | EN FLANGES A (mm) | ANSI 150 FLANGES A (mm) | ANSI 300 FLANGES A (mm) | B (mm) | C (mm) BONNET | | |
| | | | | | STAND. | FINNED | BELLOWS |
| 15 - 1/2" | 150 | 184 | 190 | 71 | 75 | 140 | 267 |
| 20 - 3/4" | 150 | 184 | 194 | 71 | 75 | 140 | 267 |
| 25 - 1" | 160 | 184 | 197 | 71 | 75 | 140 | 267 |
| 32 | 180 | - | - | 75 | 83 | 163 | 285 |
| 40 - 1 1/2" | 200 | 222 | 235 | 82 | 96 | 163 | 285 |
| 50 - 2" | 230 | 254 | 267 | 97 | 100 | 182 | 298 |

Note: welded-on flanges EN 1092-1 PN40 or ANSI B16.5 Cl.150 and 300 lbs. RF



| DIMENSIONS - ACTUATOR | | | |
|-----------------------|----------|---------------|------------|
| Type | ø E (mm) | D (mm) | WEIGHT Kgs |
| | | DN15-50 DA/RA | |
| PA-205 | 210 | 235 | 5,7 |
| PA-280 | 275 | 240 | 8,8 |
| PA-340 | 335 | 265 | 14,3 |
| PA-435 | 430 | 295 | 24,5 |

| MATERIALS | | | |
|-----------|------------------------|---------------------|--------------------|
| POS. | DESIGNATION | PV40S - EV40S | PV40I - EV40I |
| 1 | Valve Body | S355 J2 G3 / 1.0570 | AISI 316 / 1.4401 |
| 2 | Bonnet | CF8 / 1.4308 | CF8 / 1.4308 |
| 3 | * Actuator (Steel) | S235JRG2 / 1.0038 | S235JRG2 / 1.0038 |
| | * Actuator (St. steel) | AISI304 / 1.4301 | AISI304 / 1.4301 |
| 4 | Diaphragm | NBR70 | NBR70 |
| 5 | Yoke (steel) | C45E / 1.1191 | C45E / 1.1191 |
| | Yoke (st. steel) | AISI304 / 1.4301 | AISI304 / 1.4301 |
| 6 | Valve plug | St.Steel - PTFE/GR | St.Steel - PTFE/GR |
| 7 | Standard packing | PTFE/GR | PTFE/GR |

* Electric actuator : see IS EL20.00 E



| FLOW RATE COEFFICIENTS | | | | | | |
|------------------------|-------|------|------|------|------|------|
| | SIZES | | | | | |
| | DN15 | DN20 | DN25 | DN32 | DN40 | DN50 |
| Kvs | 3,8 | 5,1 | 9,4 | 15,4 | 22,2 | 40,1 |

Kvs in m³/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 |
| Stroke | 20 | 20 | 20 | 20 | 20 | 20 |

| MAX. PERM.PRESS.DROP IN bar - N.C.(fluid to open) -Reverse action actuator (air signal to open) | | | | | | | | | | |
|---|----------------|-------|------|------|------|------|------|------|------|-------|
| 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 | — | — | — |
| PA435A | 0,2 ÷ 1 bar | — | — | — | — | 40 | 25 | — | — | — |
| | 0,4 ÷ 1,2 bar | — | — | — | — | 48 | 30 | — | — | — |
| | 0,4 ÷ 2 bar | — | — | — | — | 55 | 45 | — | — | — |

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 2,4 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.

| MAX. PERM.PRESS.DROP IN bar - N.O.(fluid to open) -Direct action actuator (air signal to close) | | | | | | | | | | |
|---|----------------|-------|------|------|------|------|------|------|------|-------|
| ACTUATOR | CONTROL SIGNAL | SIZES | | | | | | | | |
| | | DN15 | DN20 | DN25 | DN32 | DN40 | DN50 | DN65 | DN80 | DN100 |
| PA-205 | 0,2 ÷ 1 bar | 16 | 16 | 12 | 5 | — | — | — | — | — |
| | 0,4 ÷ 2 bar | 25 | 24 | 16 | 7,5 | — | — | — | — | — |
| PA-280 | 0,2 ÷ 1 bar | — | — | 19 | 10 | 8 | 4 | — | — | — |
| | 0,4 ÷ 2 bar | — | — | 25 | 20 | 16 | 7 | — | — | — |
| PA-340A | 0,2 ÷ 1 bar | — | — | — | 17 | 16 | 10 | — | — | — |
| | 0,4 ÷ 2 bar | — | — | — | 28 | 26 | 25 | — | — | — |

The actuator pressure drops given with closed valve, are obtained with the following air pressures supply:
Actuator signal 0,2 to 1 bar : air supply 1,2 bar
Actuator signal 0,4 to 2 bar : air supply 2,4 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 2,4 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.



ORDERING CODES V40

| | | | | | | | | | | |
|---|--|---|-----|---|--|--|--|--|----|-----|
| VALVE CODES | | V | 40 | S | | | | | | .X. |
| Actuator Type (1) | | | | | | | | | | |
| Pneumatic Actuator | | P | | | | | | | | |
| Electric Actuator | | E | | | | | | | | |
| Group Designation | | | | | | | | | | |
| Globe valve, two way, straight body | | V | | | | | | | | |
| Valve Model | | | | | | | | | | |
| PN40 steel body | | | .40 | S | | | | | | |
| PN40 stainlesssteel body | | | .40 | I | | | | | | |
| Stem Sealing | | | | | | | | | | |
| PTFE/GR-V-Rings / Standard bonnet | | | | | | | | | 1 | |
| Virgin PTFE V-Rings / Standard bonnet | | | | | | | | | 2 | |
| Graphite / Standard bonnet | | | | | | | | | 3 | |
| Graphite / Finned bonnet | | | | | | | | | 4 | |
| Valve Plug | | | | | | | | | | |
| EQP (equal percentage) - Soft (PTFE-GR) | | | | | | | | | 1 | |
| EQP (equal percentage) - Metal AISI316 / 1.4401 | | | | | | | | | 3 | |
| EQP (equal percentage) - Stellite | | | | | | | | | 4 | |
| PL (linear) - Soft (PTFE/GR) | | | | | | | | | 6 | |
| PL (linear) - Metal AISI316 / 1.4401 | | | | | | | | | 7 | |
| PT (on-off) - Soft (PTFE/GR) | | | | | | | | | 9 | |
| PT (on-off) - Metal AISI316 / 1.4401 | | | | | | | | | 10 | |
| Pipe Connection | | | | | | | | | | |
| Threaded BSP ISO 7/1 Rp | | | | | | | | | | A |
| Flanged EN1092-1 PN40 | | | | | | | | | | N |
| Flanged ANSI B16.5 300# | | | | | | | | | | V |
| Size | | | | | | | | | | |
| DN15 | | | | | | | | | | 15 |
| DN20 | | | | | | | | | | 20 |
| ... | | | | | | | | | | |
| Actuator | | | | | | | | | | (1) |
| Extras (3) | | | | | | | | | | E |

| | | | | | | | |
|--|--|----|--|--|--|--|-----|
| ACTUATOR CODES (pneumatic) | | P. | | | | | |
| Group Designation | | | | | | | |
| Multi-spring , pneumatic linear actuator | | P. | | | | | |
| Actuator Size | | | | | | | |
| 205 | | | | | | | 1 |
| 280 | | | | | | | 3 |
| 340 A - From DN15 to DN50 | | | | | | | 5 |
| 435 A - From DN15 to DN50 | | | | | | | 7 |
| Actuator | | | | | | | |
| Direct Action | | | | | | | D |
| Reverse Action | | | | | | | R |
| Actuator Construction | | | | | | | |
| Steel construction (painted) - standard | | | | | | | (2) |
| Stainless steel construction | | | | | | | I |
| Control Signal | | | | | | | |
| 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:
 V40S valve model EQP soft plug, PTFE/GR stem sealing DN50 complete with reverse action actuator signal 0,4-1,2bar, size340A steel.

Code: PV.40S.11N50.5R18

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).