

## THREE-WAY GLOBE CONTROL VALVES V253

### DESCRIPTION

The ADCATrol V253 is a series of three-way globe control valves designed to ensure accurate control in mixing or diverting general service applications.

These valves can be assembled with pneumatic, hydraulic or electric actuators and used with the most common process fluids such as water, superheated water, thermal oil, steam, air, gas and other non corrosive fluids.

### MAIN FEATURES

Compact and cost-effective design.  
Mixing and diverting versions.

### OPTIONS AND

**ACCESSORIES:** Various stem sealing options including bellows sealed versions.

**USE:** Hot and superheated water.  
Thermal oil.  
Saturated and superheated steam.  
Air, gases and others.

### AVAILABLE

**MODELS:** V253G – SG iron.

**SIZES:** DN 15 to DN 150.

**CONNECTIONS:** Flanged EN 1092-2 PN 16 or PN 25.  
Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-2, on request.

### STEM

**SEALING:** PTFE/GR V-Rings – up to 220 °C.  
Graphite packing – up to 350 °C.  
Stainless steel bellows – up to 350 °C.



### CE MARKING – GROUP 2 (PED – European Directive)

| PN 16        | PN 25        | Category      |
|--------------|--------------|---------------|
| DN 15 to 50  | DN 15 to 40  | SEP           |
| DN 65 to 150 | DN 50 to 125 | 1 (CE marked) |
| –            | DN 150       | 2 (CE marked) |

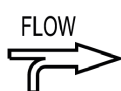
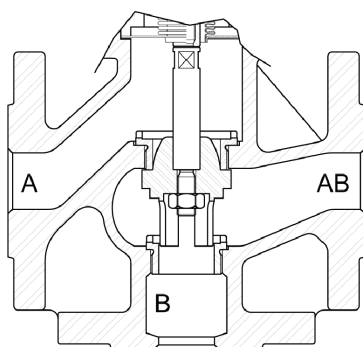
### BODY LIMITING CONDITIONS \*

| FLANGED<br>PN 16      |                        | FLANGED<br>PN 25      |                        |
|-----------------------|------------------------|-----------------------|------------------------|
| ALLOWABLE<br>PRESSURE | RELATED<br>TEMPERATURE | ALLOWABLE<br>PRESSURE | RELATED<br>TEMPERATURE |
| 16 bar                | -10 °C / 120 °C        | 25 bar                | -10 °C / 120 °C        |
| 15,5 bar              | 150 °C                 | 24,3 bar              | 150 °C                 |
| 14,7 bar              | 200 °C                 | 23 bar                | 200 °C                 |
| 14,3 bar              | 220 °C                 | 22,5 bar              | 220 °C                 |
| 13,9 bar              | 250 °C                 | 21,8 bar              | 250 °C                 |
| 12,8 bar              | 300 °C                 | 20 bar                | 300 °C                 |
| 11,2 bar              | 350 °C                 | 17,5 bar              | 350 °C                 |

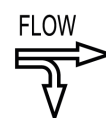
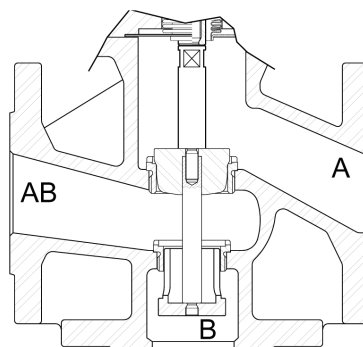
\* Rating according to EN 1092-2:2007.

### TRIM DESIGN

#### MIXING

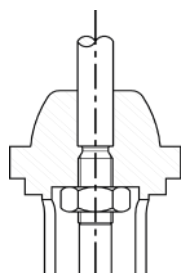


#### DIVERTING



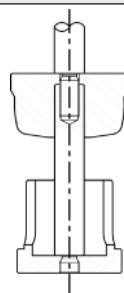
### PLUG DESIGN

#### MIXING



**Sealing:** Metal to metal  
**Characteristic:** Linear (PL)  
**Rangeability:** 30:1 to 50:1  
**Leakage:** Class IV, acc. to IEC 60534-4

#### DIVERTING



**Sealing:** Metal to metal  
**Characteristic:** Linear (PL)  
**Rangeability:** 30:1  
**Leakage:** Class IV, acc. to IEC 60534-4

### FLOW RATE COEFFICIENTS – MIXING PLUGS

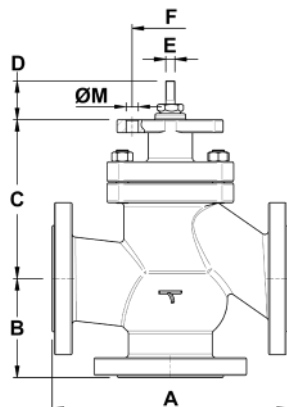
| SIZE        | DN 15   | DN 20   | DN 25   | DN 32   | DN 40   | DN 50   | DN 65   | DN 80   | DN 100   | DN 125    | DN 150    |
|-------------|---------|---------|---------|---------|---------|---------|---------|---------|----------|-----------|-----------|
| Kvs (m³/h)  | 4       | 6,3     | 10      | 16      | 25      | 40      | 63      | 100     | 160      | 230       | 330       |
| SEAT Ø *    | 20 / 15 | 20 / 15 | 25 / 20 | 32 / 25 | 40 / 32 | 50 / 40 | 65 / 50 | 80 / 65 | 100 / 80 | 125 / 120 | 150 / 140 |
| STROKE (mm) | 20      |         |         |         |         |         | 30      |         |          | 35        | 40        |

\* Upper and lower seat diameters respectively.  
For conversion, Kvs = Cv (US) x 0,865.

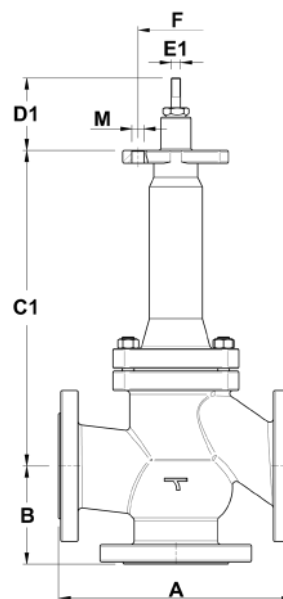
### FLOW RATE COEFFICIENTS – DIVERTING PLUGS

| SIZE        | DN 32   | DN 40   | DN 50   | DN 65   | DN 80   | DN 100   | DN 125    | DN 150    |
|-------------|---------|---------|---------|---------|---------|----------|-----------|-----------|
| Kvs (m³/h)  | 12      | 20      | 27      | 50      | 83      | 123      | 190       | 250       |
| SEAT Ø *    | 32 / 25 | 40 / 32 | 50 / 40 | 65 / 50 | 80 / 65 | 100 / 80 | 100 / 100 | 120 / 120 |
| STROKE (mm) | 20      |         |         | 30      |         |          | 35        | 40        |

\* Upper and lower seat diameters respectively.  
For conversion, Kvs = Cv (US) x 0,865.



Valve with  
standard bonnet



Bellows  
sealed valve

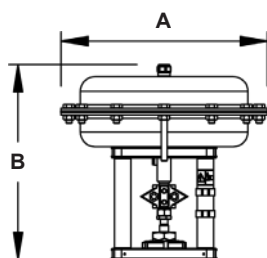
| DIMENSIONS (mm) |       |       |       |       |       |       |       |       |        |        |        |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| DIMENSION       | SIZE  |       |       |       |       |       |       |       |        |        |        |
|                 | DN 15 | DN 20 | DN 25 | DN 32 | DN 40 | DN 50 | DN 65 | DN 80 | DN 100 | DN 125 | DN 150 |
| A               | 130   | 150   | 160   | 180   | 200   | 230   | 290   | 310   | 350    | 400    | 480    |
| B               | 65    | 70    | 75    | 80    | 90    | 100   | 120   | 130   | 150    | 200    | 210    |
| C               | 143   | 157   | 151   | 158   | 163   | 166   | 209   | 209   | 217    | 319    | 334    |
| C1              | 265   | 279   | 273   | 280   | 285   | 288   | 418   | 418   | 426    | 529    | 544    |
| D               | 56    |       |       |       |       |       |       |       |        |        |        |
| D1              | 96    |       |       |       |       |       |       |       |        |        |        |
| E               | M10   |       |       |       |       |       |       |       |        |        |        |
| E1              | M12   |       |       |       |       |       |       |       |        |        |        |
| F               | 100   |       |       |       |       |       |       |       |        |        |        |
| M               | 17    |       |       |       |       |       |       |       |        |        |        |

Remark: Standard PN 16 DN 65 flanges are supplied with 4 holes. 8 holes, according to EN 1092-2, on request.

| WEIGHTS (kg) |       |       |       |       |       |       |       |       |        |        |        |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
|              | DN 15 | DN 20 | DN 25 | DN 32 | DN 40 | DN 50 | DN 65 | DN 80 | DN 100 | DN 125 | DN 150 |
| STANDARD     | 8     | 9     | 10    | 12,5  | 14    | 16    | 32    | 36    | 51     | 107    | 130    |
| BELLOWS      | 10    | 11    | 11,5  | 14,5  | 16    | 19    | 36    | 40    | 54     | 95     | 125    |

| MAX. PERMISSIBLE ACTUATING FORCES (kN) |       |       |       |       |       |       |       |       |        |        |        |
|----------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
|                                        | SIZE  |       |       |       |       |       |       |       |        |        |        |
|                                        | DN 15 | DN 20 | DN 25 | DN 32 | DN 40 | DN 50 | DN 65 | DN 80 | DN 100 | DN 125 | DN 150 |
| STANDARD                               | 12    |       |       |       |       |       |       |       |        |        |        |
| BELLOWS                                | 16    |       |       |       |       |       |       |       |        |        |        |

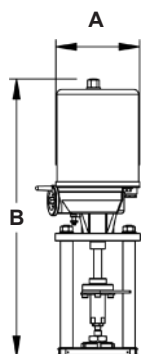
## PA SERIES PNEUMATIC ACTUATORS



| DIMENSIONS (mm) |       |       |       |             |      |
|-----------------|-------|-------|-------|-------------|------|
| DIMENSION       | PA206 | PA281 | PA341 | PA436       | PA80 |
| A               | 209   | 275   | 336   | 430         | 405  |
| B               | 236   | 243   | 323   | 291 / 311 * | 505  |
| WEIGHT (kg)     | 6,2   | 9,6   | 14,3  | 24,4 / 28 * | 50,4 |

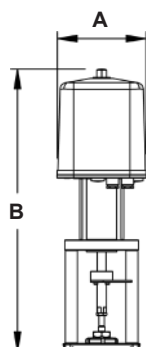
\* For actuators with spring ranges 1 - 2 bar, 1,5 - 3 bar and 2 - 4 bar.

## EL SERIES ELECTRIC ACTUATORS



| DIMENSIONS (mm) |      |             |              |       |
|-----------------|------|-------------|--------------|-------|
| DIMENSION       | EL12 | EL20 – EL45 | EL80 – EL120 | EL250 |
| A               | 129  | 148         | 188          | 216   |
| B               | 333  | 485         | 587          | 683   |
| WEIGHT (kg)     | 2,1  | 8           | 13           | 19    |

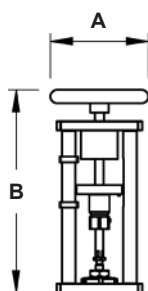
## ELR SERIES ELECTRIC ACTUATORS



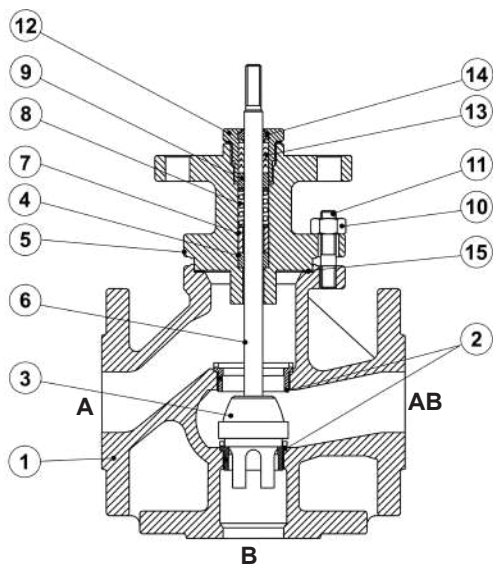
| DIMENSIONS (mm) |             |             |             |
|-----------------|-------------|-------------|-------------|
| DIMENSION       | ELR2.1      | ELR2.2      | ELR2.3      |
| A               | 162         | 162         | 162         |
| B               | 518 / 555 * | 536 / 573 * | 557 / 593 * |
| WEIGHT (kg)     | 8,7         | 9,3         | 10          |

\* With PEL electronic positioner.

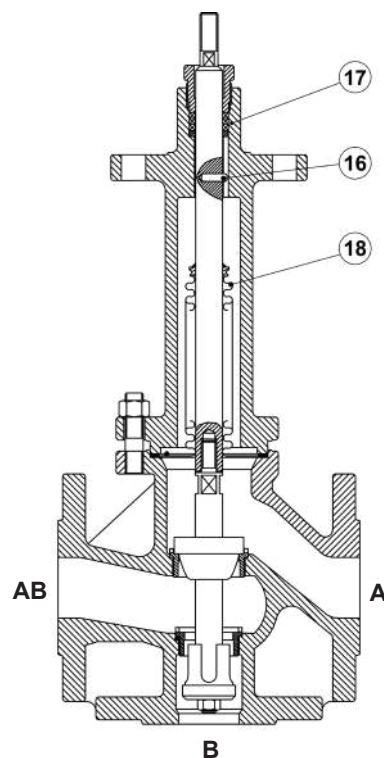
## MANUAL OPERATION HANDWHEEL



| DIMENSIONS (mm) |     |
|-----------------|-----|
| DIMENSION       | MAH |
| A               | 160 |
| B               | 331 |
| WEIGHT (kg)     | 5,6 |



Mixing valve with  
standard bonnet



Diverting bellows  
sealed valve

| MATERIALS |                       |                            |
|-----------|-----------------------|----------------------------|
| POS. N°   | DESIGNATION           | MATERIAL                   |
| 1         | Body                  | GJS-400-18-LT / 5.3103     |
| 2         | * Seats               | AISI 420 / 1.4021          |
| 3         | * Valve plug          | AISI 420 / 1.4021          |
| 4         | Lower stem guide      | Graphite filled PTFE       |
| 5         | Bonnet                | GJS-400-18-LT / 5.3103     |
| 6         | * Stem                | AISI 420 / 1.4021          |
| 7         | Packing spacer        | AISI 303 / 1.4305          |
| 8         | Spring                | AISI 301 / 1.4310          |
| 9         | Upper stem guide      | Graphite filled PTFE       |
| 10        | Nuts                  | C35E / 1.1181              |
| 11        | Studs                 | C35E / 1.1181              |
| 12        | Packing nut           | AISI 303 / 1.4305          |
| 13        | * Chevron packing set | Graphite filled PTFE       |
| 14        | Scraper ring          | FPM                        |
| 15        | * Gasket              | Stainless steel / Graphite |
| 16        | Locking pin           | Stainless steel A2-70      |
| 17        | * Safety packing set  | Stainless steel / Graphite |
| 18        | * Metal bellows       | AISI 316Ti / 1.4571        |

\* Available spare parts.

| ORDERING CODES V253 a)                                                                      |             |          |          |          |          |          |           |          |
|---------------------------------------------------------------------------------------------|-------------|----------|----------|----------|----------|----------|-----------|----------|
| <b>Valve model</b>                                                                          | <b>V.23</b> | <b>G</b> | <b>M</b> | <b>1</b> | <b>7</b> | <b>L</b> | <b>15</b> |          |
| Globe valve, three-way, straight body                                                       | <b>V.23</b> |          |          |          |          |          |           |          |
| <b>Body material</b>                                                                        |             |          |          |          |          |          |           |          |
| GJS-400-18-LT / 0.7043 SG iron                                                              |             | <b>G</b> |          |          |          |          |           |          |
| <b>Trim design</b>                                                                          |             |          |          |          |          |          |           |          |
| Mixing                                                                                      |             |          | <b>M</b> |          |          |          |           |          |
| Diverting (only available for size DN 32 and above)                                         |             |          | <b>D</b> |          |          |          |           |          |
| <b>Stem sealing</b>                                                                         |             |          |          |          |          |          |           |          |
| PTFE/GR V-Rings / Standard bonnet                                                           |             |          |          | <b>1</b> |          |          |           |          |
| Graphite / Standard bonnet                                                                  |             |          |          | <b>3</b> |          |          |           |          |
| Stainless steel bellows with graphite safety packing                                        |             |          |          | <b>8</b> |          |          |           |          |
| <b>Valve plug</b>                                                                           |             |          |          |          |          |          |           |          |
| Linear (PL) – metal to metal (class IV)                                                     |             |          |          |          | <b>7</b> |          |           |          |
| <b>Pipe connection</b>                                                                      |             |          |          |          |          |          |           |          |
| Flanged EN 1092-2 PN 16                                                                     |             |          |          |          |          | <b>L</b> |           |          |
| Flanged EN 1092-2 PN 25                                                                     |             |          |          |          |          | <b>M</b> |           |          |
| <b>Size</b>                                                                                 |             |          |          |          |          |          |           |          |
| DN 15                                                                                       |             |          |          |          |          |          | <b>15</b> |          |
| DN 20                                                                                       |             |          |          |          |          |          | <b>20</b> |          |
| ...                                                                                         |             |          |          |          |          |          |           |          |
| <b>Special valves / Extras</b>                                                              |             |          |          |          |          |          |           |          |
| Full description or additional codes have to be added in case of a non-standard combination |             |          |          |          |          |          |           | <b>E</b> |

a) Codification for valve only. For actuator codes, refer to the respective datasheet.