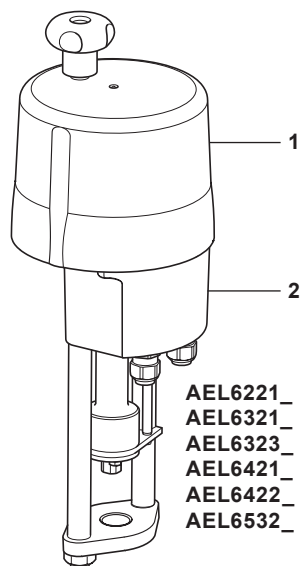




# AEL6 Series Smart Electric Actuators for DN15 to DN100 Control Valves



## Materials

| No. | Part     | Material                       |
|-----|----------|--------------------------------|
| 1   | Case     | 2.3 to 8 kN Polycarbonate      |
|     |          | 14 to 25 kN Die-cast aluminium |
| 2   | Housing  | Die-cast aluminium             |
| 3   | Guidance | Red brass                      |

## Description

The AEL6 series electric actuators are reversible having linear output.

## Available types

The actuators are available with 4 supply variants: **230 Vac**, **115 Vac**, **24 Vac** and **24 Vdc**. The standard version is available for VMD (Valve Motor Drive), 0/4-20 mA or 0/2-10 Vdc input control signals.

**These actuators can be used with the following valves**, in conjunction with an appropriate valve adaptor and mounting flange:

| Control valves | 2-port | Spira-trol™                               |
|----------------|--------|---|
|                | 3-port | QL43 and QL73 mixing and diverting valves |

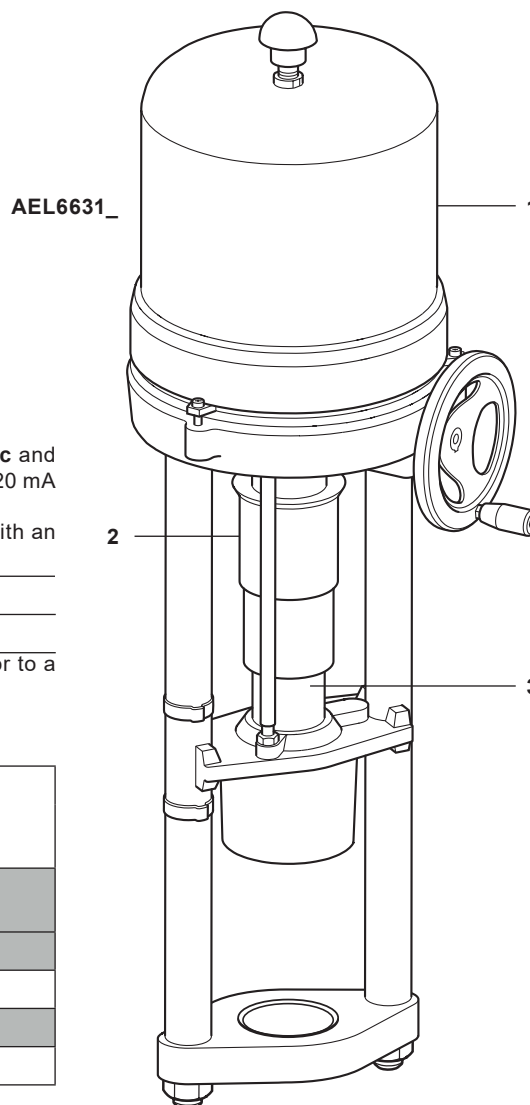
**Note:** A mounting flange and valve adaptor is required to mount the actuator to a valve. See the associated tables below:

## Mounting flange selection

| Valve type and size                       |               | Actuator                       |        |
|---|---------------|--------------------------------|--------|
|   |               | AEL62_, AEL63_, AEL64_, AEL65_ | AEL66_ |
| <b>KE and KEA</b><br><b>LE and LEA QL</b> | DN15 to DN50  | EL5970                         |        |
| <b>LE and LEA</b>                         | DN65 to DN100 | EL5971                         |        |
| <b>KE and KEA QL</b>                      | DN65 to DN100 | EL5971                         | EL5972 |
| <b>JE and JEA</b>                         | DN15 to DN50  | EL5971J                        |        |
|   | DN65 to DN100 | EL5972J                        | EL5972 |

## Valve adaptor selection

| Valve type and size                                 |               | Valve stem | AEL62_     | AEL63_     | AEL64_     | AEL65_     | AEL66_ |
|---|---------------|------------|------------|------------|------------|------------|--------|
| <b>KE and KEA</b><br><b>LE and LEA</b><br><b>QL</b> | DN15 to DN50  | M8 thread  | AEL6911    | AEL6911    | AEL6911    | AEL6911    |        |
|   | DN65 to DN100 | M12 thread | Integrated | Integrated | Integrated | Integrated | EL5945 |
| <b>JE and JEA</b>                                   | DN15 to DN50  | M8 thread  | AEL6911J   | AEL6911J   | AEL6911J   | AEL6911J   |        |
|   | DN65 to DN100 | M12 thread | EL6912J    | EL6912J    | EL6912J    | EL6912J    | EL5945 |



## Technical data

| Actuator type   | AEL6221_  | AEL6321_   | AEL6323_   | AEL6421_   | AEL6422_   | AEL6532_  | AEL6631_   |
|---|---|--|--|--|--|---|--|
| Supply voltage  | 230 Vac, 115 Vac, 24 Vac, 24 Vdc  |  |  |  |  |   |  |
| Supply frequency  | 50 Hz / 60 Hz / continuous  |  |  |  |  |   |  |
| Maximal power consumption VA<br>Note: power consumption is relative to 50/60 Hz/continuous respectively | 13  | 19   | 57   | 25   | 72   | 65  | 88   |
| Current consumed by the actuator<br>Current which is necessary for the power supply                     | 1 Amp - 24vac / dc<br>0.25 Amp - 110vac<br>0.15 Amp - 220vac  |  | 3 Amp - 24vac / dc<br>0.6 Amp - 110vac<br>0.3 Amp - 220vac |  | 4 Amp - 24vac / dc<br>0.8 Amp - 110vac<br>0.4 Amp - 220vac |   | 5 Amp - 24vac / dc<br>1 Amp - 110vac<br>0.5 Amp - 220vac |
|   |   | 1 Amp - 24vac / dc<br>0.25 Amp - 110vac<br>0.15 Amp - 220vac |  | 1 Amp - 24vac / dc<br>0.3 Amp - 110vac<br>0.2 Amp - 220vac |  | 3 Amp - 24vac / dc<br>0.7 Amp - 110vac<br>0.35 Amp - 220vac |  |
| Stroke mm   | 50  | 50   | 50   | 50   | 50   | 65  | 95*  |
| Actuator speed mm/s<br>Note: Speed is relative to 50/60 Hz/continuous respectively                      | 0.9   | 0.9  | 4.5  | 0.7  | 1.7  | 1.3   | 0.4  |
| Enclosure rating  | IP65 (for outdoor installations adequate shelter)   |  |  |  |  |   |  |
| Actuator trust kN   | 2.3   | 4.5  | 4.5  | 8  | 8  | 14  | 25   |
| Ambient limits  | -20 °C to 60 °C   |  |  |  |  |   |  |
| Analog position set valve input   | Adjustable: 0/4 - 20 mA or 0/2 - 10 Vdc   |  |  |  |  |   |  |
| Positioner function   | Dead-band ajustable between 0.5 - 5% of set value range, maximum resolution 0.1 mA or 0.05 V at 50 mm stroke  |  |  |  |  |   |  |
| Active valve position feedback  | Adjustable: 0/4 - 20 mA or 0/2 - 10 Vdc   |  |  |  |  |   |  |
| Automatic commissioning   | Drives to torque dependant stop(s) and moves through the whole valve travel. Autoscale of set value and feedback in accordance to valve travel                          |  |  |  |  |   |  |
| Characteristic curve correction   | Up to 16 interpolation points, input inaccuracy 1%  |  |  |  |  |   |  |
| Torque increase   | Adjustable up to 150% torque for up to 2.5s to break away a valve in the end position   |  |  |  |  |   |  |
| Status indication   | 2 LEDs under actuator cover   |  |  |  |  |   |  |
| Internal fault monitoring   | Torque, position set value, active position value, position, temperature of electronic board  |  |  |  |  |   |  |
| Diagnostics function  | Stores cumulated operation data (motor and total running time, number of motor starts) and data sets of current values (set value, feedback value, torque, temperature) |  |  |  |  |   |  |

### \*Notes:

1. 115 Vac and 230 Vac models of the AEL6631\_ have a stroke limited to 95 mm.
2. 24 Vac and 24 Vdc models of the AEL6631\_ are capable of up to 100 mm stroke.

### Optional extras:

- Additional position switches - AEL6951 (NC) and AEL6952 (NO)
- Local control - (non retrofitable for the AEL66\_) - AEL6955 (2.3 to 14 kN) and AEL6956 (25 kN)
- Fault indicator relay - AEL6973 (non retrofitable)
- Communication software including data cable - AEL6957
- Space heater - AEL6953 (24 Vac) and AEL6954 (115 Vac and 230 Vac)

### Approvals

This equipment is CE marked and conforms to the following:

- EEC regulation 89/336-EEC for Electromagnetical compatibility and 72/23-EEC for low voltage directive.
- EN 61000-2-2/2001 and EN 61000-6-4 for EMC, and 61010-1/1995 for safety.

## How to use the sizing data:

The following tables supply guidance as to the sizing of the AEL6 series actuator when it is used on the Spira-trol™ K and L series valves.

### Three conditions are illustrated in tabular form:

**KE, LE, KEA** - 2-port valve: Class IV shut-off - Providing shut-off of the valve to the requirements of BS 5793-4 (IEC 60534-4) class IV.

**KE, LE, KEA** - 2-port valve: Class VI shut-off - Providing shut-off of the valve to the requirements of BS 5793-4 (IEC 60534-4) class VI.

**QL** - 3-port valve: Class IV shut-off - Providing shut-off of the valve to the requirements of BS 5793-4 (IEC 60534-4) class IV.

### To select a suitable actuator:

- Identify the column containing the valve size and gland material selected.
- Identify the maximum operating pressure condition, including any transient pressures likely to occur, within the selected column.
- Read back to the left hand side of the table to identify the suitable actuator for the application.

For conditions outside of those illustrated please contact Spirax Sarco.

## Maximum differential pressures for modulating duties only – KE, LE, KEA and LEA 2-port valves.

For pure control applications providing control across the full valve operating range, but not guaranteeing shut-off to a greater level than the minimum flowrate based on the valve 50:1 turndown.

### with PTFE or Graphite stem seal

| Valve size   | DN15                              | DN20     | DN25 | DN32     | DN40 | DN50     | DN65  | DN80     | DN100 |          |      |          |      |          |      |          |      |          |  |  |
|--------------|-----------------------------------|----------|------|----------|------|----------|-------|----------|-------|----------|------|----------|------|----------|------|----------|------|----------|--|--|
| Kv           | 4.0                               | 6.3      | 10   | 16       | 25   | 36       | 63    | 100      | 160   |          |      |          |      |          |      |          |      |          |  |  |
| Valve travel | 20 mm                             |          |      |          |      |          | 30 mm |          |       |          |      |          |      |          |      |          |      |          |  |  |
| Actuator     | Maximum differential pressure bar |          |      |          |      |          |       |          |       |          |      |          |      |          |      |          |      |          |  |  |
|              | PTFE                              | graphite | PTFE | graphite | PTFE | graphite | PTFE  | graphite | PTFE  | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite |  |  |
| AEL6221-     | 40.0                              | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 38.5  | 19.2     | 16.6  | 13.7     | 11.8 | 7.5      | 5.7  | 4.8      | 3.6  | 3.0      | 2.3  |          |  |  |
| AEL6321- *   |                                   |          |      |          | 40.0 | 40.0     | 40.0  | 40.0     | 38.6  | 36.0     | 27.5 | 25.6     | 15.3 | 13.5     | 9.8  | 8.6      | 6.1  | 5.4      |  |  |
| AEL6323- *   |                                   |          |      |          | 40.0 | 40.0     | 40.0  | 40.0     | 38.6  | 36.0     | 27.5 | 25.6     | 15.3 | 13.5     | 9.8  | 8.6      | 6.1  | 5.4      |  |  |
| AEL6421- *   |                                   |          |      |          |      |          | 40.0  | 40.0     | 40.0  | 40.0     | 40.0 | 40.0     | 27.7 | 25.9     | 17.7 | 16.5     | 11.0 | 10.3     |  |  |
| AEL6422- *   |                                   |          |      |          |      |          | 40.0  | 40.0     | 40.0  | 40.0     | 40.0 | 40.0     | 27.7 | 25.9     | 17.7 | 16.5     | 11.0 | 10.3     |  |  |
| AEL6532-     |                                   |          |      |          |      |          | 40.0  | 40.0     | 40.0  | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 31.3 | 30.1     | 19.5 | 18.8     |  |  |
| AEL6631-     |                                   |          |      |          |      |          |       |          |       |          |      | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 35.0 | 34.3     |  |  |

\* **Please note** that although the AEL6321- and the AEL6323- have the same maximum differential pressure values, they have different operating speeds. The same applies to the AEL6421- and the AEL6422-. **Please refer** to the technical data table on page 1 for full details.

### with Bellows and PTFE or Graphite stem seal

| Valve size   | DN15                              | DN20     | DN25 | DN32     | DN40 | DN50     | DN65  | DN80     | DN100 |          |      |          |      |          |      |          |      |          |      |      |  |
|--------------|-----------------------------------|----------|------|----------|------|----------|-------|----------|-------|----------|------|----------|------|----------|------|----------|------|----------|------|------|--|
| Kv           | 4.0                               | 6.3      | 10   | 16       | 25   | 36       | 63    | 100      | 160   |          |      |          |      |          |      |          |      |          |      |      |  |
| Valve travel | 20 mm                             |          |      |          |      |          | 30 mm |          |       |          |      |          |      |          |      |          |      |          |      |      |  |
| Actuator     | Maximum differential pressure bar |          |      |          |      |          |       |          |       |          |      |          |      |          |      |          |      |          |      |      |  |
|              | PTFE                              | graphite | PTFE | graphite | PTFE | graphite | PTFE  | graphite | PTFE  | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite |      |      |  |
| AEL6221-     | 34.4                              | 19.5     | 27.2 | 15.4     | 18.1 | 10.2     | 14.0  | 7.9      | 6.0   | 3.4      | 4.3  | 2.4      |      |          |      |          |      |          |      |      |  |
| AEL6321- *   | 40.0                              | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 40.0  | 40.0     | 25.4  | 22.8     | 18.1 | 16.2     | 7.9  | 6.1      | 5.0  | 3.9      | 3.1  | 2.4      |      |      |  |
| AEL6323- *   | 40.0                              | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 40.0  | 40.0     | 25.4  | 22.8     | 18.1 | 16.2     | 7.9  | 6.1      | 5.0  | 3.9      | 3.1  | 2.4      |      |      |  |
| AEL6421- *   |                                   |          |      |          |      |          | 40.0  | 40.0     | 40.0  | 40.0     | 40.0 | 38.2     | 20.2 | 18.4     | 12.9 | 11.8     | 8.0  | 7.3      |      |      |  |
| AEL6422- *   |                                   |          |      |          |      |          | 40.0  | 40.0     | 40.0  | 40.0     | 40.0 | 38.2     | 20.2 | 18.4     | 12.9 | 11.8     | 8.0  | 7.3      |      |      |  |
| AEL6532-     |                                   |          |      |          |      |          |       |          |       |          |      | 40.0     | 40.0 | 40.0     | 40.0 | 26.5     | 25.4 | 16.5     | 15.8 |      |  |
| AEL6631-     |                                   |          |      |          |      |          |       |          |       |          |      |          |      |          | 40.0 | 40.0     | 40.0 | 40.0     | 32.0 | 31.3 |  |

\* **Please note** that although the AEL6321- and the AEL6323- have the same maximum differential pressure values, they have different operating speeds. The same applies to the AEL6421- and the AEL6422-. **Please refer** to the technical data table on page 1 for full details.

**Maximum differential pressures for Class IV shut-off –  
KE, LE, KEA and LEA 2-port valves**

**with PTFE or Graphite stem seal**

| Valve size   | DN15                              |          | DN20 |          | DN25 |          | DN32 |          | DN40 |          | DN50 |          | DN65 |          | DN80 |          | DN100 |          |  |
|--------------|-----------------------------------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|-------|----------|--|
| Kv           | 4.0                               |          | 6.3  |          | 10   |          | 16   |          | 25   |          | 36   |          | 63   |          | 100  |          | 160   |          |  |
| Valve travel | 20 mm                             |          |      |          |      |          |      |          |      |          |      | 30 mm    |      |          |      |          |       |          |  |
| Actuator     | Maximum differential pressure bar |          |      |          |      |          |      |          |      |          |      |          |      |          |      |          |       |          |  |
|              | PTFE                              | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE  | graphite |  |
| AEL6221-     | 40.0                              | 40.0     | 40.0 | 40.0     | 40.0 | 39.1     | 36.8 | 30.7     | 14.1 | 11.5     | 9.4  | 7.5      | 4.3  | 2.5      | 2.2  | 1.0      | 0.9   |          |  |
| AEL6321- *   |                                   |          | 40.0 | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 33.5 | 30.9     | 23.2 | 21.3     | 12.1 | 10.2     | 7.2  | 6.0      | 4.0   | 3.3      |  |
| AEL6323- *   |                                   |          | 40.0 | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 33.5 | 30.9     | 23.2 | 21.3     | 12.1 | 10.2     | 7.2  | 6.0      | 4.0   | 3.3      |  |
| AEL6421- *   |                                   |          |      |          |      |          |      | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 24.4 | 22.6     | 15.1 | 13.9     | 9.0   | 8.2      |  |
| AEL6422- *   |                                   |          |      |          |      |          |      | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 24.4 | 22.6     | 15.1 | 13.9     | 9.0   | 8.2      |  |
| AEL6532-     |                                   |          |      |          |      |          |      |          | 40.0 | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 28.7 | 27.5     | 17.4  | 16.7     |  |
| AEL6631-     |                                   |          |      |          |      |          |      |          |      |          |      |          | 40.0 | 40.0     | 40.0 | 40.0     | 33.0  | 32.2     |  |

\* **Please note** that although the AEL6321- and the AEL6323- have the same maximum differential pressure values, they have different operating speeds. The same applies to the AEL6421- and the AEL6422-. **Please refer** to the technical data table on page 1 for full details.

**with Bellows and PTFE or Graphite stem seal**

| Valve size   | DN15                              |          | DN20 |          | DN25 |          | DN32 |          | DN40 |          | DN50 |          | DN65 |          | DN80 |          | DN100 |          |     |
|--------------|-----------------------------------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|-------|----------|-----|
| Kv           | 4.0                               |          | 6.3  |          | 10   |          | 16   |          | 25   |          | 36   |          | 63   |          | 100  |          | 160   |          |     |
| Valve travel | 20 mm                             |          |      |          |      |          |      |          |      |          |      | 30 mm    |      |          |      |          |       |          |     |
| Actuator     | Maximum differential pressure bar |          |      |          |      |          |      |          |      |          |      |          |      |          |      |          |       |          |     |
|              | PTFE                              | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE  | graphite |     |
| AEL6221-     | 19.8                              | 4.9      | 14.2 | 2.4      | 7.5  |          | 6.3  |          | 0.9  |          |      |          |      |          |      |          |       |          |     |
| AEL6321- *   | 40.0                              | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 20.3 | 17.7     | 13.8 | 11.9     | 4.6  | 2.8      | 2.4  | 1.3      | 1.1   |          |     |
| AEL6323- *   | 40.0                              | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 20.3 | 17.7     | 13.8 | 11.9     | 4.6  | 2.8      | 2.4  | 1.3      | 1.1   |          |     |
| AEL6421- *   |                                   |          |      |          |      |          |      | 40.0     | 40.0 | 40.0     | 40.0 | 35.8     | 33.9 | 17.0     | 15.2 | 10.3     | 9.2   | 6.0      | 5.3 |
| AEL6422- *   |                                   |          |      |          |      |          |      | 40.0     | 40.0 | 40.0     | 40.0 | 35.8     | 33.9 | 17.0     | 15.2 | 10.3     | 9.2   | 6.0      | 5.3 |
| AEL6532-     |                                   |          |      |          |      |          |      |          | 40.0 | 40.0     | 40.0 | 40.0     | 38.2 | 36.4     | 23.9 | 22.8     | 14.5  | 13.8     |     |
| AEL6631-     |                                   |          |      |          |      |          |      |          |      |          |      |          | 40.0 | 40.0     | 40.0 | 40.0     | 30.0  | 29.3     |     |

\* **Please note** that although the AEL6321- and the AEL6323- have the same maximum differential pressure values, they have different operating speeds. The same applies to the AEL6421- and the AEL6422-. **Please refer** to the technical data table on page 1 for full details.

**Maximum differential pressures for Class VI shut-off (soft-seal) –  
KE, LE, KEA and LEA 2-port valves**

**with PTFE or Graphite stem seal**

| Valve size   | DN15                              | DN20     | DN25 | DN32     | DN40 | DN50     | DN65  | DN80     | DN100 |          |      |          |      |          |      |          |      |          |
|--------------|-----------------------------------|----------|------|----------|------|----------|-------|----------|-------|----------|------|----------|------|----------|------|----------|------|----------|
| Kv           | 4.0                               | 6.3      | 10   | 16       | 25   | 36       | 63    | 100      | 160   |          |      |          |      |          |      |          |      |          |
| Valve travel | 20 mm                             |          |      |          |      |          | 30 mm |          |       |          |      |          |      |          |      |          |      |          |
| Actuator     | Maximum differential pressure bar |          |      |          |      |          |       |          |       |          |      |          |      |          |      |          |      |          |
|              | PTFE                              | graphite | PTFE | graphite | PTFE | graphite | PTFE  | graphite | PTFE  | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite |
| AEL6221-     | 40.0                              | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 38.5  | 19.2     | 16.6  | 13.7     | 11.8 | 7.5      | 5.7  | 4.8      | 3.6  | 3.0      | 2.3  |          |
| AEL6321- *   |                                   |          |      |          | 40.0 | 40.0     | 40.0  | 40.0     | 38.6  | 36.0     | 27.5 | 25.6     | 15.3 | 13.5     | 9.8  | 8.6      | 6.1  | 5.4      |
| AEL6323- *   |                                   |          |      |          | 40.0 | 40.0     | 40.0  | 40.0     | 38.6  | 36.0     | 27.5 | 25.6     | 15.3 | 13.5     | 9.8  | 8.6      | 6.1  | 5.4      |
| AEL6421- *   |                                   |          |      |          |      |          | 40.0  | 40.0     | 40.0  | 40.0     | 40.0 | 40.0     | 27.7 | 25.9     | 17.7 | 16.5     | 11.0 | 10.3     |
| AEL6422- *   |                                   |          |      |          |      |          | 40.0  | 40.0     | 40.0  | 40.0     | 40.0 | 40.0     | 27.7 | 25.9     | 17.7 | 16.5     | 11.0 | 10.3     |
| AEL6532-     |                                   |          |      |          |      |          | 40.0  | 40.0     | 40.0  | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 31.3 | 30.1     | 19.5 | 18.8     |
| AEL6631-     |                                   |          |      |          |      |          |       |          |       |          |      | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 35.0 | 34.3     |

\* **Please note** that although the AEL6321- and the AEL6323- have the same maximum differential pressure values, they have different operating speeds. The same applies to the AEL6421- and the AEL6422-. **Please refer** to the technical data table on page 1 for full details.

**with Bellows and PTFE or Graphite stem seal**

| Valve size   | DN15                              | DN20     | DN25 | DN32     | DN40 | DN50     | DN65  | DN80     | DN100 |          |      |          |      |          |      |          |      |          |
|--------------|-----------------------------------|----------|------|----------|------|----------|-------|----------|-------|----------|------|----------|------|----------|------|----------|------|----------|
| Kv           | 4.0                               | 6.3      | 10   | 16       | 25   | 36       | 63    | 100      | 160   |          |      |          |      |          |      |          |      |          |
| Valve travel | 20 mm                             |          |      |          |      |          | 30 mm |          |       |          |      |          |      |          |      |          |      |          |
| Actuator     | Maximum differential pressure bar |          |      |          |      |          |       |          |       |          |      |          |      |          |      |          |      |          |
|              | PTFE                              | graphite | PTFE | graphite | PTFE | graphite | PTFE  | graphite | PTFE  | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite |
| AEL6221-     | 34.4                              | 19.5     | 27.2 | 15.4     | 18.1 | 10.2     | 14.0  | 7.9      | 6.0   | 3.4      | 4.3  | 2.4      |      |          |      |          |      |          |
| AEL6321- *   | 40.0                              | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 40.0  | 40.0     | 25.4  | 22.8     | 18.1 | 16.2     | 7.9  | 6.1      | 5.0  | 3.9      | 3.1  | 2.4      |
| AEL6323- *   | 40.0                              | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 40.0  | 40.0     | 25.4  | 22.8     | 18.1 | 16.2     | 7.9  | 6.1      | 5.0  | 3.9      | 3.1  | 2.4      |
| AEL6421- *   |                                   |          |      |          |      |          | 40.0  | 40.0     | 40.0  | 40.0     | 40.0 | 38.2     | 20.2 | 18.4     | 12.9 | 11.8     | 8.0  | 7.3      |
| AEL6422- *   |                                   |          |      |          |      |          | 40.0  | 40.0     | 40.0  | 40.0     | 40.0 | 38.2     | 20.2 | 18.4     | 12.9 | 11.8     | 8.0  | 7.3      |
| AEL6532-     |                                   |          |      |          |      |          |       |          |       |          | 40.0 | 40.0     | 40.0 | 40.0     | 26.5 | 25.4     | 16.5 | 15.8     |
| AEL6631-     |                                   |          |      |          |      |          |       |          |       |          |      |          | 40.0 | 40.0     | 40.0 | 40.0     | 32.0 | 31.3     |

\* **Please note** that although the AEL6321- and the AEL6323- have the same maximum differential pressure values, they have different operating speeds. The same applies to the AEL6421- and the AEL6422-. **Please refer** to the technical data table on page 1 for full details.

**Maximum differential pressures for modulating duties only  
JE and JEA 2-port valves**

**PTFE or Graphite stem seal**

| Valve size   | DN15                              |          | DN20 |          | DN25  |          | DN32  |          | DN40  |          | DN50  |          | DN65 |          | DN80 |          | DN100 |          |  |
|--------------|-----------------------------------|----------|------|----------|-------|----------|-------|----------|-------|----------|-------|----------|------|----------|------|----------|-------|----------|--|
| Kv           | 4.0                               |          | 6.3  |          | 10    |          | 16    |          | 25    |          | 36    |          | 63   |          | 100  |          | 160   |          |  |
| Valve travel | 20 mm                             |          |      |          |       |          |       |          |       |          |       | 30 mm    |      |          |      |          |       |          |  |
| Actuator     | Maximum differential pressure bar |          |      |          |       |          |       |          |       |          |       |          |      |          |      |          |       |          |  |
|              | PTFE                              | graphite | PTFE | graphite | PTFE  | graphite | PTFE  | graphite | PTFE  | graphite | PTFE  | graphite | PTFE | graphite | PTFE | graphite | PTFE  | graphite |  |
| AEL6221-     | 100.0                             | 94.0     | 86.0 | 74.0     | 58.0  | 50.0     | 45.0  | 38.5     | 19.2  | 16.6     | 13.7  | 11.8     | 7.5  | 5.7      | 4.8  | 3.6      | 3.0   | 2.3      |  |
| AEL6321-     |                                   |          |      |          | 100.0 | 100.0    | 89.0  | 83.0     | 38.6  | 36.0     | 27.5  | 25.6     | 15.3 | 13.5     | 9.8  | 8.6      | 6.1   | 5.4      |  |
| AEL6323-     |                                   |          |      |          | 100.0 | 100.0    | 89.0  | 83.0     | 38.6  | 36.0     | 27.5  | 25.6     | 15.3 | 13.5     | 9.8  | 8.6      | 6.1   | 5.4      |  |
| AEL6421-     |                                   |          |      |          |       |          | 100.0 | 100.0    | 69.0  | 67.0     | 50.0  | 48.0     | 27.7 | 25.9     | 17.7 | 16.5     | 11.0  | 10.3     |  |
| AEL6422-     |                                   |          |      |          |       |          | 100.0 | 100.0    | 69.0  | 67.0     | 50.0  | 48.0     | 27.7 | 25.9     | 17.7 | 16.5     | 11.0  | 10.3     |  |
| AEL6532-     |                                   |          |      |          |       |          | 100.0 | 100.0    | 100.0 | 100.0    | 87.0  | 85.0     | 49.0 | 47.0     | 31.3 | 30.1     | 19.5  | 18.8     |  |
| AEL6631-     |                                   |          |      |          |       |          |       |          |       |          | 100.0 | 100.0    | 88.0 | 86.0     | 56.0 | 55.0     | 35.0  | 34.3     |  |

**Maximum differential pressures for Class IV shut-off  
JE and JEA 2-port valves**

**PTFE or Graphite stem seal**

| Valve size   | DN15                              |          | DN20  |          | DN25  |          | DN32  |          | DN40  |          | DN50 |          | DN65 |          | DN80 |          | DN100 |          |  |
|--------------|-----------------------------------|----------|-------|----------|-------|----------|-------|----------|-------|----------|------|----------|------|----------|------|----------|-------|----------|--|
| Kv           | 4.0                               |          | 6.3   |          | 10    |          | 16    |          | 25    |          | 36   |          | 63   |          | 100  |          | 160   |          |  |
| Valve travel | 20 mm                             |          |       |          |       |          |       |          |       |          |      | 30 mm    |      |          |      |          |       |          |  |
| Actuator     | Maximum differential pressure bar |          |       |          |       |          |       |          |       |          |      |          |      |          |      |          |       |          |  |
|              | PTFE                              | graphite | PTFE  | graphite | PTFE  | graphite | PTFE  | graphite | PTFE  | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE  | graphite |  |
| AEL6221-     | 94.0                              | 79.0     | 73.0  | 61.0     | 47.0  | 39.1     | 36.8  | 30.7     | 14.1  | 11.5     | 9.4  | 7.5      | 4.3  | 2.5      | 2.2  | 1.0      | 0.9   |          |  |
| AEL6321-     |                                   |          | 100.0 | 100.0    | 100.0 | 97.0     | 82.0  | 76.0     | 33.5  | 30.9     | 23.2 | 21.3     | 12.1 | 10.2     | 7.2  | 6.0      | 4.0   | 3.3      |  |
| AEL6323-     |                                   |          | 100.0 | 100.0    | 100.0 | 97.0     | 82.0  | 76.0     | 33.5  | 30.9     | 23.2 | 21.3     | 12.1 | 10.2     | 7.2  | 6.0      | 4.0   | 3.3      |  |
| AEL6421-     |                                   |          |       |          |       |          | 100.0 | 100.0    | 64.0  | 62.0     | 45.0 | 43.0     | 24.4 | 22.6     | 15.1 | 13.9     | 9.0   | 8.2      |  |
| AEL6422-     |                                   |          |       |          |       |          | 100.0 | 100.0    | 64.0  | 62.0     | 45.0 | 43.0     | 24.4 | 22.6     | 15.1 | 13.9     | 9.0   | 8.2      |  |
| AEL6532-     |                                   |          |       |          |       |          |       |          | 100.0 | 100.0    | 83.0 | 81.0     | 46.0 | 44.0     | 28.7 | 27.5     | 17.4  | 16.7     |  |
| AEL6631-     |                                   |          |       |          |       |          |       |          |       |          |      |          | 85.0 | 83.0     | 54.0 | 52.0     | 33.0  | 32.2     |  |

**Maximum differential pressures for Class VI shut-off  
JE and JEA 2-port valves**

**PTFE or Graphite stem seal**

| Valve size   | DN15                              | DN20     | DN25 | DN32     | DN40  | DN50     | DN65  | DN80     | DN100 |          |       |          |      |          |      |          |      |          |
|--------------|-----------------------------------|----------|------|----------|-------|----------|-------|----------|-------|----------|-------|----------|------|----------|------|----------|------|----------|
| Kv           | 4.0                               | 6.3      | 10   | 16       | 25    | 36       | 63    | 100      | 160   |          |       |          |      |          |      |          |      |          |
| Valve travel | 20 mm                             |          |      |          |       |          | 30 mm |          |       |          |       |          |      |          |      |          |      |          |
| Actuator     | Maximum differential pressure bar |          |      |          |       |          |       |          |       |          |       |          |      |          |      |          |      |          |
|              | PTFE                              | graphite | PTFE | graphite | PTFE  | graphite | PTFE  | graphite | PTFE  | graphite | PTFE  | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite |
| AEL6221-     | 100.0                             | 94.0     | 86.0 | 74.0     | 58.0  | 50.0     | 45.0  | 38.5     | 19.2  | 16.6     | 13.7  | 11.8     | 7.5  | 5.7      | 4.8  | 3.6      | 3.0  | 2.3      |
| AEL6321-     |                                   |          |      |          | 100.0 | 100.0    | 89.0  | 83.0     | 38.6  | 36.0     | 27.5  | 25.6     | 15.3 | 13.5     | 9.8  | 8.6      | 6.1  | 5.4      |
| AEL6323-     |                                   |          |      |          | 100.0 | 100.0    | 89.0  | 83.0     | 38.6  | 36.0     | 27.5  | 25.6     | 15.3 | 13.5     | 9.8  | 8.6      | 6.1  | 5.4      |
| AEL6421-     |                                   |          |      |          |       |          | 100.0 | 100.0    | 69.0  | 67.0     | 50.0  | 48.0     | 27.7 | 25.9     | 17.7 | 16.5     | 11.0 | 10.3     |
| AEL6422-     |                                   |          |      |          |       |          | 100.0 | 100.0    | 69.0  | 67.0     | 50.0  | 48.0     | 27.7 | 25.9     | 17.7 | 16.5     | 11.0 | 10.3     |
| AEL6532-     |                                   |          |      |          |       |          | 100.0 | 100.0    | 100.0 | 100.0    | 87.0  | 85.0     | 49.0 | 47.0     | 31.3 | 30.1     | 19.5 | 18.8     |
| AEL6631-     |                                   |          |      |          |       |          |       |          |       |          | 100.0 | 100.0    | 88.0 | 86.0     | 56.0 | 55.0     | 35.0 | 34.3     |

## Maximum differential pressures for Class IV shut-off – QL 3-port valves

with PTFE or Graphite stem seal

| Valve size   | DN15                              | DN20     | DN25 | DN32     | DN40 | DN50     | DN65  | DN80     | DN100 |          |      |          |      |          |      |          |      |          |
|--------------|-----------------------------------|----------|------|----------|------|----------|-------|----------|-------|----------|------|----------|------|----------|------|----------|------|----------|
| Kv           | 4.0                               | 6.3      | 10   | 16       | 25   | 36       | 63    | 100      | 160   |          |      |          |      |          |      |          |      |          |
| Valve travel | 20 mm                             |          |      |          |      |          | 30 mm |          |       |          |      |          |      |          |      |          |      |          |
| Actuator     | Maximum differential pressure bar |          |      |          |      |          |       |          |       |          |      |          |      |          |      |          |      |          |
|              | PTFE                              | graphite | PTFE | graphite | PTFE | graphite | PTFE  | graphite | PTFE  | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite | PTFE | graphite |
| AEL6221-     | 40.0                              | 39.6     | 40.0 | 39.6     | 32.1 | 23.2     | 19.5  | 14.0     | 12.3  | 8.8      | 7.4  | 5.2      | 3.7  | 2.3      | 2.3  | 1.3      | 1.1  | 0.6      |
| AEL6321- *   | 40.0                              | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 40.0  | 40.0     | 29.2  | 25.7     | 17.9 | 15.7     | 10.3 | 8.9      | 7.0  | 6.0      | 3.7  | 3.2      |
| AEL6323- *   | 40.0                              | 40.0     | 40.0 | 40.0     | 40.0 | 40.0     | 40.0  | 40.0     | 29.2  | 25.7     | 17.9 | 15.7     | 10.3 | 8.9      | 7.0  | 6.0      | 3.7  | 3.2      |
| AEL6421- *   |                                   |          |      |          |      |          |       |          | 40.0  | 40.0     | 32.6 | 30.3     | 19.6 | 18.2     | 13.5 | 12.5     | 7.4  | 6.9      |
| AEL6422- *   |                                   |          |      |          |      |          |       |          | 40.0  | 40.0     | 32.6 | 30.3     | 19.6 | 18.2     | 13.5 | 12.5     | 7.4  | 6.9      |
| AEL6532-     |                                   |          |      |          |      |          |       |          |       |          | 40.0 | 40.0     | 30.2 | 28.8     | 20.9 | 20.0     | 11.6 | 11.1     |
| AEL6631-     |                                   |          |      |          |      |          |       |          |       |          |      |          | 40.0 | 40.0     | 40.0 | 40.0     | 25.3 | 24.7     |

\* Please note that although the AEL6321- and the AEL6323- have the same maximum differential pressure values, they have different operating speeds. The same applies to the AEL6421- and the AEL6422-. Please refer to the technical data table on page 1 for full details.

### Dimensions / weights (approximately) in mm and kg

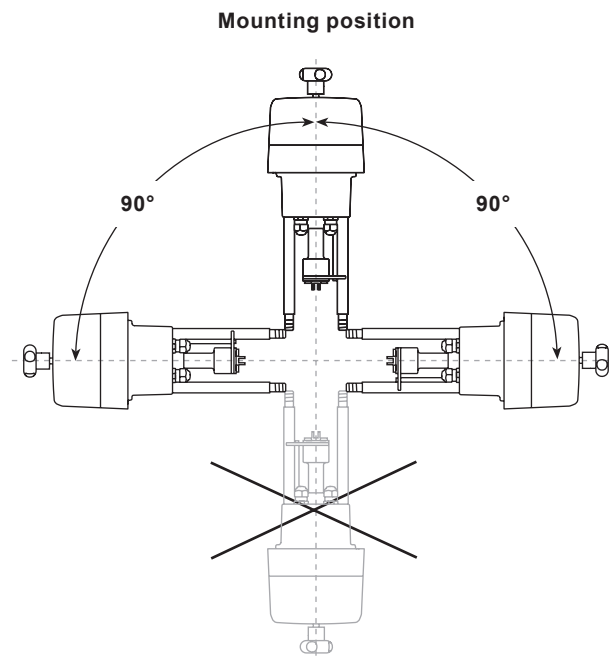
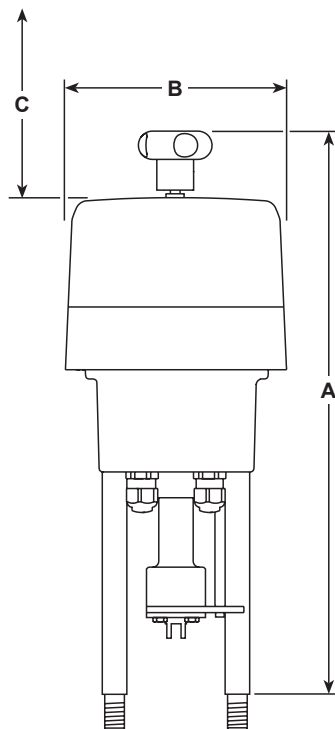
| Model    | A   | B   | C   | Weight |
|----------|-----|-----|-----|--------|
| AEL6221- | 459 | 177 | 150 | 7      |
| AEL6231- | 459 | 177 | 150 | 7      |
| AEL6323- | 459 | 177 | 150 | 7      |
| AEL6421- | 490 | 177 | 150 | 10     |
| AEL6422- | 490 | 177 | 150 | 10     |
| AEL6532- | 557 | 180 | 172 | 12     |
| AEL6631- | 760 | 226 | 277 | 20h    |

### Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions that are supplied with the product.

#### Installation and wiring note:

The valve should be installed in a horizontal pipeline. The position of the actuator will depend on the type of valve to which it is fitted and the temperature of the media. However, it is not recommended that the actuators be fitted at more than 90° from the vertical position or in a wet environment.





## AEL6 series actuators - Product nomenclature and selection example:

|                             |   |          |
|-----------------------------|---|----------|
| <b>Product</b>              | <b>A</b> = Actuator   | <b>A</b> |
| <b>Type</b>                 | <b>E</b> = Electric   | <b>E</b> |
| <b>Movement</b>             | <b>L</b> = Linear   | <b>L</b> |
| <b>Series</b>               | <b>6</b>  | <b>6</b> |
| <b>Thrust (kN)</b>          | <b>2</b> = 2.3<br><b>3</b> = 4.5<br><b>4</b> = 8<br><b>5</b> = 14<br><b>6</b> = 25  | <b>2</b> |
| <b>Stroke (mm)</b>          | <b>2</b> = 50<br><b>3</b> = 65 (AEL65 only), 95 / 100 (AEL66 only)  | <b>2</b> |
| <b>Maximum speed (mm/s)</b> | <b>1</b> = 0 - 1.0 (AEL62_, AEL63_, AEL64 and AEL66_ series only)<br><b>2</b> = 1.1 - 2.0 (AEL64_ and AEL65_ series only)<br><b>3</b> = 2.1 - 4.5 (AEL63_ series only)  | <b>1</b> |
| <b>Supply voltage</b>       | <b>1</b> = 230 Vac<br><b>2</b> = 115 Vac<br><b>3</b> = 24 Vac and 24 Vdc  | <b>1</b> |
| <b>Control signal</b>       | <b>F</b> = 24 V VMD, 0/2 - 10 Vdc and 0/4 - 20 mA (supply voltage 3 only)<br><b>G</b> = 115 V VMD, 0/2 - 10 Vdc and 0/4 - 20 mA (supply voltage 2 only)<br><b>H</b> = 24 V VMD, 0/2 - 10 Vdc and 0/4 - 20 mA (supply voltage 2 only)<br><b>J</b> = 230 V VMD, 0/2 - 10 Vdc and 0/4 - 20 mA (supply voltage 1 only)<br><b>K</b> = 24 V VMD, 0/2 - 10 Vdc and 0/4 - 20 mA (supply voltage 1 only) | <b>J</b> |
| <b>Failure mode</b>         | <b>X</b> = No mechanical/electrical fail safe device<br><b>S</b> = Super capacitor fail safe (non retrofittable)  | <b>S</b> |

### How to order / selection example:

**Example :** A 230 Vac fail safe electric actuator to suit a DN25 control valve with PTFE stem seals, to have class IV shut-off against a 10 bar differential pressure. There is no requirement for high actuating speed, the control signal is 230 V VMD.

**Selection:**

1 off Spirax Sarco AEL62211JS electric actuator.