



AEL3 Electric Actuators

Description

The AEL3 is a stepper motor controlled, electric actuator with non-serviceable maintenance free gearbox. For use on DN15-DN50 Spira-trol 2-port valves and on DN15-DN50 QL 3-port valves.

Available types

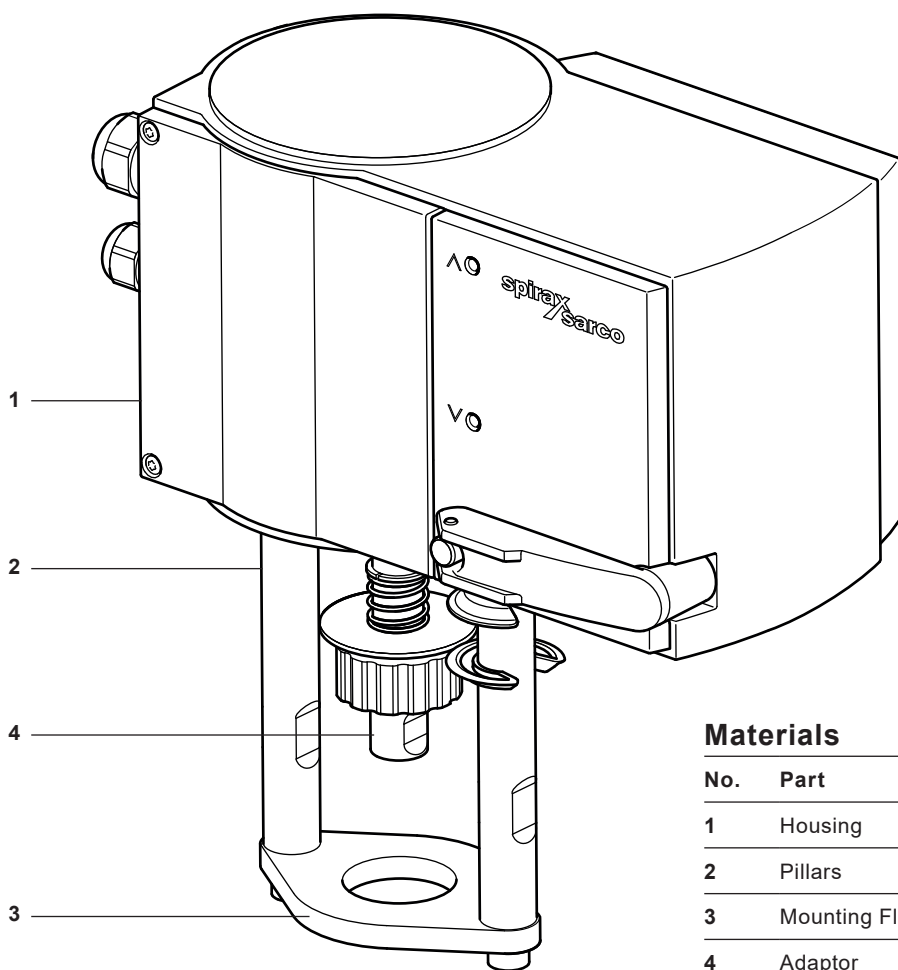
The actuators are available as standard with 24 Vac/dc. 230 Vac and 100-110 Vac modules can be installed into the actuator. The standard version is available for VMD (Valve Motor Drive), 4 - 20 mA or 0 - 10 Vdc input control signals.

Other variants are Spring Extend, Spring Retract and No Spring.

These actuators can be used with the following valves:

| Control valves | 2-port | Spira-trol™ DN15 to DN50 |
|----------------|--------|---|
| | 3-port | QL valves DN15 to DN50 with centralising ring |

Note: For fluid temperatures between 130 °C and 240 °C high temperature extension kits are required.



Materials

| No. | Part | Material |
|-----|-----------------|-----------------|
| 1 | Housing | Polycarbonate |
| 2 | Pillars | Stainless steel |
| 3 | Mounting Flange | Stainless Steel |
| 4 | Adaptor | Stainless Steel |

Technical data

| | |
|---|--|
| Supply voltage | 24 Vac/dc (modules for 230 Vac, 100-110 Vac,) (+/-15%) |
| Supply frequency | 50 Hz/60 Hz/continuous |
| Maximal power consumption W Note: power consumption is relative to 50/60 Hz/continuous respectively | 12 W (24 Vac/dc) 28 VA (230 and 100-110 Vac) |
| Stroke mm (maximum) | 20 |
| Actuator speed mm/s (s/mm) Note: Speed is selectable within the actuator. | 0.5 (Factory set), 0.25 or 0.16 (2, 4 or 6) |
| Enclosure rating | IP66 EN60529 |
| Actuator thrust kN (maximum) | 2 |
| Ambient limits | -10 °C to +55 °C, <95% humidity |
| Storage temperature | -20 °C to +70 °C |
| Altitude | ≤ 2000 m (6 562 ft) above sea level |
| Valve control input | VMD: 24 V, 100-110 V or 230 V. Signal: 4 - 20 mA or 0 - 10 Vdc |
| Active valve position feedback | 0 - 10 Vdc; load > 2500 Ohm |
| Status indication | 2 LEDs indicate the status and error |
| Duty cycle spring return | >40,000 cycles |

Optional extras

| | |
|---------------------------------|---|
| High temperature extension kits | For fluid temperatures between 130 °C and 180 °C. |
| | For fluid temperatures between 180 °C and 240 °C. |
| Auxiliary switches | |
| Power modules | For 230 Vac and 100-110 Vac |

Approvals

Type of protection IP66 (EN60529)
Protection class III (IEC 60730)

EMC Directive: 2014/30/EU, EN 61000-6-1, EN 61000-6-2, EN 61000-6-4
LV Directive: 2014/35/EU EN 60730-1, EN 60730-2-14

Over-voltage categories III
Degree of contamination III

UL - UL873

cUL - CSA-C22.2 No. 24-93

Maximum differential pressures

Class IV Shut off, Flow under – Maximum differential pressure for Spira-trol valve with metal seat*

| Actuator designation | Min thrust (N) | Theoretical Maximum Differential Pressure (bar) | | | | | | | | | | | |
|----------------------|----------------|---|----------|------|----------|------|----------|------|----------|------|----------|------|----------|
| | | DN15 | | DN20 | | DN25 | | DN32 | | DN40 | | DN50 | |
| | | PTFE | Graphite | PTFE | Graphite | PTFE | Graphite | PTFE | Graphite | PTFE | Graphite | PTFE | Graphite |
| AEL3E | 2000 | 40.0 | 40.0 | 40.0 | 40.0 | 39.1 | 31.2 | 30.7 | 24.6 | 11.5 | 8.8 | 7.5 | 5.6 |
| AEL3R | | | | | | | | | | | | | |
| AEL3X | | | | | | | | | | | | | |

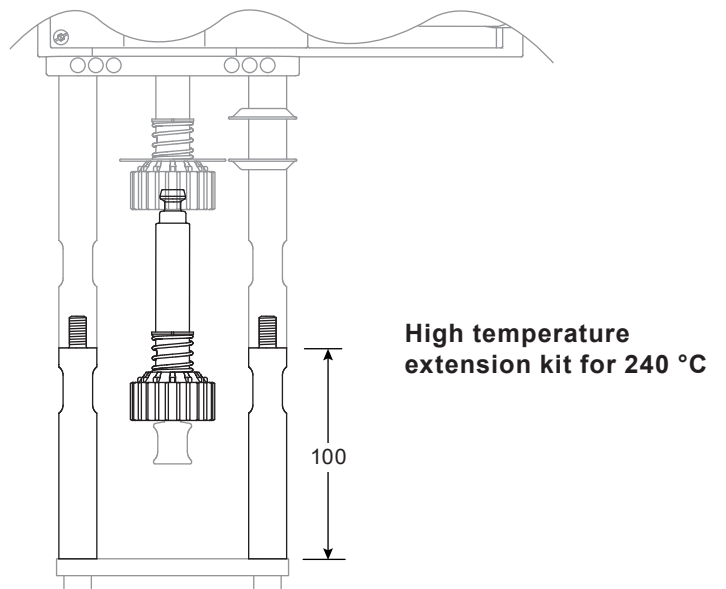
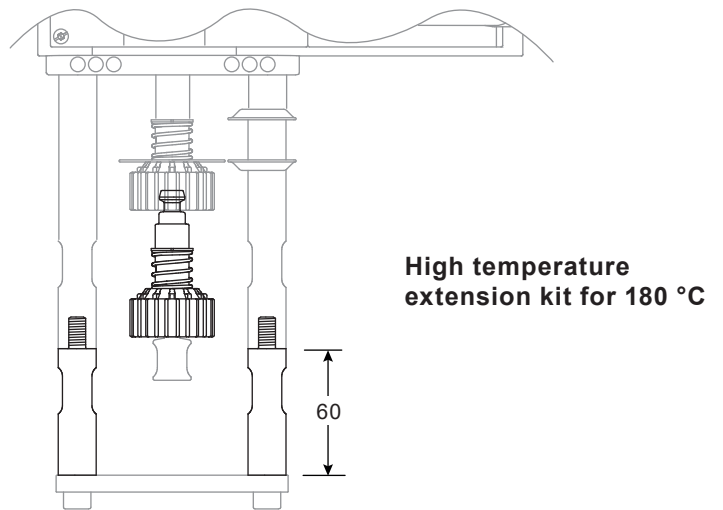
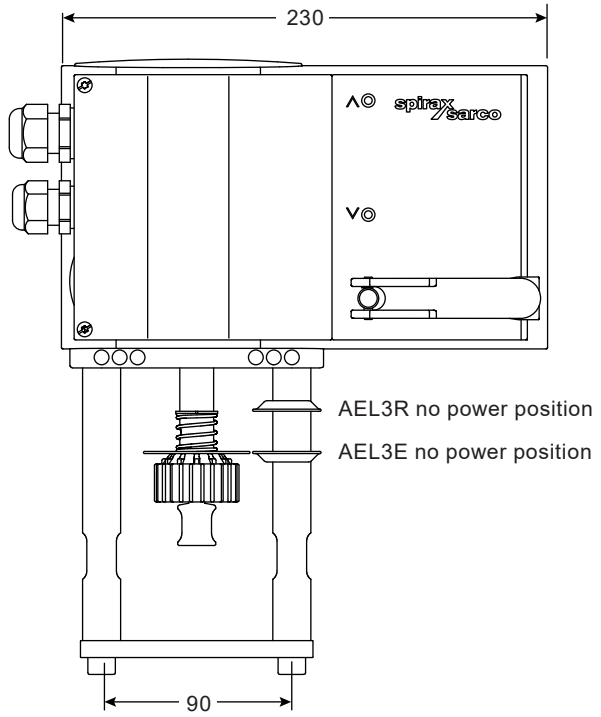
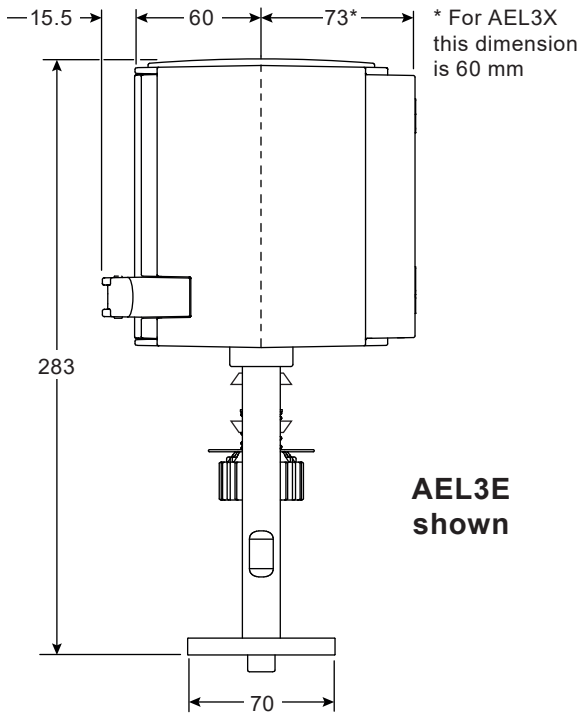
* Refer to technical information section for temperature limitations.

Class VI Shut off, Flow under – Maximum differential pressure for Spira-trol valve with soft seat*

| Actuator designation | Min thrust (N) | Theoretical Maximum Differential Pressure (bar) | | | | | | | | | | | |
|----------------------|----------------|---|----------|------|----------|------|----------|------|----------|------|----------|------|----------|
| | | DN15 | | DN20 | | DN25 | | DN32 | | DN40 | | DN50 | |
| | | PTFE | Graphite | PTFE | Graphite | PTFE | Graphite | PTFE | Graphite | PTFE | Graphite | PTFE | Graphite |
| AEL3E | 2000 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 38.5 | 35.5 | 29.4 | 14.6 | 12.0 | 10.2 | 8.3 |
| AEL3R | | | | | | | | | | | | | |
| AEL3X | | | | | | | | | | | | | |

* Refer to technical information section for temperature limitations.

Dimensions (approximate) in mm



Weights (approximate) in kg

| | |
|-------------|-----|
| AEL3E/AEL3R | 5.7 |
| AEL3X | 4.2 |
| 180 °C kit | 0.4 |
| 240 °C kit | 0.7 |

Safety information, installation and maintenance

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

AEL3 actuators - Product nomenclature and selection example:

| | | | |
|--------------------------|---|--------------------|------------------|
| Product | A = Actuator | A | |
| Type | E = Electric | E | |
| Movement | L = Linear (Selectable within the actuator) | L | |
| Series | 3 | 3 | |
| Failure mode | E = Spring extend | E | |
| | R = Spring retract | | |
| | X = No spring | | |
| Supply voltage | | 24 Vac/dc | |
| | | 230 Vac | |
| | | 100-110 Vac | |
| Selection example | AEL3 | E | 24 Vac/dc |

Customer requirement example:

24 Vac Electric actuator sprung closed for 12 bar steam on DN50 Spira-Trol valve, with additional position switches.

How to order

Example: 1 off Spirax Sarco AEL3E 24 Vac/dc Electric Actuator + 1 off AEL3 Auxiliary Switch + 1 off AEL3 High Temp. Ext. Kit <240°C