



TI-P344-02

CTLS Issue 4

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.

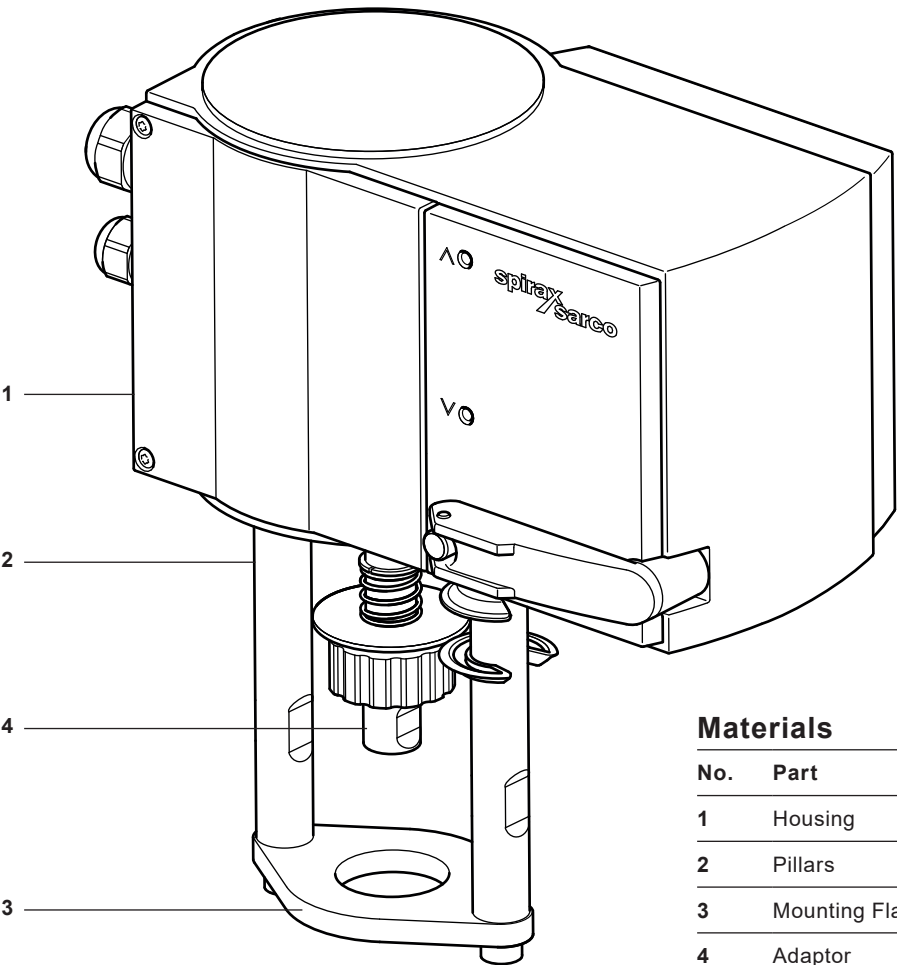
Available types

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, (2-10 Vdc for 24 Vac/dc actuators only). 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 TM DN15 to DN50	Note: For fluid temperatures between 130 °C and 240 °C high temperature extension kits are required.
	3-port	QL valves DN15 to DN50 with centralising ring	

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Materials

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

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Control systems
Electric actuators

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	12 W (24 Vac/dc)
Note: power consumption is relative to 50/60 Hz/continuous respectively	
	28 VA (230 and 100-110 Vac)
Stroke mm (maximum)	20
Actuator speed mm/s (s/mm)	0.5 (Factory set), 0.25 or 0.16 (2, 4 or 6)
Note: Speed is selectable within the actuator.	
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

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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
Split-Range unit	2-10 Vdc input control signal (24 Vdc actuators only)

Approvals

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

EMC Directive: 2014/30/EU and UK Electromagnetic Compatibility Regulations 2016, EN 61000-6-1, EN 61000-6-2, EN 61000-6-4
LV Directive: 2014/35/EU and UK Electrical Equipment (Safety) Regulations 2016, EN 60730-1, EN 60730-2-14

Over-voltage categories III
Degree of contamination III

(UL - UL873)*
(cUL - CSA-C22.2 No. 24-93)*

***Does not apply** to Auxiliary switches, Split Range Units and Power Modules 230 Vac and 100-110 Vac

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*

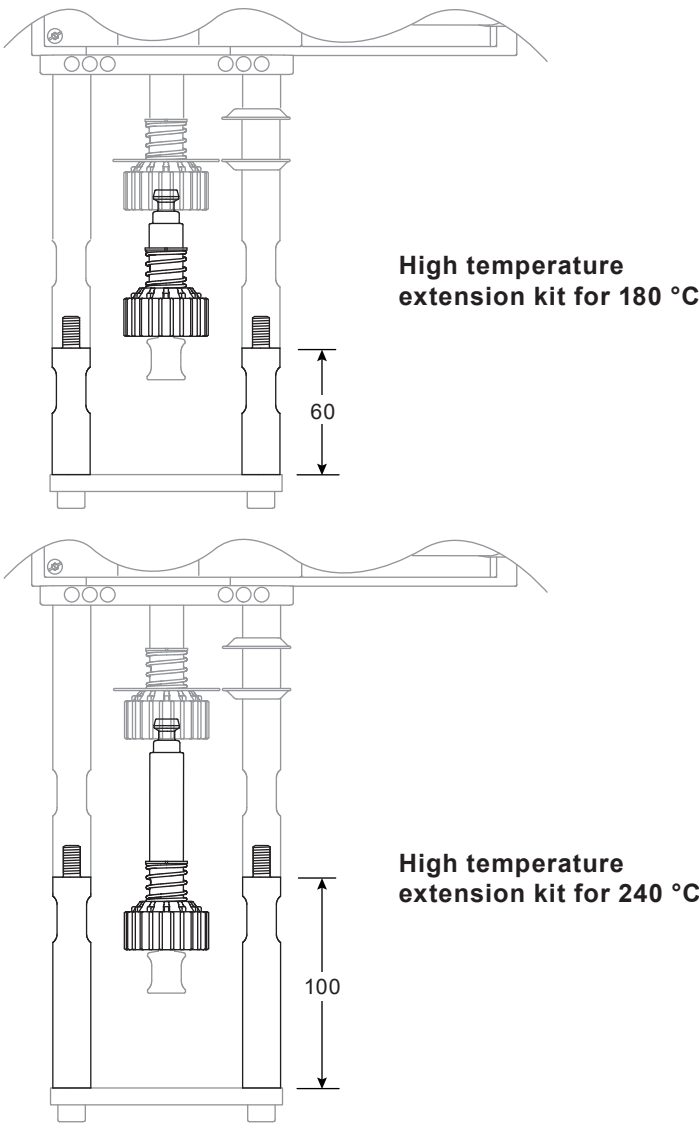
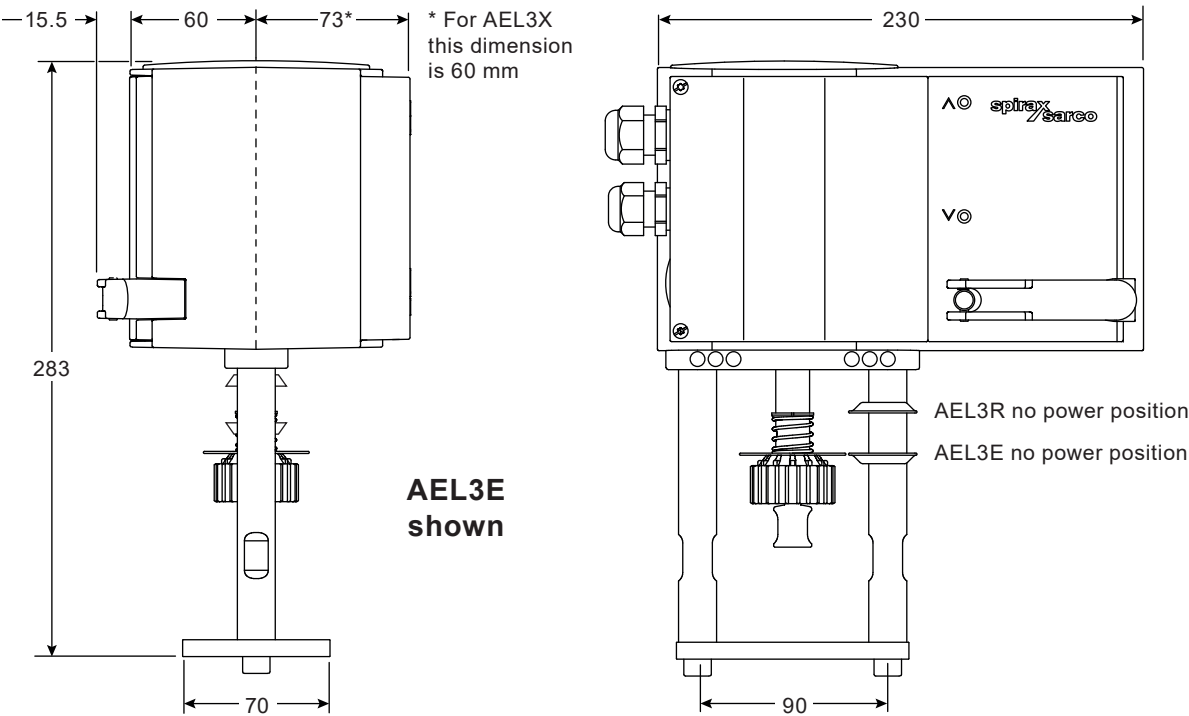
Actuator designation	Min thrust (N)	Theoretical Maximum Differential Pressure (bar)											
		DN15		DN20		DN25		DN32		DN40		DN50	
		PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite
AEL3E	2000	40.0	40.0	40.0	40.0	40.0	38.5	35.5	29.4	14.6	12.0	10.2	8.3
AEL3R						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

* Refer to technical information section for temperature limitations.

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Control systems
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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
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Customer requirement example:

24 Vac Electric actuator sprung closed for 12 bar steam on DN50 Spira-Trol valve, operating with 2-10 Vdc input control signal, plus, additional position switches.

How to order

Example: 1 off Spirax Sarco AEL3E 24 Vac/dc Electric Actuator + 1 off 2-10 Vdc Split-Range unit + 1 off AEL3 Auxiliary Switch + 1 off AEL3 High Temp. Ext. Kit <240°C

