

spirax/sarco

EL3500 Series Electric Actuator for 1/2" to 2" SPIRA-TROL Valves

Description

The EL3500 series actuators are suitable for either two position or modulating control. This actuator range can be used with the **SPIRA-TROL range and control valves**.

Operation

The drive of a synchronous motor is converted into a linear motion of the actuator stem by using a spur gear transmission. An integrated spring package limits the stem force to a pre-set value in both directions. Installed microswitches switch off the actuator precisely, when the specified stem force is reached.

Available types

The EL3500 series actuators are available in the following configurations:

Spring reserve actuators have the suffix SR or SE appended to the basic actuator code e.g. EL3501SE. Where :

SR = Spring retract; **SE** = Spring extend.

EL3501, 230 Vac operating voltage for ON/OFF control or modulating control with external valve motor drive controller.

EL3502, 24 Vac operating voltage for ON/OFF control or modulating control with external valve motor drive controller.

EL3501SE, 230 Vac operating voltage for ON/OFF control or modulating control with external valve motor drive controller with the benefit of spring extend on power failure.

EL3502SE, 24 Vac operating voltage for ON/OFF control or modulating control with external valve motor drive controller with the benefit of spring extend on power failure.

EL3512, **EL3512SR**, **EL3512SE**, 24 Vac operating voltage with 0 to 10 Vdc, or 2 Vdc to 10 Vdc control signal. For 4-20 mA control signal use a 500 Ω resistance across the signal source. See Installation and Maintenance Instructions for full details. Modulating control from any controller providing this control signal.

Ambient limits

Storage temperatures	-40° to 155°F (-40 to +70 °C) at 5 to 95 % RH
Operating temperatures	14° to 120°F (-10 to +50 °C) at 5 to 95 % RH
Maximum valve medium temperature	300°F (+150 °C)*

*If temperature exceeds 300°F of the media/medium, order the EL3905 High Temperature Kit.

Protection

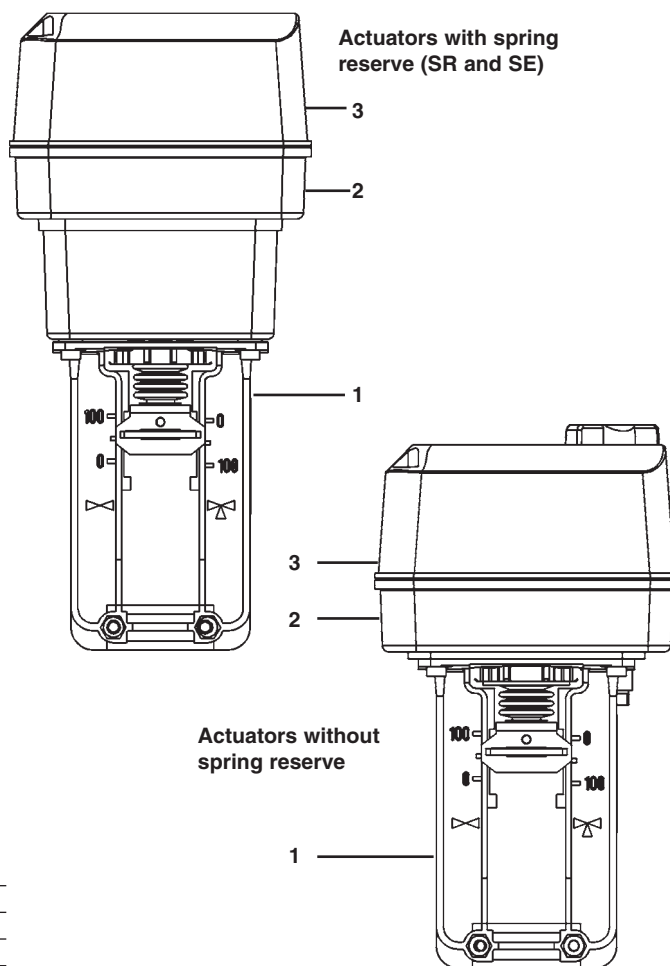
IP rating	IP54
Insulation for EN 60730	Class II
Flame resistant to UL 94-V0 (with metal cable gland)	

Specifications

Model	EL3501	EL3502	EL3501SE	EL3502SE	EL3512	EL3512SE	EL3512SR
Supply voltage	230 Vac 50 / 60 Hz	24 Vac 50 / 60 Hz	230 Vac 50 / 60 Hz	24 Vac 50 / 60 Hz	24 Vac 50 / 60 Hz	24 Vac 50 / 60 Hz	24 Vac 50 / 60 Hz
Power consumption	6.5 VA	4 VA	12 VA	11 VA	5 VA	12 VA	12 VA
Actuator speed	.32 mm/s	.32 mm/s	.19 mm/s	.19 mm/s	.32 mm/s	.19 mm/s	.19 mm/s
Control signal	VMD	VMD	VMD	VMD	0-10 / 2-10 Vdc(4-20mA)*	0-10 / 2-10 Vdc(4-20mA)*	0-10 / 2-10 Vdc(4-20mA)*
Spring reserve	NO	NO	YES	YES	NO	YES	YES
Manual handwheel	YES	YES	NO	NO	YES	NO	NO

*Will accept 4-20mA signal with a 500 Ω resistor across input terminals.

Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only. In the interests of development and improvement of the product, we reserve the right to change the specification.



Materials

No.	Part	Material
1	Yoke	Aluminium die casting
2	Base	Glass fibre reinforced plastic
3	Cover	ABS-FR

Maximum differential pressures (p) bar for SPIRA-TROL valves (KE, LE, KEA and LEA with PTFE or graphite stem seal)

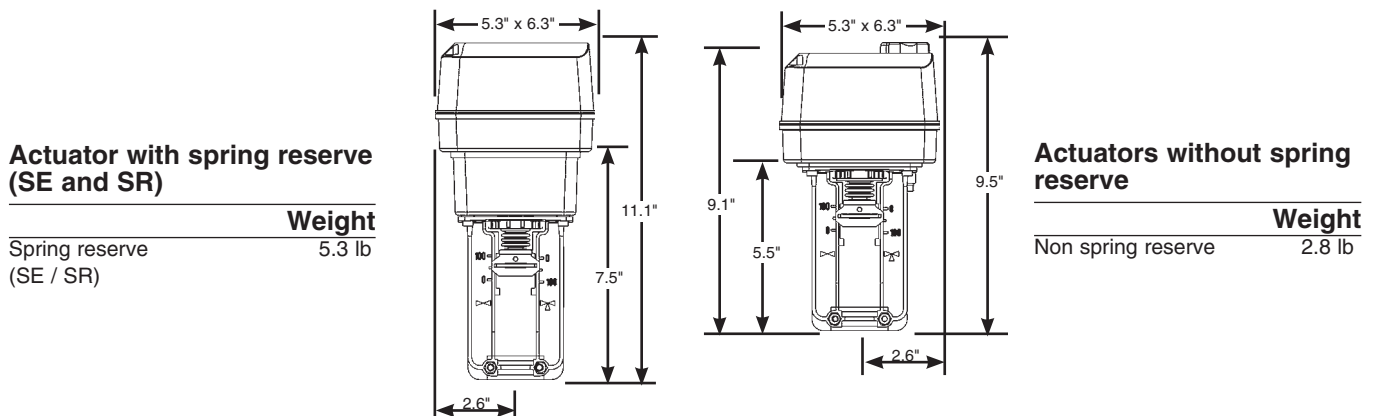
Notes:

- 1) Refer to the valve TI for maximum operating pressures.
- 2) The actuator differential pressures shown in the table below also apply to the spring reserve versions.

Valve Size	½"		¾"		1"		1¼"		1½"		2"	
Valve travel	¾"											
Cv value	5		7.5		12		16		30		45	
EL3500 series actuator and derivatives	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite	PTFE	Graphite
Modulating duty* (metal-to-metal)	359	137	282	113	188	75	145	58	63	24	45	17
Class IV shut-off (metal-to-metal)	142	-	91	-	32	-	80	-	-	-	-	-
Class VI shut-off (soft seating)	354	137	280	108	185	72	143	55	61	23	43	16

*Modulating duty- 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.

Dimensions / weights (approximate in inches and pounds)



Installation and wiring

The valve should be installed in the horizontal line. 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 directly below the valve or in a wet environment. Full installation and maintenance instructions are supplied with the product.

Termination details

See Installation and Maintenance Instructions for more details.

Accessories

All EL3500 actuators are supplied (as standard) with a linkage kit suitable for SPIRA-TROL valves. However, the following optional extras are also available at extra cost:

EL3904 spare linkage kit	For LE/KE valves.
EL3906 spare linkage kit	For SPIRA-TROL control valves.
Auxiliary potentiometer	EL3901 (10 kΩ) or EL3902 (220 Ω) are available for mounting on site. They can be used as a feedback potentiometer and/or to provide remote indication for the valve position. A cable gland is supplied with this.
EL3903 auxiliary switches	Their switching points are adjustable over the full length of the actuator stroke. The switches can be used e.g. to provide remote indication of any stroke position. A cable gland is supplied with this.
EL3905 high temperature kit	Enables all EL3500 to be used for valve medium temperatures from 300°F to 482°F.