

Data sheet

Sheet No.: 5.102 Rev. B

Date: February 2012

ELECTRIC ACTUATOR - TECHNICAL DATA

		ELS-18	ELS-25	EL-35	EL-55	EL-100	EL-150	EL-200	EL-350	EL-500	EL-800	EL-1200	EL-1600	EL-2500
Torque (Nm)	break	18	25	35	55	100	150	200	350	500	800	1200	1600	2500
	run	14	20	12.2	20	35	53	70	123	175	280	420	560	875
Torque (in.lb)	break	160	221	310	487	885	1.328	1.77	3.098	4.425	7.081	10.621	14.16	22.125
	run	124	177	108	177	310	465	620	1.084	1.548	2.478	3.717	4.956	7.744
Op. Time (S)	50 Hz	6.5	9.5	6	6	7.5	9	13.5	22	25.5	25.5	25.5	25.5	28
	60 Hz	5.5	7.5	5	5	6	7.5	11.5	18	21.5	21.5	21.5	21.5	22.5
	24VDC	-	-	-	5	6.5	8	12	20	23	-	-	-	-
Current (A) 120/1/60	break	0.55	0.6	1.1	-	2.9	2.9	2.9	2.9	2.9	4.5	14	14	38
	run	0.45	0.5	0.6	-	2.1	2.1	2.1	2.1	2.1	2.8	5.8	5.8	10.5
220/1/50	break	0.1	0.3	-	0.6	1.7	1.7	1.7	1.7	1.7	2.3	6	6	17
	run	0.1	0.27	-	0.5	1.1	1.1	1.1	1.1	1.1	1.8	2.5	2.5	5.8
380/3/50	break	-	-	-	0.4	0.7	0.7	0.7	0.7	0.7	0.9	2.8	2.8	5.5
	run	-	-	-	0.2	0.4	0.4	0.4	0.4	0.4	0.54	0.9	0.9	1.2
460/3/60	break	-	-	-	0.37	0.63	0.63	0.63	0.63	0.63	0.87	1.1	1.1	2
	run	-	-	-	0.18	0.45	0.45	0.45	0.45	0.45	0.57	0.72	0.72	1.6
24 VDC	break	0.8	0.51	-	5	8	8	8	8	8	-	-	-	-
	run	0.15	0.1	-	1.9	4.9	4.9	4.9	4.9	4.9	-	-	-	-
Power consump. (W)	120/1/60	45	25	100	-	225	225	225	225	225	315	535	535	720
	220/1/50	40	65	-	72	200	200	200	200	200	305	450	450	792
	380/3/50	-	-	-	80	145	145	145	145	145	165	220	220	560
	460/3/60	-	-	-	77	180	180	180	180	180	200	266	266	600
	24VDC	4.8	2.4	-	45	118	118	118	118	118	-	-	-	-
Power factor (cos Phi)	120/1/60	-	-	0.87	0.87	0.98	0.98	0.98	0.98	0.98	0.93	0.83	0.83	0.74
	220/1/50	0.82	0.82	-	0.91	0.82	0.82	0.82	0.82	0.82	0.77	0.92	0.92	0.5
	380/3/50	-	-	-	0.54	0.51	0.51	0.51	0.51	0.51	0.47	0.55	0.55	0.67
	460/3/60	-	-	-	0.54	0.5	0.5	0.5	0.5	0.5	0.44	0.53	0.53	0.6
Motor speed (RPM)	50 Hz	1878	1620	1450	1450	1425	1425	1425	1425	1425	1450	1450	1450	1450
	60 Hz	2328	2040	1725	1725	1725	1725	1725	1725	1725	1725	1725	1725	1725
	24VDC/AC	3230	4210	-	1600	1600	1600	1600	1600	1600	-	-	-	-
Overall gear ratio		849/1	1070/1	1250/1	1250/1	700/1	840/1	1316/1	2106/1	2480/1	2480/1	3100/1	3100/1	2600/1
Capacitor (µF/V)	120/1/60	6.8/250	6.8/250	25/250	25/250	36/250	36/250	36/250	36/250	36/250	50/250	100/250	100/250	400/250
	220/1/50	1.5/400	2/400	-	8/450	10/450	10/450	10/450	10/450	10/450	16/450	30/450	30/450	100/450
Weight (Kg)	W-proof	2.2	2.8	6	6	11	11	16.5	17	25.5	26.4	37	37	75
	Ex-proof	-	-	8	8	13	13	18.5	20	28.5	30	37	37	75
Weight (Lbs)	W-proof	4.3	5.5	13	13	24	24	36	37.5	56	57	81.5	81.5	165
	Ex-proof	-	-	17.5	17.5	28.5	28.5	40.5	44	62.5	66	81.5	81.5	165



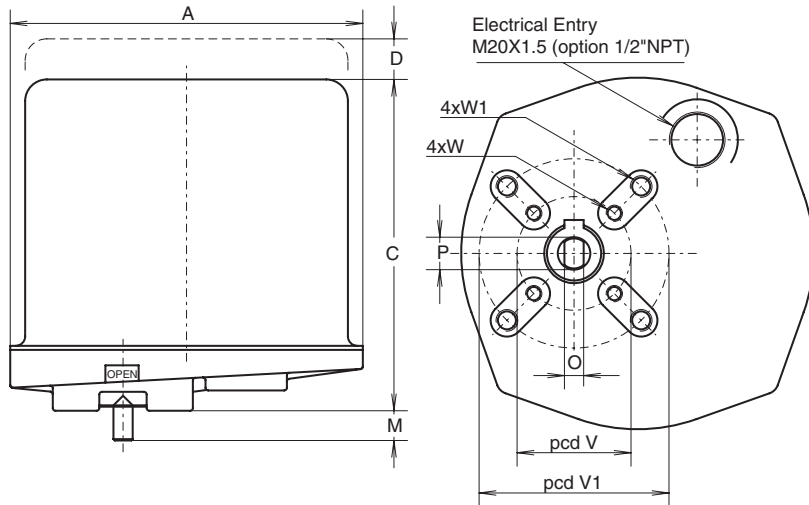
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Sheet No.: 5.104 Rev. A

Date: November 2009

DIMENSIONS AND TECHNICAL DETAILS - ELECTRIC ACTUATOR

ELS



Bottom view

Dimensions (in mm.)		ELS18	ELS25	
A		130	157	
C		122.5	135	
D		85	100	
M		11.2	13	
O	7.09	+0.05 -0.00	10	+0.00 -0.09
P	11.09	+0.03 -0.00	12	+0.00 -0.09
Vstd		42	50	
(option)		50	-	
V1		-	70	
W		M6x9	M6x12	
W1		-	M8x15	
Performance				
Torque (Nm.)	Break	18	25	
	Run	14	20	
Speed (sec.)	50Hz	6.5	9.5	
Current (A)	120V AC	0.55	0.6	
	230V AC	0.1	0.3	
Weight (kg.)		2.2	2.8	

Description

A compact, robust range of electrical actuators. Especially designed for small two and three way ball valves and similar drives requiring 90 or 180 degrees of rotation from a single phase or DC. electrical supply.

The water tight, aluminium alloy housing with steel cover, contains the drive motor and spur gear box assembly together with the anti-condensation heater and main terminal strip. Two limit switches provide for position limiting and remote position indication, space is allowed for two extra switches or a potentiometer for additional position feed back.

General Specification

Rotation	: 90°
	: adjustable by limit switches: 10° to 320°
Enclosure	: IP65.
Temperature	: -20° to +70°C
Electrical connections	: By 8 point internal terminal strip
Voltages	: 24VDC or 24VAC
- Single phase	: 110-130V 50Hz or 60Hz
	: 220-240V 50Hz or 240-280V 60Hz
Minimum Switch	
Contactor Rating	: 16A
Duty rating	: 50%
Stroke limitation	: By limit switches
Visual indication	: By direction arrow on the drive spindle
Feedback switches	: 2, at 10 or 16 Amp. (at 110/240V AC) SPDT
Stall protection	: By motor thermostat
Materials	: Base plate : Aluminium alloy
	: Cover : Steel
	: Drive spindle : Stainless steel
	: Fastenings, etc. : Stainless steel
Finish	: Two part polyurethane finish
Life	: 100,000 operations minimum
Heater	: 10 Watt (Option)
Options	: Other drives and mountings
	: Extra switches, potentiometer
	: Other mounting flanges

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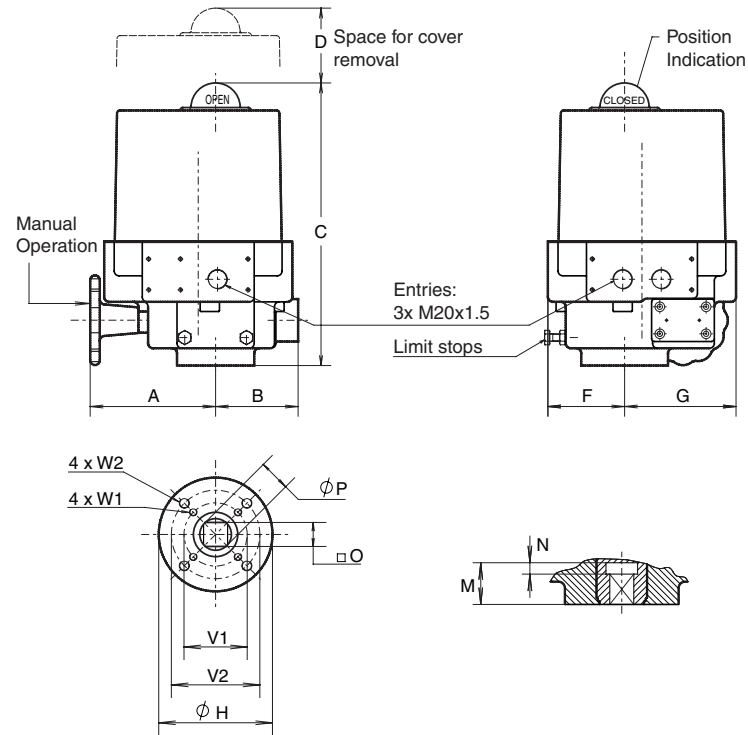
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Sheet No.: 5.103 Rev. B

Date: January 2012

DIMENSIONS AND TECHNICAL DETAILS - ELECTRIC ACTUATOR

EL



Description

Type EL electric actuators use worm and wormwheel reduction gearing to provide tight positioning control and the self locking feature necessary for controlling larger valves, in particular butterfly valves.

The housing consists of an aluminium base casting and a steel cover, this contains the drive motor and worm gear assembly, together with the anti-condensation heater and main terminal block.

EL actuators take the full range of control options, they have handwheel geared manual overrides, mechanical end position stops and position indication by a raised dome in the top cover.

General Specification

Nominal Rotation : 90° - factory set to $\pm 3^\circ$
 : Adjustable by limit switches: 10° to 320°
 Enclosure : IP65 (IP67 optional)
 Temperature range : -20° to +70°C
 Electrical connection : By 12 and/or 16 point terminal block
 Finish : Two part polyurethane
 all steel parts zinc plated

Materials

Housing : Aluminium alloy
 Cover : Steel
 Drivesleeve : Bronze (Cast Iron)
 Fastenings : Stainless steel

Life : 50,000 cycles minimum
 Limit switches : 4x SPDT V3 micro switches
 Torque switches : 2x SPDT V3 micro switches (Not on EL-55)
 Stall protection : By thermostat in motor windings
 Heater : 10 Watt

Motor voltages and types

- DC : 24VDC
 - AC Single phase : 24VAC 50/60Hz
 : 110-130VAC 50/60Hz
 : 220-280VAC 50/60Hz
 - AC Three phase : 380-460VAC 50/60Hz

Minimum customer switch or contactor rating 16Amp.

DIM. mm	EL35 & 55	EL100	EL150	EL200	EL350	EL500	EL800
A	130	135	135	170	170	195	195
B	60	82	82	109	109	128	128
C	255	292	292	315	315	318	356
D	145	165	165	165	165	165	190
3x E	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5
F	70	77	77	96	96	123	123
G	95	120	120	140.5	140.5	166	166
H	90	90	90	125	125	150	150
M	27.5	33	33	33	33	48	48
N	9	9	9	9	9	-	-
O max.	14.11	19.11	19.11	19.11	19.11	27.13	27.13
O min.	14.00	19.00	19.00	19.00	19.00	27.00	27.00
P	18	25	25	25	25	36	36
V1	50	50	50	70	70	102	125
V2	70	70	70	102	102	-	-
W1	M6x12	M6x12	M6x12	M8x15	M8x15	M10x18	M12x20
W2	M8x15	M8x15	M8x15	M10x18	M10x18	-	-

Performance		EL35	EL55	EL100	EL150	EL200	EL350	EL500	EL800
Torque (Nm)	Break	35	55	100	150	200	350	500	800
	Run	12.7	20	35	53	70	123	175	280
Speed (Sec.)	50Hz AC	6	6	7.5	9	13.5	22	25.5	25.5
	110V AC	1.1	-	2.9	2.9	2.9	2.9	2.9	4.5
	230V AC	-	0.6	1.7	1.7	1.7	1.7	1.7	2.3
Current (A) (Max.)	24V DC	-	5	8	8	8	8	8	-
	110V AC	100	-	225	225	225	225	225	315
	230V AC	-	72	200	200	200	200	200	305
Power (W)	24V DC	-	45	118	118	118	118	118	-
	Switches-Indication		4x16A	4x16A	4x16A	4x16A	4x16A	4x16A	4x16A
	Torque SPDT at 110/240VAC		-	-	2x16A	2x16A	2x16A	2x16A	2x16A
Weight (Kg.)		6	6	11	11	16.5	17	25.5	26
Duty rating		30%	30%	30%	30%	30%	30%	30%	30%

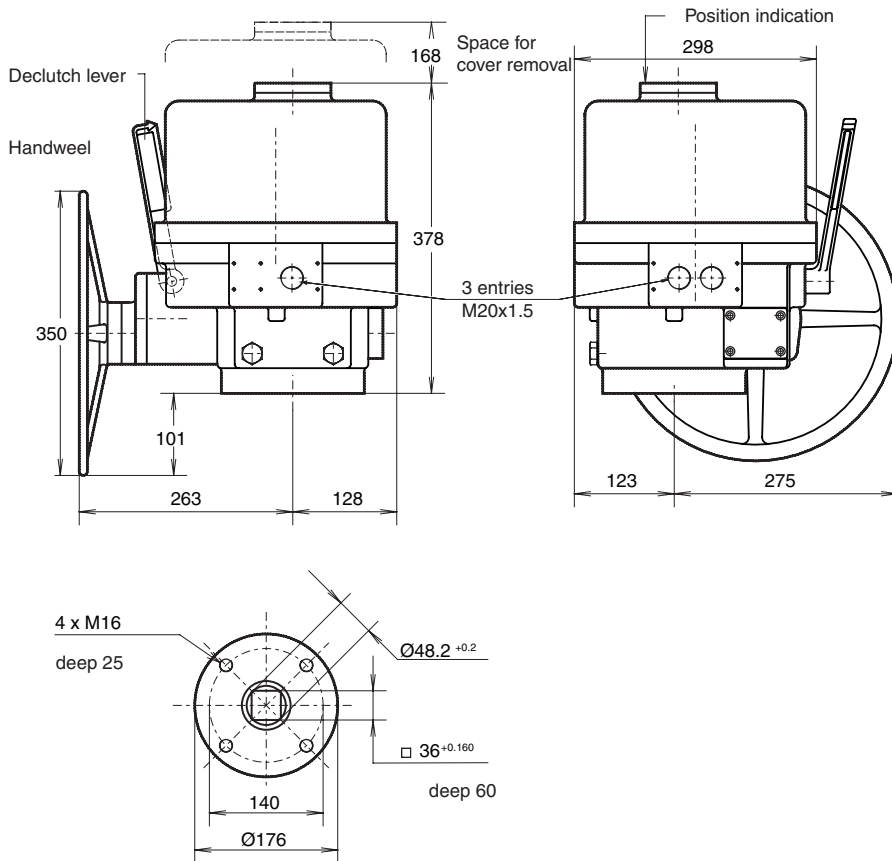


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Sheet No.: 5.103.2 Rev. A

Date: November 2009

DIMENSIONS AND TECHNICAL DETAILS EL 1200/1600



Voltage/phase/Hz.		120/1/60	230/1/50	380/3/50	460/3/60
Current (A)	break	14	7	2.8	1.1
	run	5.8	2.5	0.6	0.72
Power consumption (W)		535	450	220	266
Power factor		0.83	0.92	0.55	0.53
Operation time	(sec.)	21.5	25.5	25.5	21.5

Description

EL-1200 actuators use worm and wormwheel reduction gearing to provide tight positioning control and the self locking feature necessary for controlling larger valves, particularly butterfly types.

The housing is of two aluminium castings, it contains the drive motor and worm gear assembly, together with the anti-condensation heater and main terminal strip.

EL-1200 actuator takes the full range of control options, it has mechanical end position stops and torque switches. Visual position indication is by a window in the top cover.

A geared manual override is fitted as standard, it is engaged by means of a declutching lever. When the motor is energized the unit automatically returns to motor operation, thus ensuring operator safety.

General Specification

Nominal Rotation	: 90° - factory set to $\pm 3^\circ$
	: Adjustable by limit switches: 10° to 320°
Enclosure	: IP-67
Temperature range	: -20° to +70° C
Electrical connections	: By 12 and 16 point internal terminal strip
Cable entries	: 3x M20x1.5
Life	: 50.000 operations minimum
Heater	: 10 Watt
Voltages	
Single phase	: 110-130V 50Hz or 60Hz
	: 220-240V 50Hz or 240-280V 60Hz
Three phase	: 380-415V 50Hz or 415-460V 60Hz
Other voltages	: On request
Stall protection	: By torque switches and motor thermostat

Minimum customer switch or contactor rating 16Amp.

Materials

Housing	: Aluminium alloy
Cover	: Aluminium alloy
Fastenings	: Stainless steel
Finish	: Two part polyurethane

Technical data		EL1200	EL1600
Torque (Nm)	Break	1200 Nm	1600 Nm
	Run	420 Nm	560 Nm
Limit switches	4x SPDT	16A	16A
Torque switches	2x SPDT	16A	16A
Weight Kg		37	37
Duty		30%	30%
Drive sleeve		Cast Iron	Bronze

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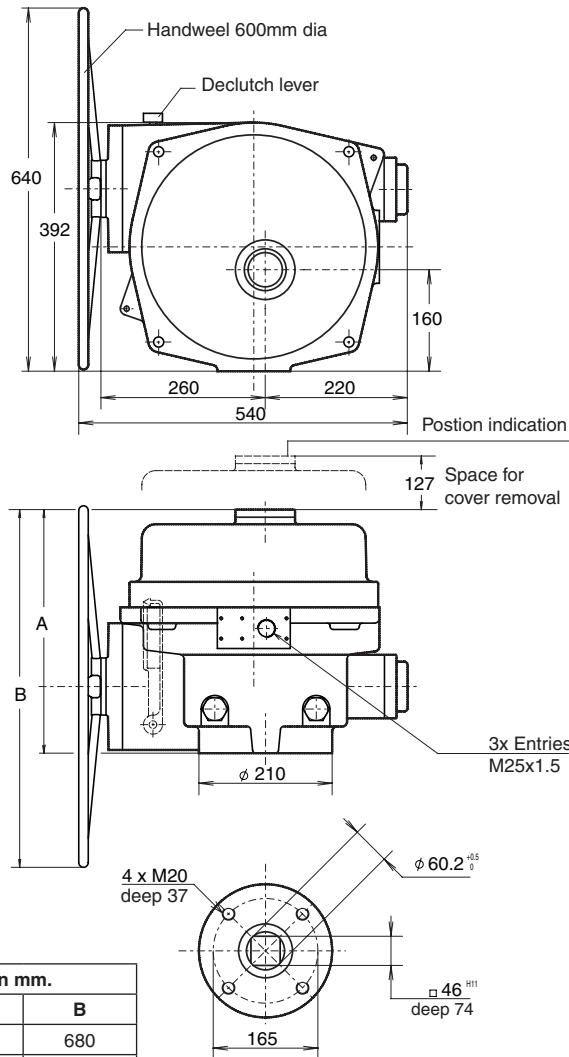
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Sheet No.: 5.103.1 Rev. A

Date: November 2009

DIMENSIONS AND TECHNICAL DETAILS

EL 2500



Dimensions in mm.		
	A	B
110/230V	485	680
380/460V	385	580

Description

EL-2500 actuators use worm and wormwheel reduction gearing to provide tight positioning control and the self locking feature necessary for controlling larger valves, particularly butterfly types.

The housing is of two aluminium castings, it contains the drive motor and worm gear assembly, together with the anti-condensation heater and main terminal strip.

EL-2500 actuator take the full range of control options, it has mechanical end position stops and torque switches. Visual position indication is by a window in the top cover.

A geared manual override is fitted as standard, it is engaged by means of a declutching lever. When the motor is energized the unit automatically returns to motor operation, thus ensuring operator safety.

General Specification

Nominal Rotation	: 90° - factory set to $\pm 3^\circ$
	: Adjustable by limit switches: 10° to 320°
Enclosure	: IP-67
Temperature range	: -20° to +70°C
Electrical connections	: By 12 and 16 point internal terminal strip
Cable entries	: 3x M25x1.5
Life	: 50.000 operations minimum
Heater	: 20 Watt
Voltages	
Single phase	: 110-130V 50Hz or 60Hz
	: 220-240V 50Hz or 240-280V 60Hz
Three phase	: 380-415V 50Hz or 415-460V 60Hz
Other voltages	: On request
Stall protection	: By torque switches and motor thermostat
Minimum customer switch or contactor rating 16Amp.	

Technical data

Break torque	: 2500 Nm
Run torque	: 875 Nm
Limit switches	: 4x 16 A SPDT
Weight	: 75 Kg
Duty	: 30%
Torque switches	: 2x 16 A SPDT (adjust. from 1500 to 2500 Nm.)

Voltage/phase/Hz.		120/1/60	230/1/50	380/3/50	460/3/60
Current (A)	break	58	27	9	2
	run	8	6	1.5	1.6
Power consumption (W)		720	792	560	600
Power factor		0.74	0.5	0.67	0.6
Operation time	(sec.)	22.5	28	28	22.5

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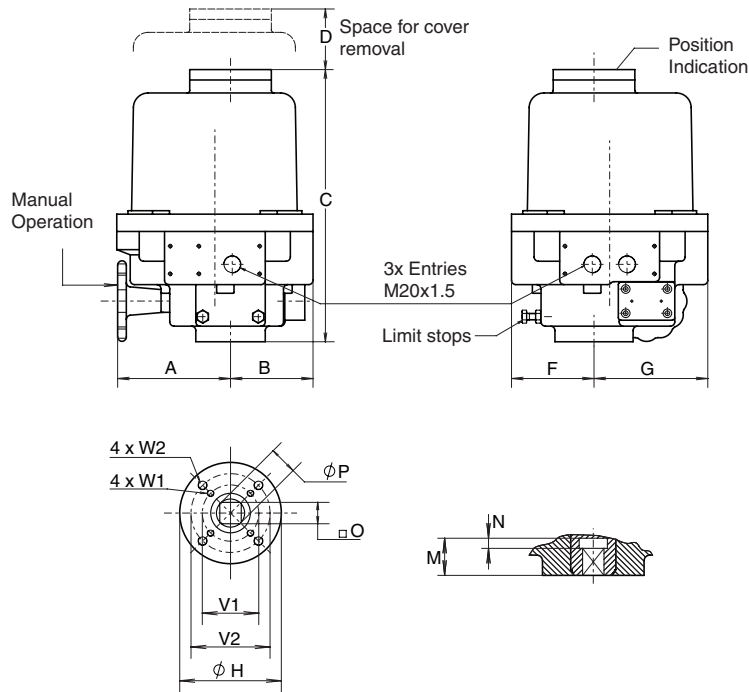
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Sheet No.: 5.105 Rev. B

Date: February 2012

DIMENSIONS AND TECHNICAL DETAILS - ELECTRIC ACTUATOR

EL Exd



Description

Type EL actuators use worm and wormwheel reduction gearing to provide tight positioning control and the self locking feature necessary for controlling larger valves, particularly butterfly types.

The explosion proof housing consists of two aluminium castings, this contains the drive motor and worm gear assembly, together with the anti-condensation heater and main terminal strip.

EL actuators take the full range of control options, they have hand wheel geared manual over rides, mechanical end position stops and torque switches on all the larger sizes. Visual position indication is by a window in the top cover.

General Specification

Nominal Rotation : 90° - factory set to $\pm 3^\circ$
 : Adjustable by limit switches 10° to 320°
 Explosion proof : II 2 G Ex db IIB T4, suitable for ATEX Zones 1, 2 (gas)
 Certificate nr. : DEKRA 12ATEX0001 X
 Enclosure : IP67 (Optional: IP68)
 Temperature : -20°C to +60°C
 Connections : By 12 and/or 16 point internal terminal strip
 Finish : Two component polyurethane coating
 Life : 50,000 operations minimum
 Heater : 10 Watt
 Motor voltages and types
 - DC : 24VDC
 - AC Single phase : 24VAC 50/60Hz
 : 110-130VAC 50/60Hz
 : 220-280VAC 50/60Hz
 - AC Three phase : 380-460VAC 50/60Hz

Stall protection : By motor thermostat (all sizes)
 : By thermostat and by torque switches (EL 100-800)
 Identification : Ex: EL 200 Exd

Minimum customer switch or contactor rating 16Amp.

Dim. mm	EL 35 & 55	EL100	EL150	EL200	EL350	EL500	EL800
A	130	135	135	185	185	195	195
B	70	100	100	109	109	128	128
C	275	290	292	315	315	380	380
D	145	165	165	165	165	165	190
3x E	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5	M20x1.5
F	70	77	77	96	96	123	123
G	95	120	120	140.5	140.5	166	166
H	90	90	90	125	125	150	150
M	27.5	33	33	33	33	45	45
N	9	9	9	9	9	-	-
O max.	14.11	19.11	19.11	19.11	19.11	27.13	27.13
O min.	14.00	19.00	19.00	19.00	19.00	27.00	27.00
P	18	25	25	25	25	36	36
V1	50	50	50	70	70	102	125
V2	70	70	70	102	102	-	-
W1	M6x12	M6x12	M6x12	M8x15	M8x15	M10x18	M12x20
W2	M8x15	M8x15	M8x15	M10x18	M10x18	-	-

Performance	EL35	EL55	EL100	EL150	EL200	EL350	EL500	EL800
Torque (Nm)	Break	35	55	100	150	200	350	500
	Run	12.7	20	35	53	70	123	175
Speed (Sec.)	50Hz AC	6	6	7.5	9	13.5	22	25.5
	110V AC	1.1	-	2.9	2.9	2.9	2.9	4.5
	230V AC	-	0.6	1.7	1.7	1.7	1.7	2.3
Current (A) (Max.)	24V DC	-	5	8	8	8	8	-
	110V AC	100	-	225	225	225	225	315
	230V AC	-	72	200	200	200	200	305
Power (W)	24V DC	-	45	118	118	118	118	-
	Switches-Indication	4x16A	4x16A	4x16A	4x16A	4x16A	4x16A	4x16A
	Torque SPDT at 110/240VAC)	-	-	2x16A	2x16A	2x16A	2x16A	2x16A
Weight (Kg.)	7.4	7.4	12.4	12.4	18.6	20.1	27.8	31.5
Duty rating	30%	30%	30%	30%	30%	30%	30%	30%



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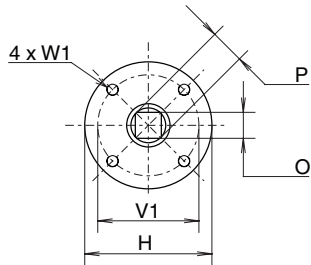
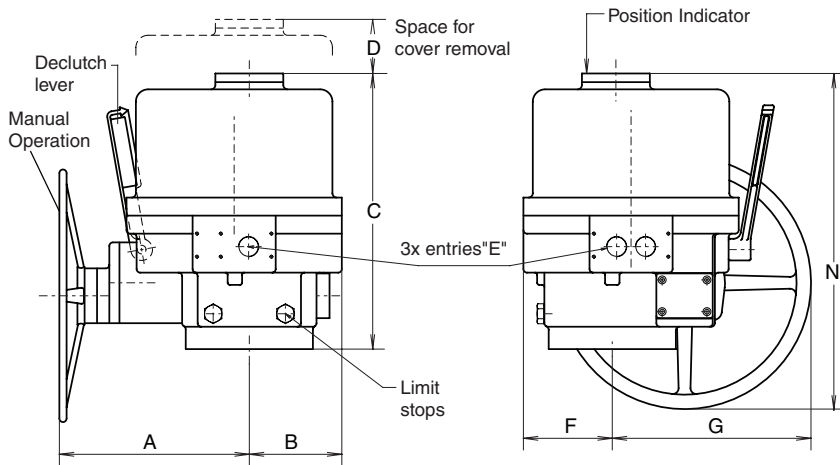
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Sheet No.: 5.105.1 Rev. B

Date: February 2012

DIMENSIONS AND TECHNICAL DETAILS - ELECTRIC ACTUATOR

EL Exd



DIM. mm	EL1200/1600	EL2500
A	263	280
B	128	220
C	378	485
D	110	130
E	3x M20	3x M25
F	123	128
G	261	324
H	176	210
M	62	74
N	470	680
O max.	36	46
O min.	36.16	46.16
P	48.2	60.2
V1	140	165
W1	M16x25	M20x32

Description

Type EL actuators use worm and wormwheel reduction gearing to provide tight positioning control and the self locking feature necessary for controlling larger valves, particularly butterfly types.

The explosion proof housing consists of two aluminium castings, this contains the drive motor and worm gear assembly, together with the anti-condensation heater and main terminal strip.

EL actuators take the full range of control options, they have handwheel geared manual overrides, mechanical end position stops and torque switches on all the larger sizes. Visual position indication is by a window in the top cover.

General Specification

Nominal Rotation	: 90° - factory set to $\pm 3^\circ$: Adjustable by limit switches 10° to 320°
Explosion proof	: II 2 G Ex db IIB T4 suitable for ATEX Zones 1, 2 (gas)
Certificate nr.	: DEKRA 12ATEX0001 X
Enclosure	: IP67 (Optional: IP68)
Temperature	: -20°C to +60°C
Connections	: By 12 and 16 point internal terminal strip
Finish	: Two component polyurethane coating
Life	: 50,000 operations minimum
Heather	: 10 Watt
Voltages	
Single phase	: 110-130VAC 50/60Hz : 220-280VAC 50/60Hz : 380-460VAC 50/60Hz
Three phase	: On request
Other voltages	: By torque switches and motor thermostat
Stall protection	: Example: EL1200 Exd
Identification	

Minimum customer switch or contactor rating 16Amp.

Performance		EL1200/1600	EL2500
Torque (Nm)	Break	1200/1600	2500
	Run	420/560	875
Speed (Sec.)	50Hz	25.5	28
Current (A)	220V AC	7	27
	(Max.) 380 3ph	2.8	9
Power (W)	220V AC	450	792
Switches-Indication		4x16A	4x16A
Torque SPDT at 110/240VAC)		2x16A	2x16A
Weight (Kg.)		37	75
Duty rating		30%	30%

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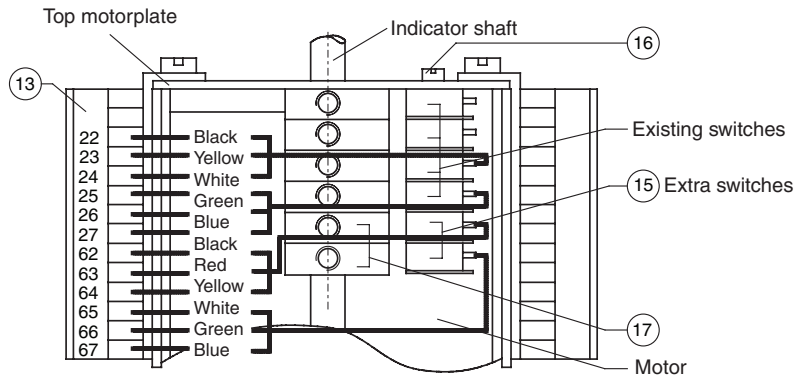

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Data sheet

Sheet No.: 5.201 Rev. A
Date: November 2009

EL ACTUATOR WITH TWO EXTRA SWITCHES (Kit option)

XS



Description

This electric actuator variation has the addition of two extra switches, to obtain the total of 4 spare switches. This provides additional indication of the actuator (and therefore valve) position by means of a completely separate circuit.

Construction

The two new switches are fitted below the existing limit switches and are driven by their own cams on the indicator shaft.

The two new switches are wired to the terminal strip (13) and may be wired externally by one of the spare electrical entries. This is particularly important if the indication voltage is different from the power voltage.

Specification

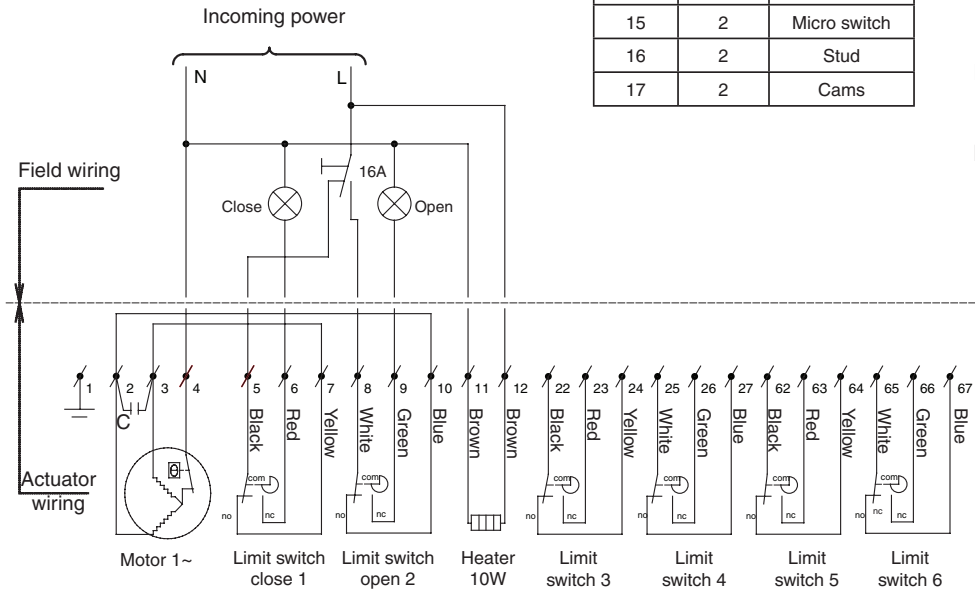
Switches	Type	: V3
	Model	: V-162-1A5
	Voltage	: Up to 250V
	Current	: 16A max.
	Temperature	: -25°C to +80°C

Identification

- Factory Option : Add "+ XS" to the basic actuator size
: eg. EL100 220/50 + XS
- Kit Option : Actuator size is added to: "Kit, XS"
: eg. Kit, XS/EL 55 220/50

- Note**
- 1) When supplied as a kit option, all the components as shown are included, together with an instruction sheet
 - 2) Wiring diagram is shown with actuator in mid position
 - 3) Wiring diagram for EL55 220V 50Hz + XS

PC no	No req	Description
13	1	Marking tag
15	2	Micro switch
16	2	Stud
17	2	Cams



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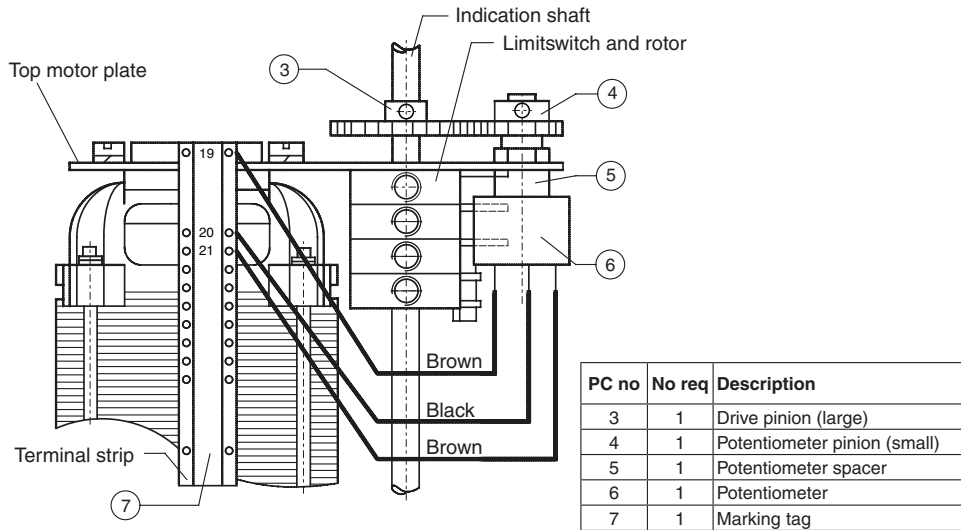
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Data sheet

Sheet No.: 5.202 Rev. A
Date: November 2009

EL ACTUATOR WITH POTENTIOMETER (Kit option)

POT



Description

This electric actuator variation has the addition of a potentiometer to provide continuous indication of the actuator (and therefore valve) position. When wired as shown a voltage signal will indicate an analog position.

Construction

The potentiometer is fitted into a pre-drilled hole in the top motor plate and driven, by a pair of spur gears, so that the 90° rotation of the indicator shaft turns the potentiometer spindle through its full operational travel.

The potentiometer is wired to the terminal strip and may be wired externally via one of the spare electrical entries. This is particularly important if the indication voltage is different from the power voltage.

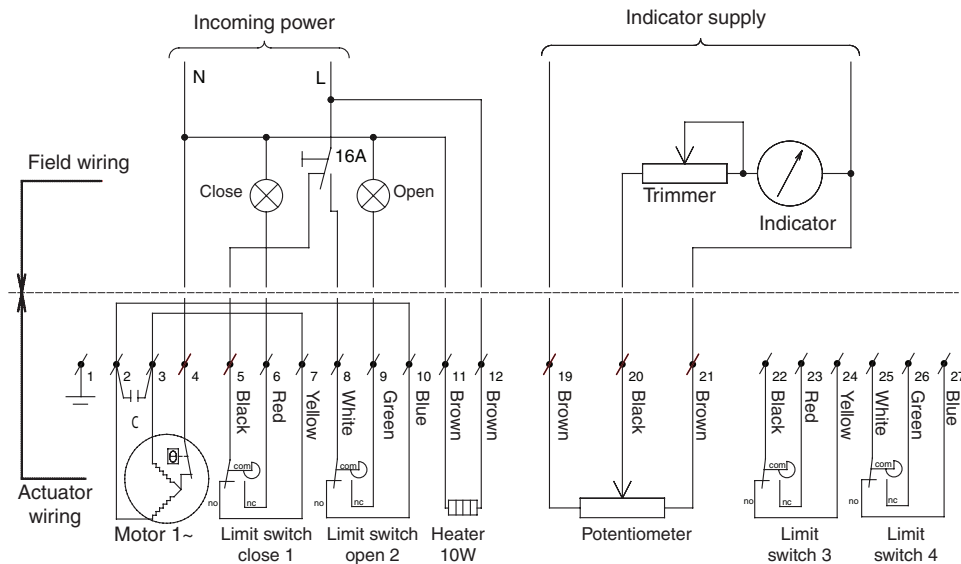
Specification

Potentiometer	Make	: SFERNICE
	Voltage	: Up to 350V
	Power	: 1 Watt
	Temperature	: -20°C to +70°C
	Resistance	: 10KΩ (±20%)
	Type	: Cermet
	Linearity	: 2%
	Mech. rotation	: 300°
	Electrical rotation	: 270°
	Max. terminal resistance	: 2Ω

Identification

Factory Option	: Add "+ POT" to the basic actuator size
	: eg. EL 55 220/50 + POT
Kit Option	: Actuator size is added to: "Kit, POT"
	: eg. Kit, POT/EL 55 220/50

- Note**
- 1) When supplied as a kit option, all the components as shown are included, together with an instruction sheet
 - 2) A special version is required for more than 90°
 - 3) Wiring diagram for EL55 220V/50Hz + POT
 - 4) The actual rotation of the potentiometer is 198° when mounted in the actuator



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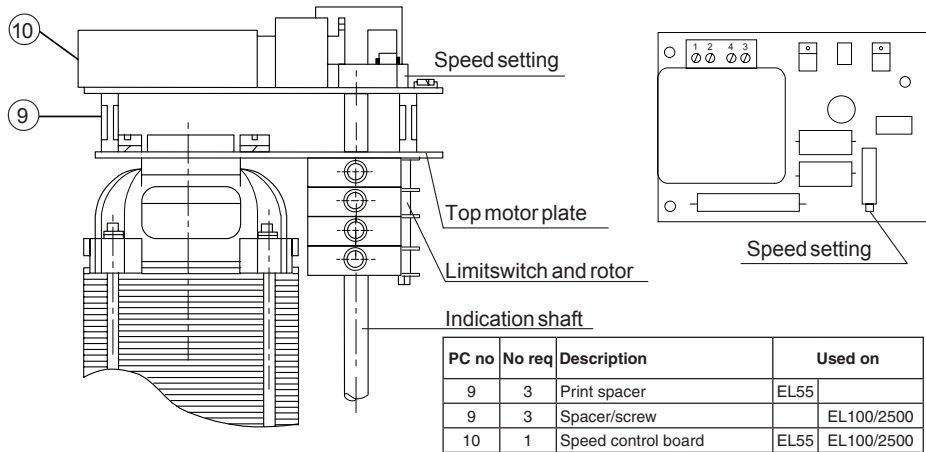
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Data sheet

Sheet No.: 5.204 Rev. A
Date: November 2009

EL ACTUATOR WITH SPEED CONTROL TIMER - AC (Kit option)

SC



PC no	No req	Description	Used on
9	3	Print spacer	EL55
9	3	Spacer/screw	EL100/2500
10	1	Speed control board	EL55 EL100/2500

Description

This electric actuator variation has the addition of an electronic card, this is provided complete with a dual voltage (AC.) power supply, a trimmer for motor pulse adjustments and a triac for motor switching.

The circuit provides a timed ON/OFF switching cycle. The ON pulse is fixed at 0.5 sec and the OFF pulse is adjustable via the trimmer.

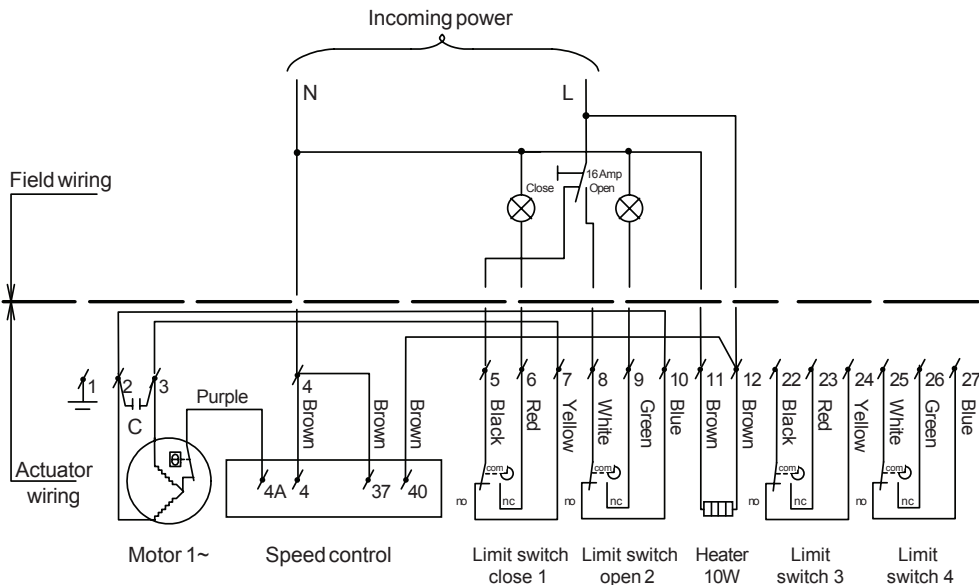
This adjustment is easily carried out with a small screwdriver, with the cover removed.

Construction

The circuit board is located on top of the motor plate and is wired directly to the terminal strip.

Specification

Voltage	: 110 or 220V 50/60 Hz.		
Temperature	: -20°C to +70°C		
Speed	: Model	Min.	Max.
		sec.	sec.
	EL 55	11.5	255
	EL 100	13.5	298
	EL 150	17.0	383
	EL 200	25.5	574
	EL 350	41.5	936
	EL 500	48.5	1085
	EL 800	48.5	1085
	EL 1200	48.5	1085
	EL 1600	48.5	1085
	EL 2500	53.0	1191



Identification

- Factory Option : Add "+ SC" to the basic actuator size
: eg. EL100 220/50 + SC
- Kit Option : Actuator size is added to: "Kit, SC"
: eg. Kit, SC/EL100 220/50

- Note**
- 1) When supplied as a kit option, all the components as shown are included, together with an instruction sheet
 - 2) Wiring diagram is shown with actuator in mid position
 - 3) Wiring diagram for EL55 220V/50Hz + SC

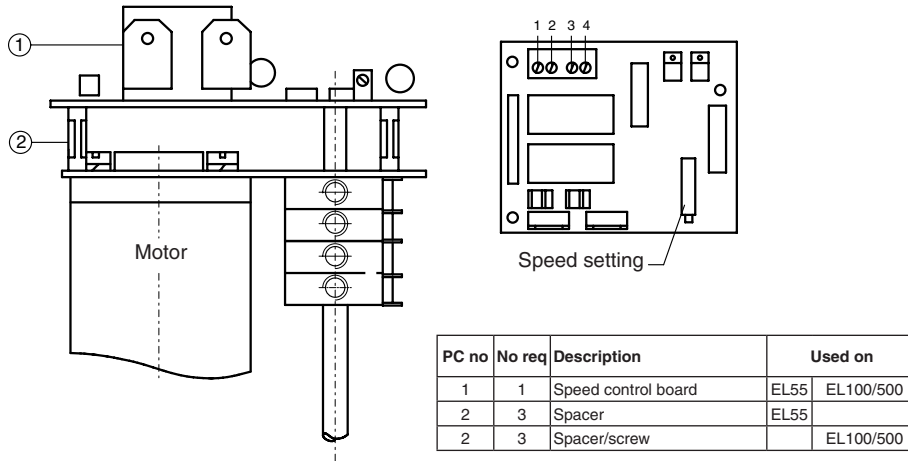


Data sheet

Sheet No.: 5.204.1 Rev. A
Date: November 2009

EL ACTUATOR WITH SPEED CONTROL TIMER - DC (Kit option)

SC



Description

This electric actuator variation has the addition of a printed circuit board, complete with a trimmer for motor pulse adjustments and a relay and power transistor network for motor switching.

The circuit provides a timed ON/OFF switching cycle. The ON pulse is fixed at 0.5 sec and the OFF pulse is adjustable via the trimmer.

This adjustment is easily carried out with a small screwdriver, with the cover removed.

Construction

The circuit board is located on top of the motor plate and is wired directly to the terminal strip.

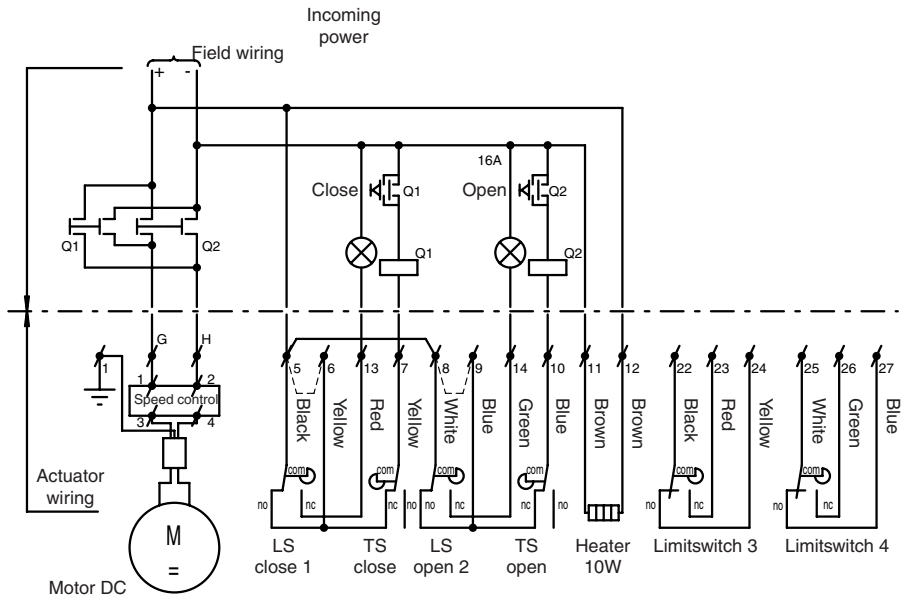
Specification

Voltage	: 24VDC		
Temperature	: -20°C to +70°C		
Speed	: Model	Min.	Max.
		sec.	sec.
	EL 55	10.5	202
	EL 100	14	263
	EL 150	17	323
	EL 200	25	485
	EL 350	42	808
	EL 500	38	727

Identification

- Factory Option : Add "+ SC-DC" to the basic actuator size
: eg. EL100 24VDC + SC-DC
- Kit Option : Actuator size is added to: "Kit, SC-DC"
: eg. Kit, SC-DC/EL55 24VDC

- Note**
- 1) When supplied as a kit option, all the components as shown are included, together with an instruction sheet
 - 2) Wiring diagram is shown with actuator in mid position
 - 3) Wiring diagram for EL100-EL500 24VDC + SC-DC

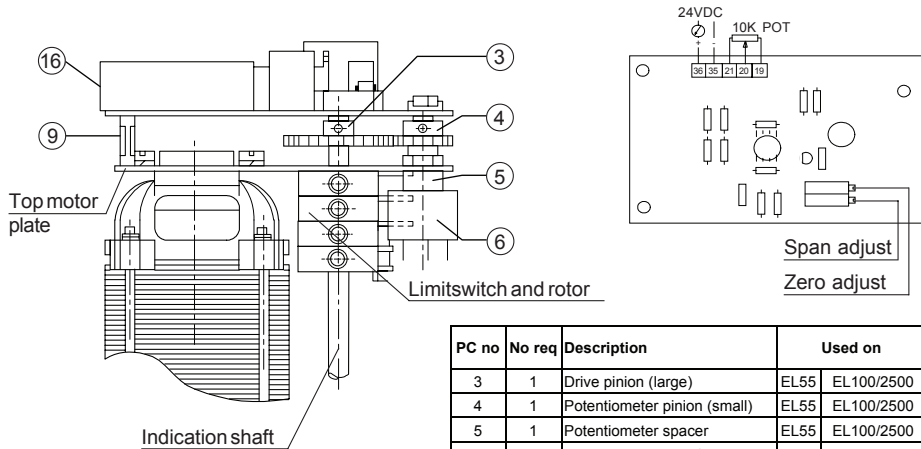


Data sheet

Sheet No.: 5.205.01 Rev. A
Date: November 2009

EL ACTUATOR WITH mA POSITION TRANSMITTER, 2-WIRE (Kit option)

PT2



PC no	No req	Description	Used on
3	1	Drive pinion (large)	EL55 EL100/2500
4	1	Potentiometer pinion (small)	EL55 EL100/2500
5	1	Potentiometer spacer	EL55 EL100/2500
6	1	Potentiometer 10K Ohm	EL55 EL100/2500
9	3	Printspacer	EL55
9	3	Spacer/screw	EL100/2500
16	1	Position transmitter board	EL55 EL100/2500

Description

This electric actuator variation provides a continuous position indication by transmitting a 4 to 20 milli-Amp signal, this is proportional to the output shaft position.

This 2 wire version consists of a potentiometer and an electronic card fed from an external (24VDC.) power supply.

The card is equipped with trimmers for zero and span adjustment and terminals for the internal and external connections.

Construction

The potentiometer and circuit board located on the top motor plate are wired as shown, using the board's own terminal strip.

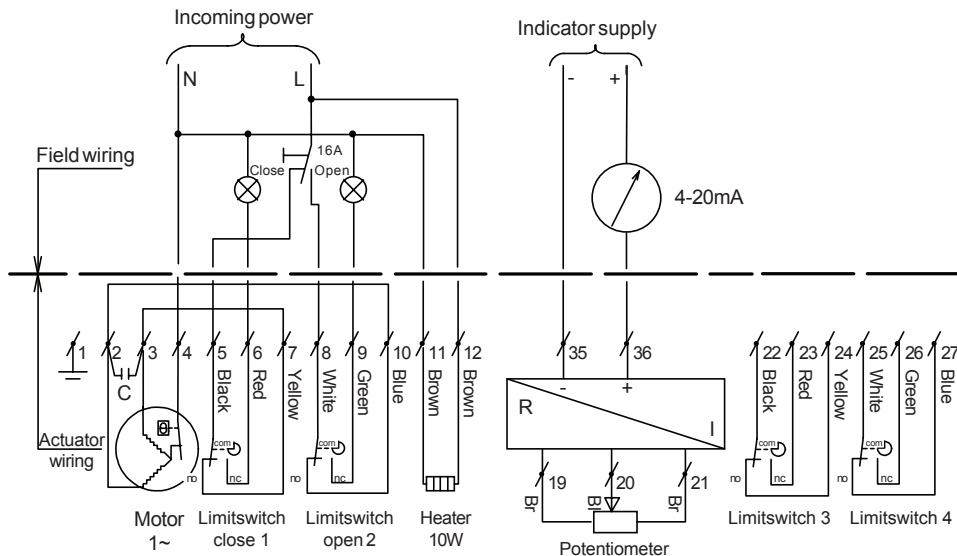
Specification

Input : 24VDC.
Output : 4 to 20 mA, with adjustable zero and span
Temperature : -20°C to +70°C
Potentiometer : 10KΩ (see sheet 5.202)

Identification

Factory Option : Add "+ PT2" to the basic actuator size
: eg. EL100 220/50 + PT2
Kit Option : Actuator size is added to: "Kit, PT2"
: eg. Kit, PT2/EL 55 220/50

- Note**
- 1) When supplied as a kit option, all the components as shown are included, together with an instruction sheet
 - 2) Wiring diagram is shown with actuator in mid position
 - 3) Wiring diagram for EL55 220V/50Hz + PT2

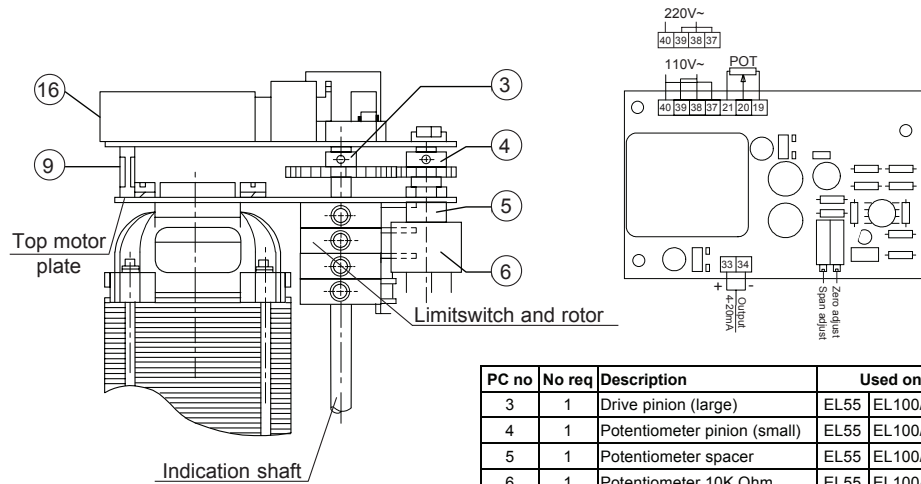


Data sheet

Sheet No.: 5.205.02 Rev. A
Date: November 2009

EL ACTUATOR WITH mA POSITION TRANSMITTER, 4-WIRE (Kit option)

PT4



PC no	No req	Description	Used on
3	1	Drive pinion (large)	EL55 EL100/2500
4	1	Potentiometer pinion (small)	EL55 EL100/2500
5	1	Potentiometer spacer	EL55 EL100/2500
6	1	Potentiometer 10K Ohm	EL55 EL100/2500
9	3	Printspacer	EL55
9	3	Spacer/screw	EL100/2500
16	1	Position transmitter board	EL55 EL100/2500

Description

This electric actuator variation provides a continuous position indication by transmitting a 4 to 20 milli-Amp signal, this is proportional to the output shaft position.

This 4 wire version consists of a potentiometer and an electronic card complete with a dual voltage (AC.) power transformer, fed from the actuator's own incoming power supply.

The remaining two wires are used for the output position signal.

The card is equipped with trimmers for zero and span adjustment and terminals for the internal and external connections.

Construction

The potentiometer and circuit board located on the top motor plate are wired as shown, using the board's own terminal strip.

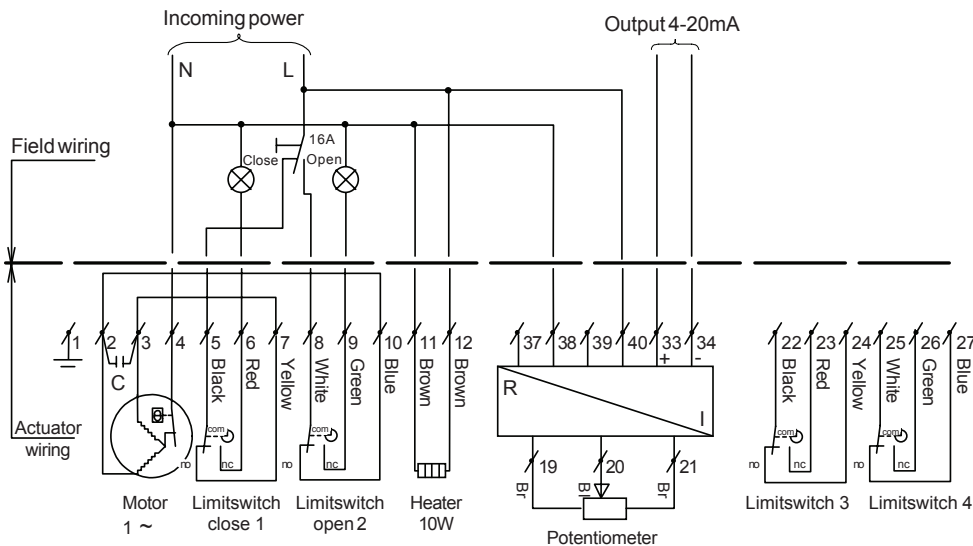
Specification

Input : 110 or 220 V 50/60 Hz.
Output : 4 to 20 mA, with adjustable zero and span
Temperature : -20°C to +70°C
Potentiometer : 10KΩ (see sheet 5.202)

Identification

Factory Option : Add "+ PT4" to the basic actuator size
: eg. EL100 220/50 + PT4
Kit Option : Actuator size is added to: "Kit, PT4"
: eg. Kit, PT4/EL55 220/50

- Note**
- 1) When supplied as a kit option, all the components as shown are included, together with an instruction sheet
 - 2) Wiring diagram is shown with actuator in mid position
 - 3) Wiring diagram for EL55 220V/50Hz + PT4



Link : For 220V nr. 37 & 39
: For 110V nr. 37 & 40 / nr. 38 & 39

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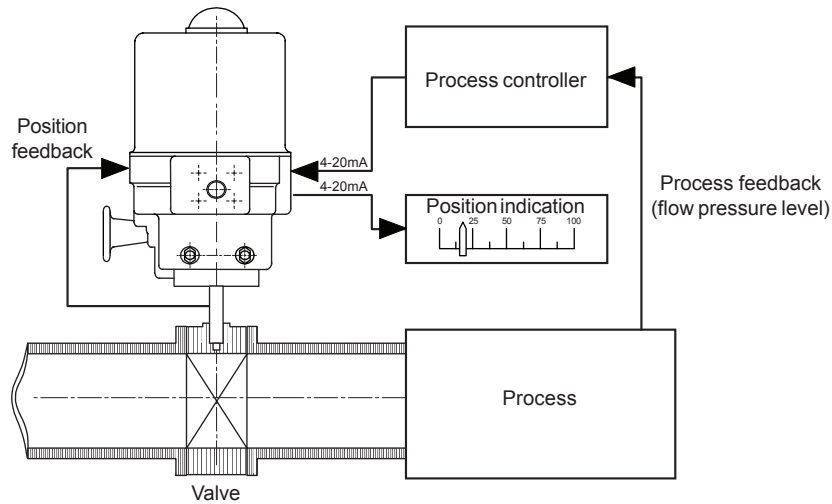
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Data sheet

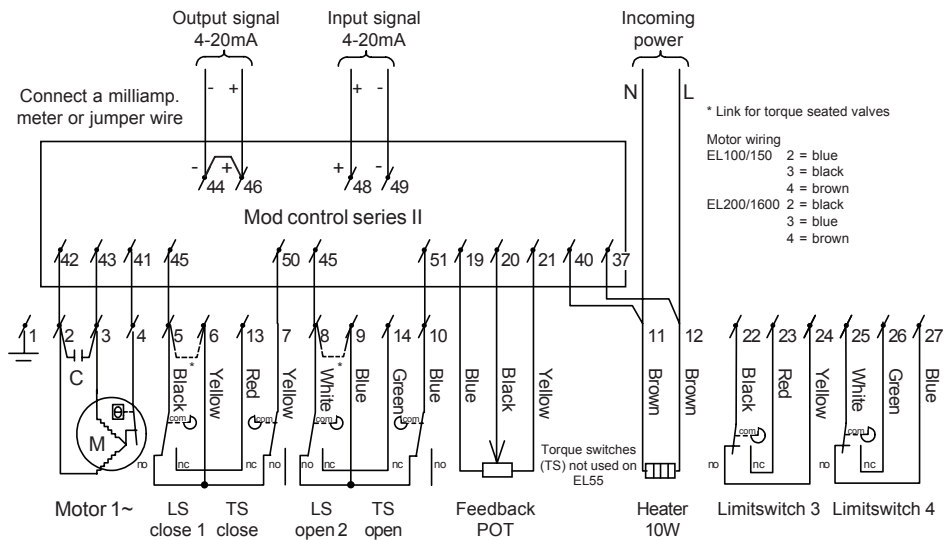
Sheet No.: 5.206 Rev. A
Date: November 2009

EL ACTUATOR WITH MODULATING POSITIONER - (Kit option)

MOD



Wiring diagram for EL100-EL1600 + MOD



Description

This electric actuator variation provides a modulating position control from an incoming 4 to 20 milli-Amp signal.

A very advanced solid-state circuit control board works on the comparator principle, where the incoming control signal is continuously compared to the actual position of the output shaft and signals are sent to the motor to "Open more" or "Close more", until the balanced or null position is achieved.

The valve is held in this position until a variation in signal causes a proportional movement of the output shaft.

The circuit board includes trimmers for zero, span adjustment sensitivity adjustment and provision is made for split ranging. LED's are fitted for simplified setting.

A speed control feature reduces the motor speed, by pulsing the motor, as the null position is approached. This allows greater accuracy without "Overshoot" or "Hunting".

Other standard features include a 4-20 mA position transmitter and "Lock on last position" on signal failure.

Specification

Input	: Voltage 220/240VAC or 110-120VAC 50/60 Hz
	: Control 4 to 20 mA, adjustable
	: 0.1 to 35 mA
	: and 0.1 to 12 mA
	: or 12 to 35 (for split ranging)
Performance	: Linearity 3%
	: Hysteresis 1%
	: Min. resolution 1%
Adjustment	: Zero, span, sensitivity
Position indication	: 4 to 20 mA output
Temperature	: -20°C to +70°C

Identification

Factory Option	: Add "MOD" to the basic actuator size
	: eg. EL100 220/50 + MOD
Kit options	: Actuator size is added to: "Kit, MOD"
	: eg. Kit MOD/EL100 220/50

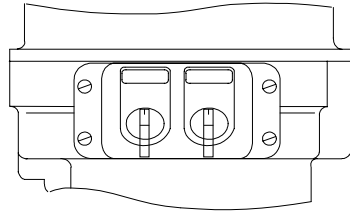
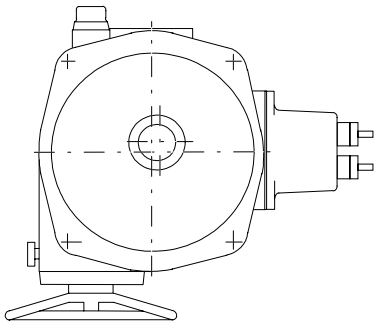


Data sheet

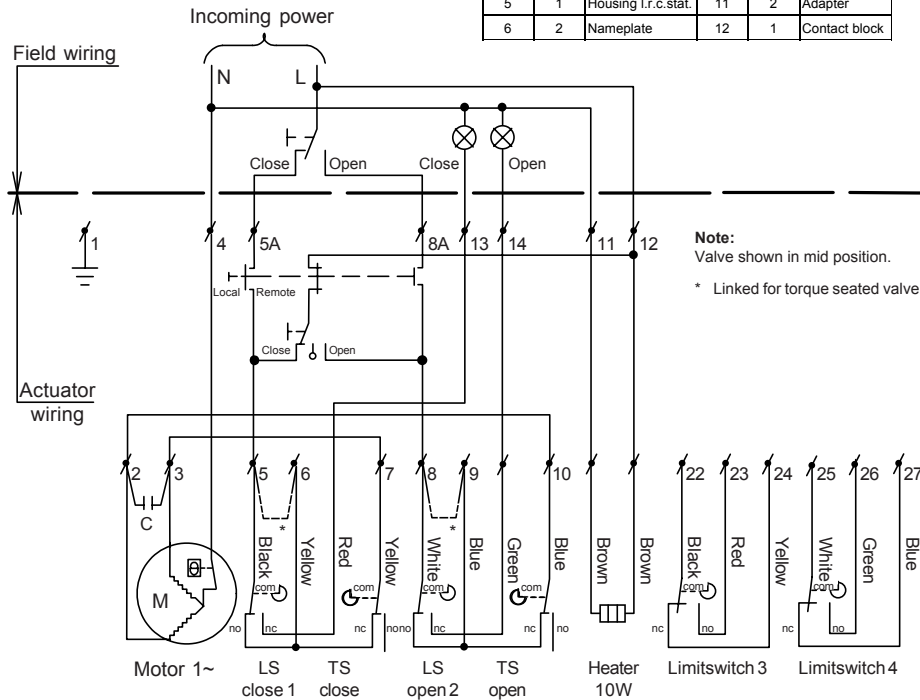
Sheet No.: 5.207 Rev. A
Date: November 2009

EL ACTUATOR WITH LOCAL CONTROL STATION

LC



PC no	NO req	Description	PC no	NO req	Description
1	1	Seal	7	1	Marking tag
2	4	Screw	8	1	Selector knob
3	4	Lock washer	9	1	Selector knob
4	4	Contact block	10	1	Marking tag
5	1	Housing l.r.c.stat.	11	2	Adapter
6	2	Nameplate	12	1	Contact block



Description

This electric actuator variation has the addition of a local control box, which has two switches.

The first is a selector switch to switch between “LOCAL” and “REMOTE” operation of the actuator. When “LOCAL” is selected the second switch may be used to open, stop or close the valve, this switch is locked out when “REMOTE” is selected and the control is returned to the remote control station.

Construction

The control box is located on the side of the actuator casting and all the connection wiring is contained internally.

Specification

Switches: Make : Sprecher & Schuh
 First switch : LC1-10-10020NL
 Second switch : LC1-10-3501
 Voltage : Up to 600V
 Current : 10A max
 Temperature : -25°C to +60°C

Identification

Factory Option : Add “+ LC” to the basic actuator size
 : eg. EL100 220/50 + LC
 Kit Option : Actuator size is added to: “Kit, LC”
 : eg. Kit, LC/EL55 220/50

Variations

: Other switch inserts for key lock, etc.

Note

: When supplied as a kit option, all the components as shown are included, together with an instruction sheet
 : Wiring diagram for EL100-1600 220V/50Hz + LC



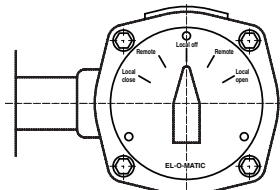
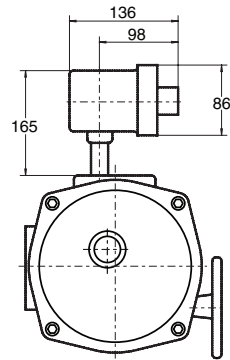
Data sheet

Sheet No.: 5.207.1 Rev. B

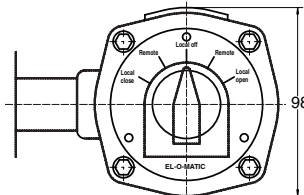
Date: February 2012

EL EX-PROOF ACTUATOR WITH LOCAL CONTROL STATION (FLAME-PROOF Ex d)

LC-Ex



Non lockable



Padlockable

Description

This electric actuator variation for use on an explosion proof actuator has the addition of a local control box, with a single rotary 5 position switch with 5 SPST contacts.

The switch selects between: "LOCAL OPEN", "REMOTE", "OFF", "REMOTE" and "LOCAL CLOSE".

When in "LOCAL OPEN" or "LOCAL CLOSE" position the actuator can not be operated remotely.

This local control station is certified flame proof according to EN 60079-0 and EN 60079-1 as an integral part of the base actuator and bears ATEX marking II 2 G Ex db IIB T4.

Construction

The control station is located on the side of an ATEX II 2 G Ex db IIB T4 flame proof electric actuator and all the connection wiring is contained internally.

Specification

Switches	Type	: Santon
	Model	: H1 P-EE1
	Voltage	: Up to 600V
	Current	: 20A max. (resistive load)
	Temperature	: -25°C to +60°C

Housing

Material	: Aluminium
Finish	: Two component polyurethane

Flame proof

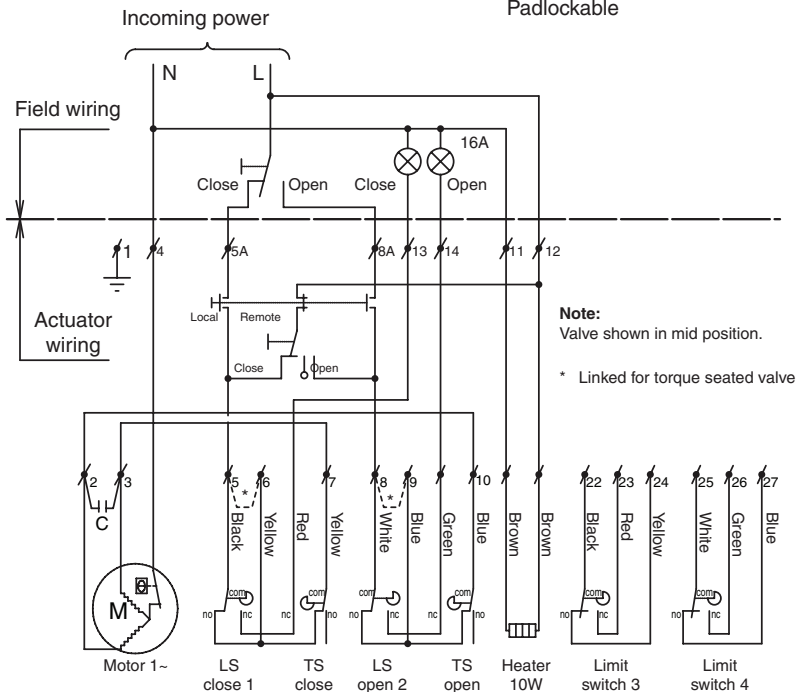
Marking	: II 2 G Ex db IIB T4, suitable for ATEX Zones 1, 2 (gas)
Certificate nr.	: DEKRA 12ATEX0001 X
Actuator sizes	: EL 35, EL 55, EL100, EL150, EL200, EL350, EL500 and EL800

Identification

Factory Option : Add "+ LC-Ex" (non lockable or "+LCL-Ex" (padlockable) to the basic actuator size eg. EL100 220/50 + LC-Ex

Note

- 1 This option is not supplied as a kit option, only as a factory option
- 2 Both local/remote and close/stop/open switches are combined into one switch
- 3 Wiring diagram for EL100-EL800 220V/50Hz + LC-Ex



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