

UNI-EL
Elektrisk aktuator
Electric actuator

Tekniske data

Technical data

UNI-EL 0100

UNI-EL 9000



(UNI-EL-0100, 0160, 0240, 0350, 0500, 0800, 1100, 1500, 2000, 3000, 6000 og 9000)



Eksternt mekanisk stop

- Forhindrer overløb af drejevinkel hvis vej-switch fejler

External mechanical stopper

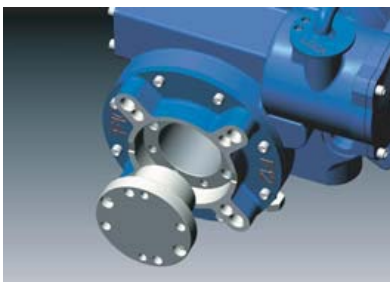
- Prevents over run of travel angle when limit switch fails.

Kabelforskrutninger

- Standard 2 stk. PF3/4" (max. 1")

Cable entries

- Standard 2-PF3/4"(Max 1") for various cable gland.



Udskiftelig adaptor og ISO5211 montage

- F07 – F16

Removable drive bushing and ISO5211 mounting base

- (F07~F16) for easy mounting on valve.



Bolte i låg

- Bliver i låget ved vedligehold eller installation

- * Alle udvendige bolte er i rustfrit stål

Captive cover bolts

- Designed to prevent losing it during maintenance or installation.

- * All external bolts are stainless steel for rust prevention.



Standard kort / short

Option lang / long (Explosion proof)

Hus

- Hårdanodiseret aluminium med udvendig epoxy coating

Housing

- Hard anodized Aluminum casting and external epoxy powder coated against severe industrial environment.

Gear

- Præcist bearbejdet dobbelt snækkegear med minimalt tilbageløb, støjsvagt, stort udgangsmoment

Gearing

- Precisely machined double worm gear c/w minimum back-lash, low noise, high output torque.

Selvhæmmende

- Dobbelt snækkegear holder ventilens stilling ved påvirkninger fra ventilen

Self locking

- Provided by double worm gearing to keep position of valve unchanged against reverse torque from valve.

Tætninger

- O-ringe i alle samlinger IP67 standard og dobbelt O-ring ved IP68 (option)

Sealing

- By O-ring in all interfaces IP67(standard), and double o-ring for IP68 (option)

Håndhjul

- Forskellige størrelser afhængig af moment og knob for nem manøvrering

Hand wheel

- Different sizes depending on actuator torque, and knob on hand wheel for easy operation.

Motor

- Induktionsmotor med højt startmoment og virkningsgrad forsynet med termisk beskyttelse

Motor

- Specially designed induction motor to generate high starting torque and high efficiency equipped with thermal protector to prevent damage from over heating.



Konisk berøringsflade mellem låg og hus

- Forhindrer at låget binder ved adskillelse og samling
- Standard: Lav berøringsflade

- Ex område: Lang, forlænger flammens vej ud
- Tapered interface between cover and lower housing**

- For easy lifting cover up from lower housing for wiring or maintenance.

- Standard: Short interface for providing easier access to internal component

- Explosion proof : Long interface for keeping the length of flame path

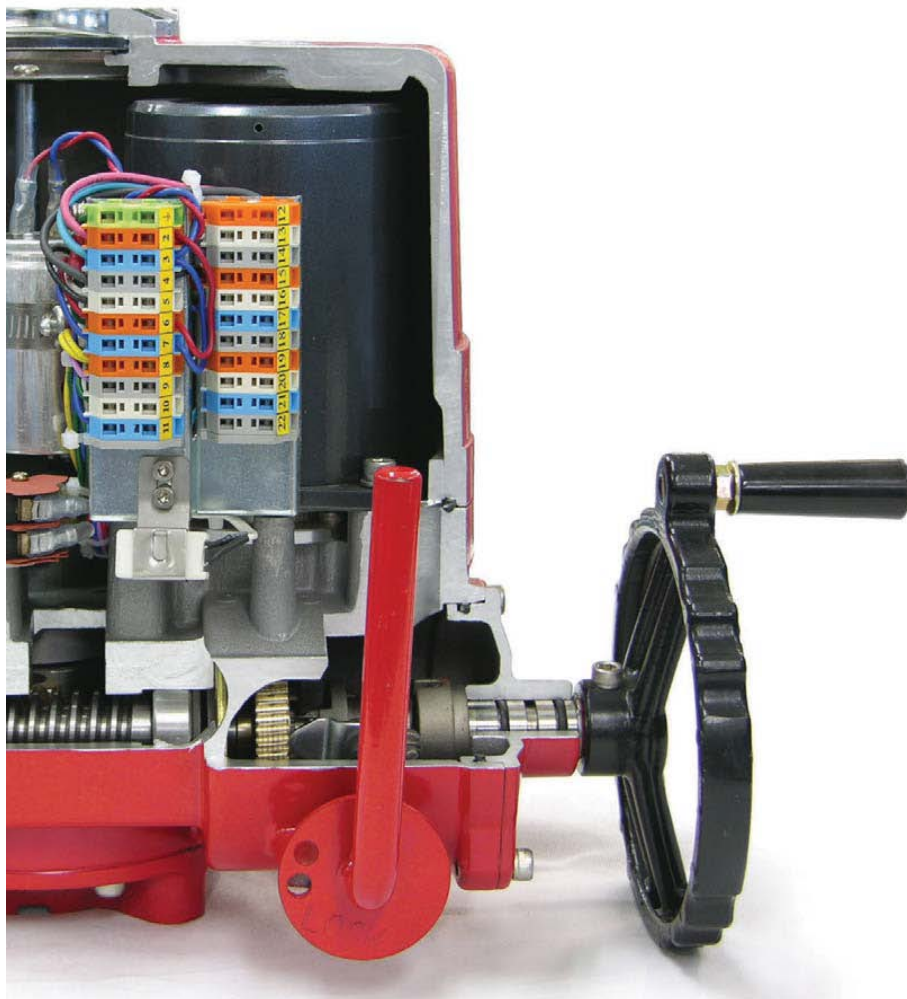


Indikator

- Mekanisk visual positionsindikator og glas med skala

Indicator

- Continuous mechanical position indicator and window with dial



Moment switch

- beskytter aktuatoren mod overbelastning fra ventilen
- 1 stk. åbne / 1 stk. lukke

Torque switches

- Protects actuator from damage caused by overload from the driven valve over the whole travel.
- 1 each for open / close



Tilbagemeldere

- Koblet til drivakslen for præcis stillingsvisning
- 2 stk. åbne / 2 stk. lukke
- Option: 4 stk. åbne / 4 stk. lukke. (Gælder ikke UNI-EL-0100)

Limit switches

- Directly engaged with driving shaft to set accurate position of valve.
- 2 ea for each travel end (open/close).
- Optional Extra Limit Switches (Max 4 ea for each end) : Except for UNI-EL-0100



Klemrække

- Fjederbelastede klemmer for at modstå vibrationer

Terminal

- Spring loaded push type terminal for tight wiring connection under severe vibration.



Håndmanøvrering

- Manuelt håndhjul for nødmanøvrering
- Kobler til auto når forsyningsspænding påtrykkes

Manual override

- Auto / Manual switchable lever and hand wheel engagement for emergency manual operation.
- Drive force automatically resorted by motor start, unless lever padlocked to prevent this occurring.



Varmelegeme

- Mod kondens
- Space Heater
- Anti-condensation

Tekniske data / *Technical information*

Type UNI-EL	0100	0160	0240	0350	0500	0800	1100	2000	3000	6000	9000
Moment <i>torque</i>	100	160	240	350	500	800	1100	2000	3000	6000	9000
Drift <i>Duty cycle S4 (%)</i>	40	30	30	30	30	30	30	30	30	30	30
Gangtid (sek.) <i>Operating time (sec.)</i>											
50 Hz	21	26	26	31	31	39	39	59	59	178	178
60 Hz	18	22	22	26	26	32	32	50	50	149	149
Adaptor (mm) <i>Max. Bore size</i>											
Key (Ø)	22	25	25	40	40	48	48	75	75	120	120
Square (•)	20	23	23	34	34	40	40	64	64	100	100
Strømforbrug <i>Rated current (A)</i>											
1 fase /1phase 110V											
50 Hz	0.98	1.60	1.62	1.72	3.60	3.90	3.90	-	-	-	-
60 Hz	1.10	1.70	1.72	1.80	3.90	4.20	4.30	-	-	-	-
1 fase /1phase 220V											
50 Hz	0.52	0.85	0.87	0.92	1.50	2.05	2.15	2.95	3.75	2.95	3.75
60 Hz	0.58	0.90	0.90	0.95	1.60	2.20	2.30	3.15	3.85	3.15	3.85
3 faser /3phase 380V											
50 Hz	0.43	0.30	0.32	0.32	0.52	0.82	0.84	1.50	1.60	1.50	1.60
60 Hz	0.33	0.30	0.32	0.32	0.56	0.88	0.90	1.80	2.00	1.80	2.00
3 faser /3phase 440V											
50 Hz	0.59	0.30	0.32	0.32	0.55	0.82	0.84	2.30	2.50	2.30	2.50
60 Hz	0.42	0.32	0.35	0.35	0.58	0.88	0.88	2.20	2.40	2.20	2.40
AC / DC 24V	2,8	1,8	2,4	3,8	5,0	-	-	-	-	-	-
Motor beskyttelsesklasse <i>Motor insulation class</i>	F	F	F	F	F	F	F	F	F	F	F
ISO 5211 montage flange <i>mounting flange</i>	F07	F07/ F10	F07/ F10	F10/ F12	F10/ F12	F12/ F14	F12/ F14	F16	F16	F25/ F30	F25/ F30
Vægt <i>Weight (Kg)</i>	7	15	15	20	20	25	25	42	42	152	152
Omdrejn. Håndhjul <i>No. of hand wheel turns</i>	10	12	12	14	14	17	17	13	13	39	39

Standardspecifikation / Standard specification

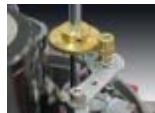
Beskyttelsesklasse <i>Enclosure</i>	IP67, NEMA4 4X og 6, O-ring tætning <i>Weatherproof IP67, NEMA4 4X and 6, O-ring sealed</i>
Forsyning <i>Main power supply</i>	110 / 220 VAC / 1 fase / 50/60 Hz, 380 / 440 VAC / 3 faser / 50/60 Hz $\pm 10\%$, 24VDC <i>110 / 220 VAC / 1 phase / 50/60 Hz, 380 / 440 VAC / 3 phases / 50/60 Hz $\pm 10\%$, 24VDC</i>
Drift ON/OFF <i>Duty cycle ON/OFF</i>	S2: 10 min. – 30 min.
Drift modulerende <i>Duty cycle modulating</i>	S4: 30-50%, 300-1200 start/hour
Motor <i>Motor</i>	Induktionsmotor <i>Induction motor</i>
Tilbagemeldere <i>Limit switches</i>	4 stk. justérbare endestopkontakter <i>4 pcs. Adjustable travel switches (SPDT 250VAC/10A rating)</i>
Moment switches <i>Torque switches</i>	2 stk. 1 for åbne og 1 for lukke <i>2 pcs. 1 for open and 1 for closing (SPDT 250VAC/10A rating except for UNI-EL-0100)</i>
Termisk beskyttelse <i>Stall protection/ set. Temp.</i>	Indbygget termisk beskyttelse, åben $150^{\circ}\text{C} \pm 5^{\circ}\text{C}$, lukke $97^{\circ}\text{C} \pm 15^{\circ}\text{C}$ <i>Built in thermal protection, open $150^{\circ}\text{C} \pm 5^{\circ}\text{C}$, close $97^{\circ}\text{C} \pm 15^{\circ}\text{C}$</i>
Drejevinkel <i>Travel angle</i>	$90^{\circ} \pm 5^{\circ}$ ($0^{\circ} - 100^{\circ}$)
Stillingsvisning <i>Position indicator</i>	Kontinuerlig visuel mekanisk indikator (plastkuppel) <i>Continious mechanical indicator with arrow</i>
Manuel nødbetjening <i>Manual override</i>	De-clutchable
Selvhæmmende <i>Self locking</i>	Vha. dobbelt snækkegear (uden bremse) <i>Provided by double worm gearing (no brake)</i>
Mekanisk stop <i>Mechanical stopper</i>	1 for åbne og 1 for lukke , ekstern og justérbar <i>1 each for each travel end (open and close), external and adjustable</i>
Varmelegeme <i>Space heater</i>	5W (110/220VAC) for anti-condensation
Kabel gennemføring <i>Cable entries</i>	2 stk. $\frac{3}{4}$ " <i>2 – PF $\frac{3}{4}$" TAP</i>
Klemrække <i>Terminal block</i>	Fjederbelastede skrue og tryk <i>Screw and lever push type (spring loaded)</i>
Omgivelsestemperatur <i>Ambient temperature</i>	Standard aktuator: $-20^{\circ}\text{C} - +70^{\circ}\text{C}$, med optioner: $-10^{\circ}\text{C} - +60^{\circ}\text{C}$ <i>Basic actuator: $-20^{\circ}\text{C} - +70^{\circ}\text{C}$, c/w control options: $-10^{\circ}\text{C} - +60^{\circ}\text{C}$</i>
Fugtighed omgivelser <i>Ambient humidity</i>	90% RH max. (non-condensing)
Vibrationer <i>Anti vibration</i>	XYZ 10g. 02-34Hz, 30 minutes
Ekstern overfladebehandling <i>External coating</i>	Dry powder (polyester)

Optioner / Options available

Mekanisk / Mechanical

Symbol	Beskrivelse Description	
EX	Ekspllosionssikker (Ex d II B T4) <i>Explosion proof (Ex d II B T4)</i>	
WT	Vandtæt (IP68), midlertidig nedsænkning <i>Water tight (IP68), temporary submersible</i>	
ALS	Ekstra tilbagemeldere (max. 2 for både åbne og lukke) <i>Auxiliary limit switches (max. 2 for each travel end)</i>	
ATS	Ekstra moment switch (max. 2 for både åbne og lukke) <i>Auxiliary torque switches (max. 2 for each travel end)</i>	Undtagen UNI-EL-0100 Except UNI-EL-0100
EXT	Udvidet dreje vinkel (op til 120°, 135°, 180°, 270°) <i>Extended travel angle (up to 120°, 135°, 180°, 270°)</i>	Undtagen UNI-EL med gear boks Except UNI-EL with gear box

Tilbage melding og regulering / Remote monitoring and control

Symbol	Beskrivelse Description	
PK	Potentiometer kit (udg. Signal: 0-1 K•) Høj opløsning og præcist forarbejdet gear kobles direkte på akslen for kontinuerlig tilbage melding af ventilens stilling <i>Potentiometer kit (output signal: 0-1 K•) High resolution potentiometer and precisely machined gearing are directly engaged with drive shaft to feed back continious position of valve</i>	
CT	Strømtransmitter (udg. Signal: 4-20 mA) Nulpunkts / område justering DIP switch (4-wire til 2-wire) <i>Current transmitter (output signal: 4-20 mA) Zero / span adjustment Convertible DIP switch (4 wire to 2 wire)</i>	
RPC	Reguleringsmodul (positioner, indg.- og udg. signal) Indg.: 4-20 mA, 0-10VDC, 2-10VDC, 1-5VDC, 0-5VDC Udg.: 4-20 mA, 0-10VDC, 2-10VDC, 1-5VDC, 0-5VDC Auto-kalibrering Reversering <i>Remote position controller (by input and output signal) Input.: 4-20 mA, 0-10VDC, 2-10VDC, 1-5VDC, 0-5VDC Output.: 4-20 mA, 0-10VDC, 2-10VDC, 1-5VDC, 0-5VDC Auto-calibration Reverse operating direction</i>	

Lokalmanøvrering / Local control

LP4 for 1 og 3-fase (UNI-EL-0160 – 9000)	Forsyning: (85 – 265VAC) 50/60Hz, option: 24VDC Magnetiske omskiftere, SMPS (switching module power supply): Åbne/lukke og lokal/stop/fjern Visning lys: Power – hvid (ON), Fjern – Blå (ON) Lukke moment switch – gul (ON) + grøn (blinker hvis lokal position) Åbne moment switch – gul (ON) + rød (blinker hvis lokal position) Helt lukket – grøn (ON), lukker – grøn (blinker hvis lokal position) Helt åben – rød (ON), åbner – rød (blinker hvis lokal position) Optioner: PK, CT, RPC, IP68, Ex	 LP4 / LM4
LP4 for 1 and 3 phase (UNI-EL-0160 – 9000)	Control power : Free Voltage (85–265VAC) 50/60Hz, Option : 24VDC Magnetic selector switches, SMPS (Switching Module Power Supply): Open/Close & Local/Stop/Remote Local lamp indication: Power - White(on), Remote : Blue(on), In case of Close Torque Switch Trip - Yellow(on) + Green (flickering : only at Local Position) In case of Open Torque Switch Trip - Yellow(on) + Red (flickering : only at Local Position) Full Close - Green(on), Closing - Green(flickering : only at Local Position) Full Open - Red(on), Opening - Red(flickering : only at Local Position) * Options Available : PK, CT, RPC(Modulating), IP68, Explosion proof	
LM4 for 3-fase (UNI-EL-0160 – 9000)	Samme som LP4 samt Reversering, transformer	
LM4 for 3 phase (UNI-EL-0160 – 9000)	<i>Including the same functions as LP4 and Reversing electric contactors, transformer</i>	
ICM1 for 1 og 3-fase (UNI-EL-0160 – 9000)	Forsyning: 3-fase 220/380/440VAC 1-fase 110/220VAC Styresignal: 24VDC, 5VDC Magnetiske omskiftere, SMPS (switching module power supply): Åbne/lukke og lokal/stop/fjern Reversering, transformer, fasedetektor Visning lys: Power – hvid (ON), Fjern – Blå (ON) Lukke moment switch – gul (ON) + grøn (blinker hvis lokal position) Åbne moment switch – gul (ON) + rød (blinker hvis lokal position) Helt lukket – grøn (ON), lukker – grøn (blinker hvis lokal position) Helt åben – rød (ON), åbner – rød (blinker hvis lokal position) Fasevending – gul + grøn – rød blinker Optioner: IP68, Ex	 ICM1
ICM1 for 1 and 3 phase (UNI-EL-0160 – 9000)	Main Power : 3Ph / 220/380/440 VAC 1Ph / 110/220 VAC Control power : 24VDC, 5VDC Magnetic selector switches Open/Close & Local/Stop/Remote Reversing electric contactors, Transformer, Phase Detector Local lamp indication: Power - White(on), Remote : Blue(on), In case of Close Torque Switch Trip - Yellow(on) + Green(flickering) In case of Open Torque Switch Trip - Yellow(on) + Red(flickering) Full Close - Green(on), Closing - Green(flickering : only at Local Position) Full Open - Red(on), Opening - Red(flickering : only at Local Position) Single & Reverse Phasing : (Yellow + Green + Red) all flickering * Options Available : Explosion Proof, IP68	

ICM2 for 1 og 3-fase (UNI-EL-0160 – 9000)	Samme som ICM1 samt Integrerede reverseringskontakter, transformer, LCD display Optioner: CT, RPC, Ex, IP68, Bus-kommunikation	 ICM2
ICM2 for 1 and 3 phase (UNI-EL-0160 – 9000)	Including same functions as ICM1 Enclosed: Reversing electric contactors, transformer, auto-phase discriminator, LCD display Options available: CT, RPC, Explosion proof, IP68 Bus communication	
ICM3 for 1 og 3-fase (UNI-EL-0160 – 9000)	Samme som ICM2 samt Integrerede reverseringskontakter, transformer, LCD display, IP68, Ex, RPC, Bus-kommunikation, 34 pins separat hus til klemrække	
ICM3 for 1 and 3 phase (UNI-EL-0160 – 9000)	Including same functions as ICM2 Enclosed: Reversing electric contactors, transformer, auto-phase discriminator, LCD display, IP68, Explosion proof, RPC, Bus communication, 34 pins separate compartment for terminal block	

Fail safe

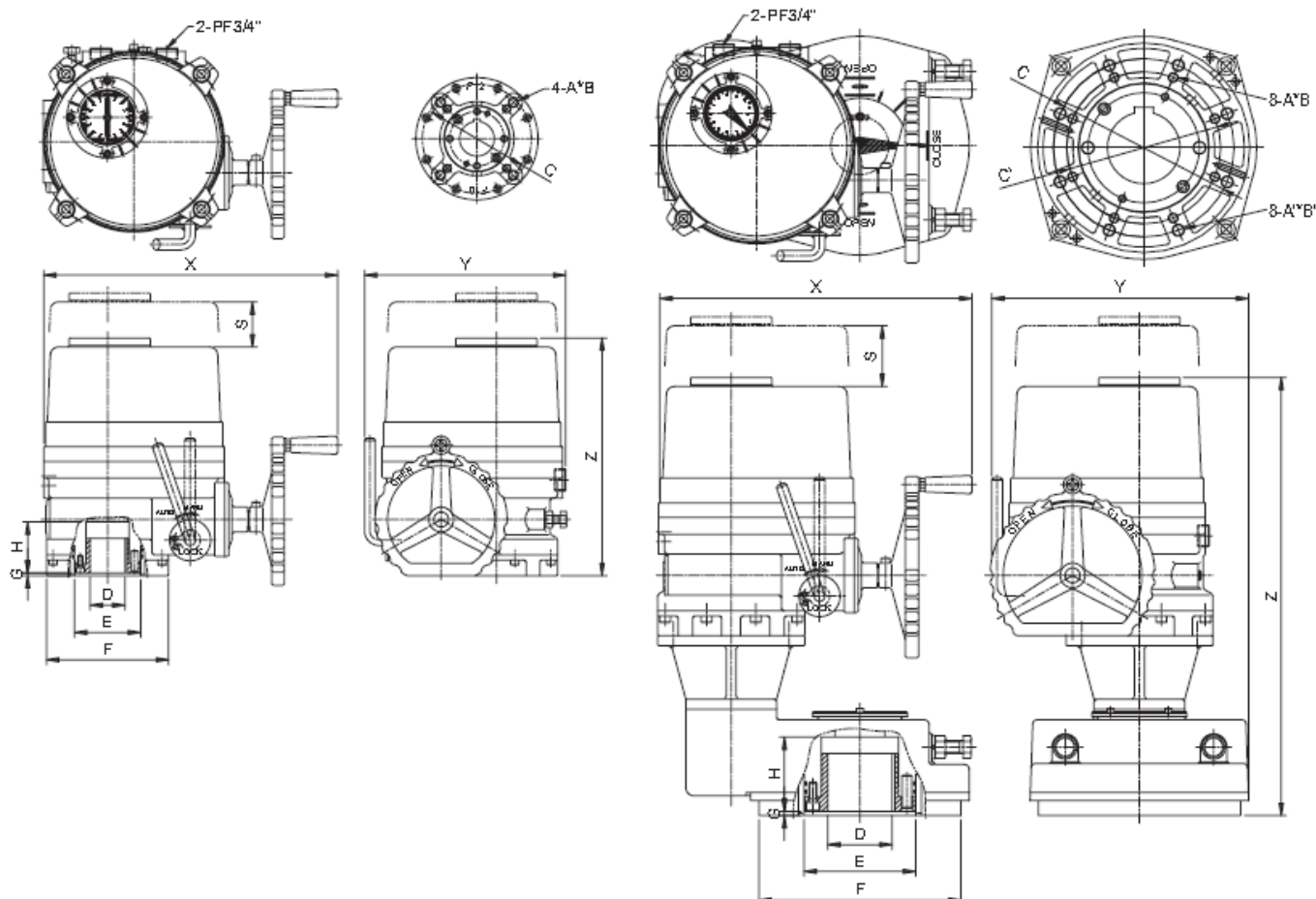
BP for 1-fase (UNI-EL-0100 – 500)	Genopladelig batteri back-up – fail safe funktion Når forsyning er på fungerer aktuatoren normalt. Når forsyningen svigter, vil aktuatoren gå til en forudindstillet stilling. Forsyning: (85 – 265VAC) 50/60Hz Tilbage melding: Åbne/lukke/alarm LED signal: 4 LEDs (fuld åben/lukke, overmoment og forsyning) Genopladeligt batteri: 2.0AH, 27.5VDC (Ni-Cd)	
BP for 1 phase (UNI-EL-0100 – 500)	Rechargeable Battery back up - Fail safe function When Main power is alive, actuator works as normally. Once power fails, actuator will move to pre-set fail safe position. Input power : Free Voltage (85~265 VAC) 50/60Hz Output contacts : open/close/Alarm relay LED signal indication : 4 LEDs (Full Open/Close, Over Torque and Power) Rechargeable battery : 2.0AH 27.5VDC(Ni-Cd)	

Standard dimensioner / Basic actuator dimensions

Med gearboks
With gear box

Type UNI-EL	0100	0160	0240	0350	0500	0800	1100	2000	3000	6000	9000
Flange ISO5211	F07	F07/ F10	F07/ F10	F10/ F12	F10/ F12	F12/ F14	F12/ F14	F16	F16	F25/ F30	F25/ F30
C	Ø70	Ø70/ Ø102	Ø70/ Ø102	Ø102/ Ø125	Ø102/ Ø125	Ø125/ Ø140	Ø125/ Ø140	Ø165	Ø165	Ø254/ Ø298	Ø254/ Ø298
A	M8	M8/ M10	M8/ M10	M10/ M12	M10/ M12	M12/ M16	M12/ M16	M20	M20	M16/ M20	M16/ M20
B	14	14/17	14/17	17/21	17/21	20/25	20/25	32	32	30/35	30/35
D(key)	Ø22	Ø25	Ø25	Ø40	Ø40	Ø48	Ø48	Ø75	Ø75	Ø120	Ø120
D(square)	• 20	• 23	• 23	• 34	• 34	• 40	• 40	• 64	• 64	• 100	• 100
E	Ø 50	Ø 58,5	Ø 58,5	Ø 80	Ø 80	Ø 95	Ø 95	Ø 135	Ø 135	Ø 216	Ø 216
F	Ø 88	Ø 125	Ø 125	Ø 148	Ø 148	Ø 178	Ø 178	Ø 226	Ø 226	Ø 350	Ø 350
G	3	3	3	3	3	3	3	5	5	5	5
H	37	57	57	62	62	67	67	90	90	114	114
S	100	115	115	145	145	170	170	225	225	225	225
X	258	338	338	357	357	380	380	440	440	516	516
Y	172	229	229	244	244	287	287	375	375	417	417
Z	220	259	259	288	288	313	313	385	385	668	668

(mm)



Dimensioner for optioner / Control option dimensions

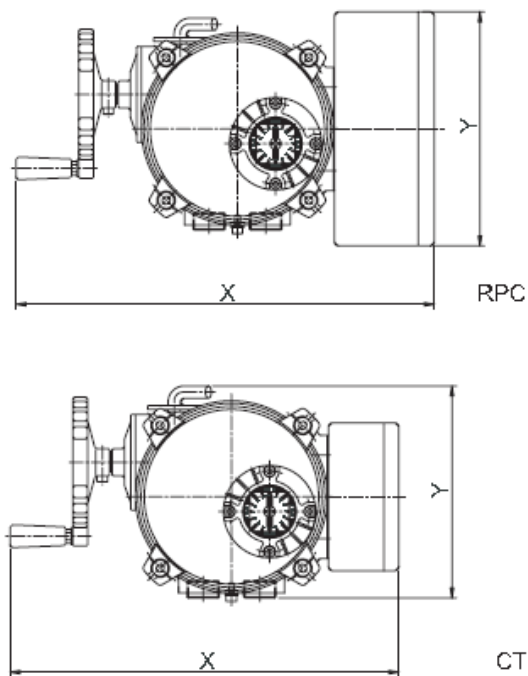
Type UNI-EL	RPC			CT			BP			LP4 / LM4 / ICM1 / ICM2			ICM3		
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
0100	340	190	220	316	172	220	428	172	220	X			X		
0240 / 0350		O			O		508	229	259	499	229	259	517	284	259
0350 / 0500		O			O		527	244	288	518	244	288	536	284	288
0800 / 1100		O			O		X			541	284	313	559	284	313
2000 / 3000		O			O		X			600	375	385	620	375	385
6000 / 9000		O			O		X			677	417	668	697	417	668

O: Installeret i aktuatoren / Installed inside of actuator

X: Ikke mulig / Not available

Z: Højde standard aktuator / Height of basic actuator

UNI-EL-0100



UNI-EL-0160 – UNI-EL-9000

