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Linear Actuators

ALI 1 – Model



For any special duty requests, please contact our Sales Department for more assistance.

Features and Options:

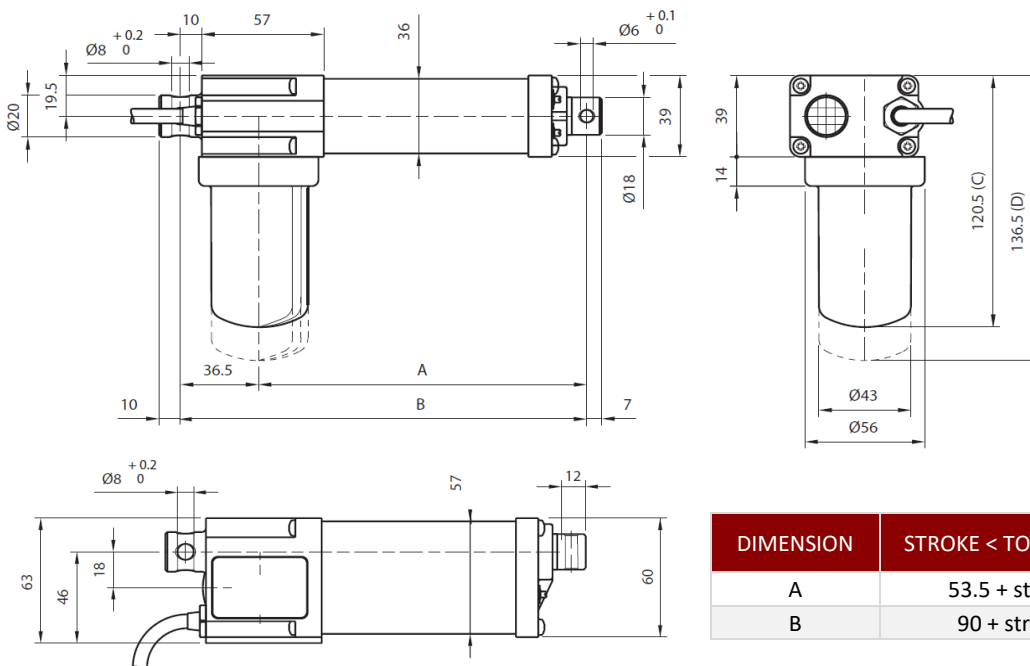
- ✓ Permanent magnet motor 12 - 24 Vdc
- ✓ Double worm gearbox
- ✓ ACME lead screw
- ✓ Aluminium push rod (Stainless steel on request)
- ✓ Permanent grease lubrication
- ✓ IP 65, tested according to rule CEI EN 60529
- ✓ Working temperature range -10°C +60°C
- ✓ Intermittent duty S3 30% (5 min) a 30°C*
- ✓ Encoder on request
- ✓ Limit switches on request (ALI1-PF)

FMAX (N)	SPEED (MM/S)	VERSION	MOTOR SIZE	MOTOR SPEED (RPM)	MAX CURRENT FOR FMAX (A) – 24VDC
95 ¹	90	M12	40S	6300	2.8
190 ¹	90	M13	40L		4.5
130 ¹	60	M10	40S		3.1
270 ¹	60	M11	40L		6
200 ¹	45	M07	40S		2.6
400 ¹	45	M09	40L		3.1
290	30	M04	40S		2.8
580	30	M06	40L		4.5
500	15	M01	40S		2.7
1200	15	M03	40L		5

¹When speed is more than 30 mm/s and/or strokes longer than 200 mm, check STROKE SETUP section.

²For 12 Vdc power supply currents are doubled and loads are 20% lower.

ALI 1:



DIMENSION	STROKE < TO 240 MM	STROKE > 240 MM
A	53.5 + stroke	66.5 + stroke
B	90 + stroke	103 + stroke

THIS DOCUMENT DISPLAYS THE MOST TYPICAL STANDARD FEATURES AND SETUPS. PLEASE CONTACT OUR SALES TEAM FOR MORE INFORMATION



Electrical Wirings:

Options Available:

- C01/C08 = Motor
- C02/C09 = N° 2 Microswitches, Diode-wired
- C03/C10 = Motor + N° 2 Micro
- C04/C11 = Motor + N° 3 Micro
- C05/C12 = Motor + Encoder
- C06/C13 = N° 2 Micro Diode Wired + Encoder
- C07/C14 = Motor + N° 2 Micro + Encoder
- C00 = Special Wiring (Presence of not standard options)

WARNING:

Micros are actuated by a cam lying on pushrod itself.

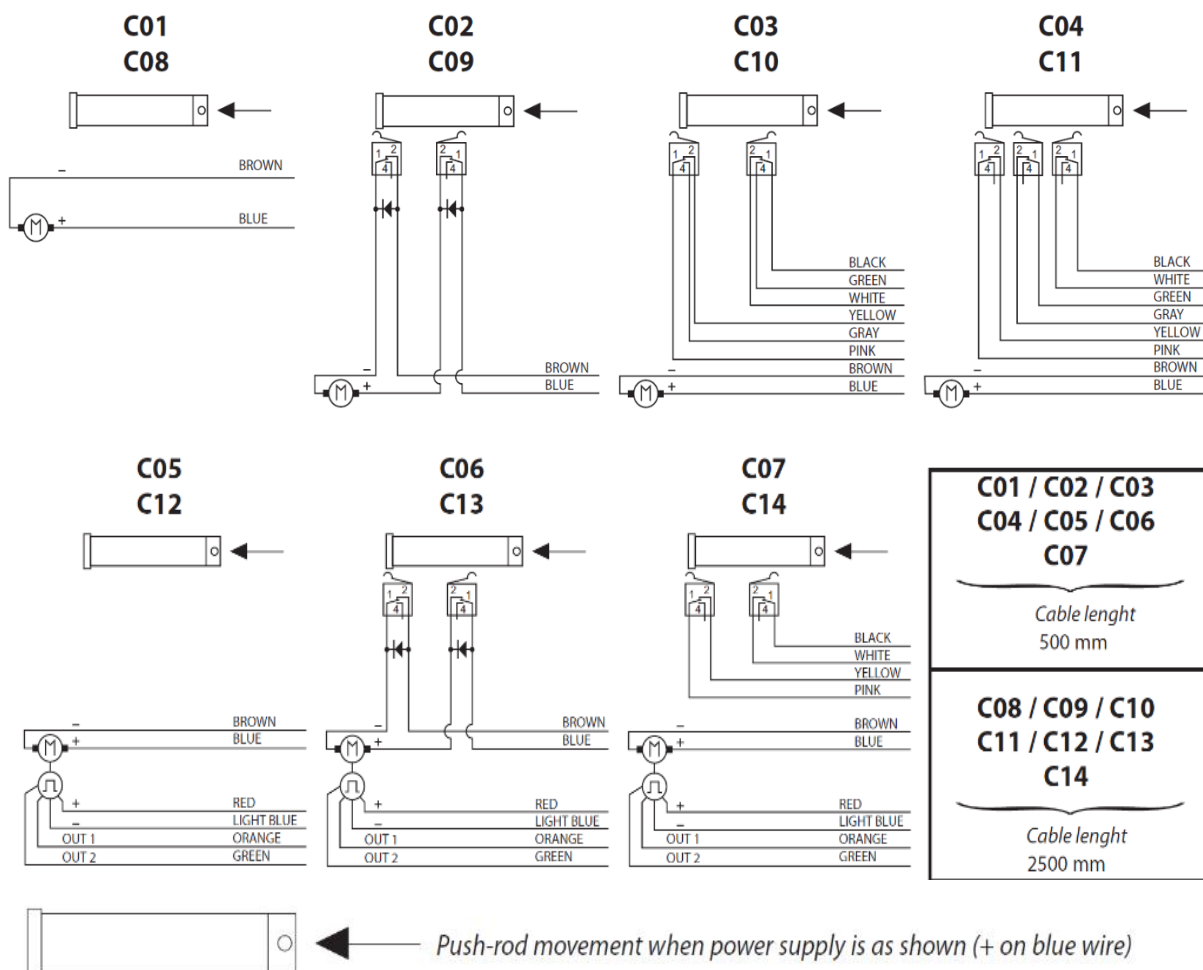
Micro signal, for speeds higher than 30 mm/s, needs to be handled in its very impulse (I.E.when actuated) and not in its state.

Alternatively, an added bush to keep the microswitch lever pressed for a longer time avoiding switch signal mistakes, but cause loss of 10 mm of stroke.

Connections C02 and C06 make a circuit which stops motor supply, so that the push rod won't overstep the area of the two micros.

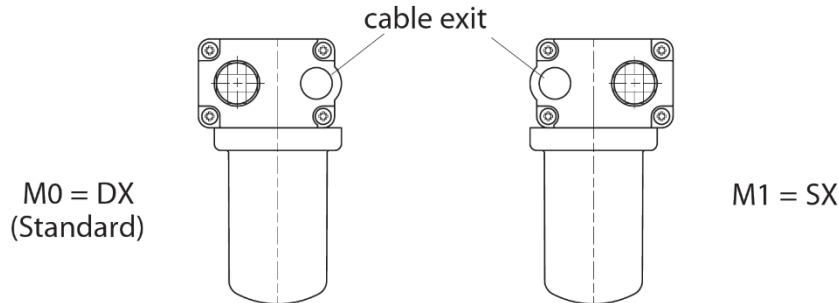
This system can work only if inertia generated by the actuator and load connected to it does not allow to over-step the micro when stroke is over. So, this works just with low speeds (M01 - M03), with a load opposing the ongoing direction of the push rod. If not, relay or PLC solutions, using C03 and C07 connections, are needed.

Wiring diagrams of connections above are following:



Motor Position:

Motor can be installed on both sides of the actuator, thus achieving two versions, as show below. Actuator is seen from backwards.



Stroke Setup:

Useful tips for handling stroke and avoid run-on-block collision

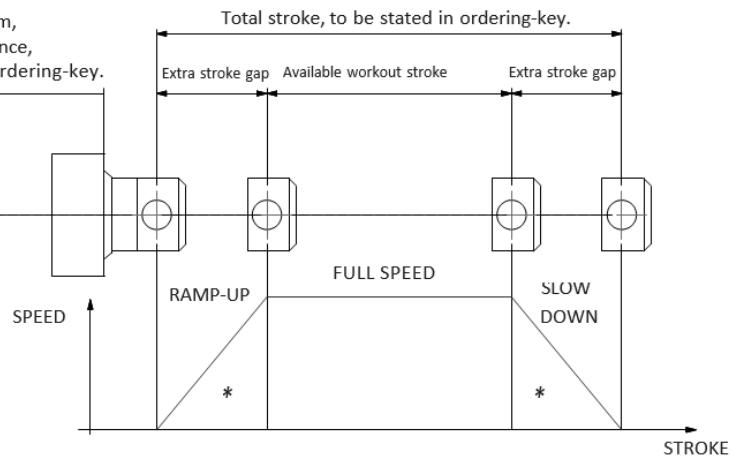
When stroke is more than 350 mm, add 50 mm extra-stroke as guidance, and put corresponding value in ordering-key.

WARNING:

SPEED-TIMING ALONG STROKELENGTH:

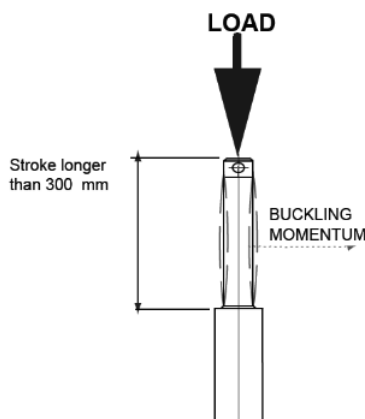
Ramps are extremely important with high speed. Inverter or PWM drive recommended.

* The more speed raises the more extra stroke must raise too.



Buckling:

When stroke is longer than 300 mm, BUCKLING can be a risk. Please check mounting with our Sales Department.



IMPORTANT:

Long strokes, even if load is low, can generate significant buckling momentums, as sketch shows.

This happens when actuator is in its all-opened position: that's the reason why we recommend 100 mm extra-stroke.

Pushtube will have this 100 mm-portion always inside the overtube, improving guidance against buckling.

For more information on this, please contact our Sales Department.

Linear Actuators

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BirCraft

GEARED MOTORS - LINEAR ACTUATORS - CONTROLS

- Over 40 Years of Supplying Africa -

Ordering Key:

ALI1F / 0250 / M01 / 12 / M0 / C02 / P1 / A2

MODEL:

ALI ALI1-F

STROKE:

es. 250 mm = 0250

VERSION:

M01 / M03 / M04 / M06 / M07 / M09 / M10 / M11 / M12 / M13

M00 = Not standard speed

MOTOR:

12 = 12 Vdc

24 = 24 Vdc

MOTOR POSITION:

MO/M1

MOTOR OPTIONS:

C01 / C08: Motor

C02 / C09: 2LS Diode wired

C03 / C10: Motor + 2LS

C04 / C11: Motor + 3LS

C05 / C12: Motor + encoder

C06 / C13: 2LS diode wired + encoder

C07 / C14: Motor + encoder + 2LS

C00: Special wiring (Presence of not standard options)

Note: LS (limit switches)

REAR END:

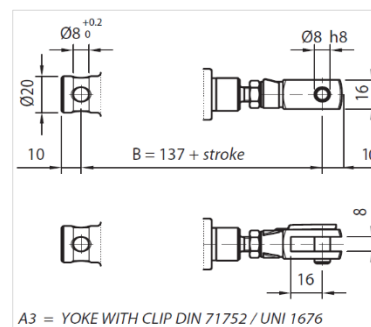
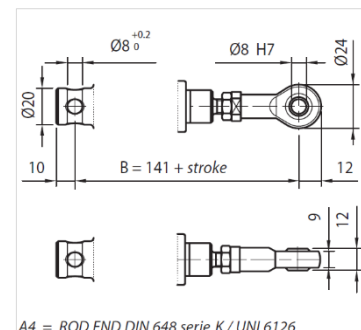
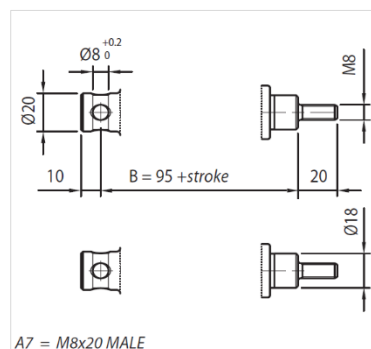
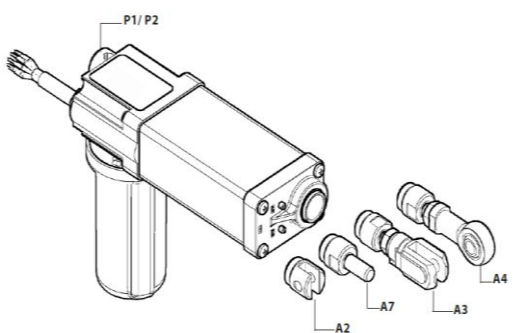
P0 = None P1/P2 = Standard

FRONT END:

A2 = Yoke A3 = Yoke + Clip

A4 = Rod end A7 = M8x20 male

NOTE: COMPLETE THE ORDERING KEY ADDING THE OPTIONS YOU CAN FIND IN THE "ACCESSORIES AND OPTIONS" SECTION ON THE BIRCCRAFT WEBSITE.



NOTES:

"B" dimension changes according to model

ALI1-F = See pictures

ALI1-F stroke > 240 mm = + 13 mm