



Actuator LA31
Data sheet

LA31

The LA31 is a compact, quiet and powerful actuator designed for a variety of applications in the MEDLINE® & CARELINE® segment, such as hospital beds, couches and nursing home beds.

The standard LA31 actuator features known parts such as piston rod eye with slot, and comes in different variations with e.g. fast motor, hall positioning and emergency lowering. The LA31 actuator has exchangeable cables and is ideal in combination with OpenBus™ control boxes.

The LA31 actuator has an ingress protection of IPX6 and is available in version with up to 6000N in push and 4000N in pull.



Features and options:

- 24 V DC permanent magnet motor
- Thrust up to 6000 N in push and 4000 N in pull
- Electric chromated steel piston rod eye with slot
- High-strength plastic housing protects motor and gears
- Elegant and compact design with small installation dimensions
- Standard protection class: IPX1, IPX4, IPX6
- Colour: black, grey, dark grey
- 2.25 m straight cable
- Built-in limit switches (not adjustable)
- Scratch and wear-resistant powder painting on outer tube Ø30 mm
- Zinc alloy back fixture
- Strong wear and corrosion resistant stainless steel inner tube
- Noise level 48dB(A); measuring method DS/EN ISO 3743-1, actuator not loaded.
- Winding isolation class F (155 degrees)
- LA31 Basic version MEDLINE® & CARELINE® (no slot in piston rod eye)
- Flexible back fixture (choose when choosing motor 2 for recliner application)
- Reed switch (8 pulses per spindle revolution) for exact positioning of memory control and compatibility with CB9P)
- Hall positioning (for use with CB6 OBF, CB16 OBF, CB20)
- Fast motor
- Mechanical splines (the actuator can only push)
- Jack plug for use with other control boxes than CB9
- Mini-fit cable for use with OpenBus™
- IPX6: only with cable placement standard and forward (only when actuator fully retracted)
- 0.2/0.4 m coiled cable with DIN or Jack plug
- Safety nut in push
- Mechanical end stop in both directions is possible as an option
- Exchangeable cables (also for DIN Reed)
- Manual lowering
- Hall Potentiometer (not with EL or mechanical spline). Cannot be used with LINAK control boxes
- Can be mounted together with CB7 or CB9 (without cable)
- Brake in either push or pull is possible as an option

Usage:

- Duty cycle: Max 10% or 2 minutes continuous use followed by 18 minutes not in use
- Ambient temperature +5°C to +40°C
- The MEDLINE® & CARELINE® system has full compliance with EN 60601-1

LA31 MEDLINE® & CARELINE®
Ordering example

XX 001 000 A P 00 0 0 - 1 0 1 0 0 XXXX 2 1 S 0 0 0

		Not used	
		Not used	
		Safety factor:	0 = 2.0 1 = 1.5 2 = 2.5
		Cable:	0 = None C = Coiled E = Exchangable (female)
		Plug Type:	S = Straight X = Special
		Fire Category:	A = JACK B = DIN C = Flying leads D = Mini-fit
		Install. Dim.:	E = (Molex) F = DL plug V = Angled Minifit X = Special
		Brake:	0 = None 1 = V0 3 = HB
		Option Position:	XXXX = mm (see later pages)
		Piston Rod Eye:	0 = None 1 = Brake PUSH 2 = Brake PULL
		Back fixture:	0 = None A = Internal QR *) B = QUICK-RELEASE *)
		Colour:	C = Manual lowering D = Free Wheel X = Other
		IP:	0 = None 1 = With slot 2 = Solid
		Motor Type:	3 = LP X = Special
		PCB Options:	0 = None 1 = 0 degrees 2 = 90 degrees
		Positioning:	3 = LP X = Special
		Safety:	1 = Black RAL 9005 2 = Grey RAL7035
		Stroke Length:	3 = Dark grey RAL7016 X = Special
		Spindle Pitch:	1 = IPx1 4 = IPx4
		Actuator Type:	6 = IPx6
			A = 12 V DC Normal B = 24 V DC Normal X = Other
			D = 12 V DC fast E = 24 V DC fast F = 24 V DC fast DOB. Wormgear
			00 = None
			0 = None H = Hall R = Reed
			Z = Hall potentiometer X = Special
			0 = None A = Safety nut
			E = Mechanical end stop F = Mechanical end stop + Safety nut G = Mechanical end stop + Spline H = Mechanical end stop + Spline + Safety nut X = Special
			C = Spline D = Spline + Safety nut.
			XXX = mm
			0 - 250 mm max. 6000N (see later pages) 250 - 350 mm max. 4000N (see later pages)
			030 = 3 mm 040 = 4 mm 050 = 5 mm 060 = 6 mm 090 = 9 mm 120 = 12 mm
			XX = LAxx

*) QR versions are not available for sale to new projects. We recommend to use LA40 QR.

N.B. Always configure the LA31 in the configurator Econ Smart Client before ordering.

**Installation dimensions
with different combinations of features/back fixtures**

LA31 standard

LA31 Standard				
	Stroke (mm)			
	Length ≤ 115	115 < Length ≤ 250	250 < Length ≤ 300	300 < Length ≤ 350
Max. load =	6000 N	6000 N	4000 N	4000 N
Piston rod eyes: 0, 1, 2 and 3				
Back fixture	BID (minimum)	BID	BID	BID
1/2 and 7/8	288 mm	S + 173 mm	S + 192 mm	S + 212 mm
5/6	288 mm	S + 173 mm	S + 192 mm	S + 212 mm
A/B	291 mm	S + 176 mm	S + 195 mm	S + 215 mm

Explanation of table:

- Min. installation dimension = 288 mm when the stroke is ≤ 115 mm.
- Min. installation dimension is S + 173 when the stroke length is 115 < Length ≤ 250 and S + 176 with A/B type back fixture.
- Min. installation dimension is S + 192 when the stroke > 250 mm and S + 195 with A/B type back fixture.
- Min. installation dimension is S + 212 when the stroke > 300 mm and S + 215 with A/B type back fixture.
- BID = Built-in dimension

LA31 with mechanical splines

LA31 mechanical splines				
	Stroke (mm)			
	Length ≤ 100	100 < Length ≤ 250	250 < Length ≤ 300	300 < Length ≤ 350
Max. load =	6000 N	6000 N	4000 N	4000 N
Piston rod eyes: 0, 1, 2 and 3				
Back fixture	BID (minimum)	BID	BID	BID
1/2 and 7/8	289 mm	S + 189 mm	S + 189 mm	S + 211 mm
5/6	289 mm	S + 189 mm	S + 189 mm	S + 211 mm
A/B	292 mm	S + 192 mm	S + 192 mm	S + 214 mm

LA31 with mechanical end stop

LA31 mechanical end stop				
	Stroke (mm)			
	Length ≤ 95	95 < Length ≤ 250	250 < Length ≤ 300	300 < Length ≤ 350
Max. load =	6000 N	6000 N	4000 N	4000 N
Piston rod eyes: 0, 1, 2 and 3				
Back fixture	BID (minimum)	BID	BID	BID
1/2 and 7/8	288 mm	S + 193 mm	S + 193 mm	S + 212 mm
5/6	288 mm	S + 193 mm	S + 193 mm	S + 212 mm
A/B	291 mm	S + 196 mm	S + 196 mm	S + 215 mm

For patient lifts the following correlation between stroke length and built-in dimension is needed in order to live up to the required safety factor of 1.5 according to EN10535. The complete application must be tested in order to comply with Safety Factor 1.5.

LA31 with mechanical splines+ML+mechanical end stop to patient lifts

LA31 mechanical splines+ML+mechanical end stop to patient lifts			
	Stroke (mm)		
	Length ≤ 100	100 < Length ≤ 250	250 < Length ≤ 300
Max. load =	6000 N	6000 N	6000 N
Piston rod eyes: 0, 1, 2 and 3			
Back fixture	BID (minimum)	BID	BID
1/2 and 7/8	374 mm	S + 274 mm	S + 274 mm
5/6	374 mm	S + 274 mm	S + 274 mm
A/B	377 mm	S + 277 mm	S + 277 mm

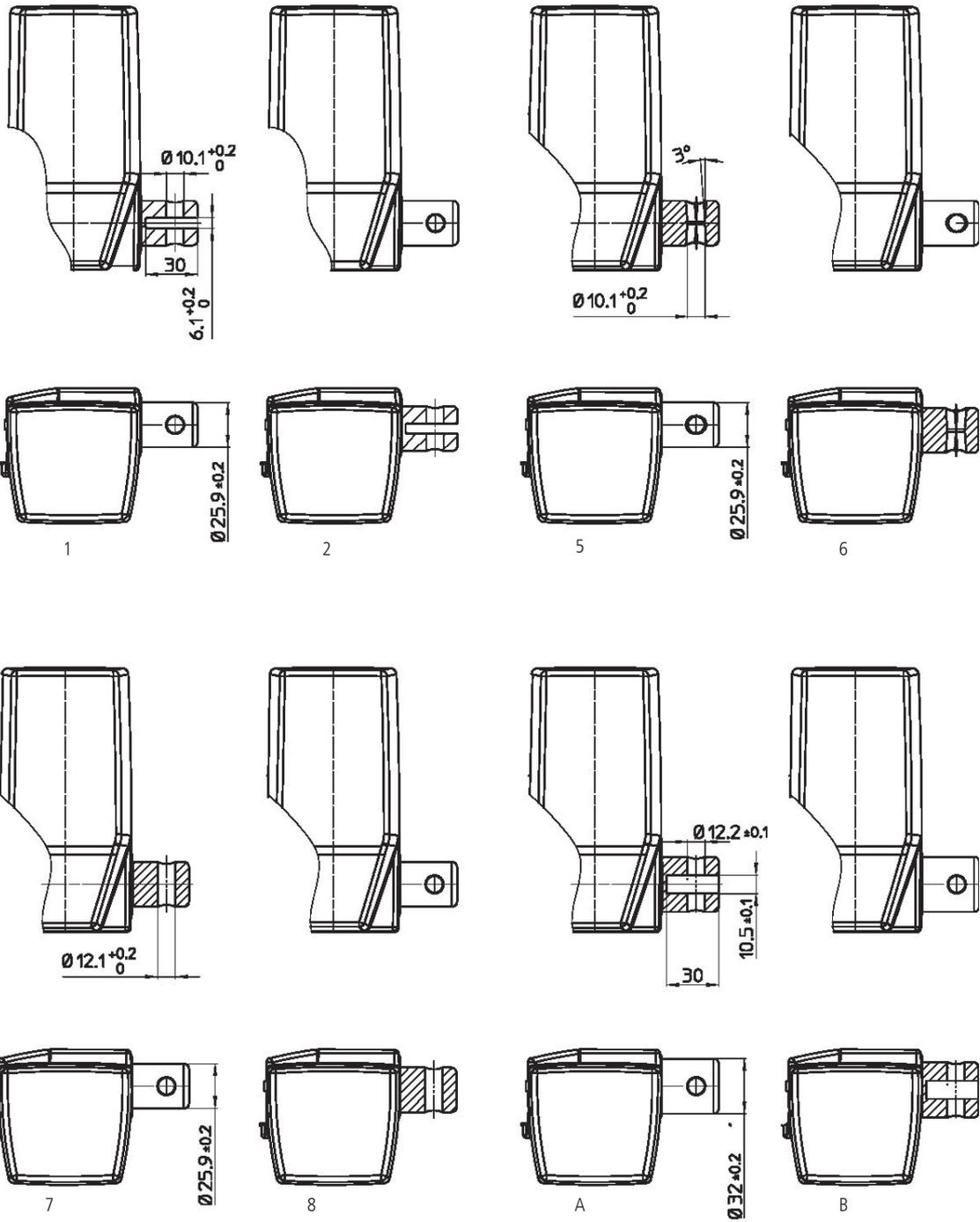
- With manual lowering the installation dimension is increased as shown above, include SPLINE, MECHANICAL END STOP + 50 mm OVERLAP (20 mm from mechanical endstop is included in the 50 mm).

LA31 mechanical splines + mechanical end stop - to patient lifts

LA31 mechanical splines + mechanical end stop to patient lifts			
	Stroke (mm)		
	Length ≤ 100	100 < Length ≤ 250	250 < Length ≤ 300
Max. load =	6000 N	6000 N	6000 N
Piston rod eyes: 0, 1, 2 and 3			
Back fixture	BID (minimum)	BID	BID
1/2 and 7/8	309 mm	S + 209 mm	S + 219 mm
5/6	309 mm	S + 209 mm	S + 219 mm
A/B	312 mm	S + 212 mm	S + 222 mm

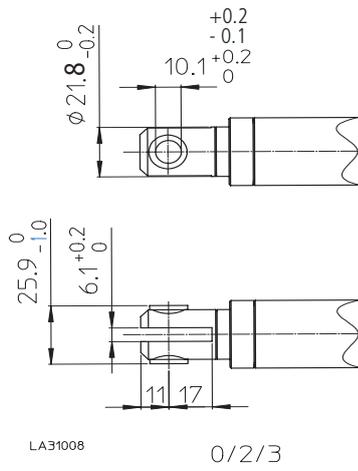
- Side load is max.1000N with stroke lengths up to 300 mm.

Back fixtures:

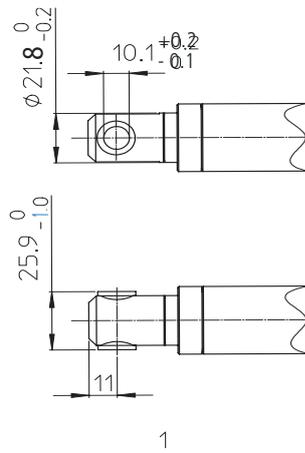


LA31007B

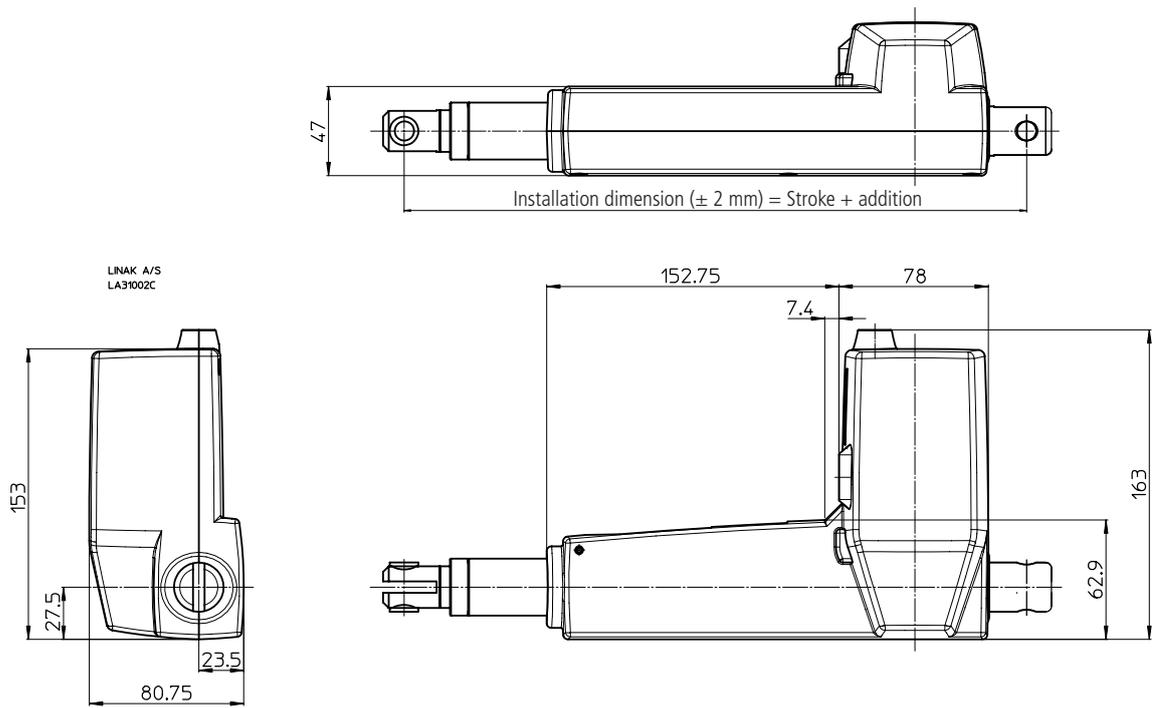
Piston rod eyes:
Standard with slot (only type to be used for QR)



Standard solid:

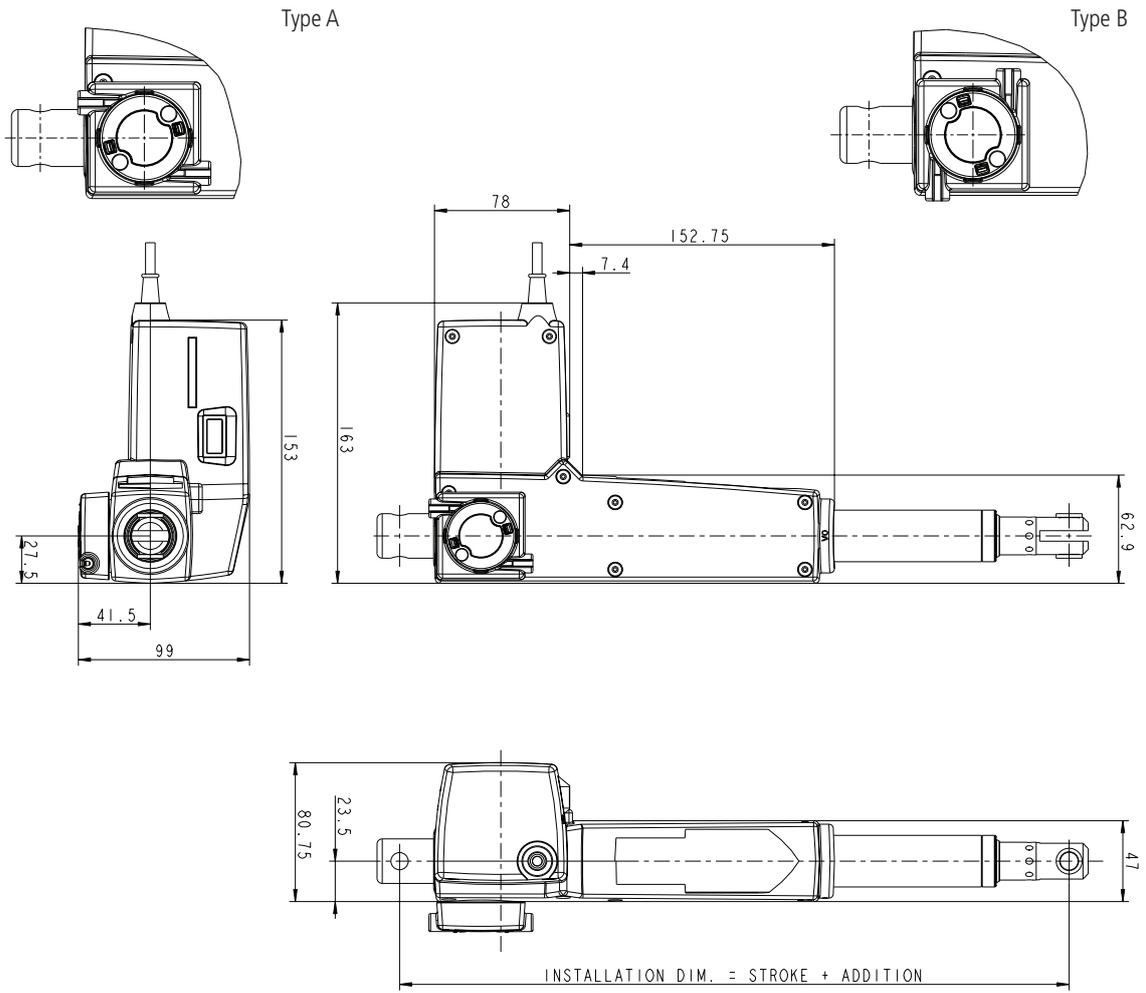


Dimensions LA31



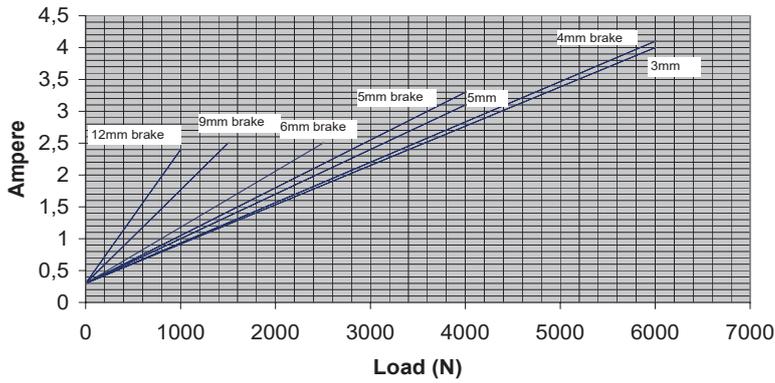
N.B Tolerance information
 ± 2 mm - Installation dimension
 ± 2 mm - Stroke length

Dimensions: LA31 with internal quick release

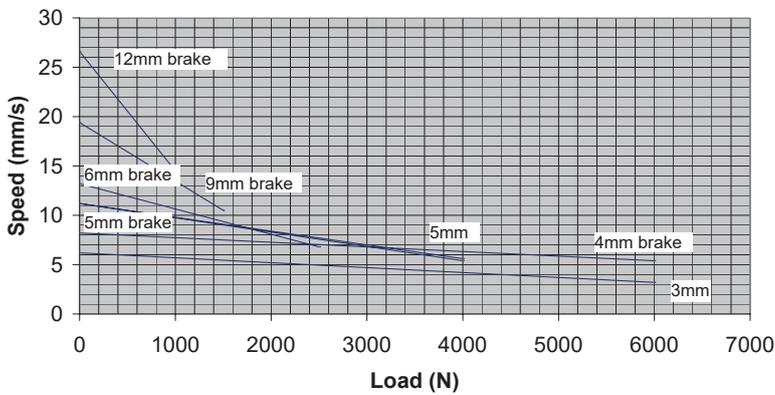


Motor current versus load

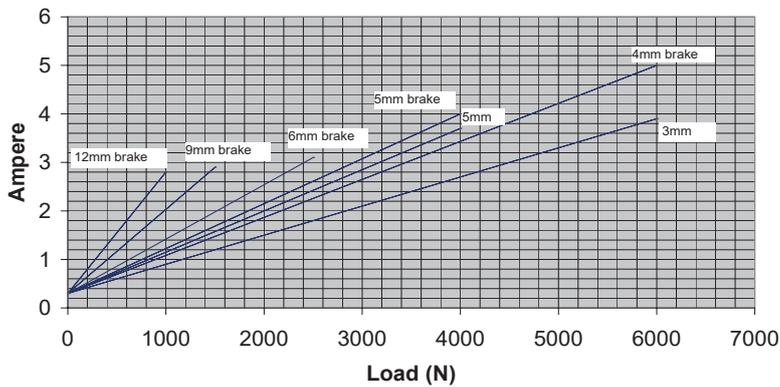
LA31 24V Std. motor current v's load



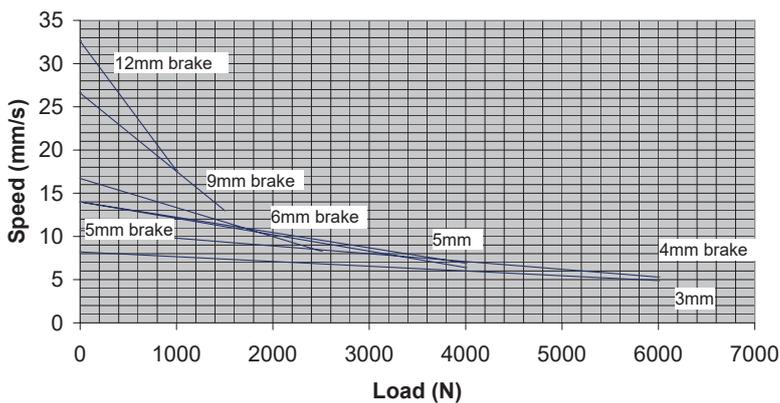
LA31 24V Std. motor speed v's load



LA31 24V Fast motor current v's load



LA31 24V Fast motor speed v's load



LA31 Internal Quick Release:

With a stroke length greater than 115 mm, the installation dim. = Stroke length + 173 mm (with type 5 / 6 back fixture).
 With 115 mm or less the installation dim. will be 288 mm (with type 5 / 6 back fixture).

Standard installation dimensions with different combinations of piston rod eyes and back fixtures to LA31 with Quick Release:

	LA31 Internal Quick release			
	Stroke (mm)			
	Length ≤ 115	115 < Length ≤ 250	250 < Length ≤ 300	300 < Length ≤ 350
Max. load =	3500N	3500N	3500N	3500N
Piston rod eye =	With QR	With QR	With QR	With QR
Back fixture				
1/2 and 7/8				
5/6	288 mm	S + 173 mm	S+192 mm	S + 212 mm
A/B				

Min. installation dimension type A, B = 288 mm
 With Mechanical endstop the installation dimension is increased by 20 mm.
 Max. load with QR = 3500N

LA31 External Quick Release:

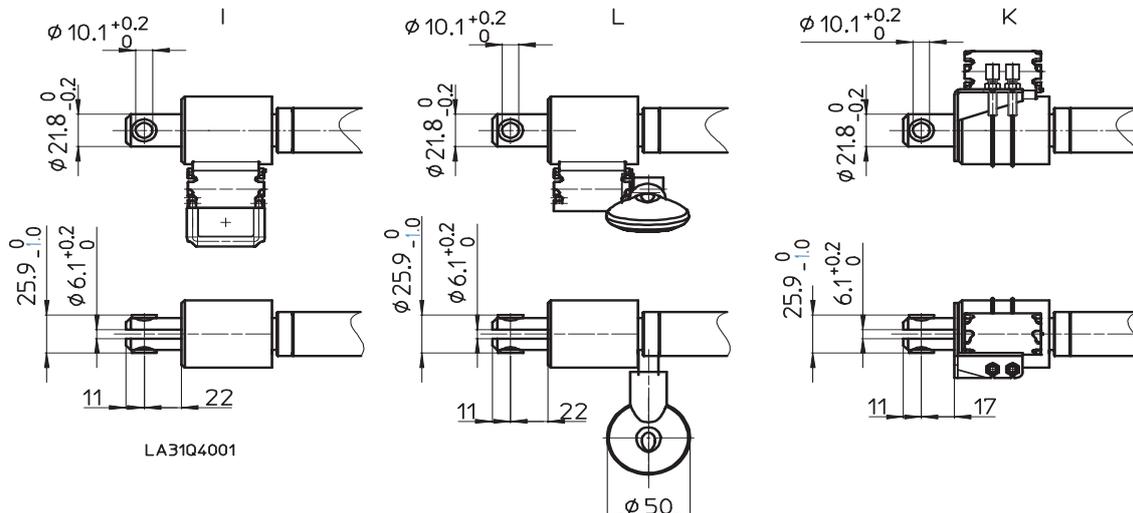
With a stroke length greater than 115 mm, the installation dim. = Stroke length + 227 mm (with type 5 / 6 back fixture).
 With 115 mm or less the installation dim. will be 342 mm (with type 5 / 6 back fixture).

Standard installation dimensions with different combinations of piston rod eyes and back fixtures to LA31 with Quick Release.

	LA31 External Quick release			
	Stroke (mm)			
	Length ≤ 115	115 < Length ≤ 250	250 < Length ≤ 300	300 < Length ≤ 350
Max. load =	3500N	3500N	3500N	3500N
Piston rod eye =	With QR	With QR	With QR	With QR
Back fixture				
1/2 and 7/8				
5/6	342 mm	S + 227 mm	S+246 mm	S + 316 mm
A/B				

Min. installation dimension type I, K, L, M = 342 mm
 With Mechanical endstop the installation dimension is increased by 20 mm.
 Max. load with QR = 3500N

External quick releases:



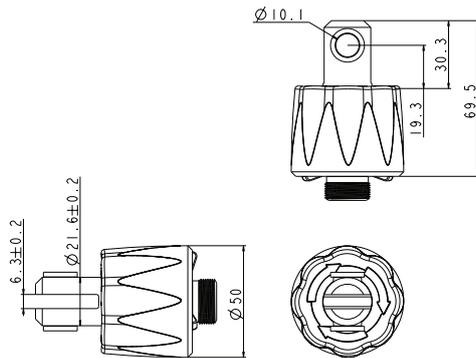
LA31 with manual lowering:



The purpose of the EL (Emergency Lowering) is in case of a powerfailure, to be able to mechanically lower a patient by turning the EL part in the clockwise direction until the actuator is fully lowered.

The EL part substitutes the std. piston rod eye, and its function is intended for patient hoists. In normal operation the EL part will work as a piston rod eye, but in a failure condition the actuator can be lowered by turning the outer ring manually.

Dimensions:



Drawing no. 03111202

Features:

- Mechanical lowering of actuator
- Zinc piston rod eye - slotted
- With Ø10.1 POM bushings
- Max. 6000N in push
- Only 3 mm and 4 mm pitch actuators
- IPx4
- Grey - RAL 7035

Precautions:

- An addition of 35 mm to installation dimension compared to standard (with spline)
- Only for push applications
- Use spline actuators
- Cannot be retro fitted

Terms of use

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