

# Actuator

## LD3

LD3 features its compact design, which is suitable for various applications that require limited installation space, such as window opener and adjustable car driver seat.



### Feature

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- Main applications: Industrial, homecare, furniture
- Input voltage: 12V DC / 24V DC
- Max. load: 1000N (push / pull)
- Max. static load: 2500N (push / pull)
- Max. speed at no load: 43.9 mm/sec
- Max. speed at full load: 5.5 mm/sec @ 1000N
- Stroke: 50 / 100 / 150 / 200 / 250 / 300 mm
- Noise level:  $\leq 70$ dB
- IP Protection level: IP54
- Color: Aluminum grey
- Preset limit switches
- Duty cycle: 25%, max. 1 min. continuous operation in 4 min.
- Ambient operation temperature:  $-25^{\circ}\text{C} \sim +65^{\circ}\text{C}$
- Certified: CE marking, EMC Directive 2014/30/EU and 2004/108/EC

## Option

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- Quiet version (LD3Q, noise level  $\leq 55\text{dB}$ )
- Positioning signal feedback with Hall effect sensor x 1
- Positioning signal feedback with Hall effect sensor x 2
- Analog positioning feedback with Potentiometer (POT)
- IP65 Protection level
- Clamp: Clamp connection is available if rear connector is not preferred. Please contact our sales for details (Fig. 1)
- Mounting bracket (MB22) (Fig. 2)



Fig. 1



Fig. 2

## Compatibility

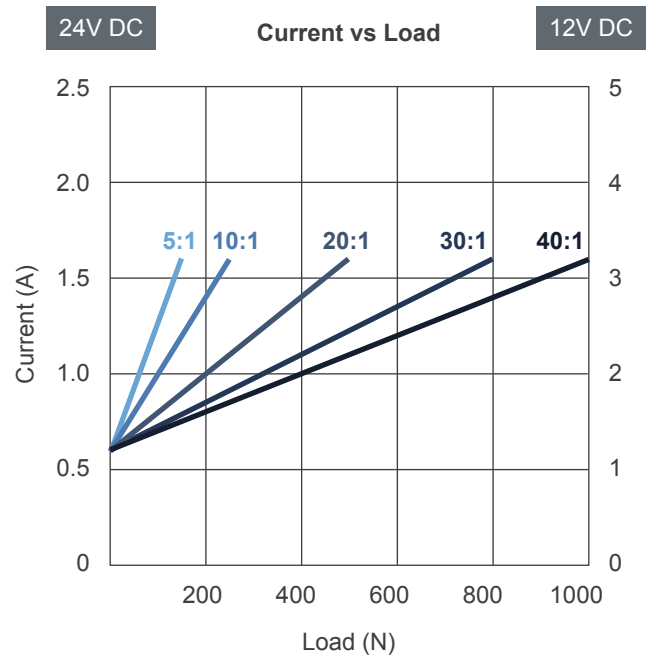
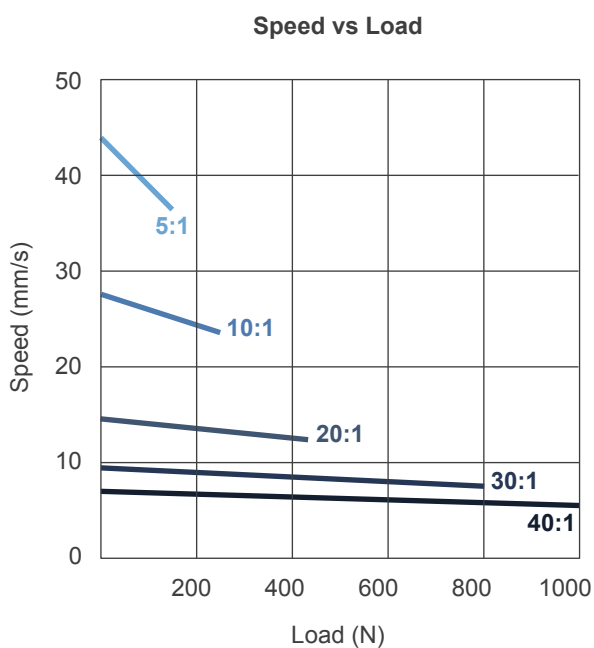
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Product	Model	LD3 spec
Control box	T control, CS1, CS2, CBT2, CB3T, CB4M	- Without positioning sensor feedback - 4-Pin Moteck F-type DIN plug
	CB3T-SY, CB4M-S, CB4M-B	- With dual Hall sensors - 6-Pin Moteck F-type DIN plug

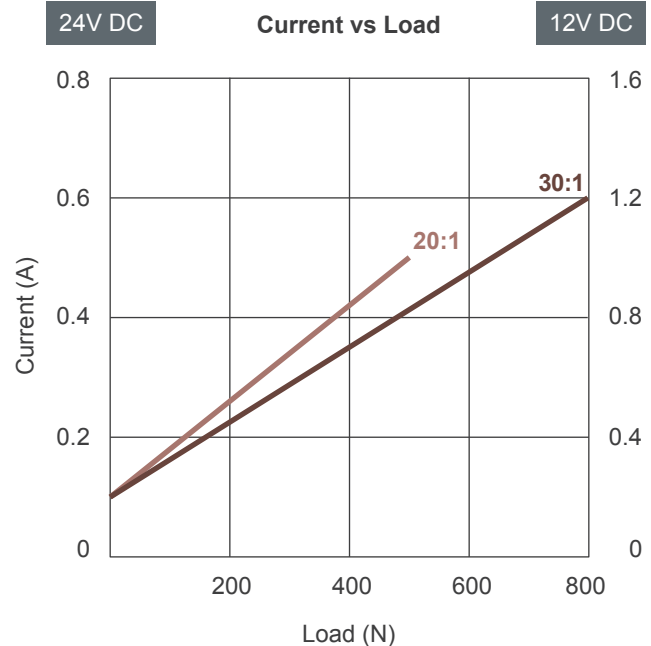
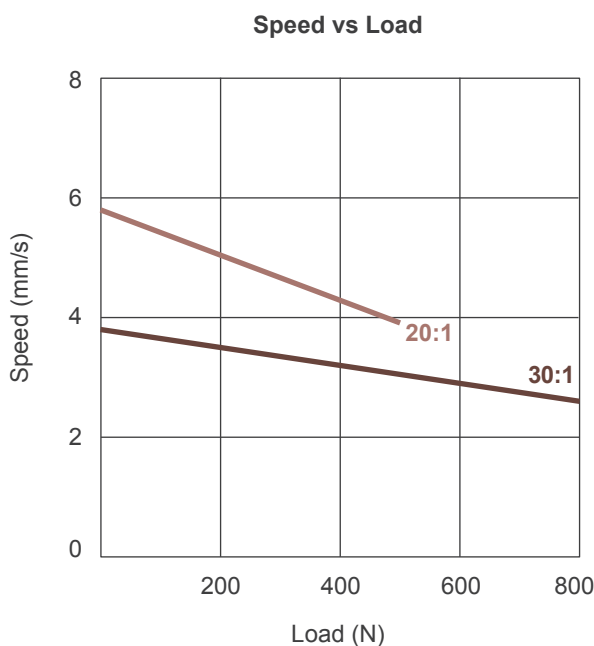
## Performance Data

Model No.	Gear ratio	Push /Pull Max. (N)	Typical speed (mm/s)		Typical current (A)				Noise level (dB)
			No load	Full load	No load		Full load		
					24V	12V	24V	12V	
LD3-XX-05-K3-CXX...	5:1	150	43.9	36.5	0.6	1.2	1.6	3.2	≤70
LD3-XX-10-K3-CXX...	10:1	250	27.6	23.5	0.6	1.2	1.6	3.2	≤70
LD3-XX-20-K3-CXX...	20:1	500	14.6	12.3	0.6	1.2	1.6	3.2	≤70
LD3-XX-30-K3-CXX...	30:1	800	9.5	7.5	0.6	1.2	1.6	3.2	≤70
LD3-XX-40-K3-CXX...	40:1	1000	7.0	5.5	0.6	1.2	1.6	3.2	≤70
LD3Q-XX-20-D3-CXX...	20:1	500	5.8	3.9	0.1	0.2	0.5	1.0	≤55
LD3Q-XX-30-D3-CXX...	30:1	800	3.8	2.6	0.1	0.2	0.6	1.2	≤55

### Normal version (LD3)

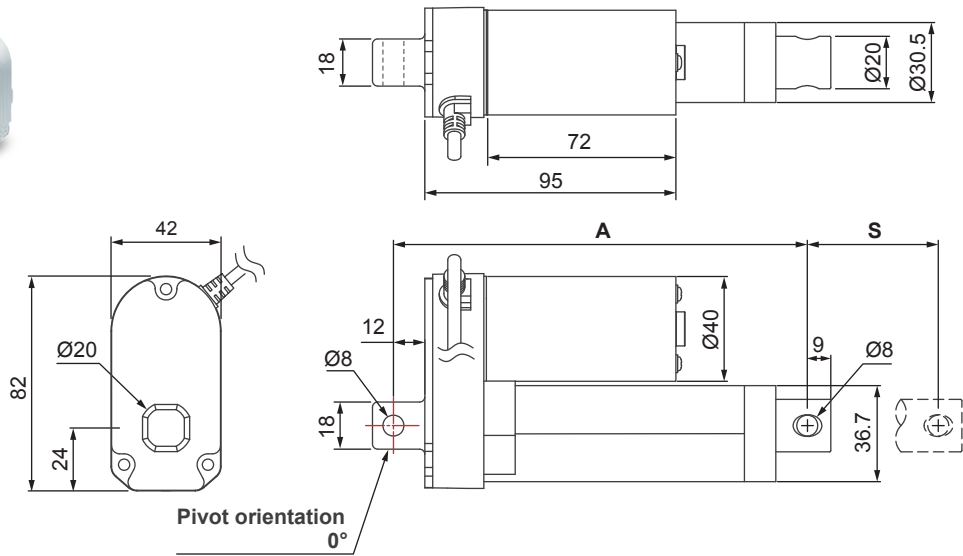


### Quiet version (LD3Q)

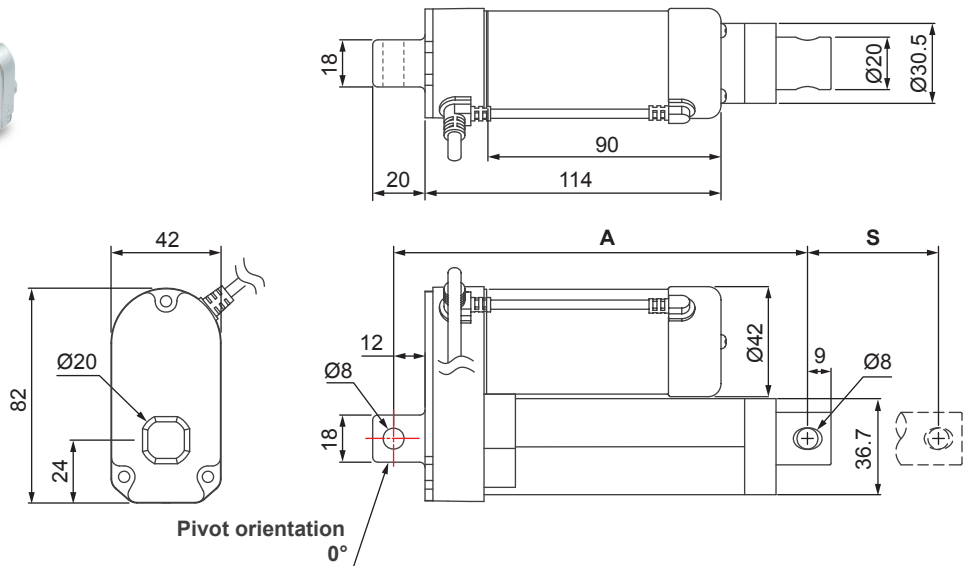


# Dimensions

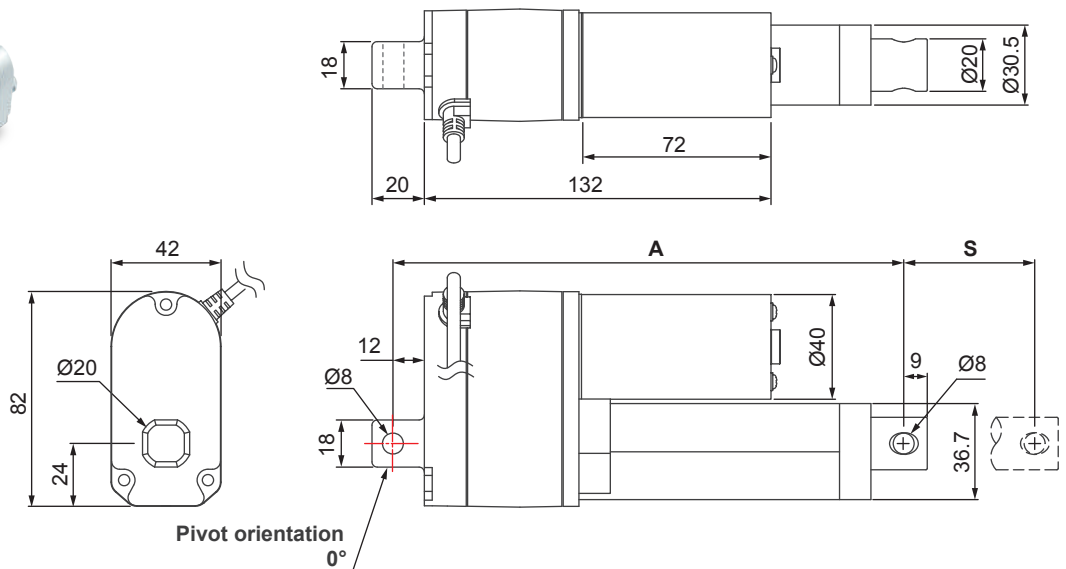
## Standard (without positioning feedback)



## With Hall effect sensor



## With Potentiometer



**Note:** As an example in 0° orientation for rear connector.

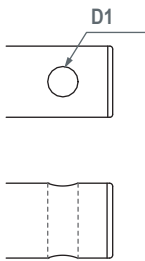
## Installation Dimension

	Option	Front connector code	Stroke (S)					
			50	100	150	200	250	300
Retracted length (A)* (tolerance: ±3mm)	Standard or Hall sensor	1, 4	158	209	260	311	362	413
		3	199	250	301	352	403	454
		6	168.5	219.5	270.5	321.5	372.5	423.5
	POT	1, 4	195	246	297	348	399	450
		3	236	287	338	389	440	491
		6	205.5	256.5	307.5	358.5	409.5	460.5

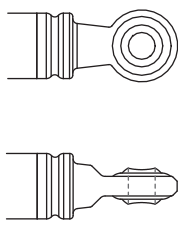
\*Remarks: The dimension "A" is shown in page 4, as indicated in the figure above.

### Front Connector

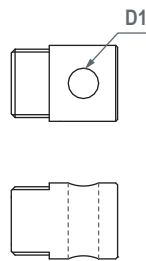
1: Drilled hole



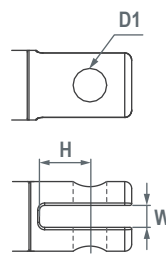
3: Spherical rod eye



4: Plastic solid

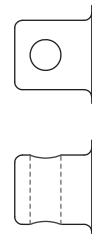


6: Plastic slot



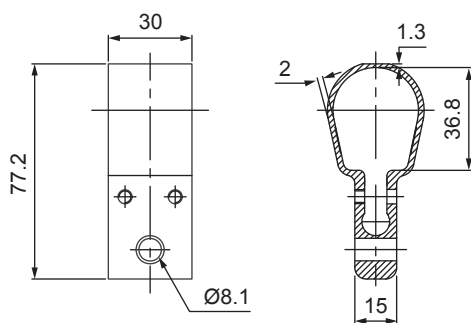
### Rear connector

1: Metal

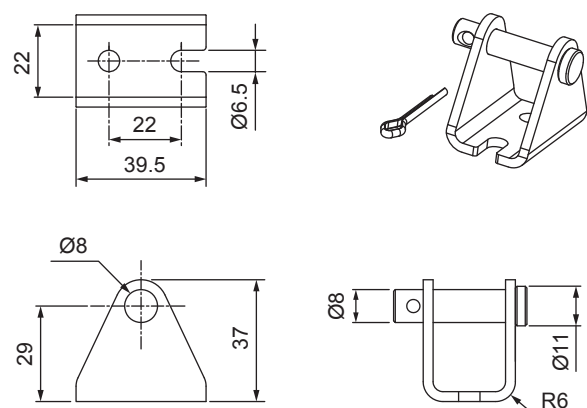


Front connector code	Diameter of pivot without bushing (D1)	Slot width (W)	Slot depth (H)
1	Ø6.4, Ø8, Ø10	N/A	N/A
3	Ø8	N/A	N/A
4	Ø8, Ø10	N/A	N/A
6	Ø8, Ø10	6	15
Rear connector code			
1	Normal version: Ø6.5, Ø8, Ø10	N/A	N/A
	Quiet version: Ø6.4, Ø8, Ø10		

### Clamp

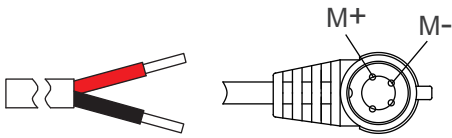


### Mounting bracket (MB22)



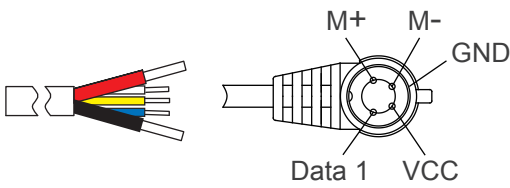
# Wiring & Cable Plug

## Standard



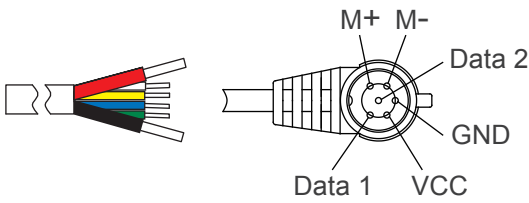
Power	
Red	Black
M+	M-

## With Hall effect sensor x 1



Power		Signal		
Red	Black	White	Yellow	Blue
M+	M-	GND	VCC	Data 1

## With Hall effect sensor x 2

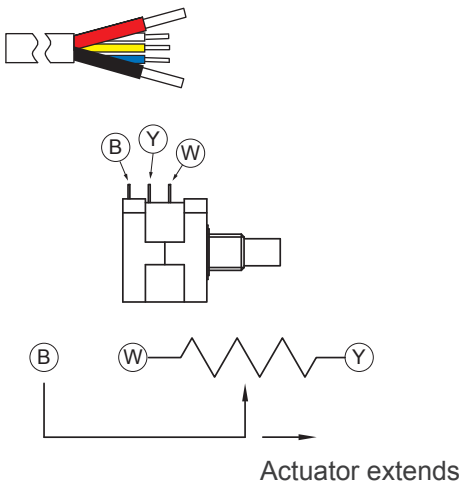


Power		Signal			
Red	Black	White	Yellow	Blue	Green
M+	M-	GND	VCC	Data 1	Data 2

Gear ratio	Resolution (pulses/mm)
5:1	2.3
10:1	3.6
20:1	6.9
30:1	10.6
40:1	14.3

## With potentiometer (POT)

The resistance between blue and white wires increases when the actuator extends, and decreases when it retracts.



Power		Signal		
Red	Black	White	Yellow	Blue
M+	M-	GND	VCC	Data

Stroke (mm)	Resistance (tolerance: $\pm 0.3K\Omega$ )
50	0.3 ~ 9.3K
100	0.3 ~ 9.7K
150	0.3 ~ 8.6K
200	0.3 ~ 9.6K
250	0.3 ~ 9.3K
300	0.3 ~ 9.3K

**Note:** Connect (M+) to '+' & (M-) to '-' of DC power, the actuator will extend.

## Ordering Key

Normal version

**LD3 - 24 - 10 - K3 - 100 - C 1 1 - HS2 - 54 - M2**

<b>Input voltage</b>	<b>12:</b> 12V DC <b>24:</b> 24V DC
<b>Gear ratio</b>	<b>05, 10, 20, 30, 40</b> (Refer to Performance Data)
<b>Motor and Spindle type</b>	<b>K3</b> (Refer to Performance Data)
<b>Stroke</b>	<b>050:</b> 50 mm <b>100:</b> 100 mm <b>150:</b> 150 mm <b>200:</b> 200 mm <b>250:</b> 250 mm <b>300:</b> 300 mm
<b>Front connector</b>	<b>1:</b> Drilled hole <b>3:</b> Spherical rod eye <b>4:</b> Plastic solid <b>6:</b> Plastic slot (Refer to page 5)
<b>Rear connector</b>	<b>1:</b> Metal (Refer to page 5)
<b>Positioning feedback</b>	<b>Blank:</b> None <b>HS1:</b> Hall effect sensor x 1 <b>HS2:</b> Hall effect sensor x 2 <b>POT:</b> Potentiometer
<b>IP Protection level</b>	<b>54:</b> IP54 (standard) <b>65:</b> IP65
<b>Mounting bracket (MB22)</b>	<b>Blank:</b> None <b>M1:</b> Mounting bracket x 1 <b>M2:</b> Mounting bracket x 2

Quiet version

LD3Q - 24 - 10 - D3 - 100 - C 1 1 - HS2 - 54 - M2

<b>Input voltage</b>	12: 12V DC 24: 24V DC
<b>Gear ratio</b>	20, 30 (Refer to Performance Data)
<b>Motor and Spindle type</b>	D3 (Refer to Performance Data)
<b>Stroke</b>	050: 50 mm 100: 100 mm 150: 150 mm 200: 200 mm 250: 250 mm 300: 300 mm
<b>Front connector</b>	1: Drilled hole 3: Spherical rod eye 6: Plastic slot (Refer to page 5)
<b>Rear connector</b>	1: Metal (Refer to page 5)
<b>Positioning feedback</b>	Blank: None HS1: Hall effect sensor x 1 HS2: Hall effect sensor x 2
<b>IP Protection level</b>	54: IP54 (standard) 65: IP65
<b>Mounting bracket (MB22)</b>	Blank: None M1: Mounting bracket x 1 M2: Mounting bracket x 2

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