Actuator
LD40

LD40 is designed for industrial applications. There are two motor positions available which make it more flexible for installation in limited space. Default external reed sensors provide end of stroke indication to control unit. And additional reed sensor is optional as 'position reached' signal feedback.

Features and Options

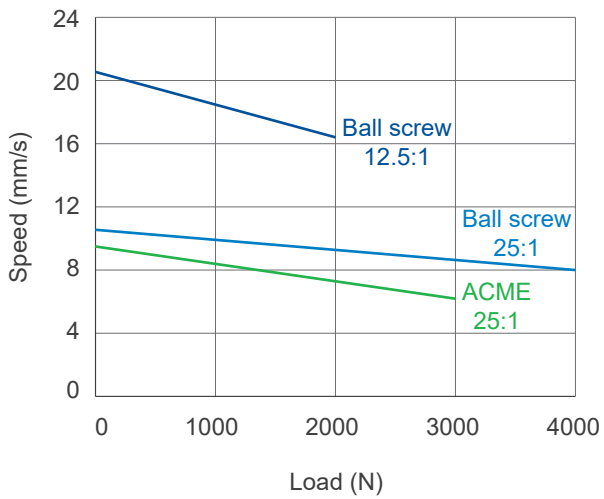
- Main applications: Industry
- Input voltage: 12V DC / 24V DC
- Max. dynamic load: 3000N (ACME screw) / 4000N (Ball screw)
- Max. static load: 4000N (ACME screw) / 6000N (Ball screw)
- Max. speed at no load: 20.5mm/sec (Typical value)
- Stroke: 100 / 150 / 200 / 250 / 300 / 350 / 400mm
- IP level: IP54 (Static; no-action)
- Friction clutch for over load protection (1)
- Motor position: Motor on the right hand side (Standard) / Motor on the left hand side (Option) (refer to page 4)
- External reed switch (ER): 2x ER (Standard) / 3x ER (2) (refer to page 6)
- Positioning: Positioning signal feedback with dual Hall effect sensor (Standard right motor option only)
- Outer tube color: Anodized black
- Stainless extension tube
- Power cord length: 250mm
- Duty cycle: 10%, max. 2 min. continuous operation in 18 min.
- Operating ambient temperature: -25°C ~ +65°C
- Storage ambient temperature: -25°C ~ +65°C
- Certified: CE Marking, EMC Directive 2014/30/EU

Remarks:
(1) The clutch can only be used as a protection device under abnormal conditions, under normal use, the clutch should not be seen to act.
(2) External reed switch is NC-type (i.e. normal close)

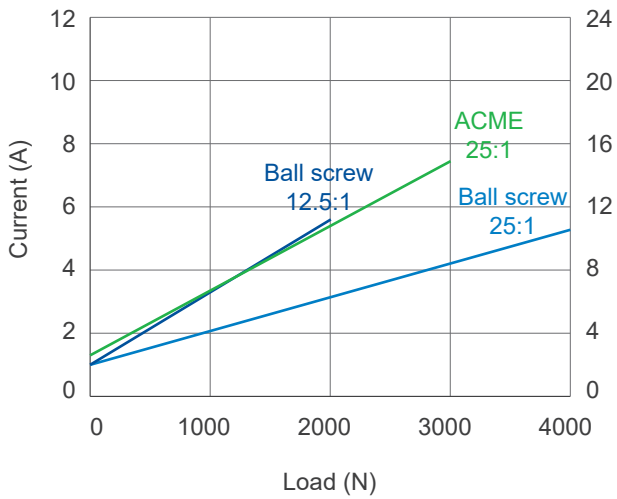
Performance Data

Model No.	Gear ratio	Spindle type	Push/Pull Max. (N)	* Typical speed (mm/s)		* Typical current (A)			
				No load	Full load	No load		Full load	
						12V	24V	12V	24V
LD40-XX-**25F4B**	25:1	Ball screw	4000	10.5	8.0	2.0	1.0	10.5	5.3
LD40-XX-**12F4B**	12.5:1	Ball screw	2000	20.5	16.3	1.9	1.0	11.3	5.6
LD40-XX-**25F4A**	25:1	ACME screw	3000	9.5	6.2	2.5	1.3	15.5	7.3

Speed VS. Load 24V DC



Current VS. Load 12V DC



Remarks:

* The typical speed or typical current means the average value neither upper limit nor lower limit, which measured under room temperature and stable power. The performance curves are made with typical values.

- **Inrush current**

- When the actuator starts to operate, an inrush current of about 0.2 seconds will be generated. The starting inrush current of LD40 can reach about 3 times of the typical current under the actuator load.
- If a circuit board power supply is used, the specifications must be sufficient to handle the inrush current. If batteries are used as the power source, inrush current will not be a problem.
- MOTECK controllers are designed to take into account the inrush current when the actuator starts. If the user provides his or her own controller, this feature must be considered in the specifications and protection mechanisms. Besides, the connectors, switches and relays selected by users must also be able to withstand the starting currents.

Dimensions

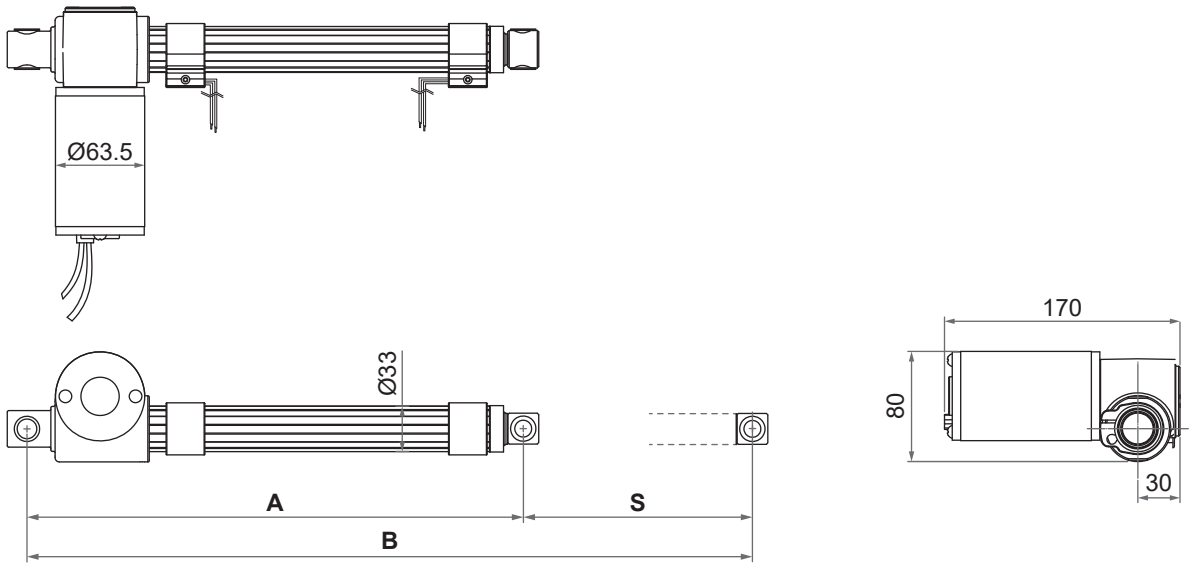
- **Extended length (B)** = Retracted length (A) + Stroke (S)
- **Retracted length (A)** ≧ S+153mm

Stroke (S)	100	150	200	250	300	350	400
Retracted length (A)	253	303	353	403	453	503	553
Extended length (B)	353	453	553	653	753	853	953

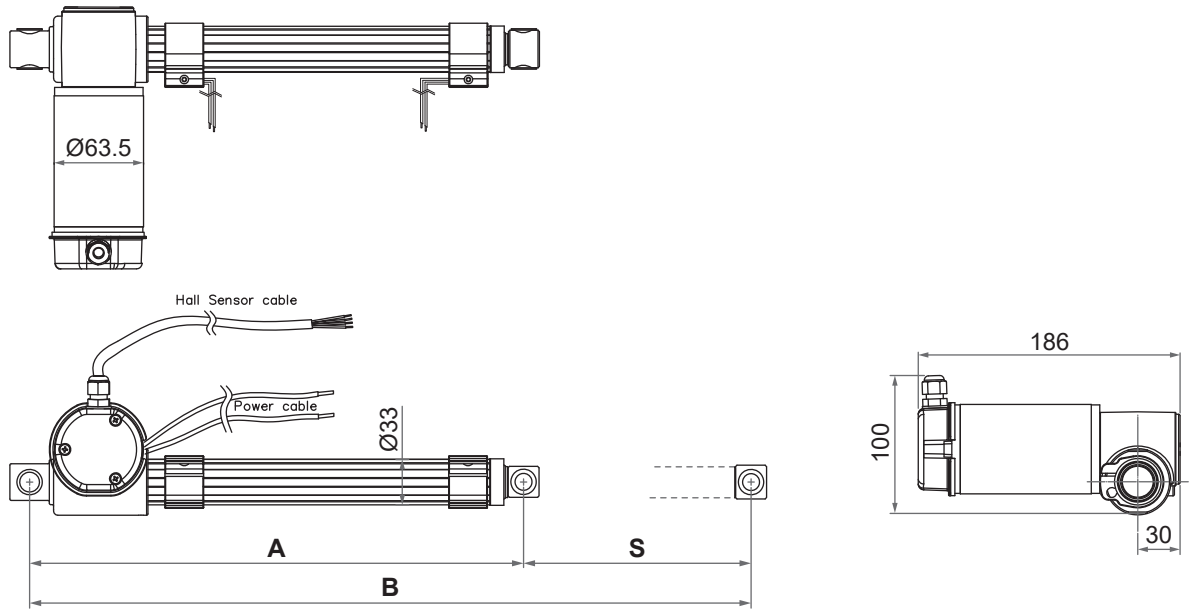
Remarks: The tolerance for stroke length is +0/-5mm, fully retracted length is +/-3mm.

- **Drawing**

- Standard

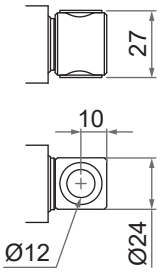


- With dual Hall effect sensors positioning feedback (additional housing attached on the motor)



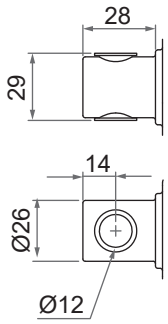
Unit: mm

• Front connector



1: Metal with plastic bushing

• Rear connector



1: Metal with plastic bushing

Unit: mm

• Motor position

Motor on the right hand side (Standard)

Motor on the left hand side (Option)

Compatibility

Product	Model	LD40 spec
Control box	CI10 *	• 24V motor • Without positioning sensor feedback
Controller	CI72	• Standard
	CI73	• 24V motor • With Hall effect sensor feedback-NPN type

Remarks:

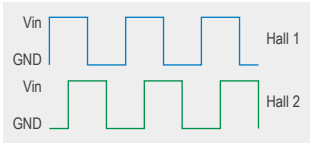
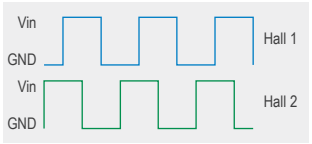
* CI10 could not automatically stop LD40 in response to its end of stroke signal feedback. Users must control it manually.

Cable with Flying Leads

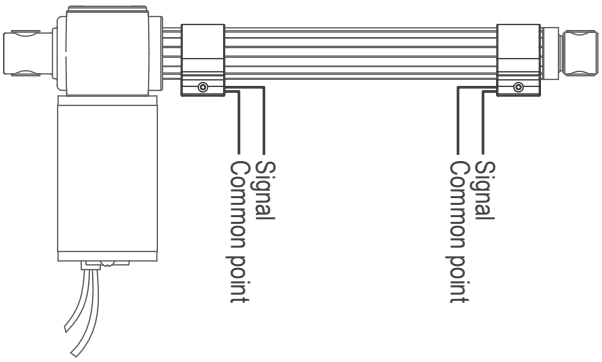
● Standard (without positioning feedback)

	Wire color	Definition	Descriptions
Power wires	Red	DC power	Connect red wire to “Vdc +” & black wire to “Vdc -“ of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	Black		

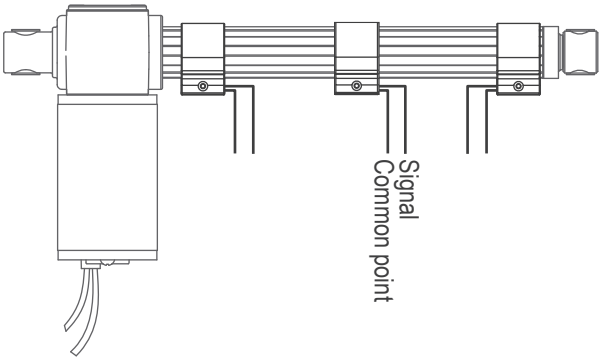
● With dual Hall effect sensors positioning feedback

	Wire color	Definition	Descriptions
Power wires	Red	DC power	Connect red wire to “Vdc +” & black wire to “Vdc -“ of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	Black		
Signal wires	Yellow	Vin	Voltage input range (Vin): 5 ~ 20V
	Blue	Hall 1 output	High= Input - 1.2V (±0.6V) Low= GND Hall signal data:  Actuator extends  Actuator retracts Hall effect sensor resolution: Model / Resolution (pulse/mm) LD40-XX-25F4B-XXX.XXX-11-XX**H**4X / 25 LD40-XX-12F4B-XXX.XXX-11-XX**H**4X / 12.5 LD40-XX-25F4A-XXX.XXX-11-XX**H**4X / 25
	Green	Hall 2 output	
	White	GND	

- **External reed sensors for 'end of stroke indication'**
  Pick either one of wires on each sensor and connect them as common point, then the other one is defined as signal input.



- **The 3rd reed sensor (for 'position reached' signal feedback)**
  The third one must be installed in between the other two, as shown below.



Certifications

LD40 actuator is compliant with the following regulations, in terms of the essential conformity requirements of EMC Directive of 2014/30/EU.

Emission	Immunity
EN 61000-6-3:2007+A1:2011	EN 61000-6-1:2007 IEC 61000-4-2:2008 IEC 61000-4-3:2006+A1:2007+A2:2010 IEC 61000-4-8:2009

Ordering Key

LD40 - 24 - 25 F 4B - 253 . 353 - 1 1 - R 2 0 4 2

Input voltage	**12**: 12V DC **24**: 24V DC
Gear ratio	**12**: 12.5:1 **25**: 25:1
Motor code	**F**: 3900rpm
Spindle type	**4B**: Ball screw, 4mm pitch **4A**: ACME screw, 4mm pitch
Retracted length (Refer to Page 3)	**XXX**
Extended length (Refer to Page 3)	**XXX**
Front connector (Refer to Page 4)	**1**: Metal with plastic bushing
Rear connector (Refer to Page 4)	**1**: Metal with plastic bushing
Motor position (Refer to Page 4)	**R**: Motor on the right hand side (Standard) **L**: Motor on the left hand side (Option)
Reed sensor (Refer to Page 6)	**2**: Reed sensor x 2 (Standard) **3**: Reed sensor x 3 (Please define the 3rd reed sensor position)
Positioning feedback	**0**: None **H**: Hall effect sensor x 2 (Motor position R only)
IP level	**4**: IP54
Cable length	**2**: 250mm **5**: 500mm **A**: 1000mm