

# Actuator

## LD12

The LD12 actuator has a tubular in-line shape with no obtrusive parts and is especially useful for applications with tight installation spaces. In addition to the high IP rating, a full body SUS304 stainless steel option is also available. It is suitable for automation industries such as shipbuilding and food engineering.



### Features and Option

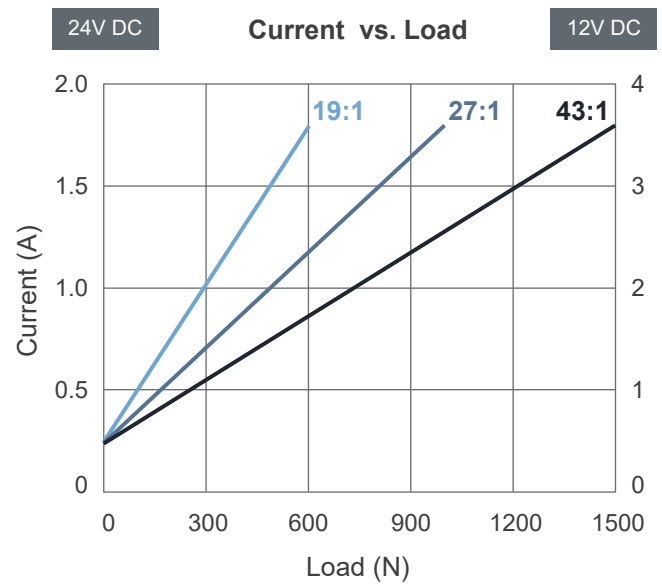
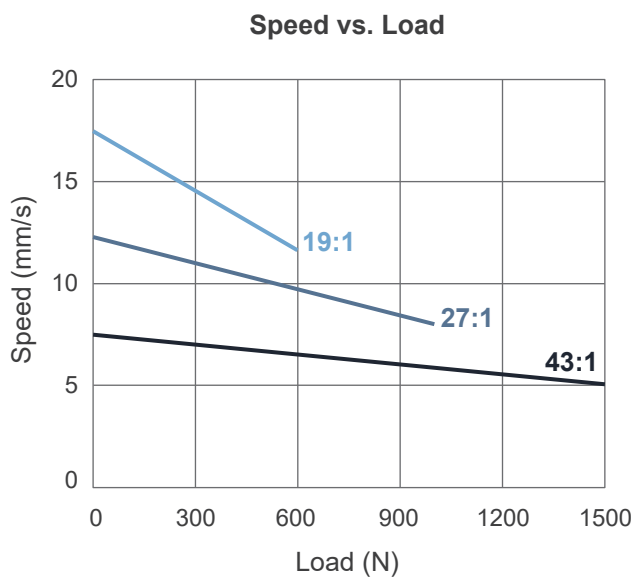
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- Main application: Industrial
- Input voltage: 12V DC / 24V DC
- Max. load: 1500N (Push / Pull)
- Max. static load: 1800N
- Speed at no load: 17.4mm/sec (typical value)
- Speed at full load: 5mm/sec (typical value @1500N loaded)
- Stroke: 50 / 100 / 150 / 200 / 250 / 300 / 350 / 400mm
- IP level: IP66, IP69K
- Material: All stainless steel "SUS304" / Black coating steel case
- Duty cycle: 10%, max. 2 min. continuous operation in 20 min.
- Operating ambient temperature: -20°C ~ +70°C
- Certified: CE Marking, Electromagnetic Compatibility Directive 2014/30/EU
- Option: Positioning signal feedback with Hall effect sensor x 2

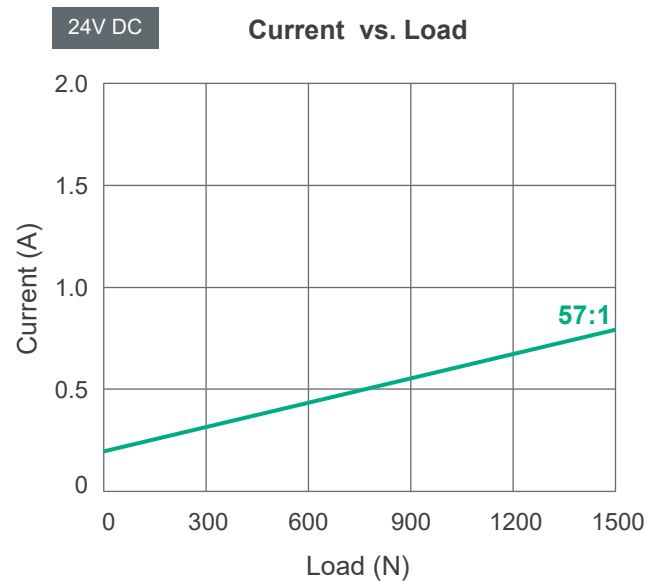
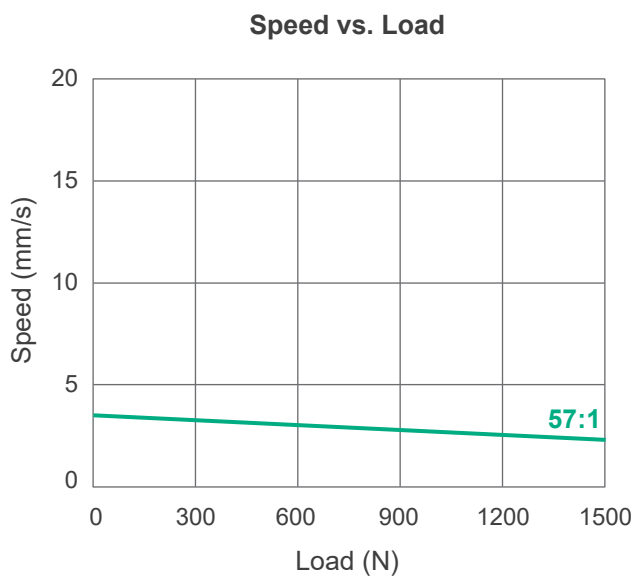
## Performance Data

Model No.	Gear ratio	Push/Pull load Max. (N)	** Typical speed (mm/s)		** Typical current (A)			
			No load	Full load	No load		Full load	
					12V	24V	12V	24V
LD12-XX19-M2-XXX.XXX-XXXXXXX	19:1	600	17.4	11.7	0.5	0.25	3.6	1.8
LD12-XX27-M2-XXX.XXX-XXXXXXX	27:1	1000	12.3	8.0	0.5	0.25	3.6	1.8
LD12-XX43-M2-XXX.XXX-XXXXXXX	43:1	1500	7.5	5.0	0.5	0.25	3.6	1.8
*LD12-2457-K2-XXX.XXX-XXXXXXX	57:1	1500	3.5	2.3	N/A	0.20	N/A	0.8

### • Motor type M2



### • Motor type K2



### Remarks:

- \* 2457-K2 is designed for applications requiring lower noise but less speed concern. 24VDC available only.
- \*\* The typical speed or typical current means the average value neither upper limit nor lower limit. The performance curves are made with typical values.

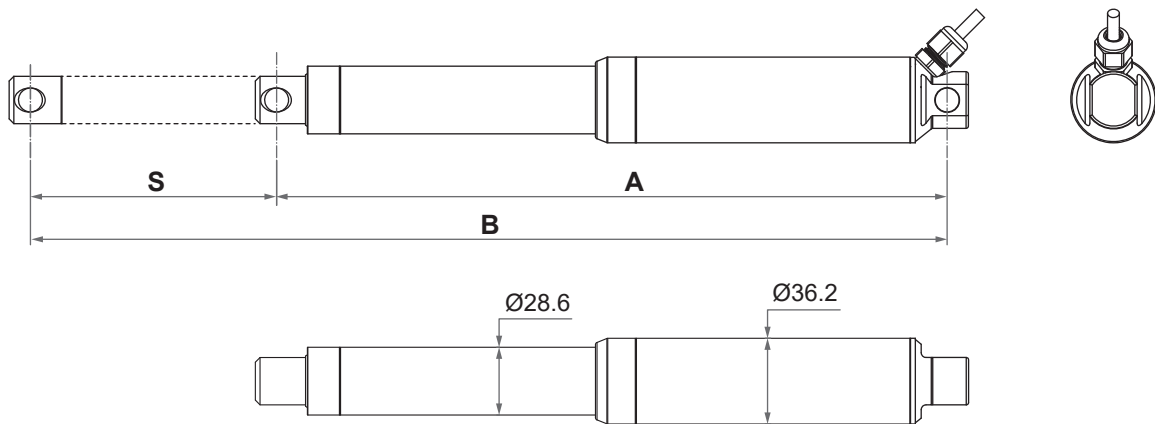
# Dimensions

- Extended length (B) = Retracted length (A) + Stroke (S)
- Retracted length (A)

Front connector code	Rear connector code	Stroke (S)							
		50	100	150	200	250	300	350	400
1	1	233	283	333	383	433	483	533	583
1	2	248	298	348	398	448	498	548	598
2	1	237	287	337	387	437	487	537	587
2	2	252	302	352	402	452	502	552	602
3	3	233	283	333	383	433	483	533	583

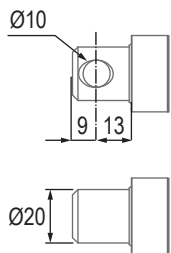
(tolerance: ±3mm)

## • Drawing

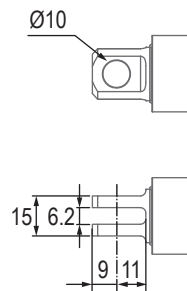


## • Front connector

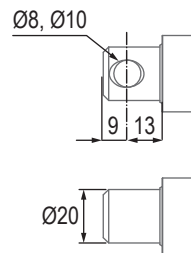
1=Stainless steel solid



2=Stainless steel slot

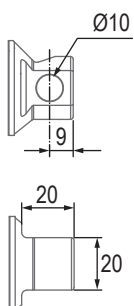


3=Aluminum solid  
(Black coating steel case only)

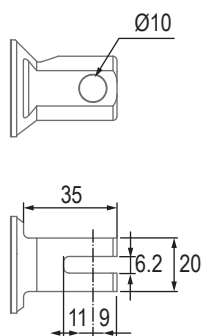


## • Rear connector

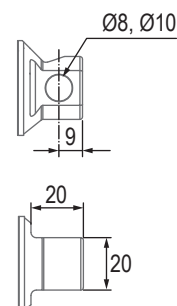
1=Stainless steel solid



2=Stainless steel slot



3=Aluminum solid  
(Black coating steel case only)



Unit: mm

## Compatibility

Product	Model	LD12 spec
Controller	CI72	Standard
Accessory	MB22 mounting bracket (Fig. 1)	Standard, mounting hole $\varnothing 8\text{mm}$ or $\varnothing 10\text{mm}$



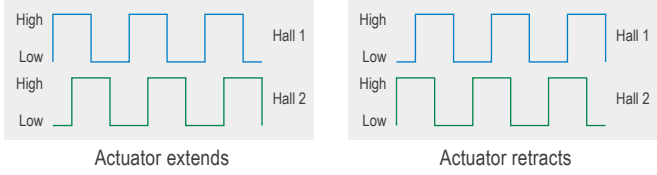
Fig. 1

## Cable with Flying Leads

- Basic, 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: 5 ~ 20V										
	Blue	Hall 1 output	High= Input - 1.2V ( $\pm 0.6\text{V}$ ) Low= GND Hall signal data: 										
	Green	Hall 2 output	Hall effect sensor resolution: <table border="1" data-bbox="730 1825 1390 2042"> <thead> <tr> <th>Gear ratio</th> <th>Resolution (pulses/mm)</th> </tr> </thead> <tbody> <tr> <td>19:1</td> <td>9.56</td> </tr> <tr> <td>27:1</td> <td>13.50</td> </tr> <tr> <td>43:1</td> <td>21.45</td> </tr> <tr> <td>57.1</td> <td>28.43</td> </tr> </tbody> </table>	Gear ratio	Resolution (pulses/mm)	19:1	9.56	27:1	13.50	43:1	21.45	57.1	28.43
	Gear ratio	Resolution (pulses/mm)											
19:1	9.56												
27:1	13.50												
43:1	21.45												
57.1	28.43												
White	GND												

## Ordering Key

LD12- 24 43 - M2 - 183 - 283 - S 1 1 9 H 0 1

<b>Input voltage</b>	12: 12V DC 24: 24V DC
<b>Gear ratio</b>	19: 19:1 (600N) 27: 27:1 (1000N) 43: 43:1 (1500N) 57: 57:1 (1500N, for 2457-K2 only)
<b>Motor and spindle type</b>	M2: 10000rpm / 2mm pitch K2: 6000rpm / 2mm pitch
<b>Retracted length</b> <i>(Refer to Page 3)</i>	XXX
<b>Extended length</b> <i>(Refer to Page 3)</i>	XXX
<b>Exterior</b>	S: All stainless steel "SUS304" B: Black coating steel case and aluminum inner tube
<b>Front connector</b> <i>(Refer to Page 3)</i>	1: Stainless steel solid 2: Stainless steel slot 3: Aluminum solid (for black coating steel case only)
<b>Rear connector</b> <i>(Refer to Page 3)</i>	1: Stainless steel solid 2: Stainless steel slot 3: Aluminum solid (for black coating steel case only)
<b>IP level</b>	6: IP66 9: IP66/IP69K (for All stainless steel "SUS304")
<b>Positioning feedback</b>	0: None H: Hall effect sensor x 2
<b>Reserved</b>	0
<b>Cable length</b>	1: 1000mm straight 2: 1500mm straight

## Attentions

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LD12 is without built-in mechanical limit switches, and is suggested to be used with Hall sensor feedback included. Also it is strongly suggested that the customer provides a over-current protection device in the power circuit with a value setting around 1.5 times the typical full load current. It's important that LD12 work with a control system that prevents the actuators from constantly hitting its internal end positions, which will reduce the actuator lifespan.

## Certifications

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LD12 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+AC:2012	EN 61000-6-1:2007 IEC 61000-4-2:2008 IEC 61000-4-3:2006+A1:2007+A2:2010 IEC 61000-4-8:2009

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