

Actuator

ID12

ID12 has the same performance of load capability, speed, and power consumption as ID10. However, ID12 features its square outer tube, which makes it easy to install and apply the external reed sensor on demand.



Features and Options

Main applications: Industrial

Standard features:

- Input voltage: 12 / 24 / 48V DC
- Max. rated load: 3,500N (ACME) / 7,000N (Ball Screw)
- Max. static load: 4,500N (ACME) / 13,600N (Ball Screw)
- Max. speed at no load: 72.1 mm/sec (Typical value)
- Stroke: 100 / 150 / 200 / 300 / 450 / 600mm
- IP Level: IP66, IP69K
- Overload protection by clutch
- Aluminum outer tube
- Stainless steel extension tube
- Color: Black gearbox and motor
- Power cord length: 250mm (with bare wires)
- Duty cycle: 25%, max. 2 min. continuous operation in 8 min.
- Operating ambient temperature: -25°C ~ +65°C
- Certified: CE Marking, EMC Directive 2014/30/EU

Options:

- Positioning signal feedback with Hall effect sensor x 1
- Analog and absolute positioning feedback with Potentiometer (POT)
- Preset limit switches (LT), to stop motor automatically at both stroke ends by cutting power.
- External adjustable reed sensor. NC-type (i.e. normal close) is default.
And NO-type (i.e. normal open) is also available, please indicate to sales window if required.
- Manual drive socket (MD, can be driven by hand with a 8 mm hex bit screwdriver or electric screwdriver)
- Mounting bracket (MB30)

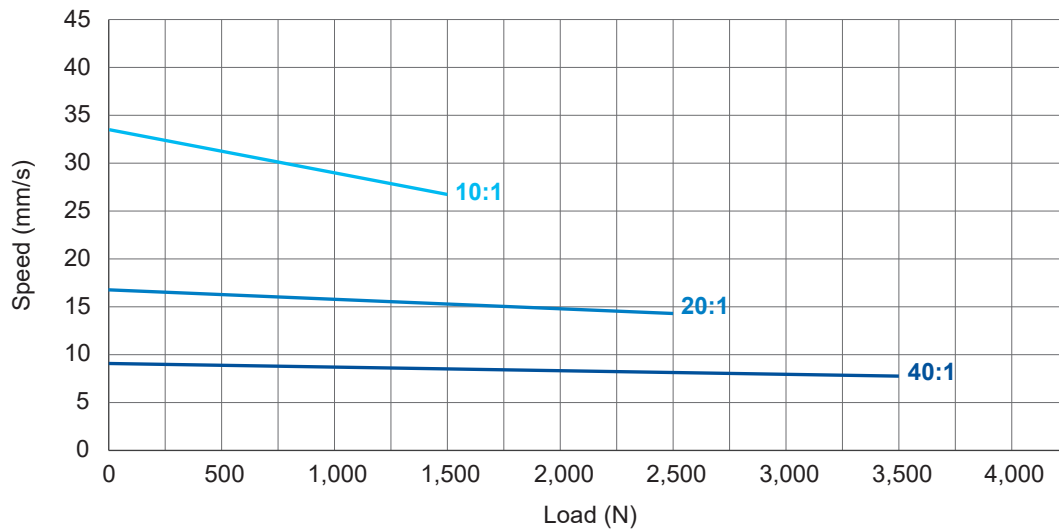
Performance Data

ACME type

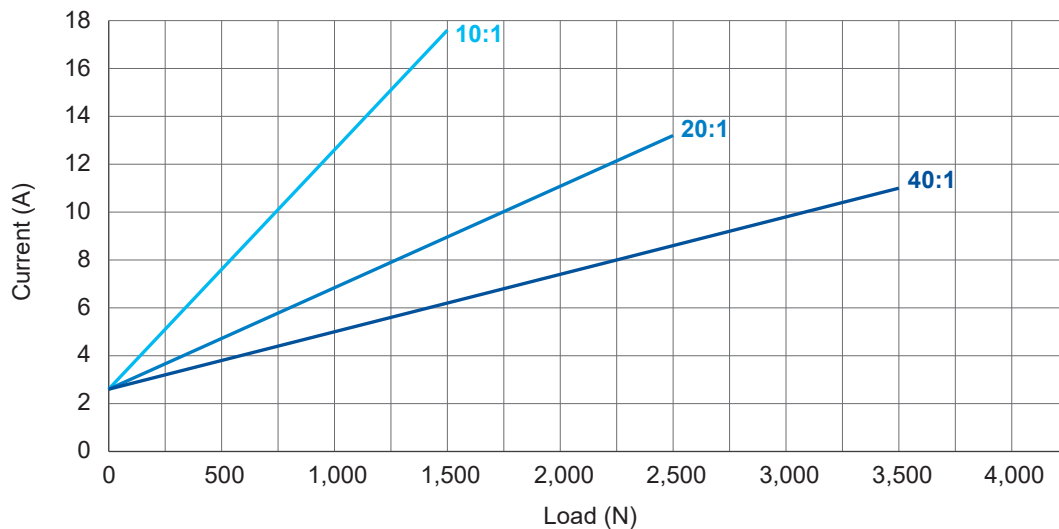
- 12V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	*Typical Speed (mm/s)		*Typical Current (A)	
			No load	Full load	No load	Full load
ID12-12-10-A-XXX	10:1	1500	33.5	26.7	2.6	17.6
ID12-12-20-A-XXX	20:1	2500	16.8	14.3	2.6	13.2
ID12-12-40-A-XXX	40:1	3500	8.4	7.3	2.6	11.0

Speed vs. Load



Current vs. Load

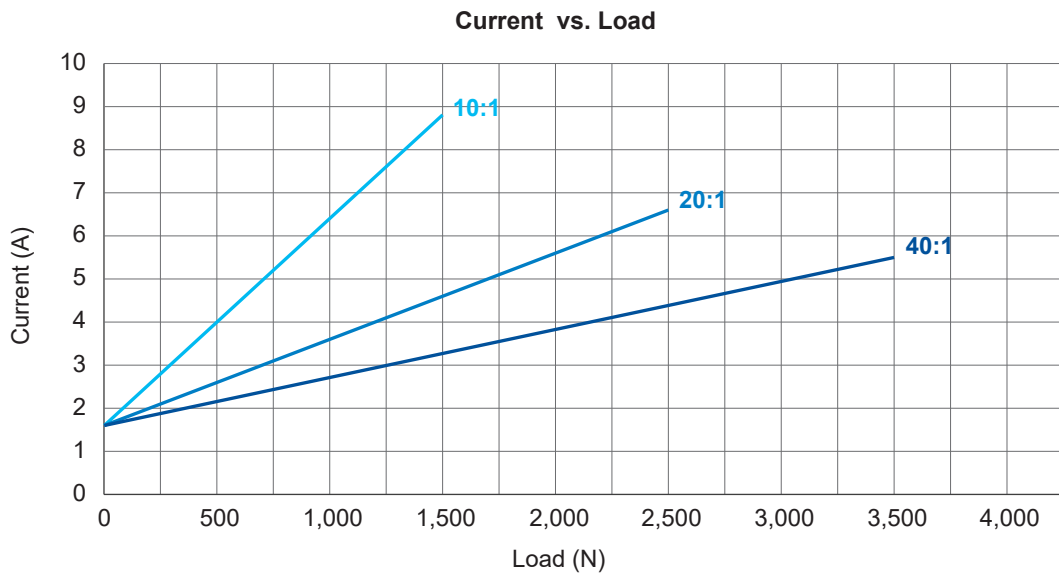
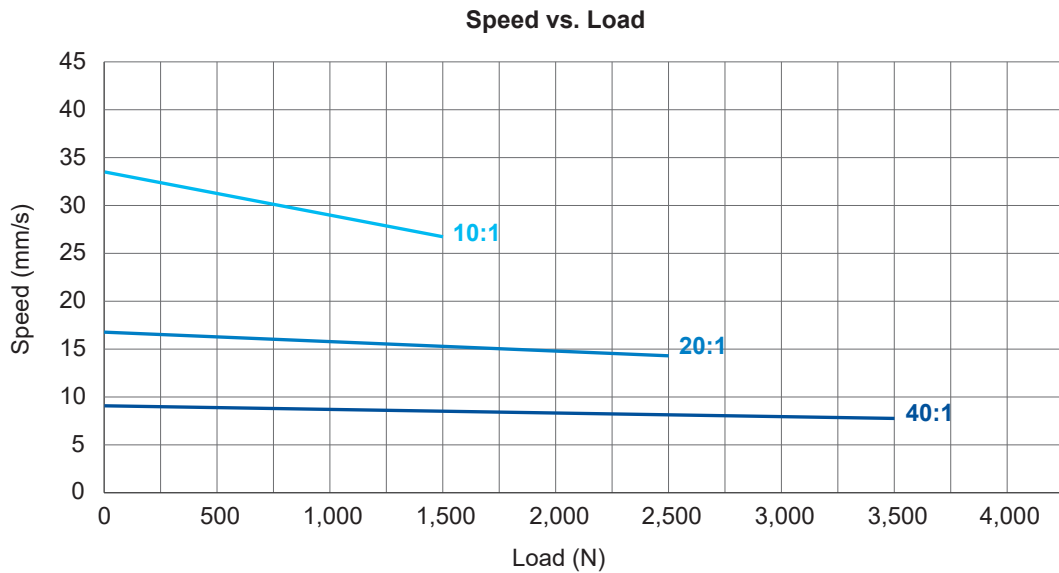


Remarks:

- * The typical speed or typical current means the average value neither upper limit nor lower limit. The performance curves are made with typical values.

● 24V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	*Typical Speed (mm/s)		*Typical Current (A)	
			No load	Full load	No load	Full load
ID12-24-10-A-XXX	10:1	1500	33.5	26.7	1.6	8.8
ID12-24-20-A-XXX	20:1	2500	16.8	14.3	1.6	6.6
ID12-24-40-A-XXX	40:1	3500	8.4	7.3	1.6	5.5



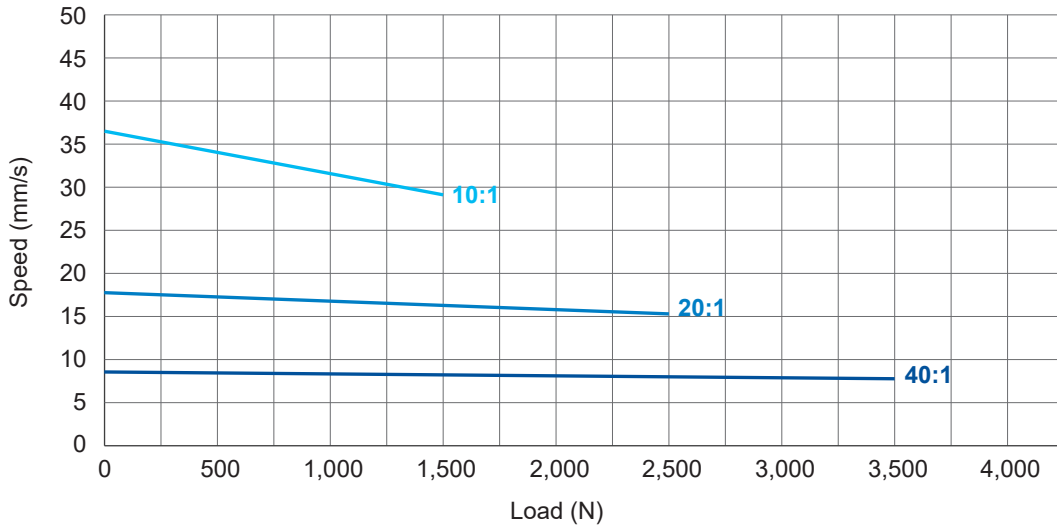
Remarks:

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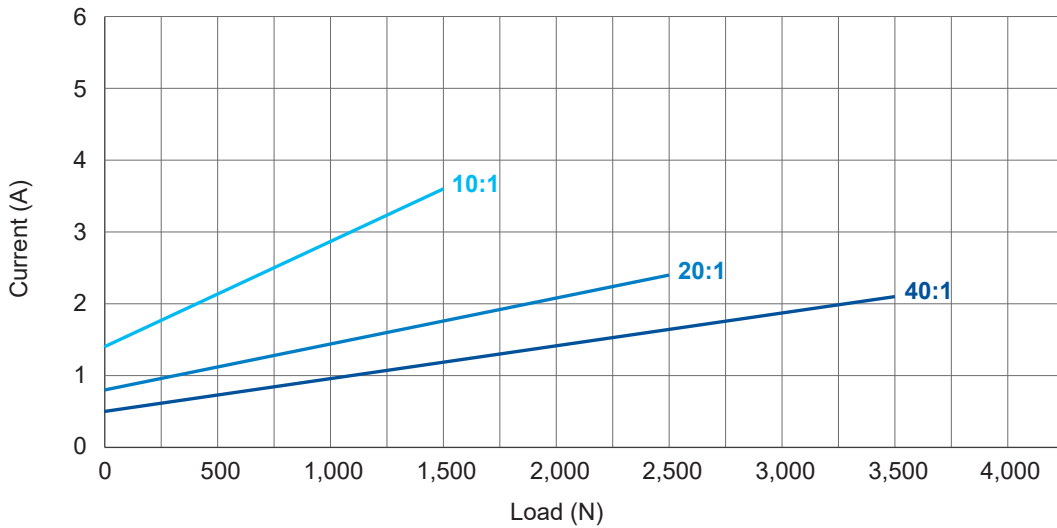
● 48V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	*Typical Speed (mm/s)		*Typical Current (A)	
			No load	Full load	No load	Full load
ID12-48-10-A-XXX	10:1	1500	36.5	29.1	1.4	3.6
ID12-48-20-A-XXX	20:1	2500	17.8	15.3	0.8	2.4
ID12-48-40-A-XXX	40:1	3500	8.6	7.8	0.5	2.1

Speed vs. Load



Current vs. Load



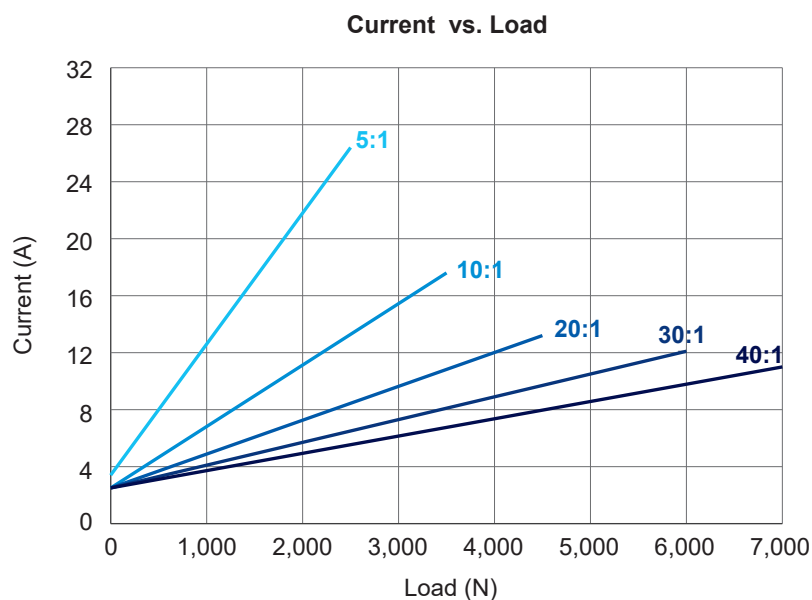
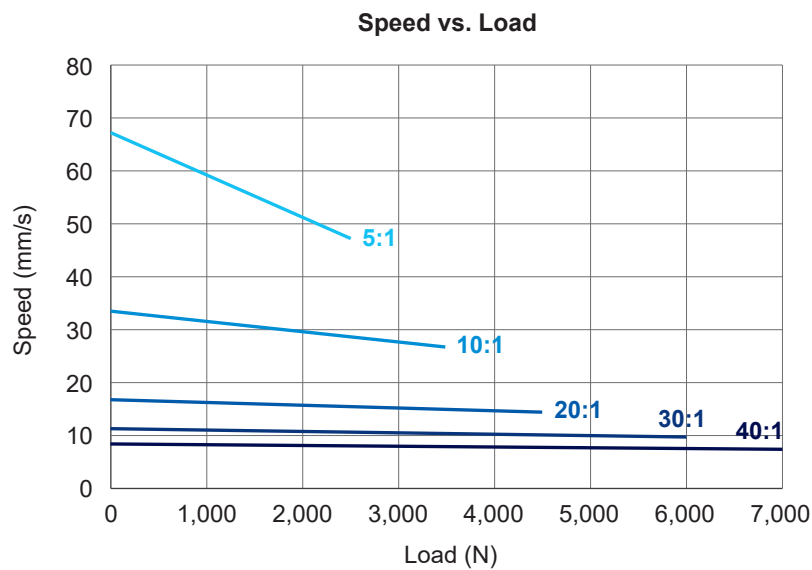
Remarks:

- * The typical speed or typical current means the average value neither upper limit nor lower limit. The performance curves are made with typical values.

Ball Screw type

- 12V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	*Typical Speed (mm/s)		*Typical Current (A)	
			No load	Full load	No load	Full load
ID12-12-05-B-XXX	5:1	2500	67.1	47.2	3.4	26.4
ID12-12-10-B-XXX	10:1	3500	33.5	26.7	2.6	17.6
ID12-12-20-B-XXX	20:1	4500	16.8	14.3	2.6	13.2
ID12-12-30-B-XXX	30:1	6000	11.2	9.8	2.6	12.1
ID12-12-40-B-XXX	40:1	7000	8.4	7.4	2.6	11.0

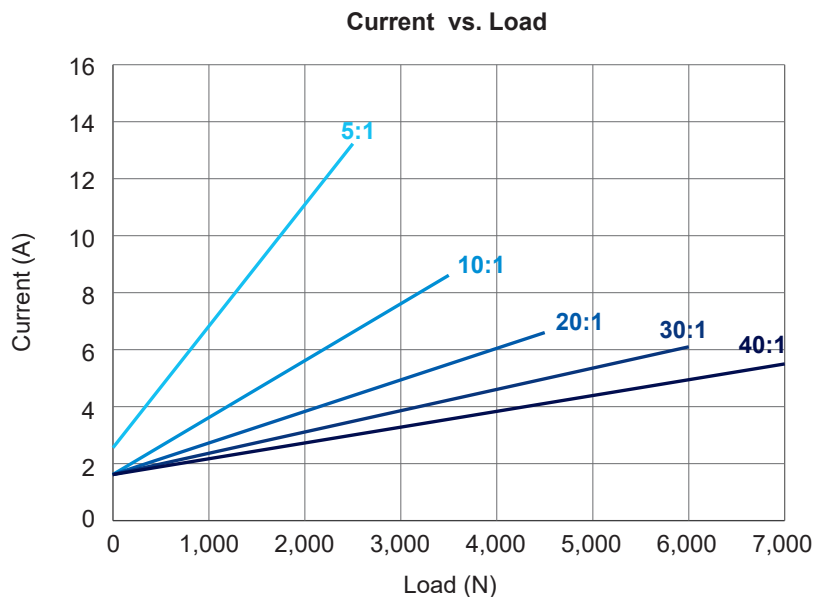
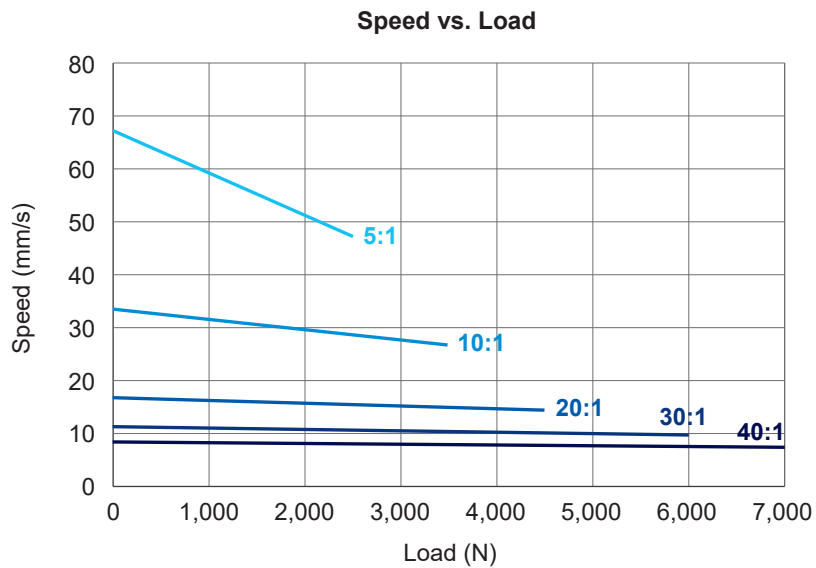


Remarks:

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● 24V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	*Typical Speed (mm/s)		*Typical Current (A)	
			No load	Full load	No load	Full load
ID12-24-05-B-XXX	5:1	2500	67.1	47.2	2.6	13.2
ID12-24-10-B-XXX	10:1	3500	33.5	26.7	1.6	8.6
ID12-24-20-B-XXX	20:1	4500	16.8	14.3	1.6	6.6
ID12-24-30-B-XXX	30:1	6000	11.2	9.8	1.6	6.1
ID12-24-40-B-XXX	40:1	7000	8.4	7.4	1.6	5.5

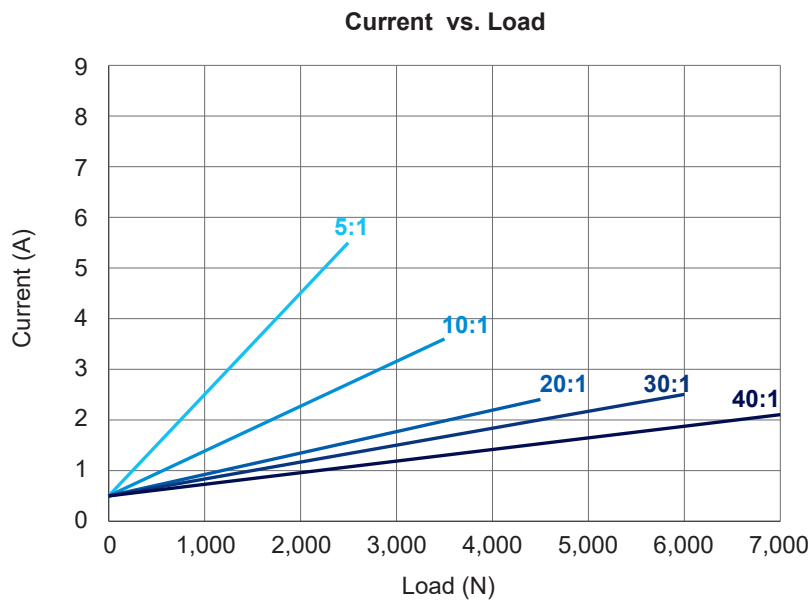
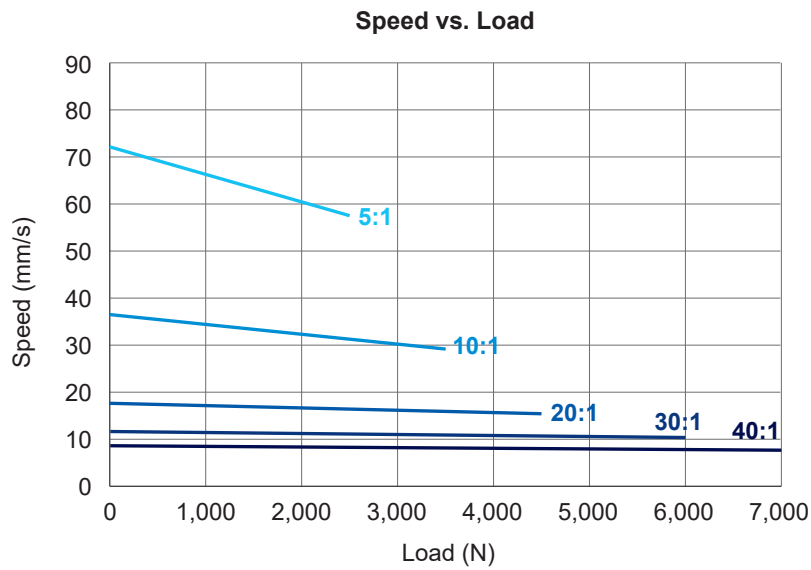


Remarks:

- * The typical speed or typical current means the average value neither upper limit nor lower limit. The performance curves are made with typical values.

● 48V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	*Typical Speed (mm/s)		*Typical Current (A)	
			No load	Full load	No load	Full load
ID12-48-05-B-XXX	5:1	2500	72.1	57.5	0.5	5.5
ID12-48-10-B-XXX	10:1	3500	36.5	29.1	0.5	3.6
ID12-48-20-B-XXX	20:1	4500	17.8	15.3	0.5	2.4
ID12-48-30-B-XXX	30:1	6000	11.7	10.3	0.5	2.5
ID12-48-40-B-XXX	40:1	7000	8.6	7.8	0.5	2.1



Remarks:

- * 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

ACME type

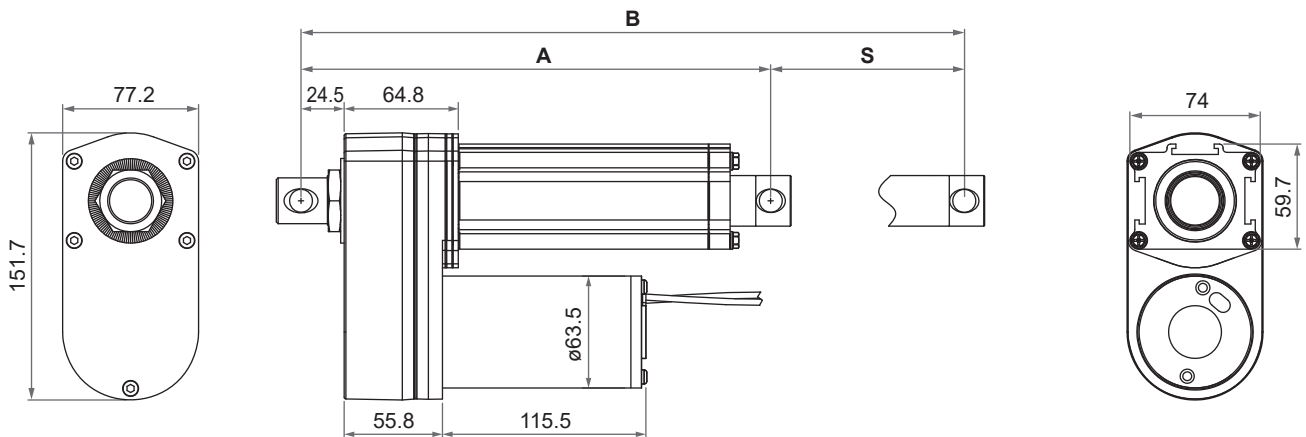
- Extended length (B) = Retracted length (A) + Stroke (S)
- Retracted length (A)

Option	Stroke (S)					
	100 (4")	150 (6")	200 (8")	300 (12")	450 (18")	600 (24")
Standard	266	316	366	466	666	816
With positioning	306	356	406	506	706	856
With LT	362	412	462	612	762	912

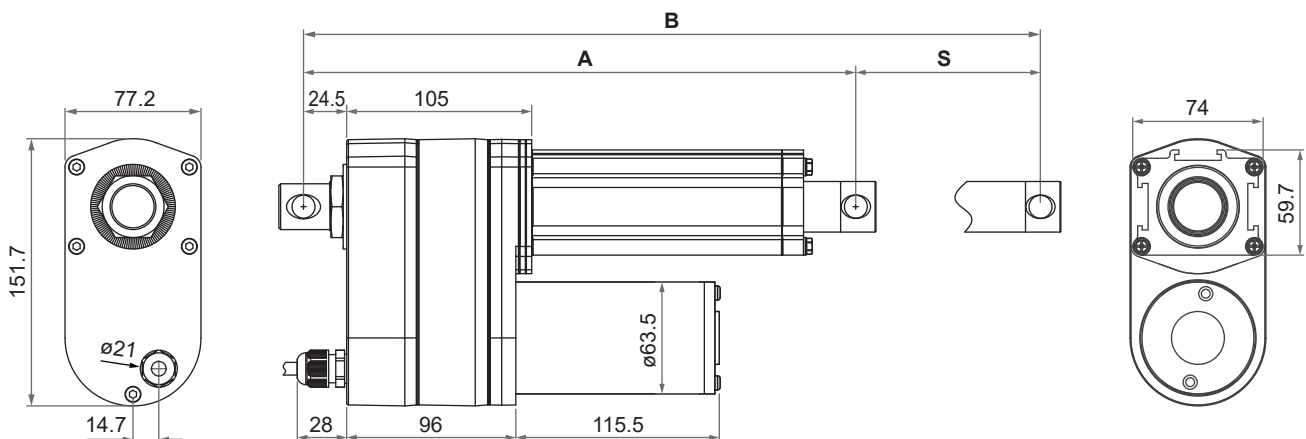
(Tolerance: ±5mm)

• Drawing

- Standard (without Limit switch nor positioning feedback)



- With Limit switches (LT) or positioning feedback



Unit: mm

Ball Screw type

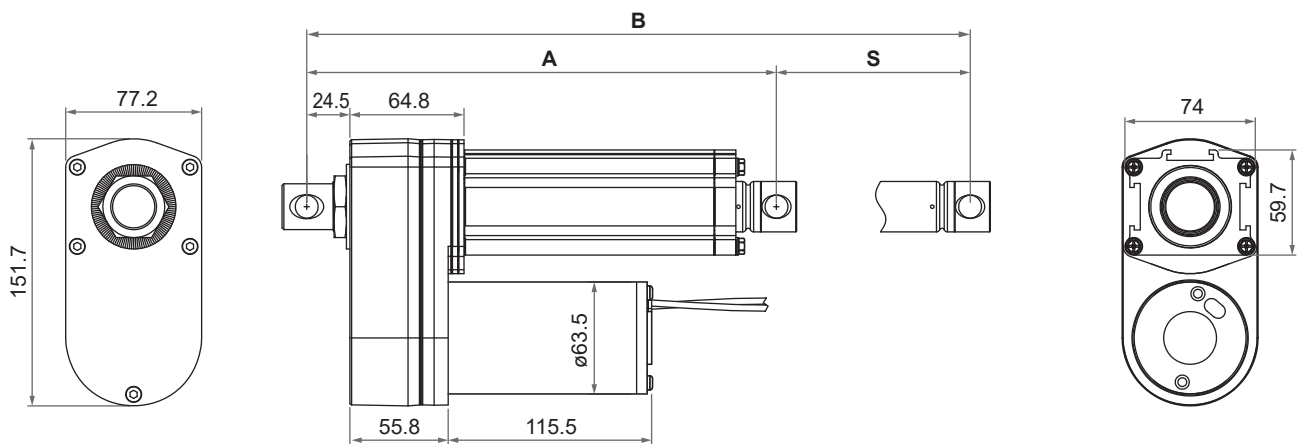
- Extended length (B) = Retracted length (A) + Stroke (S)
- Retracted length (A)

Option	Stroke (S)					
	100 (4")	150 (6")	200 (8")	300 (12")	450 (18")	600 (24")
Standard	319	369	419	519	719	869
With positioning	359	409	459	559	759	909
With LT	415	465	515	665	815	965

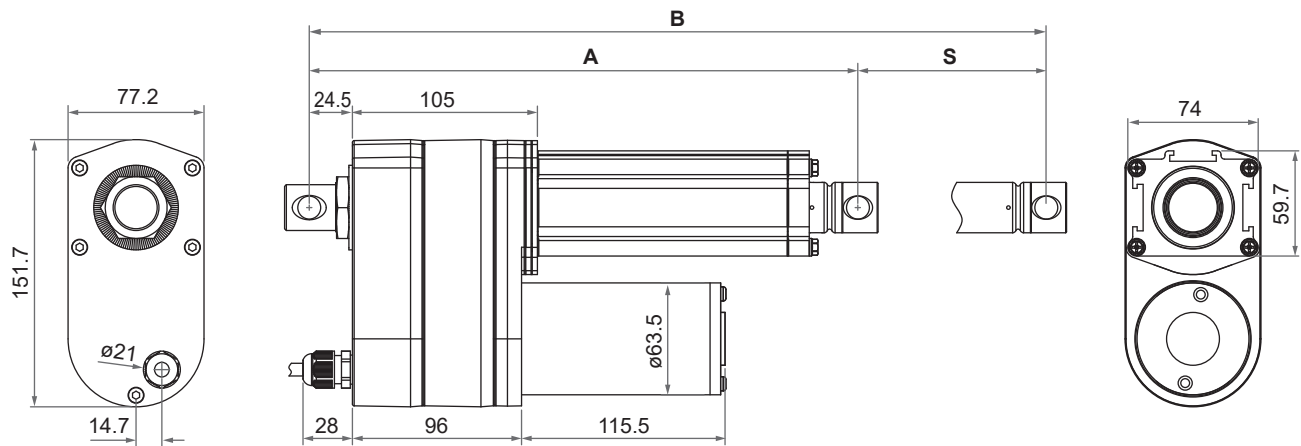
(Tolerance: ±5mm)

• Drawing

- Standard (without Limit switch nor positioning feedback)



- With Limit switches (LT) or positioning feedback

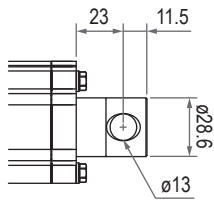


Unit: mm

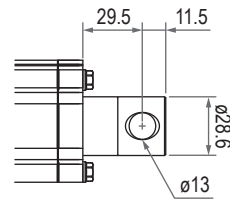
● **Front connector**

ACME type

- Standard (without Limit switch nor positioning feedback)

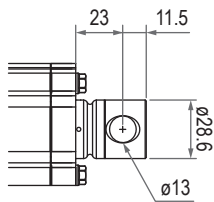


- With Limit switches (LT) or positioning feedback

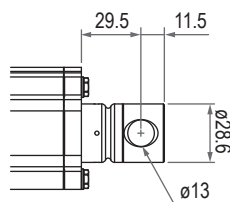


Ball Screw type

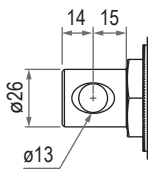
- Standard (without Limit switch nor positioning feedback)



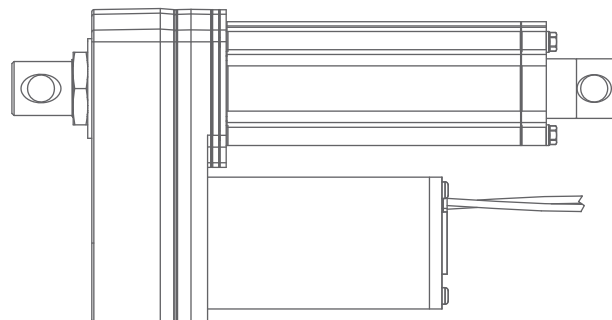
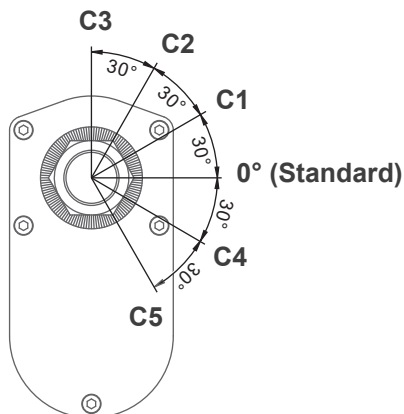
- With Limit switches (LT) or positioning feedback



● **Rear connector**

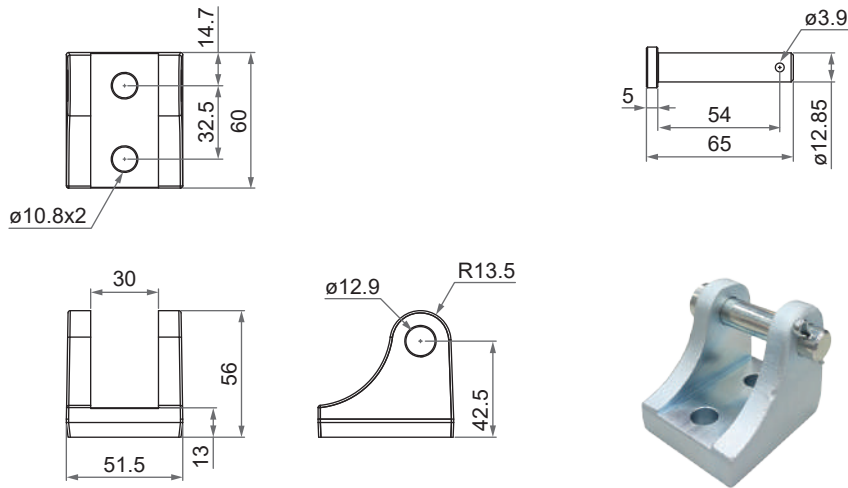


● **Pivot orientation of rear connector**



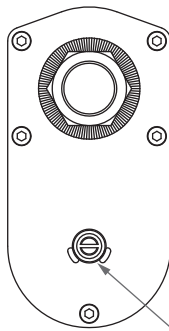
Note: As an example in 0° pivot of rear connector.

● **Mounting bracket (MB30)**



● **Manual drive socket (MD)**

- Compatible with IP54 option and 5, 10 or 20 to 1 gear ratio.
- Not applicable to IP66, IP69K, Limit switch and/or Potentiometer option.
- Power wires outlet at motor cap. (Refer to page 8 & 9)
- Please refer to “ID12 User Guide” for operation steps.



Drive the hex socket on the motor shaft by screwdriver or electric screwdriver with 8mm hex bit.

Compatibility

Product	Model	ID12 spec
Control box	CI10	<ul style="list-style-type: none"> • 24V motor • With limit switches option • Without positioning sensor feedback
	CIS1	<ul style="list-style-type: none"> • 24V motor • With single Hall effect sensor for positioning
	CIS2	<ul style="list-style-type: none"> • 12V motor • With single Hall effect sensor for positioning
	CIS3	<ul style="list-style-type: none"> • 24V motor • With Potentiometer for positioning

Wiring

- **Standard (without Limit switch nor positioning feedback)**

Gear ratio: 5:1, 10:1, 20:1

	Wire color	Definition	Comments
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		

Gear ratio: 30:1, 40:1

	Wire color	Definition	Comments
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 Limit switches**

	Wire color	Definition	Comments
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 Potentiometer (POT) absolute positioning feedback**

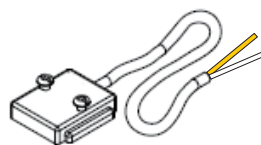
	Wire color	Definition	Comments															
Power wires	Red	DC power	Connect red wire to "Vdc +" & black wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.															
	Black																	
Signal wires	White	GND																
	Yellow	Vin	Input voltage 70V max.															
	Blue	OUTPUT		Potentiometer specification: - Potentiometer 10K ohm, 10 turns. - Total resistance tolerance $\pm 5\%$ Output voltage: Between 0 ~ Vin Potentiometer resistance: <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Stroke (mm)</th> <th>Resistance (tolerance: $\pm 0.3K\Omega$)</th> </tr> </thead> <tbody> <tr> <td>100 (4")</td> <td>0.3 ~ 8.0K</td> </tr> <tr> <td>150 (6")</td> <td>0.3 ~ 8.5K</td> </tr> <tr> <td>200 (8")</td> <td>0.3 ~ 9.1K</td> </tr> <tr> <td>300 (12")</td> <td>0.3 ~ 8.6K</td> </tr> <tr> <td>450 (18")</td> <td>0.3 ~ 9.2K</td> </tr> <tr> <td>600 (24")</td> <td>0.3 ~ 9.8K</td> </tr> </tbody> </table>	Stroke (mm)	Resistance (tolerance: $\pm 0.3K\Omega$)	100 (4")	0.3 ~ 8.0K	150 (6")	0.3 ~ 8.5K	200 (8")	0.3 ~ 9.1K	300 (12")	0.3 ~ 8.6K	450 (18")	0.3 ~ 9.2K	600 (24")	0.3 ~ 9.8K
					Stroke (mm)	Resistance (tolerance: $\pm 0.3K\Omega$)												
100 (4")					0.3 ~ 8.0K													
150 (6")					0.3 ~ 8.5K													
200 (8")					0.3 ~ 9.1K													
300 (12")					0.3 ~ 8.6K													
450 (18")	0.3 ~ 9.2K																	
600 (24")	0.3 ~ 9.8K																	
			The resistance between blue and white wires increases when the actuator extends, and decreases when it retracts. <div style="text-align: center; margin-top: 10px;"> </div>															

- With single Hall effect sensor positioning feedback

	Wire color	Definition	Comments
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	Blue	GND	
	White	Vin	Voltage input range: 3.5 ~ 20V
	Yellow	Hall	Hall effect sensor resolution: 20ppi, 1.27mm/pulse (0.787pulses/mm) Output voltage of signal (DATA) = Vin Hall signal data: 

Remarks:

With external reed sensors, select either yellow or white wire as common point, and the other one will be signal output.



Yellow (+), White (-)
or
Yellow (-), White (+)

Certifications

The ID12 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

	ID12 - 24 - 20 - B - 300 - POT - LT - C1 - M1
Input voltage	12: 12V DC 24: 24V DC 48: 48V DC
Gear ratio	05: 5:1 (Ball Screw only) 10: 10:1 20: 20:1 30: 30:1 (Ball Screw only) 40: 40:1
Spindle type	A: ACME B: Ball Screw
Stroke	100: 100mm (4") 150: 150mm (6") 200: 200mm (8") 300: 300mm (12") 450: 450mm (18") 600: 600mm (24")
Positioning feedback	Blank: None POT: Potentiometer HS: Hall effect sensor x 1
Option	Blank: None LT: Limit switches MD: Manual drive socket (Refer to Page 11 for conditions to order) ER1: External adjustable reed sensor x 1 ER2: External adjustable reed sensor x 2
Pivot orientation of Rear connector (Refer to Page 10)	Blank: 0° (Standard) C1: 30° counter-clockwise C2: 60° counter-clockwise C3: 90° counter-clockwise C4: 30° clockwise C5: 60° clockwise
Mounting bracket (Refer to Page 11)	Blank: None M1: Mounting bracket x 1 M2: Mounting bracket x 2



More information about usage is provided in ID12 User Guide, which can be downloaded from Moteck website.

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