

# Actuator ID10

ID10 features its heavy load capability and high speed performance, which is suitable for industry field, agricultural and construction machinery and recreational vehicle that requires quick movement. User can choose Ball Screw or ACME lead screw on demand.



## Features and Options

**Main applications:** Industrial, Agriculture

**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: 102 / 153 / 203 / 254 / 305 / 457 / 610mm
- IP level: IP54
- Overload protection by clutch
- Extension tube material: Iron (ACME) or stainless steel (Ball Screw)
- Color: Black
- 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:**

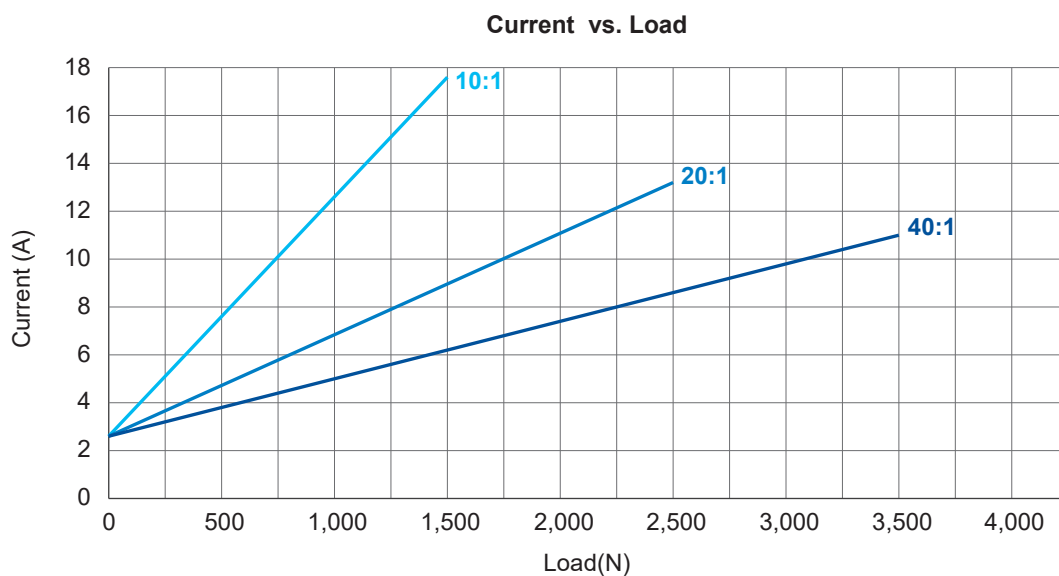
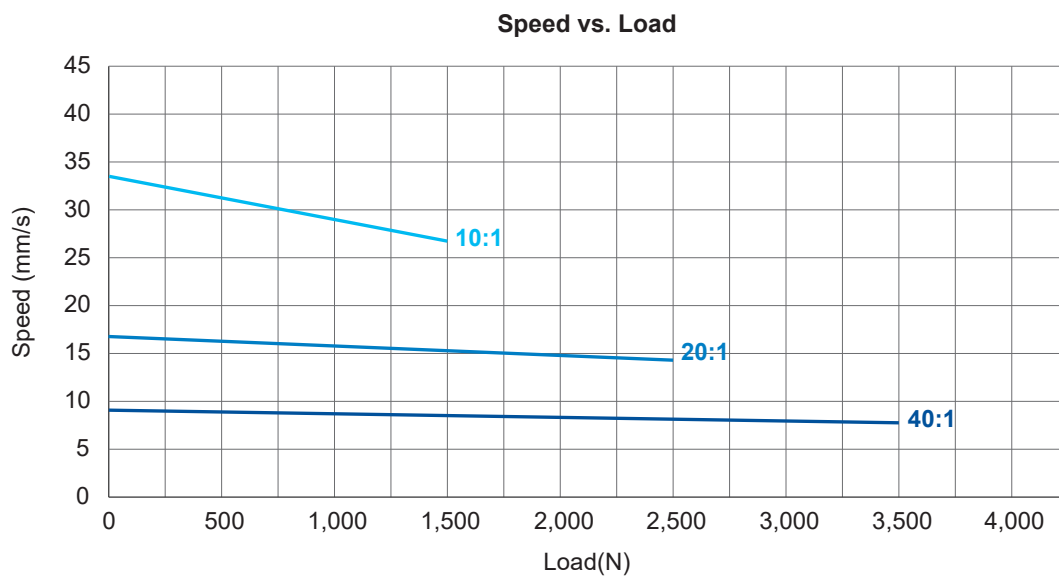
- Positioning signal feedback with Hall effect sensor x 1
- Analog and absolute positioning feedback with Potentiometer (POT)
- Preset limit switches (LT), to stop motor automatically at both stroke ends by cutting power.
- IP level: IP65
- Manual drive socket (Please refer to Page 11)
- Mounting bracket (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
ID10-12-10-A	10:1	1500	33.5	26.7	2.6	17.6
ID10-12-20-A	20:1	2500	16.8	14.3	2.6	13.2
ID10-12-40-A	40:1	3500	8.4	7.3	2.6	11.0

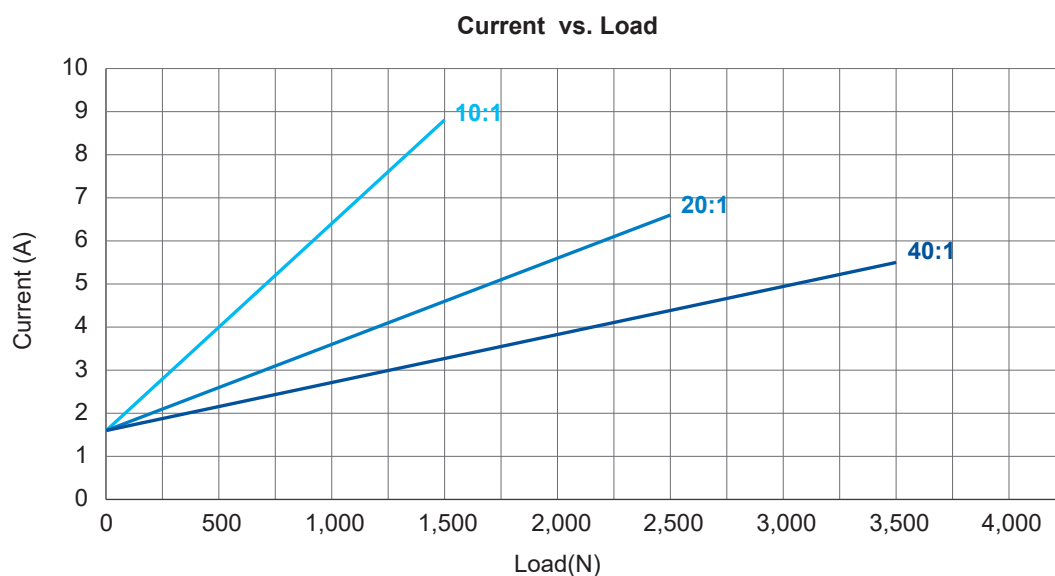
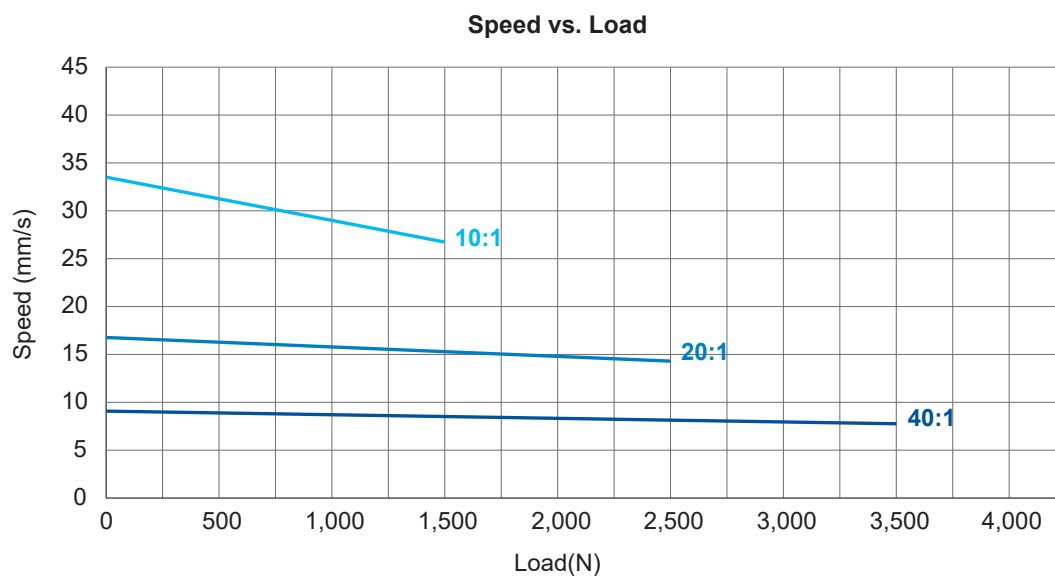


#### Remarks:

- \* 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
ID10-24-10-A	10:1	1500	33.5	26.7	1.6	8.8
ID10-24-20-A	20:1	2500	16.8	14.3	1.6	6.6
ID10-24-40-A	40:1	3500	8.4	7.3	1.6	5.5

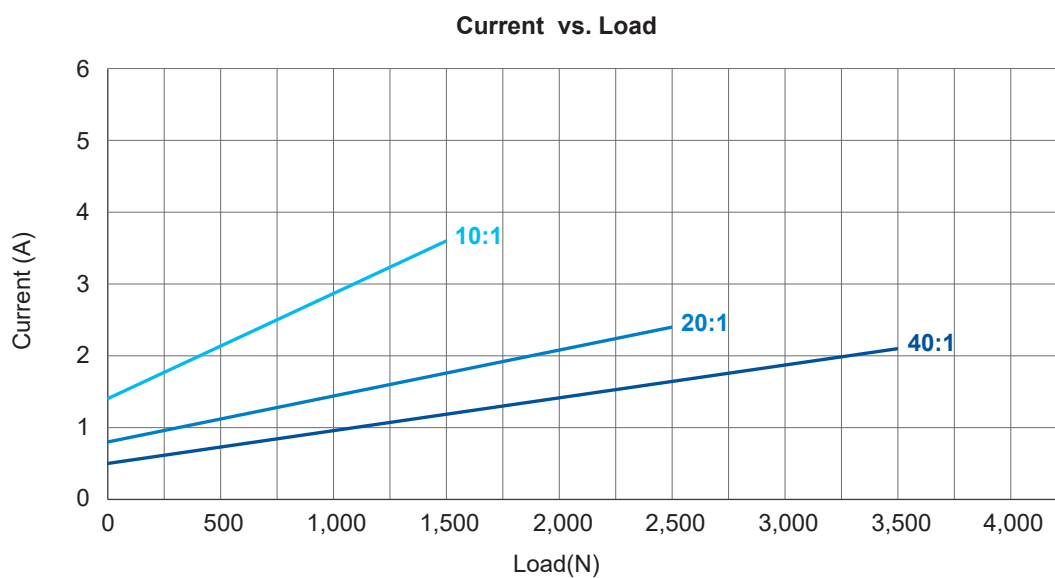
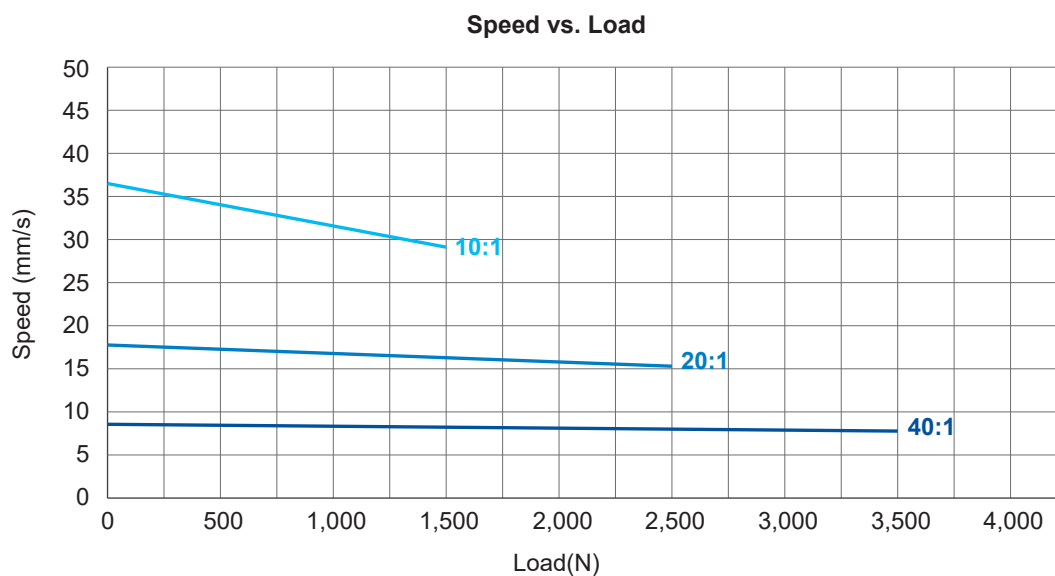


**Remarks:**

- \* 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
ID10-48-10-A	10:1	1500	36.5	29.1	1.4	3.6
ID10-48-20-A	20:1	2500	17.8	15.3	0.8	2.4
ID10-48-40-A	40:1	3500	8.6	7.8	0.5	2.1



**Remarks:**

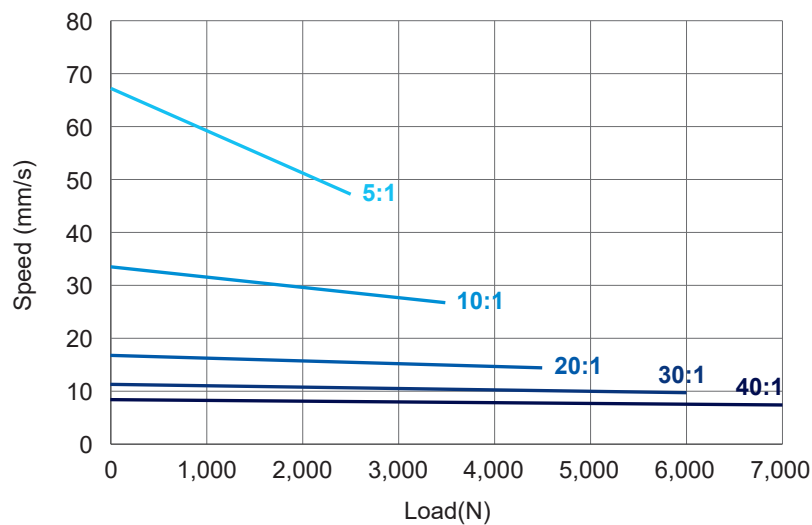
- \* The typical speed or typical current means the average value neither upper limit nor lower limit. The performance curves are made with typical values.

## Ball Screw type

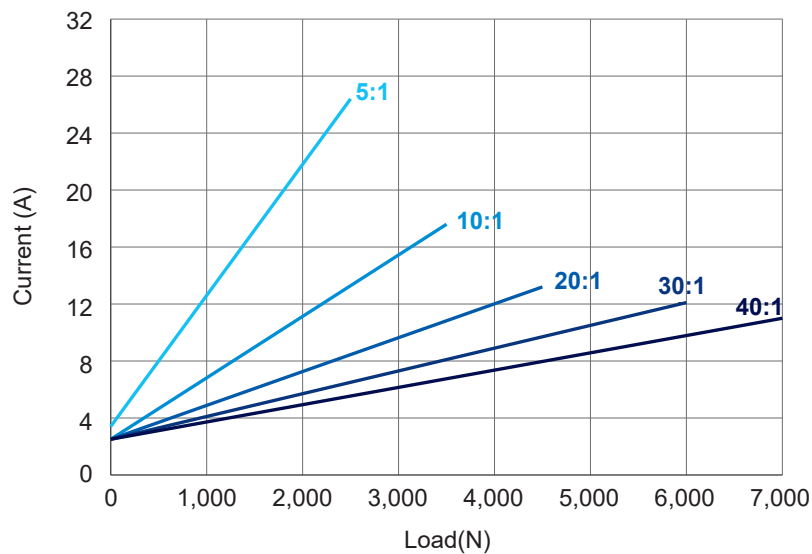
### ● 12V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	*Typical speed (mm/s)		*Typical current (A)	
			No load	Full load	No load	Full load
ID10-12-05-B	5:1	2500	67.1	47.2	3.4	26.4
ID10-12-10-B	10:1	3500	33.5	26.7	2.6	17.6
ID10-12-20-B	20:1	4500	16.8	14.3	2.6	13.2
ID10-12-30-B	30:1	6000	11.2	9.8	2.6	12.1
ID10-12-40-B	40:1	7000	8.4	7.4	2.6	11.0

Speed vs. Load



Current vs. Load



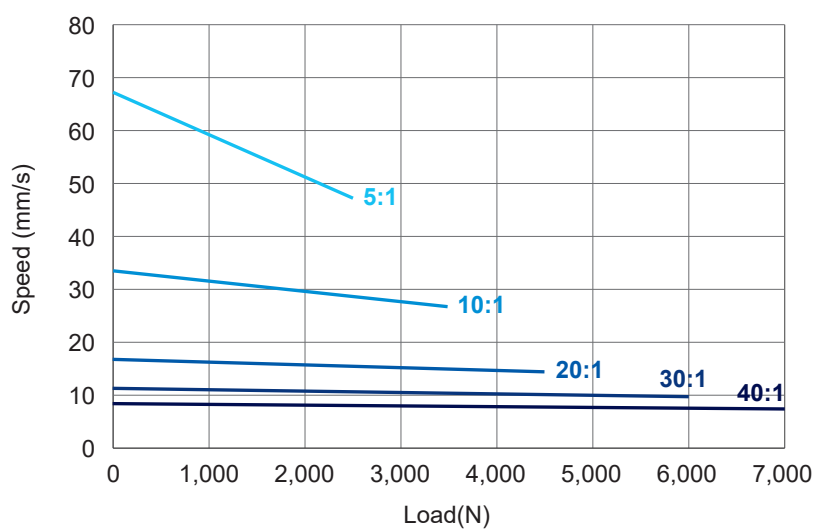
#### Remarks:

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

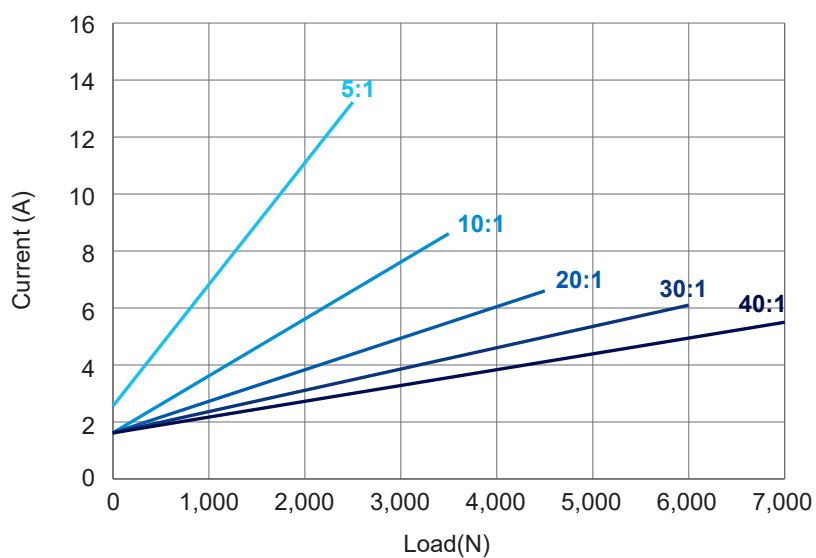
• 24V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	*Typical speed (mm/s)		*Typical current (A)	
			No load	Full load	No load	Full load
ID10-24-05-B	5:1	2500	67.1	47.2	2.6	13.2
ID10-24-10-B	10:1	3500	33.5	26.7	1.6	8.6
ID10-24-20-B	20:1	4500	16.8	14.3	1.6	6.6
ID10-24-30-B	30:1	6000	11.2	9.8	1.6	6.1
ID10-24-40-B	40:1	7000	8.4	7.4	1.6	5.5

Speed vs. Load



Current vs. Load



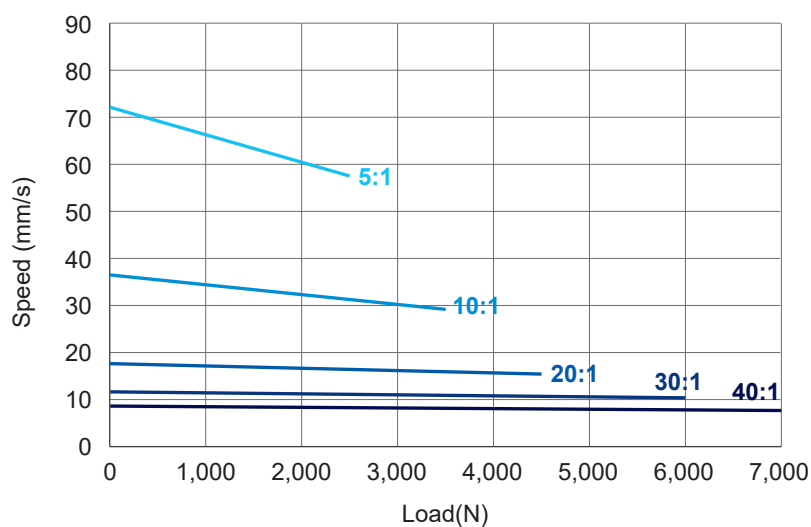
Remarks:

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

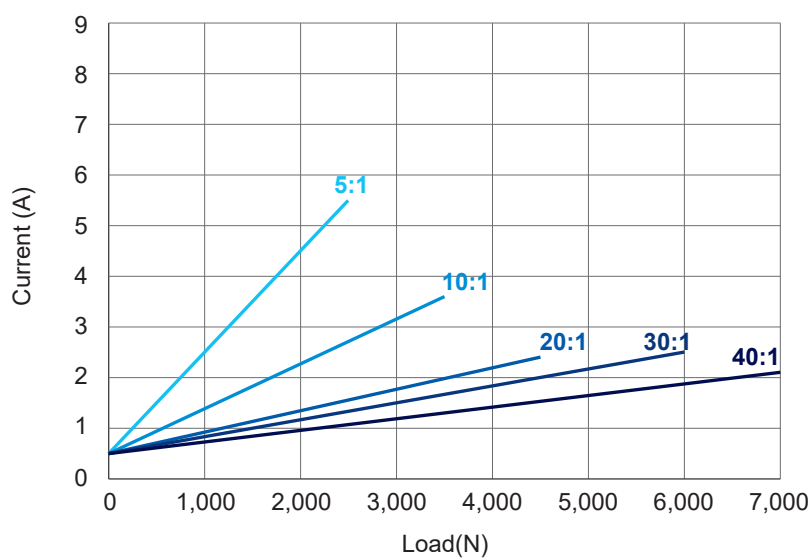
● 48V DC motor

Model No.	Gear ratio	Push/Pull Max. (N)	*Typical speed (mm/s)		*Typical current (A)	
			No load	Full load	No load	Full load
ID10-48-05-B	5:1	2500	72.1	57.5	0.5	5.5
ID10-48-10-B	10:1	3500	36.5	29.1	0.5	3.6
ID10-48-20-B	20:1	4500	17.8	15.3	0.5	2.4
ID10-48-30-B	30:1	6000	11.7	10.3	0.5	2.5
ID10-48-40-B	40:1	7000	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.

# Dimensions

## ACME type

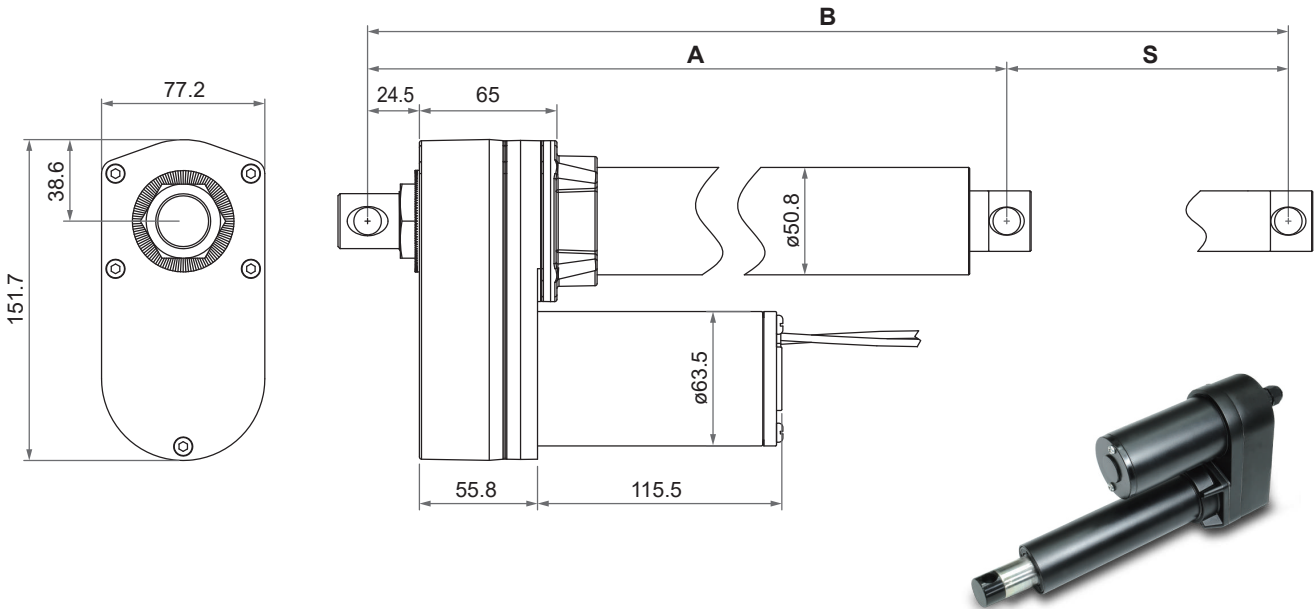
- Extended length (B) = Retracted length (A) + Stroke (S)
- Retracted length (A)

Option	Stroke (S)						
	102 (4")	153 (6")	203 (8")	254 (10")	305 (12")	457 (18")	610 (24")
Standard	262	313	364	414	465	668	821
With positioning feedback	302	353	404	454	505	708	861
With LT	359	410	460	511	613	765	918

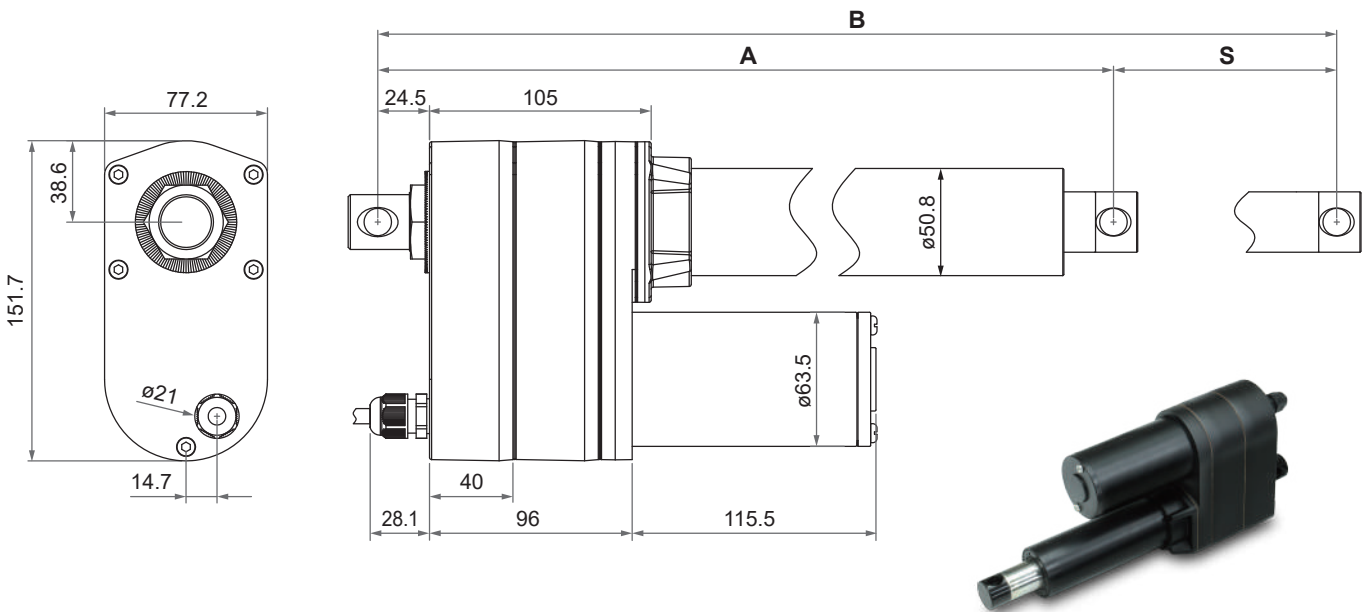
(Tolerance: ±5mm)

## Drawing

- Standard (without limit switch nor positioning feedback)



- With limit switches (LT) or positioning feedback



Unit: mm



## Ball Screw type

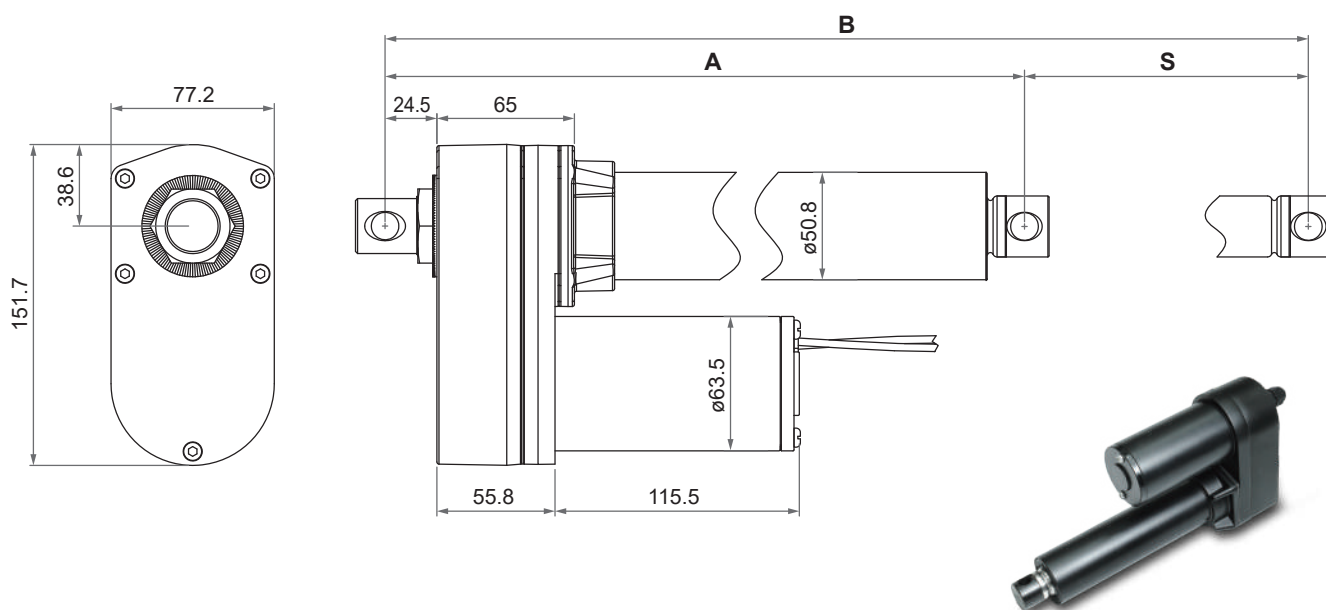
- Extended length (B) = Retracted length (A) + Stroke (S)
- Retracted length (A)

Option	Stroke (S)						
	102 (4")	153 (6")	203 (8")	254 (10")	305 (12")	457 (18")	610 (24")
Standard	302	353	404	455	506	735	888
With positioning feedback	342	393	444	495	546	775	928
With limit switches	399	450	501	552	680	832	985

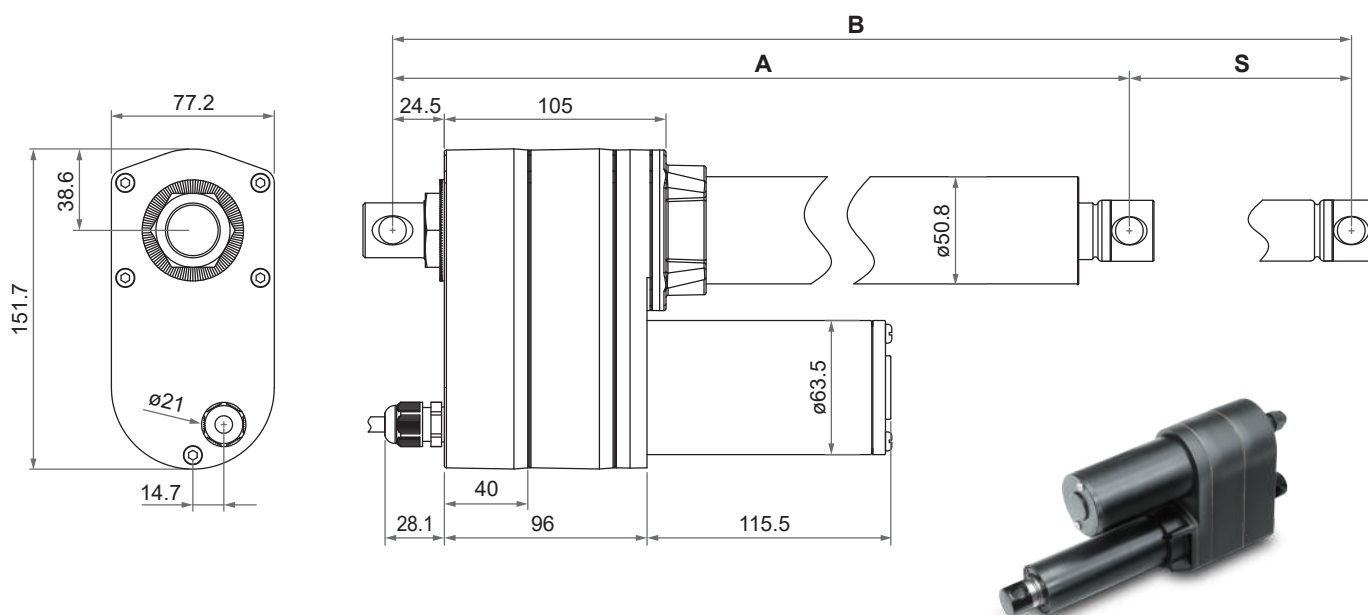
(Tolerance: ±5mm)

## • Drawing

- Standard (without limit switch nor positioning feedback)



- With limit switches (LT) or positioning feedback

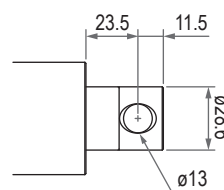
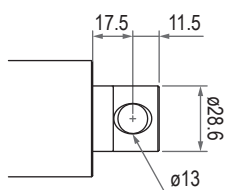


Unit: mm

## ● Front connector

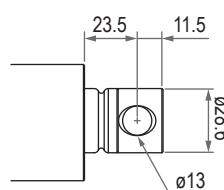
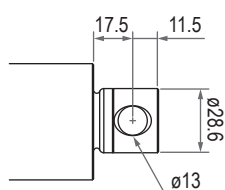
### ACME type

- Standard (without limit switch nor positioning feedback)
- With limit switches (LT) or positioning feedback

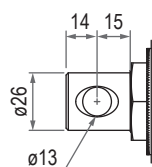


### Ball Screw type

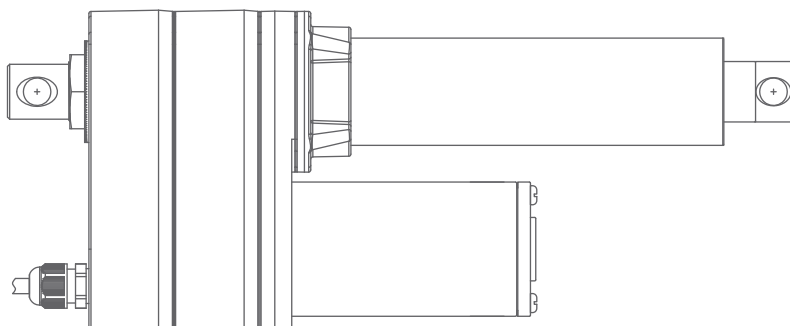
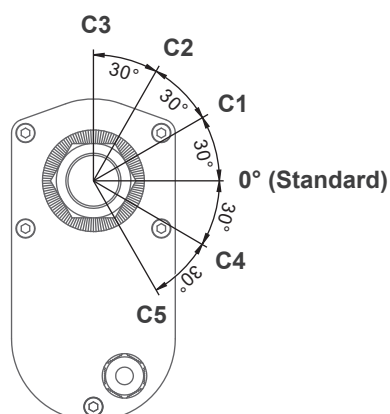
- Standard (without limit switch nor positioning feedback)
- With limit switches (LT) or positioning feedback



## ● Rear connector

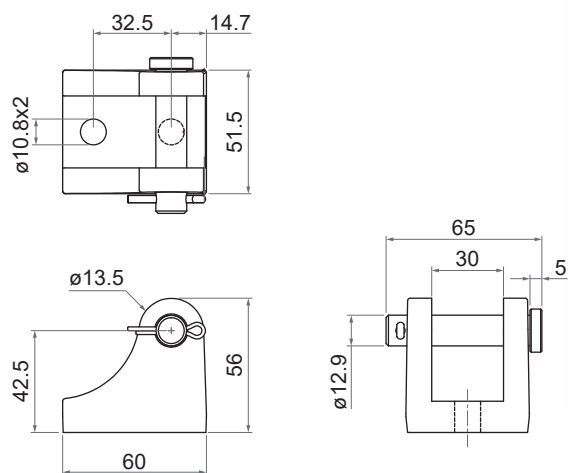


## ● Pivot orientation of rear connector



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

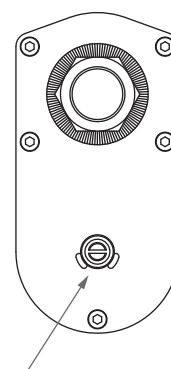
## • Mounting bracket (MB30)



Unit: mm

## • Manual drive socket (MD)

- Compatible with IP54 option and 5, 10 or 20 to 1 gear ratio.
- Not applicable to IP65, Limit switch and/or Potentiometer option.
- Power wires outlet at motor cap. (Refer to Page 8 & 9)
- Please refer to "ID10 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	ID10 spec
Control box	CI10	<ul style="list-style-type: none"> <li>• 24V motor</li> <li>• With limit switches option</li> <li>• Without positioning sensor feedback</li> </ul>
	CIS1	<ul style="list-style-type: none"> <li>• 24V motor</li> <li>• With single Hall effect sensor for positioning</li> </ul>
	CIS2	<ul style="list-style-type: none"> <li>• 12V motor</li> <li>• With single Hall effect sensor for positioning</li> </ul>
	CIS3	<ul style="list-style-type: none"> <li>• 24V motor</li> <li>• With Potentiometer for positioning</li> </ul>

## 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		

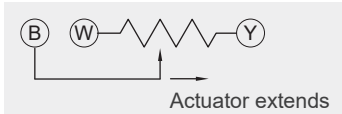
Gear ratio: 30:1, 40:1

	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	POT output	Potentiometer specification: - Potentiometer 10K ohm, 10 turns. - Total resistance tolerance ±5% Output voltage: Between 0 ~ Vin																
			The potentiometer resistance according to different strokes are as follows:																
			<table><tr><th>Stroke (mm)</th><th>Resistance (tolerance: ±0.3KΩ)</th></tr><tr><td>102 (4")</td><td>0.3 ~ 8.1K</td></tr><tr><td>153 (6")</td><td>0.3 ~ 8.7K</td></tr><tr><td>203 (8")</td><td>0.3 ~ 9.2K</td></tr><tr><td>254 (10")</td><td>0.3 ~ 7.4K</td></tr><tr><td>305 (12")</td><td>0.3 ~ 8.8K</td></tr><tr><td>457 (18")</td><td>0.3 ~ 9.4K</td></tr><tr><td>610 (24")</td><td>0.1 ~ 9.9K</td></tr></table>		Stroke (mm)	Resistance (tolerance: ±0.3KΩ)	102 (4")	0.3 ~ 8.1K	153 (6")	0.3 ~ 8.7K	203 (8")	0.3 ~ 9.2K	254 (10")	0.3 ~ 7.4K	305 (12")	0.3 ~ 8.8K	457 (18")	0.3 ~ 9.4K	610 (24")
Stroke (mm)			Resistance (tolerance: ±0.3KΩ)																
102 (4")			0.3 ~ 8.1K																
153 (6")	0.3 ~ 8.7K																		
203 (8")	0.3 ~ 9.2K																		
254 (10")	0.3 ~ 7.4K																		
305 (12")	0.3 ~ 8.8K																		
457 (18")	0.3 ~ 9.4K																		
610 (24")	0.1 ~ 9.9K																		
The resistance between blue and white wires increases when the actuator extends, and decreases when it retracts.																			
																			

- 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 output	Hall effect sensor resolution: 20ppi, 1.27mm/pulse (0.787pulses/mm) Output voltage of signal (DATA) = Vin Hall signal data: 

## Certifications

ID10 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

		ID10- 24 - 10 - B - 102 - POT							
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	102: 102mm (4") 153: 153mm (6") 203: 203mm (8") 254: 254mm (10") 305: 305mm (12") 457: 457mm (18") 610: 610mm (24")								
Positioning feedback	Blank: None POT: Potentiometer HS: Hall effect sensor x 1								
Option	Blank: None LT: Limit switches 65: IP65 MD: Manual drive socket (Refer to Page 11 for conditions to order)								
Pivot orientation of Rear connector (Please 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 (Please refer to Page 11)	Blank: None M1: MB30 mounting bracket x 1 M2: MB30 mounting bracket x 2								



More information about installation and usage, please refer to User Guide or contact Moteck sales.

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