

# Actuator

## ID10K

ID10K has the same dimensions and waterproof performance as ID10. It adopts ACME lead screw design to achieve a greater thrust up to 7,000N, which is suitable for industry field, agriculture, and construction machinery that requires quick movement.



### Features and Options

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**Main applications:** Industrial, Agriculture, Construction

**Standard features:**

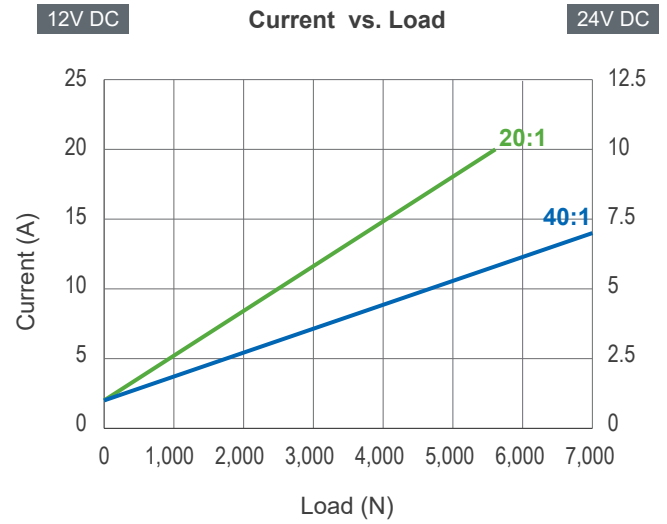
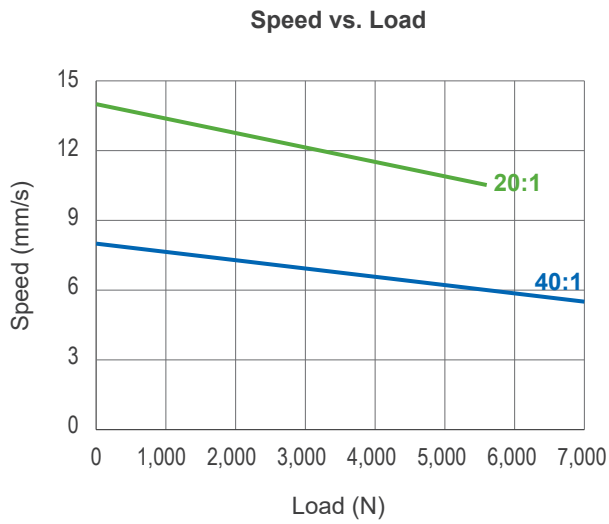
- Input voltage: 12 / 24V DC
- Max. rated load: 7,000N
- Max. static load: 13,600N
- Max. speed at no load: 14mm/sec (gear motor 20:1 average value)
- Stroke: 102 / 153 / 203 / 254 / 305 / 457 / 610mm
- IP level: IP65
- Overload protection by clutch
- Spindle type: ACME
- Extension tube material: Iron
- Color: Black
- Power and signal cord length: 250mm (with tinned wires)
- Duty cycle: 10%, max. 2 min. continuous operation in 20 min.
- Operating ambient temperature: -25°C ~ +65°C

**Options:**

- Positioning signal feedback with Hall effect sensor x 1
- Analog and absolute positioning feedback with Potentiometer (POT)
- Limit switches

## Performance Data

Model No.	Gear ratio	Push / Pull Max. (N)	*Typical speed (mm/s)		*Typical current (A)			
			No load	Full load	No load		Full load	
					12V	24V	12V	24V
ID10K-XX-G4A-20-XXX	20:1	5,600	14	10.5	2	1	20	10
ID10K-XX-G4A-40-XXX	40:1	7,000	7	5.5	2	1	14	7



### Remarks:

- \* The typical speed or typical current refers to an average value that is neither the upper limit nor the lower limit. The performance curves are made with typical values.

## Dimensions

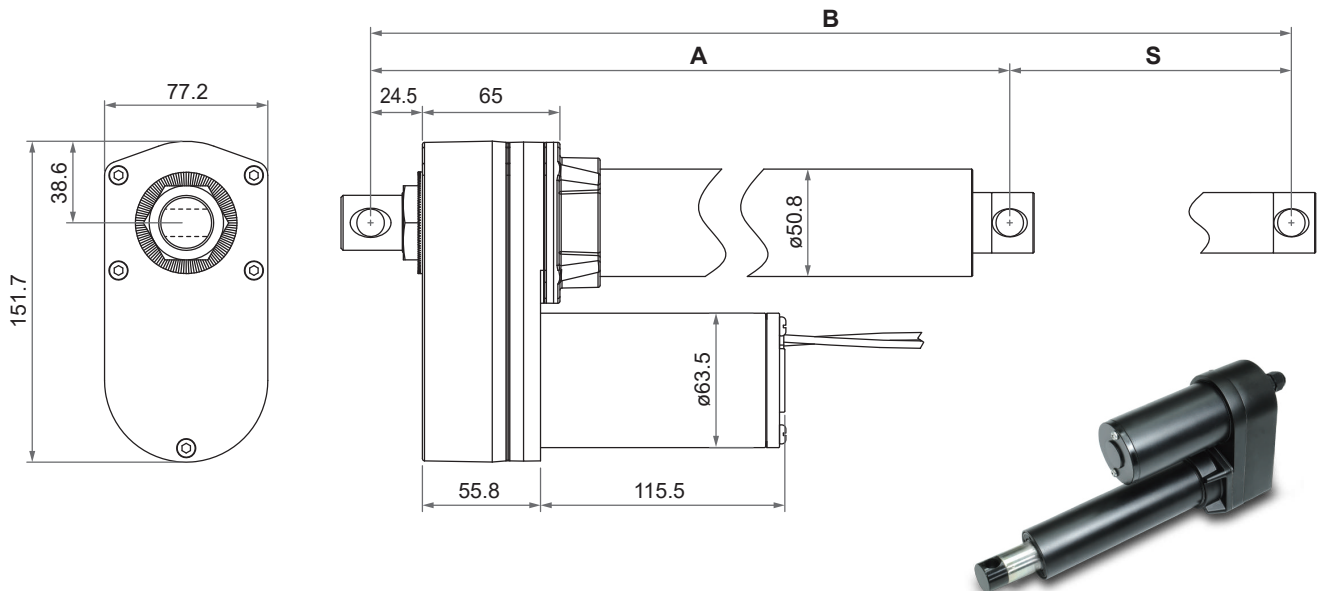
- Extended length (B) = Retracted length (A) + Stroke (S)
- Retracted length (A)

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

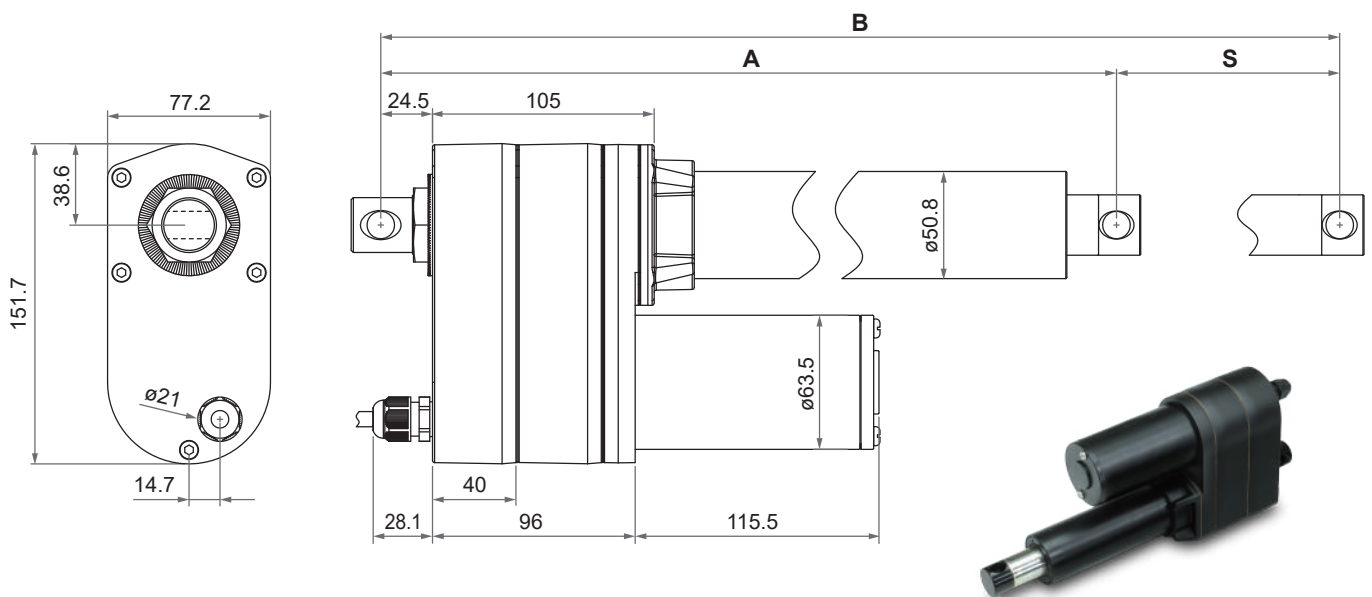
(tolerances: ±5mm)

### • Drawing

- Basic (without limit switch nor positioning feedback)



- With limit switches or positioning feedback

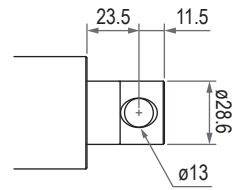
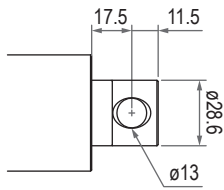


Unit: mm

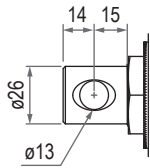
● **Front connector**

- Basic (without limit switch nor positioning feedback)

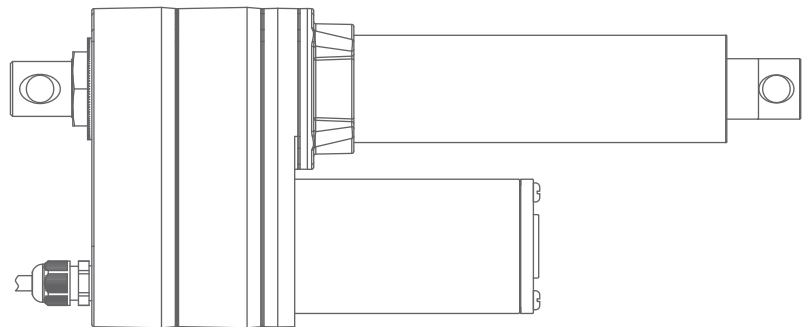
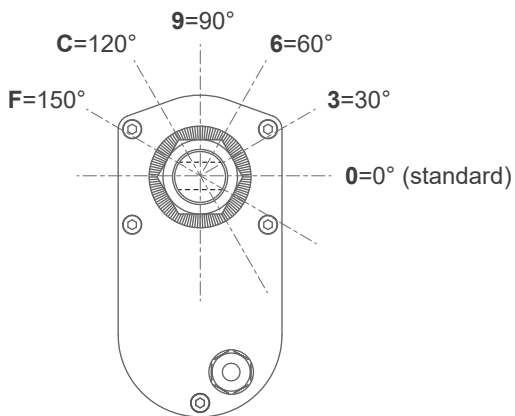
- With limit switches or positioning feedback



● **Rear connector**



● **Pivot orientation of rear connector**



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

Unit: mm

## Compatibility

Product	Model	ID10K spec
<b>Control box</b>	CI10	<ul style="list-style-type: none"> <li>• 24V motor</li> <li>• With limit switches option</li> <li>• Without positioning 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>
	CI72	<ul style="list-style-type: none"> <li>• Standard</li> </ul>
<b>Accessory</b>	MB30 Mounting bracket	<ul style="list-style-type: none"> <li>• Standard, mounting hole <math>\varnothing</math>13mm.</li> </ul>



ID10K in-position control needs to cooperate with the limit switch option or set an external limit switch. If you choose positioning signal feedback with single Hall effect sensor, it is recommended that the actuator can be used with a controller such as CI72 to provide software stroke limit. ID10K can not use clutch overload protection as an in-position control, otherwise it will seriously reduce the service life of the actuator.

# Wiring

## • Basic (without limit switch nor positioning feedback)

Gear ratio: 20:1

	Wire color	Definitions	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		

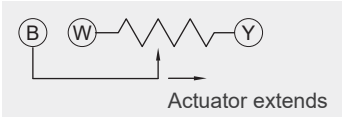
Gear ratio: 40:1

	Wire color	Definitions	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 limit switches (without positioning feedback)

	Wire color	Definitions	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 potentiometer (POT) absolute positioning feedback

	Wire color	Definitions	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	Input voltage 70V max.																
	Blue	POT output	<p>Potentiometer specification:</p> <ul style="list-style-type: none"> <li>- Potentiometer 10K ohm, 10 turns.</li> <li>- Total resistance tolerance <math>\pm 5\%</math></li> </ul> <p>Output voltage: Between 0 ~ Vin</p> <p>The potentiometer resistance according to different strokes are as follows:</p> <table border="1"> <thead> <tr> <th>Stroke (mm)</th> <th>Resistance (tolerance: <math>\pm 0.3K\Omega</math>)</th> </tr> </thead> <tbody> <tr> <td>102 (4")</td> <td>0.3 ~ 7.3K</td> </tr> <tr> <td>153 (6")</td> <td>0.3 ~ 8.7K</td> </tr> <tr> <td>203 (8")</td> <td>0.3 ~ 7.3K</td> </tr> <tr> <td>254 (10")</td> <td>0.3 ~ 9.1K</td> </tr> <tr> <td>305 (12")</td> <td>0.3 ~ 7.9K</td> </tr> <tr> <td>457 (18")</td> <td>0.3 ~ 9.4K</td> </tr> <tr> <td>610 (24")</td> <td>0.3 ~ 8.2K</td> </tr> </tbody> </table> <p>The resistance between blue and white wires increases when the actuator extends, and decreases when it retracts.</p> 	Stroke (mm)	Resistance (tolerance: $\pm 0.3K\Omega$ )	102 (4")	0.3 ~ 7.3K	153 (6")	0.3 ~ 8.7K	203 (8")	0.3 ~ 7.3K	254 (10")	0.3 ~ 9.1K	305 (12")	0.3 ~ 7.9K	457 (18")	0.3 ~ 9.4K	610 (24")	0.3 ~ 8.2K
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457 (18")	0.3 ~ 9.4K																		
610 (24")	0.3 ~ 8.2K																		
White	GND																		

• With single Hall effect sensor positioning feedback

	Wire color	Definitions	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): 3.5 ~ 20V
	Blue	Hall output	High= Input - 1.2V ( $\pm 0.6V$ ) Low= GND Hall signal data:  Hall effect sensor resolution: 1.0 pulse/mm
	White	GND	

## Ordering Key

	ID10K-	12	G4A	40	102	0	0	0	P	L	5	0
<b>Input voltage</b>	12: 12V DC 24: 24V DC											
<b>Motor and spindle type</b>	G4A: 4500rpm / 4mm pitch / ACME											
<b>Gear ratio</b>	20: 20:1 40: 40:1											
<b>Stroke</b>	102: 102mm (4") 153: 153mm (6") 203: 203mm (8") 254: 254mm (10") 305: 305mm (12") 457: 457mm (18") 610: 610mm (24")											
<b>Front connector</b>	0: Standard											
<b>Rear connector</b>	0: Standard											
<b>Pivot orientation of rear connector</b> <i>(Refer to Page 4)</i>	0: 0° (standard) 3: 30° 6: 60° 9: 90° C: 120° F: 150°											
<b>Positioning feedback</b>	0: Basic, positioning feedback. P: Potentiometer (POT) H: Hall effect sensor x 1											
<b>Limit switches</b>	0: Basic, limit switches. L: Limit switches											
<b>IP level</b>	5: IP65											
<b>Reserved</b>	0											

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