

# Actuator

## ID10P

ID10P is an actuator dedicated to high-load and high-speed applications. The enhanced gearbox and internal structure make ID10P more suitable for harsh working environments. In addition, ID10P also has IP66, IP67, IP69K protection and the coating of housing passed 250-hour salt spray test which is suitable for agricultural, construction and industrial fields.



### Features and Options

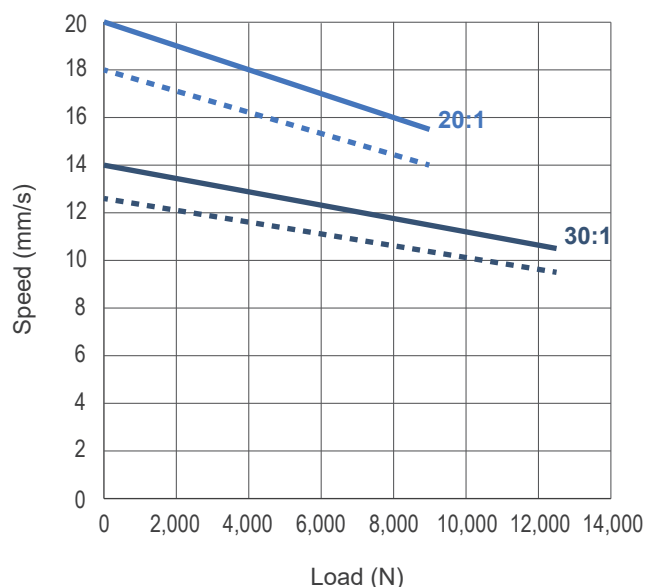
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- Main applications: Industry, Agriculture, Construction
- Input voltage: 24V DC
- Max. rated load: 12,500N (Push / Pull)
- Self-locking ability: 13,600N
- Speed at no load: 20mm/sec (gear motor 20:1 average value)
- Spindle type: Ball Screw
- Gear motor: 20:1 / 30:1
- Stroke: 102 (4") / 203 (8") / 305 (12") mm
- Noise level:  $\leq 70$ dB
- IP level: IP66 / IP67 / IP69K (Static; no-action)
- Salt spray test: 250 hours
- Overload protection by clutch
- Preset limit switches
- Extension tube material: Stainless steel
- Color: Black
- Duty cycle: 10%, max. 1.5 min. continuous operation in 15 min.
- Operating ambient temperature: -25°C ~ +65°C
- Storage ambient temperature: -25°C ~ +65°C
- Option: Analog and absolute positioning feedback with Potentiometer (POT)

## Performance Data

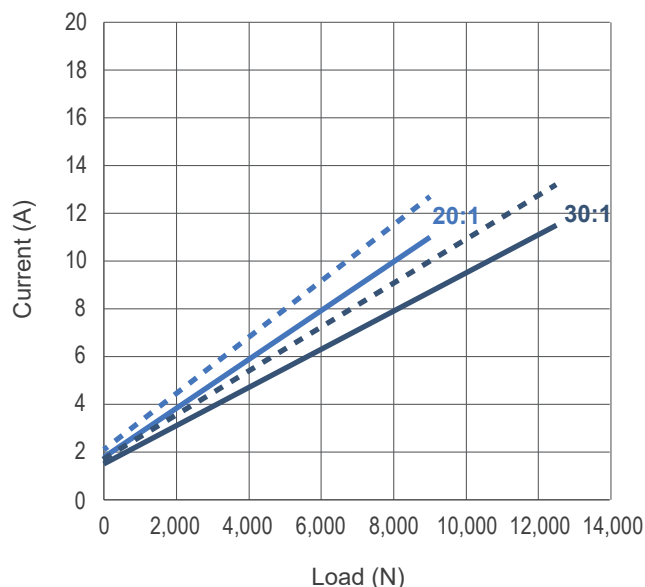
Model No.	Gear Ratio	Max. Pull/Pull Load (N)	Self-locking ability (N)	Typical Speed (mm/s)		Typical Current (A) @24V DC	
				No Load	Full Load	No Load	Full Load
ID10P-24-20B-XXX	20:1	9,000	13,600	20	15.5	1.8	11.0
ID10P-24-30B-XXX	30:1	12,500	13,600	14	10.5	1.5	11.5

Speed VS. Load with 24V DC motor



— Typical Speed    - - - Min. Speed

Current VS. Load with 24V DC motor



— Typical Current    - - - Max. Current

### Remarks:

- \* The self-locking force of 13600 refers to the condition where the actuator is in an short circuit state.

### ● Inrush current



- When the actuator starts to operate, an inrush current of about 0.2 seconds will be generated. The starting inrush current of ID10P can reach about 3 times of the typical current under the actuator maximum 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.

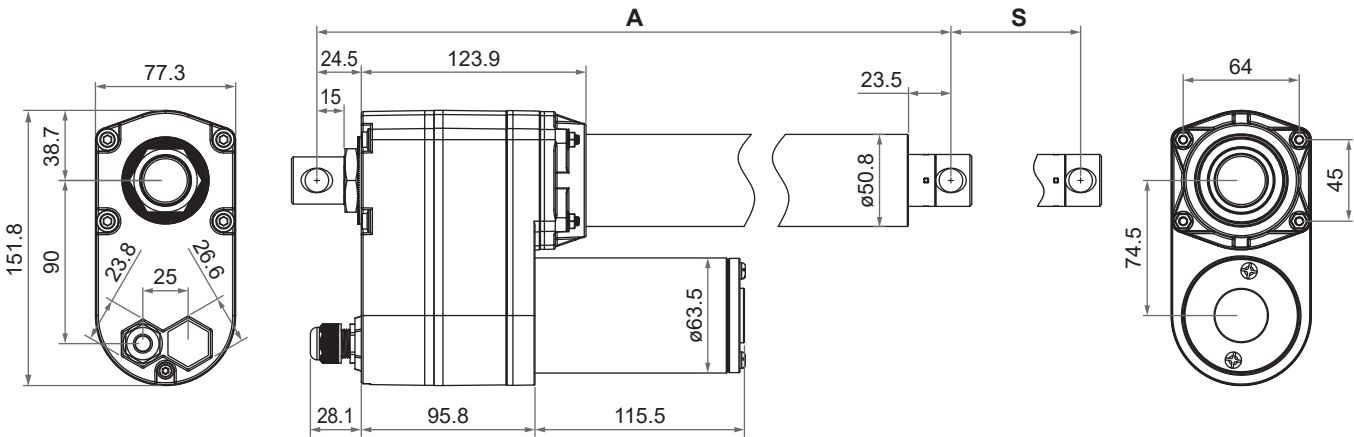
Dimensions

• Retracted length (A)

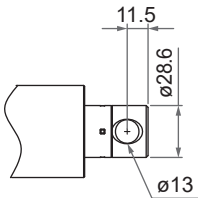
Stroke (S)	102 (4")	203 (8")	305 (12")
Retracted length (A)	398	501	601

(tolerance: ±5mm)

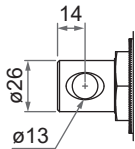
• Drawing



• Front connector

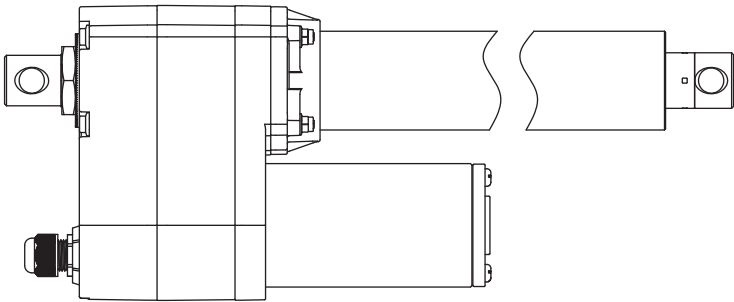
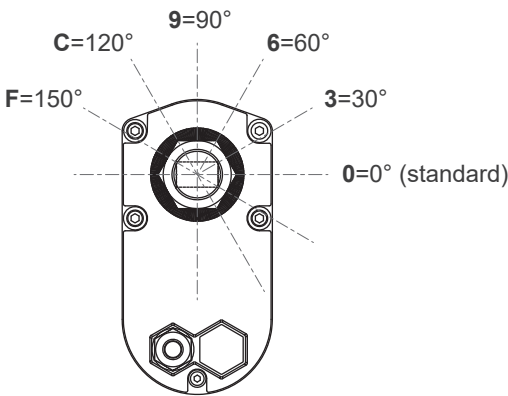


• Rear connector




Unit: mm

• Pivot orientation of rear connector



**Note:** As an example in 0° orientation.

## Compatibility

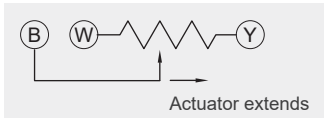
Product	Model	ID10P spec
Controller	CI72	• Standard (Cable with flying leads)
	CI73	• Standard (Cable with flying leads)
Accessory	MB30 mounting bracket 	• Standard, mounting hole ø13mm.

## 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 Potentiometer (POT) absolute 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: 5~32V								
	Blue	POT output	<div><p>1. Potentiometer specification:</p><ul style="list-style-type: none"><li>- 10K ohm, 10 turns.</li><li>- Total resistance tolerance <math>\pm 5\%</math></li><li>- Independent linearity <math>\pm 0.25\%</math></li></ul><p>2. Output voltage: The voltage (resistance) between blue and white increases linearly from about 0 when the actuator extends, and decreases when it retracts.</p><div></div><p>3. There are different resolutions according to the stroke length (as table below)</p><table><tr><th>Stroke</th><th>Resistance (tolerance: <math>\pm 0.3K\Omega</math>)</th></tr><tr><td>102mm (4")</td><td>0.3 ~ 8.1K</td></tr><tr><td>203mm (8")</td><td>0.3 ~ 9.2K</td></tr><tr><td>305mm (12")</td><td>0.3 ~ 8.8K</td></tr></table><p>4. The potential value can be measured through the POT output and GND wires.</p></div>	Stroke	Resistance (tolerance: $\pm 0.3K\Omega$ )	102mm (4")	0.3 ~ 8.1K	203mm (8")	0.3 ~ 9.2K	305mm (12")	0.3 ~ 8.8K
	Stroke	Resistance (tolerance: $\pm 0.3K\Omega$ )									
102mm (4")	0.3 ~ 8.1K										
203mm (8")	0.3 ~ 9.2K										
305mm (12")	0.3 ~ 8.8K										
	White	GND									

## Ordering Key

ID10P - 24 - 30 B - 102 - 0 P 0 0 0 0	
Input voltage	24: 24V DC
Gear ratio	20: 20:1 (9,000N) 30: 30:1 (12,500N)
Spindle type	B: Ball Screw
Stroke	102: 102mm (4") 203: 203mm (8") 305: 305mm (12")
Reserved	0
Positioning feedback	0: None P: Potentiometer (POT)
Reserved	0
Pivot orientation of rear connector (Refer to Page 3)	0: 0° (standard) 3: 30° 6: 60° 9: 90° C: 120° F: 150°
Reserved	0
Cable length	0: 250mm straight 1: 500mm straight 3: 1000mm straight 5: 1500mm straight

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