

Actuator ID10S



Revision	2025.8_V2.3
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Technical changes may be made to improve the product without notice !

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1. Important Information

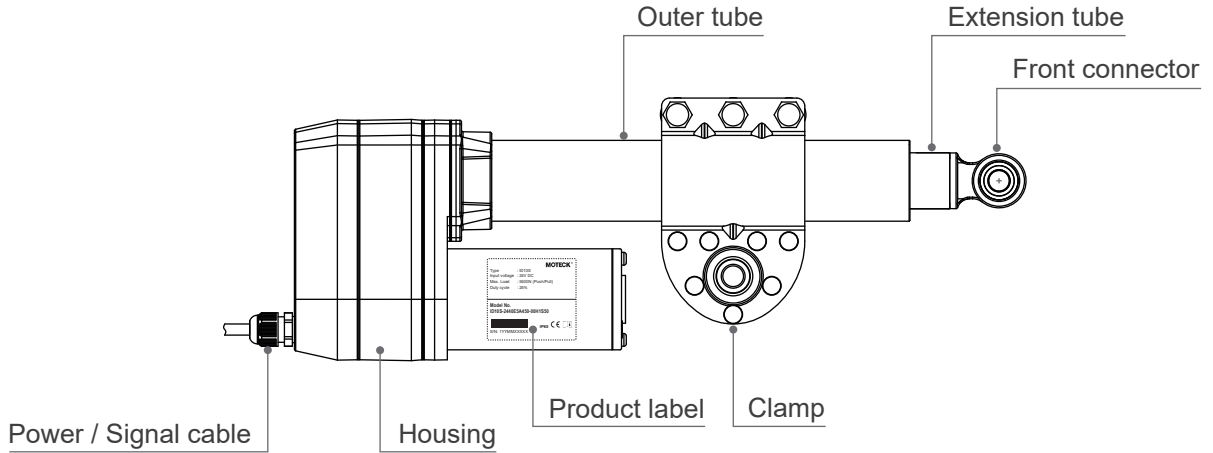


- Only qualified personnel are allowed to carry out the mechanical and electrical installation of this product. Qualified personnel should be familiar with the mechanical or electrical installation work and have corresponding work qualifications.
- Do not perform mechanical installation when the actuator is powered. Complete the mechanical installation first, and then perform the electrical installation.
- Do not hold the extension tube when the actuator is powered.
- Never disconnect any wires or connectors during operation or when power is applied.
- If you find any malfunction or damage to the actuator, please stop using it immediately and notify qualified personnel to take corrective measures.



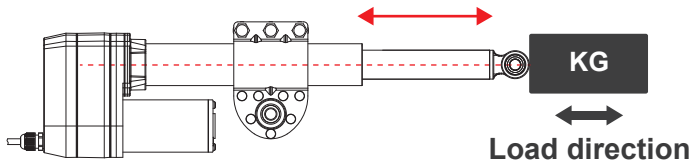
2. Installation


2.1 Terminology

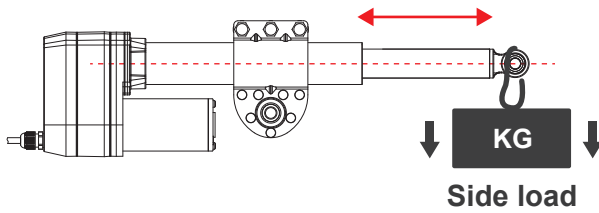


2.2 Mechanical installation

- (1) Be sure that the load acts on the actuator in the axial direction and it isn't recommended to apply side load to the actuator.



 The load should be centered on the operating direction

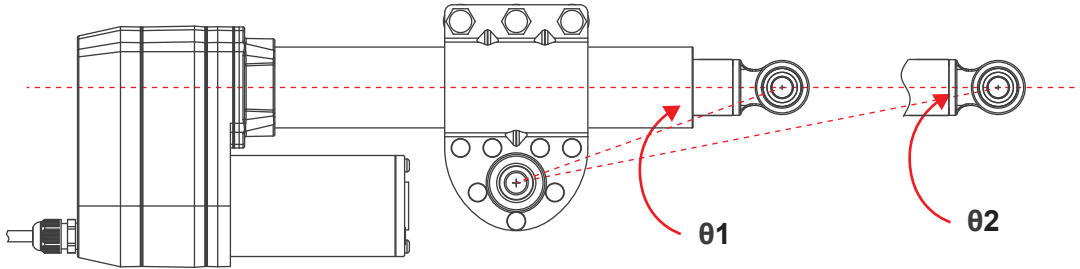


 Side load is NOT good for actuators

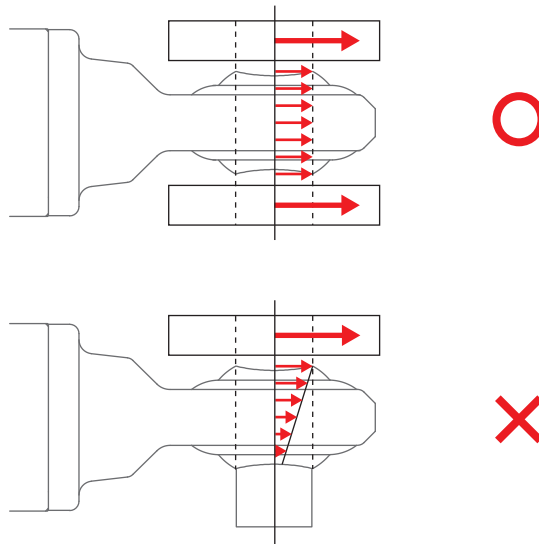
- (2) If the actuator is jammed by an obstruction or the load is severely overweight, the actuator's clutch protection device will trip and run idly to protect the actuator or the customer's mechanical equipment from damage. Please be careful to avoid obstructions and do not exceed the rated load of the actuator.
- (3) Users are forbidden to open the outer cover of the limit switch so as not to affect the original protection level of the actuator, resulting in the immediate failure of the original factory protection commitment.



- (4) Since the fixed point of the clamp is not located on the moving axis of the actuator (off the axis), when the extension tube is moving outwards, the angle between the connecting line of the two fixed points and the axis will change ($\theta_1 \rightarrow \theta_2$). Therefore, please pay attention to the installation method to avoid mechanical interference.



- (5) Make sure all the mounting holes of front connector and clamp are at the right position, then lock all the screws, and then confirm all of them are tightened properly.
- (6) Be sure that mounting pins are supported at both ends.



- (7) If the actuator is used on the equipment to rotate with the mounting pin as the axis, it must be ensured the housing and other mechanical parts will not interfere and damage the actuator or equipment in the full range of movement.

3. Cable with Flying Leads

For ID10S actuators, please follow the instructions below to connect the power and signal wires.


3.1 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		

3.2 With reed sensor positioning feedback

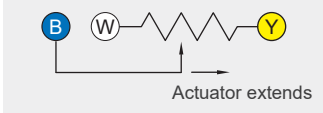
	Wire color	Definition	Descriptions
Power wires	Red	DC power	Connect red wire to "Vdc +" & black wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	Black		
Signal wires	Yellow	Data	Resolution: 1.18pulses/mm (30PPI, 0.847mm/pulse)
	White	GND	

3.3 With single Hall effect sensor 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	White	Vin	Voltage input range: 5~20V
	Yellow	Hall output	High= Input - 1.2V ($\pm 0.6V$) Low= GND Hall signal data:  Resolution: 0.787pulses/mm (20PPI, 1.27mm/pulse)
	Blue	GND	



3.4 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	Input voltage 70V max.								
	Blue	POT output	<p>1. Potentiometer specification:</p> <ul style="list-style-type: none"> - 10K ohm, 10 turns. - Total resistance tolerance $\pm 5\%$ - Independent linearity $\pm 0.25\%$ <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 style="text-align: center;">  </div> <p>3. There are different resolutions according to the stroke length (as table below)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Stroke (mm)</th> <th>Resistance (tolerance: $\pm 0.3K\Omega$)</th> </tr> </thead> <tbody> <tr> <td>450</td> <td>0.3 ~ 8.8K</td> </tr> <tr> <td>600</td> <td>0.3 ~ 9.4K</td> </tr> <tr> <td>900</td> <td>0.3 ~ 9.2K</td> </tr> </tbody> </table> <p>4. The potential value can be measured through the POT output and GND wires.</p>	Stroke (mm)	Resistance (tolerance: $\pm 0.3K\Omega$)	450	0.3 ~ 8.8K	600	0.3 ~ 9.4K	900	0.3 ~ 9.2K
	Stroke (mm)	Resistance (tolerance: $\pm 0.3K\Omega$)									
	450	0.3 ~ 8.8K									
600	0.3 ~ 9.4K										
900	0.3 ~ 9.2K										
White	GND										

4. Inrush Current



- When the actuator starts to operate, an inrush current of about 0.2 seconds will be generated. The starting inrush current of ID10S 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.

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