Manual

Actuator
ID12

Revision	2023.08_V1.3

Technical changes may be made to improve the product without notice！

CAUTION

● Be sure there's no side loading acts on the actuator. The load should act along the axis of the actuator since the off center loads may cause binding, excessive friction, reducing the actuator's speed, lifespan and can also damage the internal components such as the drive nut, lead screw, transmission gears or motor.

KG Load

○
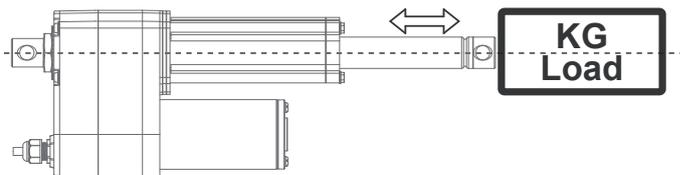
The load must be exerted in the moving direction of extension rod.

KG

Side Loading

✗
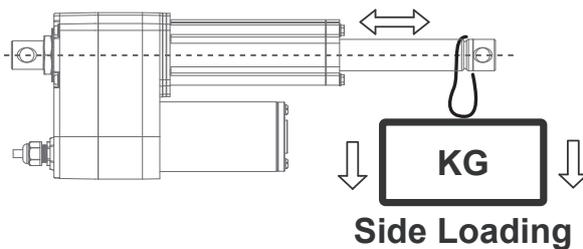
The load that is exerted perpendicular to the extension rod.

● The slip clutch will be engaged to cut off the power from motor if there's overload condition or any obstructions on the way of actuator's traveling that causes overload. Please be careful of obstructions and reomve the obstacle first and make sure the operation load is equal or less than rated load.

● Please do not remove the back cover of gear box and/or try to tune the default setting of limit switches or the actuator will be no longer with the default IP warranty and there's the risk of effective stroke length be changed.

MANUAL DRIVE (MD) HEXAGON SOCKET

The MD (manual drive) is an alternative way to override the actuator in both directions in case of a power failure. The actuator accepts a standard hexagon key to rotate the motor in either direction.

Step 1. Remove the plug on the gearbox cover.
Step 2. Use a 8.0mm hex bit or electric screwdriver (recommended) to drive the gear directly.
Step 3. Insert the plug back to original position and confirm the plug is installed properly.

● The Max. drive torque is 6kg-cm with 4500N load (Ball Screw)

Hexagon socket

Plug
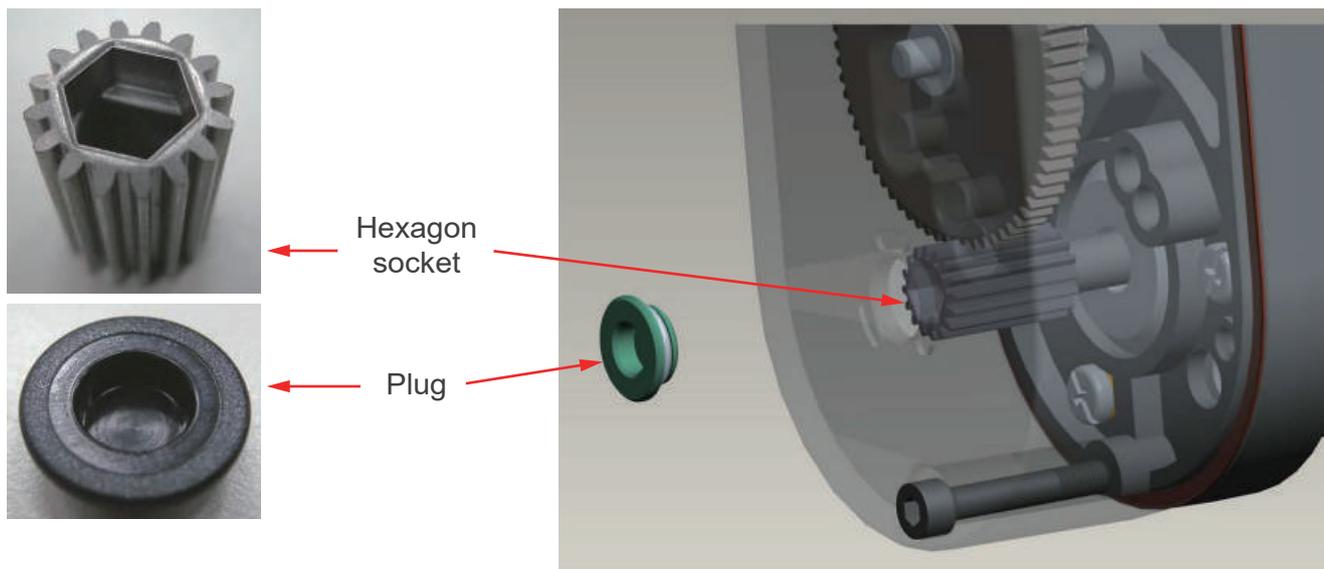
WIRE CONNECTION

For ID12 actuator, connection rule of power wires varies according to different types and gear ratio(s). Please follow the instructions below.

(1) Basic (Without limit switch nor positioning feedback)
   ● Gear ratio: 5:1, 10:1, 20:1

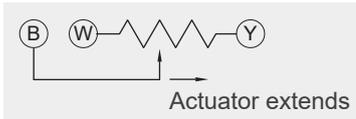|	Wire color	Definition	Descriptions
Power wires	Red / Black	DC power	Connect red wire to "Vdc +" & black wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.

   ● Gear ratio: 30:1, 40:1

	Wire color	Definition	Descriptions
Power wires	Red / Black	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.

(2) With limit switches

	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) 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	1. Potentiometer specification: - 10K ohm, 10 turns. - Tolerance ±5% 2. Output voltage: The voltage (resistance) between blue and white increases linearly from about 0 when the actuator extends, and decreases when it retracts. Actuator extends 3. There are different resolutions according to the stroke length (as table below) | Stroke (mm)	Resistance (tolerance: ±0.3KΩ)
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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	
	White	GND	

(4) 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 (±0.6V) Low= GND Hall signal data: High ⎍⎍⎍ Hall Low Hall effect sensor resolution: 20ppi, 1.27mm/pulse (0.787pulses/mm)
	Blue	GND	

(5) With external reed sensors

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

● How to change the position of reed sensor:
  Step 1. Loosen the screws.
  Step 2. Slide sensor to the correct position.
  Step 3. Tighten the screws and make sure the sensor is fixed.
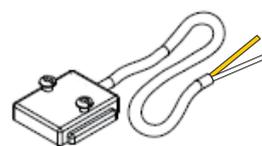
Yellow (+), White (-)
or
Yellow (-), White (+)

External adjustable reed sensor NC-type
(i.e. normal close)

SAFETY DECLARATION

This appliance cannot be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.