Actuator
MK50

MK50 is a in-line shape linear actuator that provides push and pull forces up to 4,500N and has a high degree of IP protection. MK50 has DC 12V and 24V input voltage specifications, as well as a variety of performance options, suitable for industrial applications and general applications.

Features and Options

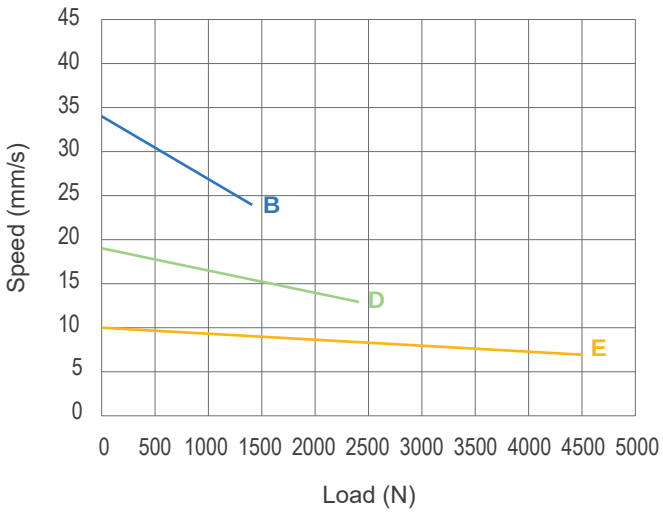
- Main application: Industry
- Input voltage: 12V DC / 24V DC
- Max. load: 4,500N (Push/Pull)
- Max. static load: 4,700N (With plastic connectors)/ 16,800N (With aluminum alloy connectors)
- Max. speed at no load: 34mm/sec (Performance option B)
- Stroke: 50 ~ 750mm
- Spindle type: ACME screw
- Inner tube material: Stainless steel
- Motor & Outer tube material: Black coating steel case (RAL 9005)
- IP level: IP67/IP69K (Static; non-action)
- Duty cycle:10%, max. 2 min. continuous operation in 20 min.
- Operating ambient temperature: -40°C ~ +80°C
- Storage ambient temperature: -55°C ~ +105°C
- Option: Positioning signal feedback with dual Hall effect sensors

Performance Data

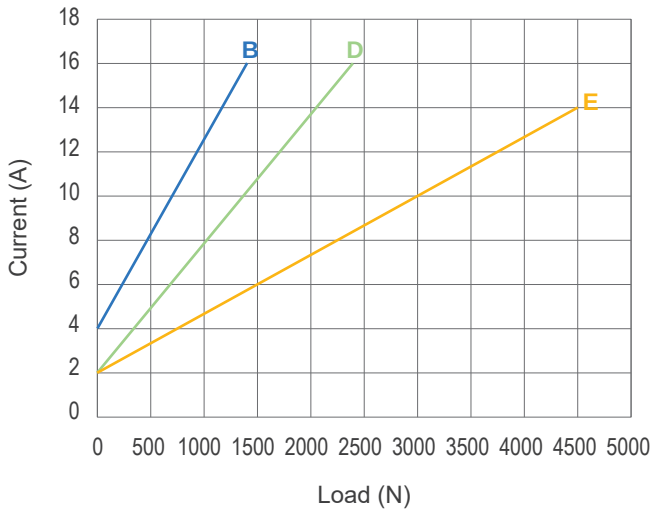
● **12V motor**

Model No.	Push/Pull load Max. (N)	* Typical speed (mm/s)		* Typical current (A)	
		No load	Full load	No load	Full load
MK50-12-**B**-XXX.XXX-BXXX00X	1,400	34	24	4	16
MK50-12-**D**-XXX.XXX-BXXX00X	2,400	19	13	2	16
MK50-12-**E**-XXX.XXX-BXXX00X	4,500	10	7	2	14

Speed VS. Load



Current VS. Load



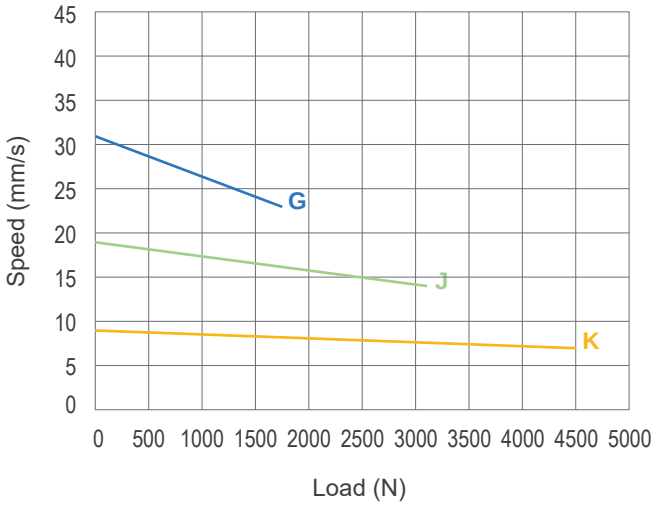
Remarks:

* The typical speed or typical current means the average value neither upper limit nor lower limit, which measured under room temperature and stable power. The performance curves are made with typical values.

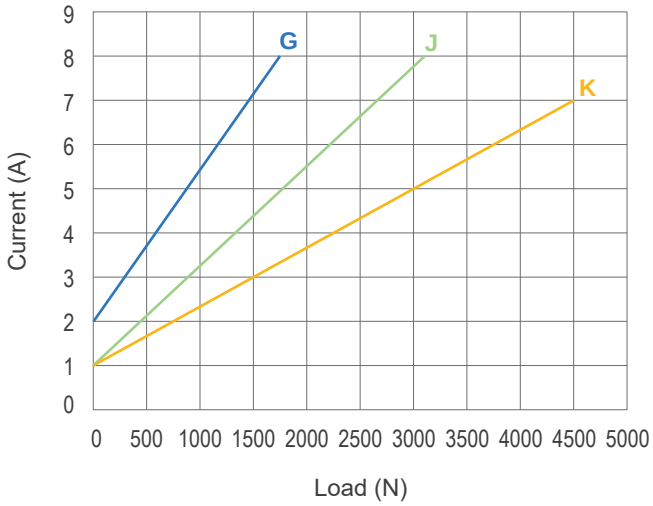
● **24V motor**

Model No.	Push/Pull load Max. (N)	* Typical speed (mm/s)		* Typical current (A)	
		No load	Full load	No load	Full load
MK50-24-**G**-XXX.XXX-BXXX00X	1,750	31	23	2	8
MK50-24-**J**-XXX.XXX-BXXX00X	3,100	19	14	1	8
MK50-24-**K**-XXX.XXX-BXXX00X	4,500	9	7	1	7

Speed VS. Load



Current VS. Load



Remarks:

* The typical speed or typical current means the average value neither upper limit nor lower limit, which measured under room temperature and stable power. The performance curves are made with typical values.

● **Inrush current**

- When the actuator starts to operate, an inrush current of about 0.2 seconds will be generated. The starting inrush current of MK50 can reach about 3 times of the typical current under the actuator 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

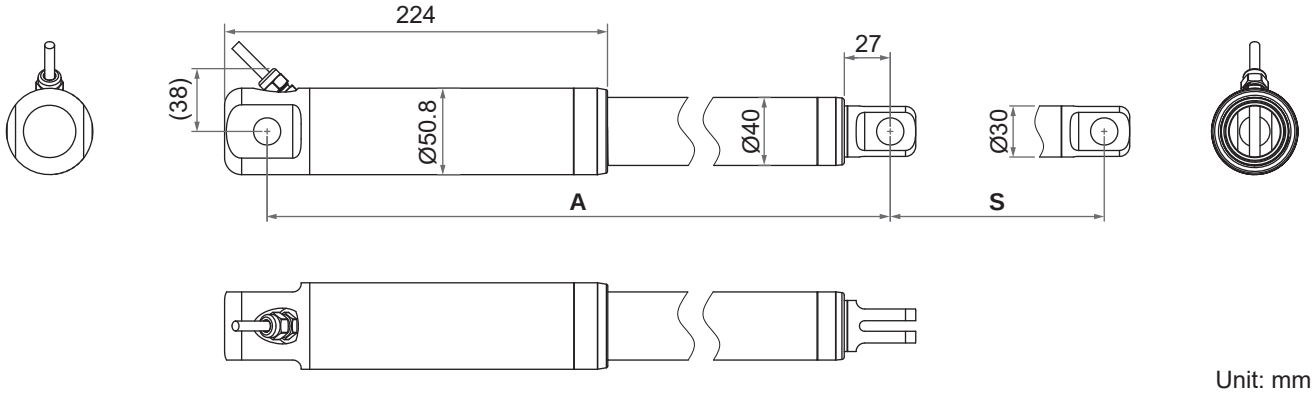
- **Available stroke range (S)** = 50 ~ 750mm (One step in every 50mm)
- **Extended length** = Retracted length (A) + Stroke (S)
- **Retracted length (A)**

Performance	Basic, without positioning feedback	With dual Hall effect sensors positioning feedback
B, D, G, J, E, K	A≧S+255 mm	A≧S+270 mm

(tolerance: ±3mm)

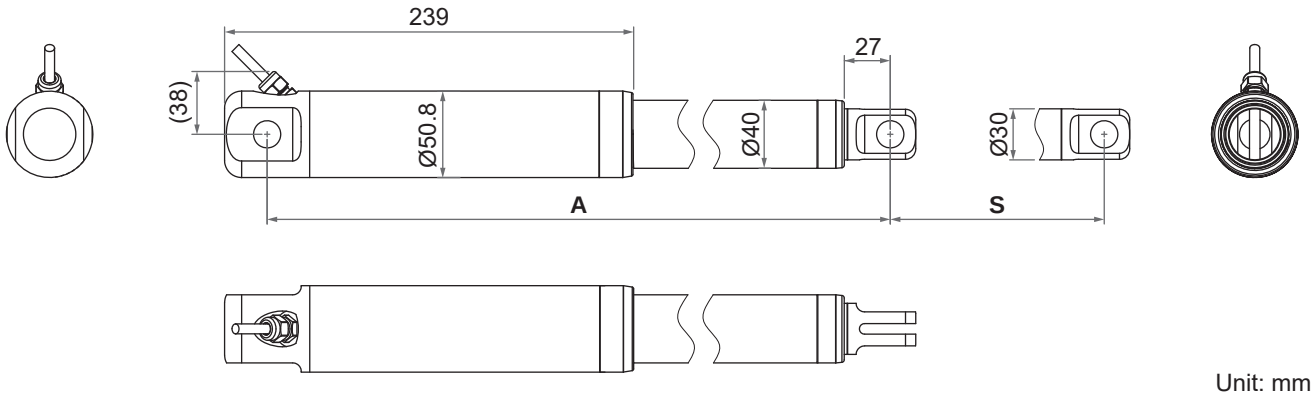
- **Drawing**

- Basic, without position feedback.



Unit: mm

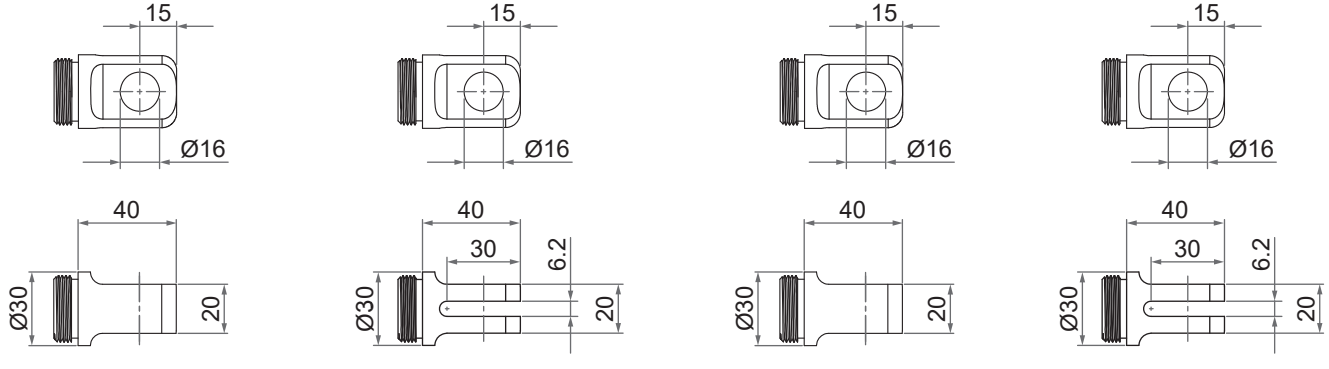
- With dual Hall effect sensors positioning feedback



Unit: mm

- **Front connector**

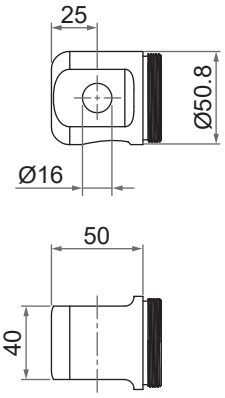
3: Aluminum alloy solid **4**: Aluminum alloy slot **5**: Plastic solid **6**: Plastic slot



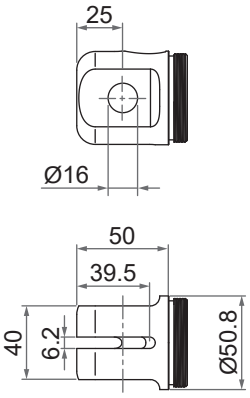
Unit: mm

● **Rear connector**

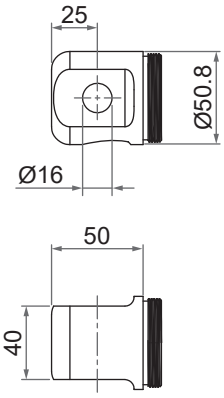
3: Aluminum alloy solid



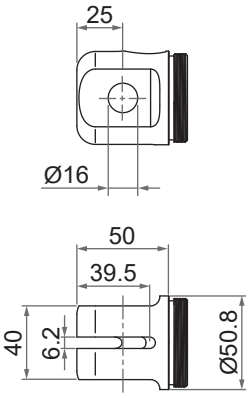
4: Aluminum alloy slot



5: Plastic solid



6: Plastic slot



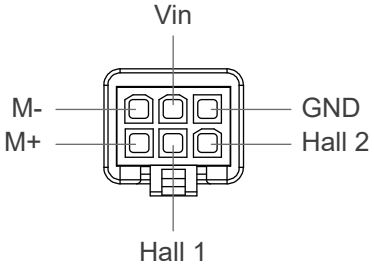
Unit: mm

Compatibility

Product	Model	MK50 spec
Controller	CI72	• Standard • Cable with flying leads
	CI73	• With dual Hall effect sensors for positioning • Cable with flying leads
	CI74	• With dual Hall effect sensors for positioning • With Moteck L3-type minifit 6-pin plug

Cable Plug

● **Connecting controller devices that provide power**



With Moteck L3-type minifit 6-pin plug
(With dual Hall effect sensors for positioning)

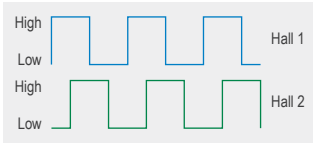
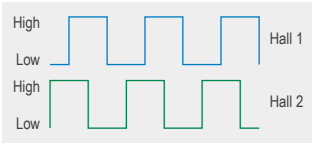
L3-type plug

Cable with Flying Leads

● Basic, without position 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 dual Hall effect sensors 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: 5~60V (1 mA), it is recommended to provide a separate power source. ⚠ If this voltage input must share the motor's power supply, be sure to use a separate power cord to draw power from the source, not tapping it from the control board's power input. Otherwise, the motor's inrush current will cause the Hall IC circuit to malfunction.
	Blue	Hall 1 output	High= Input - 1.2V (±0.6V) Low= GND Hall signal data:  Actuator extends  Actuator retracts Hall effect sensor resolution:
	Green	Hall 2 output	
	White	GND	

Voltage & Performance	Resolution (Pulses/mm)
12-B	4.67
12-D	8.00
12-E	16.33
24-G	4.67
24-J	8.00
24-K	16.33

Ordering Key

MK50 - 24 - G - 255 . 370 - B 3 3 H 0 0 3

Input voltage	**12**: 12V DC **24**: 24V DC
Performance	**B**, **D**, **E** (Refer to p.2) **G**, **J**, **K** (Refer to p.3)
Retracted length (Refer to p.4)	**XXX**
Extended length (Refer to p.4)	**XXX**
Exterior	**B**: Black coating steel case and aluminum inner tube
Front connector (Refer to p.4)	**3**: Aluminum alloy solid **4**: Aluminum alloy slot **5**: Plastic solid **6**: Plastic slot
Rear connector (Refer to p.4)	**3**: Aluminum alloy solid **4**: Aluminum alloy slot **5**: Plastic solid **6**: Plastic slot
Positioning feedback	**0**: None **H**: Hall effect sensor x 2
Reserved	**0**
Reserved	**0**
Cable length	**3**: 1000mm straight **6**: 2000mm straight