

Actuator MK40



MK40 is a slim actuator but providing a maximum thrust of 6,000N. This, combined with its short installation length, makes it ideal for applications in confined spaces.

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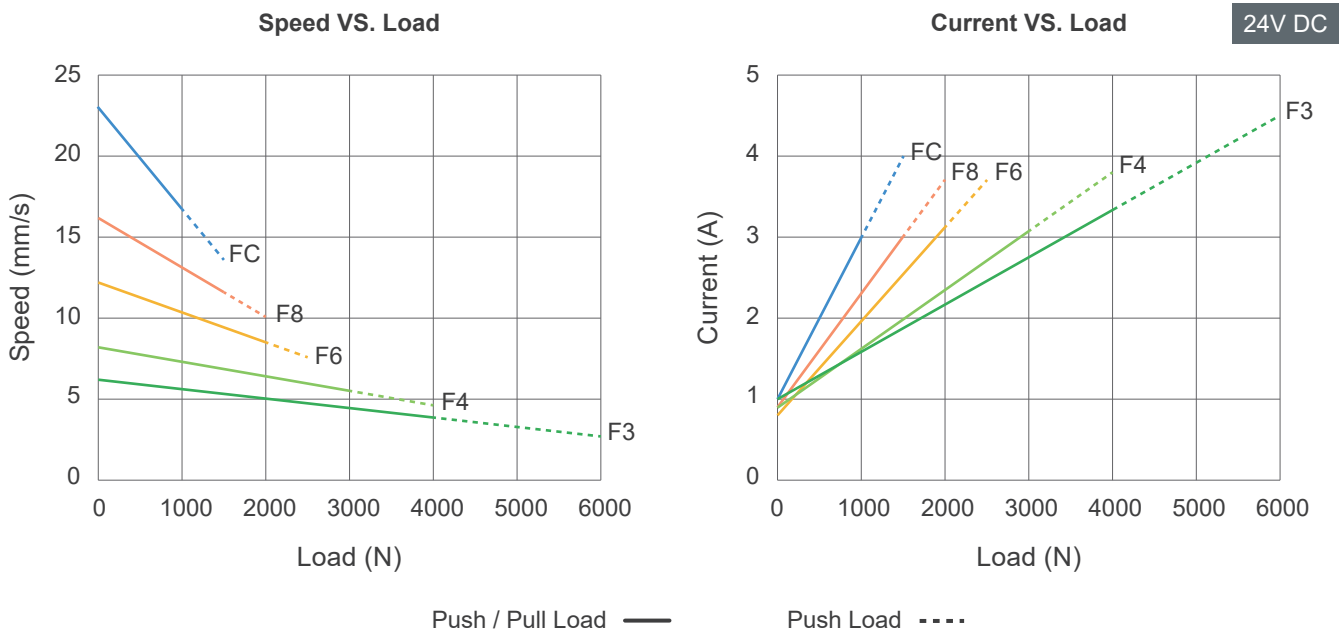
Features and Options

- Main application: Furniture
- Input voltage: 24V DC
- Max. load: 6,000N (Push) / 4,000N (Pull)
- Max. speed at no load: 23.0mm/sec (Typical value)
- Speed at full load: 2.7mm/sec (Typical value @6,000N loaded)
- Stroke: 50~400mm
- Noise level: ≤ 50 dB
- Preset limit switches
- Duty cycle: 10%, max. 2 min. continuous operation in 20 min.
- Operating ambient temperature: $-20^{\circ}\text{C}\sim+65^{\circ}\text{C}$
- Storage ambient temperature: $-25^{\circ}\text{C}\sim+65^{\circ}\text{C}$
- Positioning: Optional digital positioning feedback with dual Hall effect sensors
- Optional mechanical push only extension tube



Performance Data

Model No.	Max. load (N)		Typical speed (mm/s) ⁽¹⁾		Typical current (A) ⁽¹⁾	
	Push	Pull	No load	Full load	No load	Full load
MK40-XXF3-XXX.XXX-XXXXXX0X	6,000	4,000	6.2	2.7	1.0	4.5
MK40-XXF4-XXX.XXX-XXXXXX0X	4,000	3,000	8.2	4.6	0.9	3.8
MK40-XXF6-XXX.XXX-XXXXXX0X	2,500	2,000	12.2	7.6	0.8	3.7
MK40-XXF8-XXX.XXX-XXXXXX0X	2,000	1,500	16.2	10.1	0.9	3.7
MK40-XXFC-XXX.XXX-XXXXXX0X	1,500	1,000	23.0	13.6	1.0	4.0



Note:

⁽¹⁾ The typical speed or typical current means the average value neither upper limit nor lower limit. 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 MK40 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

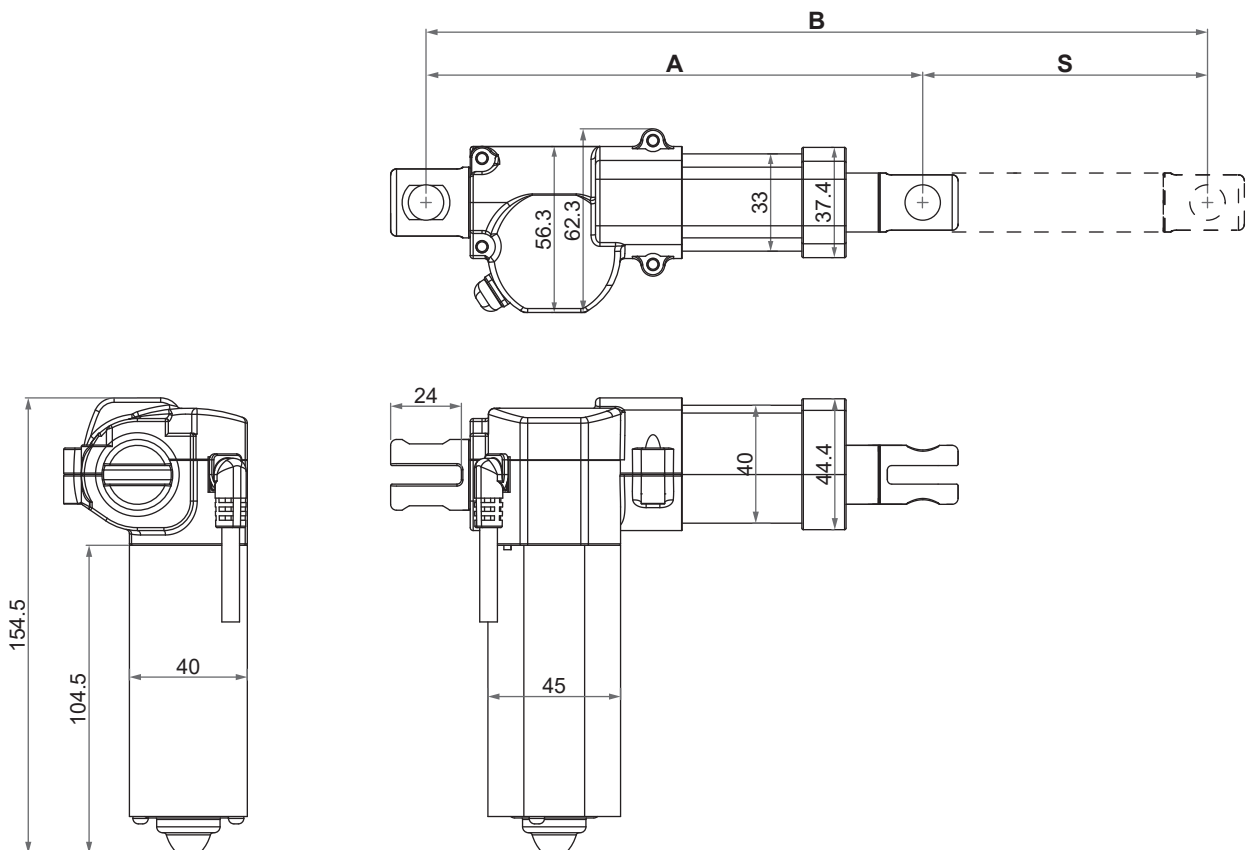
1. Installation dimension

- Available stroke (S) range = 50~400mm (±3mm)
- Retracted length (A) $\geq S + 110 + E + F + L$ (Unit: mm)

Stroke	E
$\leq 200\text{mm}$	+0 mm
$201 \leq S \leq 250\text{mm}$	+10 mm
$251 \leq S \leq 300\text{mm}$	+20 mm
$301 \leq S \leq 400\text{mm}$	+40 mm
Front connector code	F
2 (only available for $\leq 2000\text{N}$)	+0 mm
3	+13 mm
6 (only available for $\leq 2000\text{N}$)	+13 mm
Feature option	L
Motor and spindle type: F4, F6, F8, FC ($\leq 4,000\text{N}$)	+0 mm
Motor and spindle type: F3 ($> 4,000\text{N}$)	+10 mm

- $S \geq 401\text{mm}$, please consult MOTECK sales representative for feasibility and the available.
- Extended length (B) = Retracted length (A) + Stroke (S)

2. Drawing

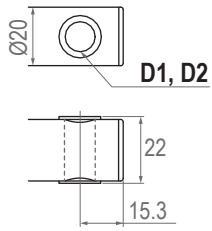


Unit: mm

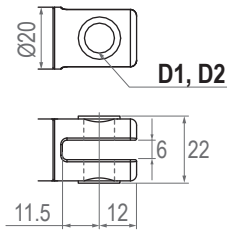


3. Front connector type

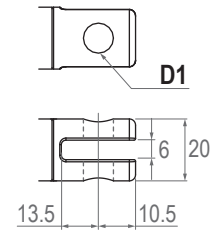
2=Drilled hole ⁽¹⁾



3=Metal slot



6=Plastic slot ⁽²⁾



Front connector code	Diameter of pivot without bushing (D1)	Diameter of pivot with bushing (D2)
2 ⁽¹⁾	Ø8, Ø10	Ø8
3	Ø8, Ø10	Ø8
6 ⁽²⁾	Ø8, Ø10	N/A

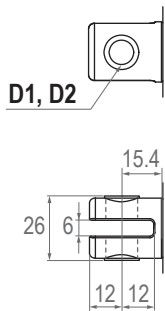
Notes:

⁽¹⁾ Only for models with max. load $\leq 2000\text{N}$

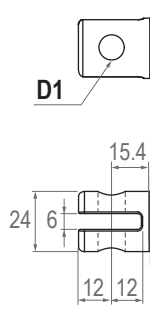
⁽²⁾ Only for models with max. load $\leq 2000\text{N}$

4. Rear connector type

2=Metal



4=Plastic ⁽¹⁾



Rear connector code	Diameter of pivot without bushing (D1)	Diameter of pivot with bushing (D2)
2	Ø8, Ø10	Ø8
4 ⁽¹⁾	Ø8, Ø10	N/A

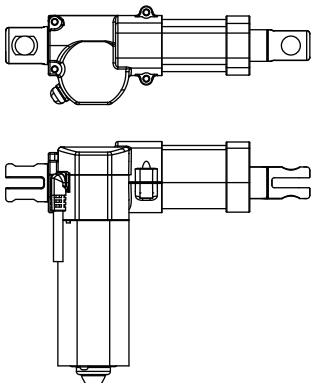
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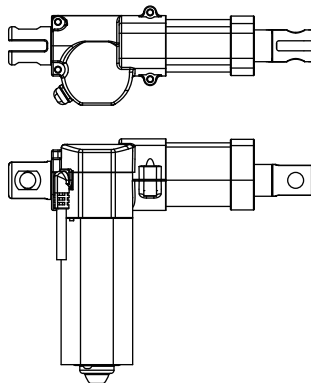
Unit: mm

5. Pivot orientation of rear connectors

0=0° (standard)



9=90°



Compatibility

Product	Model	Application condition ⁽¹⁾	MK40 spec
Control box	T-control, CS1, CS2, CB3T, CB4M, CBT2	Max. 3A current per channel	<ul style="list-style-type: none"> • Without positioning sensor • With Moteck F-type DIN plug
	CF11H, CF12H	Max. 3.6A current per channel	<ul style="list-style-type: none"> • Without positioning sensor • With Moteck L3-type minifit plug
	CB3T-SY	Max. $\leq 5A$ current 2 channels	<ul style="list-style-type: none"> • With dual Hall effect sensors for positioning • With Moteck F-type DIN plug
	CB4M-S, CB4M-B	Max. 3A current per channel	
	CF11S	Max. $\leq 6A$ current 2 channels	<ul style="list-style-type: none"> • With dual Hall effect sensors for positioning • With Moteck L3-type minifit plug
	CF12S	Max. 3.6A current per channel	
Hand control	Depend on control box		<ul style="list-style-type: none"> • Powered by control box
	HS15, H2B, H2G		<ul style="list-style-type: none"> • With Moteck S-type DIN 41529 male plug ⁽²⁾

Notes:


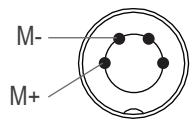
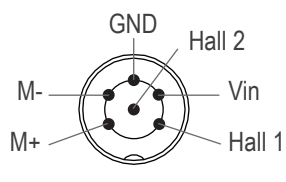

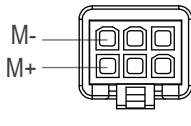
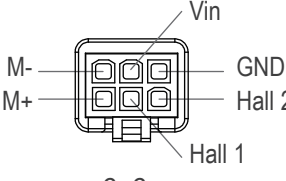

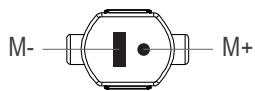
⁽¹⁾ If the current limit of the selected control box is lower than the typical current of the actuator model under full load, the actuator could not be operated in full performance.

⁽²⁾ The S-type DIN 41529 plug of the actuator is connected to the HS15 hand control directly, no control box.


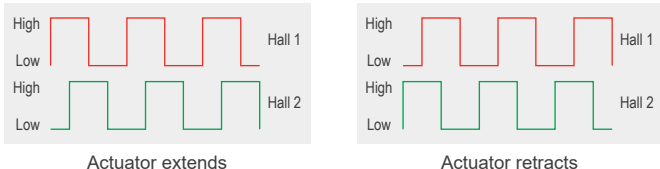


Cable Plug

- Connecting control devices that provide power

	Without positioning feedback	Positioning feedback with dual Hall effect sensors
 Moteck F-type DIN male plug	 4p2c	 6p6c
 Moteck L3-type Minifit male plug	 6p2c	 6p6c
 Moteck S-type DIN 41529 male plug	 2p2c	N/A

Note: Pin definition

	Definition	Descriptions												
Power	M+	Connect M+ to "Vdc +" & M- to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.												
	M-													
Signal	Vin	Voltage input range: 5~60V  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.												
	Hall 1 output	High= Input - 1.2V ($\pm 0.6V$) Low= GND Hall signal data: 												
	Hall 2 output	Hall effect sensor resolution: <table border="1"> <thead> <tr> <th>Model No.</th> <th>Resolution (pulses/mm)</th> </tr> </thead> <tbody> <tr> <td>MK40-24F3-XXX.XXX-XXXHX0X</td> <td>9.33</td> </tr> <tr> <td>MK40-24F4-XXX.XXX-XXXHX0X</td> <td>7.00</td> </tr> <tr> <td>MK40-24F6-XXX.XXX-XXXHX0X</td> <td>4.66</td> </tr> <tr> <td>MK40-24F8-XXX.XXX-XXXHX0X</td> <td>3.50</td> </tr> <tr> <td>MK40-24FC-XXX.XXX-XXXHX0X</td> <td>2.33</td> </tr> </tbody> </table>	Model No.	Resolution (pulses/mm)	MK40-24F3-XXX.XXX-XXXHX0X	9.33	MK40-24F4-XXX.XXX-XXXHX0X	7.00	MK40-24F6-XXX.XXX-XXXHX0X	4.66	MK40-24F8-XXX.XXX-XXXHX0X	3.50	MK40-24FC-XXX.XXX-XXXHX0X	2.33
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MK40-24F8-XXX.XXX-XXXHX0X	3.50													
MK40-24FC-XXX.XXX-XXXHX0X	2.33													
GND														



Ordering Key

	MK40-24 F8-190.240-3 2 0 H 1 0 1
Input voltage	24: 24V DC
Motor and Spindle type	F3: 3500RPM / 3mm pitch F4: 3500RPM / 4mm pitch F6: 3500RPM / 6mm pitch F8: 3500RPM / 8mm pitch FC: 3500RPM / 12mm pitch
Retracted length (Refer to page 5)	XXX
Extended length (Refer to page 5)	XXX
Front connector type (Refer to Page 6)	2: Drilled hole (only for models with max. load $\leq 2000\text{N}$) 3: Metal slot 6: Plastic slot (only for models with max. load $\leq 2000\text{N}$)
Rear connector type (Refer to Page 6)	2: Metal 4: Plastic (only for models with max. load $\leq 2000\text{N}$)
Pivot orientation of rear connector (Refer to Page 6)	0: 0° (standard) 9: 90°
Positioning feedback	0: None H: Hall effect sensor x 2
Option	0: None 1: Mechanical push only extension tube
Reserved	0
Cable length	0: 300mm straight 1: 1000mm straight A: 450mm with 300mm coiled

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