

Actuator MK41



MK41 is a compact, high-load electric actuator specifically designed for ultra-low adjustable beds or nursing beds, providing a stable thrust of up to 8,000N. It is particularly suitable for beds with extremely low ground clearance, enhancing care safety and product flexibility. It is widely applicable in a variety of applications, including hospitals, long-term care facilities, and home care.

Features and Options

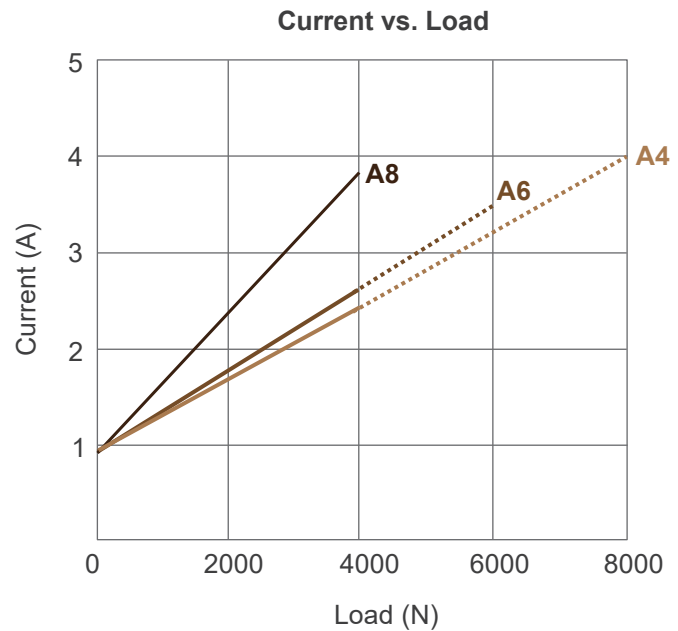
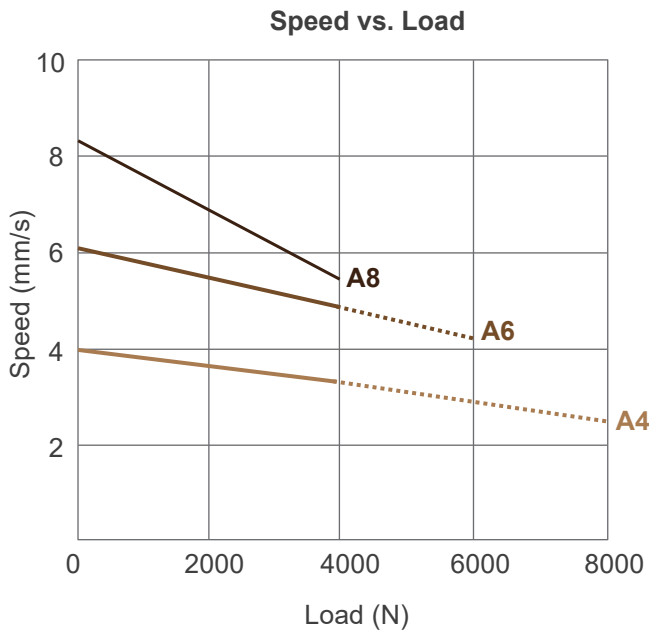
- Main applications: Medical care
- Input voltage: 24V DC
- Max. load: 8000N (Push) / 4000N (Pull)
- Self-locking ability: 6500N
- Max. speed at no load: 8.3mm/sec
- Stroke: 50~300mm
- Noise level: ≤ 50 dB
- IP Protection level: IPX6 (static, non-action)
- Color: Light gray RAL 7035
- Optional positioning signal feedback with hall effect sensor x 2
- Optional mechanical push only extension tube
- Optional safety nut (in push direction)
- Optional mechanical brake

Usages

- Duty cycle: 10%, max. 2 min. continuous operation in 20 min.
- Operating ambient temperature: +5°C to +40°C
- Transport and storage temperature: -10°C to +50°C
- Relative humidity: 20% to 85%
- Atmospheric pressure: 71 kPa to 101.3 kPa
- Height above mean sea level: Max. 3,000 meters

Performance Data

Model No.	Push Max.(N)	Pull Max.(N)	Self-locking ability (N)	Typical Speed (mm/s)		Typical Current (A)	
				No load	Full load	No load	Full load
MK41-24A4...	8000	4000	6500	4.0	2.7	0.9	4.0
MK41-24A6...	6000	4000	5500	6.1	4.3	0.9	4.5
MK41-24A8...	4000	4000	4000	8.3	5.7	0.9	3.8



Push / Pull Load —

Push Load

*Remarks:

1. The self-locking ability is performed by short circuit the motor terminals when the actuator is stopped. All MOTECK compatible control boxes are designed with this feature.
2. For A4 and A6 models requiring greater self-locking capability, select the brake option to prevent slipping within the rated load range.
3. 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 MK41 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

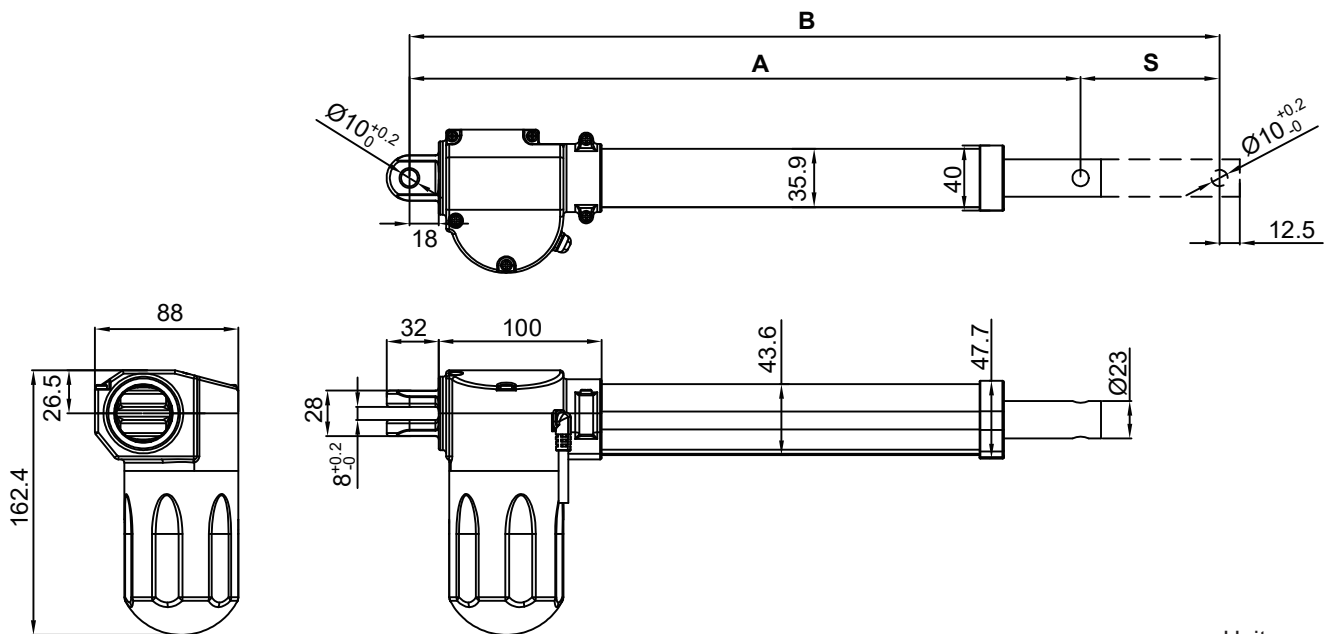
1. Installation dimension

- Retracted length (A)

Front connector	Retracted length (A)	Safety option
3	$A \geq S + 160\text{mm} (\pm 3\text{mm})$	+8mm
8	$A \geq S + 188\text{mm} (\pm 3\text{mm})$	

- Available stroke (S) range = 50 ~ 300mm
- Extended length (B) = Retracted length (A) + Stroke (S)

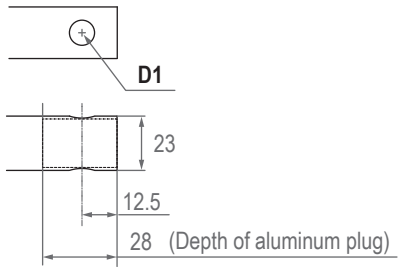
2. Drawing



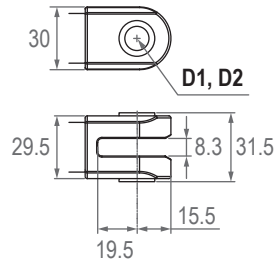
Unit: mm

3. Front connector

3: Drilled hole with aluminum plug



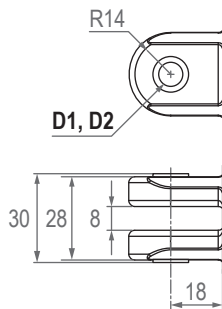
8: Aluminum alloy clevis



Front connector code	Diameter of pivot without bushing (D1)	Diameter of pivot with bushing (D2)
3	ø10	N/A
8	ø10, ø12	ø8, ø10

4. Rear connector

1: Aluminum alloy clevis

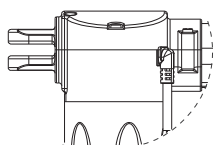
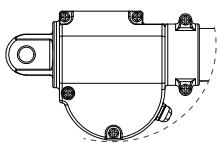


Unit: mm

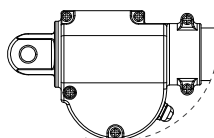
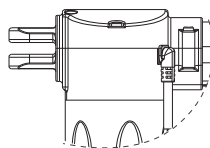
Rear connector code	Diameter of pivot without bushing (D1)	Diameter of pivot with bushing (D2)
1	ø10, ø12	ø8, ø10

5. Pivot orientation of rear connectors

0: 0° (standard)



9: 90°

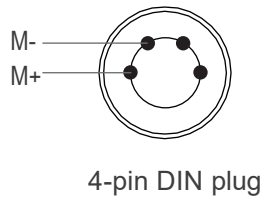


Compatibility

Product	Model	MK41 spec
Control box	CM45	• MOTECK H-type 4-pin DIN plug
	CM41	• Without positioning feedback • MOTECK LR-type 6-pin minifit plug
	CM41-M, CB5P-M	• With dual Hall effect sensors for positioning • MOTECK LR-type 6-pin minifit plug

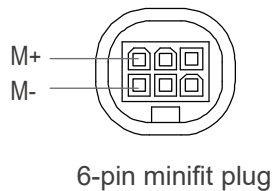
Cable Plug

- MOTECK H-type plug



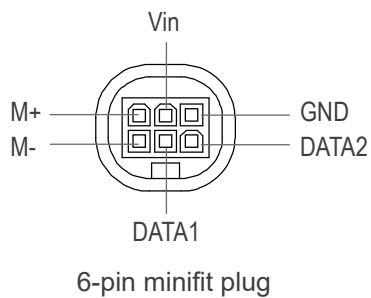
H-type

- MOTECK LR-type plug
 - Without positioning feedback

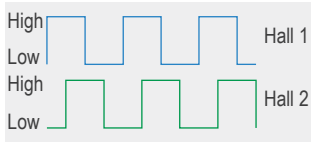
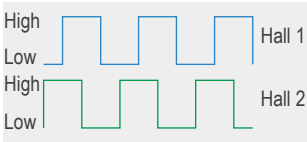


LR-type

- With dual Hall effect sensors for positioning



• Note:

	Definition	Comments								
Power	M+	Connect blue wire to “Vdc +” & Brown wire to “Vdc -” of DC power to extend the actuator. Switch the polarity of DC input to retract it.								
	M-									
Signal	Vin	Voltage input range (Vin): 5 ~ 20V								
	Hall 1 output	<div>High= Input - 1.2V (±0.6V) Low= GND Hall signal data:</div> <div><div><p>Actuator extends</p></div><div><p>Actuator retracts</p></div></div>								
	Hall 2 output	<div>Hall effect sensor resolution:</div> <table><thead><tr><th>Model No.</th><th>Resolution (pulses/mm)</th></tr></thead><tbody><tr><td>MK41-24A4-XXX.XXX-XXXXXXXX</td><td>10.00</td></tr><tr><td>MK41-24A6-XXX.XXX-XXXXXXXX</td><td>6.67</td></tr><tr><td>MK41-24A8-XXX.XXX-XXXXXXXX</td><td>5.00</td></tr></tbody></table>	Model No.	Resolution (pulses/mm)	MK41-24A4-XXX.XXX-XXXXXXXX	10.00	MK41-24A6-XXX.XXX-XXXXXXXX	6.67	MK41-24A8-XXX.XXX-XXXXXXXX	5.00
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GND										

Ordering Key

	MK41 - 24 - A4 - 210 - 260 - 3 - 1 - 0 - H - 0 - 0 - 0
Input voltage	24: 24V DC
Motor and Spindle type	A4: 2500rpm / 4mm pitch A6: 2500rpm / 6mm pitch A8: 2500rpm / 8mm pitch
Retracted length	XXX (refer to page 4)
Extended length	XXX (refer to page 4)
Front connector	3: Drilled hole with aluminum plug 8: Aluminum alloy clevis
Rear connector	1: Aluminum alloy clevis
Pivot orientation of rear connector	0: 0° (standard) 9: 90°
Positioning feedback	0: None H: With dual Hall effect sensors for positioning
Safety option	0: None S: Safety nut P: Push only
Brake option	0: None B: Mechanical brake
Cable length	0: 300mm straight 3: 1000mm straight 6: 2000mm straight A: 450mm with 300mm coiled

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