

Actuator MK32

MK32 is a small actuator with push/pull force up to 3500N. It features compact outline and low noise level that is mainly suitable for medical and furniture applications such as recliners, beds, etc., as well as various industrial applications with limited installation space.



Features and Options

- Main applications: Medical, furniture, industry
- Input voltage: 24V DC
- Max. load: 3500N (Push/Pull)
- Speed at no load: 26.0mm/sec (Typical value)
- Speed at full load: 5.0mm/sec (Typical value @3500N loaded)
- Stroke: 50~600mm (The max. stroke is depending on load, refer to Dimensions)
- Noise level: \leq 52dB
- IP level: IPX4, IP66 (Static; non-action)
- Aluminum alloy outer tube and gear box
- Preset limit switches
- Positioning:
 - Digital positioning feedback with dual Hall effect sensors /
 - Analog positioning feedback with Potentiometer (POT)
- Optional safety nut (in push direction)
- Optional mechanical push only extension tube
- Duty cycle: 10%, max. 2 min. continuous operation in 20 min.
- Operating ambient temperature: -20°C~+65°C
- Storage ambient temperature: -25°C~+65°C
- Certified: CE Marking, Electromagnetic Compatibility Directive 2014/30/EU (N-type motor only)

Performance Data

Madal Na	Push / Pull	* Typical Sp	beed (mm/s)	* Typical Current @ 24V DC			
	Max. (N)	No Load	Full Load	No Load	Full Load		
MK32-24 N3 -XXX.XXX-XXXXXX	3500	6.5	5.0	2.5	5.0		
MK32-24 N4 -XXX.XXX-XXXXXXX	3000	8.5	6.0	2.5	5.2		
MK32-24N6-XXX.XXX-XXXXXXX	2500	13.0	9.0	2.5	6.0		
MK32-24 N8 -XXX.XXX-XXXXXX	2000	17.0	11.5	2.5	5.5		
MK32-24 NC -XXX.XXX-XXXXXX	1500	26.0	14.0	2.5	6.0		
MK32-24 P4- XXX.XXX-XXXXXXX	3000	6.0	3.0	2.5	5.0		
MK32-24 P6 -XXX.XXX-XXXXXXX	2500	10.5	5.5	2.5	4.5		
MK32-24 P8 -XXX.XXX-XXXXXXX	2000	14.0	7.5	2.5	4.5		







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 MK32 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 (S) range = 50~600mm (±3mm)
- Retracted length (A) \geq S + 112mm + E + F + R + P + D (±3mm)

Stroke	E
50≦S≦150mm	0mm
151≦S≦300mm	10mm
301≦S≦400mm	20mm
401≦S≦500mm	30mm
501≦S≦600mm	40mm
Front connector code	F
1, 2	0mm
3	13mm
4	7mm
8	1mm
Rear connector code	R
0, 1	0mm
8	3mm
Positioning	Р
0, H	0mm
Р	38mm
Safety option	ח
0, P	0mm

Max load VS. Stroke rang

Max. load	Stroke range
≦1,000N	50~600mm
1,001N≦1,500N	50~500mm
1,501N≦2,500N	50~400mm
2,501N≦3,500N	50~300mm

- S \geq 601mm, please consult MOTECK sales representative for feasibility and the available.
- Extended length (B) = Retracted length (A) + Stroke (S)

• Drawing

- Basic (Without positioning feedback)



- With dual Hall effect sensors for positioning



- With Potentiometer (POT) absolute positioning feedback



• Front connector

1: Metal solid







3: Metal slot

4: Plastic solid, black





8: M6 screw



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

Rear connector



90°











1: Metal solid 0°







90°



8: M6 screw

21 6

0°



Rear connector code	Diameter of pivot without bushing (D1)	Diameter of pivot with bushing (D2)
0	ø8, ø10	ø8
1	ø8, ø10	ø8
8	ø8, ø10	N/A

Unit: mm

Compatibility

Product	Model	Application condition	MK32 spec
	CM45, MD6C, MD6C-M	Max. 5A current per channel	Without positioning feedbackWith Moteck H-type DIN plug
Control box	MD6C-M	Max. 5A current per channel	 With dual Hall effect sensors for positioning With Moteck H-type DIN plug
	CB5P-M, CM41-M	Max. 5A current per channel	 With dual Hall effect sensors for positioning With Moteck LR-type minifit plug
	CM41	Max. 5A current per channel	Without positioning feedbackWith Moteck LR-type minifit plug
	CM23	Max. \leq 6A current 2 channels	 With dual Hall effect sensors for positioning With Moteck H-type DIN plug
Controller	CI72		StandardCable with flying leads
Accessory	MB22 mounting bracket	Connect the front or rear connectors of the actuator	• Standard, mounting hole ø8mm or ø10mm

Remarks:

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.

Cable Plug

Connecting control devices that provide power

• Without positioning feedback



With H-type 4-pin DIN plug

• With dual Hall effect sensors for positioning





With LR-type 6-pin minifit plug







H-type plug



LR-type plug

With H-type 6-pin DIN plug

With LR-type 6-pin minifit plug

Remarks:

Connect M+ to "Vdc +" & M- to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.

Cable with Flying Leads

• Without positioning feedback

	Wire color	Definition	Descriptions	
Power	Blue	DC power	Connect blue wire to "Vdc +" & brown wire to "Vdc -" of DC power	
wires	Brown	DC power	DC power	to extend the actuator. Switch the polarity of DC input to retract it.

• With dual Hall effect sensors for positioning

	Wire color	Definition	Des	scriptions						
Power	Blue	DC power	Connect blue wire to "Vdc +" 8	brown wire to "Vdc -" of DC power						
wires	Brown		to extend the actuator. Switch the polarity of DC input to retract it.							
	Yellow	Vin	Voltage input range: 5~20V							
Signal	Red	Hall 1 output	High= Input - 1.2V (±0.6V) Low= GND Hall signal data: High Low Hall 1 High Low Hall 2 Actuator extends	High Low High Low Actuator retracts						
wires			Hall effect sensor resolution:							
			Motor and Spindle type	Resolution (Pulses/mm)						
			N3	10.125						
	Green	Hall 2	N4, P4	7.594						
	Creen	output	N6, P6	5.063						
			N8, P8	3.797						
			NC	2.531						
	Black	GND								

• With Potentiometer (POT) absolute positioning feedback

	Wire color	Definition		Descriptions								
Power wires	Blue Brown	DC power	Connect to extend	blue wire t d the actua	to "Vdc +" & brow tor. Switch the po	n wire to "Vdc -" of DC plarity of DC input to ref	power tract it.					
	Yellow	Vin	Voltage i	∋ input range: 5~32V								
			 Potent 10k Tota Inde 2. Outpu increa decrea 	 Potentiometer specification: 10K ohm, 10 turns. Total resistance tolerance ±5% Independent linearity ±0.25% Output voltage: The voltage (resistance) between red and increases linearly from about 0 when the actuator extends decreases when it retracts. 								
			and st	roke lengt	n (as table below))	eleau					
				Pitch	Stroke range (mm)	Resistance resolution (ohm/mm)	resolution mm)					
					50~100	93.75						
				3mm	101~200	46.30						
				511111	201~300	29.76						
Signal		POT output			301~400	21.16						
wires	Red			4mm	50~100	70.31						
					101~200	41.67	_					
					201~300	26.79						
					301~400	22.32						
					50~200	46.88						
				6mm	201~400	23.15						
					401~500	14.88						
					50~200	35.16						
				8mm	201~400	20.83						
					401~600	13.39						
				12mm	50~400	23.44						
					401~600	13.89						
			4. Custo and G 5. When value	omers measure the Potential value through the POT outpu GND wires. In the actuator retracts the lower limit, the POT resistance e default is 0~0.3K ohm.								
	Green	Not used										
	Black	GND	JND									

	MK32 -	24	N4	212	312	- 2	0	0	н	0	4	0
Input voltage	24 : 24V DC								I			
Motor and Spindle type	N3: 4500rpm / 3mm pitch N4: 4500rpm / 4mm pitch N6: 4500rpm / 6mm pitch N8: 4500rpm / 8mm pitch NC: 4500rpm / 12mm pitch P4: 3800rpm / 4mm pitch P6: 3800rpm / 6mm pitch P8: 3800rpm / 8mm pitch											
Retracted length (Refer to Page 3~4)	XXX								I			
Extended length (Refer to Page 3~4)	ххх								I			
Front connector (Refer to Page 5)	 Metal solid Drilled hole ⁽¹⁾ Metal slot Plastic solid, black M6 screw 						l		l			
Rear connector (Refer to Page 5)	0: Metal slot 1: Metal solid 8: M6 screw								I			
Pivot orientation of rear connector (Refer to Page 5)	0 : 0° 9 : 90°								I			
Positioning feedback	0 : None H : Dual Hall effect sensors P: Potentiometer (POT) ⁽²⁾											
Option	0: None S: Safety nut P: Push only A: Safety nut + Push only											
IP level	0: No designation 4: IPX4 6: IP66											
Cable length	0: 300mm straight 3: 1000mm straight A: 450mm with 300mm coil	ed										

Remarks:

(1) Front connector type "2" drilled hole, IP66 cannot be selected.

(2) For rear connector type with Potentiometer absolute positioning feedback, only metal slot can be used.

Certifications

MK32 actuator is compliant with the following regulations, in terms of the essential conformity requirements of EMC Directive of 2014/30/EU.

Emission

EN 61000-6-3:2007+A1:2011+AC:2012 EN IEC 61000-6-1:2019



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