

# Actuator

## MK33

MK33 actuator has a short installation length and a maximum thrust of 6000N. It has reasonable speed options and low noise quality requirements. It can also be equipped with dual Hall sensors to feedback positioning signals. It is suitable for matching with Moteck's many electronic control solutions for furniture applications.



### Features and Options

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**Main application:** Furniture

**Standard features:**

- Input voltage: 24V DC
- Max. load: 6000N (Push) / 3000N (Pull)
- Max. speed at no load: 4.2mm/sec (Typical value)
- Speed at full load: 2.9mm/sec (Typical value @6000N Loaded)
- Stroke: 50 ~ 300mm
- Noise level:  $\leq 48$ dB
- IP level: IP42 (Static; non-action)
- Preset limit switches
- Duty cycle: 10%, max. 2 min. continuous operation in 20 min.
- Operating ambient temperature: -20°C ~ +65°C

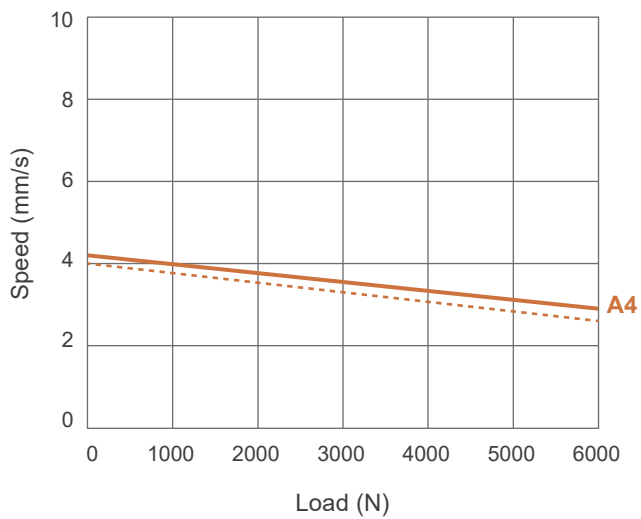
**Options:**

- Positioning signal feedback with dual Hall effect sensors
- Push only

### Performance Data

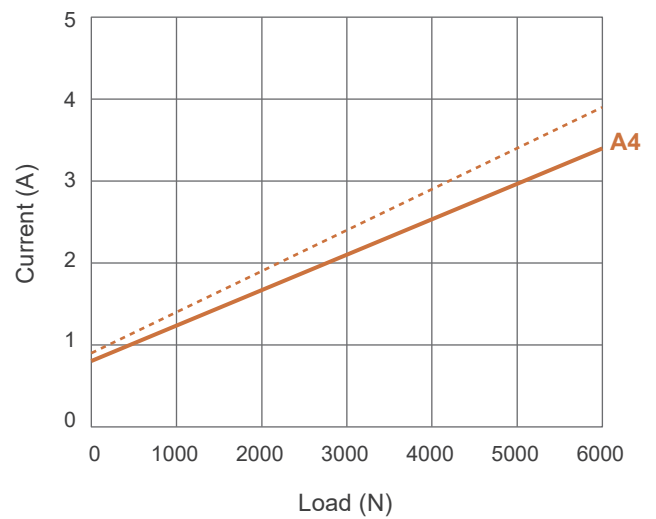
Model	Push Max. (N)	Pull Max. (N)	Typical speed (mm/s)		Typical current (A) @ 24V DC	
			No load	Full load	No load	Full load
MK33	6000	3000	4.2	2.9	0.8	3.4

Speed VS. Load



— Typical speed    - - - Min. speed

Current VS. Load



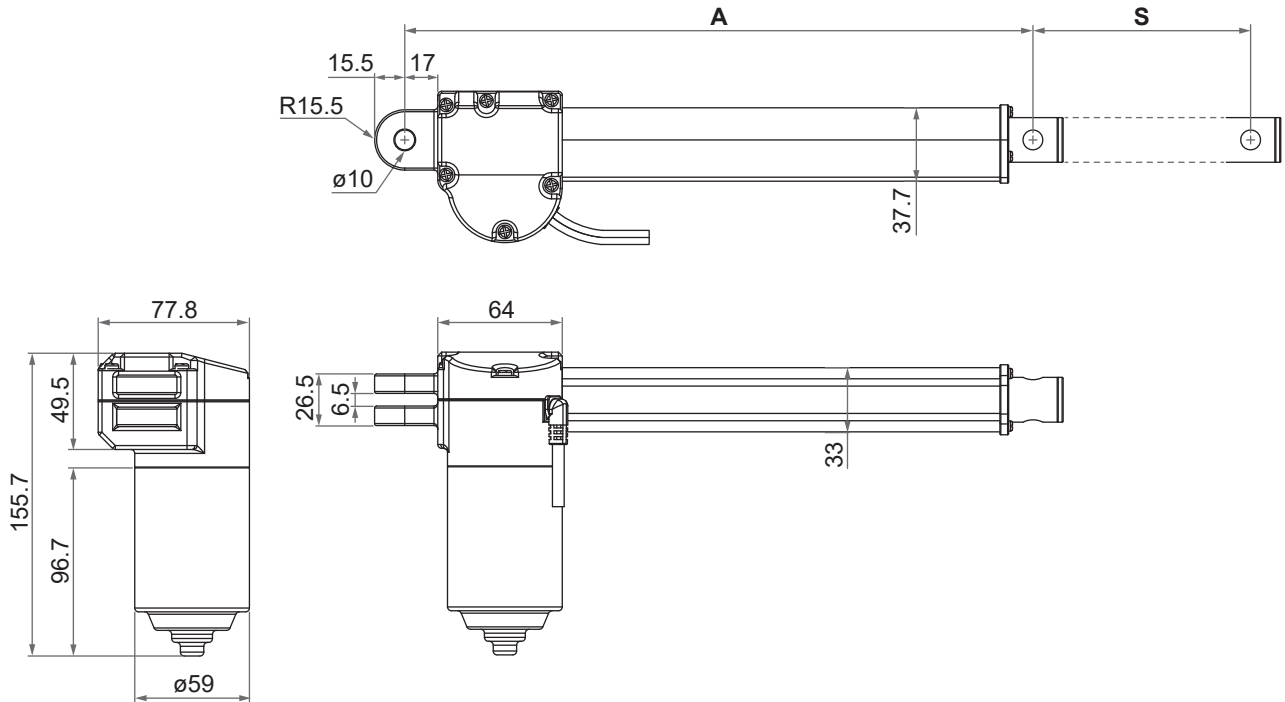
— Typical current    - - - Max. current

## Dimensions

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

Front connector code	Rear connector type	Retracted length (A)
1, 5	Plastic	$A \geq S + 153\text{mm} (\pm 3\text{mm})$
3, 7		$A \geq S + 125\text{mm} (\pm 3\text{mm})$

### • Drawing



**Note:** Pivot orientation of rear connector is 0°

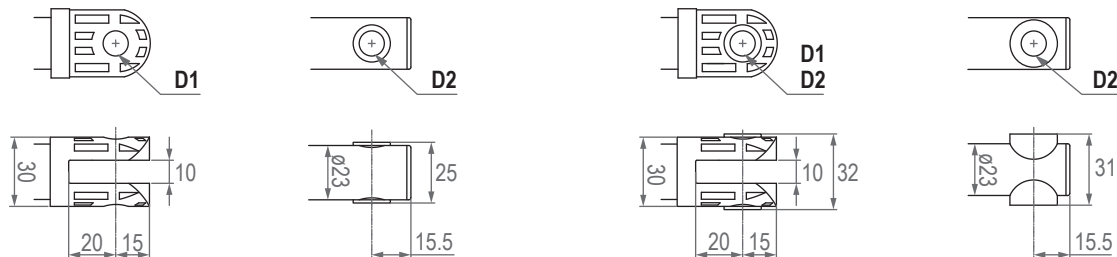
### • Front connector

1: Plastic

3: Drilled hole

5: Metal

7: Plastic bushing



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

Unit: mm

## Compatibility

Product	Model	MK33 spec
<b>Control box</b>	T-control, CS1, CS2, CB3T, CB4M, CBT2	<ul style="list-style-type: none"> <li>• Without positioning feedback</li> <li>• With Moteck F-type 4-pin DIN plug</li> </ul>
	CF11H, CF12H	<ul style="list-style-type: none"> <li>• Without positioning feedback</li> <li>• With Moteck L3-type minifit 6-pin plug</li> </ul>
	CB3T-SY, CB4M-S, CB4M-B	<ul style="list-style-type: none"> <li>• With dual Hall effect sensors for positioning</li> <li>• With Moteck F-type 6-pin DIN plug</li> </ul>
	CF11S, CF12S	<ul style="list-style-type: none"> <li>• With dual Hall effect sensors for positioning</li> <li>• With Moteck L3-type minifit 6-pin plug</li> </ul>
	CF01-S	<ul style="list-style-type: none"> <li>• Without positioning feedback</li> <li>• With Moteck S-type DIN 41529 male plug</li> </ul>
	TX2A, CF01-R	<ul style="list-style-type: none"> <li>• With Moteck direct-cut power cable DL1</li> </ul>
<b>Hand control</b>	Depend on control box	<ul style="list-style-type: none"> <li>• Powered by control box</li> </ul>
	HS15	<ul style="list-style-type: none"> <li>• With Moteck S-type DIN 41529 male plug <sup>(1)</sup></li> </ul>
	HB, TPSL, HS02, HZ02, HZ03, HZ04, HZ05, HZ06	<ul style="list-style-type: none"> <li>• With Moteck direct-cut power cable DL1 <sup>(2)</sup></li> </ul>
<b>Accessory</b>	Power adapter: TSW1, TSW4, DPA-87-2930-C8, DPA-87-2930-C6 (Originally TSW3)	<ul style="list-style-type: none"> <li>• With Moteck direct-cut power cable DL1</li> </ul>

### Remarks:

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

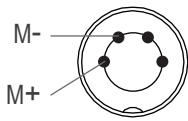
(2) The actuator is connected to the hand control through the DL1 cable directly, no control box.

## Cable Plug

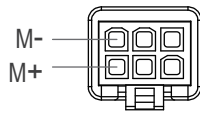
### A. Connecting control devices that provide power

#### 1. With Moetck F-type or L3-type plug

- Without positioning feedback



F-type 4-pin DIN plug

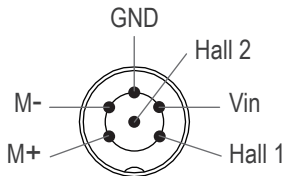


L3-type Minifit 6-pin plug

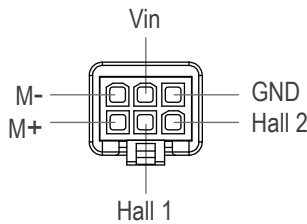


F-type plug

- Positioning feedback with dual Hall effect sensors



F-type 6-pin DIN plug



L3-type Minifit 6-pin plug



L3-type plug

#### 2. With Moteck S-type DIN 41529 2-pin male plug



S-type plug

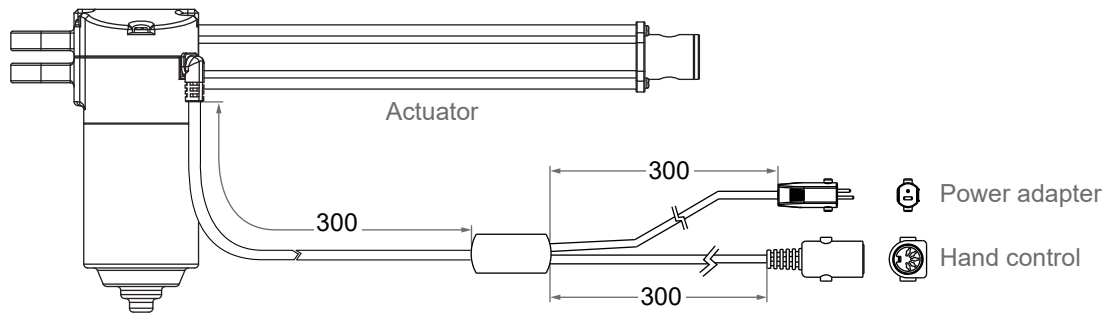
**Note:** Pin definition

	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 ~ 20V
	Hall 1 output	High= Input - 1.2V (±0.6V) Low= GND Hall signal data:
	Hall 2 output	<p>Actuator extends                      Actuator retracts</p>
	GND	Hall effect sensor resolution: 10.0 pulses/mm

## B. Connecting control devices that DO NOT provide power

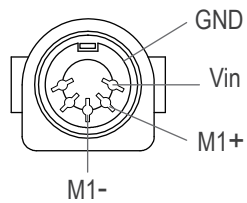
### 1. Cable solution

- With direct-cut power cable DL1



### 2. Hand control connector: Moteck U-type DIN 5-pin female connector

- 1 drive

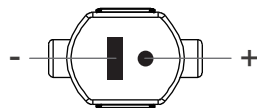


**Note:** Connect M1+ to "Vdc +" & M1- to "Vdc -" of DC power to extend the M1 actuator. Switch the polarity of DC input to retract it.



U-type female connector

### 3. Power connector: Moteck S-type DIN 41529 2-pin male plug



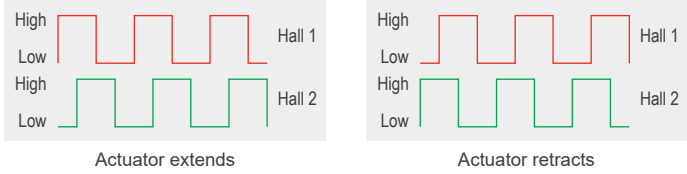
S-type male plug

## Cable with Flying Leads

Basic, without 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		

With dual Hall effect sensors for positioning

	Wire color	Definition	Descriptions
Power wires	Blue	DC Power	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.
	Brown		
Signal wires	Yellow	Vin	Voltage input range: 5 ~ 20V
	Red	Hall 1 output	High= Input - 1.2V ( $\pm 0.6V$ ) Low= GND Hall signal data:
	Green	Hall 2 output	 <p>Hall effect sensor resolution: 10.0 pulses/mm</p>
	Black	GND	

## Ordering Key

	<b>MK33 - 24 D A4 - 125 . 325 - 1 0 0 H P 0 0</b>
<b>Input voltage</b>	<b>24:</b> 24V DC
<b>Motor</b>	<b>D:</b> Default motor
<b>Motor and spindle type</b>	<b>A4:</b> 2500rpm / 4mm pitch
<b>Retracted length</b> (Refer to Page 3)	<b>XXX</b>
<b>Extended length</b> (Refer to Page 3)	<b>XXX</b>
<b>Front connector</b> (Refer to Page 3)	<b>1:</b> Plastic <b>3:</b> Drilled hole <b>5:</b> Metal <b>7:</b> Plastic bushing
<b>Reserved</b>	<b>0</b>
<b>Reserved</b>	<b>0</b>
<b>Positioning feedback</b>	<b>0:</b> None <b>H:</b> Dual Hall effect sensors
<b>Push only</b>	<b>0:</b> None <b>P:</b> Push only
<b>Reserved</b>	<b>0</b>
<b>Cable length</b>	<b>0:</b> 300mm straight <b>3:</b> 1000mm straight <b>A:</b> 450mm with 300mm coiled <b>D:</b> Direct-cut power cable DL1 (Refer to Page 6)

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