

# Actuator

## BD21

BD21 is a quiet and rapid actuator, having a speed up to 42mm/s under 1500N, and with its speed well-maintained either with or without load. It features its two mounting points at both tube front and gearbox, while the spindle nut steers the movement parts of furniture. Users can also choose front end outlet or rear end outlet according to their needs. BD21 is very suitable for furniture applications, such as electric recliner sofa.



## Features

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**Main applications:** Furniture, Recliner sofa

**Standard features:**

- Input voltage: 24V DC
- Max. Load: 2000N (Push/Pull)
- Max. Speed at no load: 52 mm/sec (typical value)
- Max. Speed at full load: 42 mm/sec (typical value @1500N loaded)
- Stroke: 50~333mm
- Noise level:  $\leq 55$ dB
- Preset limit switches
- Duty cycle: 10%, max. 2 min. continuous operation in 20 min.
- Ambient operation temperature: -20°C ~ +65°C
- Certified: CE Marking, EMC Directive 2014/30/EU, UL 962

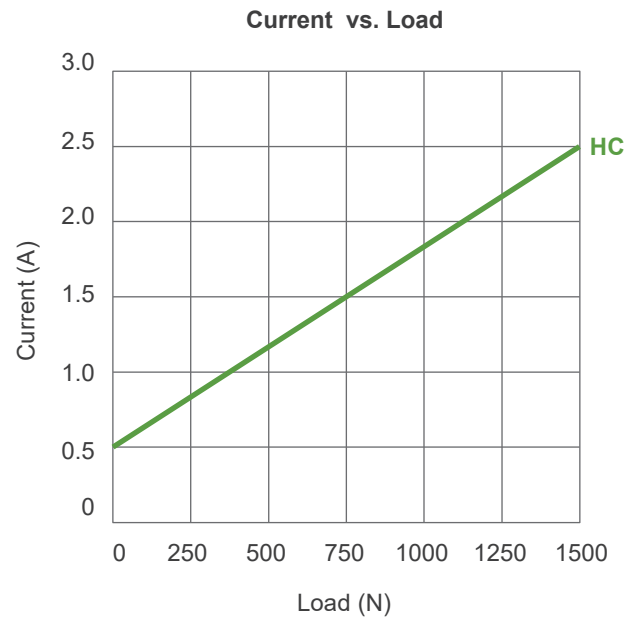
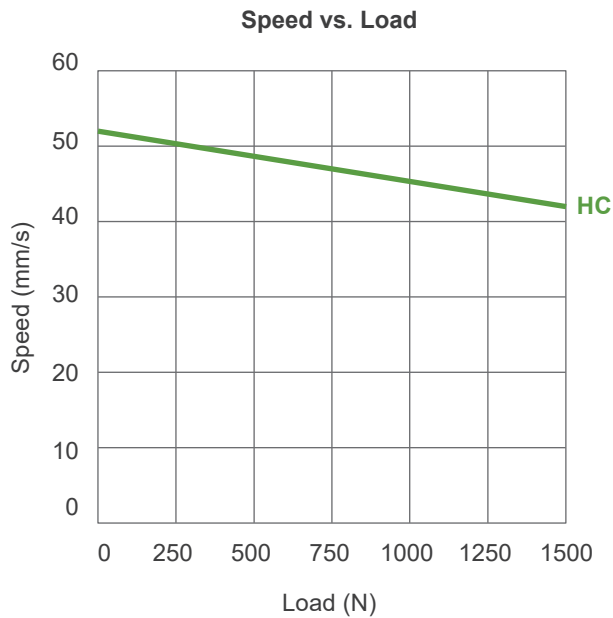
**Options:**

- Location of cable outlet (Refer to page 6)
- There are 2 plastic nut type can be chosen
- Positioning signal feedback with Hall effect sensor x 2

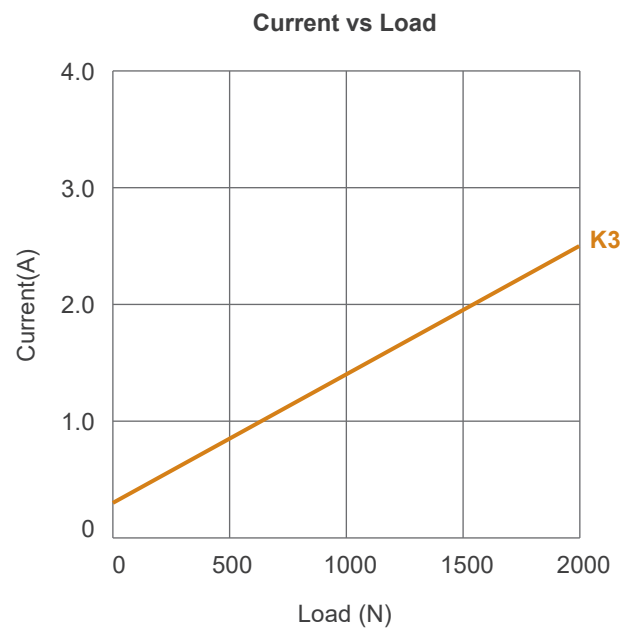
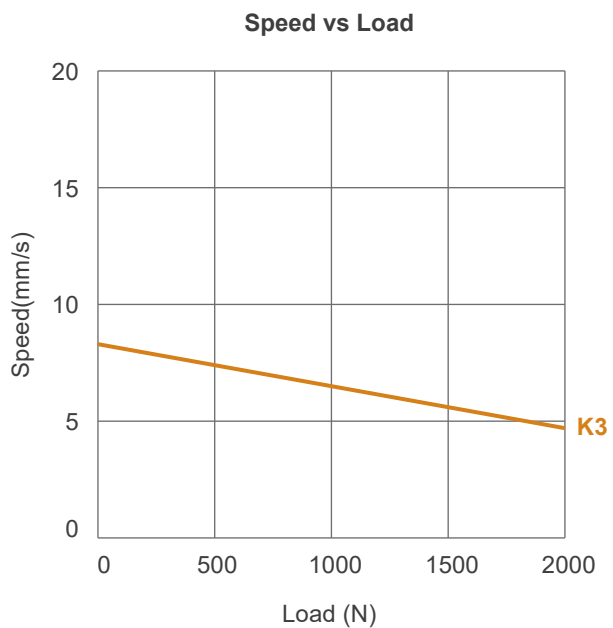
## Performance Data

This model is suitable for recliner application, with DL1 cable.

Model No.	Push / Pull Max. (N)	*Typical speed (mm/s)		*Typical current (A) @ 29V	
		No load	Full load	No load	Full load
BD21-X0-24-HC-XXX.XXX-XX	1500	52	42	0.5	2.5



Model No.	Push / Pull Max. (N)	*Typical speed (mm/s)		*Typical current (A) @ 24V	
		No load	Full load	No load	Full load
BD21-X0-24-K3-XXX.XXX-XX-H	2000	8.3	4.7	0.3	2.5



### Remarks:

\* The typical speed or typical current means the average value neither upper limit nor lower limit.  
The performance curves are made with typical values.

# Dimensions

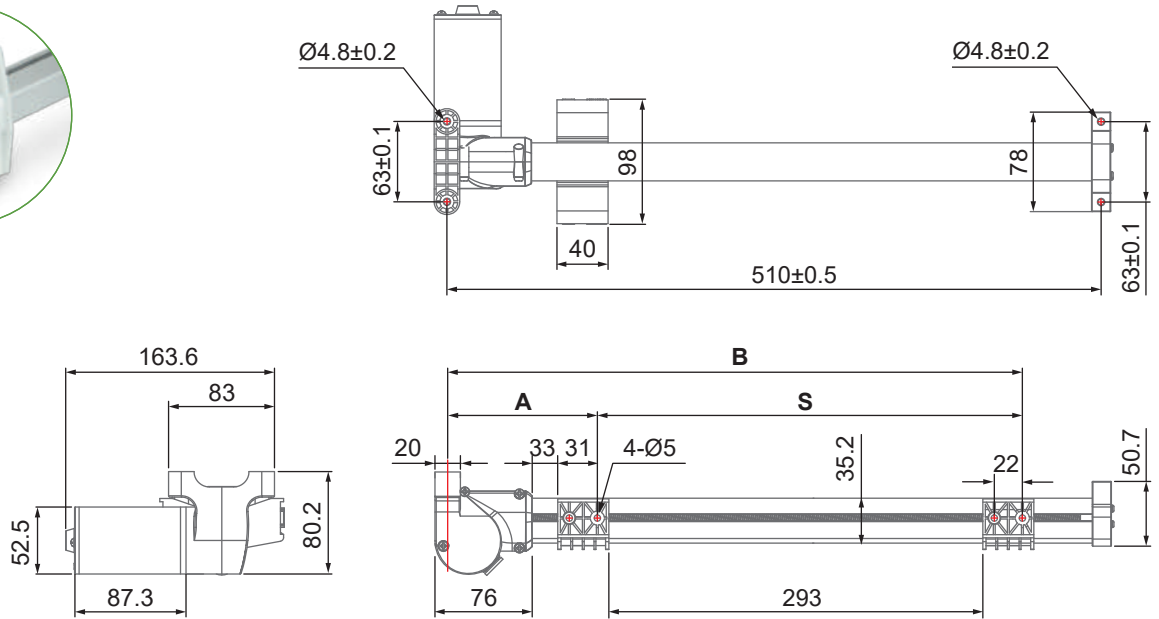
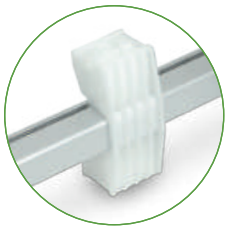
- Available stroke (S) range = 50 ~ 333mm (±3mm)
- Retracted length (A)

Nut type	Retracted length (A)
A, C	$A \geq 130\text{mm}$ (±3mm)

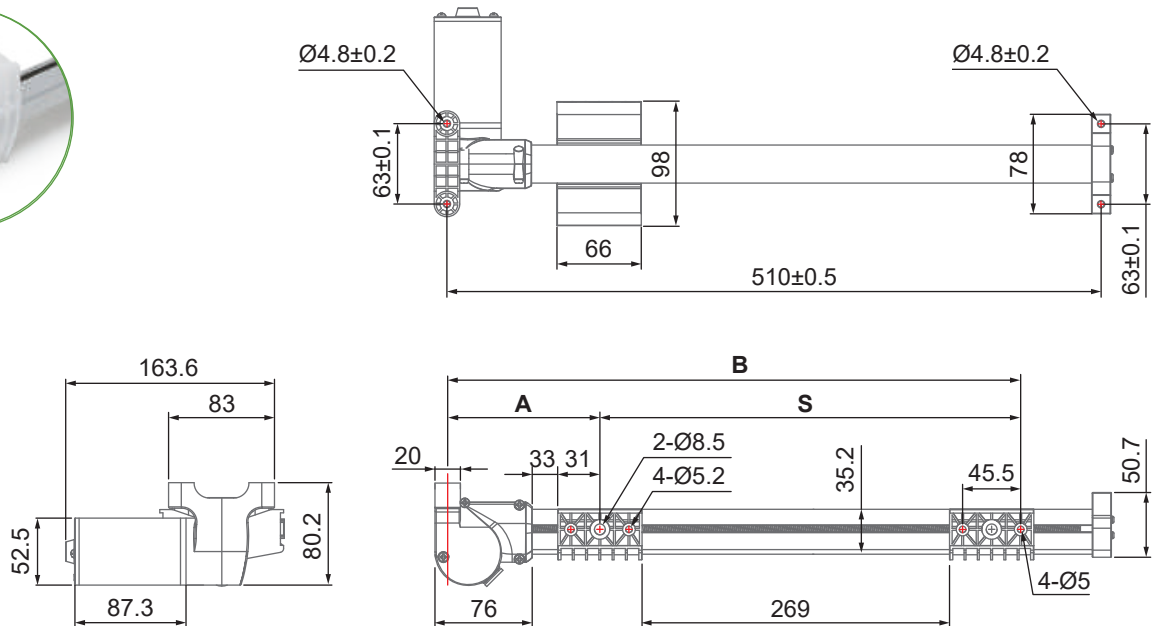
- Extended length (B) = Retracted length (A) + Stroke (S)
- Two fixing points dimension = 510mm (±0.5mm)

## • Drawing

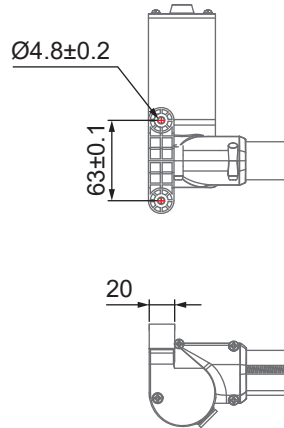
A-type plastic nut



C-type plastic nut



- Rear connector



## Compatibility

Product	Model	BD21 spec
<b>Control box</b>	T-control, CS1, CS2, CB3T, CB4M, CBT2	<ul style="list-style-type: none"> <li>• Without positioning sensor feedback</li> <li>• 4-pin MOTECK F-type DIN plug</li> </ul>
	CF11H, CF12H	<ul style="list-style-type: none"> <li>• Without positioning sensor 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</li> <li>• 6-pin MOTECK F-type DIN plug</li> </ul>
	CF12S, CF15	<ul style="list-style-type: none"> <li>• With dual Hall effect sensors</li> <li>• With MOTECK L3-type minifit 6-pin plug</li> </ul>
<b>Hand control</b>	Depend on control box	<ul style="list-style-type: none"> <li>• Powered by control box</li> </ul>
	HB, H2G, TPSG HR, HS02, HZ02, HZ03, HZ04, HZ05, HZ06	<ul style="list-style-type: none"> <li>• With MOTECK Direct-Cut cable DL1*</li> </ul>
<b>Accessory</b>	Switching mode power supply: TSW1	<ul style="list-style-type: none"> <li>• With MOTECK Direct-Cut cable DL1</li> </ul>
<b>Seating frame</b> (Not included in Moteck product scope)	5104	<ul style="list-style-type: none"> <li>• BD21-A0-24-HC-130.463-F4</li> </ul>
	5302	<ul style="list-style-type: none"> <li>• BD21-C0-24-HC-130.460-F4</li> </ul>

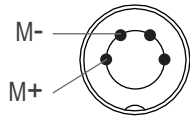
### Remarks:

- \* Connect Direct-cut cable to DC power supply and hand control directly, no control box.

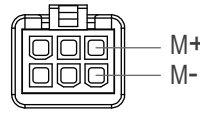
# Cable Plug

## With Moetck F-type or L3-type plug (Required to be connected to the control box):

- Without Hall effect sensor



F-type 4-pin DIN plug

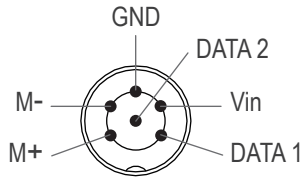


L3-type Minifit 6-pin plug

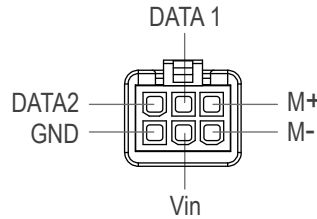


F-type

- With dual Hall effect sensors



F-type 6-pin DIN plug



L3-type Minifit 6-pin plug

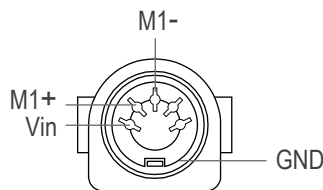


L3-type

**Note:** Connect Pin (M+) to “+” & Pin (M-) to “-” of DC power, the actuator will extend.

## With Direct-cut cable DL1 (NOT required to be connected to any control box):

- Hand control connector: With Moteck U-type female connector



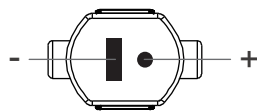
5-pin connector  
(Moteck pinout: C-DIN-51R)



U-type

**Note:** Connect Pin (M+) to “+” & Pin (M-) to “-” of DC power, the actuator will extend.

- Power plug: With Moteck S-type DIN 41529 male plug



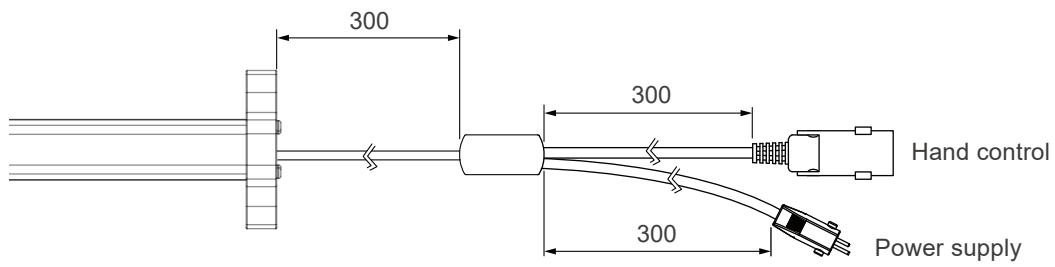
DIN 41529 plug



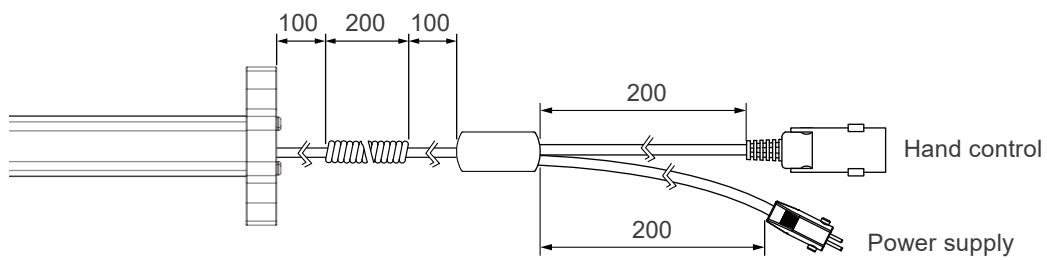
S-type

• **Cable length**

**6:** 600mm all straight

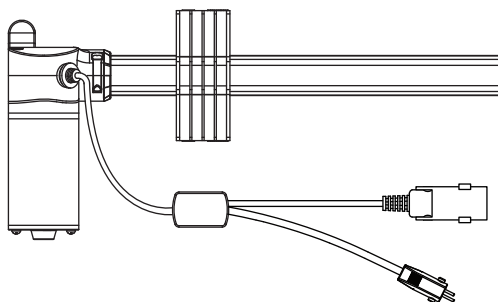


**S:** 600mm long with 200mm spiral

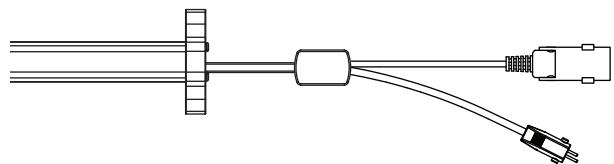


• **Location of cable outlet**

**R:** Rear end outlet



**F:** Front end outlet



**Certifications**

The BD21 actuator is compliant with the following regulations, in terms of the essential conformity requirements of EMC Directive of 2014/30/EU.

Emission	Immunity
EN 55014-1:2006/A1:2009/A2:2011	EN 55014-2:1997/A2:2008 Catagory I

## Ordering Key

**BD21- A 0 - 24 - HC - 130 - 460 - R S -**

<b>Nut type</b>	<b>A:</b> A-type plastic nut <b>C:</b> C-type plastic nut <i>(Refer to Page 3)</i>
<b>Rear connector</b>	<b>0:</b> Standard
<b>Input voltage</b>	<b>24:</b> 24V DC
<b>Motor and Spindle type</b>	<b>HC:</b> 3300rpm, 12mm pitch <b>K3:</b> 2500rpm, 3mm pitch
<b>Retracted length</b>	<b>XXX</b> <i>(Refer to Page 3)</i>
<b>Extended length</b>	<b>XXX</b> <i>(Refer to Page 3)</i>
<b>Location of cable outlet</b>	<b>F:</b> Front end outlet <b>R:</b> Rear end outlet <i>(Refer to Page 6)</i>
<b>Cable length</b>	<b>0:</b> 300mm straight <b>1:</b> 1000mm straight <b>2:</b> 450mm long with 300mm spiral <b>6:</b> 600mm all straight <i>(Refer to Page 6)</i> <b>S:</b> 600mm long with 200mm spiral <i>(Refer to Page 6)</i>
<b>Positioning feedback</b>	<b>Blank:</b> None (Standard) <b>H:</b> Dual Hall effect sensors (K3 spindle only)

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