

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.

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Features and Options

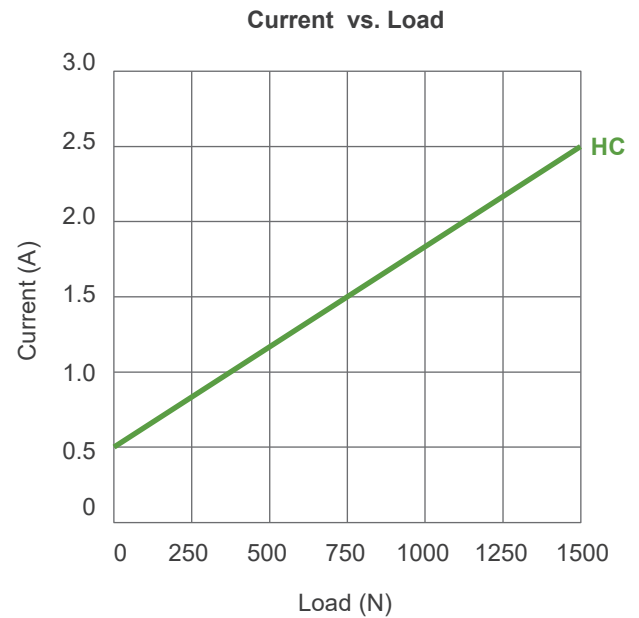
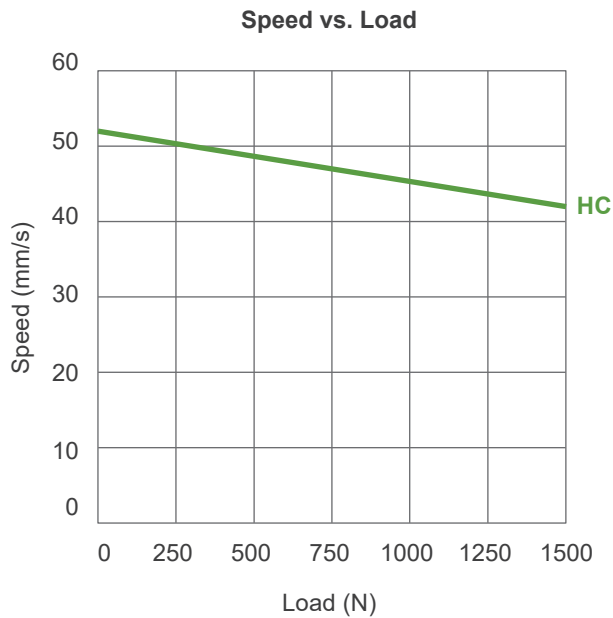
- Main applications: Furniture, recliner sofa
- Input voltage: 24V DC
- Max. load: 2000N (Push/Pull)
- Max. Speed at no load: 52mm/sec (Typical value)
- Max. Speed at full load: 42 mm/sec (Typical value @1500N loaded)
- Stroke: 50~333mm
- Noise level: ≤ 55 dB
- Preset limit switches
- Positioning: Optional digital positioning feedback with dual Hall effect sensors
- 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: $-25^{\circ}\text{C}\sim+65^{\circ}\text{C}$
- Cable outlet from front or rear end
- There are 2 plastic slider block type can be chosen
- Certified: CE Marking, EMC Directive 2014/30/EU, UL 962.



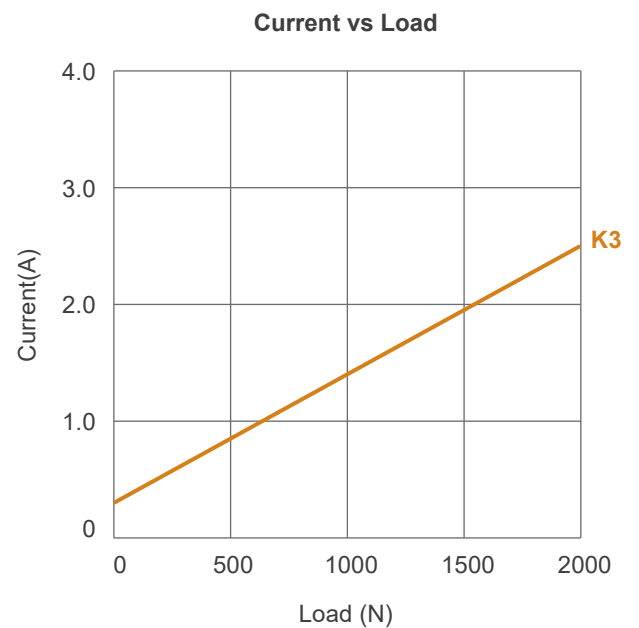
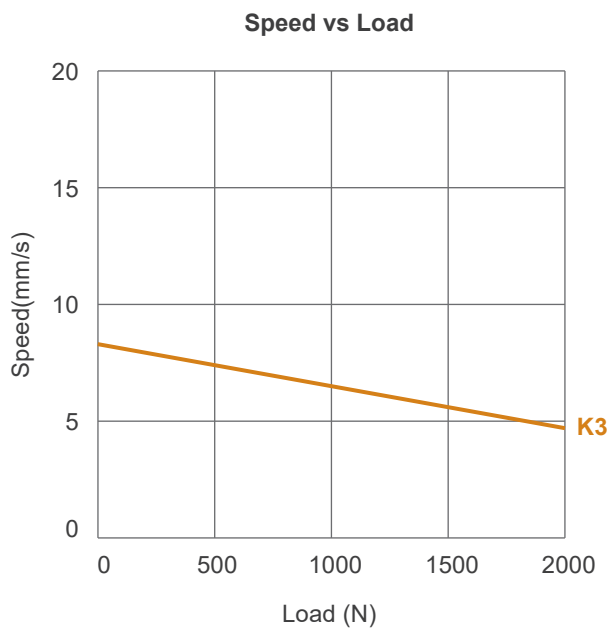
Performance Data

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

1. Installation dimension

- Available stroke (S) range = $50 \leq S \leq 333\text{mm}$ ($\pm 3\text{mm}$)
- Retracted length (A)

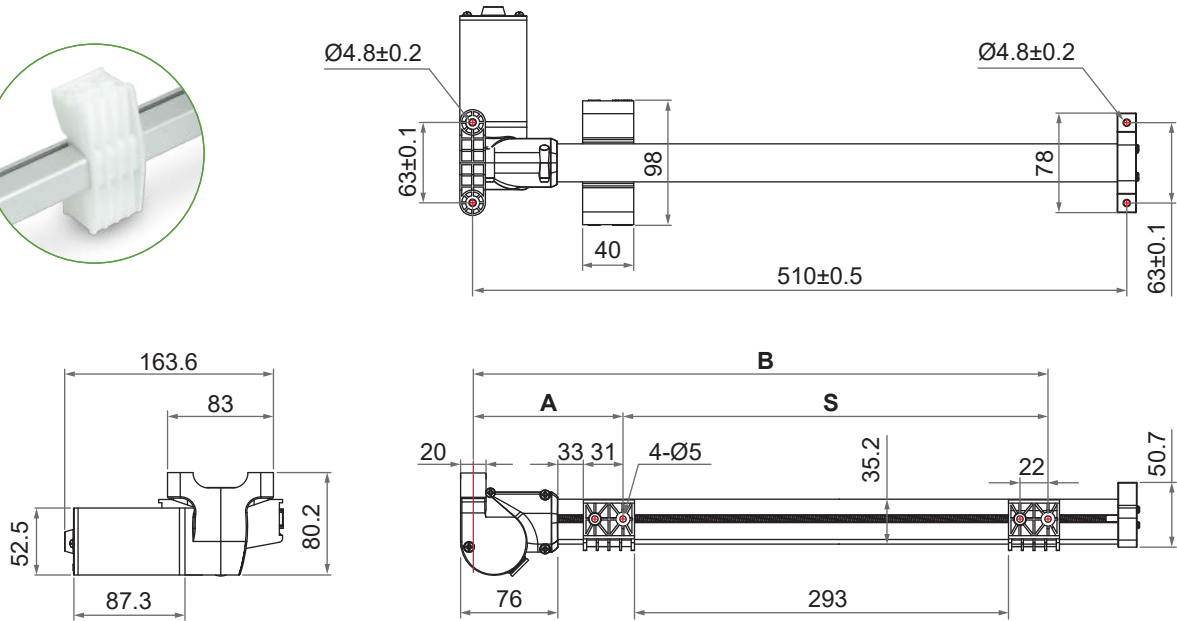
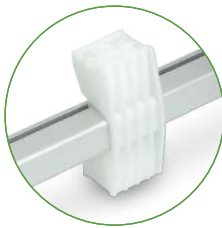
Nut type	Retracted length (A)
A, C	$A \geq 130\text{mm}$ ($\pm 3\text{mm}$)

- Extended length (B) = Retracted length (A) + Stroke (S)
- Two fixing points dimension = 510mm ($\pm 0.5\text{mm}$)

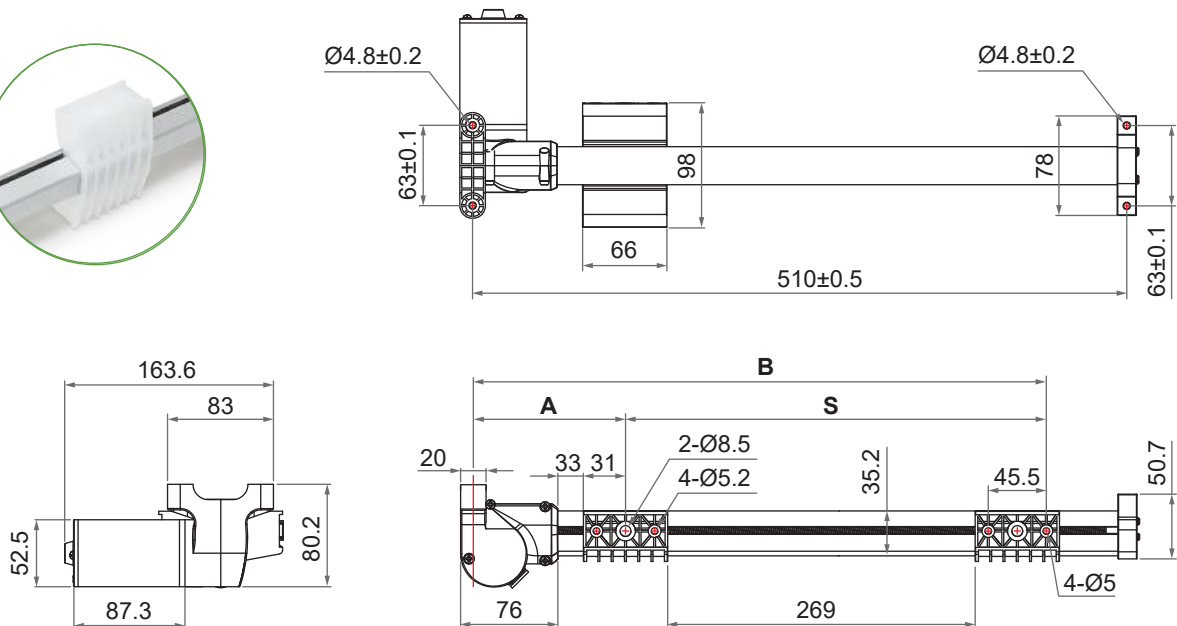
2. Drawing

(1) Front connector

A=A-type plastic nut



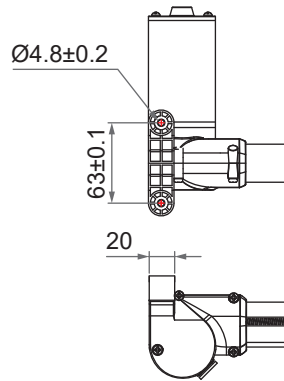
C=C-type plastic nut



Unit: mm



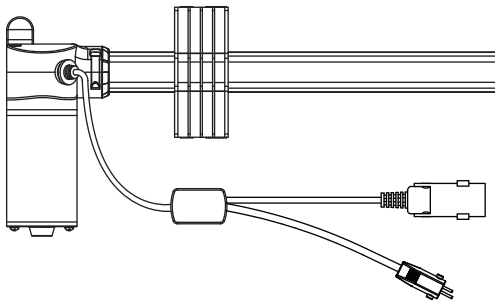
(2) Rear connector
 0= Standard



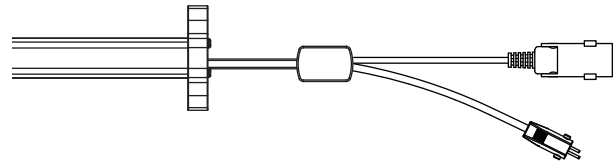
Unit: mm

3. Location of cable outlet

R= Rear end outlet



F= Front end outlet



Compatibility

Product	Model	BD21 spec
Control box	T-control, CS1, CS2, CB3T, CB4M, CBT2	<ul style="list-style-type: none"> • Without positioning sensor feedback • With Moteck F-type 4-pin DIN plug
	CF11H, CF12H	<ul style="list-style-type: none"> • Without positioning sensor feedback • With Moteck L3-type minifit 6-pin plug
	CB3T-SY, CB4M-B, CB4M-S	<ul style="list-style-type: none"> • With dual Hall effect sensors • With Moteck F-type 6-pin DIN plug
	CF11S, CF12S	<ul style="list-style-type: none"> • With dual Hall effect sensors • With Moteck L3-type minifit 6-pin plug
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 ⁽¹⁾
	HB, TPSL, HS02, HZ02, HZ03, HZ04, HZ05, HZ06	<ul style="list-style-type: none"> • With Moteck direct-cut power cable DL1 ⁽²⁾
Accessory	Power adapter: DPA-58-2920-C8 (formerly TSW1), WPA-29-2910-NA (formerly TSW4), DPA-87-2930-C8 (formerly TSW9), DPA-72-2430-C6	<ul style="list-style-type: none"> • With Moteck direct-cut power cable DL1
Seating frame (Not included in Moteck product scope)	5104	<ul style="list-style-type: none"> • BD21-A0-24-HC-130.463-F4
	5302	<ul style="list-style-type: none"> • BD21-C0-24-HC-130.460-F4

Remarks:


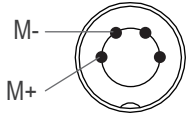
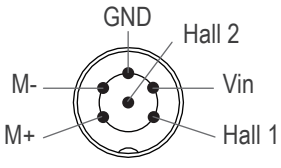

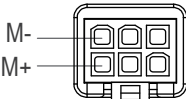
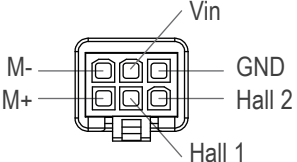

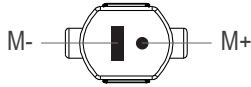
(1) The S-type DIN 41529 plug of the actuator is connected to the HS15 hand control directly, no control box.

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

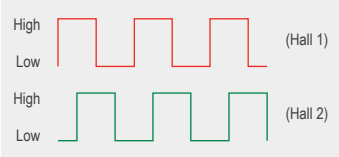





Cable Plug

1. 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

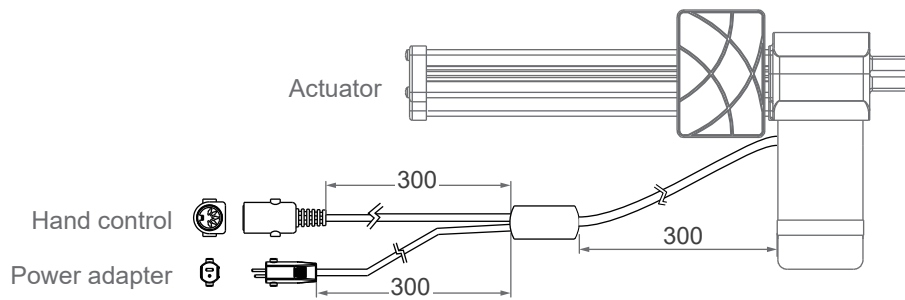
	Definition	Descriptions				
Power	M+	Connect M+ to "Vdc +" & M- to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.				
	M-					
Signal	Vin	Voltage input range: 5~20V				
	Hall 1 output	High= Input - 1.2V ($\pm 0.6V$) Low= GND Hall signal data: 				
	Hall 2 output	   Hall effect sensor resolution: <table border="1" data-bbox="517 1917 1214 2007"> <thead> <tr> <th>Model No.</th> <th>Resolution (Pulses/mm)</th> </tr> </thead> <tbody> <tr> <td>BD21-X0-24-K3-XXX.XXX-XX-H</td> <td>10.00</td> </tr> </tbody> </table>	Model No.	Resolution (Pulses/mm)	BD21-X0-24-K3-XXX.XXX-XX-H	10.00
	Model No.	Resolution (Pulses/mm)				
BD21-X0-24-K3-XXX.XXX-XX-H	10.00					
GND						



2. Connecting control devices that DO NOT provide power

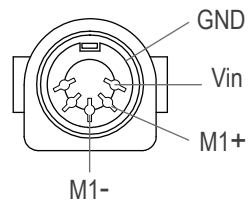
(1) Cable solution

- With direct-cut power cable DL1



(2) Hand control connector: Moteck U-type DIN 5-pin female connector

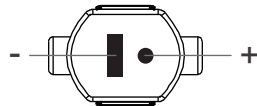
- 1 drive



U-type female connector

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.

(3) Power connector: Moteck S-type DIN 41529 2-pin male plug



S-type male plug

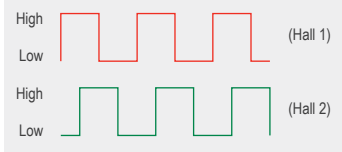
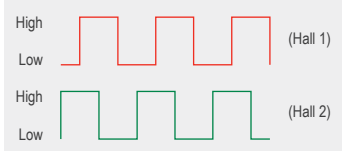


Cable with Flying Leads

1. Basic, without positioning feedback.

	Wire color	Definition	Descriptions
Power wires	White	DC Power	Connect white wire to "Vdc +" & black wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	Black		

2. With dual Hall effect sensors for positioning

	Wire color	Definitions	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	Actuator retracts 			
	Black	GND	Hall effect sensor resolution: <table border="1" data-bbox="711 1263 1407 1346"> <thead> <tr> <th>Model No.</th> <th>Resolution (Pulses/mm)</th> </tr> </thead> <tbody> <tr> <td>BD21-X0-24-K3-XXX.XXX-XX-H</td> <td>10.00</td> </tr> </tbody> </table>	Model No.	Resolution (Pulses/mm)	BD21-X0-24-K3-XXX.XXX-XX-H
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BD21-X0-24-K3-XXX.XXX-XX-H	10.00					

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 Category I



Ordering Key

BD21- A 0 - 24 - HC - 130 - 460 - R 1

Front connector (Refer to Page 5)	A: A-type plastic slider block C: C-type plastic slider block
Rear connector	0: Standard
Input voltage	24: 24V DC
Motor and Spindle type	HC: 3300rpm, 12mm pitch. K3: 2500rpm, 3mm pitch.
Retracted length (Refer to Page 5)	XXX
Extended length (Refer to Page 5)	XXX
Location of cable outlet (Refer to Page 6)	F: Front end outlet R: Rear end outlet
Cable length	0: 300mm straight 1: 1000mm straight 2: 450mm long with 300mm spiral A: Direct-cut power cable DL1 (Refer to Page 9)
Positioning feedback	Blank: None (Standard) H: Dual Hall effect sensors (K3 spindle only)

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