

Actuator

FD20

FD20 is a compact and quiet actuator designed for use in furniture, home care and fitness equipment. To meet various application needs, there are several models with different speed and load for customer to choose. It is able to connect with hand control and power supply to make up a simple system without control box.



Feature

- Main applications: Furniture, home care and fitness equipment
- Input voltage: 24V DC
- Max. load: 2000N (Push / Pull)
- Max. speed at no load: 33.3 mm/sec
- Max. speed at full load: 6.2 mm/sec @ 2000N
- Stroke: 50 ~ 250 mm
- Noise level: ≤ 53 dB
- IP Protection level: IP42
- Color: Black
- Preset limit switches
- Duty cycle: 10%, max. 2 min. continuous operation in 20 min.
- Ambient operation temperature: $-20^{\circ}\text{C} \sim +65^{\circ}\text{C}$
- Certified: CE Marking, EMC Directive 2014/30/EU and 2004/108/EC

Option

- Positioning signal feedback with Hall effect sensor x 1
- Positioning signal feedback with Hall effect sensor x 2
- Mechanical push only extension tube

Compatibility

Product	Model	FD20 spec
Control box	T control, CS1, CS2, CB3T, CB4M, CBT2	- Without positioning sensor feedback - 4-pin MOTECK F-type DIN plug
	CB3T-SY, CB4M-S, CB4M-B	- With dual Hall effect sensors - 6-pin MOTECK F-type DIN plug
Hand control	Depend on control box	- Powered by control box
	H3B, HS01, HZ01	- With MOTECK dedicated cable TL1*
	HB, H2G, HS02, HZ02, HZ03, HZ04, HZ05, HZ06	- With MOTECK dedicated cable DL1*
Accessory	Switching mode power supply: TSW1, TSW4, TSW5	- With MOTECK dedicated cable DL1 or TL1
	T Connector (Extension cable of actuator and handset, to connect to power supply or transformer box)	- 4-pin MOTECK F-type DIN plug

***Remarks:**

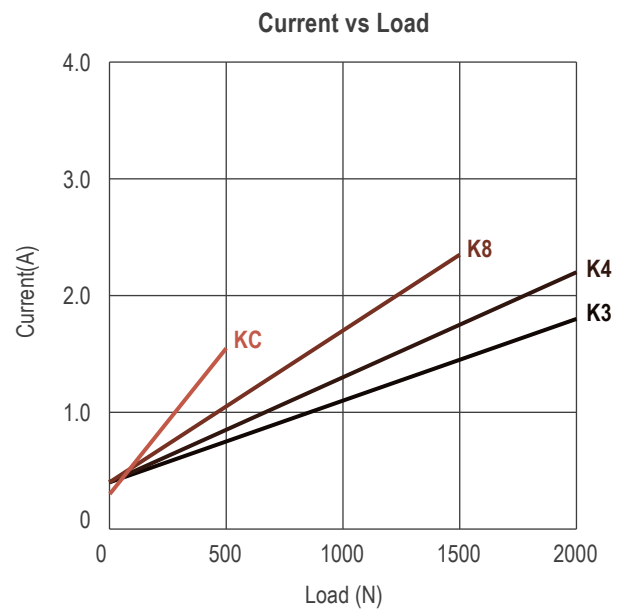
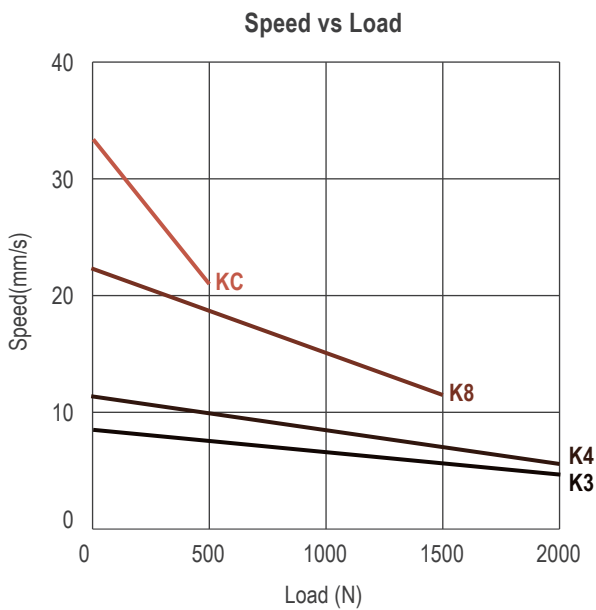
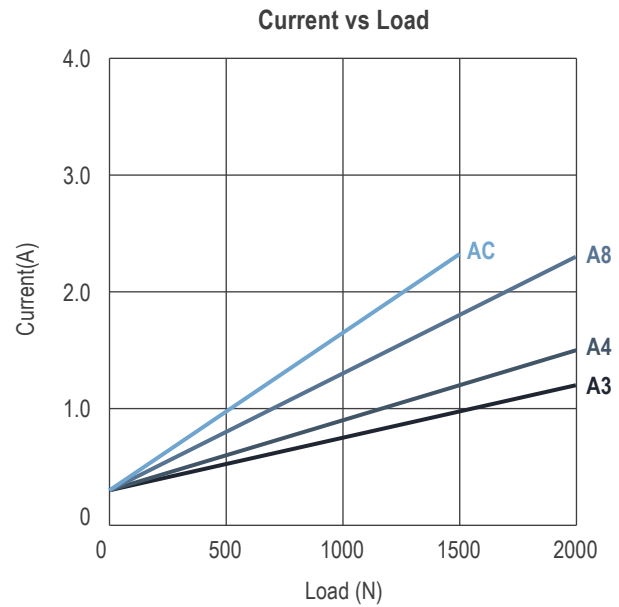
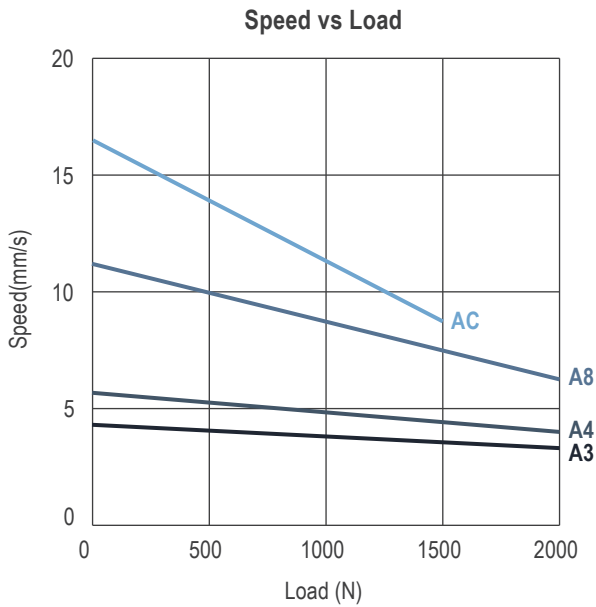
Dedicated cable DL1 or TL1 to connect to power supply and control directly, without control box.

Performance Data

Model No.	Push / Pull Max. (N)	Self-locking ability (N)	Typical speed (mm/s)		Typical current (A) @ 24V	
			No load	Full load	No load	Full load
FD20-24-A3-XXX.XXX-CXX-XXX	2000	2000	4.3	3.3	0.3	1.2
FD20-24-A4-XXX.XXX-CXX-XXX	2000	2000	5.6	4.0	0.3	1.5
FD20-24-A8-XXX.XXX-CXX-XXX	2000	1000	11.1	6.2	0.3	2.3
FD20-24-AC-XXX.XXX-CXX-XXX	1500	500	16.6	8.7	0.3	2.3
FD20-24-K3-XXX.XXX-CXX-XXX	2000	2000	8.3	4.7	0.4	1.8
FD20-24-K4-XXX.XXX-CXX-XXX	2000	1000	11.1	5.6	0.4	2.2
FD20-24-K8-XXX.XXX-CXX-XXX	1500	0	22.2	11.5	0.4	2.35
FD20-24-KC-XXX.XXX-CXX-XXX	500	0	33.3	21	0.3	1.55

***Remarks:**

Mechanical brake is option upon request, to enhance the braking ability conforming to maximum load.

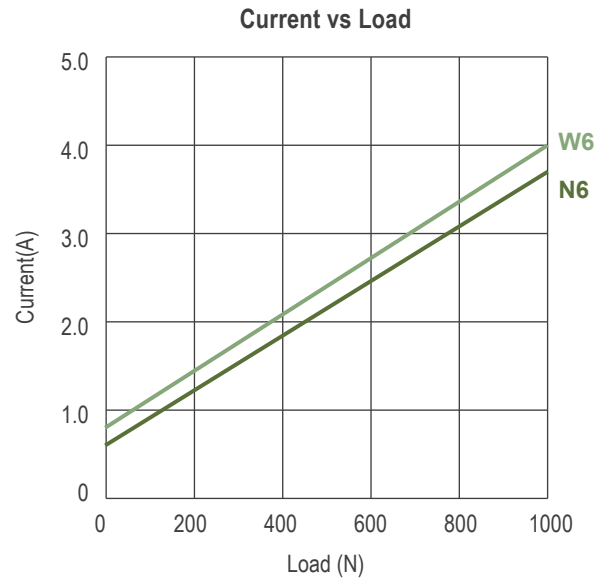
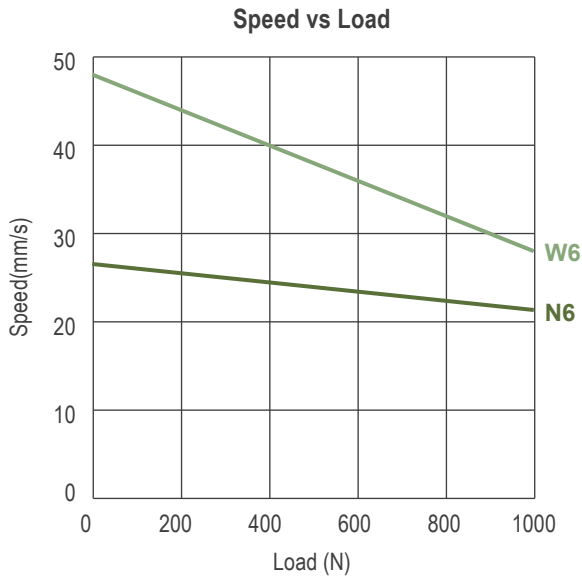


The below 2 models are suitable for recliner application, with DL1 or TL1 cable.

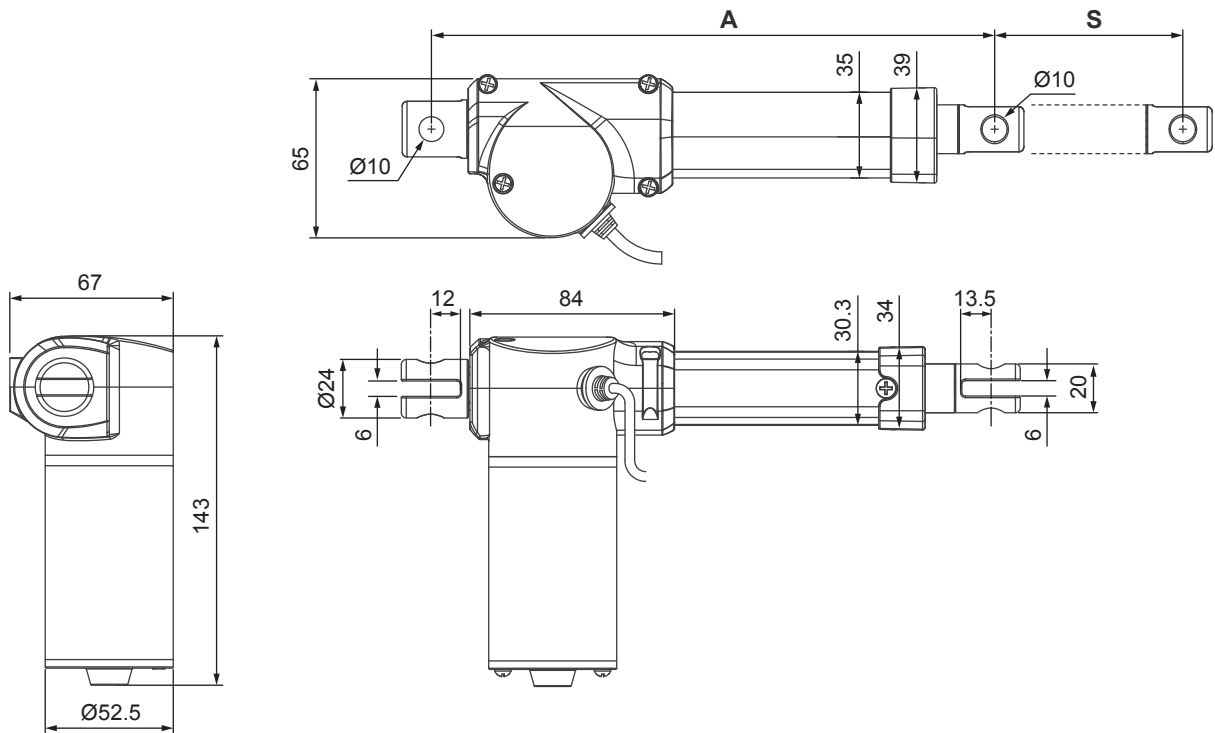
Model No.	Push / Pull Max. (N)	*Self-locking ability (N)	Typical speed (mm/s)		Typical current (A) @ 29V	
			No load	Full load	No load	Full load
FD20-24-N6-XXX.XXX-CXX-XXX	1000	500	26.7	21.3	0.6	3.7
FD20-24-W6-XXX.XXX-CXX-XXX	1000	500	48	28	0.6	4.0

***Remarks:**

Mechanical brake is option upon request, to enhance the braking ability conforming to maximum load.



Dimensions



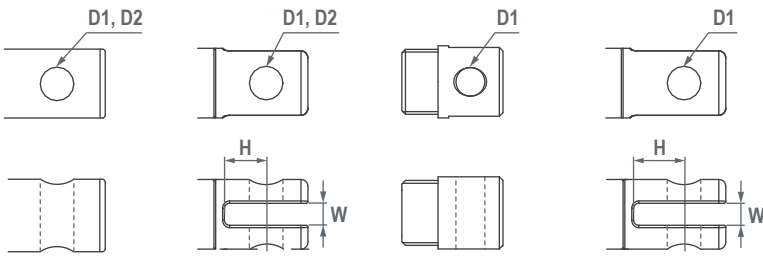
Installation Dimension

Front connector code	Rear connector code	Retracted length (A)
2, 4	1, 2, 4	$A \geq S + 135 (\pm 3\text{mm})$
3, 6	1, 2, 4	$A \geq S + 150 (\pm 3\text{mm})$

Available stroke (S) range = 50 ~ 250 mm
 Extended length = S + A

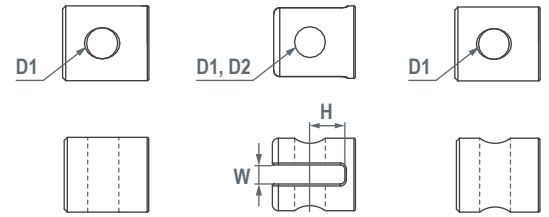
Front Connector

2: Drilled hole 3: Metal slot 4: Plastic solid 6: Plastic slot



Rear Connector

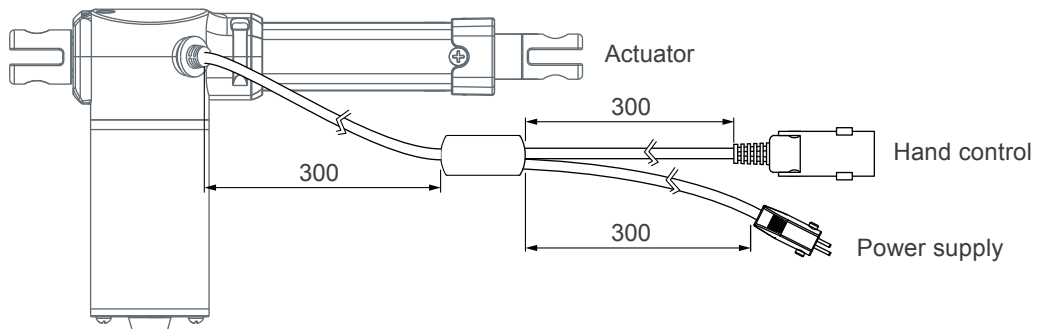
1: Plastic solid, square type 2: Metal slot 4: Plastic solid, round type



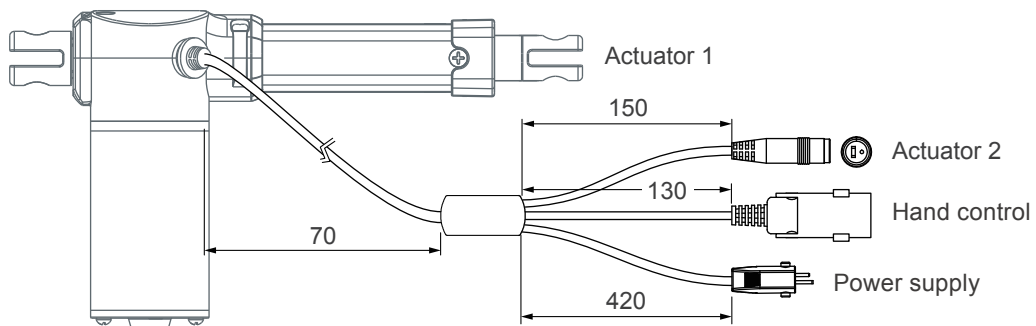
Front connector code	Diameter of pivot without bushing (D1)	Diameter of pivot with plastic bushing (D2)	Slot width (W)	Slot depth (H)
2	Ø6.4, Ø8, Ø10	Ø8	N/A	N/A
3	Ø8, Ø10	Ø8	6	13.5
4	Ø8, Ø10	N/A	N/A	N/A
6	Ø8, Ø10	Ø8	6	15
Rear connector code				
1	Ø8	N/A	N/A	N/A
2	Ø8, Ø10	Ø8	6	12
4	Ø10	N/A	N/A	N/A

Cable Length

Dedicated cable DL1



Dedicated cable TL1

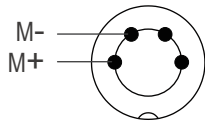


Cable Plug

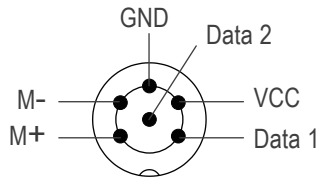
> With Moteck F-type DIN plug to connect to control box

- Without positioning sensor feedback

- With dual Hall effect sensors



4-pin DIN plug



6-pin DIN plug



F-type

Note:

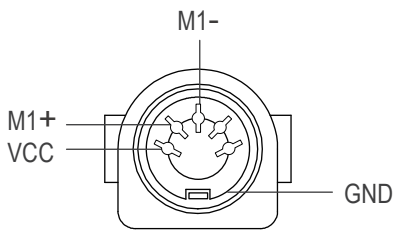
Connect Pin (M+) to "+" & Pin (M-) to "-" of DC power, the actuator will extend.

> Dedicated cable DL1 or TL1 to connect to hand control and power supply directly, without control box.

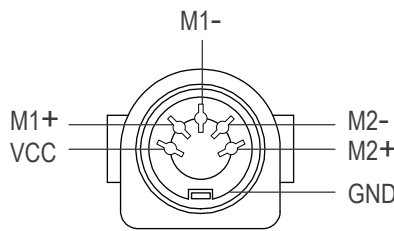
▶ Hand control connector: with Moteck U-type female connector

- 1 drive

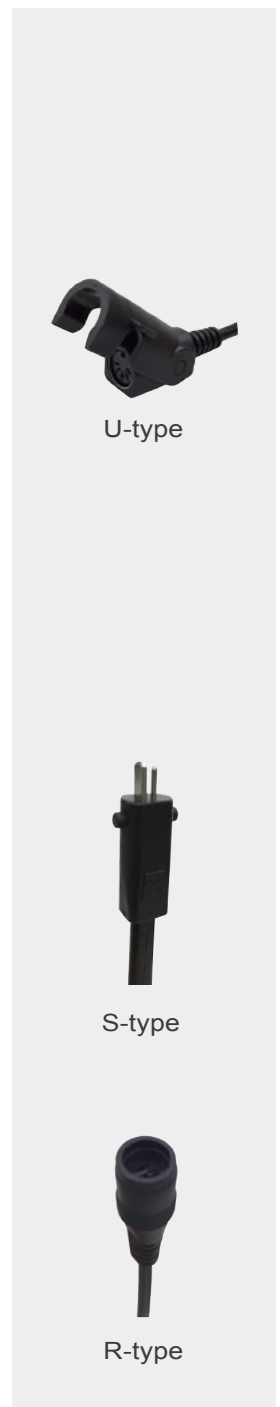
- 2 drives



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



5-pin connector
(Moteck pinout: C-DIN-52R)

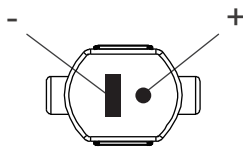


U-type

Note:

Connect pin (M1+) to "+" & pin (M1-) to "-" of DC power, the M1 actuator will extend. Definition of M2 actuator is the same.

▶ Power plug: with Moteck S-type DIN 41529 male plug

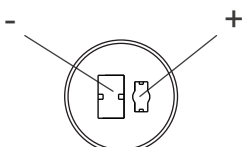


DIN 41529 plug



S-type

▶ Connector for 2nd actuator: with Moteck R-type DIN 41529 female (for TL1 only)



DIN 41529 connector



R-type

Ordering Key

FD20 - 24 - A4 - 230 - 330 - C 2 1 - HS2 - PO - 0

Input voltage	24: 24V DC
Motor and spindle type	A3, K3, N6, A4, K4, W6, A8, K8, AC, KC, (Refer to Performance Data)
Retracted length	XXX (Refer to Dimensions)
Extended length	XXX (Refer to Dimensions)
Front connector	2: Drilled hole 3: Metal slot 4: Plastic solid 6: Plastic slot (Refer to page 5)
Rear connector	1: Plastic solid, square type 2: Metal slot 4: Plastic solid, round type (Refer to page 5)
Positioning feedback	Blank: None HS1: Hall effect sensor x 1 HS2: Hall effect sensor x 2
Option	Blank: None PO: Mechanical push only extension
Cable	0: 300 mm straight 1: 1000 mm straight 2: 450 mm with 300 mm coiled A: Dedicated cable DL1, without control box (Refer to page 5) B: Dedicated cable TL1, without control box (Refer to page 5)

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