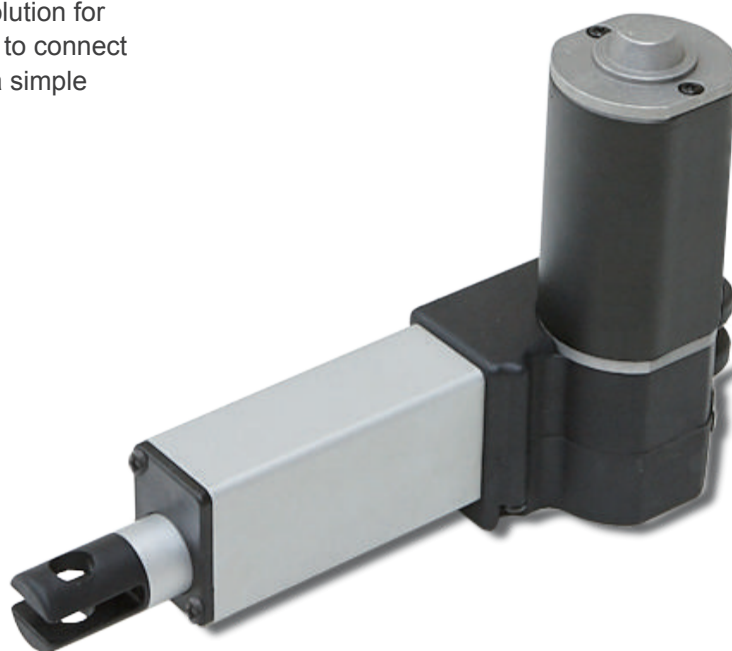


# Actuator

## FD10

FD10 is a small and quiet actuator. It allows small fitting dimensions, which makes FD10 an ideal solution for recliner and bed as neck actuator. It is able to connect with control and power supply to make up a simple system without control box.



### Feature

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- Main applications: Furniture
- Input voltage: 24V DC
- Max. Load: 1000N (Push) / 500N (Pull)
- Typical speed at no load: 15.1 mm/sec
- Typical speed at full load: 6.2 mm/sec (1000N load)
- Stroke: 50 ~ 300 mm
- Noise level:  $\leq 50$ dB
- Color: Black
- Preset limit switches
- Duty cycle: 10%, max. 2 min. continuous operation in 18 min.
- Ambient operation temperature: -20°C ~ +65°C
- Certified: CE Marking, EMC Directive 2014/30/EU

## Option

- Positioning signal feedback with Hall effect sensor x 2
- Mechanical push only extension tube
- PTC thermistor for thermal protection

## Compatibility

Product	Model	FD10 spec
<b>Control box</b>	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
<b>Hand control</b>	Depend on control box	- Powered by control box
	HB, H2G, HZ02, HZ03, HZ04, HZ05, HZ06	- With Moteck dedicated cable DL1*
<b>Accessory</b>	Switching mode power supply: TSW1, TSW4, TSW5	- With Moteck dedicated cable DL1
	T connector (Extension cable of actuator and handset, to connect to power supply or transformer box)	- 4-pin Moteck F-type DIN plug

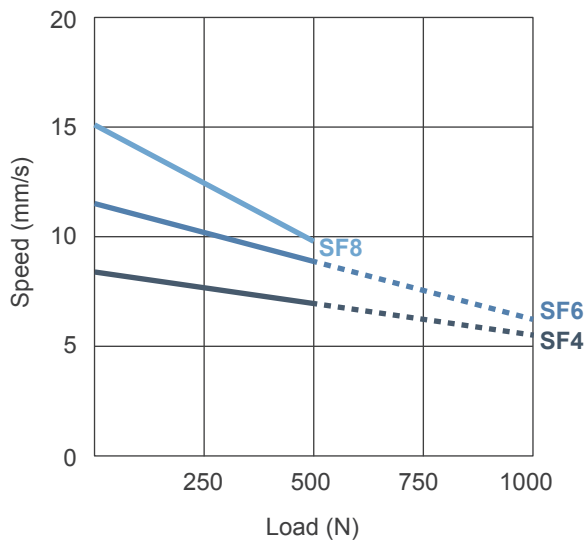
### Remarks:

- \* Dedicated cable DL1 to connect to power supply and control directly, without control box.

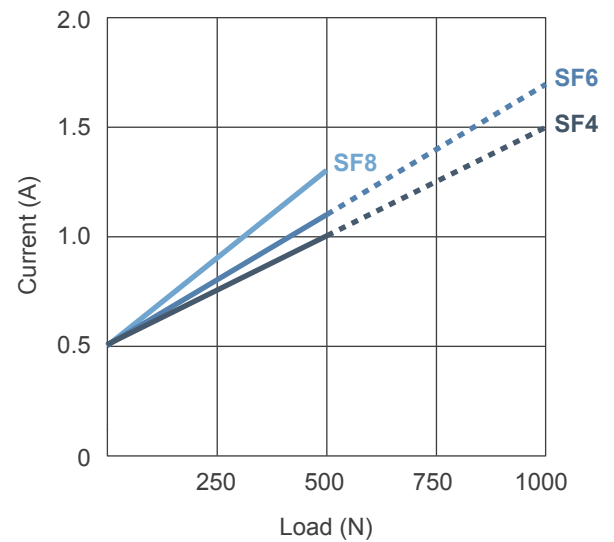
## Performance Data

Model	Push Max. (N)	Pull Max. (N)	*Typical Speed (mm/s)		*Typical Current (A) @ 24V	
			No load	Full load	No load	Full load
FD10-24SF4-XXX.XXX-XXXXX0X	1000	500	8.4	5.5	0.5	1.5
FD10-24SF6-XXX.XXX-XXXXX0X	1000	500	11.5	6.2	0.5	1.7
FD10-24SF8-XXX.XXX-XXXXX0X	500	500	15.1	9.8	0.5	1.3

Speed vs. Load



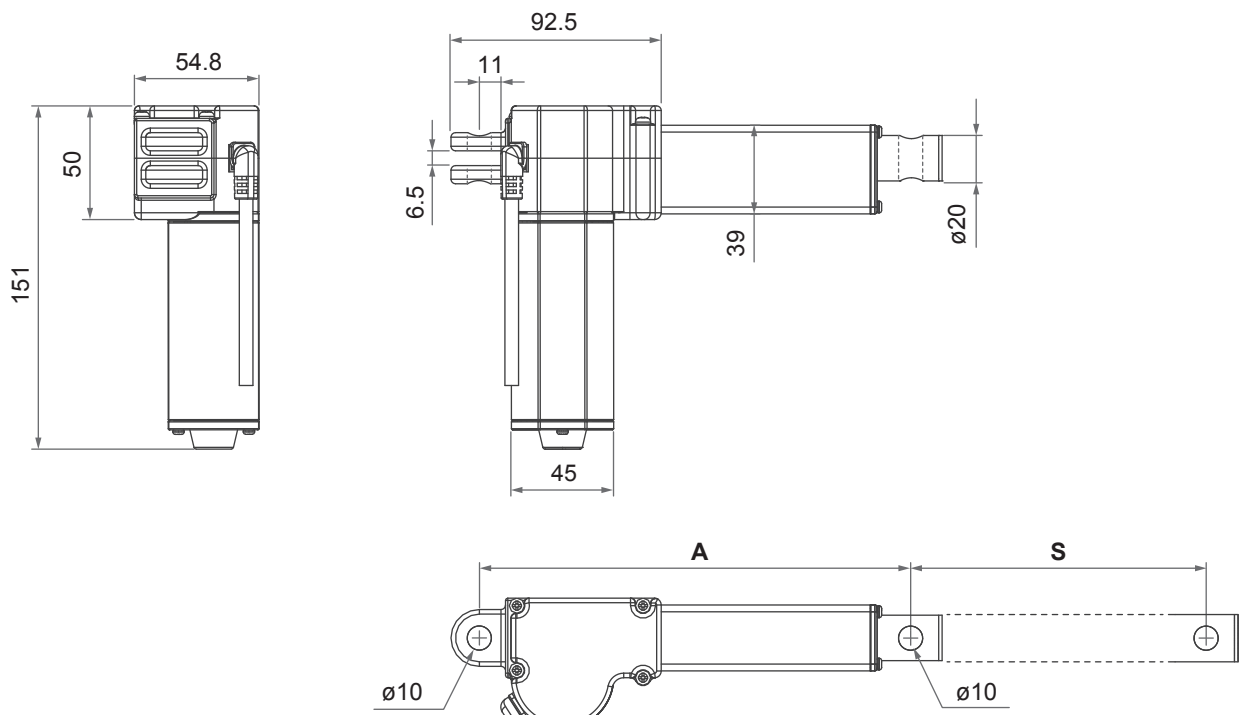
Current vs. Load



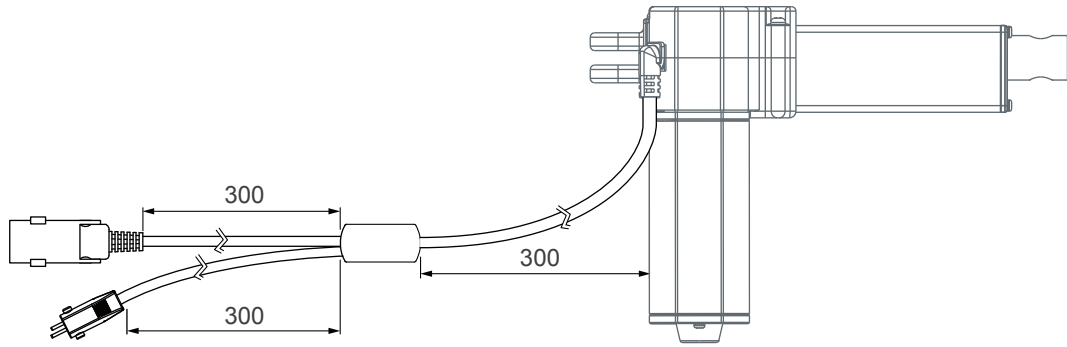
### Remarks:

- \* 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



## Dedicated cable DL1



### Installation Dimension

#### • Retracted length (A)

Front connector code	Stroke (S)		
	≤ 200mm	201~250mm	251~300mm
2	$A \geq S + 120\text{mm} (\pm 3\text{mm})$	$A \geq S + 130\text{mm} (\pm 3\text{mm})$	$A \geq S + 140\text{mm} (\pm 3\text{mm})$
3, 6	$A \geq S + 135\text{mm} (\pm 3\text{mm})$	$A \geq S + 145\text{mm} (\pm 3\text{mm})$	$A \geq S + 155\text{mm} (\pm 3\text{mm})$

Available stroke (S) range = 50 ~ 300mm

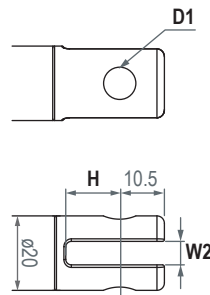
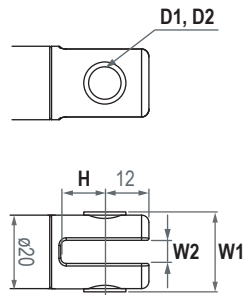
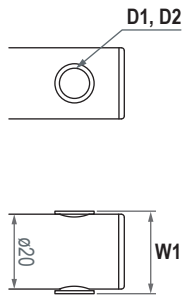
Extended length (B) = S + A

#### • Front connector

2: Drilled hole

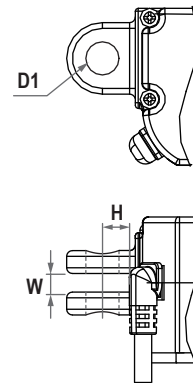
3: Metal slot

6: Plastic slot



#### • Pivot orientation of rear connector

4: Plastic, 0°



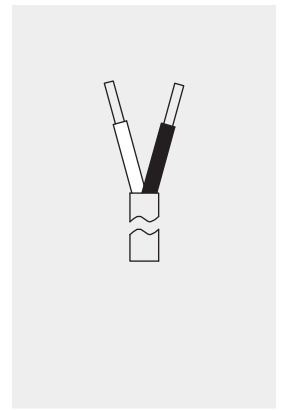
Front connector code	Diameter of pivot without bushing (D1)	Diameter of pivot with bushing (D2)	Width with bushing (W1)	Slot width (W2)	Slot depth (H)
2	ø8, ø10	ø8	22	N/A	N/A
3	ø8, ø10	ø8	22	6.4	13.5
6	ø8, ø10	N/A	N/A	6.4	15
Rear connector code	Diameter of pivot without bushing (D1)	Diameter of pivot with bushing (D2)	Width with bushing (W1)	Slot width (W2)	Slot depth (H)
4	ø10	N/A	N/A	6.5	11

## Wiring

### Wire definitions:

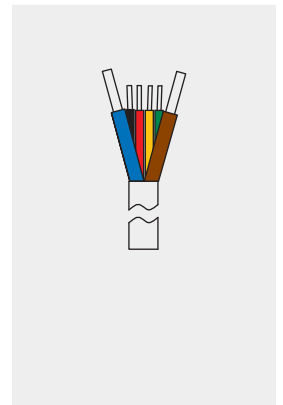
- Without positioning sensor feedback

Power	
White	Black
M+	M-



- With dual Hall effect sensors

Power		Signal			
Blue	Brown	Black	Yellow	Red	Green
M+	M-	GND	VCC	Data 1	Data 2



### Note:

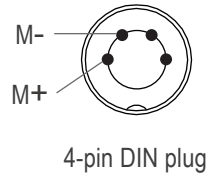
1. Connect Pin (M+) to “+” & Pin (M-) to “-“ of DC power, the actuator will extend.
2. Hall effect sensor resolution:

Model No.	Resolution (pulses/mm)
FD10-24SF4-XXX.XXX-XXXHX0X	7.00
FD10-24SF6-XXX.XXX-XXXHX0X	4.66
FD10-24SF8-XXX.XXX-XXXHX0X	3.50

## Cable Plug

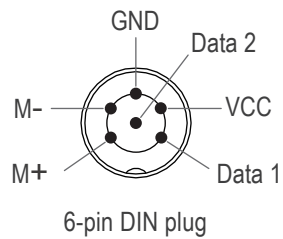
With Moteck F-type DIN plug (required to be connected to the control box):

- Without positioning sensor feedback



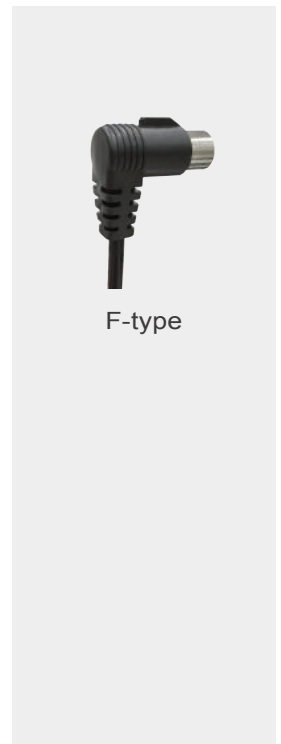
4-pin DIN plug

- With dual Hall effect sensors



6-pin DIN plug

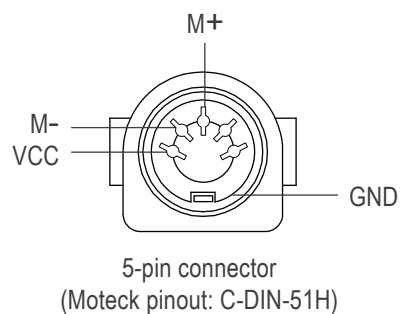
**Note:** Connect Pin (M+) to “+” & Pin (M-) to “-“ of DC power, the actuator will extend.



F-type

With special cable DL1 (NOT required to be connected to any control box):

- Hand control connector: with MOTECK U-type female connector



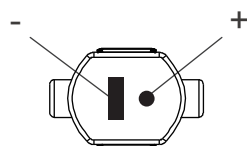
5-pin connector  
(Moteck pinout: C-DIN-51H)

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



U-type

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



DIN 41529 plug (S-type for DL1 only)



S-type

## Ordering Key

	<b>FD10 - 24 S F8 - 160 . 210 - 6 4 0 H 1 0 A</b>
<b>Input voltage</b>	<b>24:</b> 24V DC
<b>Motor power</b>	<b>S:</b> Short motor
<b>Motor and spindle type</b>	<b>F4</b> <b>F6</b> <b>F8</b> (Refer to Performance Data)
<b>Retracted length</b>	<b>XXX</b> (Refer to Dimensions)
<b>Extended length</b>	<b>XXX</b> (Refer to Dimensions)
<b>Front connector</b>	<b>2:</b> Drilled hole <b>3:</b> Metal <b>6:</b> Plastic (Refer to Dimensions)
<b>Rear connector</b>	<b>4:</b> Plastic (Refer to Dimensions)
<b>Pivot orientation of rear connector</b>	<b>0:</b> 0° (Refer to Dimensions)
<b>Positioning feedback</b>	<b>0:</b> None <b>H:</b> Hall effect sensor x 2
<b>Option</b>	<b>0:</b> None <b>1:</b> Push only extension tube <b>2:</b> PTC thermal protection <b>3:</b> Push only + PTC thermal protection
<b>Reserved</b>	<b>0:</b> No meaning
<b>Cable</b>	<b>0:</b> 300 mm straight <b>1:</b> 1000 mm straight <b>2:</b> 450 mm with 300 mm coiled <b>A:</b> Dedicated cable DL1, without control box

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