Actuator
MD10

MD10 is a compact and quiet actuator which is suitable for various applications with limited installation space, such as recliners, beds, and other applications.

Features and Options

Main applications: Home care, medical
Standard features:

- Input voltage: 24V DC
- Max. load: 1000N (Push/Pull)
- Speed at no load: 36 mm/sec (typical value)
- Speed at full load: 2.8 mm/sec (typical value @1000N loaded)
- Stroke: 50 ~ 300 mm
- Noise level: Refer to Performance Data
- IP Protection level: IPX5
- Color: Aluminum grey
- Preset limit switches
- Duty cycle: 10%, max. 2 min. continuous operation in 20 min.
- Ambient operation temperature: -20°C ~ +65°C
- Storage ambient temperature: -25°C ~ +65°C
- Certified: CE Marking, EN 60601-1-2, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-8

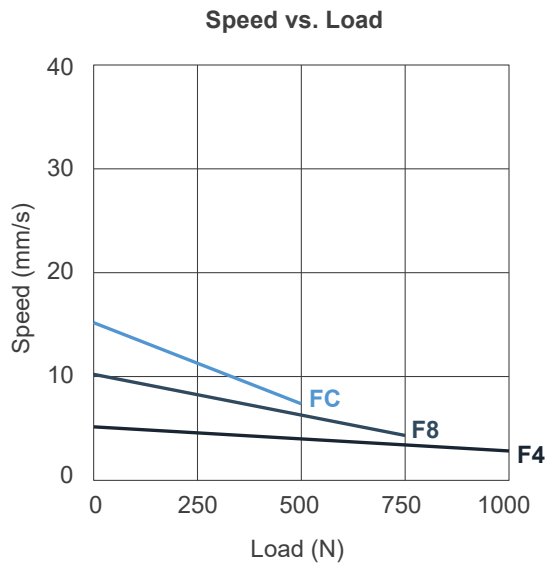
Options:

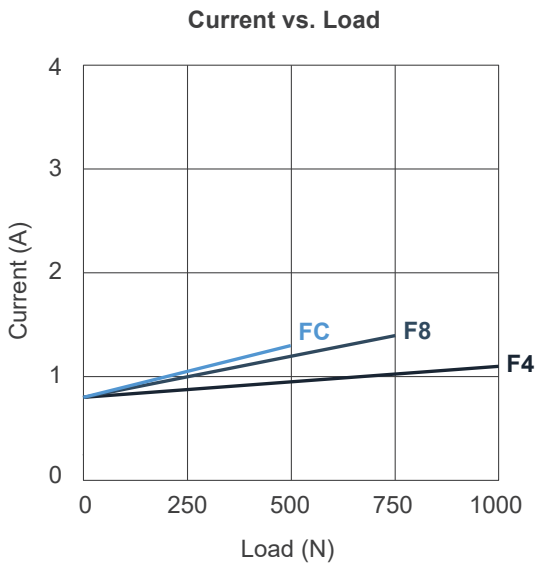
- Positioning signal feedback with Hall effect sensor x 2
- Mechanical push only extension tube

Performance Data

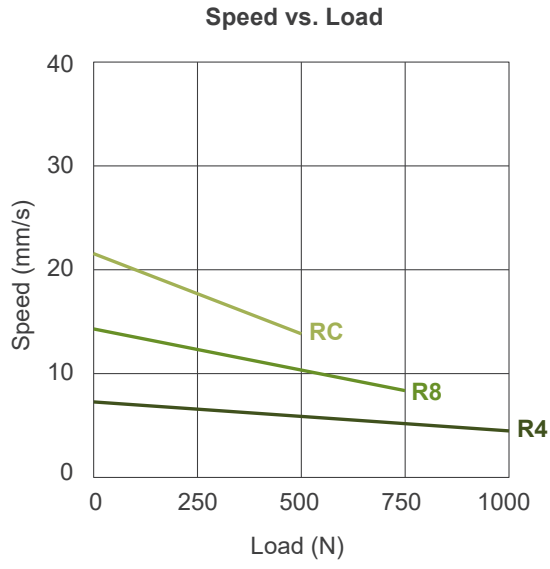
Model No.	Push / Pull Max. (N)	*Typical Speed (mm/s)		*Typical Current (A) @ 24V		Noise level (dB)
		No load	Full load	No load	Full load	
MD10-24**F4**-XX...	1000	5.1	2.8	0.8	1.1	≦48
MD10-24**F8**-XX...	750	10.1	4.3	0.8	1.4	≦48
MD10-24**FC**-XX...	500	15.1	7.4	0.8	1.3	≦48
MD10-24**R4**-XX...	1000	7.2	4.5	1.0	1.8	≦50
MD10-24**R8**-XX...	750	14.2	8.4	1.0	2.1	≦50
MD10-24**RC**-XX...	500	21.6	13.9	1.0	1.8	≦50

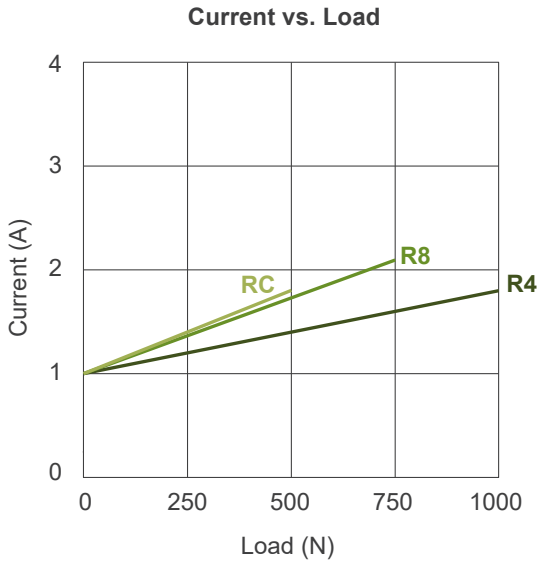
● 3000 rpm motor





● 4500 rpm motor





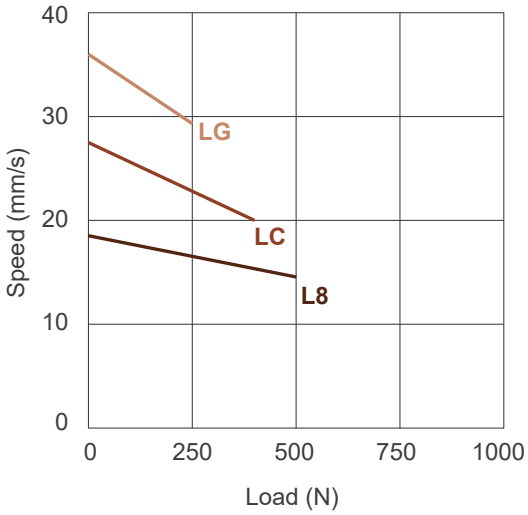
Remarks:

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

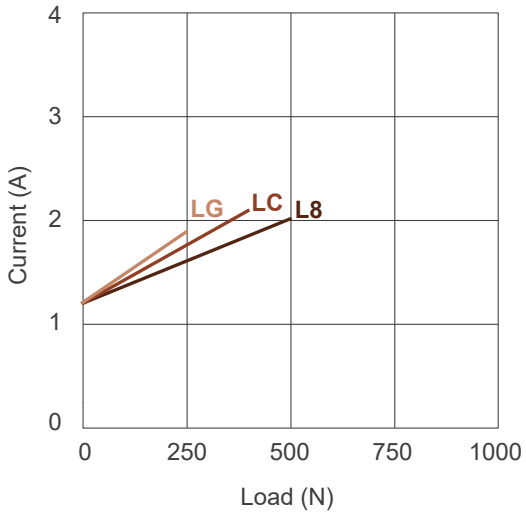
Model No.	Push / Pull Max. (N)	*Typical Speed (mm/s)		*Typical Current (A) @ 24V		Noise level (dB)
		No load	Full load	No load	Full load	
MD10-24**L8**-XX...	500	18.6	14.8	1.2	2.0	≦52
MD10-24**LC**-XX...	400	27.5	20	1.2	2.1	≦52
MD10-24**LG**-XX...	250	36	29.3	1.2	1.9	≦52

● 6000 rpm motor

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.

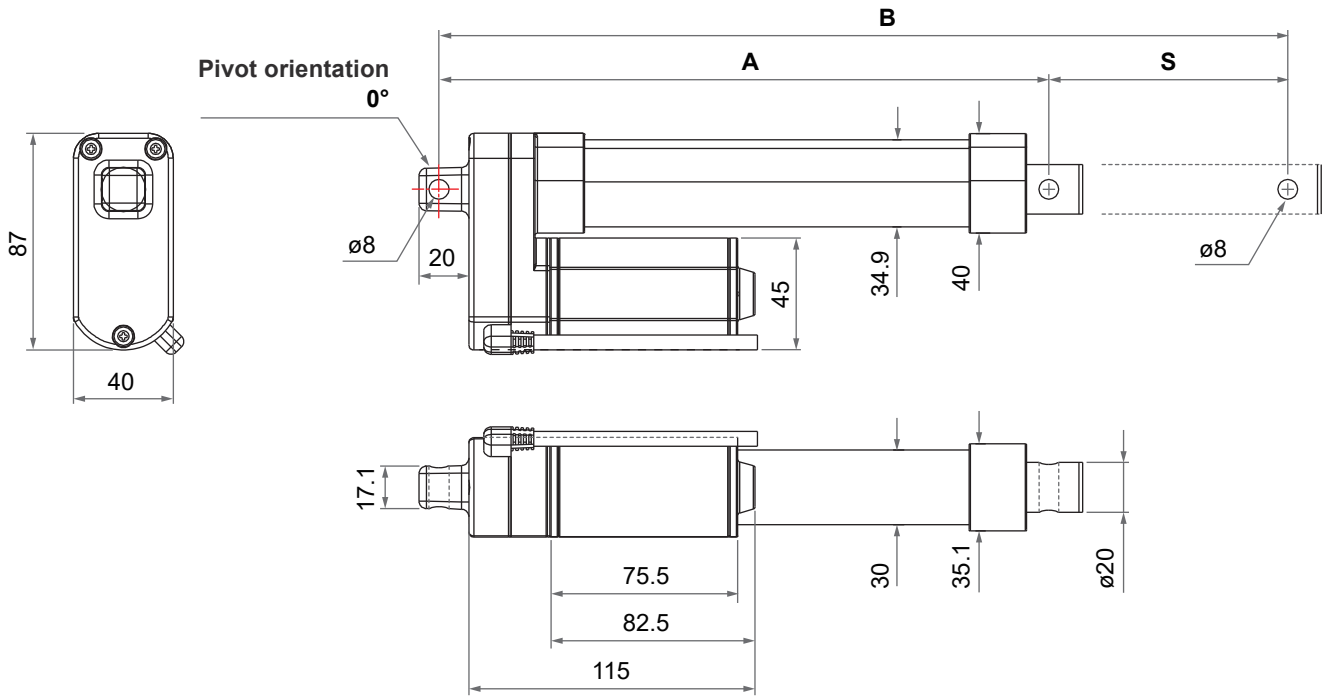
Dimensions

● **Retracted length (A)**

Front connector code	Stroke (S)		
	≦200mm	201~250mm	251~300mm
2, 4	A≧S+115mm (±3mm)	A≧S+125mm (±3mm)	A≧S+135mm (±3mm)
3, 6	A≧S+130mm (±3mm)	A≧S+140mm (±3mm)	A≧S+150mm (±3mm)

● Available stroke (S) range = 50 ~ 300mm

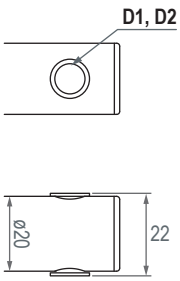
● Extended length (B) = S + A



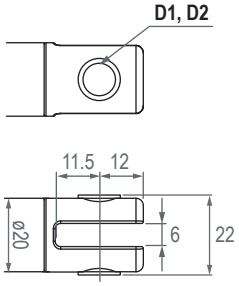
Note: As an example in 0° orientation for rear connector.

● Front connector

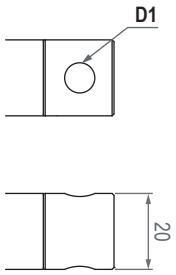
2: Drilled hole



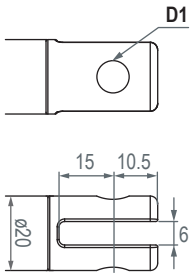
3: Metal slot



4: Plastic solid



6: Plastic slot

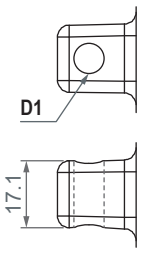


Front connector code	Diameter of pivot without bushing (D1)	Diameter of pivot with bushing (D2)
2	ø8, ø10	ø8
3	ø8, ø10	ø8
4	ø8, ø10	N/A
6	ø8, ø10	N/A

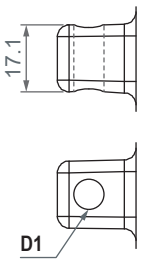
● Pivot orientation of rear connector

2: Metal

0 : 0° (standard)



9 : 90°



Rear connector code	Diameter of pivot without bushing (D1)	Diameter of pivot with bushing (D2)
2	ø8	N/A

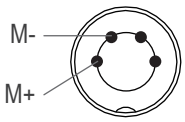
Compatibility

Product	Model	MD10 spec
Control box	T-control, CS1, CS2, CB3T, CB4M	- 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
	CM45	- Without positioning sensor feedback - 4-pin MOTECK H-type DIN plug
	CB2P, CB4P, MD6C, MD7C	- Without positioning sensor feedback - 4-pin MOTECK V-type or H-type DIN plug
	CB4P-SY	- With dual Hall effect sensors - 6-pin MOTECK V-type or H-type DIN plug

Cable Plug

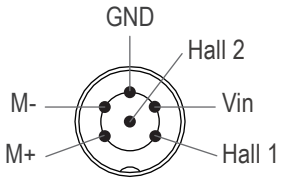
Moteck F-type, V-type or H-type DIN plug

● Without positioning feedback



4-pin DIN plug

● Positioning feedback with Hall effect sensors



6-pin DIN plug

F-type

V-type

H-type

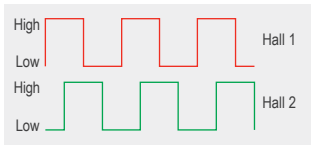
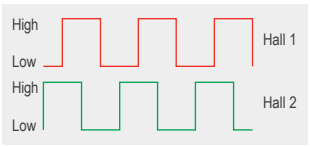
Note:
Connect M+ to “Vdc +” & M- to “Vdc -“ of DC power to extend the actuator.
Switch the polarity of DC input to retract it.

Cable with Flying Leads

Without positioning feedback

	Wire color	Definition	Comments
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		

With dual Hall effect sensors for positioning

	Wire color	Definition	Comments
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 (±0.6V) Low= GND Hall signal data:  Actuator extends  Actuator retracts Hall effect sensor resolution:
	Green	Hall 2 output	
	Black	GND	

Model No.	Resolution (pulses/mm)
MD10-24-F4-XXX.XXX-XXXHX0X	10
MD10-24-F8-XXX.XXX-XXXHX0X	5
MD10-24-FC-XXX.XXX-XXXHX0X	3.3
MD10-24-R4-XXX.XXX-XXXHX0X	10
MD10-24-R8-XXX.XXX-XXXHX0X	5
MD10-24-RC-XXX.XXX-XXXHX0X	3.3
MD10-24-L8-XXX.XXX-XXXHX0X	5
MD10-24-LC-XXX.XXX-XXXHX0X	3.3
MD10-24-LG-XXX.XXX-XXXHX0X	2.5

Ordering Key

MD10 - 24 F4 - 240 . 360 - 4 2 0 H 0 0 0

Motor and spindle type	**F4**: 3000rpm / 4mm pitch **F8**: 3000rpm / 8mm pitch **FC**: 3000rpm / 12mm pitch **R4**: 4500rpm / 4mm pitch **R8**: 4500rpm / 8mm pitch **RC**: 4500rpm / 12mm pitch **L8**: 6000rpm / 8mm pitch **LC**: 6000rpm / 12mm pitch **LG**: 6000rpm / 16mm pitch (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 Dimensions)
Rear connector	**2**: Metal (Refer to Dimensions)
Pivot orientation of rear connector	**0**: 0° (standard) **9**: 90° (Refer to Dimensions)
Positioning feedback	**0**: Without positioning feedback **H**: Hall effect sensor x 2
Option	**0**: None **P**: Mechanical push only extension tube
Reserved	**0**
Cable	**0**: 300 mm straight **1**: 1000 mm straight **2**: 450 mm with 300 mm coiled