

TA16

series



Product Segments

- **Care Motion**
- **Comfort Motion**
- **Industrial Motion**

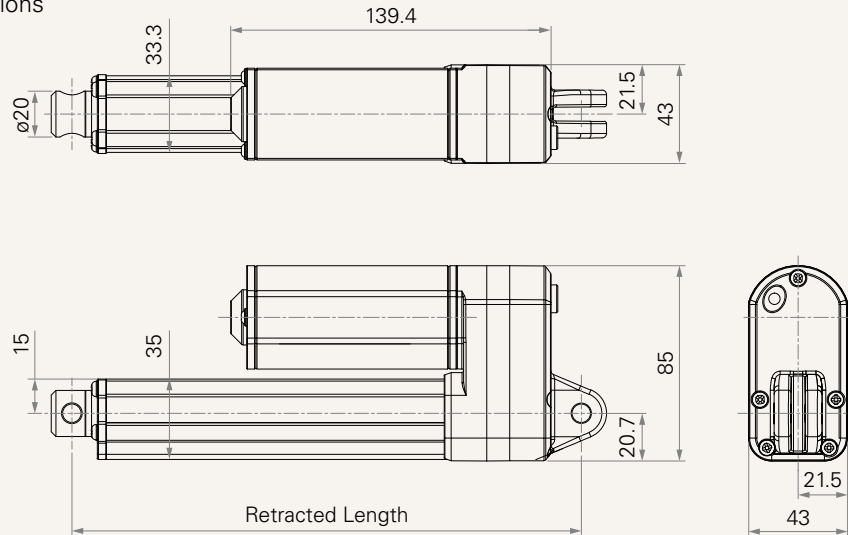
TiMOTION's TA16 series linear actuator is similar to the TA2 linear actuator, but is specifically designed for low-noise medical applications where a compact linear actuator is needed. It is available with optional IP66 protection and Hall sensors for position feedback. Certificates for the TA16 include IEC60601-1, ES60601-1, IEC60601-1-2, UL962, and EMC.

General Features

Voltage of motor	12V DC or 24V DC
Maximum load	3,500N in push and pull
Maximum speed at full load	13.5mm/s (with 1,500N in a push or pull condition)
Stroke	20~600mm
Minimum installation dimension	Stroke + 112mm
Color	Silver
IP rating	Up to IP66
Options	POT, Hall sensor(s)
Certificate	IEC60601-1, ES60601-1, IEC60601-1-2, UL962, EMC
Operational temperature range	+5°C~+45°C
With very low noise, small size for easy installation	

Drawing

Standard Dimensions
(mm)



Load and Speed

CODE	Load (N)		Self Locking Force (N)	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull		No Load 32V DC	With Load 24V DC	No Load 32V DC	With Load 24V DC
Motor Speed (3800RPM, Duty Cycle 10%)							
A	2500	2500	2500	1.2	2.8	5.2	3.0
B	2000	2000	2000	1.2	2.8	8.3	4.7
C	1500	1500	1000	1.2	2.8	11.9	7.0
D	1000	1000	1000	1.2	2.8	17.7	10.3
Motor Speed (5600RPM, Duty Cycle 10%)							
G	3500	3500	2000	1.5	4.7	12.0	6.5
J	2000	2000	1000	1.5	3.2	17.0	10.5
K	1500	1500	700	1.5	3.5	23.5	13.5

Note

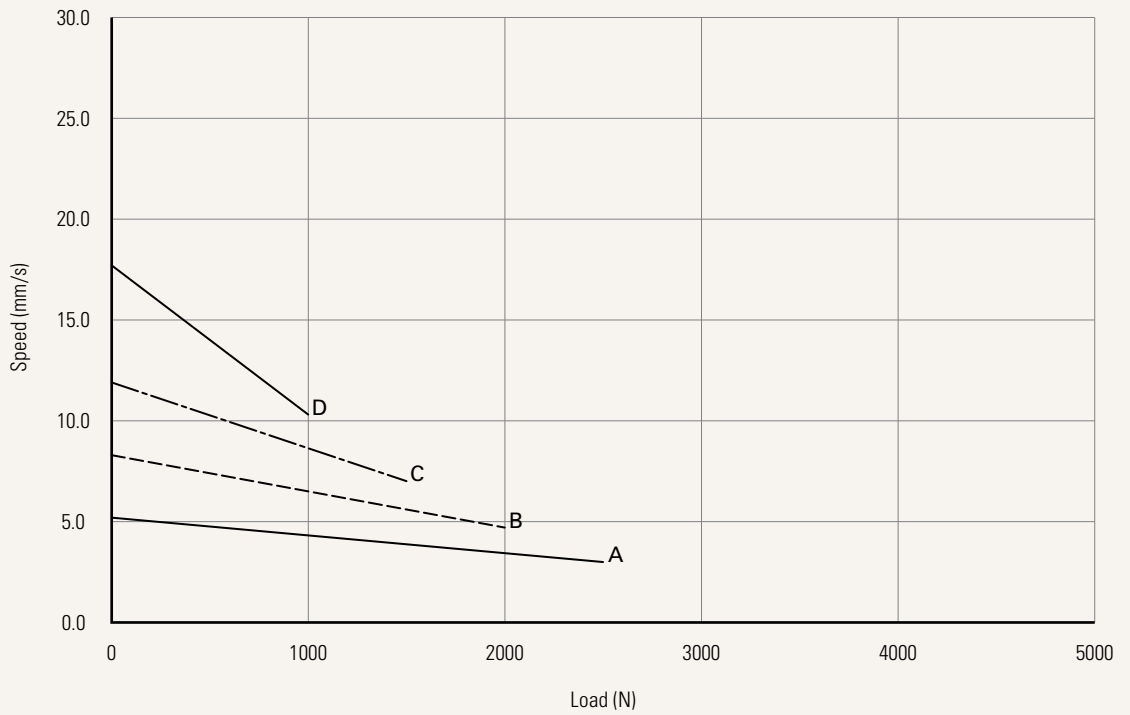
- 1 With a 12V motor, the current is approximately twice the current measured in 24V; speed will be similar for both voltages.
- 2 This self-locking force level is reached only when a short circuit is applied on the terminals of the motor. All the TiMOTION control boxes have this feature built-in.
- 3 Current and speed: Tested average value when extending in push direction.
- 4 Standard stroke: Min. ≥ 20 mm, Max. please refer to below table.

CODE	Load (N)	Max Stroke (mm)
D	≤ 1000	600
C, K	≤ 1500	500
B, J	≤ 2000	450
A	≤ 2500	400
G	≤ 3500	300

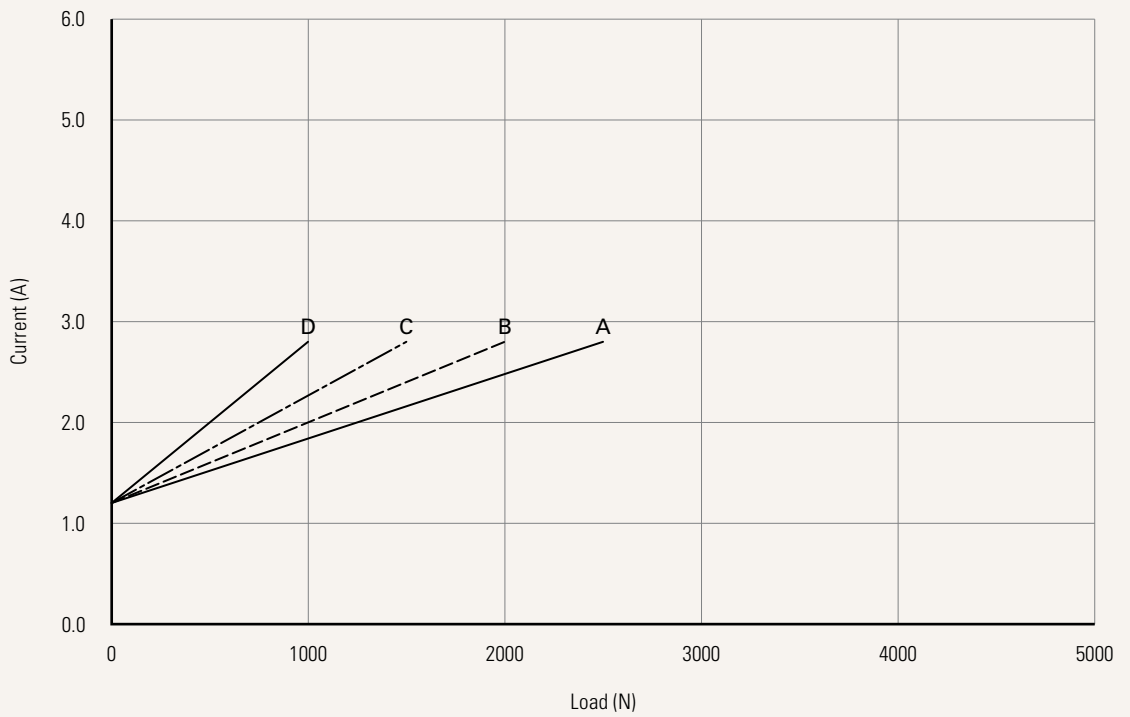
Performance Data (24V DC Motor)

Motor Speed (3800RPM, Duty Cycle 10%)

Speed vs. Load



Current vs. Load



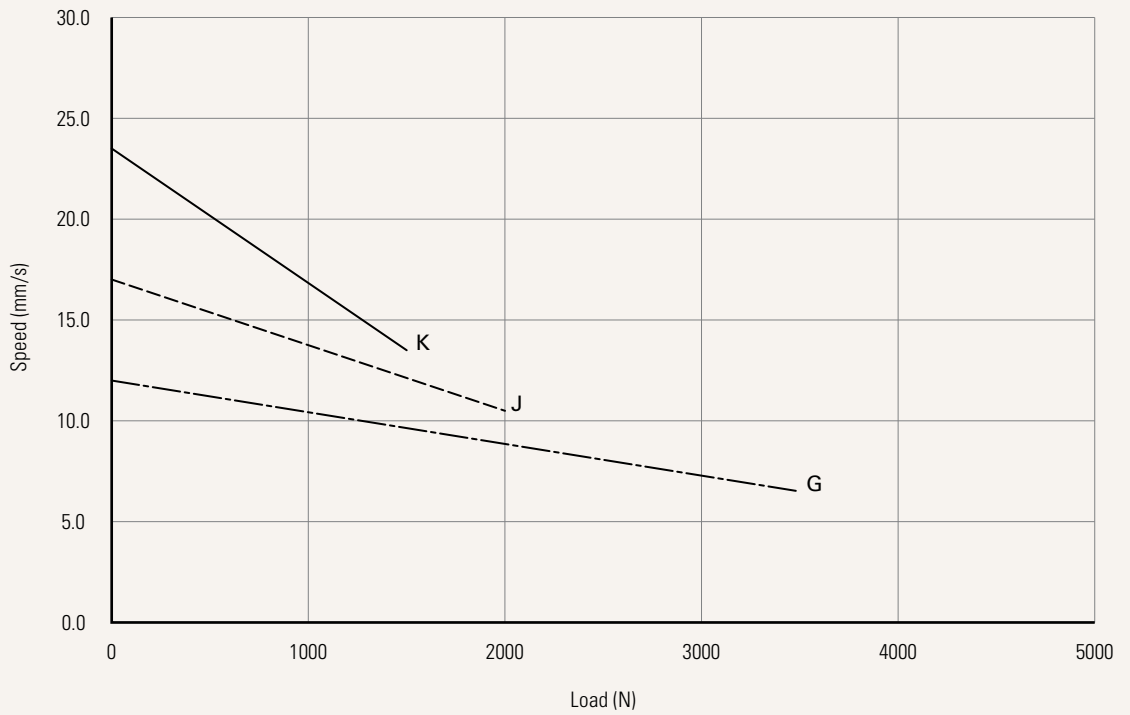
Note

1 The performance data in the curve charts shows theoretical value.

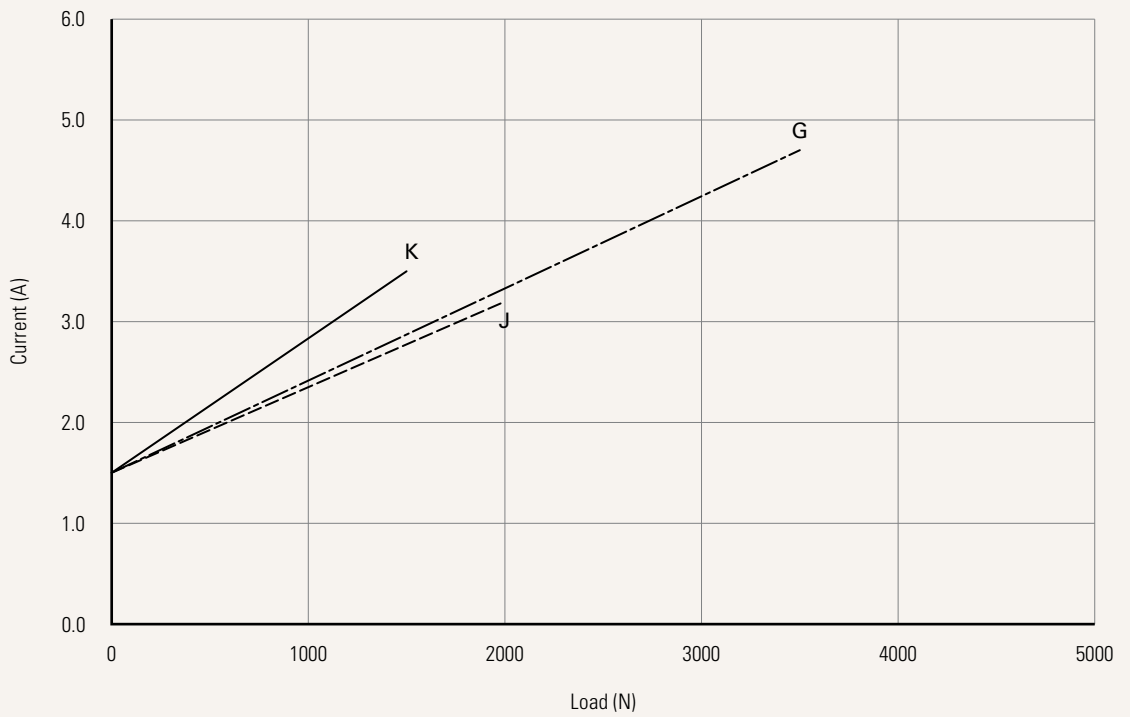
Performance Data (24V DC Motor)

Motor Speed (5600RPM, Duty Cycle 10%)

Speed vs. Load



Current vs. Load



Note

1 The performance data in the curve charts shows theoretical value.

Voltage	1 = 12V DC	2 = 24V DC		
Load and Speed	See page 2			
Stroke (mm)	See page 2			
Retracted Length (mm)	See page 6			
Rear Attachment (mm)	1 = Aluminum casting, U clevis, width 6.0, depth 12.2, hole 6.4, one piece casting with gear box 2 = Aluminum casting, U clevis, width 6.0, depth 12.2, hole 8.0, one piece casting with gear box 3 = Aluminum casting, U clevis, width 6.0, depth 12.2, hole 10.0, one piece casting with gear box			
Front Attachment (mm)	1 = Aluminum casting, no slot, hole 6.4 2 = Aluminum casting, no slot, hole 8.0 3 = Aluminum casting, no slot, hole 10.0 4 = Aluminum casting, U clevis, width 6.0, depth 13.0, hole 6.4		5 = Aluminum casting, U clevis, width 6.0, depth 13.0, hole 8.0 6 = Aluminum casting, U clevis, width 6.0, depth 13.0, hole 10.0	
Direction of Rear Attachment (Counterclockwise)	1 = 90°	2 = 0°		
IP Rating	1 = Without	2 = IP54	3 = IP66	
Functions for Limit Switches	1 = Two switches at full retracted / extended positions to cut current 2 = Two switches at full retracted / extended positions to cut current + 3rd LS to send signal 3 = Two switches at full retracted / extended positions to send signal 4 = Two switches at full retracted / extended positions to send signal + 3rd LS to send signal			
Special Functions for Spindle Sub-Assembly	0 = Without 1 = Safety nut		2 = Standard push only 3 = Standard push only + safety nut	
Output Signals	0 = Without	1 = POT	4 = Hall sensor * 1	5 = Hall sensor * 2
Connector	1 = DIN 6P, 90° plug 2 = Tinned leads 4 = Big 01P, plug	C = Y cable (Sor direct cut system, water proof, anti pull) E = Molex 8P, plug F = DIN 6P, 180° plug		G = Audio plug
Cable Length (mm)	0 = Straight, 100 1 = Straight, 500 2 = Straight, 750	3 = Straight, 1000 4 = Straight, 1250 5 = Straight, 1500	6 = Straight, 2000 7 = Curly, 200 8 = Curly, 400	B-H = For direct cut system See page 8

Retracted Length (mm)

1. Calculate $A+B+C+D = Y$
2. Retracted length needs to \geq Stroke + Y

A. Rear / Front Attachment

Front Attachment	Rear Attachment
	1, 2, 3
1, 2, 3	+112
4, 5, 6	+122

B. Load V.S. Stroke

Stroke (mm)	Load (N)	
	< 3500	= 3500
20~150	-	+5
151~200	+8	+13
201~250	+8	+13
251~300	+13	+18
301~350	+13	+18
351~400	+18	+23
401~450	+23	+28
451~500	+28	+33
501~550	+33	+38
551~600	+38	+43

C. Load V.S. Spindle Functions

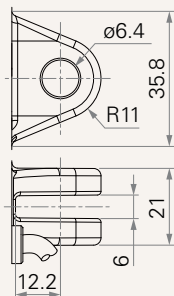
Spindle Functions	Load (N)		
	A, B	G	C, D, J, K
0	-	-	-
1	+10	-	-
2	+2	+2	+2
3	+12	-	-

D. Output Signals

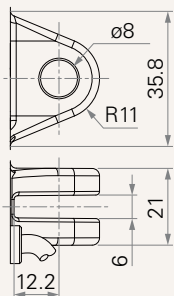
CODE	
0, 4, 5	-
1	+36

Rear Attachment (mm)

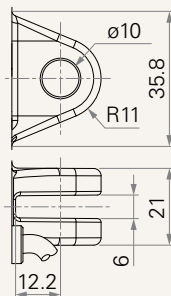
1 = Aluminum casting, U clevis, width 6.0, depth 12.2, hole 6.4, one piece casting with gear box



2 = Aluminum casting, U clevis, width 6.0, depth 12.2, hole 8.0, one piece casting with gear box

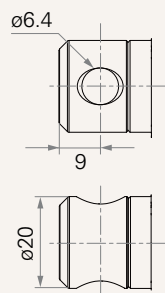


3 = Aluminum casting, U clevis, width 6.0, depth 12.2, hole 10.0, one piece casting with gear box

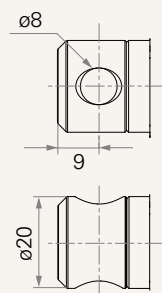


Front Attachment (mm)

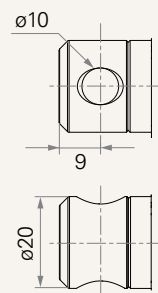
1 = Aluminum casting, no slot, hole 6.4



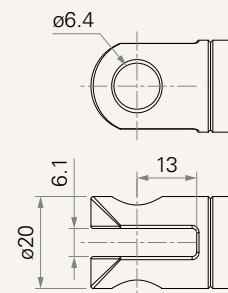
2 = Aluminum casting, no slot, hole 8.0



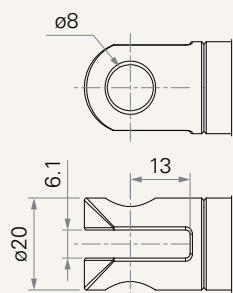
3 = Aluminum casting, no slot, hole 10.0



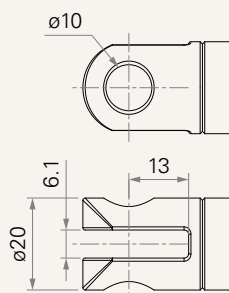
4 = Aluminum casting, U clevis, width 6.0, depth 13.0, hole 6.4



5 = Aluminum casting, U clevis, width 6.0, depth 13.0, hole 8.0

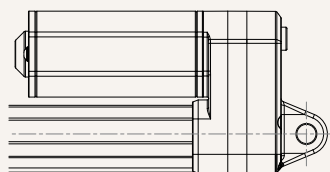


6 = Aluminum casting, U clevis, width 6.0, depth 13.0, hole 10.0

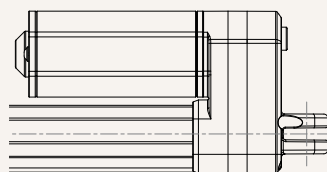


Direction of Rear Attachment (Counterclockwise)

1 = 90°



2 = 0°



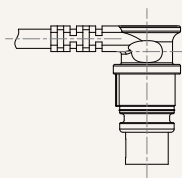
Functions for Limit Switches

Wire Definitions

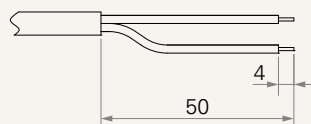
CODE	Pin					
	● 1 (Green)	● 2 (Red)	○ 3 (White)	● 4 (Black)	● 5 (Yellow)	● 6 (Blue)
1	extend (VDC+)	N/A	N/A	N/A	retract (VDC+)	N/A
2	extend (VDC+)	N/A	middle switch pin B	middle switch pin A	retract (VDC+)	N/A
3	extend (VDC+)	common	upper limit switch	N/A	retract (VDC+)	lower limit switch
4	extend (VDC+)	common	upper limit switch	medium limit switch	retract (VDC+)	lower limit switch

Connector

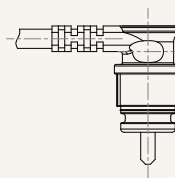
1 = DIN 6P, 90° plug



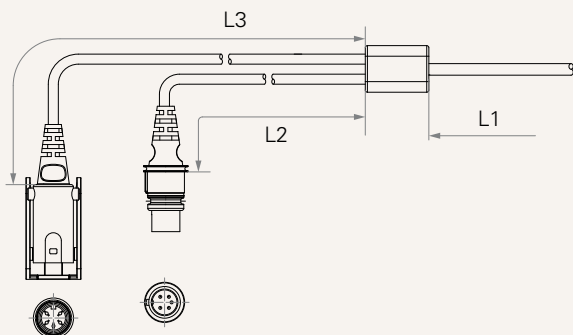
2 = Tinned leads



4 = Big 01P, plug



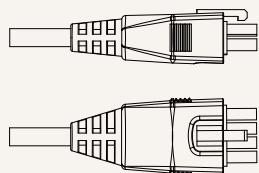
C = Y cable (For direct cut system, water proof, anti pull)



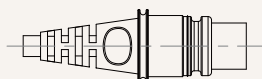
Cable length for direct cut system (mm)

CODE	L1	L2	L3
B	100	100	100
C	100	1000	400
D	100	2700	500
E	1000	100	100
F	100	600	1000
G	1500	1000	1000
H	100	100	1200

E = Molex 8P, plug



F = DIN 6P, 180° plug



G = Audio plug



Terms of Use

The user is responsible for determining the suitability of TiMOTION products for a specific application. TiMOTION products are subject to change without prior notice.