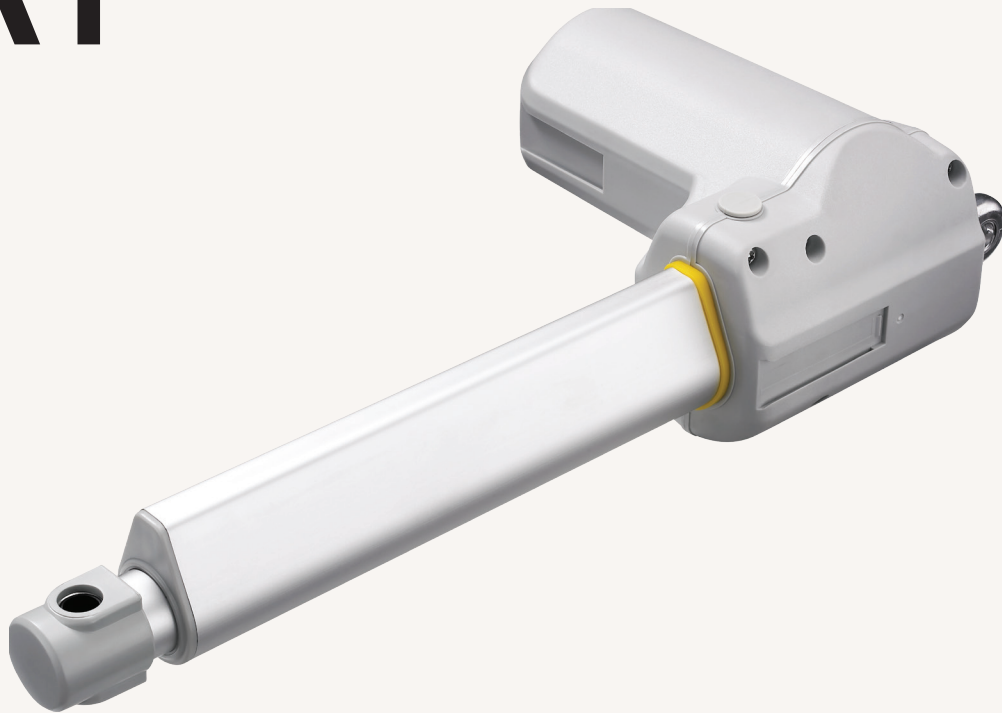


TA1

series



Product Segments

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



The TA1 series linear actuator is TiMOTION's flagship model suited for healthcare, furniture, ergonomic and industrial applications. Industry certifications for the TA1 include IEC60601-1, RoHS, and UL/EN60601-1. In addition, the TA1 linear actuator is available with optional IP rating 54 or 66. Other options include a manual or quick release system and Hall or Reed feedback sensors.

General Features

Voltage of motor	12V DC, 24V DC, or 36V DC
Maximum load	10,000N in push
Maximum load	4,000N in pull
Maximum speed at full load condition)	23.4mm/s (with 1,000N in a push or pull condition)
Minimum installation dimension	Stroke+163mm
Color	Black or grey
Protection class	Up to IP66
Certificate	IEC60601-1, ES60601-1, and RoHS
Operational temperature range	+5°C~+45°C
Option	Safety nut, quick release, Hall/Reed sensor(s)

Load and Speed

CODE	Rated Load		Self Locking N (PUSH)	Typical Current at Rated Load (A)	Typical Speed	
	PUSH N	PULL N			No Load (32V DC) mm/s	Rated Load (24V DC) mm/s
Motor Speed (2600RPM)						
C	5000	4000	2500	3.6	8.0	4.1
D	6000	4000	4000	3.6	6.0	3.1
F	2500	2500	1500	3.3	15.9	8.3
G	2000	2000	1000	3.3	21.4	11.1
H	1000	1000	500	2.2	32.1	19.1
J	3500	3500	2500	3.7	11.9	6.0
K	8000	4000	5000	4.1	5.4	2.7
Motor Speed (3400RPM)						
L	6000	4000	4000	4.3	7.6	4.1
N	2500	2500	1500	4.2	20.2	11.1
O	2000	2000	1000	4.1	27.1	14.9
P	1000	1000	500	3.1	39.5	23.4
Q	3500	3500	2500	4.7	15.1	7.9
R	8000	4000	5000	5.1	6.8	3.5
T	5000	4000	2500	4.3	10.1	5.4
Motor Speed (3800RPM)						
Y	8000	4000	5000	5.4	7.7	4.4
B	10000	4000	10000	5.3	5.7	3.3
U	5000	4000	2500	4.6	11.4	6.6
W	2500	2500	1500	4.4	22.9	13.1
Z	3500	3500	2500	4.9	17.1	9.5

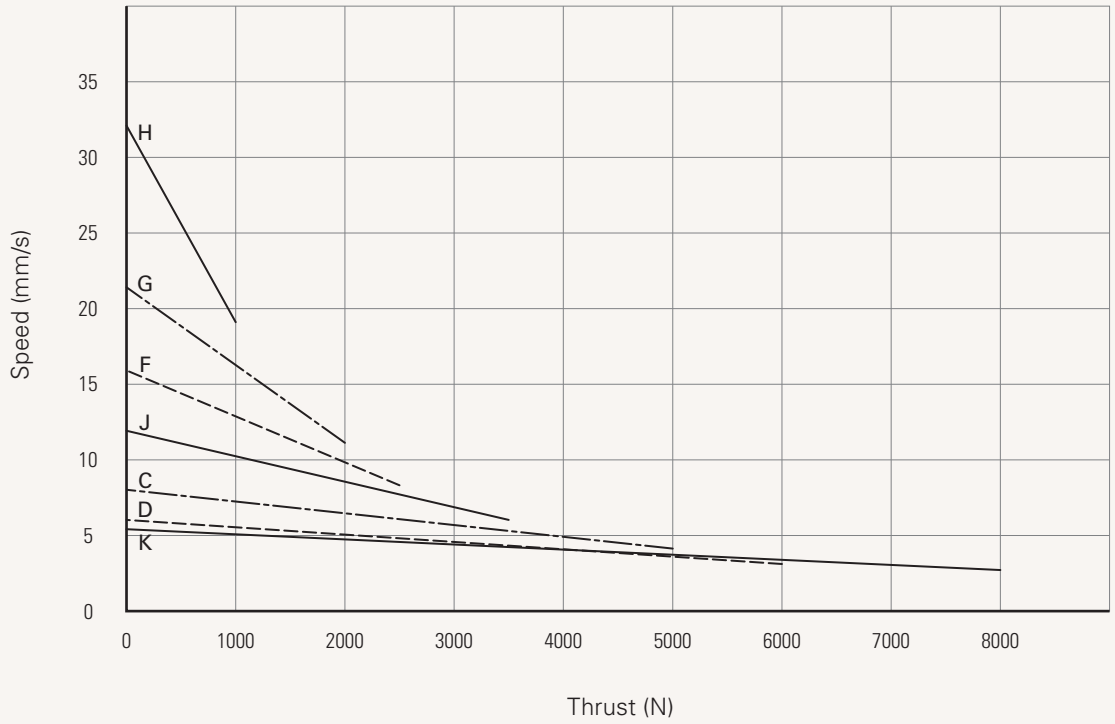
Note

- 1 Motor 12V current is around 2 times in 24V; Motor 36V current is around 2/3 in 24V; speed is around the same.
- 2 Above self lock performance needs working with TiMOTION control system.

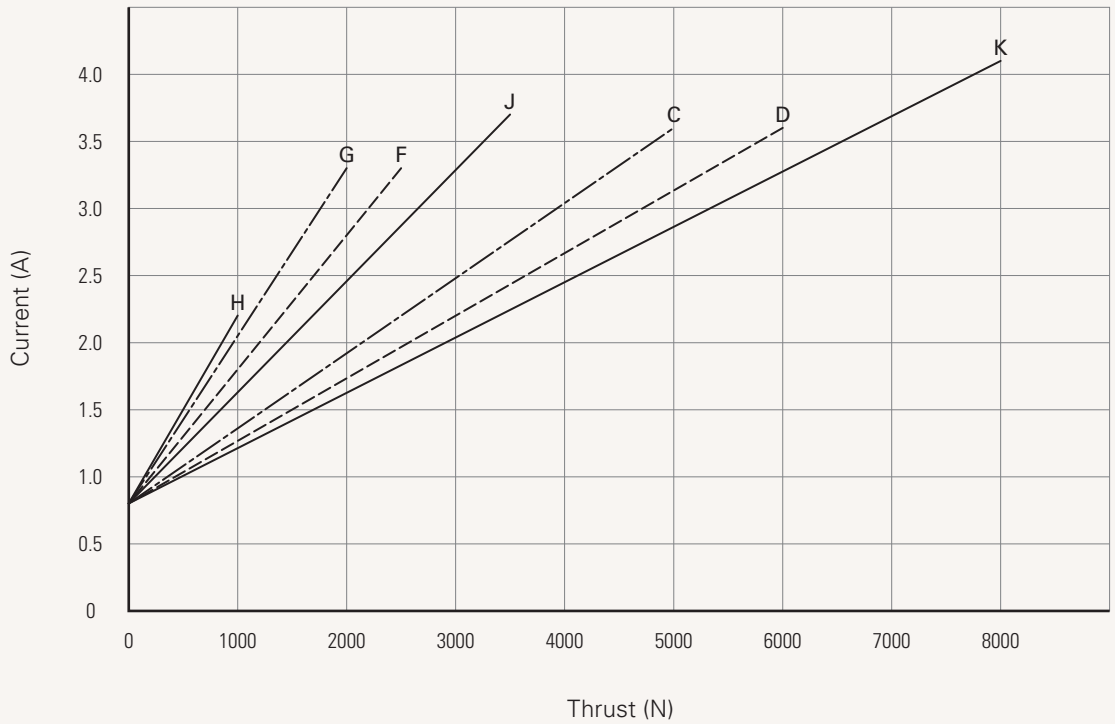
Performance Data (24V)

Motor Speed (2600RPM)

Speed vs. Thrust



Current vs. Thrust



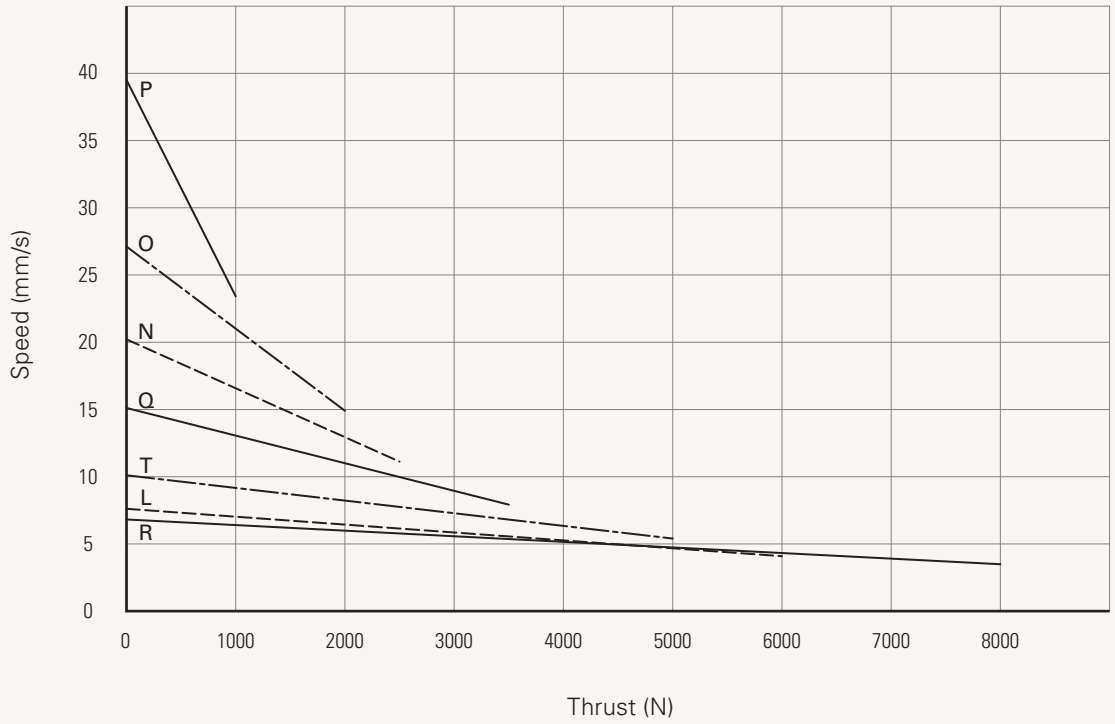
Note

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

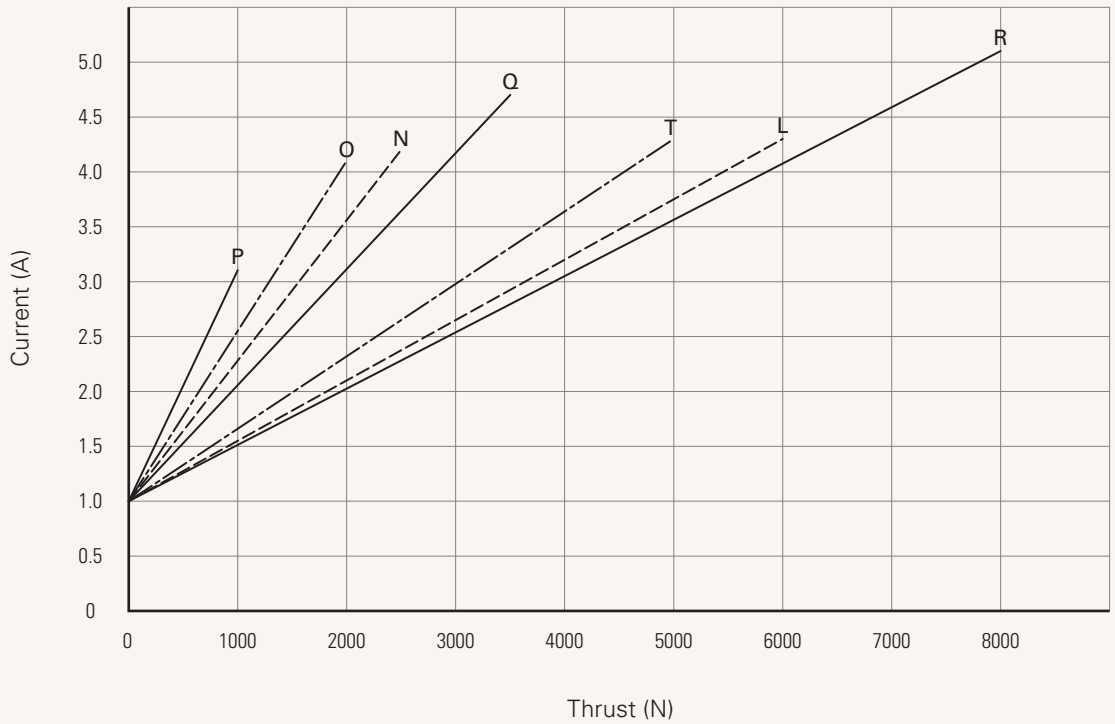
Performance Data (24V)

Motor Speed (3400RPM)

Speed vs. Thrust



Current vs. Thrust



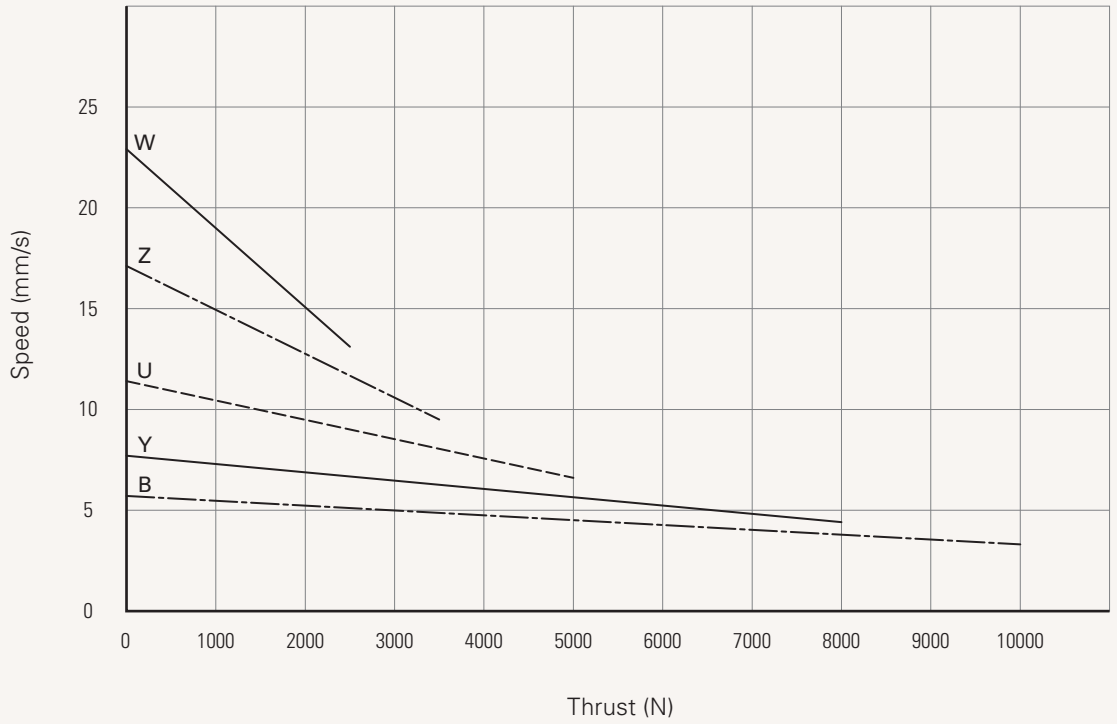
Note

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

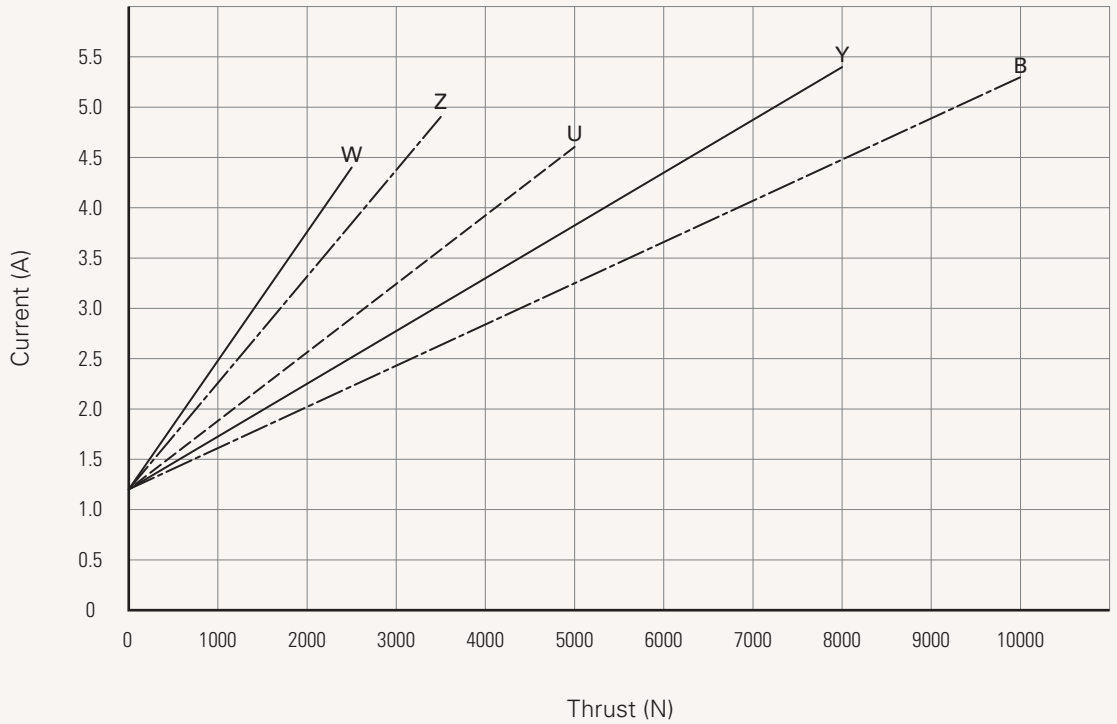
Performance Data (24V)

Motor Speed (3800RPM)

Speed vs. Thrust



Current vs. Thrust

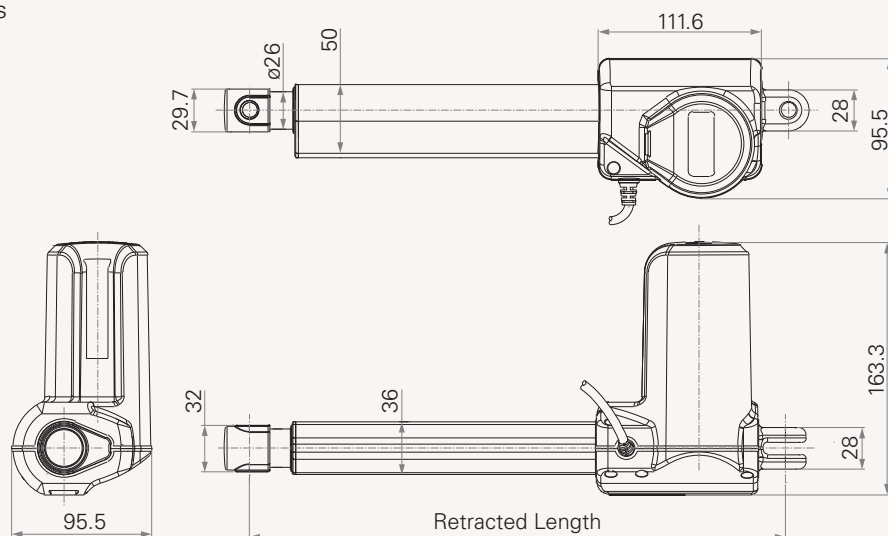


Note

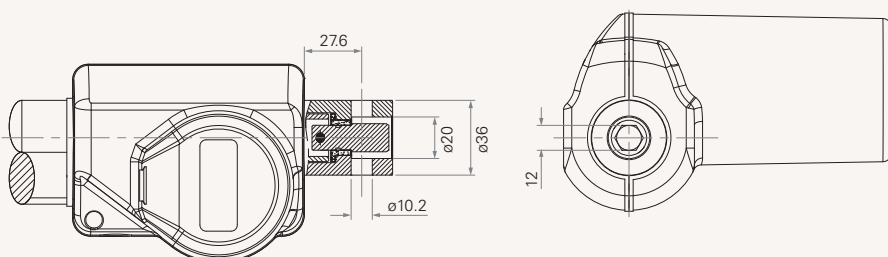
1 The performance data in the curve charts shows theoretical value only.

Drawing

Standard Dimensions
(mm)



Dimensions
with Manual
Operation
(mm)



Wire Definitions

CODE*	Pin					
	1	2	3	4	5	6
	● (green)	● (red)	○ (white)	● (black)	● (yellow)	● (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

Note

* See ordering key - functions for limit switches

Invalid length (mm)

Rear/Front Attachment	Rear attachment	
Front attachment	0, 1, 2, 3, 4, 5, C	H
1	+163	+171
2	+163	+171
3	+185	+193
4	+185	+193
5	+163	+171
6	+163	+171
7	+175	+183
8	+175	+183
9	+175	+183

Stroke (mm)	Load (N)			
	< 6000	= 6000	= 8000	= 10000
0~150	-	-	-	+6
151~200	-	-	+5	+11
201~250	-	+5	+10	+16
251~300	-	+10	+15	+21
301~350	+5	+15	+20	+26
351~400	+10	+20	+25	+31

Emergency Release Function

CODE	
0	-
1	+24
2	+24

Special Functions For Spindle Sub-Assembly	Load (N)
Push only	≥ 6000
0	-
1	-
2	+3
3	+3

Note

* Retracted length needs \geq stroke + invalid length

TA1

Version: 20151126-X

	Voltage	1 = 12V	2 = 24V	3 = 36V
	Load and Speed	See page 2.		
	Stroke (mm)			
	Retracted Length (mm)	See page 7.		
	Rear Attachment	0 = U clevis plastic , slot 8.2mm, hole 10.2mm (for load push < 4000N & pull < 2500N) 1 = U clevis plastic , slot 8.2mm, hole 12.2mm (for load push < 4000N & pull < 2500N) 2 = U clevis Aluminum casting, slot 8.2mm, hole 10.2mm 3 = U clevis Aluminum casting, slot 8.2mm, hole 12.2mm	4 = U clevis Aluminum casting, slot 10.2mm, hole 10.2mm 5 = U clevis Aluminum casting, slot 10.2mm, hole 12.2mm C = U clevis Aluminum casting #3 + plastic bushing, slot 8.2 mm, hole 10.2mm H = Hand crank	
	Front Attachment	1 = Punched hole on inner tube + plastic cap, width 32mm, without slot, hole 10.2mm 2 = Punched hole on inner tube + plastic cap, width 32mm, without slot, hole 12.2mm 3 = U clevis plastic, ø30mm, slot 8.2mm, hole 10.2mm (for load push < 4000N & pull < 2500N) 4 = U clevis plastic, ø30mm, slot 8.2mm, hole 12.2mm (for load push < 4000N & pull < 2500N) 5 = Punched hole on inner tube, width 26mm, without slot, hole 10.2mm	6 = Punched hole on inner tube, width 26mm, without slot, hole 12.2mm 7 = U clevis Aluminum casting, width 26mm, slot 6.2mm, hole 10.2mm 8 = U clevis Aluminum casting, width 26mm, slot 6.2mm, hole 12.2mm 9 = U clevis Aluminum casting #8 + plastic bushing, width 28mm, slot 6.2mm, hole 10.2mm	
	Direction of Rear Attachment (Counterclockwise)	1 = 0°	2 = 45°	3 = 90° 4 = 135°
	Color	1 = Black	2 = Grey (Pantone 428C)	
	IP Rating	1 = Without	2 = IP54	3 = IP66 4 = Without housings 5 = IP66W
	Emergency Release Function	0 = Without	1 = Cable type quick release (standard)	2 = Handle type quick release
	Special Functions for Spindle Sub-Assembly	0 = Without (standard)	1 = Safety nut	2 = Standard push only 3 = Standard push only + safety nut
	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 + third one in between 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 + third one in between to send signal		
	Output Signals	0 = Without	1 = One Hall sensor	2 = Two Hall sensors 3 = Reed Sensor
	Connector	1 = DIN 6pin, 90° plug 2 = Tinned leads 4 = Big 01pin, plug	C = Y cable (for direct cut system, water proof, anti pull) D = Extension cable + DIN 6P socket (with anti pull clip) E = Molex 8pin, plug	F = DIN 6pin, 180° plug G = Audio plug
	Cable Length	0 = Straight, 100mm 1 = Straight, 500mm 2 = Straight, 750mm	3 = Straight, 1000mm 4 = Straight, 1250mm 5 = Straight, 1500mm	6 = Straight, 2000mm 7 = Coiled, 200mm 8 = Coiled, 400mm B-H = For direct cut system, please contact TIMOTION

TA1 - Patient Hoist Ordering Key

TA1

Version: 20151126-X

<input type="checkbox"/>	Voltage	2 = 24V	
<input type="checkbox"/>	Load and Speed	Y = 8000N	
<input type="checkbox"/>	Stroke (mm)		
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>	Retracted Length (mm)	Stroke + 250mm	
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>	Rear Attachment	C = U clevis Aluminum casting #3 + plastic bushing, slot 8.2 mm, hole 10.2mm	
<input type="checkbox"/>	Front Attachment	F = Manual release + plastic bushing, slot 8.2mm, hole 10.2mm	
<input type="checkbox"/>	Direction of Rear Attachment (Counterclockwise)	1 = 0°	
<input type="checkbox"/>	Color	1 = Black	2 = Grey (Pantone 428C)
<input type="checkbox"/>	IP Rating	2 = IP54	3 = IP66
<input type="checkbox"/>	Emergency Release Function	5 = Manual release	
<input type="checkbox"/>	Special Functions for Spindle Sub-Assembly	6 = Mechanical push only + safety nut	
<input type="checkbox"/>	Functions for Limit Switches	1 = Two switches at full retracted/extended positions to cut current	
<input type="checkbox"/>	Output Signals	0 = Without sensor	
<input type="checkbox"/>	Connector	1 = DIN 6pin, 90° plug F = DIN 6pin, 180° plug, for TC12	G = Audio plug
<input type="checkbox"/>	Cable Length	1 = Straight, 500mm	3 = Straight, 1000mm

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.