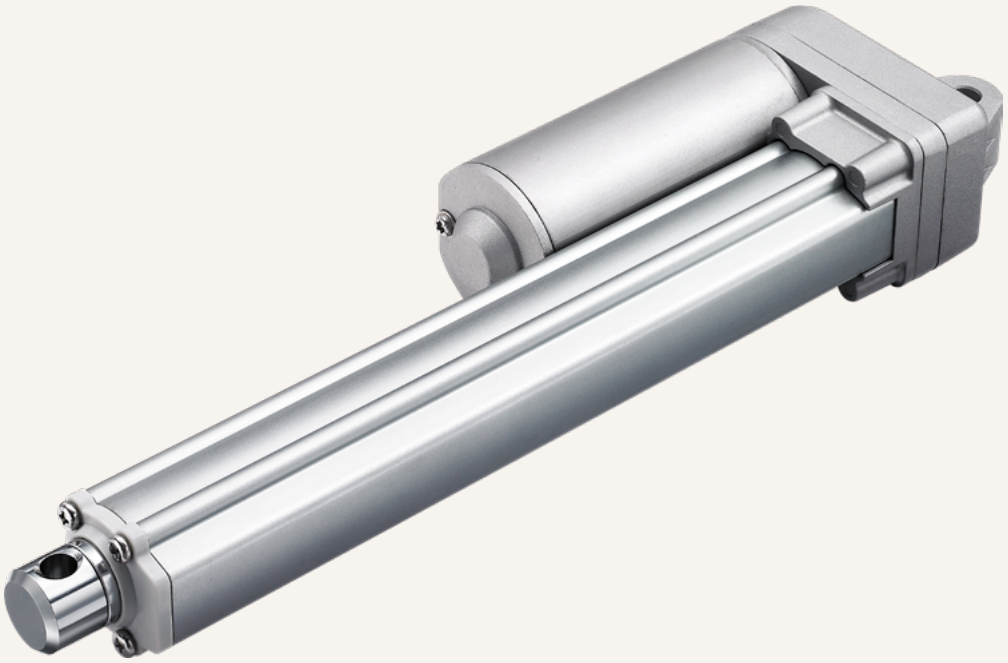
TA2P

series



Product Segments

- **Industrial Motion**

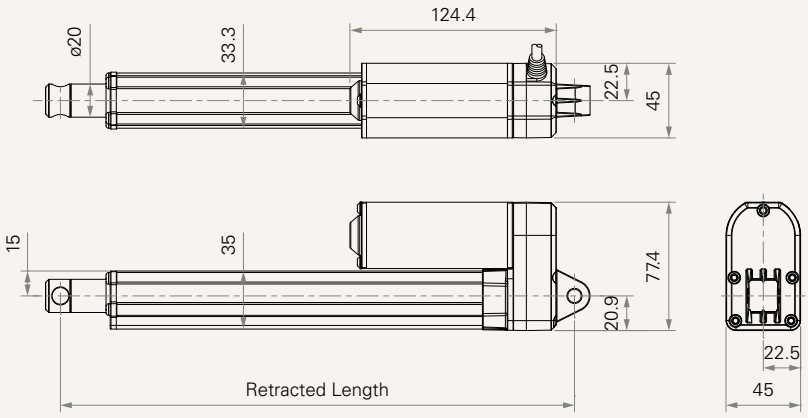
Both the TA2 and the TA2P are compact, robust, and capable of performing well in certain outdoor environments. A more powerful motor makes the TA2P capable of handling load ratings up to 3500N (787 pounds) while retaining its compact size. In addition to the high power motor, the TA2P linear actuator is available with multiple choices for feedback sensors.

General Features

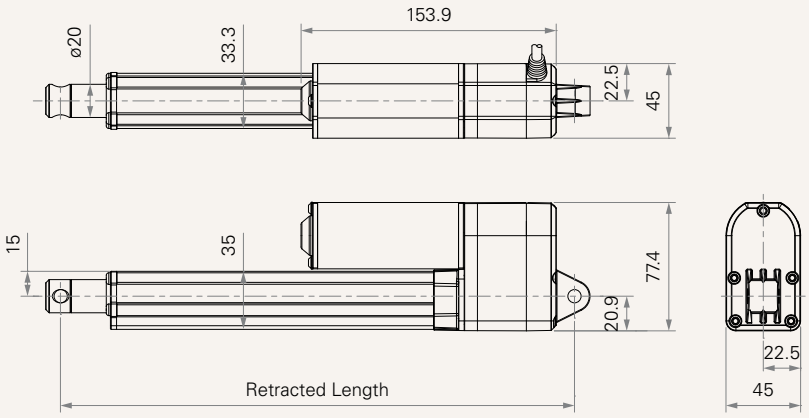
Max. load	3,500N (push); 2,000N (pull)
Max. speed at max. load	2.4mm/s
Max. speed at no load	56.5mm/s
Retracted length	≥ Stroke + 108mm (with Hall sensors or without output signals)
IP rating	IP66M
Certificate	UL73
Stroke	20~1000mm
Output Signals	Mechanical pot., NPN Hall sensor
Voltage	12/24/36/48V DC; 12/24/48V DC (PTC)
Color	Silver
Operational temperature range	-25°C ~ +65°C
Operational temperature range at full performance	+5°C ~ +45°C

Drawing

Dimensions
without Output Signal
or with Hall Sensors
(mm)



Dimensions
with POT
or Reed Sensor
(mm)



Load and Speed

CODE	Load (N)		Self Locking Force (N)	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull		No Load 24V DC	With Load 24V DC	No Load 24V DC	With Load 24V DC
Motor Speed (5200RPM, duty cycle 25%)							
A	250	250	250	1.2	2.3	43.0	36.0
B	500	500	500	1.1	2.5	25.8	23.0
C	1000	1000	1000	1.1	3.0	14.0	11.8
D	1500	1500	1500	1.0	2.8	9.0	8.0
E	2000	2000	2000	1.0	2.8	7.1	6.2
Motor Speed (6600RPM, duty cycle 25%)							
F	250	250	250	1.6	3.0	56.5	45.0
G	500	500	500	1.5	3.0	32.5	28.5
H	1000	1000	1000	1.5	3.0	16.5	14.3
K	1500	1500	1500	1.3	3.0	11.1	10.0
L	2000	2000	2000	1.3	3.0	8.8	7.7
Motor Speed (3800RPM, duty cycle 25%)							
S	3500	2000	3500	0.8	2.8	3.2	2.4
Motor Speed (2200RPM, duty cycle 25%)							
T	2000	2000	2000	0.3	0.9	3.2	2.3

Note

1 Please refer to the approved drawing for the final authentic value.

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 The current & speed in table are tested with 24V DC motor. With a 12V DC motor, the current is approximately twice the current measured in 24V DC. With a 36V DC motor, the current is approximately two-thirds the current measured in 24V DC. Speed will be similar for all the voltages.

4 The current & speed in table are tested when the actuator is extending under push load.

5 The current & speed in table and diagram are tested with a stable 24V DC power supply.

6 Without load, noise level ≤ 78dBA (by TiMOTION test standard, ambient noise level ≤ 36dBA).

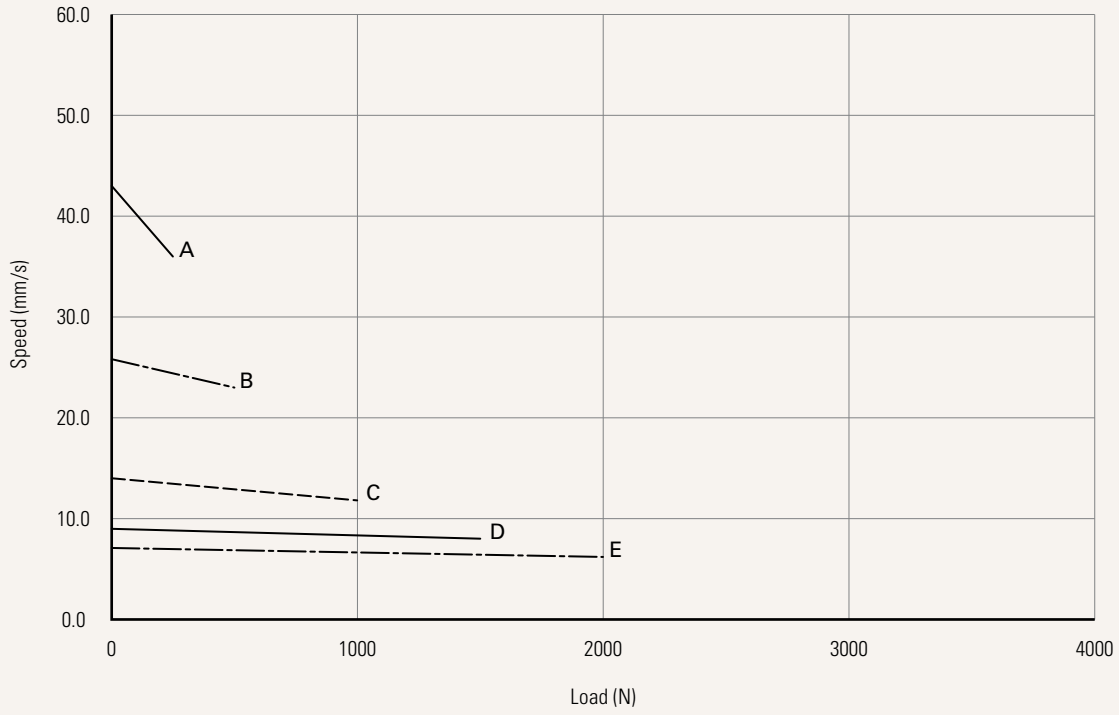
7 Standard stroke: Min. ≥ 20 mm, Max. please refer to the table below. A, B, F, G options, reserve space for equipotential braking is needed, the minimum value is ≥ 40mm, if minimum strkoke <40mm , a customized thrust bearing is required.

CODE	Load (N)	Min. Stroke (mm)	Max. Stroke (mm)
A, F	≤ 250	40	1000
B, G	≤ 750	40	800
H	≤ 1000	40	600
C	≤ 1000	20	600
D, K	≤ 1500	20	500
E, L, T	≤ 2000	20	450
S	≤ 3500	20	300

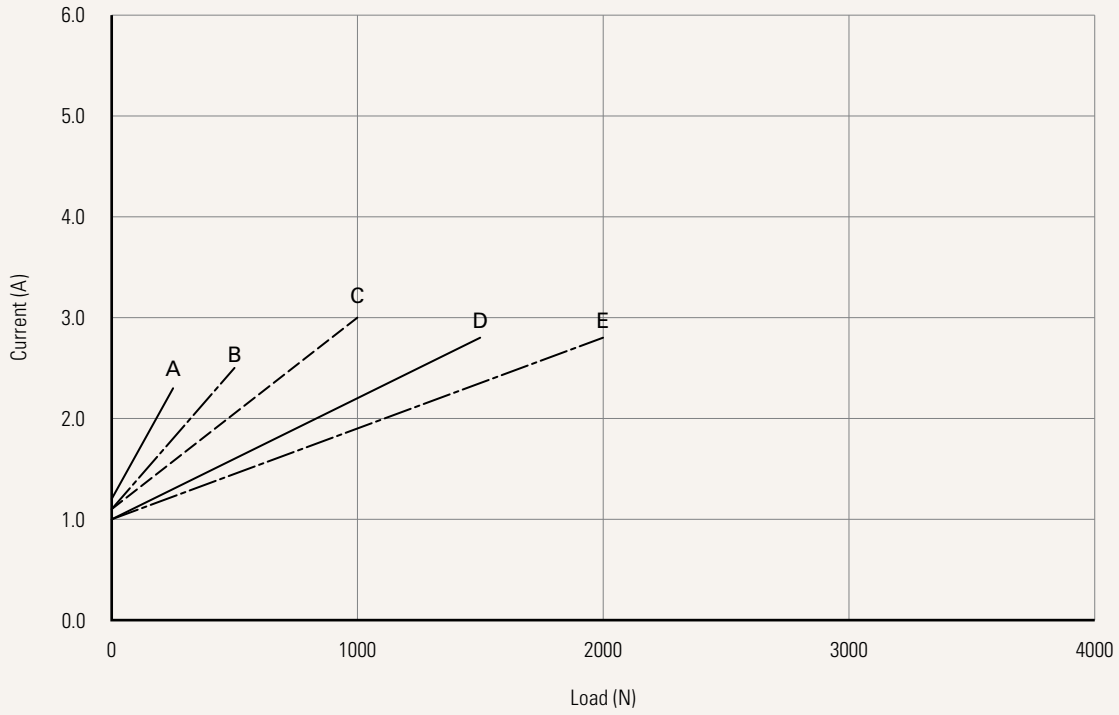
Performance Data (24V DC)

Motor Speed (5200RPM, duty cycle 25%)

Speed vs. Load



Current vs. Load



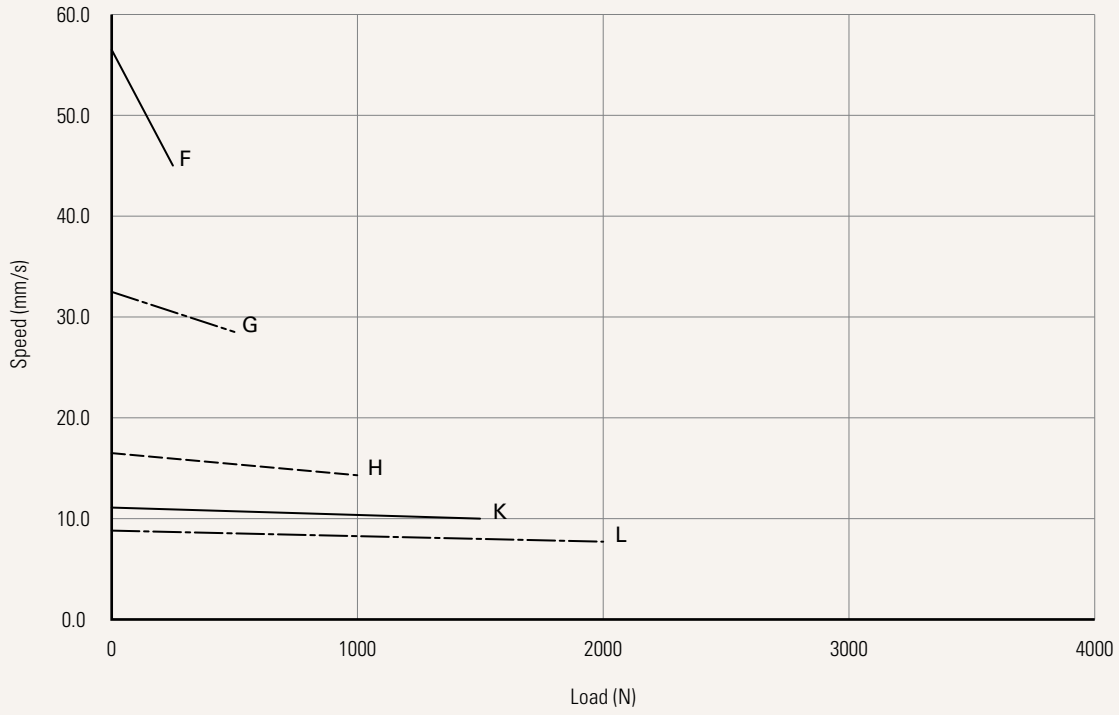
Note

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

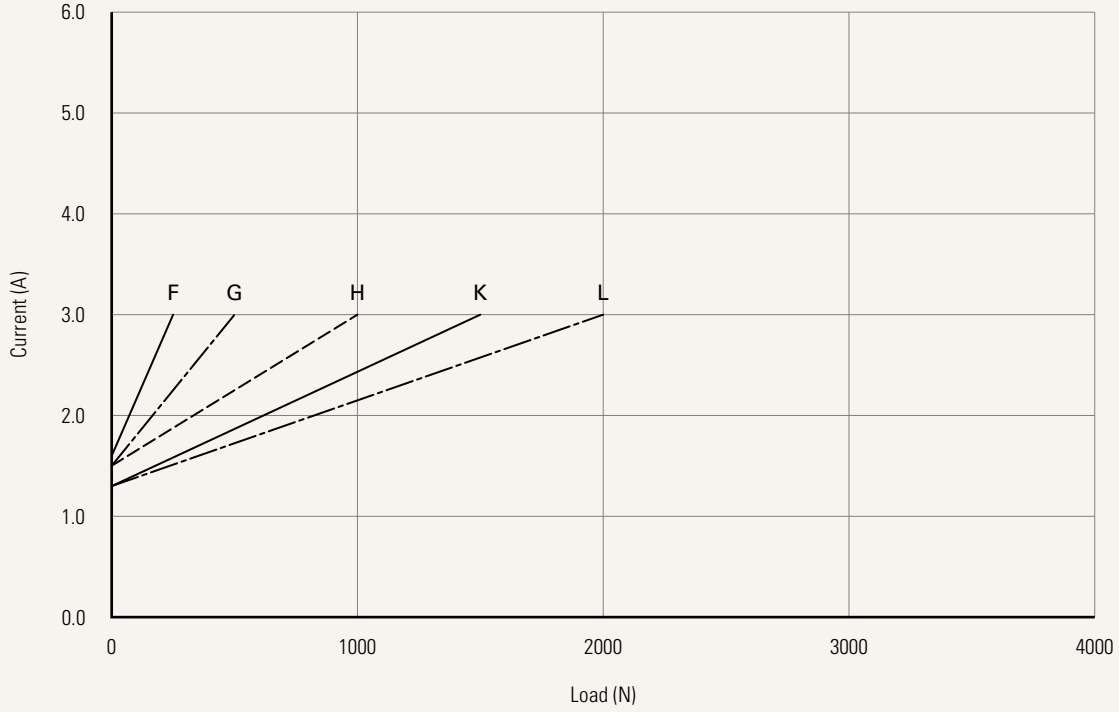
Performance Data (24V DC)

Motor Speed (6600RPM, duty cycle 25%)

Speed vs. Load



Current vs. Load



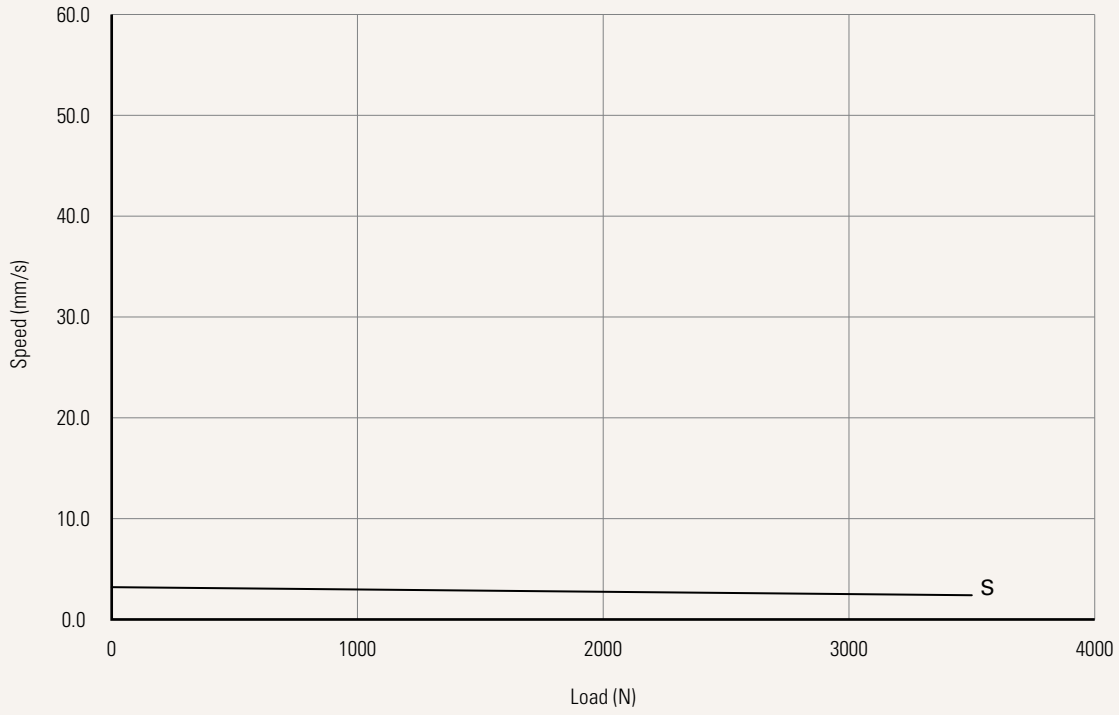
Note

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

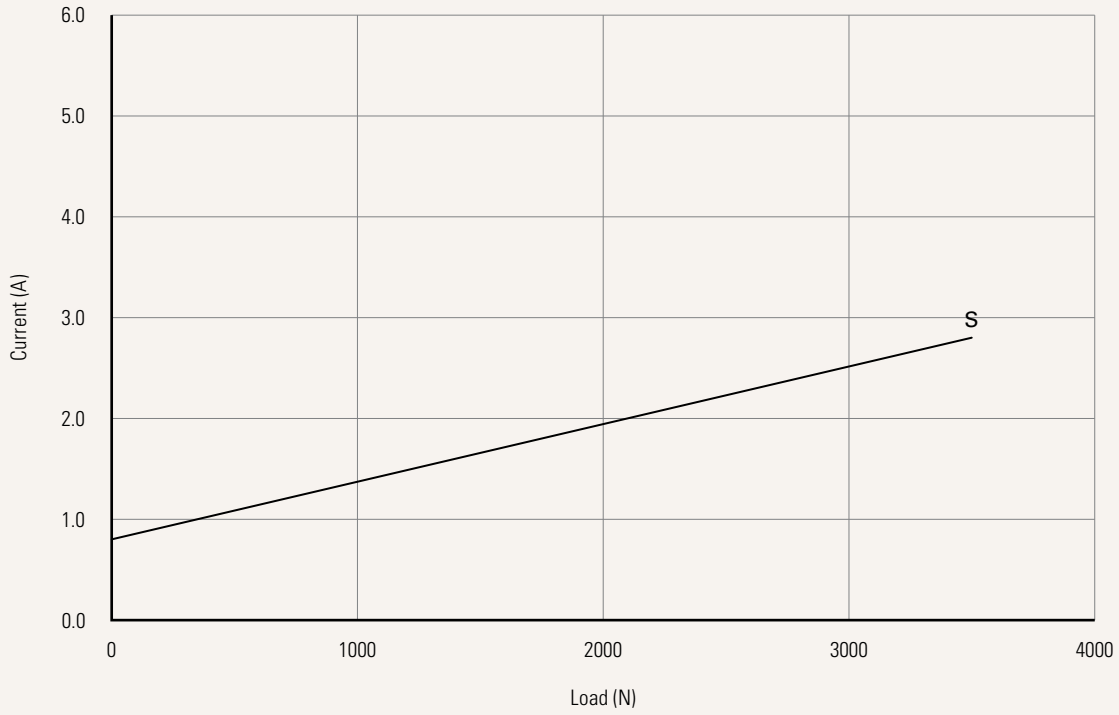
Performance Data (24V DC)

Motor Speed (3800RPM, duty cycle 25%)

Speed vs. Load



Current vs. Load

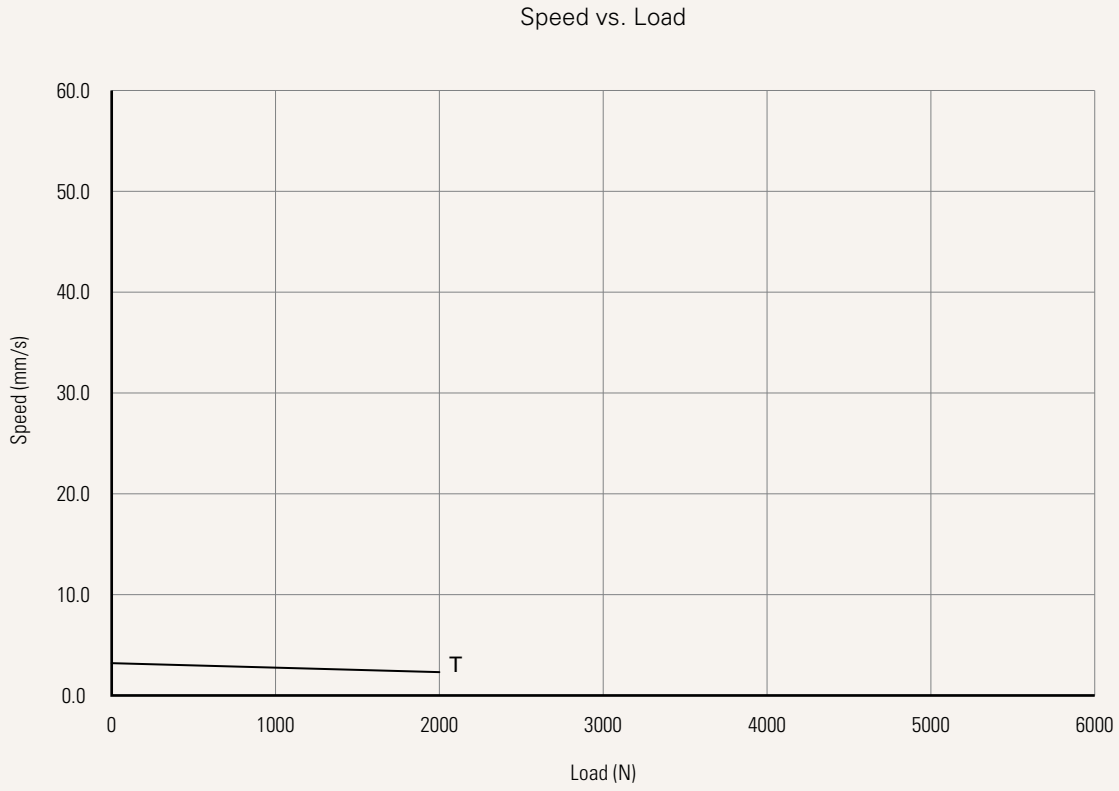


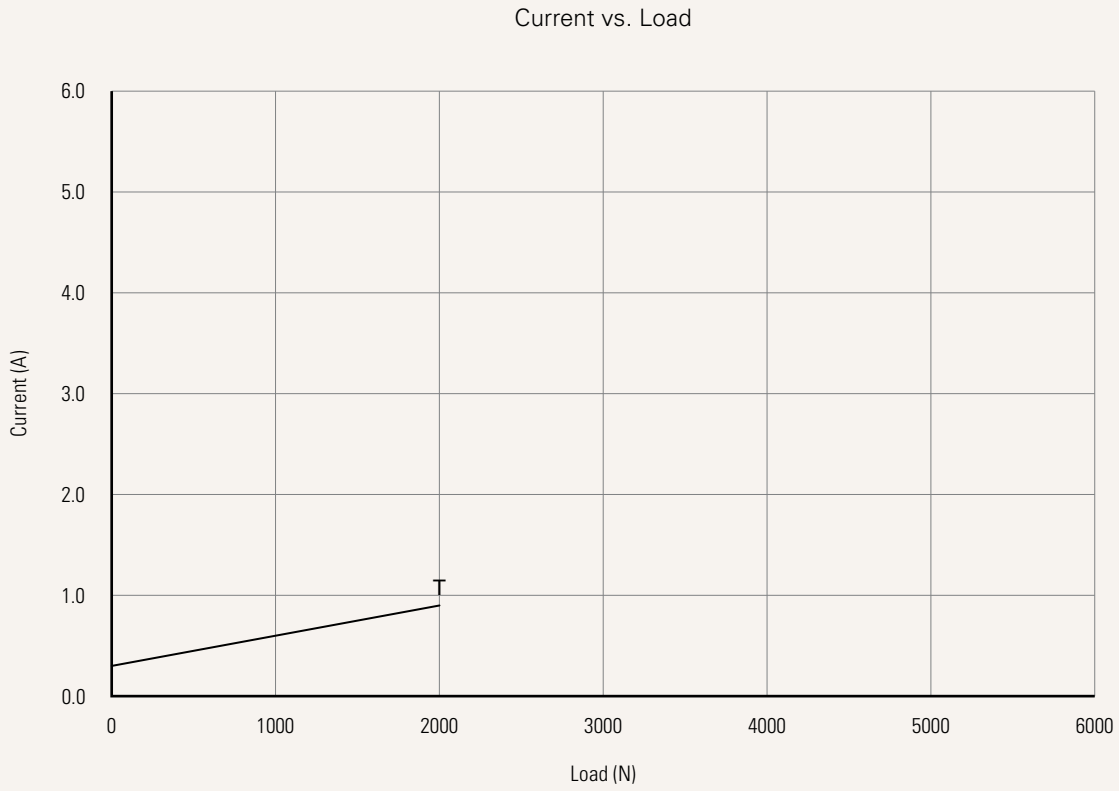
Note

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

Performance Data (24V DC)

Motor Speed (2200RPM, duty cycle 25%)





Note

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

TA2P Ordering Key

TiMOTION

TA2P

Version: 20240926-T

Voltage	1 = 12V DC	3 = 36V DC	6 = 12V DC, PTC	8 = 48V DC, PTC
See page 10	2 = 24V DC	4 = 48V DC	5 = 24V DC, PTC	
Load and Speed	See page 3			
Stroke (mm)	See page 3			
Retracted Length (mm)	See page 9			
Rear Attachment (mm)	1 = Aluminum, slotless, hole 6.4, one piece casting with gearbox		4 = Aluminum, U clevis, slot 6.0, depth 10.5, hole 6.4, one piece casting with gearbox	
See page 10	2 = Aluminum, slotless, hole 8.0, one piece casting with gearbox		5 = Aluminum, U clevis, slot 6.0, depth 10.5, hole 8.0, one piece casting with gearbox	
	3 = Aluminum, slotless, hole 10.0, one piece casting with gearbox		6 = Aluminum, U clevis, slot 6.0, depth 10.5, hole 10.0, one piece casting with gearbox	
Front Attachment (mm)	1 = Aluminum, slotless, hole 6.4		3 = Aluminum, U clevis, slot 6.0, depth 16.0, hole 10.0	
See page 11	2 = Aluminum, slotless, hole 8.0		4 = Aluminum, U clevis, slot 6.0, depth 16.0, hole 6.4	
	6 = Aluminum, slotless, hole 10.0		5 = Aluminum, U clevis, slot 6.0, depth 16.0, hole 8.0	
Direction of Rear Attachment (Counterclockwise)	1 = 90°	2 = 0°		
See page 11				
Function of Limit Switches	1 = Two micro switches cut off the actuator at end of stroke (EOS)			
See page 12	2 = Two micro switches cut off the actuator at EOS + in-between third one sends 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 Signal	0 = Without	1 = Mechanical pot.	N = NPN Hall sensor*2	
Connector	1 = DIN 6P, 90° plug	2 = Tinned leads		
See page 12				
Cable Length (mm)	1 = Straight, 300	2 = Straight, 600	3 = Straight, 1000	
IP Rating	1 = Without	2 = IP54	3 = IP66	6 = IP66M

TA2P Ordering Key Appendix

TiMOTION

Retracted Length (mm)

1. Calculate A+B+C = Y
2. Retracted length needs to ≥ Stroke + Y
3. IP66M with industrial wiper and gear box cover. The retracted length should refer to the table on the right.

A. Attachment

Front Attachment	Rear Attachment	
	1, 2, 3	4, 5, 6
1, 2	+108	+112
3, 4, 5	+120	+124

B. Load V.S. Stroke

Stroke (mm)	Load (N)	
	< 3500	= 3500
20~150	-	+5
151~200	+2	+7
201~250	+2	+7
251~300	+2	+7
301~350	+12	+17
351~400	+22	+27
401~450	+32	+37
451~500	+42	+47
501~550	+52	+57
551~600	+62	+67
601~650	+72	+77
651~700	+82	+87
701~750	+92	+97
751~800	+102	+107
801~850	+112	+117
851~900	+122	+127
901~950	+132	+137
951~1000	+142	+147

C. Output Signals

CODE	
0, N	-
1, 3	+30

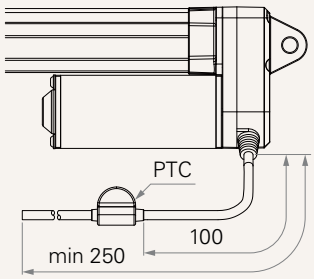
IP66M Min. Retracted length

Front Attachment	Rear Attachment	
	1, 2, 3	4, 5, 6
1, 2, 6	≥ 174	≥ 178
3, 4, 5	≥ 187	≥ 191

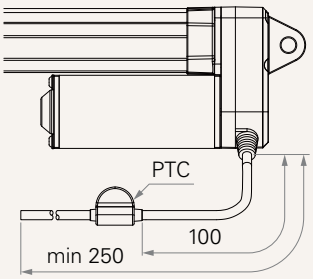
TA2P Ordering Key Appendix

Voltage

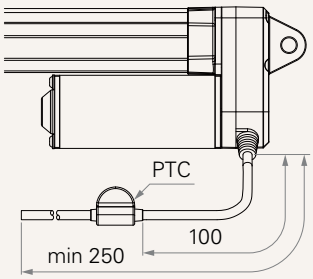
5 = 24V DC, PTC



6 = 12V DC, PTC

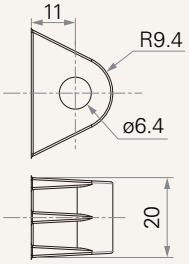


8 = 48V DC, PTC

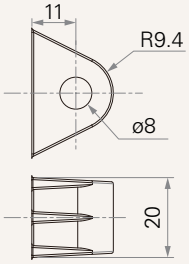


Rear Attachment (mm)

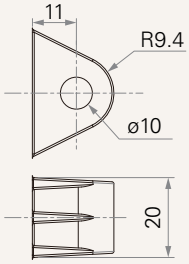
1 = Aluminum, slotless, hole 6.4, one piece casting with gearbox



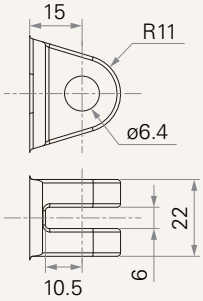
2 = Aluminum, slotless, hole 8.0, one piece casting with gearbox



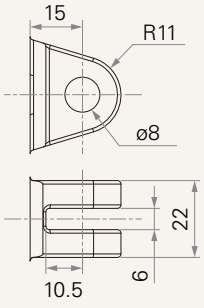
3 = Aluminum, slotless, hole 10.0, one piece casting with gearbox



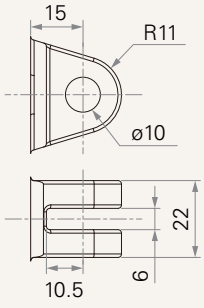
4 = Aluminum, U clevis, slot 6.0, depth 10.5, hole 6.4, one piece casting with gearbox



5 = Aluminum, U clevis, slot 6.0, depth 10.5, hole 8.0, one piece casting with gearbox



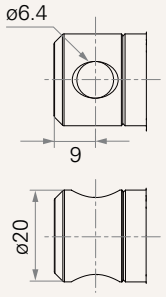
6 = Aluminum, U clevis, slot 6.0, depth 10.5, hole 10.0, one piece casting with gearbox



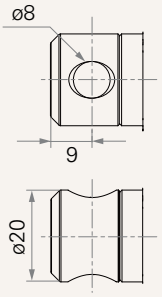
TA2P Ordering Key Appendix

Front Attachment (mm)

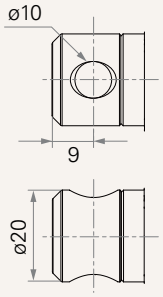
1 = Aluminum, slotless, hole 6.4



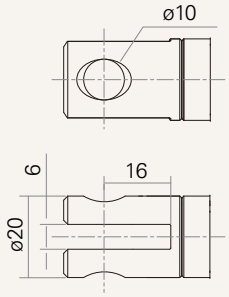
2 = Aluminum, slotless, hole 8.0



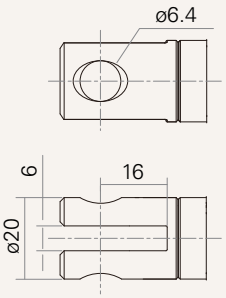
6 = Aluminum, slotless, hole 10.0



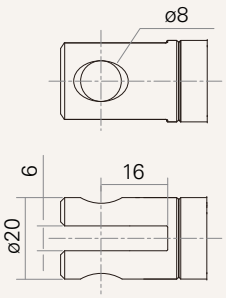
3 = Aluminum, U clevis, slot 6.0, depth 16.0, hole 10.0



4 = Aluminum, U clevis, slot 6.0, depth 16.0, hole 6.4

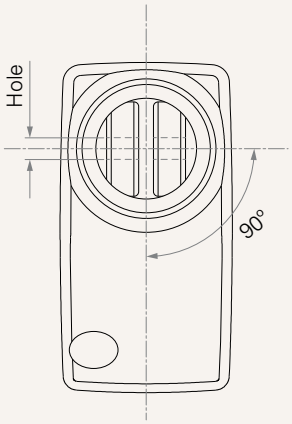


5 = Aluminum, U clevis, slot 6.0, depth 16.0, hole 8.0

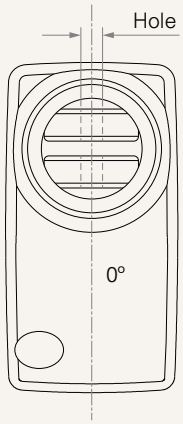


Direction of Rear Attachment (Counterclockwise)

1 = 90°



2 = 0°



TA2P Ordering Key Appendix

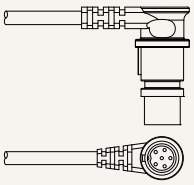
Functions for Limit Switches

Wire Definitions

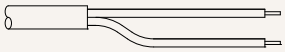
CODE	Pin					
	1 (Green)	2 (Red)	3 (White)	4 (Black)	5 (Yellow)	6 (Blue)
1	extend (VDC+)	N/A	N/A	N/A	retract (VDC+)	N/A
2	extend (VDC+)	N/A	middle switch pin B	middle switch pin A	retract (VDC+)	N/A
3	extend (VDC+)	common	upper limit switch	N/A	retract (VDC+)	lower limit switch
4	extend (VDC+)	common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

Connector

1 = DIN 6P, 90° plug



2 = Tinned leads



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