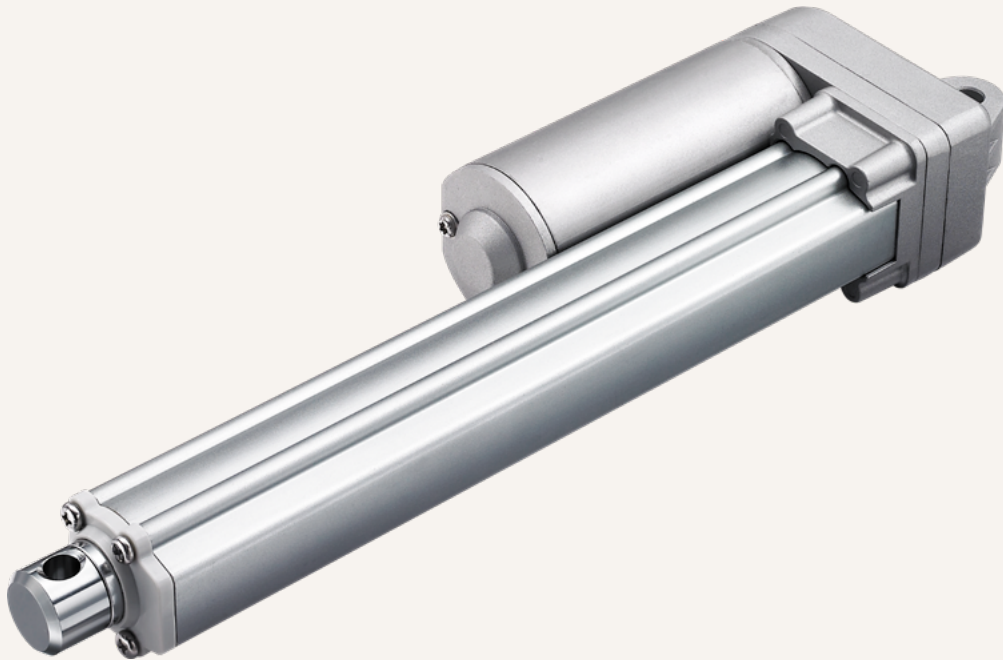


TA2P

series



Product Segments

• Industrial Motion

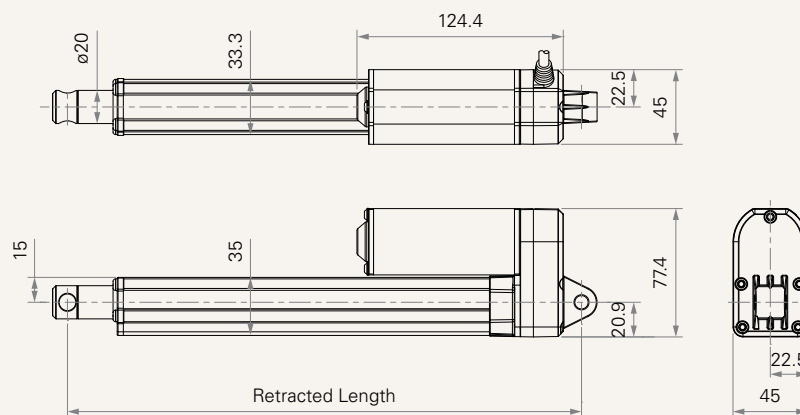
Both the TA2 and the TA2P are compact, robust, and capable of performing well in certain outdoor environments. A more powerful motor makes the TA2P capable of handling load ratings up to 3500N (787 pounds) while retaining its compact size. In addition to the high power motor, the TA2P linear actuator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

General Features

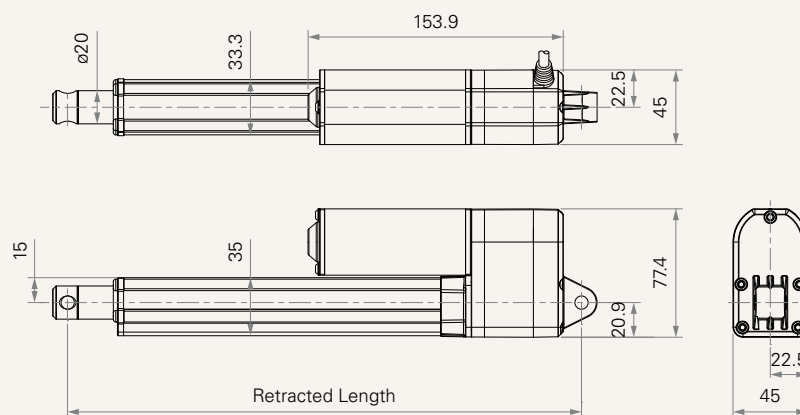
Max. load	3,500N (push); 2,000N (pull)
Max. speed at max. load	2.4mm/s
Max. speed at no load	56.5mm/s
Retracted length	≥ Stroke + 108mm (with Hall sensors or without output signals)
IP rating	IP66M (dynamic)
Certificate	UL73
Stroke	20~1000mm
Output Signals	Mechanical pot., Hall sensor * 2 (5-36V input)
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 (12V DC)

CODE	Load (N)		Self Locking Force (N)	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull		No Load	With Load	No Load	With Load
Motor Speed (5200RPM, Duty Cycle 25%)							
A	250	250	250	2.3	4.3	41.0	38.0
B	500	500	500	2.2	4.7	29.0	26.0
C	1000	1000	1000	2.2	5.0	14.0	13.5
D	1500	1500	1500	2.0	5.1	9.0	8.0
E	2000	2000	2000	2.0	5.1	7.1	6.0
Motor Speed (6600RPM, Duty Cycle 25%)							
F	250	250	250	2.8	4.9	55.5	44.2
G	500	500	500	2.7	5.2	31.6	26.5
H	1000	1000	1000	2.6	5.5	16.5	14.0
K	1500	1500	1500	2.6	5.5	11.1	9.5
L	2000	2000	2000	2.6	5.5	9.0	7.5
Motor Speed (3800RPM, Duty Cycle 25%)							
S	3500	2000	3500	1.6	4.8	3.2	2.4
Motor Speed (2200RPM, Duty Cycle 25%)							
T	2000	2000	2000	0.6	1.2	3.2	2.3

Load and Speed (24V DC)

CODE	Load (N)		Self Locking Force (N)	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull		No Load	With Load	No Load	With Load
Motor Speed (5200RPM, Duty Cycle 25%)							
A	250	250	250	1.2	2.0	43.0	36.0
B	500	500	500	1.1	2.2	25.8	23.0
C	1000	1000	1000	1.1	2.4	14.0	11.8
D	1500	1500	1500	1.0	2.5	9.0	8.0
E	2000	2000	2000	1.0	2.3	7.1	6.2
Motor Speed (6600RPM, Duty Cycle 25%)							
F	250	250	250	1.6	2.7	56.5	45.0
G	500	500	500	1.5	2.9	32.5	28.5
H	1000	1000	1000	1.5	2.9	16.5	14.3
K	1500	1500	1500	1.3	2.9	11.1	10.0
L	2000	2000	2000	1.3	2.9	8.8	7.7
Motor Speed (3800RPM, Duty Cycle 25%)							
S	3500	2000	3500	0.8	2.5	3.2	2.4
Motor Speed (2200RPM, Duty Cycle 25%)							
T	2000	2000	2000	0.3	0.9	3.2	2.3

Load and Speed (36V DC)

CODE	Load (N)		Self Locking Force (N)	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull		No Load	With Load	No Load	With Load
Motor Speed (5200RPM, Duty Cycle 25%)							
A	250	250	250	0.8	1.4	43.0	36.0
B	500	500	500	0.8	1.5	25.8	23.0
C	1000	1000	1000	0.8	1.6	14.0	11.8
D	1500	1500	1500	0.7	1.7	9.0	8.0
E	2000	2000	2000	0.7	1.6	7.1	6.2
Motor Speed (6600RPM, Duty Cycle 25%)							
F	250	250	250	1.1	1.8	56.5	45.0
G	500	500	500	1.0	2.0	32.5	28.5
H	1000	1000	1000	1.0	2.0	16.5	14.3
K	1500	1500	1500	0.9	2.0	11.1	10.0
L	2000	2000	2000	0.9	2.0	8.8	7.7
Motor Speed (3800RPM, Duty Cycle 25%)							
S	3500	2000	3500	0.6	1.7	3.2	2.4
Motor Speed (2200RPM, Duty Cycle 25%)							
T	2000	2000	2000	0.2	0.6	3.2	2.3

Load and Speed (48V DC)

CODE	Load (N)		Self Locking Force (N)	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull		No Load	With Load	No Load	With Load
Motor Speed (5200RPM, Duty Cycle 25%)							
A	250	250	250	0.6	1.0	43.0	36.0
B	500	500	500	0.6	1.1	25.8	23.0
C	1000	1000	1000	0.6	1.2	14.0	11.8
D	1500	1500	1500	0.5	1.3	9.0	8.0
E	2000	2000	2000	0.5	1.2	7.1	6.2
Motor Speed (6600RPM, Duty Cycle 25%)							
F	250	250	250	0.8	1.4	56.5	45.0
G	500	500	500	0.8	1.5	32.5	28.5
H	1000	1000	1000	0.8	1.5	16.5	14.3
K	1500	1500	1500	0.7	1.5	11.1	10.0
L	2000	2000	2000	0.7	1.5	8.8	7.7
Motor Speed (3800RPM, Duty Cycle 25%)							
S	3500	2000	3500	0.4	1.3	3.2	2.4
Motor Speed (2200RPM, Duty Cycle 25%)							
T	2000	2000	2000	0.2	0.5	3.2	2.3

Note

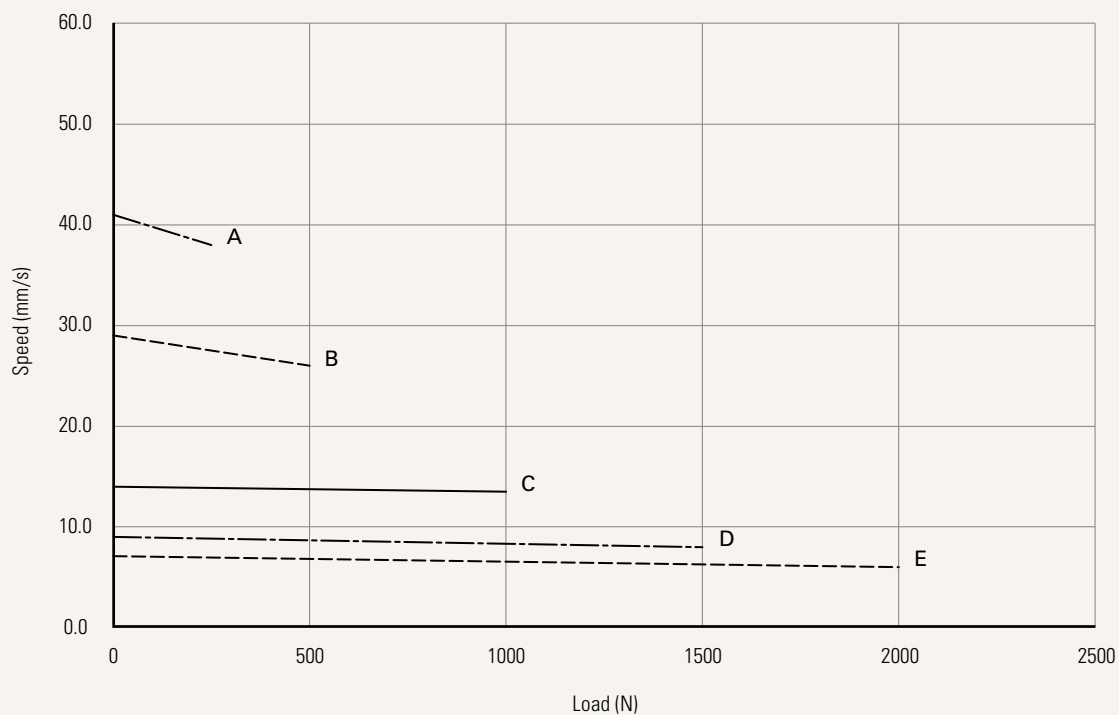
- Please refer to the approved drawing for the final authentic value.
- This self-locking force level is reached only when a short circuit is applied on the terminals of the motor. All the TiMOTION control boxes have this feature built-in.
- Voltage range: 24V±10%, 12V±20%, 36V±10%, 48V±10%.
- The current & speed in table are tested when the actuator is extending under push load.
- The current & speed in table and diagram are tested with a stable 24V DC power supply.
- Without load, noise level ≤ 71~83dBA (by TiMOTION test standard, ambient noise level ≤ 36dBA).
- Standard stroke restriction: Min. ≥ 20mm, Max. please refer to the table below. When choosing "Two micro switches cut off the actuator at EOS", A, B, F, G, H options, reserve space for equipotential braking is needed, the minimum value is ≥ 40mm, if minimum stroke < 40mm, a customized thrust bearing is required.
- Tolerance: fully extended length & retracted length ±2mm.

CODE	Load (N)	Min. Stroke (mm)		Max. Stroke (mm)
		Function of Limit Switches		
		#1, #2	#3, #4	
A, F	≤ 250	40	20	1000
B, G	≤ 750	40	20	800
H	≤ 1000	40	20	600
C	≤ 1000	20	20	600
D, K	≤ 1500	20	20	500
E, L, T	≤ 2000	20	20	450
S	≤ 3500	20	20	300

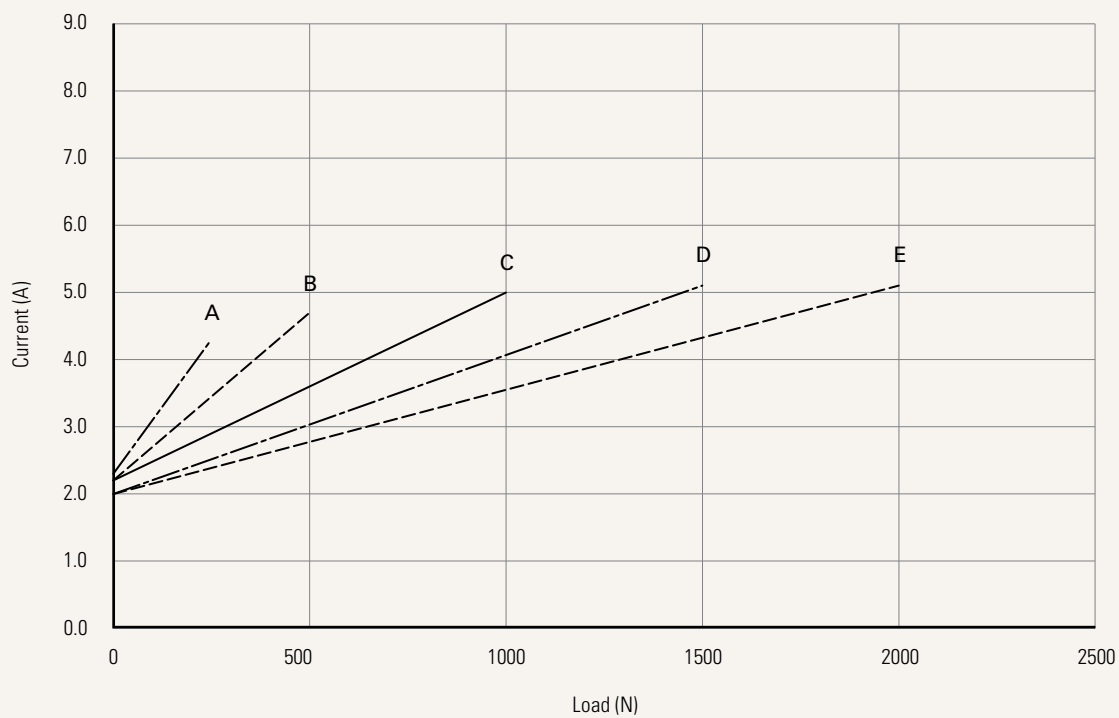
Performance Data (12V DC)

Motor Speed (5200RPM)

Speed vs. Load



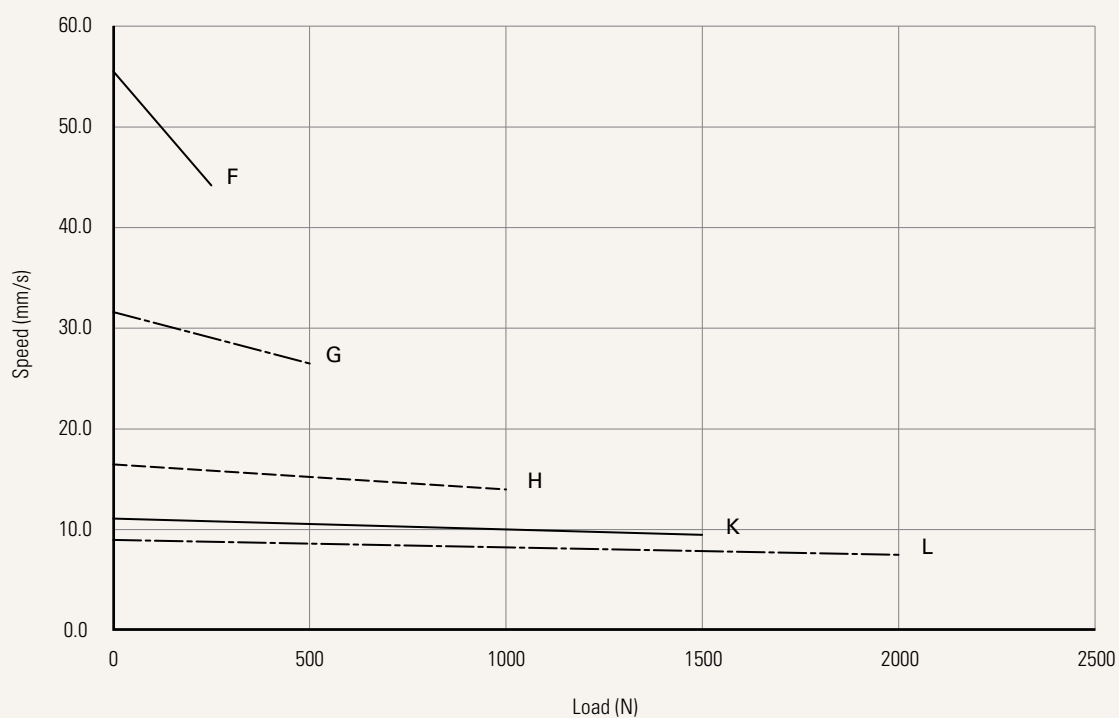
Current vs. Load



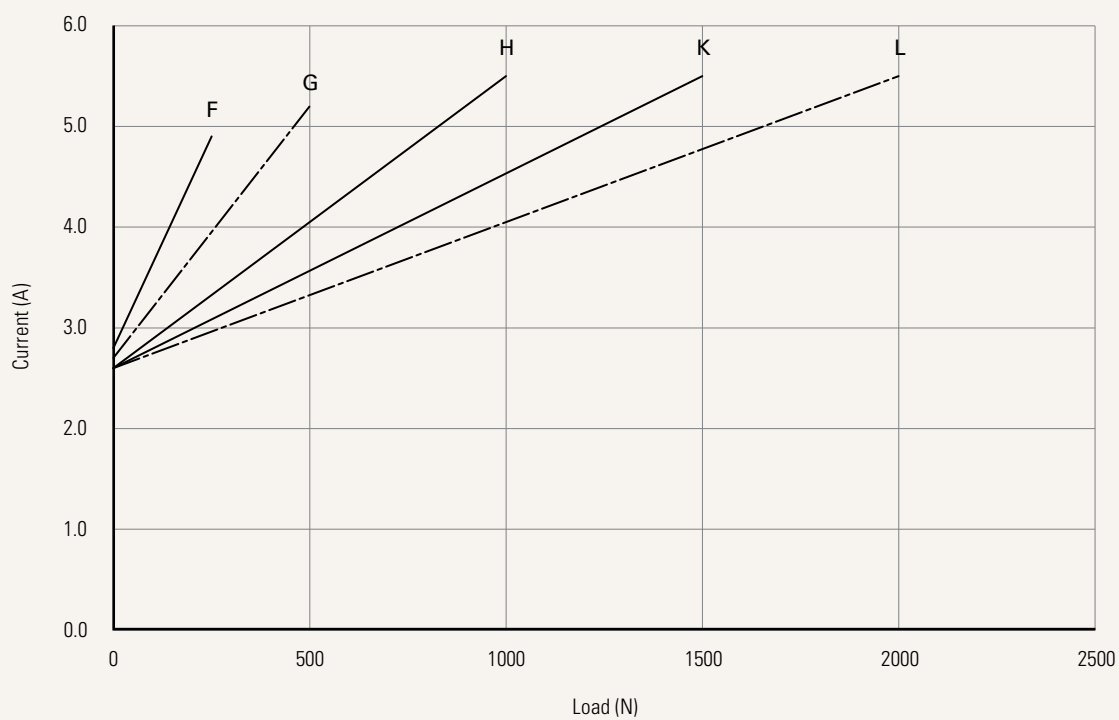
Performance Data (12V DC)

Motor Speed (6600RPM)

Speed vs. Load



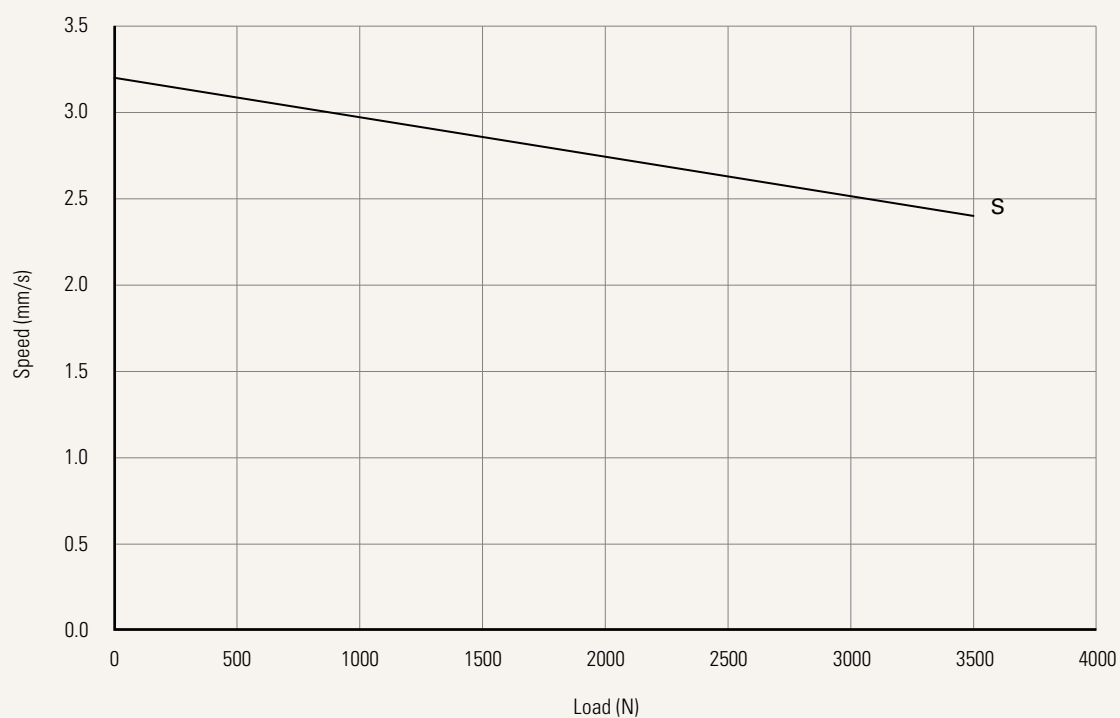
Current vs. Load



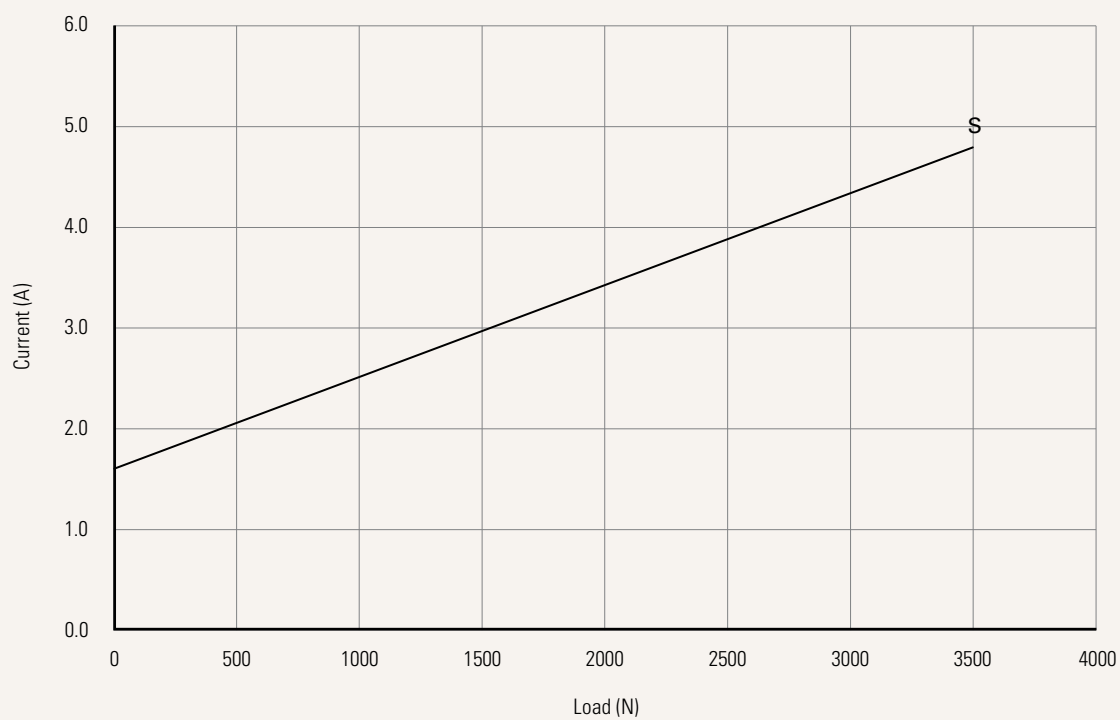
Performance Data (12V DC)

Motor Speed (3800RPM)

Speed vs. Load



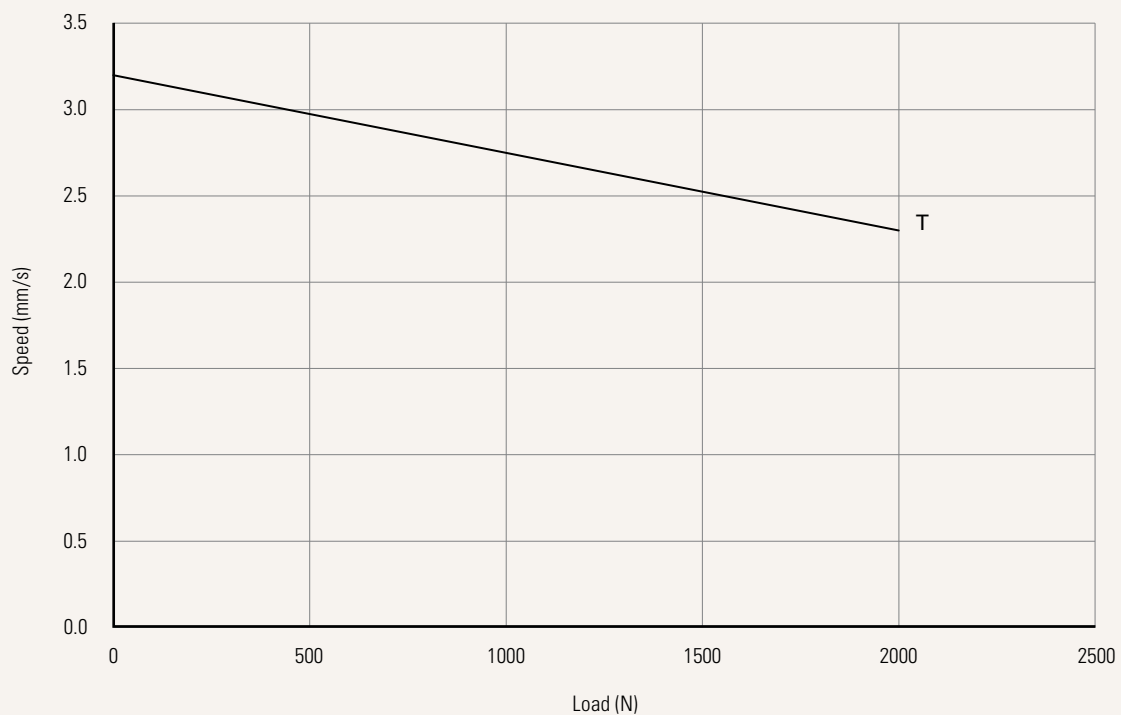
Current vs. Load



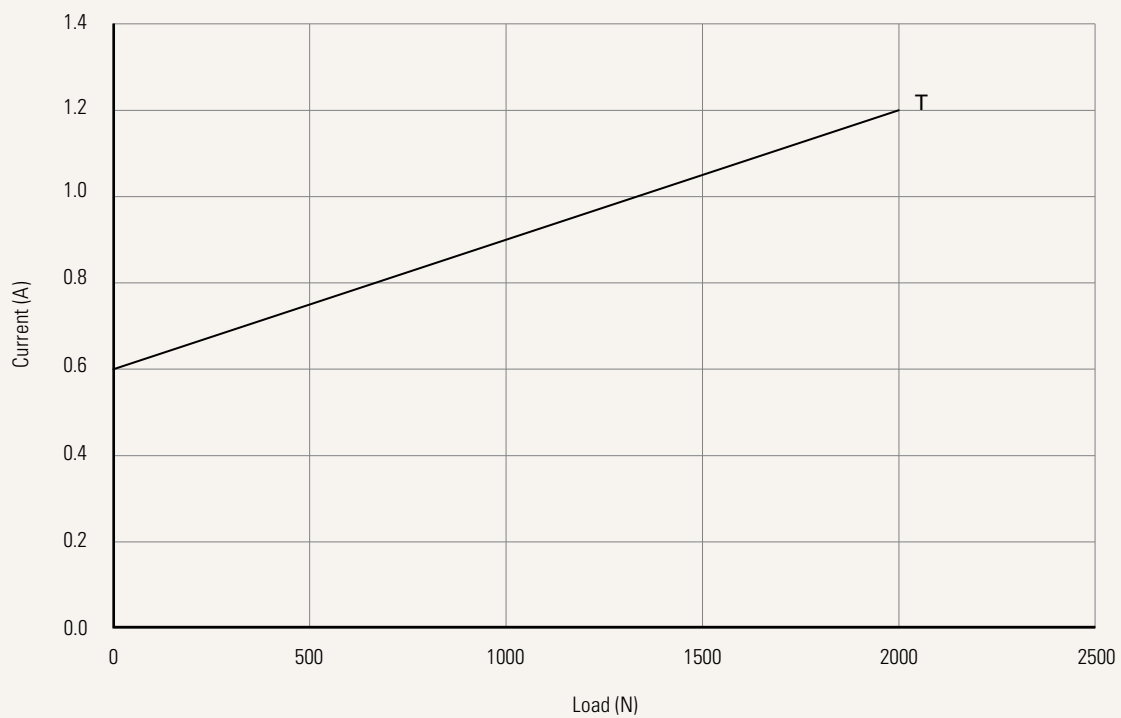
Performance Data (12V DC)

Motor Speed (2200RPM)

Speed vs. Load



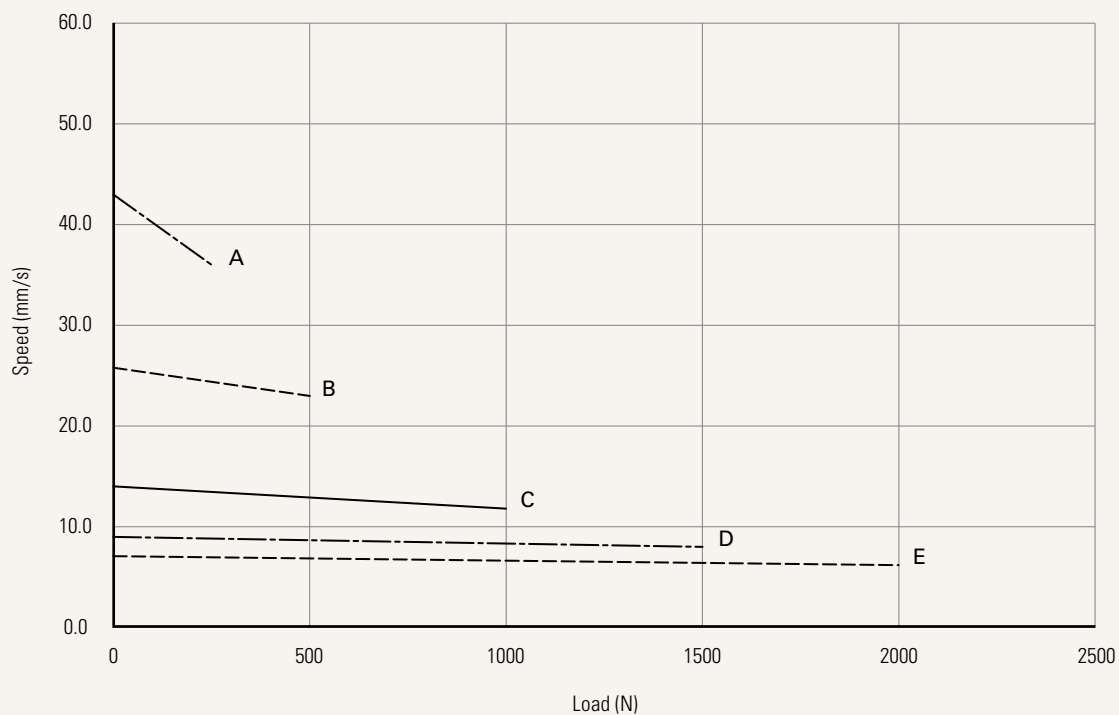
Current vs. Load



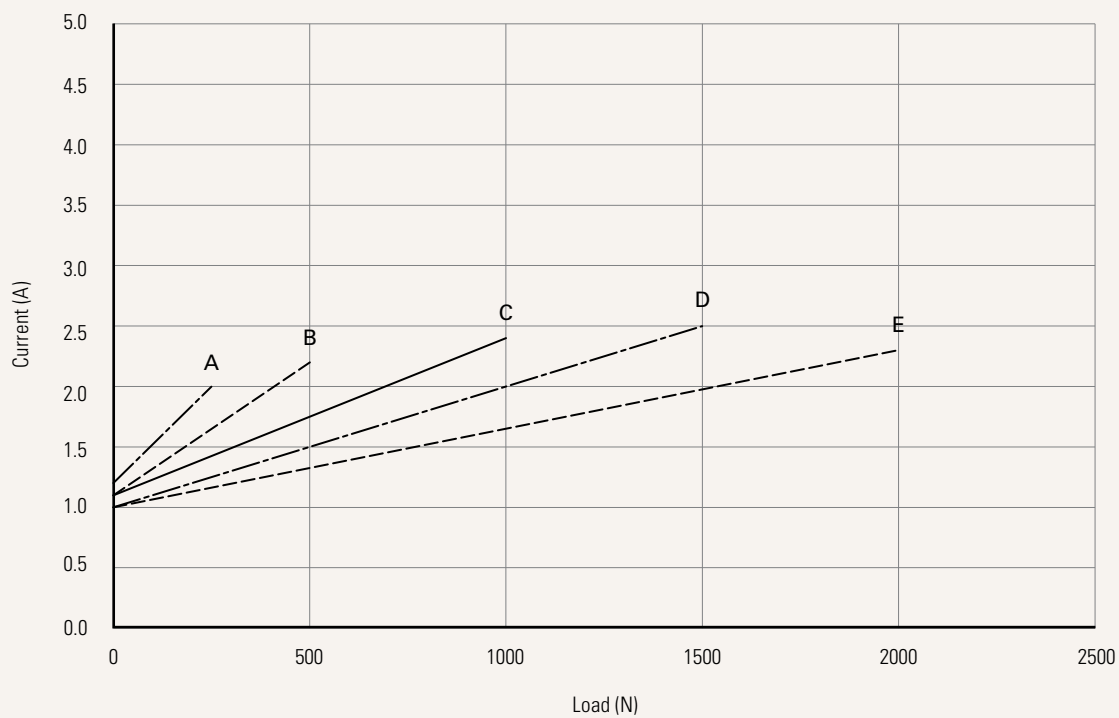
Performance Data (24V DC)

Motor Speed (5200RPM)

Speed vs. Load



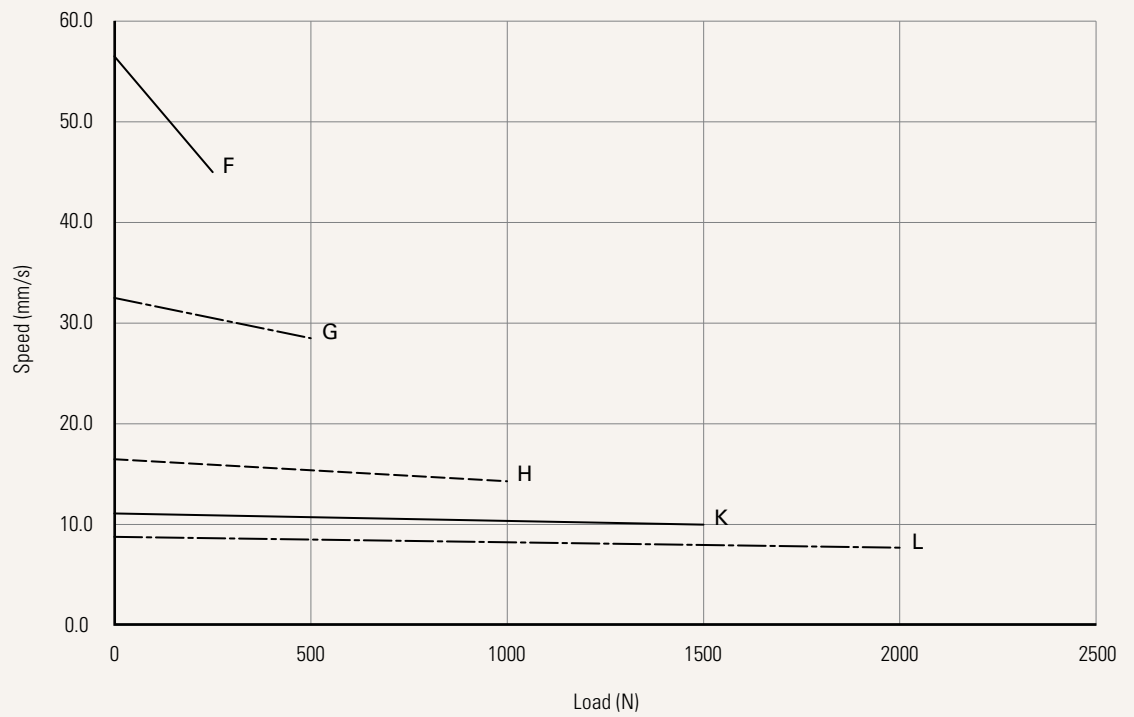
Current vs. Load



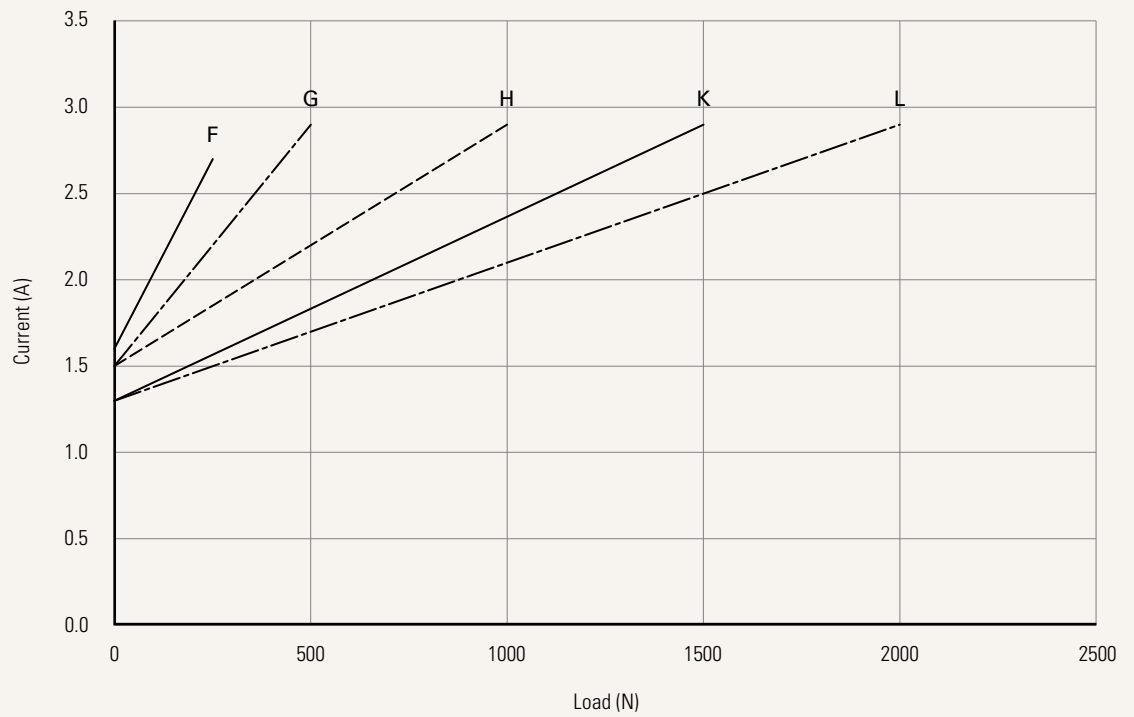
Performance Data (24V DC)

Motor Speed (6600RPM)

Speed vs. Load



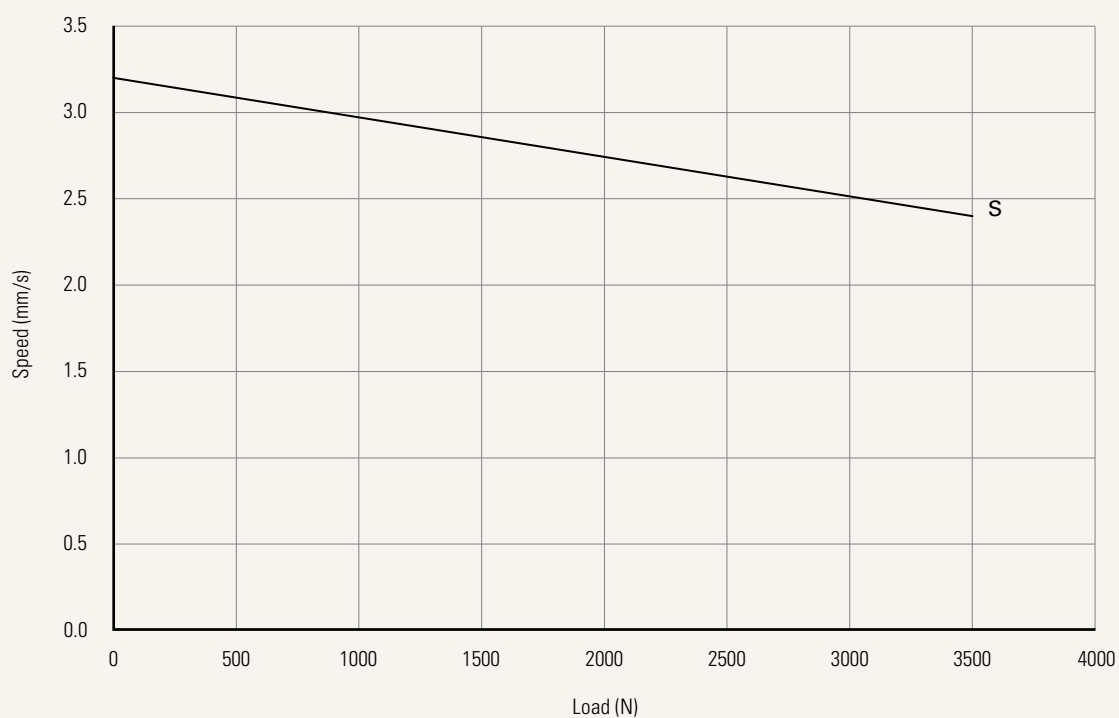
Current vs. Load



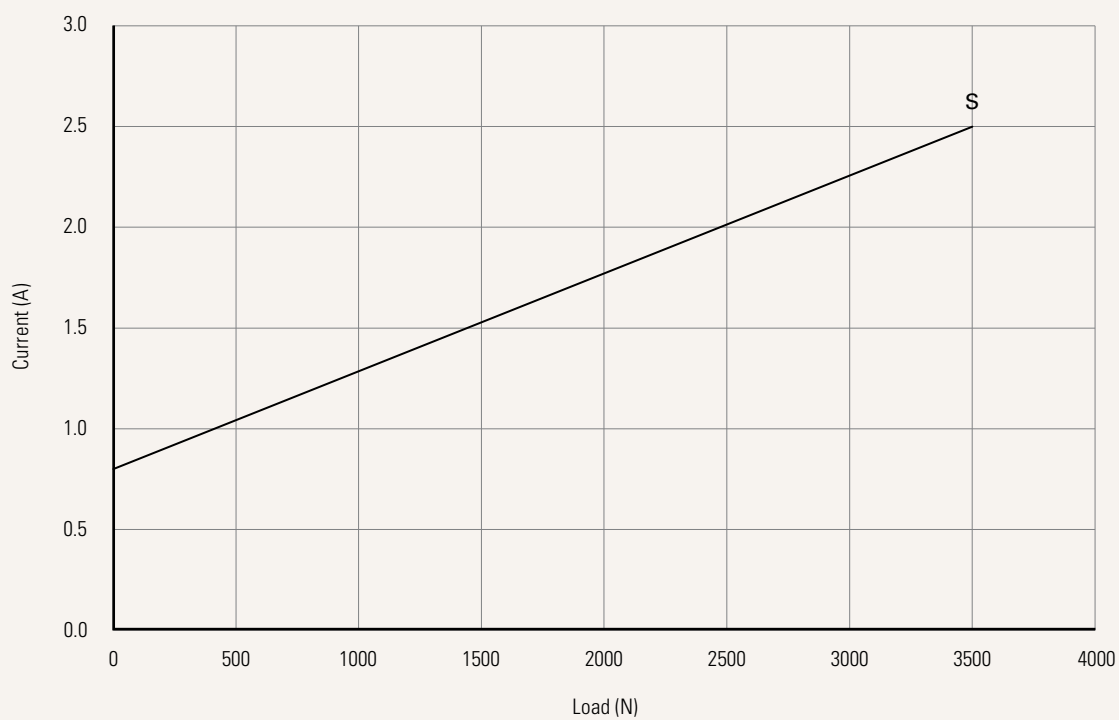
Performance Data (24V DC)

Motor Speed (3800RPM)

Speed vs. Load



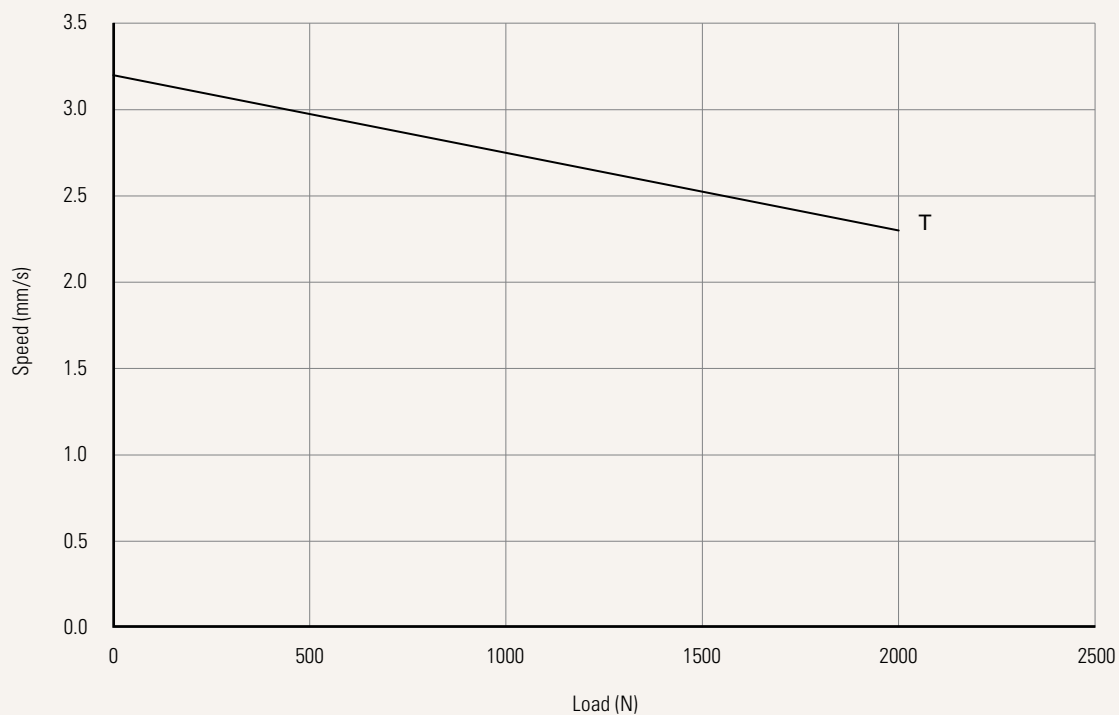
Current vs. Load



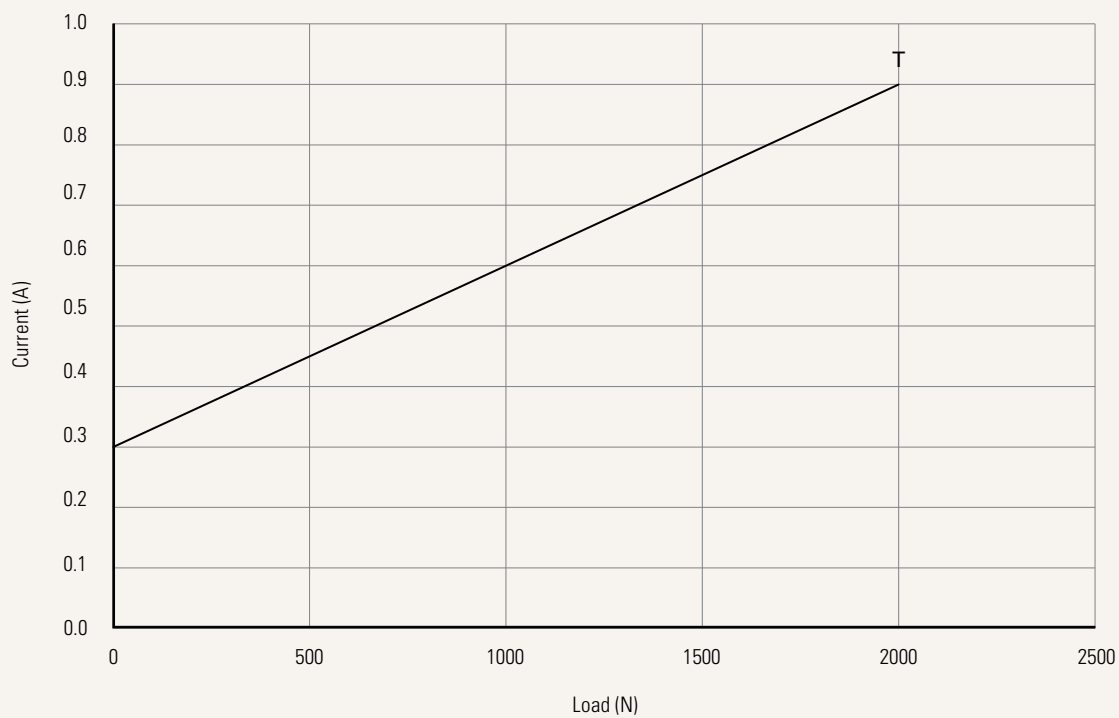
Performance Data (24V DC)

Motor Speed (2200RPM)

Speed vs. Load



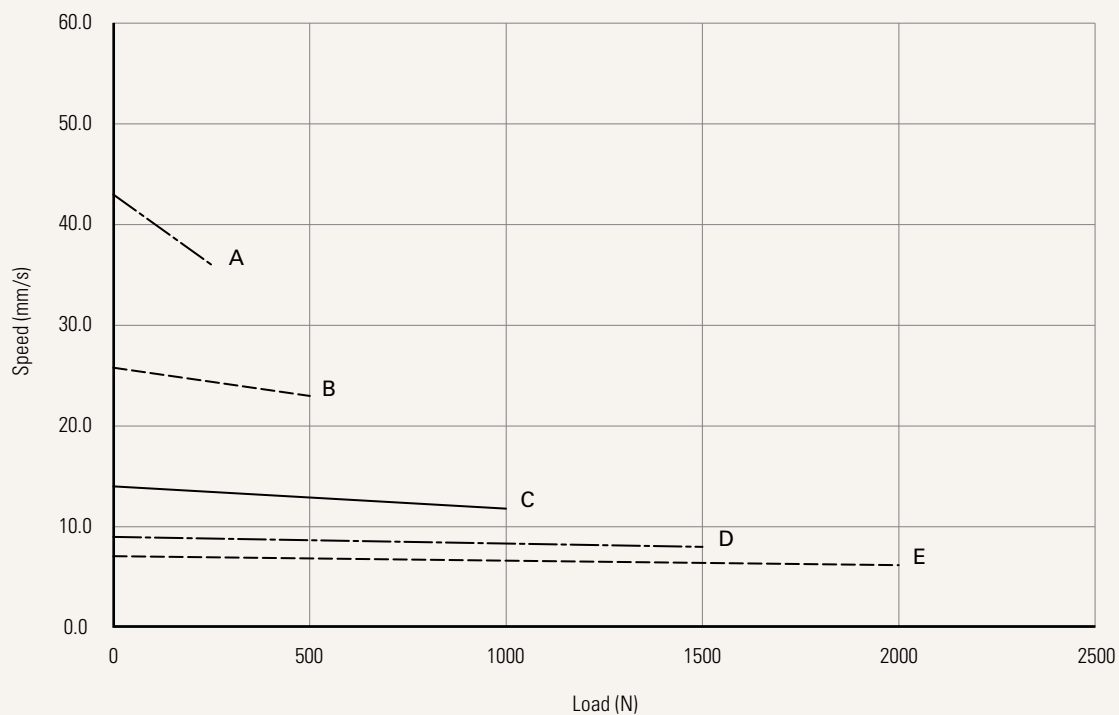
Current vs. Load



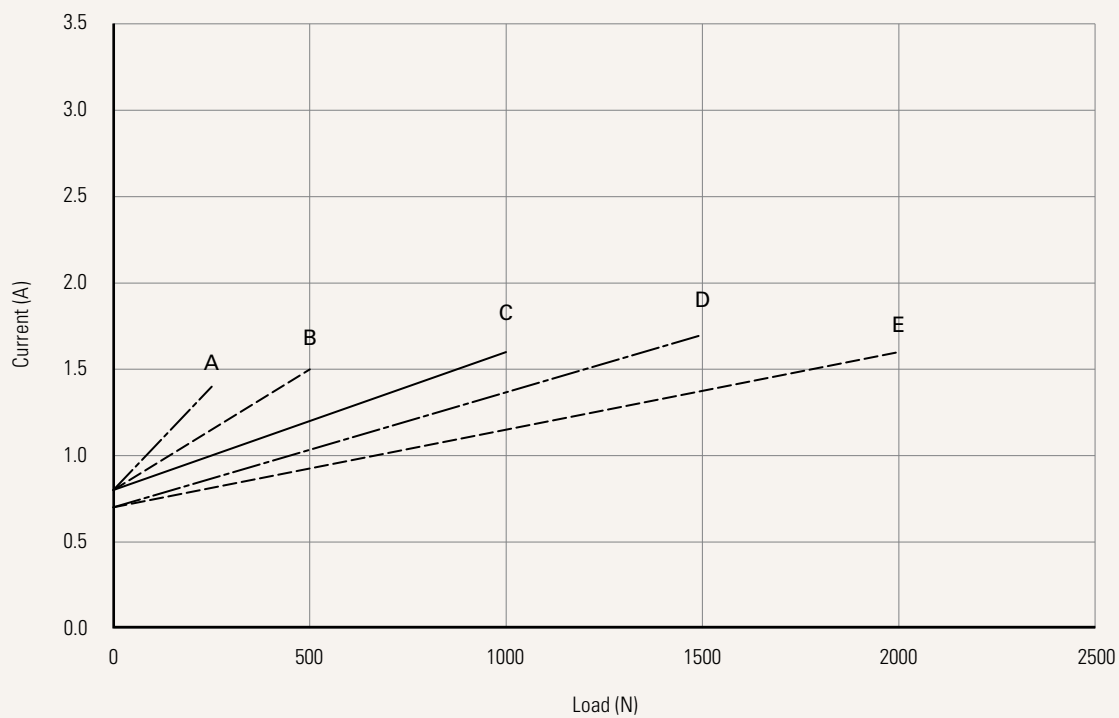
Performance Data (36V DC)

Motor Speed (5200RPM)

Speed vs. Load



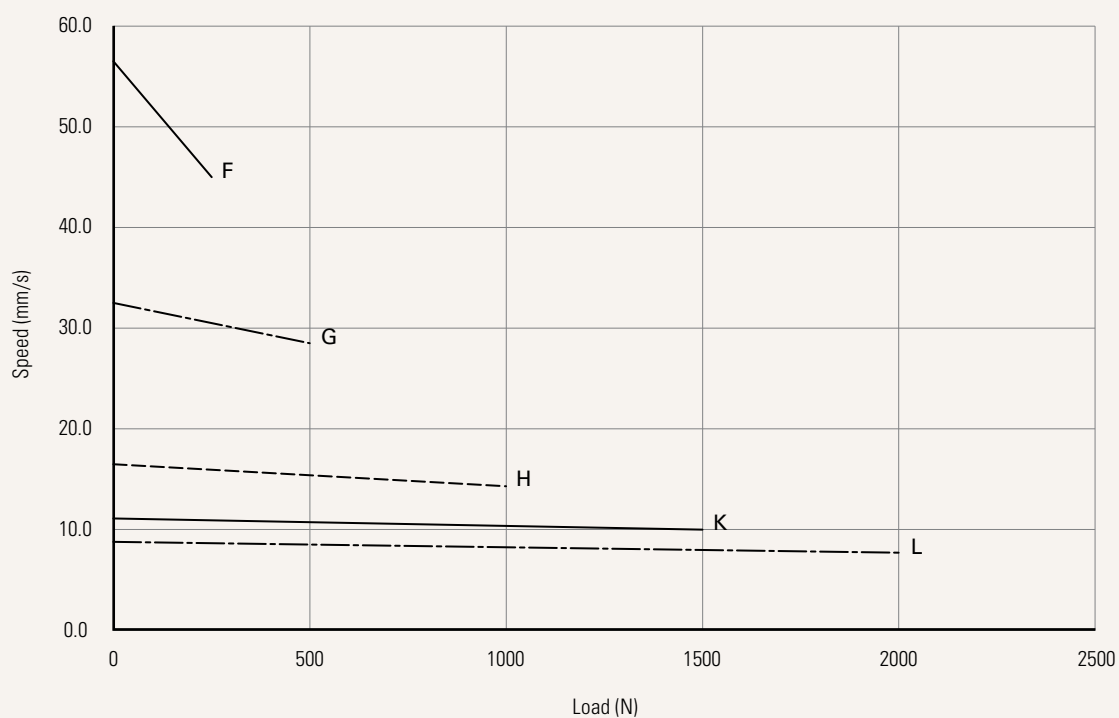
Current vs. Load



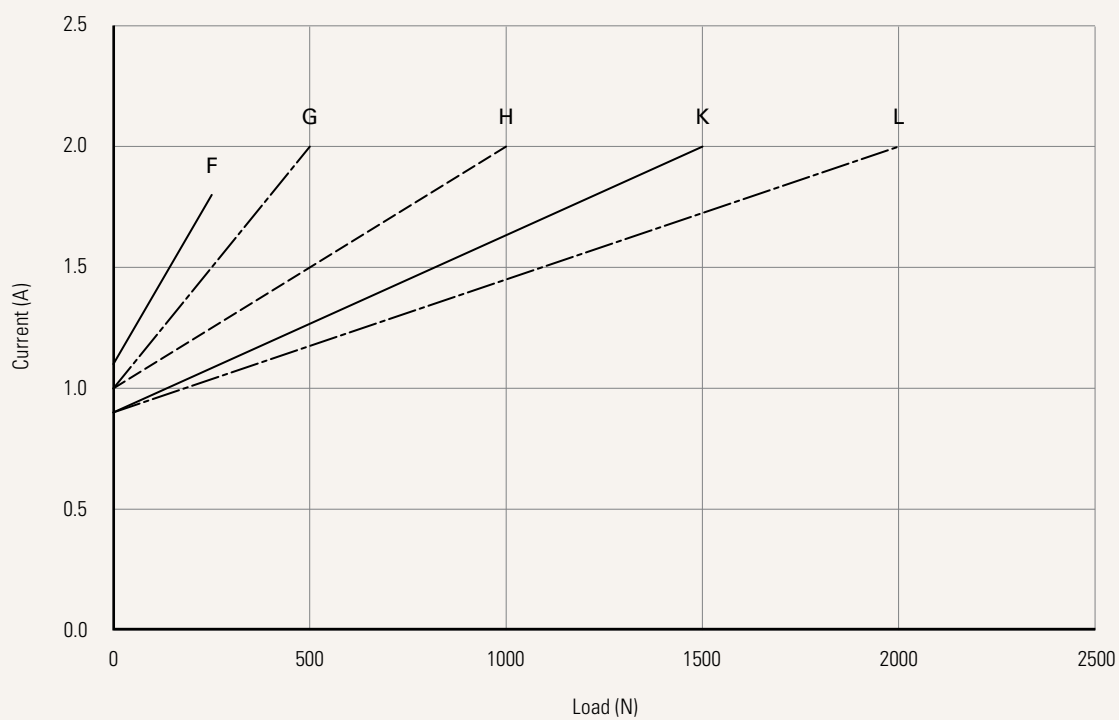
Performance Data (36V DC)

Motor Speed (6600RPM)

Speed vs. Load



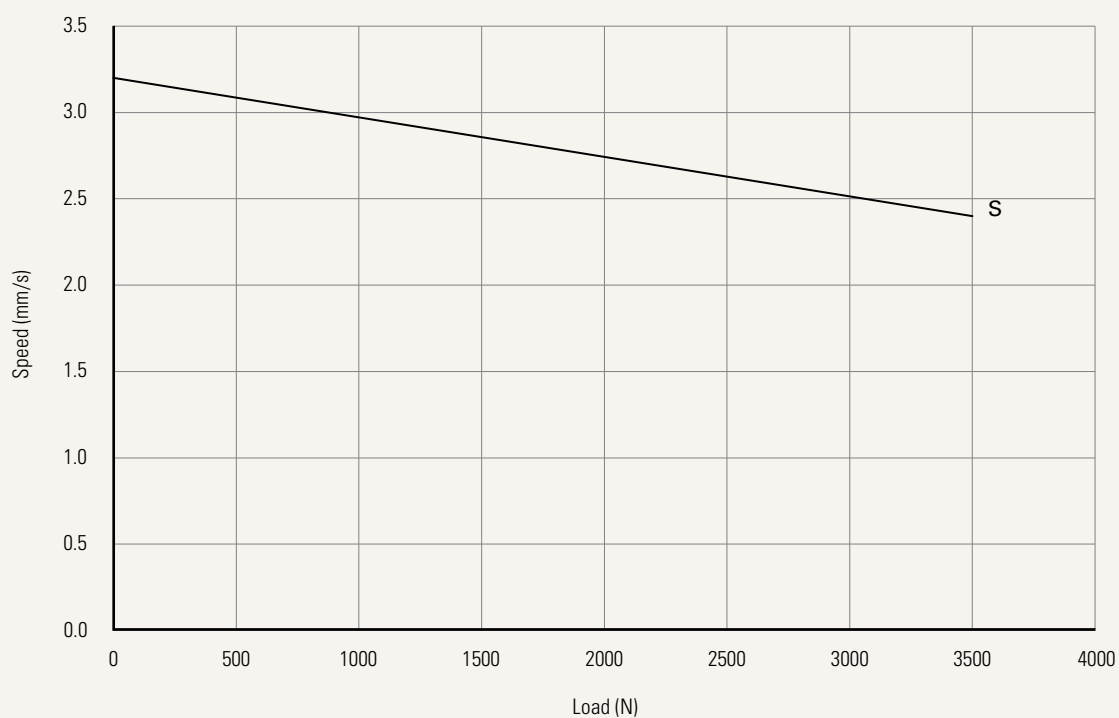
Current vs. Load



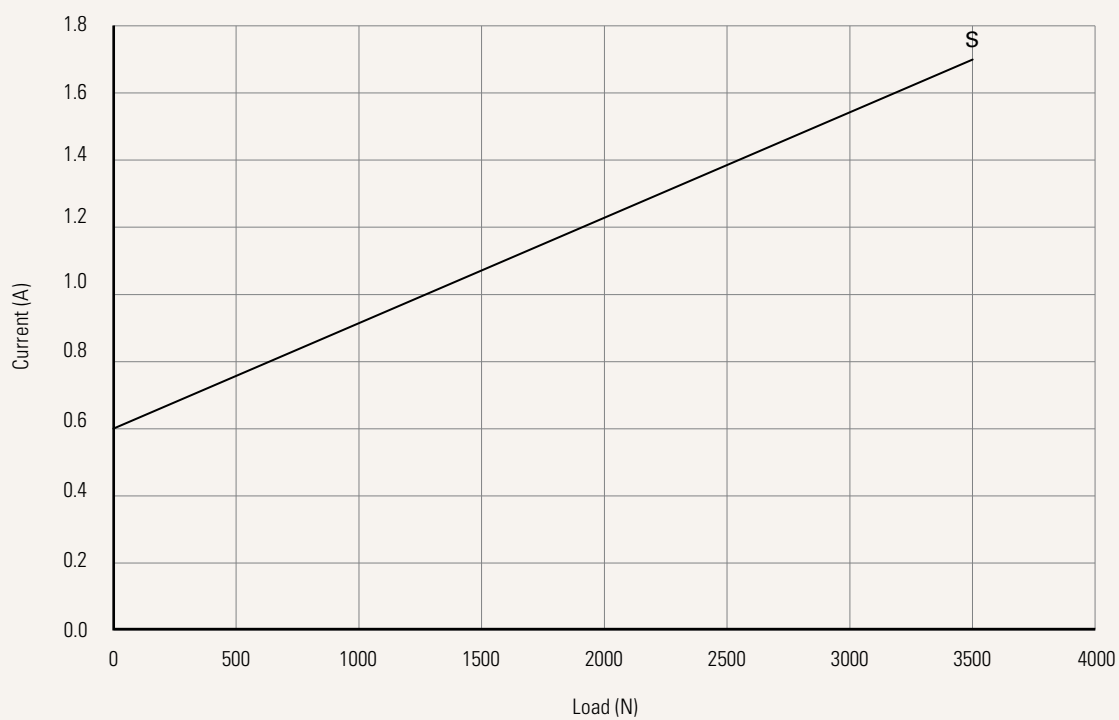
Performance Data (36V DC)

Motor Speed (3800RPM)

Speed vs. Load



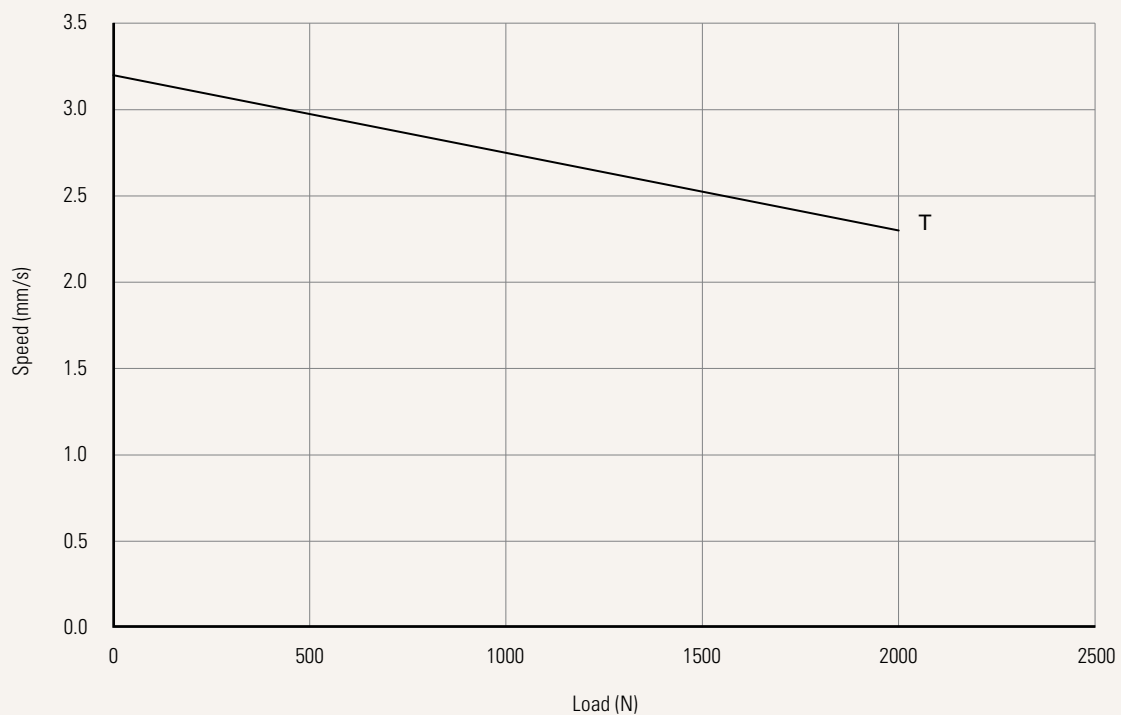
Current vs. Load



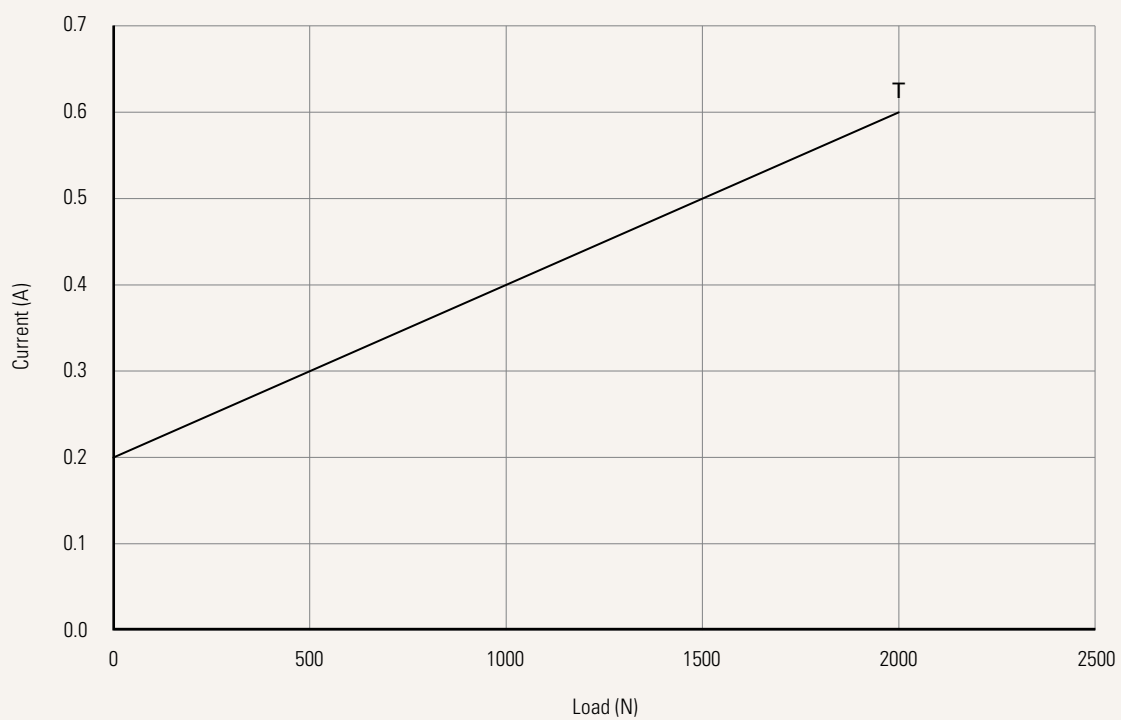
Performance Data (36V DC)

Motor Speed (2200RPM)

Speed vs. Load



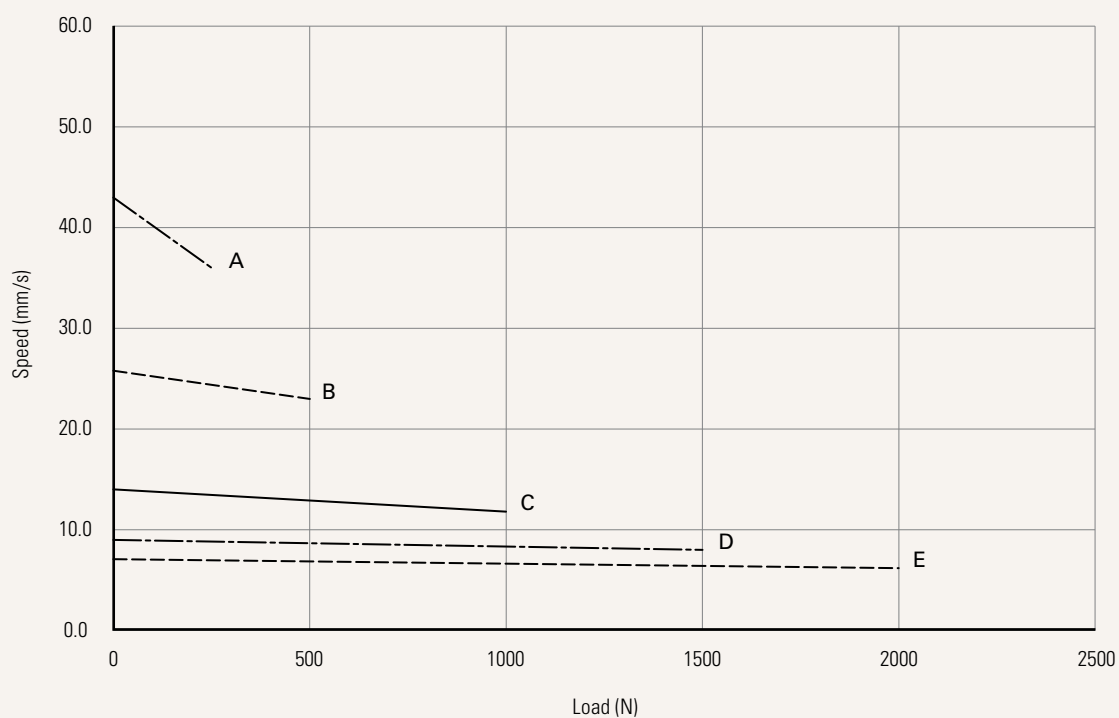
Current vs. Load



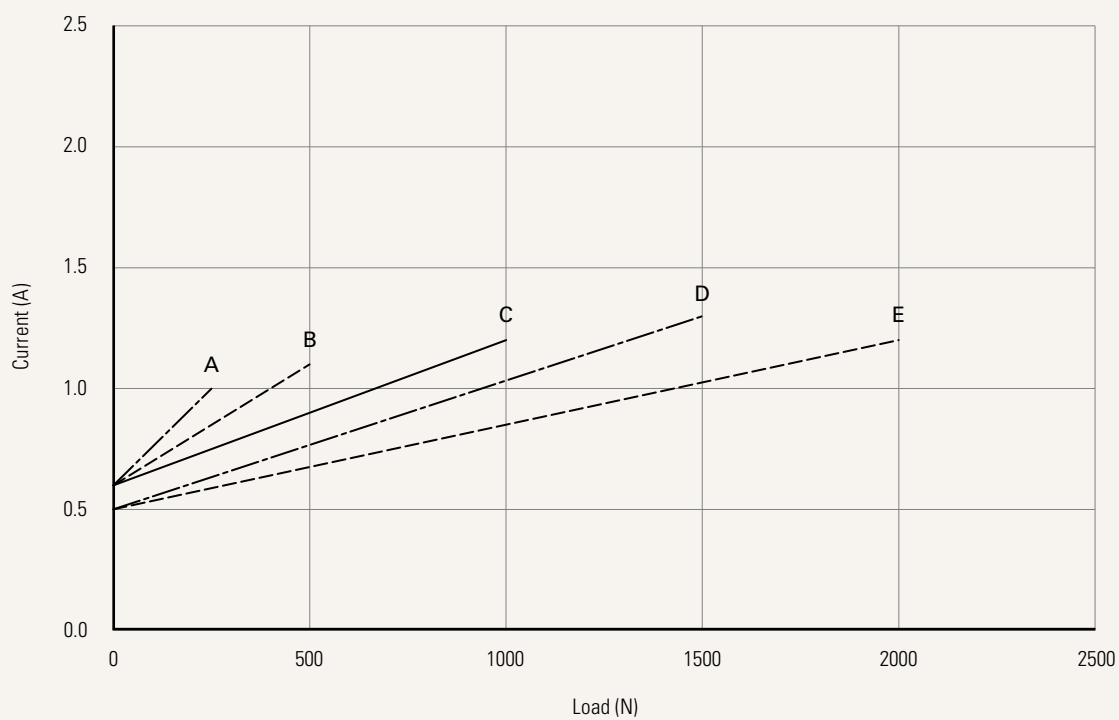
Performance Data (48V DC)

Motor Speed (5200RPM)

Speed vs. Load



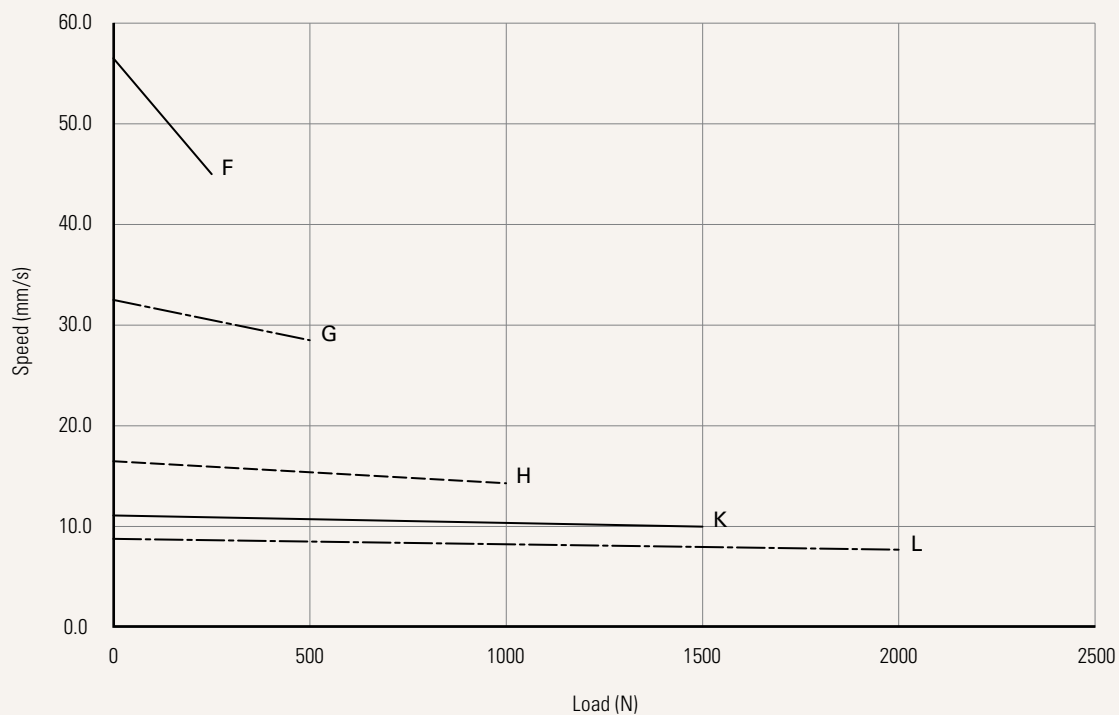
Current vs. Load



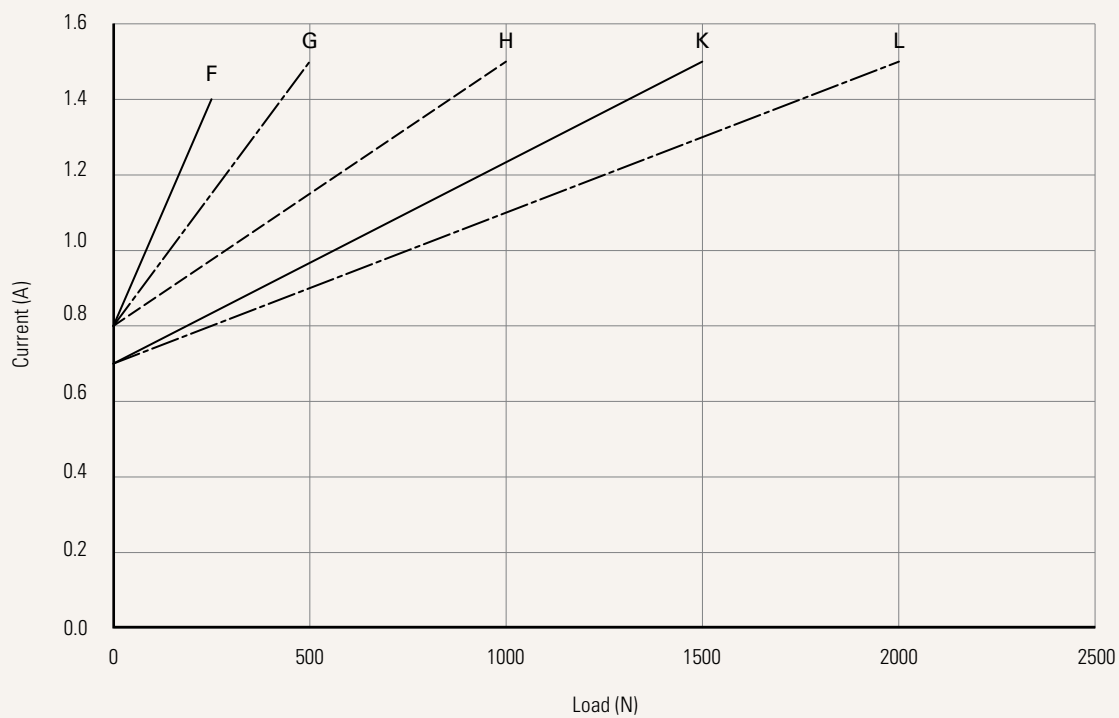
Performance Data (48V DC)

Motor Speed (6600RPM)

Speed vs. Load



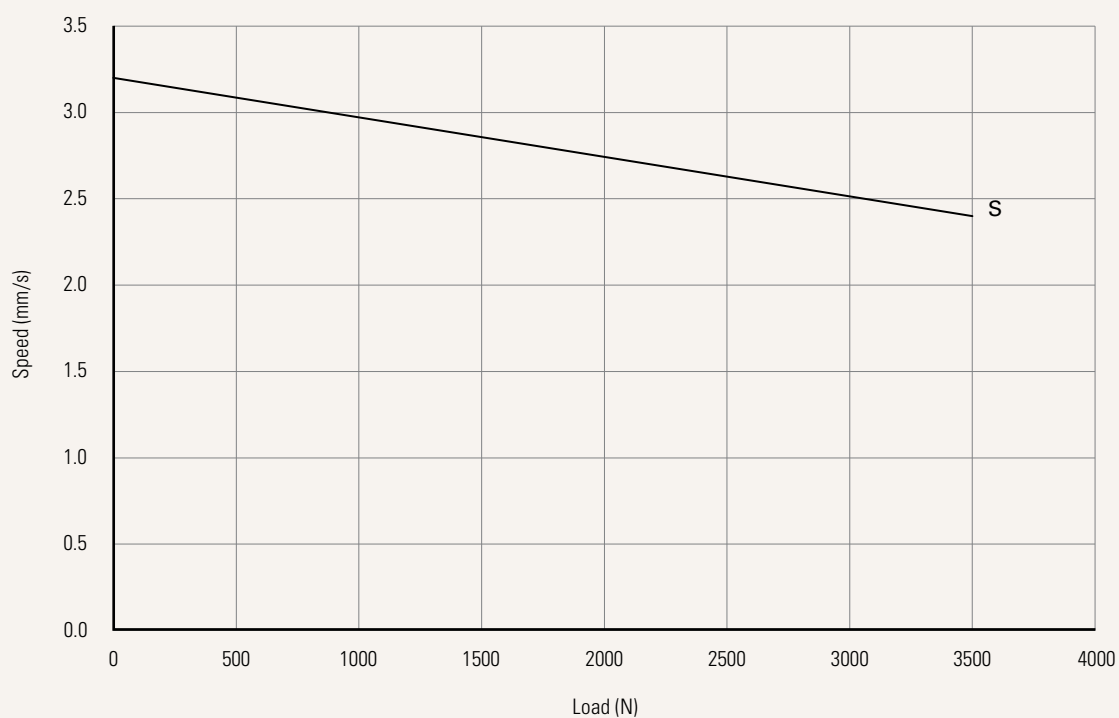
Current vs. Load



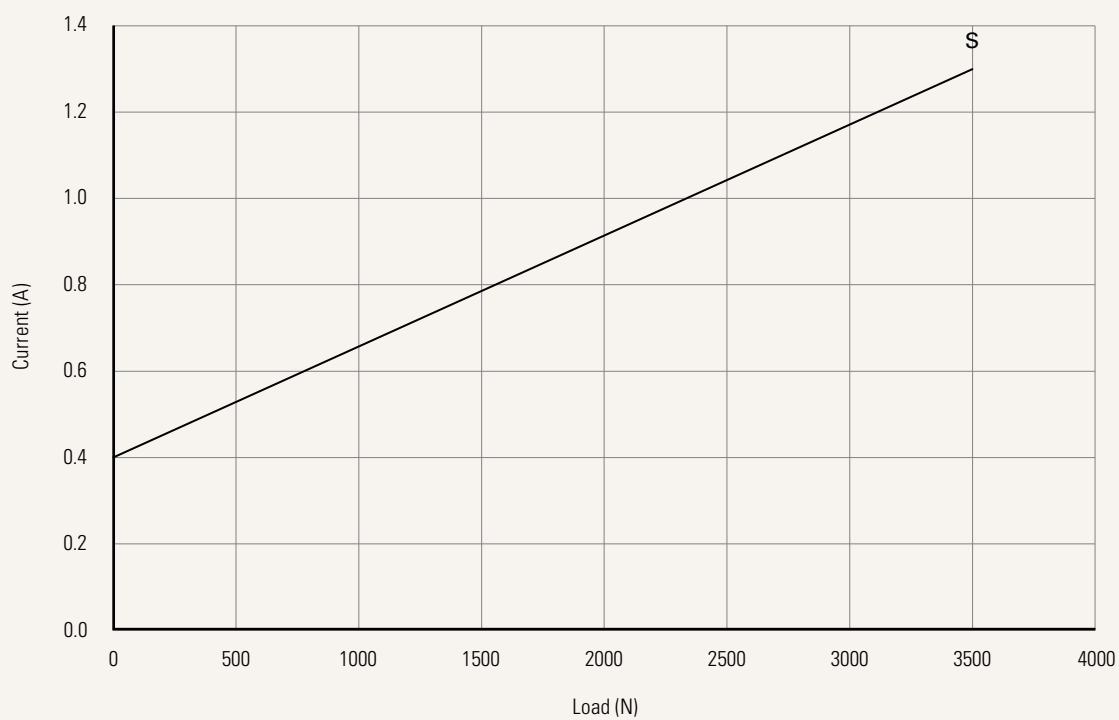
Performance Data (48V DC)

Motor Speed (3800RPM)

Speed vs. Load



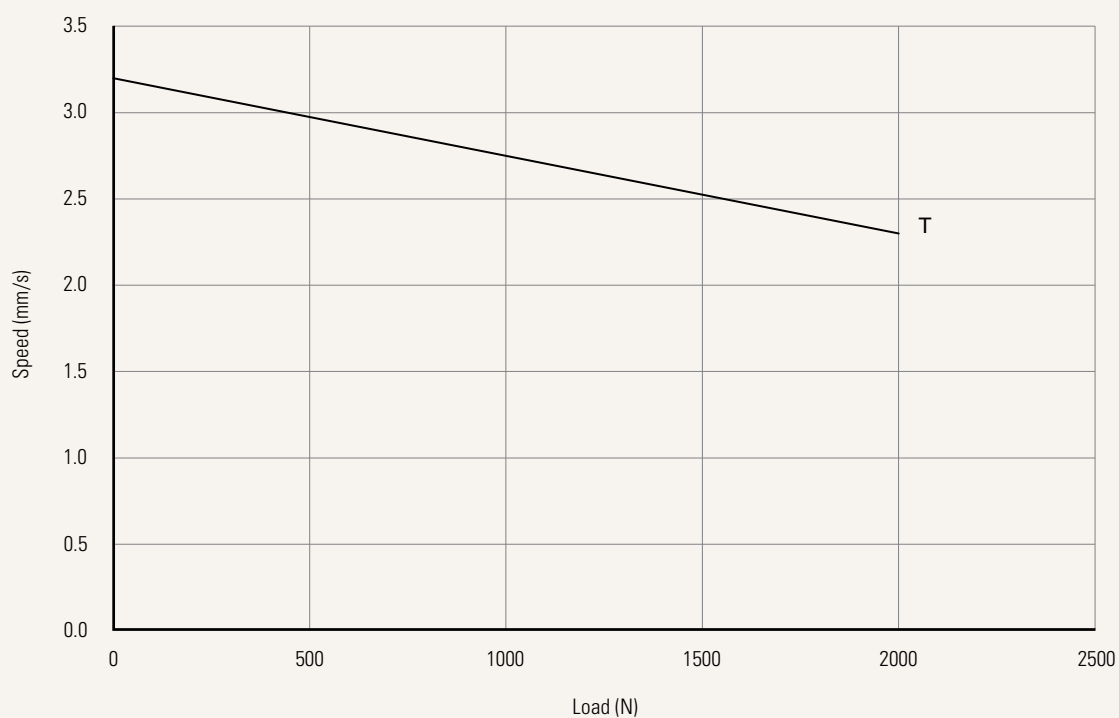
Current vs. Load



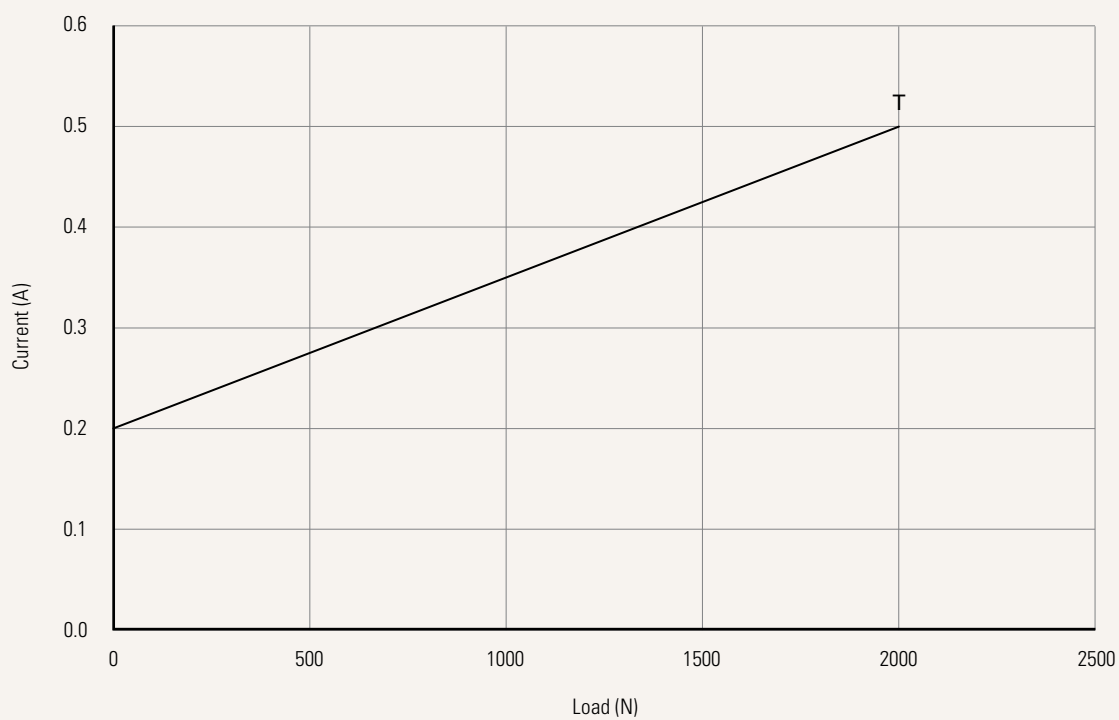
Performance Data (48V DC)

Motor Speed (2200RPM)

Speed vs. Load



Current vs. Load



TA2P

Version: 20260703-Z



Voltage See page 24	1 = 12V DC 2 = 24V DC	3 = 36V DC 4 = 48V DC	5 = 24V DC, PTC 6 = 12V DC, PTC	8 = 48V DC, PTC
Load and Speed	See page 3-5			
Stroke (mm)	See page 3			
Retracted Length (mm)	See page 23			
Rear Attachment (mm) See page 24	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			
Front Attachment (mm) See page 25	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) See page 25	1 = 90°		2 = 0°	
Function of Limit Switches See page 26-27	1 = Two micro switches cut off the actuator at end of stroke (EOS) 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 See page 26-27	0 = Without 1 = Mechanical pot.		N = Hall sensor * 2 (5-36V input)	
Connector (mm) See page 25	1 = DIN 6P, 90° plug 2 = Tinned leads		S = AMP superseal 1.5, 2 pins plug	
Cable Length (mm)	0 = Straight, 100	1 = Straight, 300	2 = Straight, 600	3 = Straight, 1000
IP Rating	1 = Without	2 = IP54	3 = IP66	6 = IP66M

Retracted Length (mm)

1. Calculate $A+B+C = Y$
2. Retracted length needs to $\geq$ Stroke + Y
3. Min. retracted length related with IP: When choosing IP66M, the min. retracted length should comply with the table below.

A. Attachment

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

IP66M Min. Retracted length

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

B. Load VS. Stroke

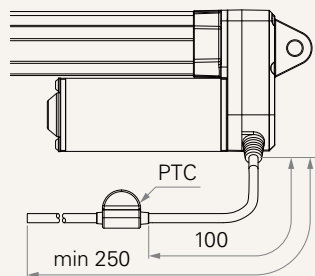
Stroke (mm)	Load (N)	
	< 3500	≥ 3500
20~150	-	+5
151~200	+2	+7
201~250	+2	+7
251~300	+2	+7
301~350	+12	+17
351~400	+22	+27
401~450	+32	+37
451~500	+42	+47
501~550	+52	+57
551~600	+62	+67
601~650	+72	+77
651~700	+82	+87
701~750	+92	+97
751~800	+102	+107
801~850	+112	+117
851~900	+122	+127
901~950	+132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

C. Output Signals

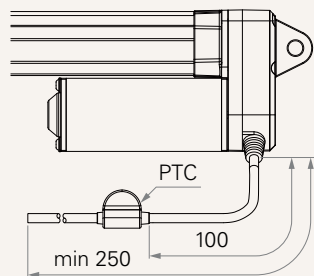
CODE	
0, N	-
1	+30

Voltage

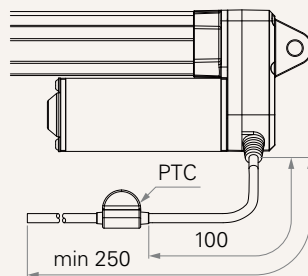
5 = 24V DC, PTC



6 = 12V DC, PTC

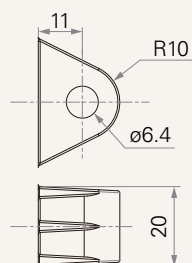


8 = 48V DC, PTC

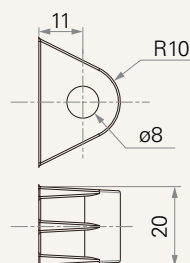


Rear Attachment (mm)

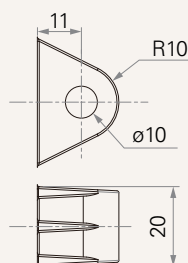
1 = Aluminum, slotless, hole 6.4, one piece casting with gearbox



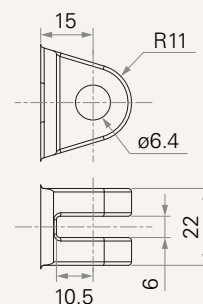
2 = Aluminum, slotless, hole 8.0, one piece casting with gearbox



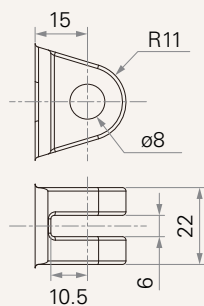
3 = Aluminum, slotless, hole 10.0, one piece casting with gearbox



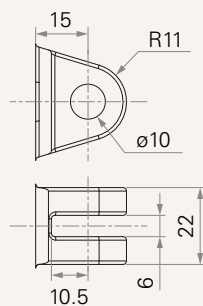
4 = Aluminum, U clevis, slot 6.0, depth 10.5, hole 6.4, one piece casting with gearbox



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

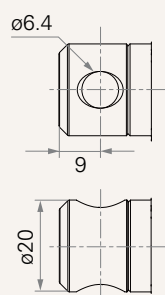


6 = Aluminum, U clevis, slot 6.0, depth 10.5, hole 10.0, one piece casting with gearbox

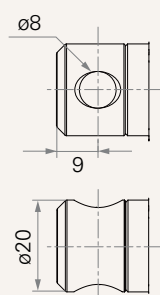


Front Attachment (mm)

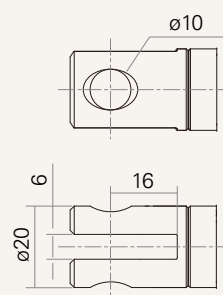
1 = Aluminum, slotless, hole 6.4



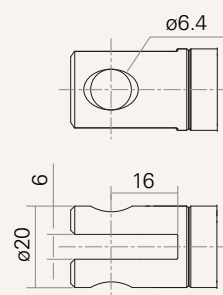
2 = Aluminum, slotless, hole 8.0



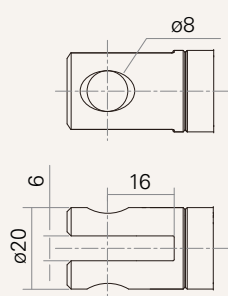
3 = Aluminum, U clevis, slot 6.0, depth 16.0, hole 10.0



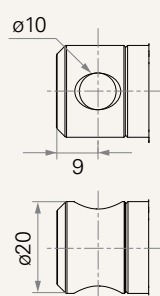
4 = Aluminum, U clevis, slot 6.0, depth 16.0, hole 6.4



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

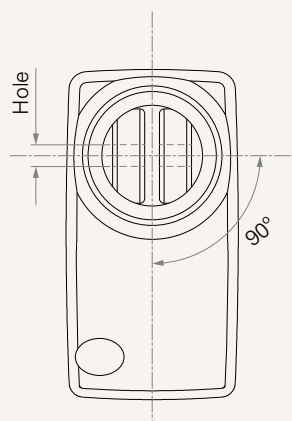


6 = Aluminum, slotless, hole 10.0

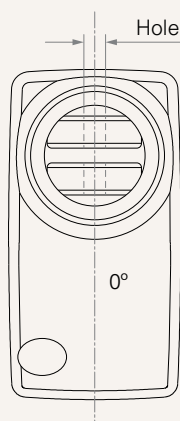


Direction of Rear Attachment (Counterclockwise)

1 = 90°

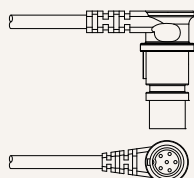


2 = 0°

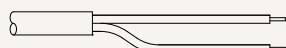


Connector (mm)

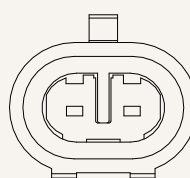
1 = DIN 6P, 90° plug



2 = Tinned leads



S = AMP superseal 1.5, 2 pins plug



Wire Definition

Port	Function of Limit Switches	Wire Color	Wire Gauge (AWG)	Output Signal		
				0. Without	1. Mechanical pot.	N. Hall sensor * 2
A1	1. Two micro switches cut off the actuator at end of stroke (EOS)	● GN	20	EXT+	EXT+	EXT+
		● YE	20	RET+	RET+	RET+
		● RD	26	-	POT-out	Vcc+
		○ WH	26	-	POT-Vin (+5V)	S1
		● BK	26	-	GND	Hall-GND
		● BU	26	-	-	S2
		● BN	26	-	-	-
		● GY	26	-	-	-
		● OG	26	-	-	-
		● VT	26	-	-	-
A1	2. Two micro switches cut off the actuator at EOS + in-between third one sends signal	● GN	20	EXT+	EXT+	EXT+
		● YE	20	RET+	RET+	RET+
		● RD	26	-	-	Vcc+
		○ WH	26	3rd LS pin1	POT-Vout	S1
		● BK	26	3rd LS pin2	POT-Vin (+5V)	Hall-GND
		● BU	26	-	POT-GND	S2
		● BN	26	-	3rd LS pin2	3rd LS pin1
		● GY	26	-	3rd LS pin1	-
		● OG	26	-	-	3rd LS pin2
		● VT	26	-	-	-
A1	3. Two micro switches send signal at end of stroke	● GN	20	EXT+	EXT+	EXT+
		● YE	20	RET+	RET+	RET+
		● RD	26	LS-COM	LS-COM	Vcc+
		○ WH	26	UP LS	UP LS	S1
		● BK	26	-	POT-GND	Hall-GND
		● BU	26	LOW LS	LOW LS	S2
		● BN	26	-	POT-Vin (+5V)	UP LS
		● GY	26	-	-	-
		● OG	26	-	POT-Vout	LOW LS
		● VT	26	-	-	LS-COM

* The signal wires gauge for limit switch function 1 combined with signal output 1 are 20 AWG

* For other wire gauge requirements, please contact Engineering

Wire Definition

Port	Function of Limit Switches	Wire Color	Wire Gauge (AWG)	Output Signal		
				0. Without	1. Mechanical pot.	N. Hall sensor * 2
A1	4. Two micro switches send signal at end of stroke + in-between third one sends signal	● GN	20	EXT+	EXT+	EXT+
		● YE	20	RET+	RET+	RET+
		● RD	26	LS-COM	LS-COM	Vcc+
		● WH	26	UP LS	UP LS	S1
		● BK	26	3rd LS pin1	3rd LS pin1	Hall-GND
		● BU	26	LOW LS	LOW LS	S2
		● BN	26	-	POT-Vin (+5V)	UP LS
		● GY	26	-	-	3rd LS
		● OG	26	-	POT-Vout	LOW LS
		● VT	26	-	POT-GND	LS-COM

* The signal wires gauge for limit switch function 1 combined with signal output 1 are 20 AWG

* For other wire gauge requirements, please contact Engineering

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