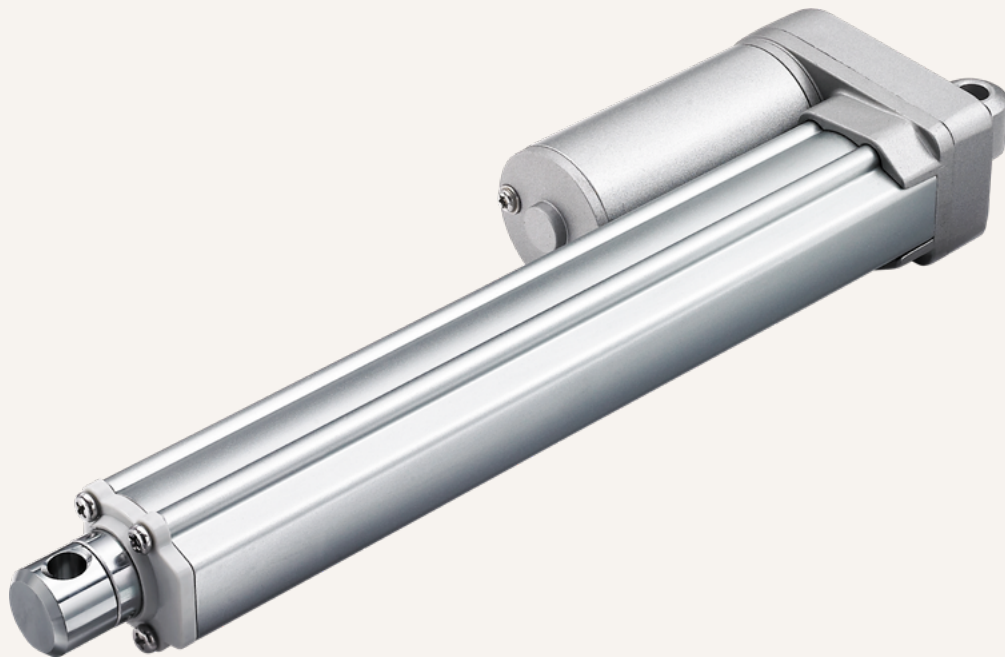# TA2
series

Product Segments

• Industrial Motion

TiMOTION's TA2 series linear actuator is compact, robust and capable of performing well in certain outdoor environments. This linear actuator is perfect for use in small spaces where force or capability cannot be sacrificed. Options include feedback sensors, signal sending limit switches and 90 degree clevis mounting. Industry certifications for the TA2 linear actuator include IEC60601-1, ES60601-1, and EMC.

General Features

Voltage of motor	12, 24, 36, 48V DC, or
	12, 24, 36, 48V DC (PTC)
Maximum load	1,000N in pull and push
Maximum speed at full load	51mm/s
	(with 120N in a push or pull condition)
Stroke	20~1000mm
Minimum installation dimension	≥ Stroke + 105mm (without output signals)
Color	Silver
Certificate	IEC60601-1, ES60601-1, EMC
Operational temperature range	+5°C~+45°C (Load < 500N)
	-25°C~+65°C (Load ≥ 500N)
Operational temperature range at full performance	+5°C~+45°C
IP rating	Up to IP66D
Options	POT, Reed, Hall sensor(s)
Compact size for limited space	

Drawing

Dimensions without
Output Signals
(mm)

Retracted Length
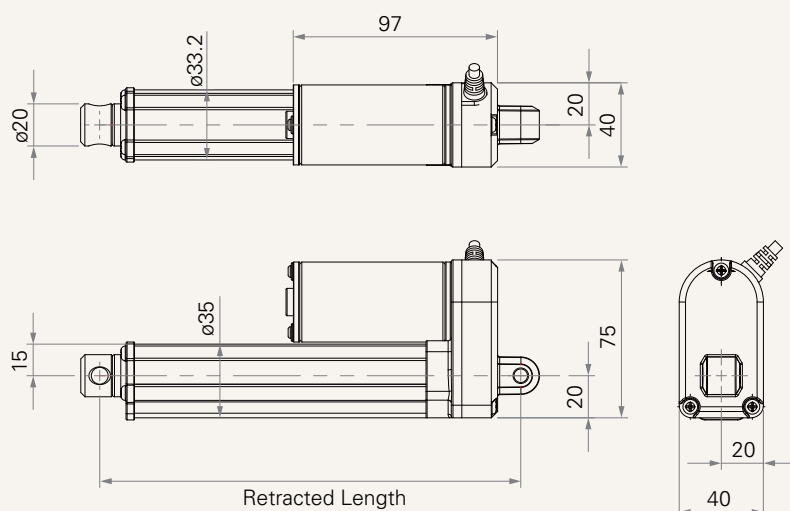
Dimensions with
Output Signals
(mm)

Retracted Length
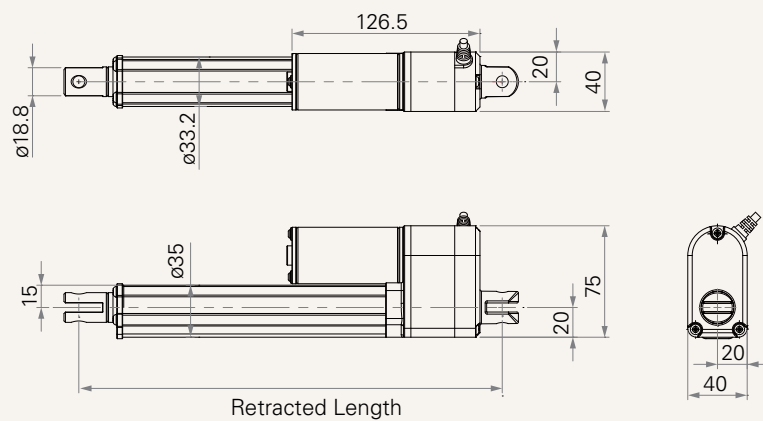
Load and Speed

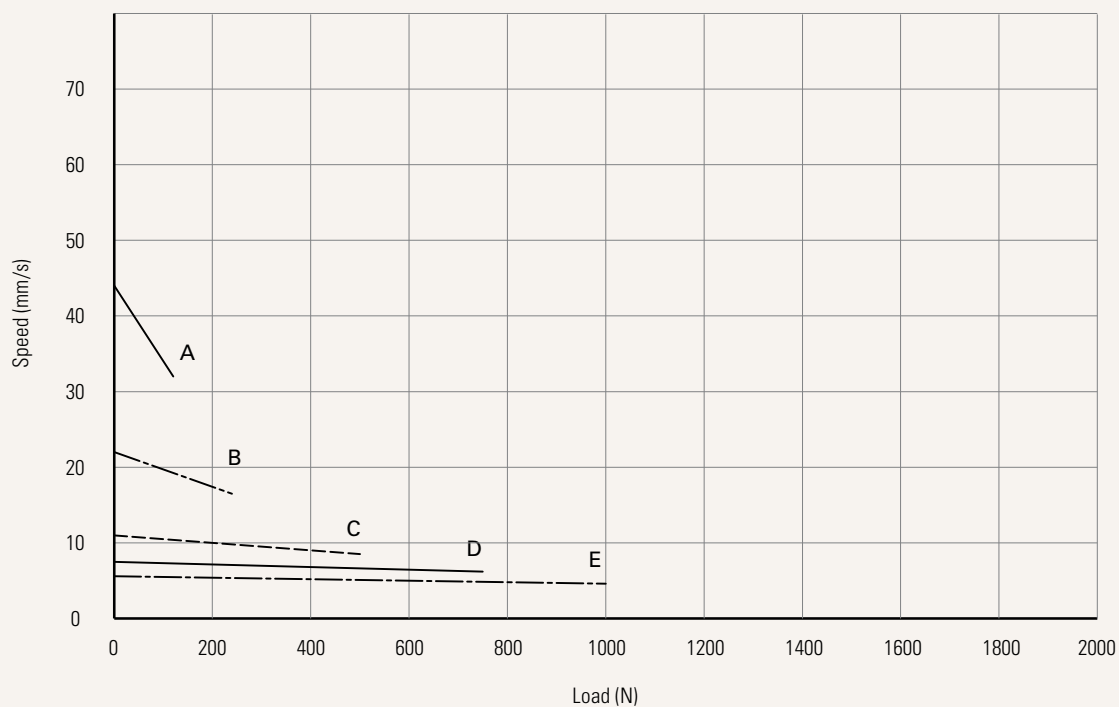| CODE	Load (N)		Self Locking Force (N)	Typical Current (A)		Typical Speed (mm/s)	
	Push	Pull		No Load 24V DC	With Load 24V DC	No Load 24V DC	With Load 24V DC
Motor Speed (4200RPM, duty cycle 25%)							
A	120	120	120	0.8	1.2	44.0	32.0
B	240	240	240	0.7	1.2	22.0	16.5
C	500	500	500	0.6	1.0	11.0	8.5
D	750	750	750	0.6	1.0	7.5	6.2
E	1000	1000	1000	0.6	1.0	5.6	4.6
Motor Speed (6000RPM, duty cycle 25%)							
F	120	120	120	1.0	1.8	67.5	51.0
G	240	240	240	0.9	1.8	33.5	26.5
H	500	500	500	0.8	1.5	17.0	14.0
K	750	750	750	0.8	1.5	11.0	10.0
L	1000	1000	1000	0.8	1.5	9.0	7.6

Note

1 With a 12V motor, the current is approximately twice the current measured in 24V. With a 36V motor, the current is approximately two-thirds the current measured in 24V. With a 48V motor, the current is approximately half the current measured in 24V. Speed will be similar for all the 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 stretching in push direction.

4 Standard stroke: Min. ≥ 20mm, Max. please refer to below table.

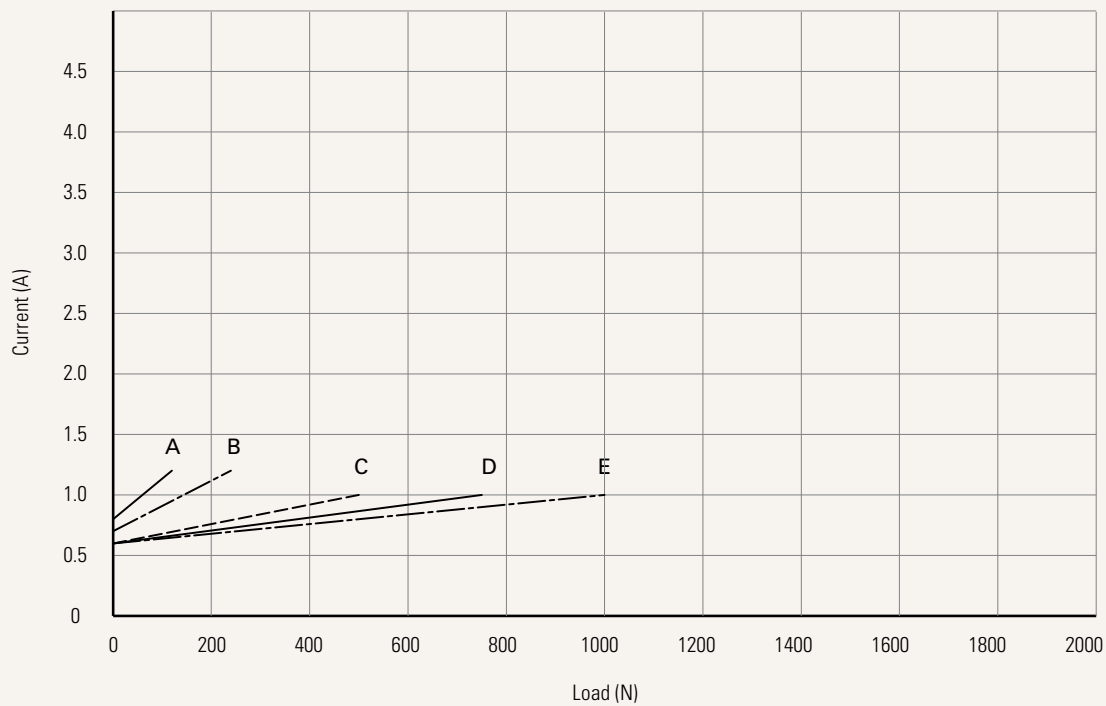| CODE	Load (N)	Max Stroke (mm)
A, B, F, G	≤250	1000
C, D, H, K	≤750	800
E, L	≤000	600

Performance Data (24V DC)

Motor Speed (4200RPM, duty cycle 25%)

Speed vs. Load
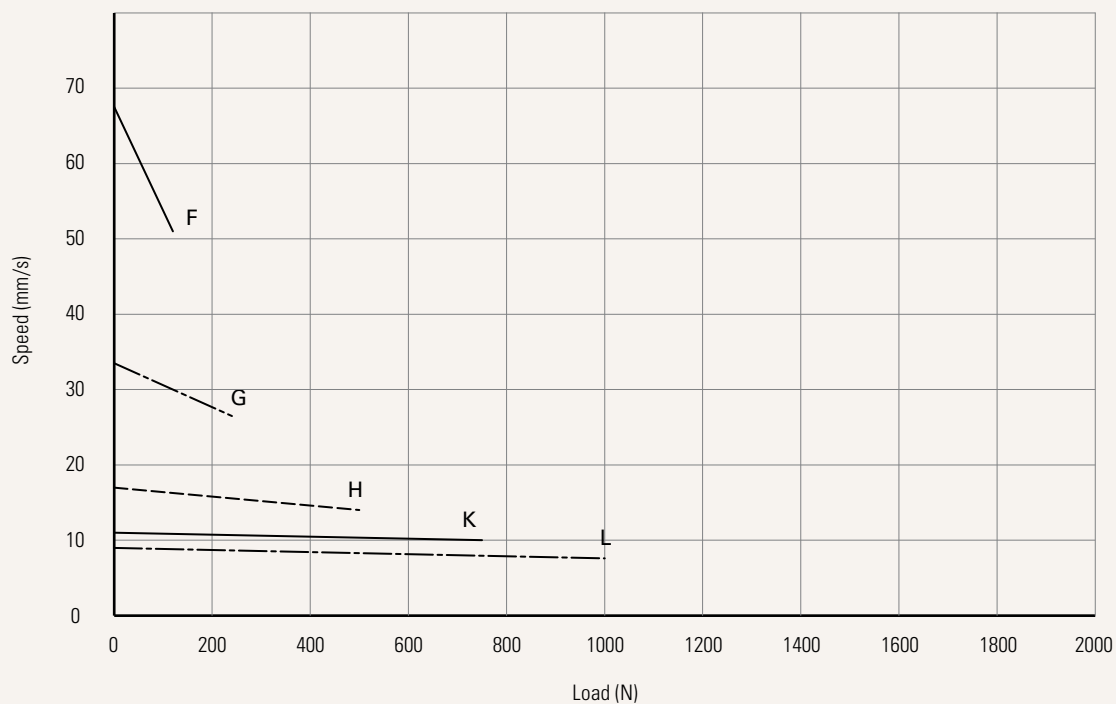

Current vs. Load

Note

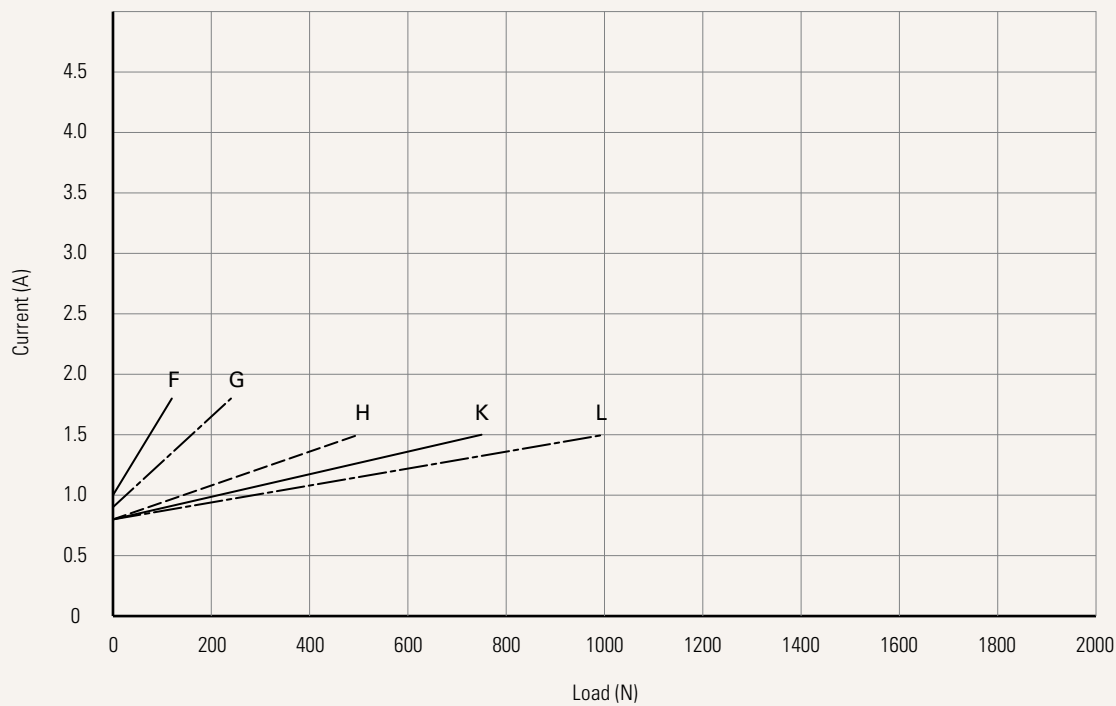**1** The performance data in the curve charts shows theoretical value.

Ti MOTION

Performance Data (24V DC)

Motor Speed ((6000RPM, duty cycle 25%)

Speed vs. Load

Current vs. Load

Note

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

T*i*MOTION

TA2 Ordering Key

TA2

Voltage	1 = 12V DC	3 = 36V DC	5 = 24V DC, PTC	7 = 36V DC, PTC
	2 = 24V DC	4 = 48V DC	6 = 12V DC, PTC	8 = 48V DC, PTC

Load and Speed See page 3

Stroke (mm)

Retracted Length (mm) See page 7

Rear Attachment (mm) See page 8	1 = Aluminum casting, without slot, hole 6.4, one piece casting with gear box	4 = Aluminum casting, U clevis, slot 6.0, width 10.5, hole 6.4, one piece casting with gear box
	2 = Aluminum casting, without slot, hole 8.0, one piece casting with gear box	5 = Aluminum casting, U clevis, slot 6.0, width 10.5, hole 8.0, one piece casting with gear box
	3 = Aluminum casting, without slot, hole 10.0, one piece casting with gear box	6 = Aluminum casting, U clevis, slot 6.0, width 10.5, hole 10.0, one piece casting with gear box

Front Attachment (mm) See page 8	1 = Aluminum casting, without slot, hole 6.4	4 = Aluminum CNC, U clevis, slot 6.0, depth 16.0, hole 6.4
	2 = Aluminum casting, without slot, hole 8.0	5 = Aluminum CNC, U clevis, slot 6.0, depth 16.0, hole 8.0
	3 = Aluminum CNC, U clevis, slot 6.0, depth 16.0, hole 10.0	6 = Aluminum casting, hole 10.0

Direction of Rear Attachment (Counterclockwise) See page 9	1 = 90°	2 = 0°

Functions for Limit Switches See page 9	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	3 = Reed sensor	5 = Hall sensors*2
	1 = POT	4 = Hall sensor*1	

Connector See page 9	1 = DIN 6P, 90° plug	2 = Tinned leads

Cable Length (mm)	1 = Straight, 300mm	3 = Straight, 1000mm
	2 = Straight, 600mm	B~H = For direct cut system*
		Note: please contact TiMOTION before making an order

IP Rating	1 = Without	2 = IP54	3 = IP66	6 = IP66D

Retracted Length (mm)

1. Calculate A+B+C = Y
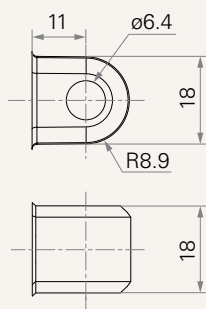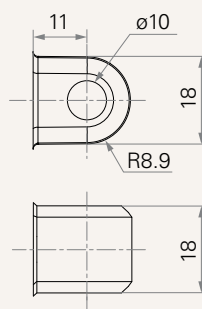2. Retracted length needs to ≥ Stroke + Y

A. Rear / Front Attachment

Front Attachment	Rear Attachment	
	1, 2, 3	4, 5, 6
1, 2, 6	+105	+109
3, 4, 5	+115	+119

C. Output Signals

CODE	
0	-
1, 3, 4, 5	+30

B. Stroke (mm)

20~150	-
151~200	+2
201~250	+2
251~300	+2
301~350	+12
351~400	+22
401~450	+32
451~500	+42
501~550	+52
551~600	+62
601~650	+72
651~700	+82
701~750	+92
751~800	+102
801~850	+112
851~900	+122
901~950	+132
951~1000	+142

TA2 Ordering Key Appendix

Rear Attachment (mm) (Below is the illustration of 90° rear attachment)

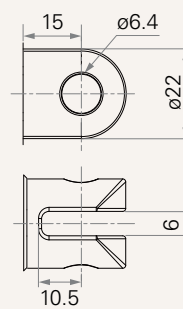1 = Aluminum casting, without slot, hole 6.4, one piece casting with gear box

11   ø6.4
18
R8.9
18

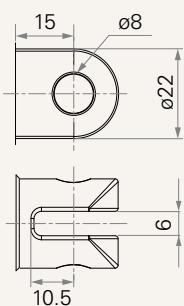2 = Aluminum casting, without slot, hole 8.0, one piece casting with gear box

11   ø8
18
R8.9
18

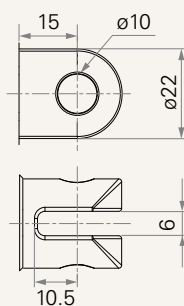3 = Aluminum casting, without slot, hole 10.0, one piece casting with gear box

11   ø10
18
R8.9
18

4 = Aluminum casting, U clevis, slot 6.0, width 10.5, hole 6.4, one piece casting with gear box

15   ø6.4
ø22
6
10.5

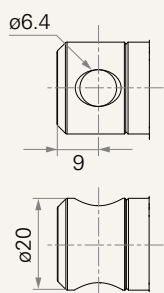5 = Aluminum casting, U clevis, slot 6.0, width 10.5, hole 8.0, one piece casting with gear box

15   ø8
ø22
6
10.5

6 = Aluminum casting, U clevis, slot 6.0, width 10.5, hole 10.0, one piece casting with gear box
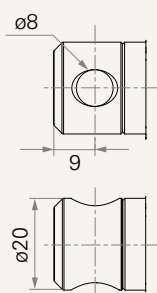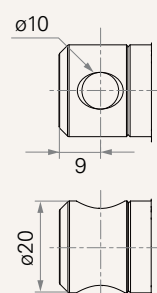
15   ø10
ø22
6
10.5

Front Attachment (mm)

1 = Aluminum casting, without slot, hole 6.4
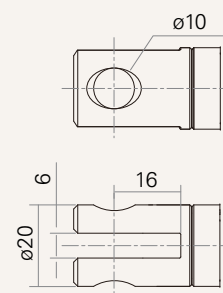
ø6.4
9
ø20

2 = Aluminum casting, without slot, hole 8.0

ø8
9
ø20

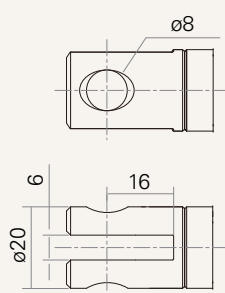6 = Aluminum casting, without slot, hole 10.0

ø10
9
ø20

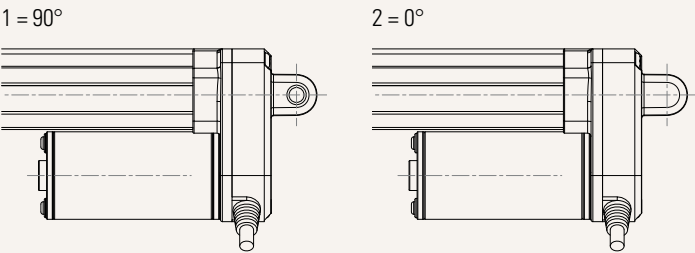3 = Aluminum CNC, U clevis, slot 6.0, depth 16.0, hole 10.0

ø10
6   16
ø20

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

ø6.4
6   16
ø20

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

ø8
6   16
ø20

TA2 Ordering Key Appendix

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

50
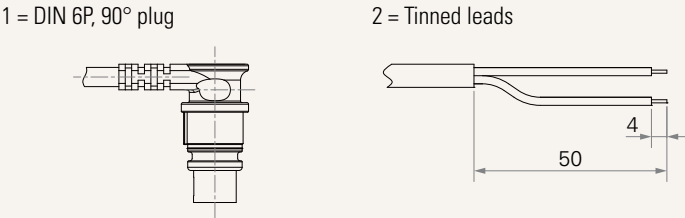
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