TL8
series

Product Segments

- **Care Motion**

TiMOTION's TL8 series columns are designed with a 3 stage cylindrical appearance and built-in motors. It was designed primarily for use in medical applications. The TL8 provides stable vertical lifting. This makes the engineering design process easier and safer by replacing older style lifting mechanisms that use many moving stages and have pinch points. The TL8 is suitable for the medical bed applications.

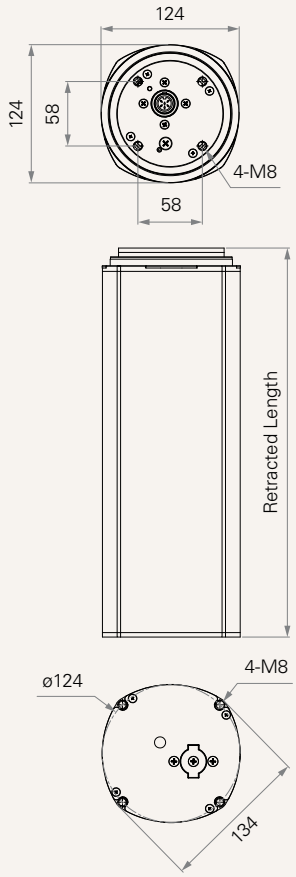
General Features

Max. load	2,000N (push)
Max. dynamic bending moment	500Nm
Max. static bending moment	1,000Nm
Max. speed at max. load	9.6mm/s
Max. speed at no load	32.6mm/s
Retracted length	≥ (Stroke/2) + 150mm
IP rating	IPX6
Dimension of outer tube	Ø124mm round
Stages	3-stage
Stroke	200~400mm
Certificate	IEC60601-1-2, IEC60601-1, ES60601-1, EMC
Output signals	Hall sensors
Voltage	24V DC (PTC)
Color	Matte silver, black
Operational temperature range	+5°C~+45°C

The TL8 can only be used in pairs; single column usage is not recommended.
The TL8 is recommended for push applications only; pull conditions are not advised.
Multiple cable exit options

Drawing

Standard Dimensions
(mm)



Load and Speed

CODE	Load (N)	Bending Moment (Nm)		Self Locking Force (N)	Typical Current (A)		Typical Speed (mm/s)	
	Push	Dynamic	Static		No Load 32V DC	With Load 24V DC	No Load 32V DC	With Load 24V DC
Motor Speed (5200RPM)								
A	2000	500	1000	2000	2.3	4.3	16.5	9.6
B	1000	250	500	1000	1.7	3.6	32.6	19.9

Note

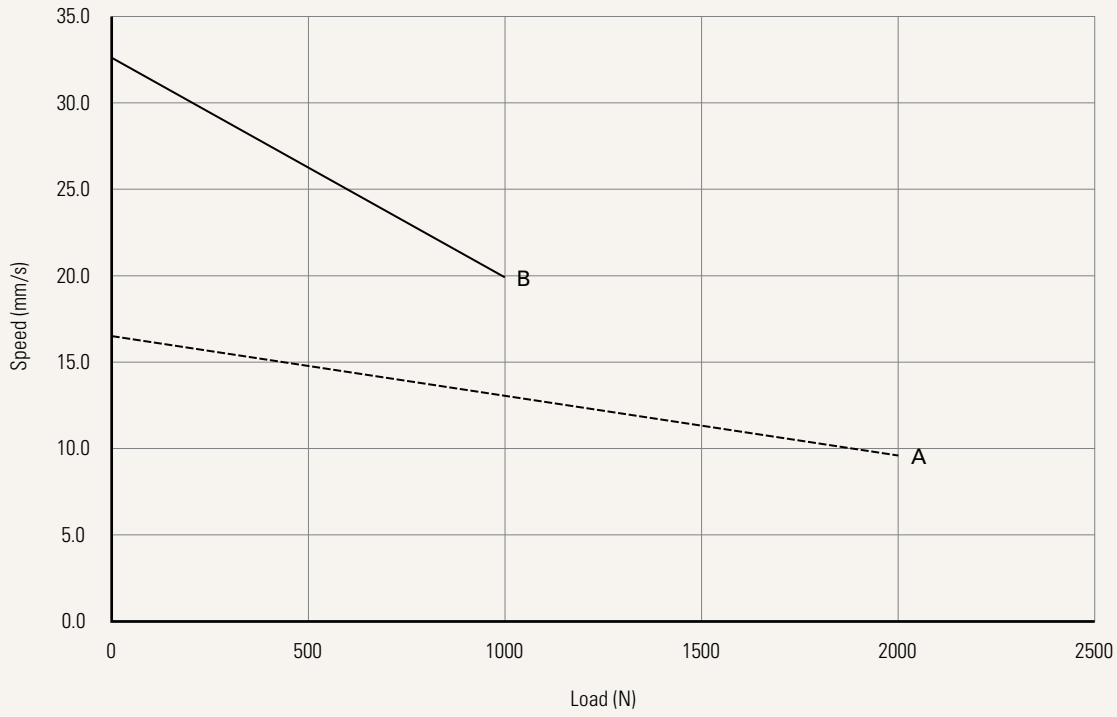
1 Parameters above are from tested average, please refer to approval drawing for final value.

2 The current & speed are tested with 24VDC motor.

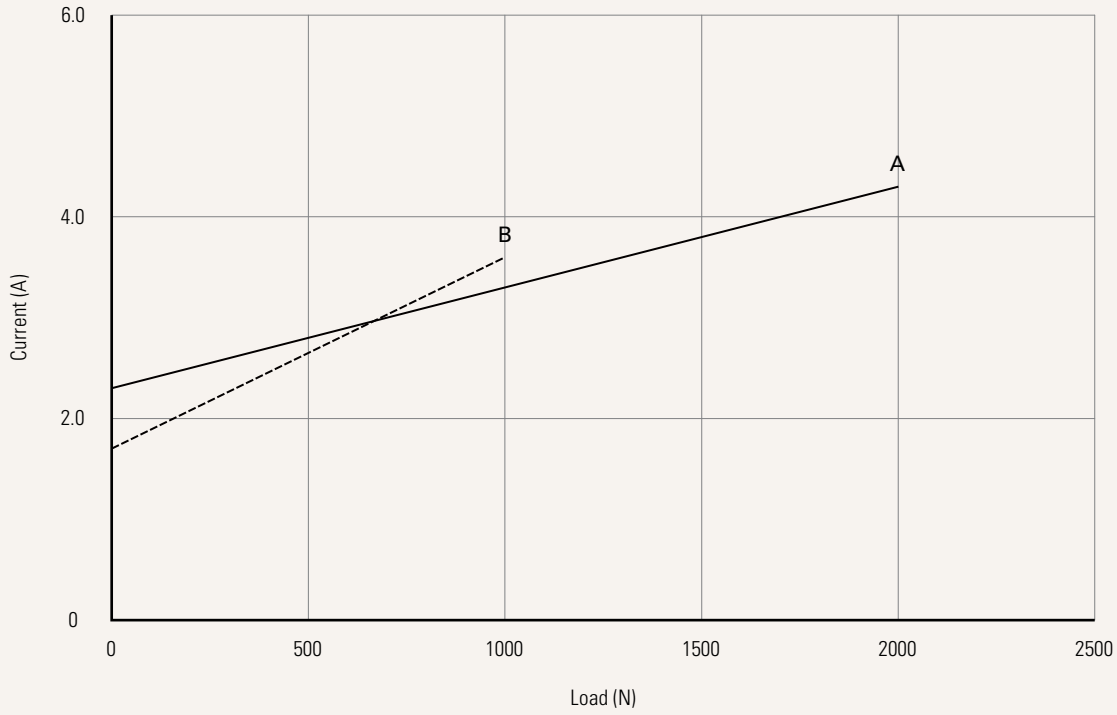
Performance Data (24V DC Motor)

Motor Speed (5200RPM)

Speed vs. Load



Current vs. Load



TL8 Ordering Key - Top End Socket

TL8

Version: 20240417-M

Voltage	5 = 24V, PTC		
Load and Speed	See page 2		
Stroke (mm)	200 - 400		
Retracted Length (mm)	Minimum retract length needs to ≥ (stroke/2) +150		
See page 6			
Color	1 = Black (With black cable set)	3 = Matte silver (With black cable set)	
	2 = Matte silver (With 428C color cable set)	4 = Black (With 428C color cable set)	
Special Functions for Spindle Sub-Assembly	0 = Without (standard)		
Functions for Limit Switches	1 = Two switches at full retracted / extended positions to cut current		
	3 = Two switches at full retracted / extended positions to send signal		
See page 6			
Output Signals	0 = Without	2 = Hall sensors*2	
IP Rating	1 = Without	2 = IPX4	3 = IPX6
Cable Exit	1 = Top end socket		
See page 6			
Cable Length	0 = Without (the corresponding extension cable TEC needs to be ordered seperately)		
Connector	1 = DIN 6P, socket		
See page 6			

Note

1 The TL8 is designed especially for push applications, not suitable for pull applications.

TL8 Ordering Key - Side Cable

TL8

Version: 20240417-M

Voltage	5 = 24V, PTC				
Load and Speed	See page 2				
Stroke (mm)	200 - 400				
Retracted Length (mm)	Minimum retract length needs to ≥ (stroke/2) +150				
See page 6					
Color	1 = Black (With black cable set)		3 = Matte silver (With black cable set)		
	2 = Matte silver (With 428C color cable set)		4 = Black (With 428C color cable set)		
Special Functions for Spindle Sub-Assembly	0 = Without (standard)				
Functions for Limit Switches	1 = Two switches at full retracted / extended positions to cut current				
	3 = Two switches at full retracted / extended positions to send signal				
See page 6					
Output Signals	0 = Without	2 = Hall sensors*2			
IP Rating	1 = Without	2 = IPX4	3 = IPX6		
Cable Exit	2 = Bottom side cable	3 = Top side cable			
See page 6					
Cable Length (mm)	1 = Straight, 500	3 = Straight, 1000	5 = Straight, 1500	7 = Straight, 2000	
	2 = Straight, 750	4 = Straight, 1250	6 = Straight, 1750		
Connector	1 = DIN 6P, 90° plug	F = DIN 6P, 180° plug	H = molex 8P 180°		
See page 6	2 = Tinned leads	G = molex 8P 90°			

Note

1 The TL8 is designed especially for push applications, not suitable for pull applications.

TL8 Ordering Key Appendix

Retracted Length (mm)

1. Retracted length needs to ≥ A+B

A. Load (N)	1000	2000
	S / 2 + 150	

Note

1 Different retracted length is relative to different bending moment, See page 2.

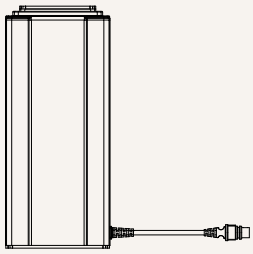
B. Cable Exit			
CODE	Top End Socket	Bottom Side Cable	Top Side Cable
1	-	-	-
2	-	-	-
3	-	+20	-

Functions for Limit Switches

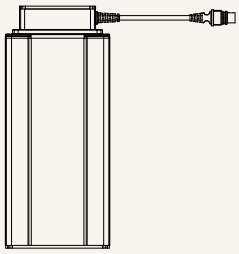
Wire Definitions						
CODE	Pin					
	1 (Green)	2 (Red)	3 (White)	4 (Black)	5 (Yellow)	6 (Blue)
1	extend (VDC+)	N/A	N/A	N/A	retract (VDC+)	N/A
3	extend (VDC+)	common	upper limit switch	N/A	retract (VDC+)	lower limit switch

Cable Exit

2 = Bottom side cable

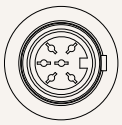


3 = Top side cable

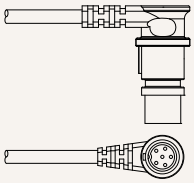


Connector

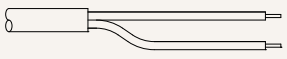
1 = DIN 6P, socket



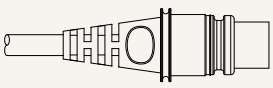
1 = DIN 6P, socket



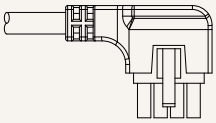
2 = Tinned leads



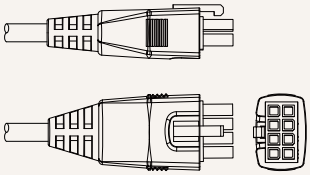
F = DIN 6P, 180° plug



G = molex 8P 90°



H = molex 8P 180°



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