

TL18 series



Product Segments

- Care Motion
- Comfort Motion
- Ergo Motion
- Industrial Motion

The TL18 column is designed for medical applications such as nurse carts, ophthalmological devices, X-ray machines, etc.The TL18 features an extruded aluminum rectangular appearance. Our high capacity, yet economical, TL18 provides stable vertical lifting. This streamlines the engineering design process and replaces the older style, unsafe lifting mechanisms which have many moving stages and pinch points.

General Features

Max. load 4,500N (push)
Self-locking force 4,500N
Max. dynamic bending moment 250Nm
Max. static bending moment 500Nm
Max. speed at max. load 6.6mm/s
Max. speed at no load 45mm/s

Retracted length ≥ Stroke + 147mm

Dimension of outer tube 196.4*148.4mm rectangular

Stages 2-stage
Stroke 100~1000mm

Certificate IEC60601-1, ES60601-1, IEC60601-1-2, UL73, EMC

Output signals Hall sensors

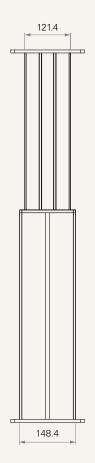
Options Cable exit from top or bottom

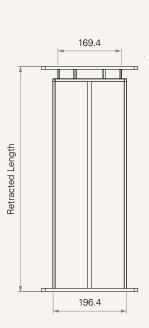
side, direct cut system

Voltage 12 / 24V DCOperational temperature range $+5^{\circ}C \sim +45^{\circ}C$

Drawing

Standard Dimensions (mm)





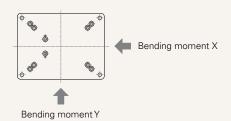
Load and Speed

CODE	Load (N)	Self Locking	Typical Current (A)		Typical Speed (mm/s)		
	Push	Force (N)	No Load 32V DC	With Load 24V DC	No Load 32V DC	With Load 24V DC	
Motor Speed (3800RPM, Duty Cycle 10%)							
U	4500	4500	2.5	4.9	11.4	6.6	
Z	3000	3000	2.5	5.5	17.1	9.5	
W	2000	2000	2.5	4.8	22.9	13.1	
s	1500	1500	2.5	4.7	30.0	18.9	
V	500	500	2.5	4.0	45.0	28.0	

Note

- 1 Please refer to the approved drawing for the final authentic value.
- 2 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; speed will be similar for both voltages.
- 3 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.
- 4 Bending moment Y direction = X*0.8
- 5 Static bending moment = dynamic*2

Dynamic bending moment (Nm)- X direction					
Retracted length (S+147				
Stroke (mm)	100-1000	250			

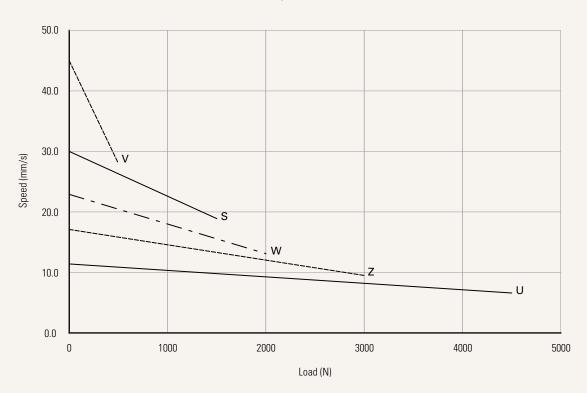




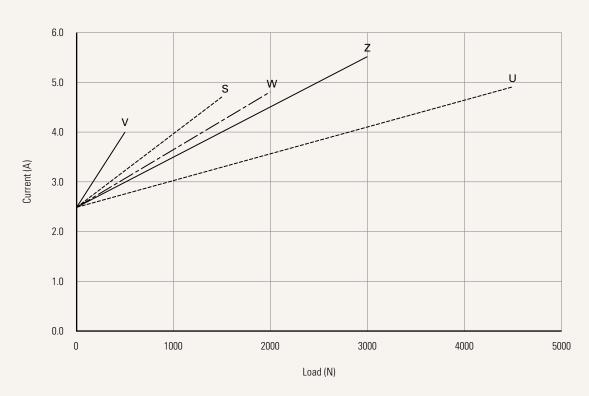
Performance Data (24V DC Motor)

Motor Speed (3800RPM, Duty Cycle 10%)

Speed vs. Load



Current vs. Load





TL18 Ordering Key



TL18

			Version: 20220914-	
Voltage	1 = 12V DC	2 = 24V DC		
Load and Speed	See page 2			
Stroke (mm)	100-1000			
Retracted Length (mm)	See page 2			
Cable Exit	2 = Bottom side cable	3 = Top side cable		
Special Functions for Spindle Sub- Assembly	0 = Without (standard)	1 = Safety nut		
Functions for Limit Switches See page 6	1 = Two switches at full retracted / extended positions to cut current 3 = Two switches at full retracted / extended positions to send signal			
Color	1 = Black (Black cable set) 2 = Silver (428C color cabl		3 = Silver (Black cable set)	
IP Rating	1 = Without			
Output Signals	0 = Without	2 = Hall sensor * 2		
Top Plate	1 = Small plate	2 = Big plate		
Bottom Plate	1 = Small plate	2 = Big plate		
Connector	1 = DIN 6P, 90° plug C = Y cable, for direct cut	system	D = Molex 8P, without anti-clip, 90° plug E = Molex 8P, 180° plug	
Cable Length (mm)	1 = Straight, 500 2 = Straight, 750 3 = Straight, 1000	4 = Straight, 1250 5 = Straight, 1500 6 = Straight, 1750	7 = Straight, 2000 B = For direct cut system See page 6	

Note

¹ TL18 is designed especially for push applications, not suitable for pull applications

TL18 Ordering Key Appendix



Retracted Length (mm)

1. Retracted length needs to \geq Stroke+A

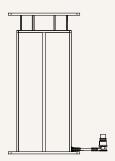
A. Plate					
Top Plate	Bottom Plate				
	1	2			
1	+147	+151			
2	+151	+155			

TL18 Ordering Key Appendix

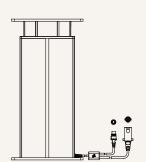


Cable Exit

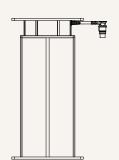
2 = Bottom side cable



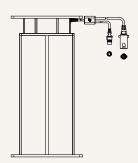
2 = Bottom side- Y cable, for TH + TP



3 = Top side cable



3 = Top side- Y cable, for TH + TP

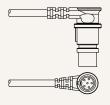


Functions for Limit Switches

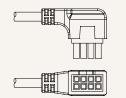
Wire Definitions						
CODE	Pin					
	1 (Green)	2 (Red)	3 (White)	4 (Black)	5 (Yellow)	6 (Blue)
1	extend (VDC+)	N/A	N/A	N/A	retract (VDC+)	N/A
2	extend (VDC+)	N/A	middle switch pin B	middle switch pin A	retract (VDC+)	N/A

Connector

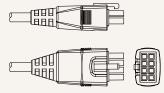
1 = DIN 6P, 90° plug



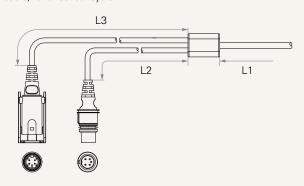
D = Molex 8P, without anti-clip, 90° plug



E = Molex 8P, 180° plug



C = Y cable, for direct cut system



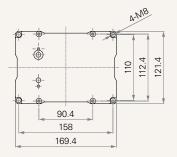
Cable Length for Direct Cut System (mm)					
CODE	L1	L2	L3		
В	100	100	100		

TL18 Ordering Key Appendix



Top Plate

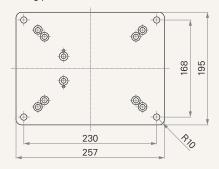
1 = Small plate



Small Plate: 4 fixation holes

Thickness 4mm

2 = Big plate

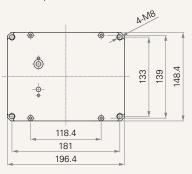


Big Plate: 4 fixation holes

Thickness 8mm

Bottom Plate

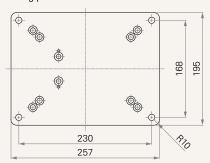
1 = Small plate



Small Plate: 4 fixation holes

Thickness 4mm

2 = Big plate



Big Plate: 4 fixation holes

Thickness 8mm

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