



# M-Track – Technical Features



## Standard Features

- Compact and lightweight
- Corrosion resistant housing
- Self-locking acme screw drive system
- Integrated standard end-of-stroke limit switches
- Optional analog potentiometer feedback
- Stroke up to 12 inches
- Maintenance free
- Internally restrained extension tube
- Typical applications are ventilation and valve adjustment, vise or clamp operation or light weight positioning of lifts and tilts.

## General Specifications

Screw type	acme
Nut type	acme
Manual override	no
Anti-rotation	yes
Static load holding brake	no (self-locking)
Safety features	motor auto reset thermal switch internal end-of-stroke limit switches
Electrical connections	cable with connector for units without option potentiometer, cable with flying leads if potentiometer
Compliances	CE, UKCA

## Accessories

Protective boot (contact customer support for more information)

## Compatible Controls

Contact customer support at [www.thomsonlinear.com/cs](http://www.thomsonlinear.com/cs)

# M-Track – Technical Specifications

Mechanical Specifications		
Max. static load <sup>(1)</sup>	[N (lbf)]	1300 (300)
Max. dynamic load (Fx)	[N (lbf)]	
M1-D0xx-0025		111 (25)
M1-D0xx-0050		222 (50)
M1-D0xx-0100		445 (100)
M1-D0xx-0165		734 (165)
Speed @ max. load	[mm/s (in/s)]	
M1-D0xx-0025		45 (1.75)
M1-D0xx-0050		20 (0.80)
M1-D0xx-0100		11 (0.45)
M1-D0xx-0165		6 (0.25)
Min. ordering stroke (S) length	[in]	1
Max. ordering stroke (S) length	[in]	12
Ordering stroke length increments	[in]	1
Operating temperature limits	[°C (F)]	-25 – 65 (-13 – 150)
Full load duty cycle @ 25 °C (77 °F)	[%]	25
End play, maximum	[mm (in)]	0.9 (0.04)
Restraining torque	[Nm (lbf-in)]	0
Protection class - static / dynamic		IP69K / IP65
Salt spray resistance	[h]	96

(1) Max. static load at fully retracted stroke

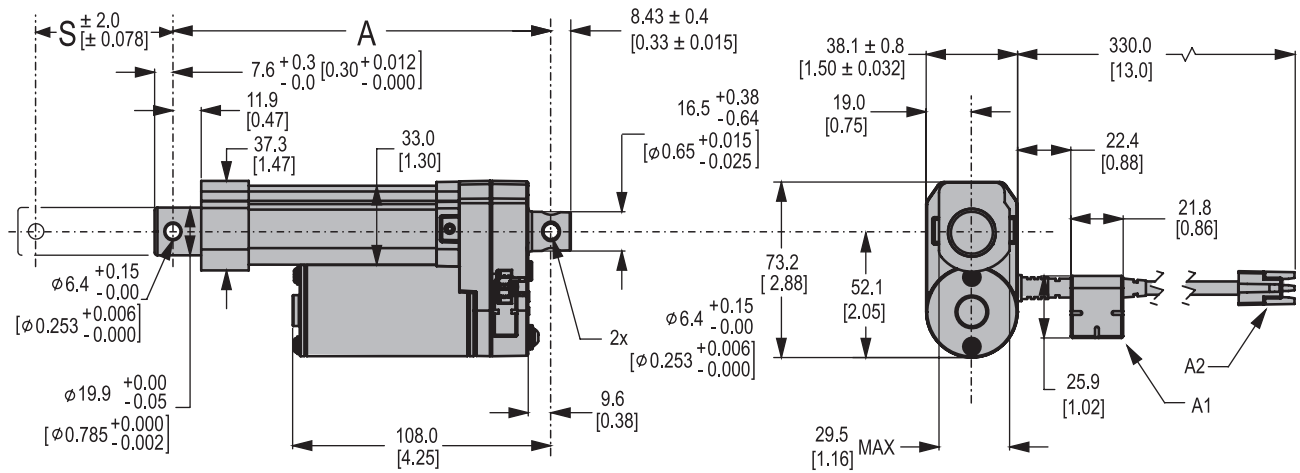
(2) Delphi Packard male connector 8911773 body

Electrical Specifications		
Available input voltages <sup>1)</sup>	[Vdc]	12, 24
Input voltage tolerance	[%]	± 10
Current draw @ no load/max. load	[A]	
M1-D012-0025		0.9/2.0
M1-D012-0050		0.6/2.5
M1-D012-0100		0.9/4.4
M1-D012-0165		0.7/3.4
M1-D024-0025		0.5/1.0
M1-D024-0050		0.3/1.3
M1-D024-0100		0.5/2.2
M1-D024-0165		0.4/1.1
Cable connector	[mm (in)]	Delphi Packard <sup>(2)</sup>
Without potentiometer option		-
With potentiometer option		-
Cable length	[mm (in)]	
Without potentiometer option		330 (13)
With potentiometer option		304 (12)
Cable leads cross section	[mm <sup>2</sup> (AWG)]	
Power supply leads		0.75 (18)
Potentiometer leads		0.26 (26)
Cable diameter	[mm (in)]	7.8 (0.31)



# M-Track – Dimensions

Dimensions	Projection
mm [inch]	



S: stroke  
 A: retracted length  
 A1: EMC filter  
 A2: 330 mm long cable with connector if no potentiometer, 304 mm long cable with no connector if potentiometer.

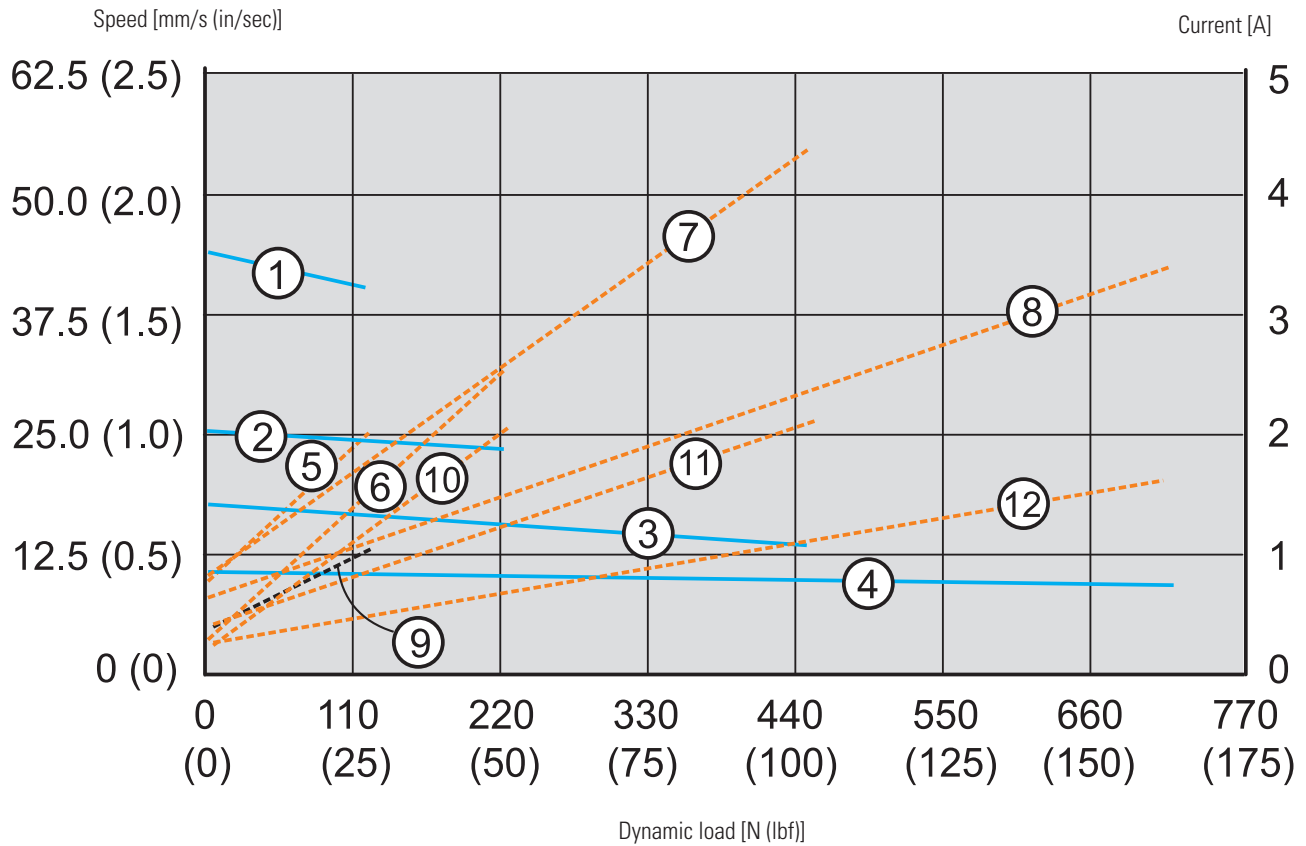
## Stroke, Retracted and Cover Tube Length and Weight Relationships

Ordering stroke (S)	[in]	1	2	3	4	5	6	7	8	9	10	11	12
Retracted length (A) without potentiometer	[mm]	132.6	158.0	183.4	209.0	234.4	260.1	285.5	310.9	336.6	362.0	387.4	413.0
	[in]	5.22	6.22	7.22	8.23	9.23	10.24	11.24	12.24	13.25	14.25	15.25	16.26
Retracted length (A) with potentiometer*	[mm]	-	191.8	217.7	243.1	268.5	293.9	319.5	344.9	370.3	395.7	421.1	446.5
	[in]	-	7.55	8.57	9.57	10.57	11.57	12.58	13.58	14.58	15.58	16.58	17.58
Weight without potentiometer	[kg]	0.50	0.58	0.66	0.75	0.83	0.91	0.99	1.07	1.15	1.24	1.32	1.40
	[lbs]	1.105	1.285	1.465	1.645	1.825	2.005	2.185	2.365	2.545	2.725	2.905	3.085
Weight with potentiometer	[kg]	-	0.66	0.75	0.83	0.91	0.99	1.07	1.15	1.24	1.32	1.40	1.48
	[lbs]	-	1.465	1.645	1.825	2.005	2.185	2.365	2.545	2.725	2.905	3.085	3.265

\* The extra retracted length added to a potentiometer model is only added to the cover tube length and not to the front or rear housings.

# M-Track – Performance Diagrams

Speed and Current vs. Load



**Speed**

- 1: M1-D012(24)-0025 (111 N (25 lbf))
- 2: M1-D012(24)-0050 (222 N (50 lbf))
- 3: M1-D012(24)-0100 (445 N (100 lbf))
- 4: M1-D012(24)-0165 (734 N (165 lbf))

**Current**

- 5: M1-D012-0025 (111 N (25 lbf))
- 6: M1-D012-0050 (222 N (50 lbf))
- 7: M1-D012-0100 (445 N (100 lbf))
- 8: M1-D012-0165 (734 N (165 lbf))
- 9: M1-D024-0025 (111 N (25 lbf))
- 10: M1-D024-0050 (222 N (50 lbf))
- 11: M1-D024-0100 (445 N (100 lbf))
- 12: M1-D024-0165 (734 N (165 lbf))

Dynamic load [N (lbf)]

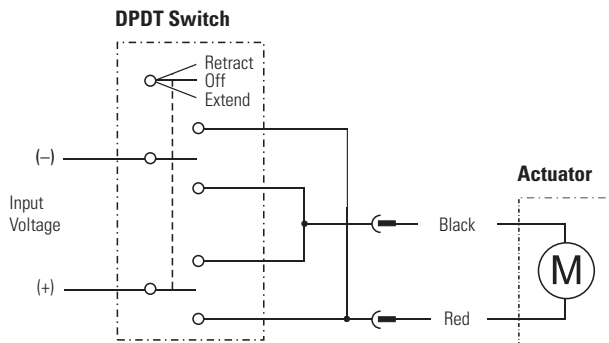


# M-Track – Ordering Key

Ordering Key			
1	2	3	4
<b>M1-D012-</b>	<b>0025-</b>	<b>01-</b>	<b>LN</b>
<p><b>1. Model and input voltage</b>  M1-D012- = M-Track, 12 Vdc  M1-D024- = M-Track, 24 Vdc</p> <p><b>2. Dynamic load capacity and screw type</b>  0025- = 111 N (25 lbf), acme  0050- = 222 N (50 lbf), acme  0100- = 445 N (100 lbf), acme  0165- = 734 N (165 lbf), acme</p>		<p><b>3. Ordering stroke length</b>  01- = 1 inch (25.4 mm)  02- = 2 inch (50.8 mm)  03- = 3 inch (76.2 mm)  04- = 4 inch (101.6 mm)  05- = 5 inch (127.0 mm)  06- = 6 inch (152.4 mm)  07- = 7 inch (177.8 mm)  08- = 8 inch (203.2 mm)  09- = 9 inch (228.6 mm)  10- = 10 inch (254.0 mm)  11- = 11 inch (279.4 mm)  12- = 12 inch (304.8 mm)</p> <p><b>4. Control option</b>  LN = End-of-stroke limit switches  LP = End-of-stroke limit switches and potentiometer feedback <sup>(1)</sup></p> <p>(1) Not possible with 1 inch stroke</p>	

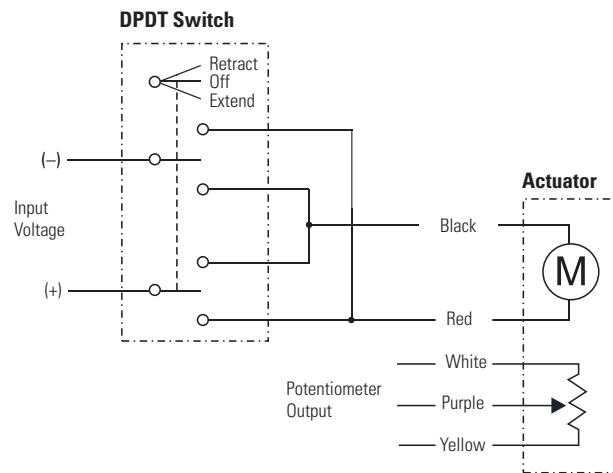
# M-Track – Electrical Connections

Standard		
Actuator supply voltage	[Vdc]	
M1-D012		12
M1-D024		24



Connect the red lead to positive and black to negative to extend the actuator. Change polarity to retract the actuator.

With Potentiometer		
Actuator supply voltage	[Vdc]	
M1-D012		12
M1-D024		24
Potentiometer type		linear membrane
Potentiometer resistance	[kohm]	12
Potentiometer max. input voltage	[Vdc]	27
Resistance tolerance	[%]	± 20
Potentiometer linearity	[%]	5
Potentiometer output resolution	[ohm/mm]	
M1-D0xx-xxxxA-01		not possible
M1-D0xx-xxxxA-02		472
M1-D0xx-xxxxA-04		236
M1-D0xx-xxxxA-06		118
M1-D0xx-xxxxA-08		79
M1-D0xx-xxxxA-10		47
M1-D0xx-xxxxA-12		39



Connect the red lead to positive and black to negative to extend the actuator. Change polarity to retract the actuator. The potentiometer output has 0 ohm between white and purple leads when the actuator is fully retracted and 12 kohm when fully extended.