



# DMD – Technical Features



## Standard Features

- Self supporting column in extruded anodized aluminum with high load torque capability
- 12 or 24 Vdc as standard input voltages
- Static load up to 18 kN (4000 lbf)
- Dynamic load up to 6.8 kN (1500 lbf)
- Stroke up to 24 inch
- Speed up to 71 mm/s (2.8 in/s)
- Protection class static IP65
- Rugged, robust and strong
- T-slot grooves along the entire profile
- Maintenance free

## General Specifications

Screw type	acme or ball
Nut type DMDxxxxA (acme screw) DMDxxxxB (ball screw)	self locking lead nut load lock ball nut
Manual override	no
Anti-rotation	yes
Static load holding brake acme screw ball screw	no (self-locking) yes
Safety features	overload clutch auto reset thermal switch
Electrical connections	cable with flying leads
Compliances	CE

## Optional Electrical Features

Potentiometer feedback

## Compatible Controls

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

## DMD – Technical Specifications

Mechanical Specifications		
Max. static load <sup>(1)</sup> DMDxxxxA (acme screw) DMDxxxxB (ball screw)	[N (lbf)]	11350 (2500) 18000 (4000)
Max. dynamic load (Fx) DMDxx05A5 DMDxx10A5 DMDxx20A5 DMDxx05B5 DMDxx10B5 DMDxx20B5 DMDxx21B5	[N (lbf)]	1100 (250) 2250 (500) 2250 (500) 2250 (500) 4500 (1000) 4500 (1000) 6800 (1500)
Max. load torque, dyn. and static DMDxx-xxA (acme screw) DMDxx-xxB (ball screw)	[Nm (lbf-in)]	565 (5000) 710 (6284)
Speed @ no load/max. load DMDxx05A5 DMDxx10A5 DMDxx20A5 DMDxx05B5 DMDxx10B5 DMDxx20B5 DMDxx21B5	[mm/s (in/s)]	54/32 (2.10/1.20) 30/18 (1.20/0.70) 15/12 (0.67/0.45) 61/37 (2.40/1.40) 30/19 (1.30/0.80) 15/12 (0.60/0.45) 15/11 (0.60/0.43)
Min. ordering stroke (S) length	[in]	4
Max. ordering stroke (S) length <sup>(2)</sup>	[in]	24
Ordering stroke length increments	[in]	2
Operating temperature limits	[°C (F)]	-25–65 (-15–150)
Full load duty cycle @ 25 °C (77 °F)	[%]	25
End play, maximum	[mm (in)]	1.0 (0.04)
Protection class - static		IP65

(1) Max. static load at fully retracted stroke

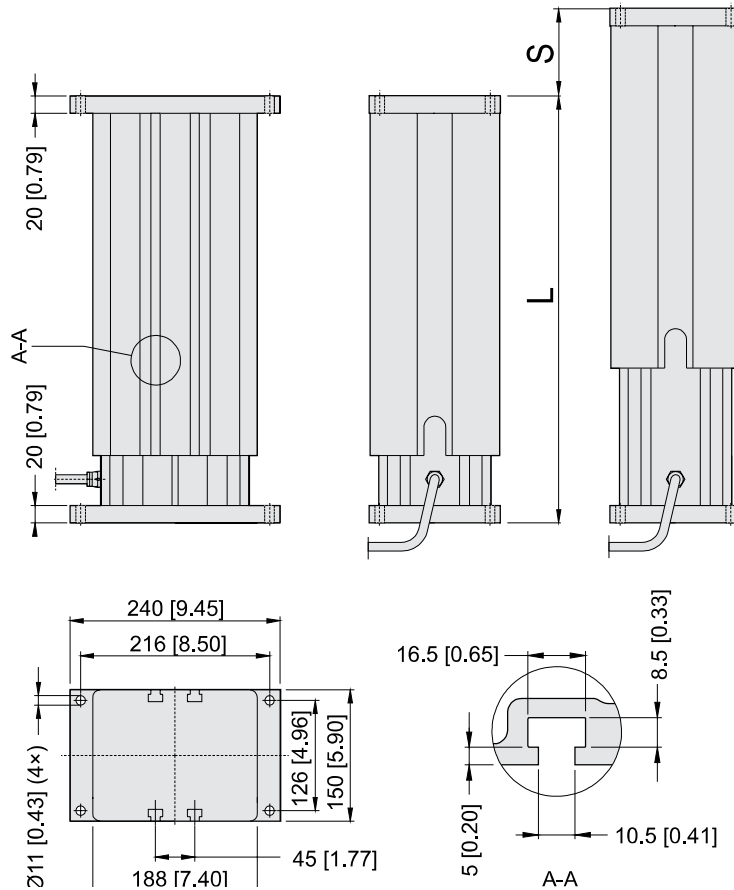
Electrical Specifications		
Available input voltages <sup>(1)</sup>	[Vdc]	12, 24
Input voltage tolerance	[%]	± 10
Current draw @ no load/max. load <sup>(2)</sup>	[A]	
DMD1205A5		12.0/34.0
DMD1210A5		7.0/27.0
DMD1220A5		5.0/15.0
DMD1205B5		7.0/27.0
DMD1210B5		5.0/25.0
DMD1220B5		4.0/13.0
DMD1221B5		4.0/20.0
DMD2405A5		6.0/17.0
DMD2410A5		4.0/13.0
DMD2420A5		2.0/7.5
DMD2405B5		4.0/14.0
DMD2410B5		2.0/12.5
DMD2420B5		2.0/7.5
DMD2421B5		2.0/10.0
Cable length	[mm (in)]	2000 (79)
Cable diameter	[mm (in)]	9 (0.35)
Cable leads cross section motor leads potentiometer leads	[mm <sup>2</sup> (AWG)]	2.5 (10) 1 (17)

(1) For other input voltages - contact customer support.

(2) For current draw for 36 Vdc input voltage models - contact customer support.



# DMD – Dimensions



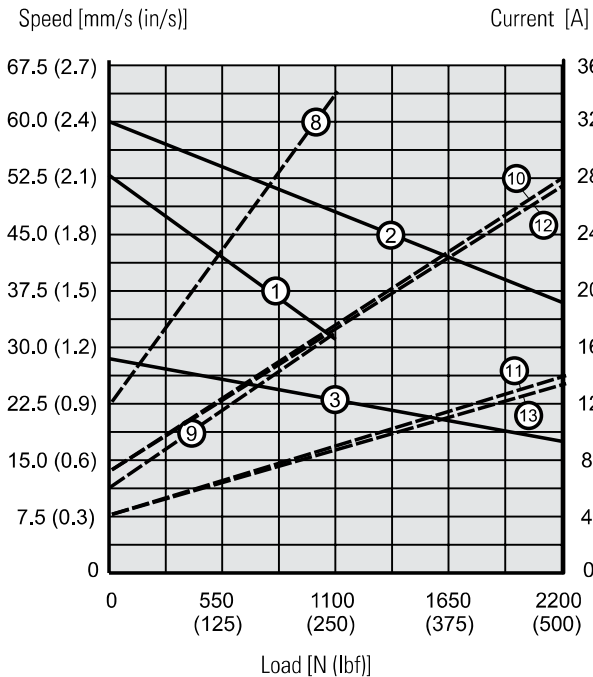
Dimensions	Projection
mm [inch]	

## Stroke, Retracted Length and Weight Relationships

Ordering stroke (S)	[in]	4	6	8	10	12	14	16	18	20	24
Retracted length, acme screw models (A)	[mm]	329.6	380.4	431.2	482.0	532.8	633.6	684.4	735.2	786.0	887.6
	[in]	13.0	15.0	17.0	19.0	21.0	24.9	26.9	28.9	30.9	34.9
Retracted length, ball screw models (A)	[mm]	369.6	420.4	471.2	522.0	572.8	673.6	724.4	775.2	826.2	927.6
	[in]	14.6	16.6	18.6	20.6	22.6	26.5	28.5	30.5	32.5	36.5
Add on length for option potentiometer	[mm]	55.0									
	[in]	2.17									
Weight, acme screw models	[kg]	18.7	20.2	21.6	23.1	24.6	27.3	28.7	30.2	31.7	34.6
	[lbf]	41.2	44.5	47.6	50.9	54.2	60.2	63.3	66.6	69.9	76.3
Weight, ball screw models	[kg]	20.4	21.9	23.4	24.8	26.3	29.0	30.4	31.9	33.4	36.3
	[lbf]	45.0	48.3	51.6	54.7	58.0	63.9	67.0	70.3	73.6	80.0
Add on weight for option potentiometer	[kg]	1.3									
	[lbf]	2.9									

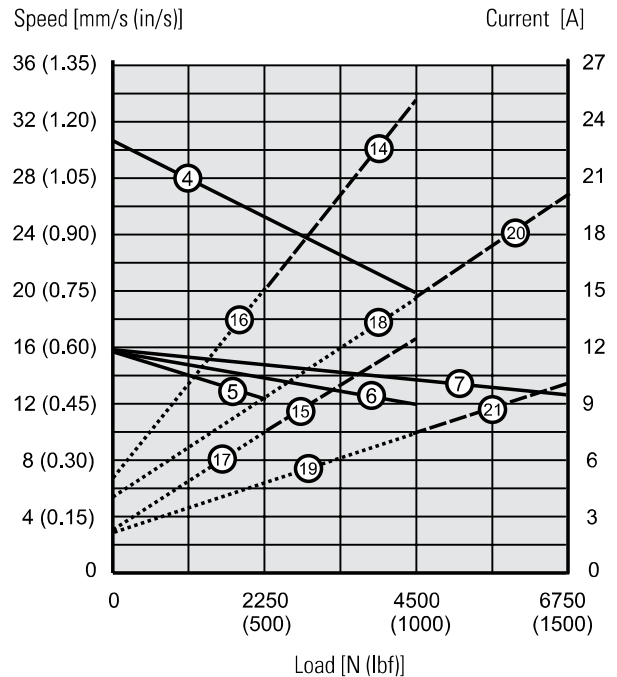
# DMD – Performance Diagrams

Speed and Current vs. Load - Diagram 1



- |                               |                                 |
|-------------------------------|---------------------------------|
| <u>Speed Curves Diagram 1</u> | <u>Current Curves Diagram 1</u> |
| 1: DMDxx05A5                  | 8: DMD1205A5                    |
| 2: DMDxx05B5                  | 9: DMD2405A5                    |
| 3: DMDxx10A5                  | 10: DMD1205B5                   |
|                               | 11: DMD2405B5                   |
|                               | 12: DMD1210A5                   |
|                               | 13: DMD2410A5                   |

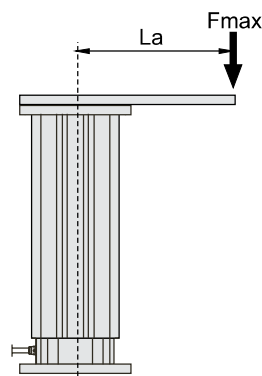
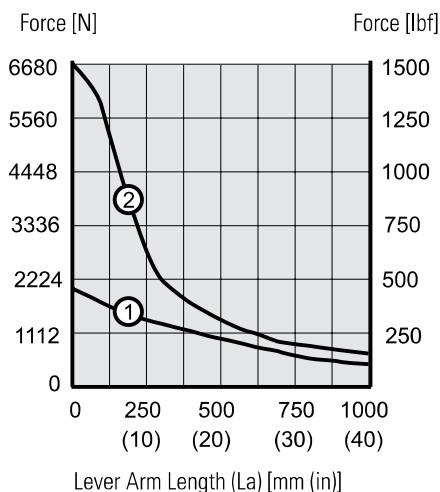
Speed and Current vs. Load - Diagram 2



- |                               |                                 |
|-------------------------------|---------------------------------|
| <u>Speed Curves Diagram 2</u> | <u>Current Curves Diagram 2</u> |
| 4: DMDxx10B5                  | 14: DMD1210B5                   |
| 5: DMDxx20A5                  | 15: DMD2410B5                   |
| 6: DMDxx20B5                  | 16: DMD1220A5                   |
| 7: DMDxx21B5                  | 17: DMD2420A5                   |
|                               | 18: DMD1220B5                   |
|                               | 19: DMD2420B5                   |
|                               | 20: DMD1221B5                   |
|                               | 21: DMD2421B5                   |

Contact customer service for data on 36 Vdc models.

## Off Center Load Capacity



- 1: Acme screw models  
2: Ball screw models



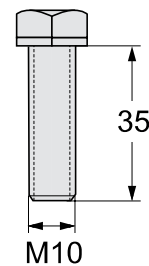
## DMD – Ordering Key

Ordering Key			
1	2	3	4
DMD12-	05A5-	10	P0
<p><b>1. Model and input voltage</b>            DMD12- = lifting column type DMD, 12 Vdc            DMD24- = lifting column type DMD, 24 Vdc</p> <p><b>2. Screw type, dynamic load capacity</b>            05A5 - = 1100 N, acme, 54 mm/s            10A5 - = 2250 N, acme, 30 mm/s            20A5 - = 2250 N, acme, 15 mm/s            05B5 - = 2250 N, ball, 61 mm/s            10B5 - = 4500 N, ball, 30 mm/s            20B5 - = 4500 N, ball, 15 mm/s            21B5 - = 6800 N, ball, 15 mm/s</p>		<p><b>3. Ordering stroke length <sup>(1)</sup></b>            04 = 4 inch (101.6 mm)            06 = 6 inch (152.4 mm)            08 = 8 inch (203.2 mm)            10 = 10 inch (254.0 mm)            12 = 12 inch (304.8 mm)            14 = 14 inch (355.6 mm)            16 = 16 inch (406.4 mm)            18 = 18 inch (457.2 mm)            20 = 20 inch (508.0 mm)            24 = 24 inch (609.6 mm)</p> <p><b>4. Options <sup>(2)</sup></b>            P0 = potentiometer</p> <p>(1) Other stroke lengths available upon request. Contact customer support.            (2) Leave position blank for no option.</p>	

## DMD – Accessories

T-slot Bolt	
Designation	Part Number
M10 T-slot bolt	D800041

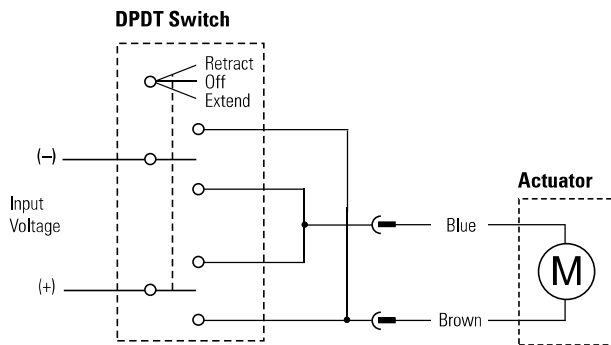
The T-slot bolt fits in to the T-slot running along the outer profile of the lifting column. The T-slot bolts can be used to mount the unit instead of using the upper mounting plate, or/and for attaching other components to the profile.



Dimensions  
mm

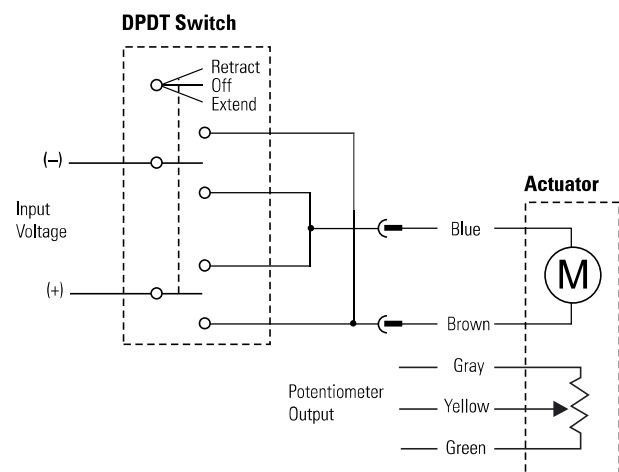
# DMD – Electrical Connections

Without Option		
Actuator supply voltage	[Vdc]	
DMD12		12
DMD24		24



Connect the brown lead to positive and blue to negative to extend the actuator. Change polarity to retract the actuator.

Option Potentiometer		
Actuator supply voltage	[Vdc]	
DMD12		12
DMD24		24
Potentiometer type		wire-wound
Potentiometer max. input voltage	[Vdc]	32
Potentiometer max. power	[W]	2
Potentiometer linearity	[%]	± 0.25
Potentiometer output resolution	[ohm/mm]	
2 - 10 inch stroke		39
11 - 20 inch stroke		20
21 - 24 inch stroke		10



Connect the brown lead to positive and blue to negative to extend the actuator. Change polarity to retract the actuator. The potentiometer output has 0 ohm between gray and yellow when the actuator is fully extended.



# DMA – Technical Features



## Standard Features

- Self-supporting column in extruded anodized aluminium with high load torque capability
- 1 × 230 Vac standard input voltage
- Static load up to 18 kN (4000 lbf)
- Dynamic load up to 9 kN (2000 lbf)
- Stroke up to 24 inch
- Speed up to 71 mm/s (2.8 in/s)
- Protection class static IP45
- Rugged, robust and strong
- T-slot grooves along the entire profile
- Maintenance free

## General Specifications

Screw type	acme or ball
Nut type DMDxx-xxA (acme screw) DMDxx-xxB (ball screw)	self-locking lead nut load lock ball nut
Manual override	no
Anti-rotation	yes
Static load holding brake acme screw ball screw	no (self-locking) yes
Safety features	overload clutch auto reset thermal switch
Electrical connections	cable with flying leads
Compliances	CE

## Accessories

T-slot bolts

## Compatible Controls

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

## DMA – Technical Specifications

Mechanical Specifications		
Max. static load <sup>(1)</sup>	[N (lbf)]	
DMA22xxA (acme screw)		11350 (2500)
DMA22xxB (ball screw)		18000 (4000)
Max. dynamic load (Fx)	[N (lbf)]	
DMA2205A5		1100 (250)
DMA2210A5		2250 (500)
DMA2220A5		2250 (500)
DMA2205B5		2250 (500)
DMA2210B5		4500 (1000)
DMA2220B5		4500 (1000)
DMA2221B5		6800 (1500)
Max. load torque, dyn. and static	[Nm (lbf-in)]	
DMAxxxxA (acme screw)		565 (5000)
DMAxxxxB (ball screw)		710 (6284)
Speed @ no load/max. load	[mm/s (in/s)]	
DMA2205A5		54/32 (2.10/1.20)
DMA2210A5		30/18 (1.20/0.70)
DMA2220A5		15/12 (0.67/0.45)
DMA2205B5		61/37 (2.40/1.40)
DMA2210B5		30/19 (1.30/0.80)
DMA2220B5		15/12 (0.60/0.45)
DMA2221B5		15/11 (0.60/0.43)
Min. ordering stroke (S) length	[in]	4
Max. ordering stroke (S) length	[in]	24
Ordering stroke length increments	[in]	2
Operating temperature limits	[°C (F)]	-25 – 65 (-15 – 150)
Max. on time	[s]	45
Full load duty cycle @ 25 °C (77 °F)	[%]	25
End play, maximum	[mm (in)]	1.0 (0.04)
Protection class - static, standard (optional)		IP45

(1) Max. static load at fully retracted stroke

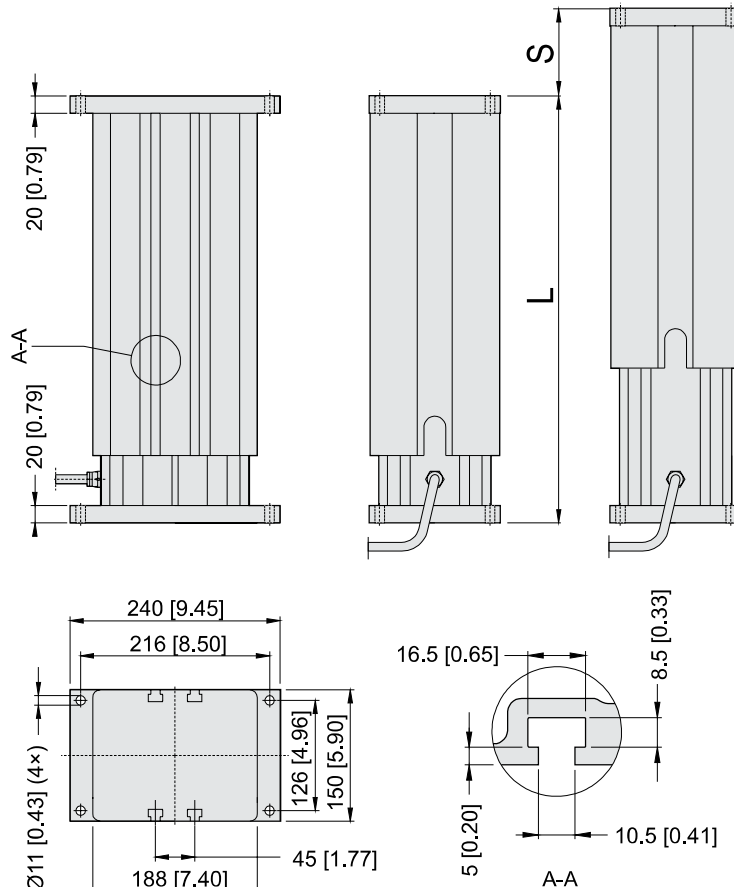
Electrical Specifications		
Available input voltages	[Vac]	1 × 230 <sup>(1)</sup>
Input voltage tolerance	[%]	± 10
Current draw @ no load/max. load	[A]	
DMA2205A5		1.10/1.55
DMA2210A5		0.85/1.30
DMA2220A5		0.95/1.25
DMA2205B5		0.85/1.30
DMA2210B5		0.85/1.30
DMA2220B5		0.85/1.30
DMA2221B5		0.85/1.25
Cable length	[mm (in)]	0.6 (24)
Cable diameter	[mm (in)]	9 (0.35)
Cable leads cross section	[mm <sup>2</sup> (AWG)]	2.5 (14)

(1) Capacitor 10 µF ( p/n 9200-448-003) required to run the actuator.





# DMA – Dimensions



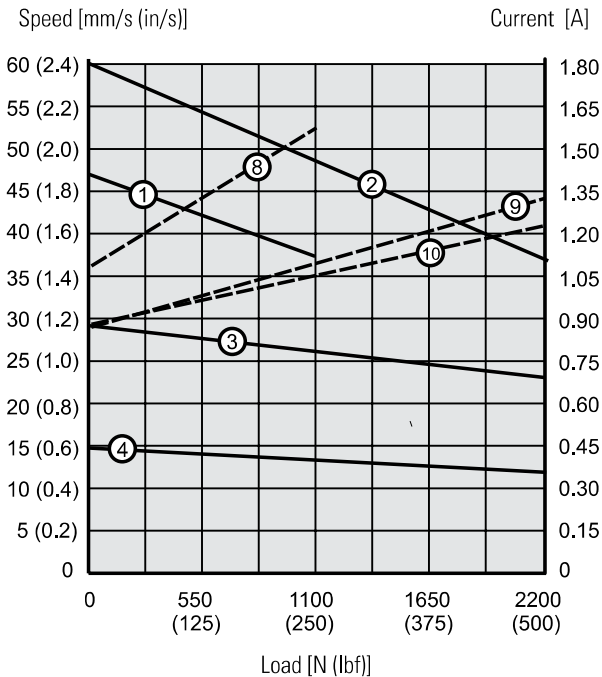
Dimensions	Projection
mm [inch]	

## Stroke, Retracted Length and Weight Relationships

Ordering stroke (S)	[in]	4	6	8	10	12	14	16	18	20	24
Retracted length, acme screw models (A)	[mm]	329.6	380.4	431.2	482.0	532.8	633.6	684.4	735.2	786.0	887.6
	[in]	13.0	15.0	17.0	19.0	21.0	24.9	26.9	28.9	30.9	34.9
Retracted length, ball screw models (A)	[mm]	369.6	420.4	471.2	522.0	572.8	673.6	724.4	775.2	826.2	927.6
	[in]	14.6	16.6	18.6	20.6	22.6	26.5	28.5	30.5	32.5	36.5
Weight, acme screw models	[kg]	20.9	22.4	23.8	25.3	26.8	29.5	30.9	32.4	33.9	36.8
	[lbf]	46.1	49.4	52.5	55.8	59.1	65.0	68.1	71.4	74.7	81.1
Weight, ball screw models	[kg]	22.6	24.1	25.6	27.0	28.5	31.2	32.6	34.1	35.6	38.6
	[lbf]	49.8	53.1	56.4	59.5	62.8	68.8	71.9	75.2	78.5	85.1

# DMA – Performance Diagrams

Speed and Current vs. Load - Diagram 1



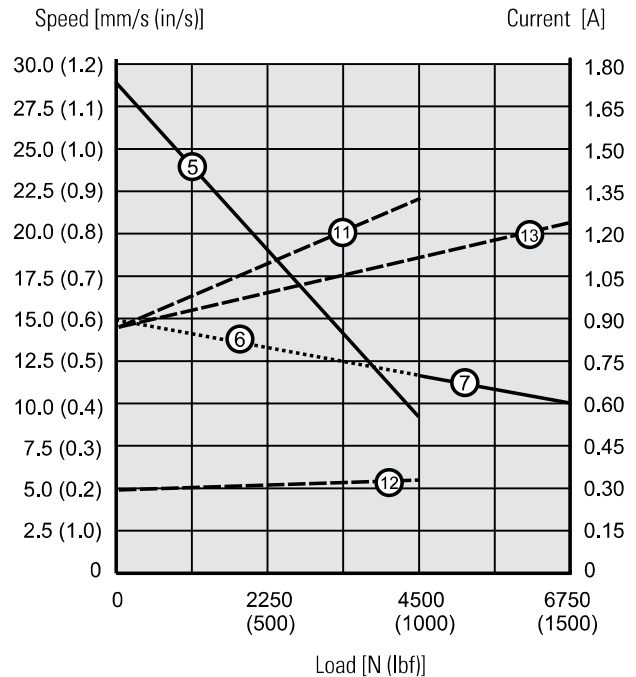
Speed Curves Diagram 1

- 1: DMA2205A5
- 2: DMA2205B5
- 3: DMA2210A5
- 4: DMA2220A5

Current Curves Diagram 1

- 8: DMA2205A5
- 9: DMA2205B5(10A5)
- 10: DMA2220A5

Speed and Current vs. Load - Diagram 2



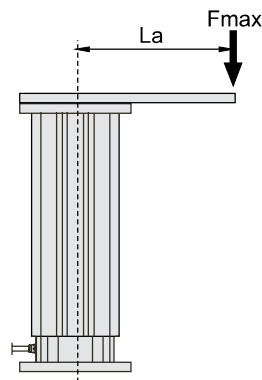
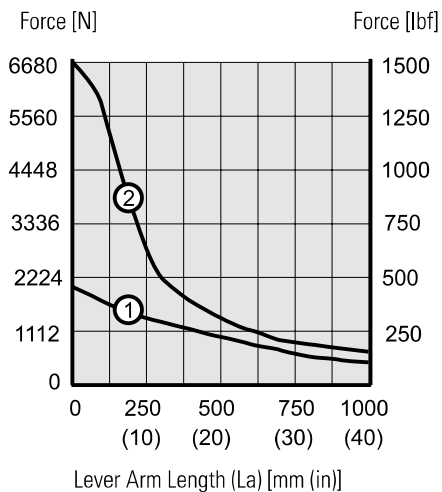
Speed Curves Diagram 2

- 5: DMA2210B5
- 6: DMA2220B5
- 7: DMA2221B5

Current Curves Diagram 2

- 11: DMA2210B5(20B5)
- 12: DMA2220B5
- 13: DMA2221B5

Off Center Load Capacity



- 1: Acme screw models
- 2: Ball screw models



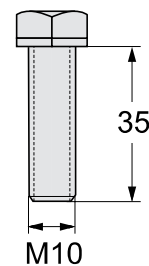
## DMA – Ordering Key

Ordering Key		
1	2	3
DMA22	05A5-	10
<b>1. Model and input voltage</b> DMA22 = lifting column type DMA, 1 × 230 Vac  <b>2. Screw type, dynamic load capacity</b> 05A5 - = 1100 N, acme, 54 mm/s 10A5 - = 2250 N, acme, 30 mm/s 20A5 - = 2250 N, acme, 15 mm/s 05B5 - = 2250 N, ball, 61 mm/s 10B5 - = 4500 N, ball, 30 mm/s 20B5 - = 4500 N, ball, 15 mm/s 21B5 - = 6800 N, ball, 15 mm/s		<b>3. Ordering stroke length <sup>(1)</sup></b> 04 = 4 inch (101.6 mm) 06 = 6 inch (152.4 mm) 08 = 8 inch (203.2 mm) 10 = 10 inch (254.0 mm) 12 = 12 inch (304.8 mm) 14 = 14 inch (355.6 mm) 16 = 16 inch (406.4 mm) 18 = 18 inch (457.2 mm) 20 = 20 inch (508.0 mm) 24 = 24 inch (609.6 mm)
		(1) Other stroke lengths available upon request. Please contact customer support. (2) Leave position blank for no option.

## DMA – Accessories

T-slot Bolt	
Designation	Part Number
M10 T-slot bolt	D800041

The T-slot bolt fits in to the T-slot running along the outer profile of the lifting column. The T-slot bolts can be used to mount the unit instead of using the upper mounting plate, or/and for attaching other components to the profile.

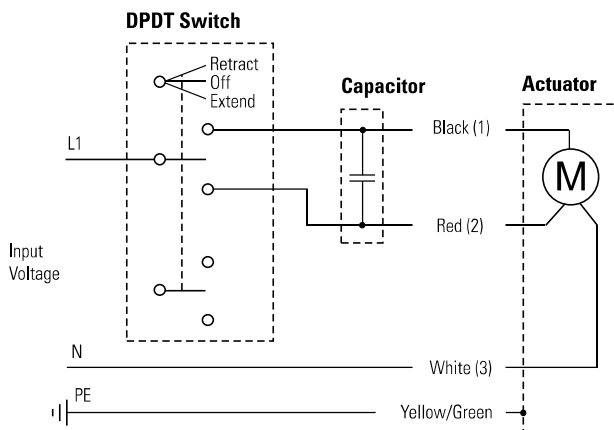


Dimensions
mm

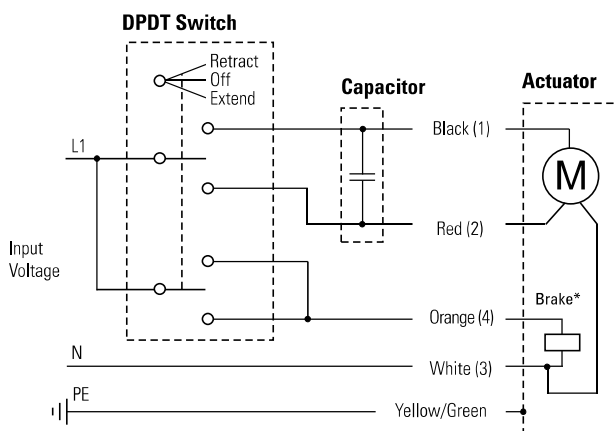
# DMA – Electrical Connections

Input Voltage 230 Vac		
Actuator supply voltage DMA22	[Vac]	1 × 230

### Acme screw models (no anti-coast brake)



### Ball screw models (with anti-coast brake)



Leads can be either color or number marked. To be able to run the actuator, a 10  $\mu$ F capacitor must be connected between black (1) and red (2) leads. See page 54 for ordering of capacitors. Connect black (1) lead to L1 and white (3) lead to N (neutral) to retract the actuator. Change L1 from lead black (1) to lead red (2) to extend the actuator. Ball screw models have an anti-coast brake\*, that must be released during motion, which is done by connecting orange (4) lead to L1. Acme models do not have any anti-coast brake.