



## Linear Actuators

Advanced Components for Industrial, Mobile and Structural Applications

Specifications				
	Electrak® HD	Electrak GX DC	Electrak GX AC	
				
Screw type	ball	acme or ball	acme or ball	
Manual operation	yes	optional	optional	
Static load holding	yes	yes	yes	
End-of-stroke protection	internal limit switches	clutch	clutch	
Overload protection	yes	yes	yes	
Available input voltages	[Vdc] [Vac]			
	12, 24 -	12, 24, 36, 48, 90 -	- 1 × 115, 1 × 230, 3 × 400	
Max. static load	[N (lbf)]			
	18000 (4000)	18000 (4000)	18000 (4000)	
Max. dynamic load (Fx)	[N (lbf)]			
	16000 (3584)	9000 (2000)	9000 (2000)	
Max. speed @ no load/max. load	[mm/s (in/s)]			
	71/58 (2.80/2.28)	61/37 (2.40/1.40)	53/43 (2.10/1.70)	
Max. ordering stroke (S) length	[mm] / [in]			
	1000 / -	- / 24	- / 24	
Restraining torque	[Nm (lbf-in)]			
	0	11.3 (100)	11.3 (100)	
Operating temperature limits	[°C (F)]			
	- 40 – 85 (- 40 – 185)	- 25 – 65 (- 15 – 150)	- 25 – 65 (- 15 – 150)	
Full load duty cycle @ 25 °C (77 °F)	[%]			
	25	25	25	
Ingress protection rating - static				
	IP67 / IP69K	IP66 / IP69K	IP45	
Control options				
	<ul style="list-style-type: none"> <li>• End-of-stroke output</li> <li>• Analog position feedback</li> <li>• Digital position feedback</li> <li>• Low-level switching</li> <li>• Synchronization</li> <li>• CANopen or SAE J1939 CAN bus</li> </ul>	<ul style="list-style-type: none"> <li>• Analog position feedback</li> </ul>	<ul style="list-style-type: none"> <li>• Analog position feedback</li> </ul>	
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**Do you want help to size and select the best match for your application?  
LinearMotioneering will guide you through the whole process!  
[www.linearactuators.linearmotioneering.com](http://www.linearactuators.linearmotioneering.com)**

# Electrak® GX DC – Technical Features



## Standard Features

- Robust and reliable
- 12, 24, 36, 48 or 90 Vdc as standard input voltages
- Acme and ball screw models
- Static load up to 18 kN (4000 lbf)
- Dynamic load up to 9 kN (2000 lbf)
- Stroke up to 24 in (609 mm)
- Speed up to 61 mm/s (2.4 in/s)
- Protection class static IP66
- Overload clutch for mid and end of stroke protection
- Motor with thermal switch
- Maintenance free

## General Specifications

Screw type	acme or ball
Nut type Dxxx-xxA (acme screw) Dxxx-xxB (ball screw)	self locking lead nut load lock ball nut
Manual override	no (optional)
Anti-rotation	no
Static load holding brake acme screw models ball screw models	no (self locking) yes
Safety features	overload clutch motor auto reset thermal switch
Anti coast brake	yes
Electrical connections no potentiometer option with potentiometer option	flying leads with or without connector cable with or without connector
Compliances standard optional	– CE <sup>(1)(2)</sup>

(1) Actuators used in the EU must be in compliance with CE

(2) The 90 Vdc model cannot be delivered in compliance with CE.

## Optional Mechanical Features

Variety of front and rear adapters

Manual override

## Optional Electrical Features

Potentiometer feedback

## Accessories

Mechanical

Mounting pins

## Compatible Controls

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

# Electrak® GX DC – Technical Specifications

Mechanical Specifications		
Max. static load <sup>(1)</sup>	[N (lbf)]	
Dxx-xxA (acme screw)		11350 (2500)
Dxx-xxB (ball screw)		18000 (4000)
Max. dynamic load (Fx)	[N (lbf)]	
Dxxx-05A5		1100 (250)
Dxxx-10A5		2250 (500)
Dxxx-20A5		2250 (500)
Dxxx-05B5		2250 (500)
Dxxx-10B5		4500 (1000)
Dxxx-20B5		4500 (1000)
Dxxx-21B5		6800 (1500)
Dxxx-2KB5		9000 (2000)
Speed @ no load/max. load	[mm/s (in/s)]	
Dxxx-05A5		54/32 (2.10/1.20)
Dxxx-10A5		30/18 (1.20/0.70)
Dxxx-20A5		15/12 (0.67/0.45)
Dxxx-05B5		61/37 (2.40/1.40)
Dxxx-10B5		30/19 (1.30/0.80)
Dxxx-20B5		15/12 (0.60/0.45)
Dxxx-21B5		15/11 (0.60/0.43)
Dxxx-2KB5		15/9 (0.60/0.40)
Min. ordering stroke (S) length	[in]	2
Max. ordering stroke (S) length <sup>(2)(3)(4)</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)
Restraining torque	[Nm (lbf-in)]	11.3 (100)
Protection class - static, standard (optional)		IP66 (IP66/IP69K)
Salt spray resistance	[h]	96

(1) Max. static load at fully retracted stroke

(2) Max. ordering stroke length for Dxx-2KB5 is 12 inches

(3) Max. ordering stroke length for Dxx-21B5 is 20 inches

(4) For other strokes, contact customer support

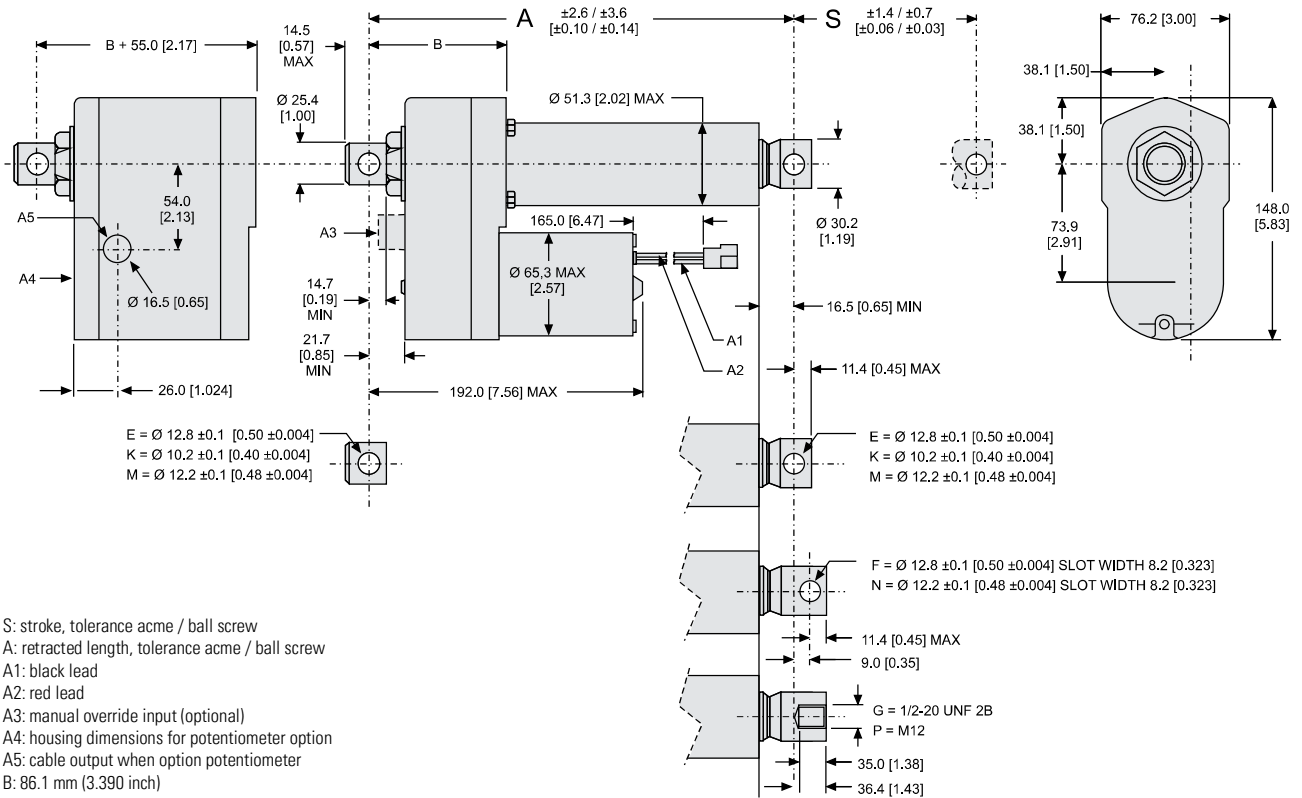
Electrical Specifications		
Available input voltages <sup>(1)(2)</sup>	[Vdc]	12, 24, 36, 48, 90
Input voltage tolerance	[%]	± 10
Current draw @ no load/max. load	[A]	
D12x-05A5		12.0/33.0
D12x-10A5		8.0/27.0
D12x-20A5		3.0/15.0
D12x-05B5		8.0/28.0
D12x-10B5		5.0/27.0
D12x-20B5		3.0/13.0
D12x-21B5		3.0/20.0
D12x-2KB5		4.0/25.0
D24x-05A5		6.0/16.5
D24x-10A5		4.0/13.5
D24x-20A5		1.5/7.5
D24x-05B5		4.0/14.0
D24x-10B5		2.5/13.5
D24x-20B5		1.5/7.5
D24x-21B5		1.5/10.0
D24x-2KB5		2.0/12.5
D36x-05A5		4.0/11.0
D36x-10A5		2.67/9.0
D36x-20A5		1.0/5.1
D36x-05B5		2.67/9.3
D36x-10B5		1.67/9.0
D36x-20B5		1.0/5.1
D36x-21B5		1.0/6.7
D36x-2KB5		1.34/8.4
D48x-05A5		3.0/8.3
D48x-10A5		2.0/6.8
D48x-20A5		0.8/3.8
D48x-05B5		2.0/7.0
D48x-10B5		1.3/6.8
D48x-20B5		0.8/3.8
D48x-21B5		0.8/5.0
D48x-2KB5		1.0/6.3
D90x-05A5		1.5/4.1
D90x-10A5		1.0/3.4
D90x-20A5		0.4/1.9
D90x-05B5		1.0/3.5
D90x-10B5		0.6/3.4
D90x-20B5		0.4/1.9
D90x-21B5		0.4/2.5
D90x-2KB5		0.5/3.2
Flying leads length	[mm (in)]	165 (7.5)
Flying leads diameter	[mm (in)]	3 (0.12)
Flying leads cross section	[mm <sup>2</sup> (AWG)]	2 (14)
Cable length with option pot.	[mm (in)]	600 (24)
Cable diameter with option pot.	[mm (in)]	9 (0.35)
Cable leads cross section with option potentiometer	[mm <sup>2</sup> (AWG)]	
motor leads		2.5 (14)
potentiometer leads		1.5 (16)

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

(2) 90 Vdc model not CE compliant.

# Electrak® GX DC – Dimensions

Dimensions	Projection
mm [inch]	

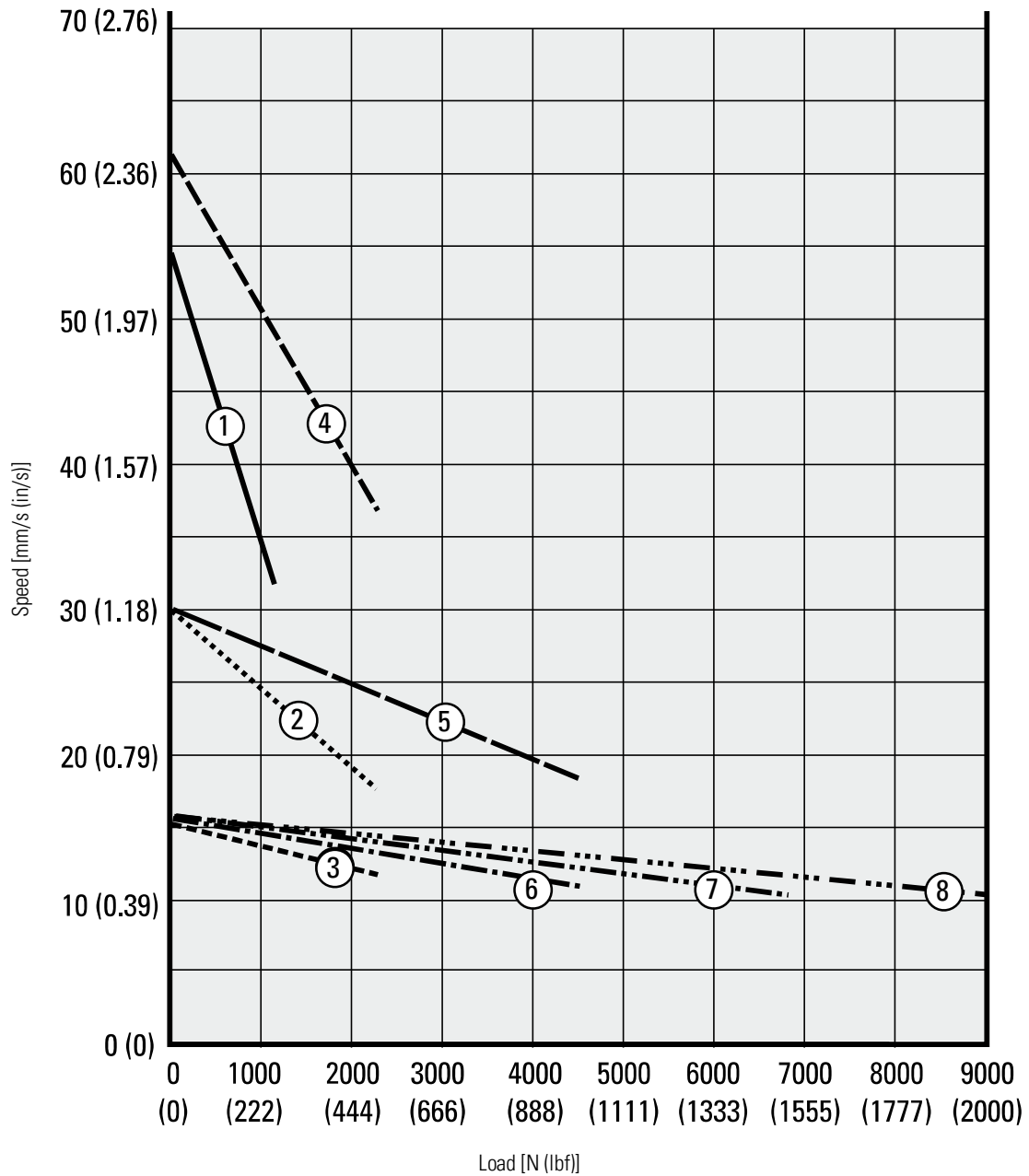


## Stroke, Retracted Length and Weight Relationships

Ordering stroke (S)	[in]	2	4	6	8	10	12	14	16	18	20	22	24
Retracted length, acme screw models (A)	[mm]	211.3	262.1	312.9	363.7	414.5	465.3	583.7	634.5	685.3	736.1	786.9	837.7
	[in]	8.32	10.32	12.32	14.32	16.32	18.32	22.98	24.98	26.98	28.98	30.98	32.98
Retracted length, ball screw models (A)	[mm]	251.5	302.3	353.1	403.9	454.7	505.5	623.6	674.4	725.2	776.0	826.8	877.6
	[in]	9.90	11.90	13.90	15.90	17.90	19.90	24.55	26.55	28.55	30.55	32.55	34.55
Add on length for option potentiometer	[mm]	55.0											
	[in]	2.17											
Weight, acme screw models	[kg]	4.4	4.6	4.8	5.0	5.1	5.3	5.5	5.6	5.8	5.9	6.1	6.2
	[lbf]	9.7	10.1	10.6	11.0	11.2	11.7	12.1	12.3	12.8	13.0	13.4	13.6
Weight, ball screw models	[kg]	5.0	5.2	5.4	5.6	5.8	6.0	6.1	6.2	6.4	6.5	6.7	6.9
	[lbf]	11.0	11.4	11.9	12.3	12.8	13.2	13.4	13.6	14.1	14.3	14.7	15.2
Add on weight for option potentiometer	[kg]	1.30											
	[lbf]	2.86											

# Electrak® GX DC – Performance Diagrams

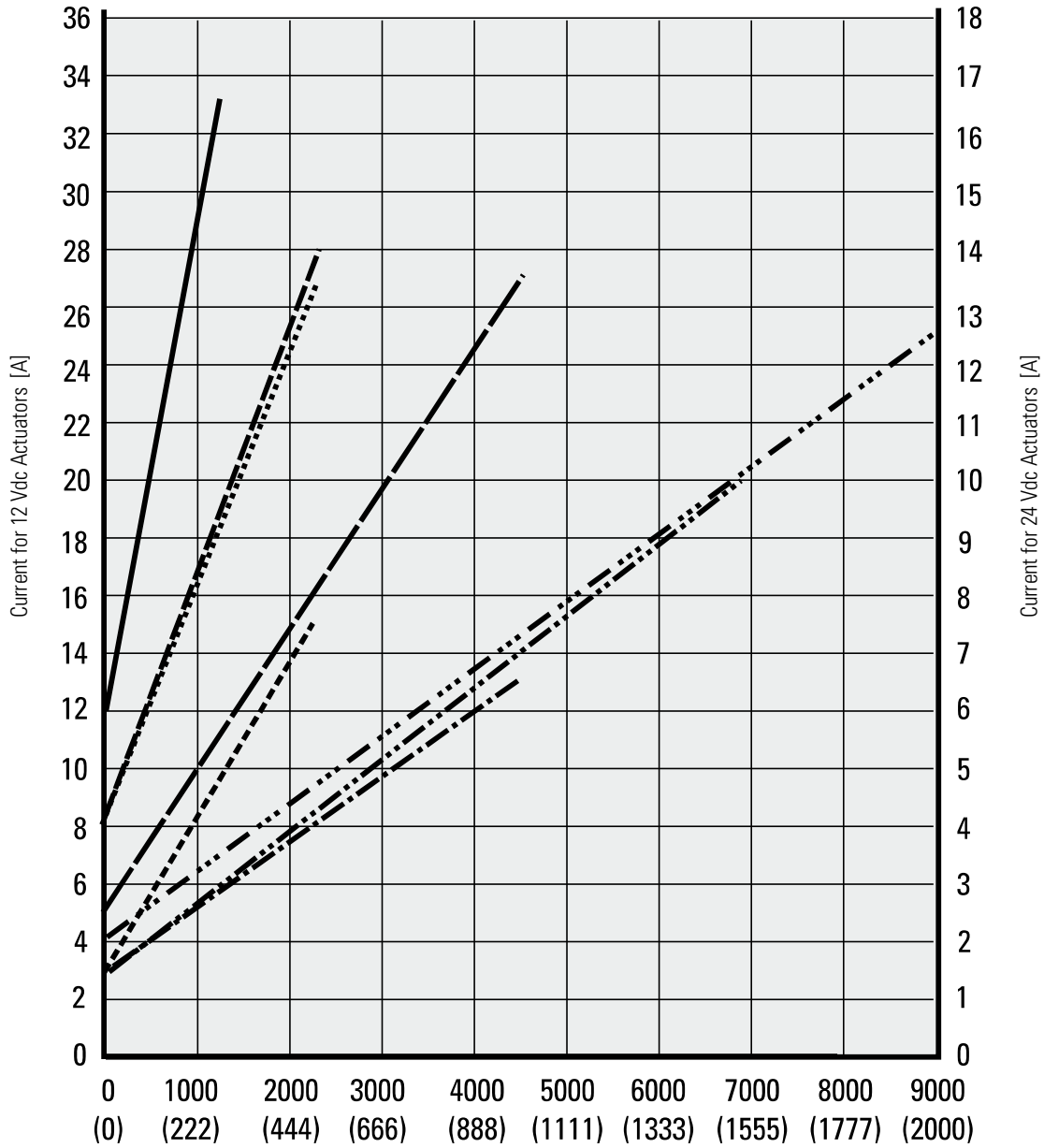
Load vs. Speed



- |                                 |           |                                  |                 |
|---------------------------------|-----------|----------------------------------|-----------------|
| 1. Dxxx-05A5 (1100 N (250 lbf)) | —————     | 5. Dxxx-10B5 (4500 N (1000 lbf)) | —————           |
| 2. Dxxx-10A5 (2250 N (500 lbf)) | .....     | 6. Dxxx-20B5 (4500 N (1000 lbf)) | - - - - -       |
| 3. Dxxx-20A5 (2250 N (500 lbf)) | - - - - - | 7. Dxxx-21B5 (6800 N (1500 lbf)) | - . - . - .     |
| 4. Dxxx-05B5 (2250 N (500 lbf)) | - - - - - | 8. Dxxx-2KB5 (9000 N (2000 lbf)) | - . . . - . . . |

# Electrak® GX DC – Performance Diagrams

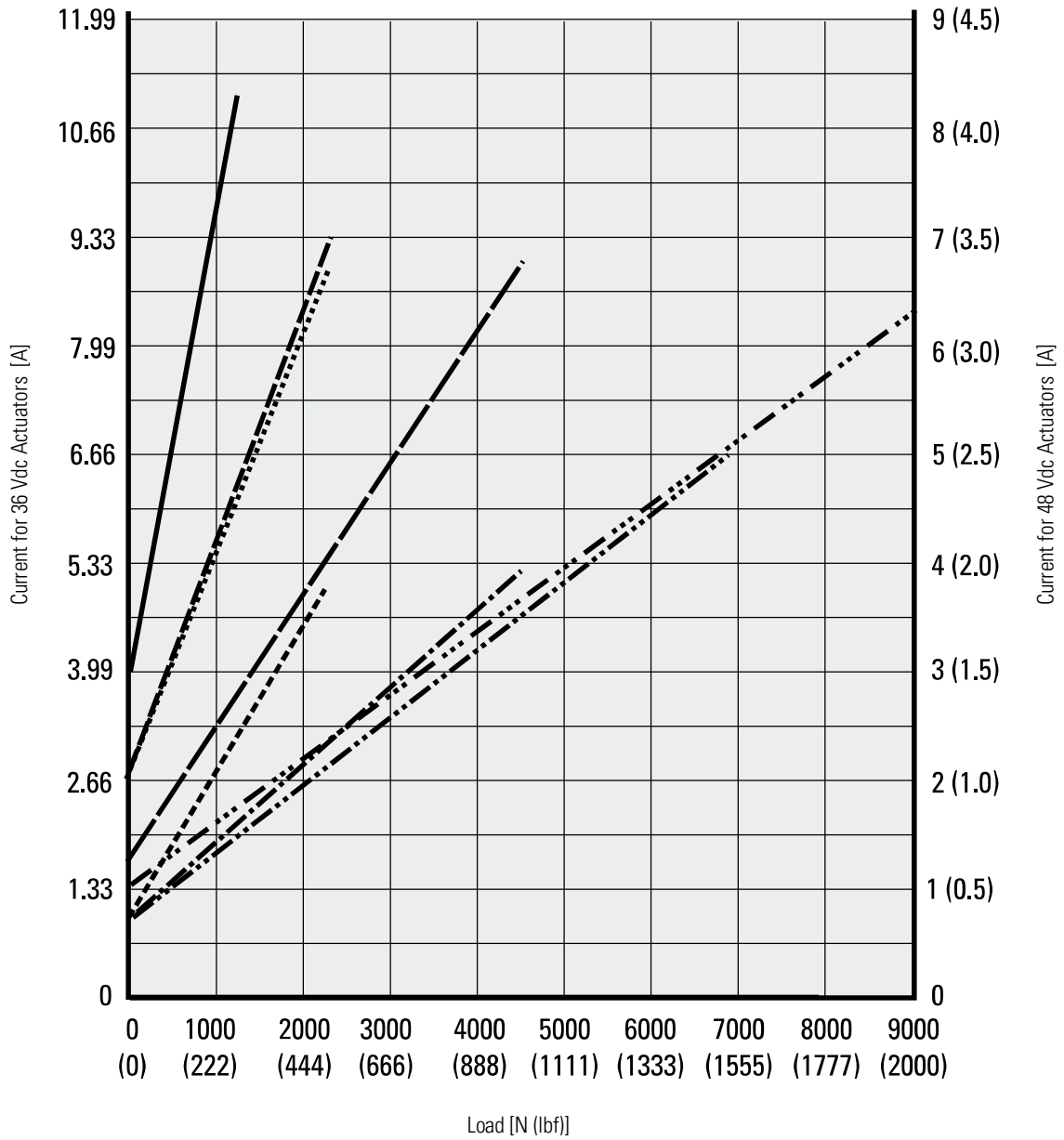
Load vs. Current for 12 and 24 Vdc actuators



- |                              |           |                               |                     |
|------------------------------|-----------|-------------------------------|---------------------|
| Dxxx-05A5 (1100 N (250 lbf)) | —————     | Dxxx-10B5 (4500 N (1000 lbf)) | —————               |
| Dxxx-10A5 (2250 N (500 lbf)) | .....     | Dxxx-20B5 (4500 N (1000 lbf)) | - . - . - . - . - . |
| Dxxx-20A5 (2250 N (500 lbf)) | - - - - - | Dxxx-21B5 (6800 N (1500 lbf)) | - . - . - . - . - . |
| Dxxx-05B5 (2250 N (500 lbf)) | - - - - - | Dxxx-2KB5 (9000 N (2000 lbf)) | - . . . - . . . - . |

# Electrak® GX DC – Performance Diagrams

Load vs. Current for 36 and 48 Vdc actuators



- |                              |  |                               |  |
|------------------------------|--|-------------------------------|--|
| Dxxx-05A5 (1100 N (250 lbf)) |  | Dxxx-10B5 (4500 N (1000 lbf)) |  |
| Dxxx-10A5 (2250 N (500 lbf)) |  | Dxxx-20B5 (4500 N (1000 lbf)) |  |
| Dxxx-20A5 (2250 N (500 lbf)) |  | Dxxx-21B5 (6800 N (1500 lbf)) |  |
| Dxxx-05B5 (2250 N (500 lbf)) |  | Dxxx-2KB5 (9000 N (2000 lbf)) |  |



# Electrak® GX DC – Ordering Key

## Ordering Key

1	2	3	4	5	6	7	8	9
<b>D12C</b>	<b>05A5-</b>	<b>02</b>	<b>M0</b>	<b>N</b>	<b>N</b>	<b>-D</b>	<b>E</b>	<b>E</b>

### 1. Model, input voltage and CE compliance

D12C = Electrak GX, 12 Vdc, CE compliant  
 D24C = Electrak GX, 24 Vdc, CE compliant  
 D36C = Electrak GX, 36 Vdc, CE compliant  
 D48C = Electrak GX, 48 Vdc, CE compliant  
 D12N = Electrak GX, 12 Vdc, not CE compliant  
 D24N = Electrak GX, 24 Vdc, not CE compliant  
 D36N = Electrak GX, 36 Vdc, not CE compliant  
 D48N = Electrak GX, 48 Vdc, not CE compliant  
 D90N = Electrak GX, 90 Vdc, not CE compliant

### 2. Dynamic load capacity, screw type and maximum speed

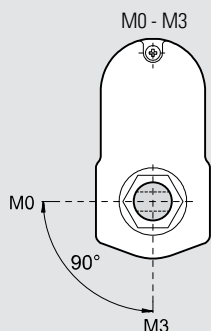
05A5 - = 1100 N, acme, 54 mm/s  
 10A5 - = 2250 N, acme, 30 mm/s  
 20A5 - = 2250 N, acme, 15 mm/s  
 05B5 - = 2250 N, ball, 61 mm/s  
 10B5 - = 4500 N, ball, 30 mm/s  
 20B5 - = 4500 N, ball, 15 mm/s  
 21B5 - = 6800 N, ball, 15 mm/s <sup>(1)</sup>  
 2KB5 - = 9000 N, ball, 9 mm/s <sup>(2)</sup>

### 3. Ordering stroke length

02 = 2 inch (50.8 mm)  
 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)  
 22 = 22 inch (558.8 mm)  
 24 = 24 inch (609.6 mm)

### 4. Rear adapter hole orientation

M0 = adapter at 0° (standard)  
 M3 = adapter at 90° <sup>(3)</sup>



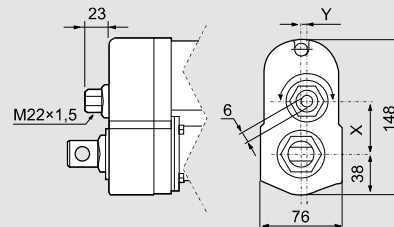
### 5. Ingress protection rating

N = IP66  
 K = IP66/IP69K

### 6. Options

N = no option  
 P = potentiometer feedback  
 H = manual override

Dimensions for manual override option



Model	X	Y
Dxxx05A(B)5-	49.6	0.0
Dxxx10A(B)5-	43.3	5.2
Dxxx20(21, 2K)A(B)5-	38.9	0.0

### 7. Connector option

-A = AMP terminal 42098-2, house 180908-5  
 -B = Packard Electric 56 Series  
 -D = no connector (flying leads)

### 8. Front adapter option

E = cross hole for 0.5 inch pin  
 F = forked cross hole for 0.5 inch pin  
 G = 1/2-20 UNF 2B female thread  
 K = cross hole for 10 mm pin  
 M = cross hole for 12 mm pin  
 N = forked cross hole for 12 mm pin  
 P = M12 female thread

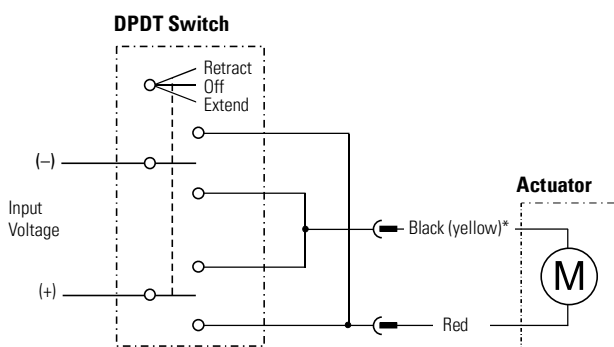
### 9. Rear adapter option

E = cross hole for 0.5 inch pin  
 K = cross hole for 10 mm pin  
 M = cross hole for 12 mm pin

(1) 21B5 not possible with strokes above 20 inch  
 (2) 2KB5 not possible for strokes above 12 inch  
 (3) Not possible with option manual override

# Electrak® GX DC – Electrical Connections

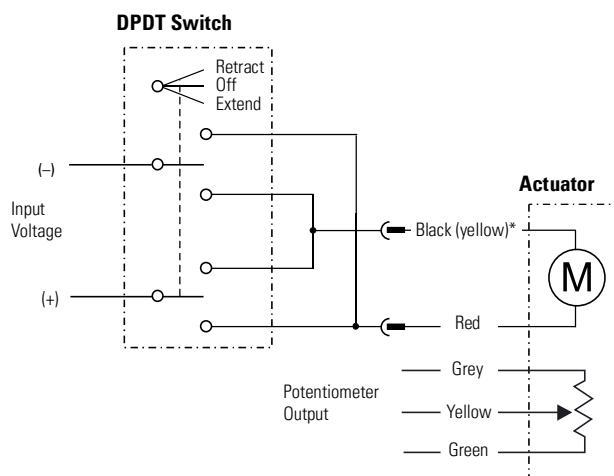
Without Option		
Actuator supply voltage	[Vdc]	
D12x		12
D24x		24
D36x		36
D48x		48
D90N		90



\* Lead can be black or yellow

Connect the red lead to positive and black (yellow)\* to negative to extend the actuator. Change polarity to retract the actuator.

Option Potentiometer		
Actuator supply voltage	[Vdc]	
D12x		12
D24x		24
D36x		36
D48x		48
D90N		90
Potentiometer type		wirewound
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



\* Lead can be black or yellow

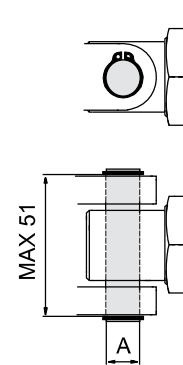
Connect the red lead to positive and black (yellow)\* to negative to extend the actuator. Change polarity to retract the actuator. The potentiometer output cable has 0 ohm between grey and yellow leads when the actuator is fully extended.

## Electrak® GX DC – Accessories

### Mounting Pin Kits

Designation	A [mm(in)]	Part Number
Mounting pins (pair)	12.7 (0.5)	D603 028

The mounting pins are used in the rear and front adapter holes of the actuator. The pins have a groove in each end so that it can be secured with snap rings.



Dimensions

mm

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## Electrak® GX AC – Technical Features



### Standard Features

- Robust and reliable
- 1 × 115, 1 × 230 or 3 × 400 Vac as standard input voltages
- Acme and ball screw models
- Static load up to 18 kN (4000 lbf)
- Dynamic load up to 9 kN (2000 lbf)
- Stroke up to 24 in (609 mm)
- Speed up to 61 mm/s (2.4 in/s)
- Protection class static IP45
- Overload clutch for mid and end of stroke protection
- Anti coast brake
- Motor with thermal switch
- Maintenance free

### General Specifications

Screw type	acme or ball
Nut type Axxx-xxA (acme screw) Axxx-xxB (ball screw)	self locking lead nut load lock ball nut
Manual override	no (optional)
Anti-rotation	no
Static load holding brake acme screw models ball screw models	no (self locking) yes
Safety features	overload clutch motor auto reset thermal switch
Anti coast brake	yes
Electrical connections no potentiometer option with potentiometer option	cable with flying leads 2 x cable with flying leads
Compliances	CE
Certificates	UL, CSA

### Optional Mechanical Features

Variety of front and rear adapters

Manual override

### Optional Electrical Features

Potentiometer feedback

# Electrak<sup>®</sup> GX AC – Technical Specifications

Mechanical Specifications		
Max. static load <sup>(1)</sup>	[N (lbf)]	
Axx-xxA (acme screw)		11350 (2500)
Axx-xxB (ball screw)		18000 (4000)
Max. dynamic load (Fx)	[N (lbf)]	
A12(22)C-05A5 <sup>(2)</sup>		1100 (250)
A12(22)C-10A5		2250 (500)
A42C-10A5		1100 (250)
A12(22)C-20A5		2250 (500)
A42C-20A5		1100 (250)
A12(22)C-05B5		2250 (500)
A42C-05B5		1100 (250)
A12(22)C-10B5		4500 (1000)
A42C-10B5		2250 (500)
A12(22)C-20B5		4500 (1000)
A42C-20B5		2250 (500)
A12(22)C-21B5 <sup>(2)</sup>		6800 (1500)
A12(22)C-2KB5 <sup>(2)</sup>		9000 (2000)
Speed @ no load/max. load	[mm/s (in/s)]	
AxxC-05A5 <sup>(2)</sup>		54/32 (2.10/1.20)
AxxC-10A5		30/18 (1.20/0.71)
AxxC-20A5		15/12 (0.67/0.47)
AxxC-05B5		61/37 (2.40/1.40)
AxxC-10B5		30/18 (1.20/0.71)
AxxC-20B5		15/12 (0.60/0.47)
AxxC-21B5 <sup>(2)</sup>		15/11 (0.60/0.43)
AxxC-2KB5 <sup>(2)</sup>		15/9 (0.60/0.35)
Min. ordering stroke (S) length	[in]	6
Max. ordering stroke (S) length <sup>(3)(4)(5)</sup>	[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)
Restraining torque	[Nm (lbf-in)]	11.3 (300)
Protection class - static		IP45
Salt spray resistance	[h]	96

(1) Max. static load at fully retracted stroke

(2) Not possible with supply voltage 3 × 400 Vac

(3) 2KB5 not possible for strokes above 12 inch

(4) 21B5 not possible for strokes above 20 inch

(5) For other strokes, contact customer support

Electrical Specifications		
Available input voltages <sup>(1)</sup>	[Vac]	1 × 115 <sup>(2)</sup> 1 × 230 <sup>(2)</sup> 3 × 400
Input voltage tolerance	[%]	± 10
Current draw @ no load/max. load	[A]	
A12C-05A5		1.2/2.8
A12C-10A5		1.2/2.8
A12C-20A5		0.8/2.2
A12C-05B5		1.0/2.8
A12C-10B5		1.0/2.8
A12C-20B5		1.0/2.4
A12C-21B5		0.8/2.8
A12C-2KB5		0.8/3.7
A22C-05A5		0.6/1.4
A22C-10A5		0.6/1.4
A22C-20A5		0.4/1.4
A22C-05B5		0.5/1.3
A22C-10B5		0.5/1.3
A22C-20B5		0.5/1.4
A22C-21B5		0.4/1.6
A22C-2KB5		0.4/1.8
A42C-05A5		not possible
A42C-10A5		0.35/0.7
A42C-20A5		0.30/0.7
A42C-05B5		0.45/0.7
A42C-10B5		0.45/0.7
A42C-20B5		0.45/0.7
A42C-21B5		not possible
A42C-2KB5		not possible
Motor cable length	[mm (in)]	600 (24)
Motor cable diameter	[mm (in)]	10 (0.4)
Motor cable leads cross section	[mm <sup>2</sup> (AWG)]	1.5 (16)
Potentiometer cable length <sup>(3)</sup>	[mm (in)]	500 (20)
Potentiometer cable diameter <sup>(3)</sup>	[mm (in)]	9 (0.35)
Pot. cable leads cross section <sup>(3)</sup>	[mm <sup>2</sup> (AWG)]	1.5 (16)

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

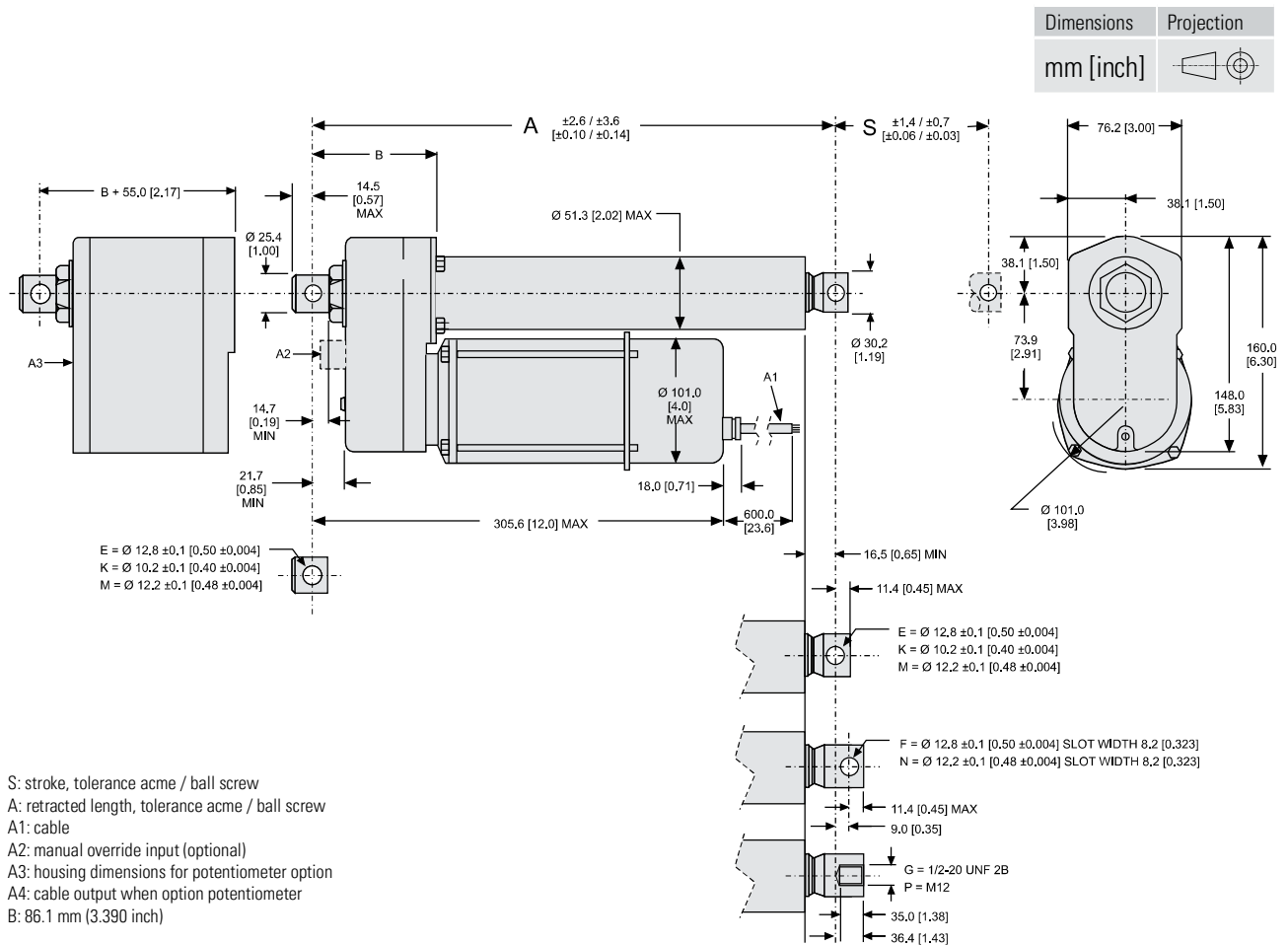
(2) Capacitor required to run the actuator.

1 × 115 Vac = 35 µF, p/n 9200-448-002

1 × 230 Vac = 10 µF, p/n 9200-448-003

(3) Potentiometer is optional

# Electrak® GX AC – Dimensions

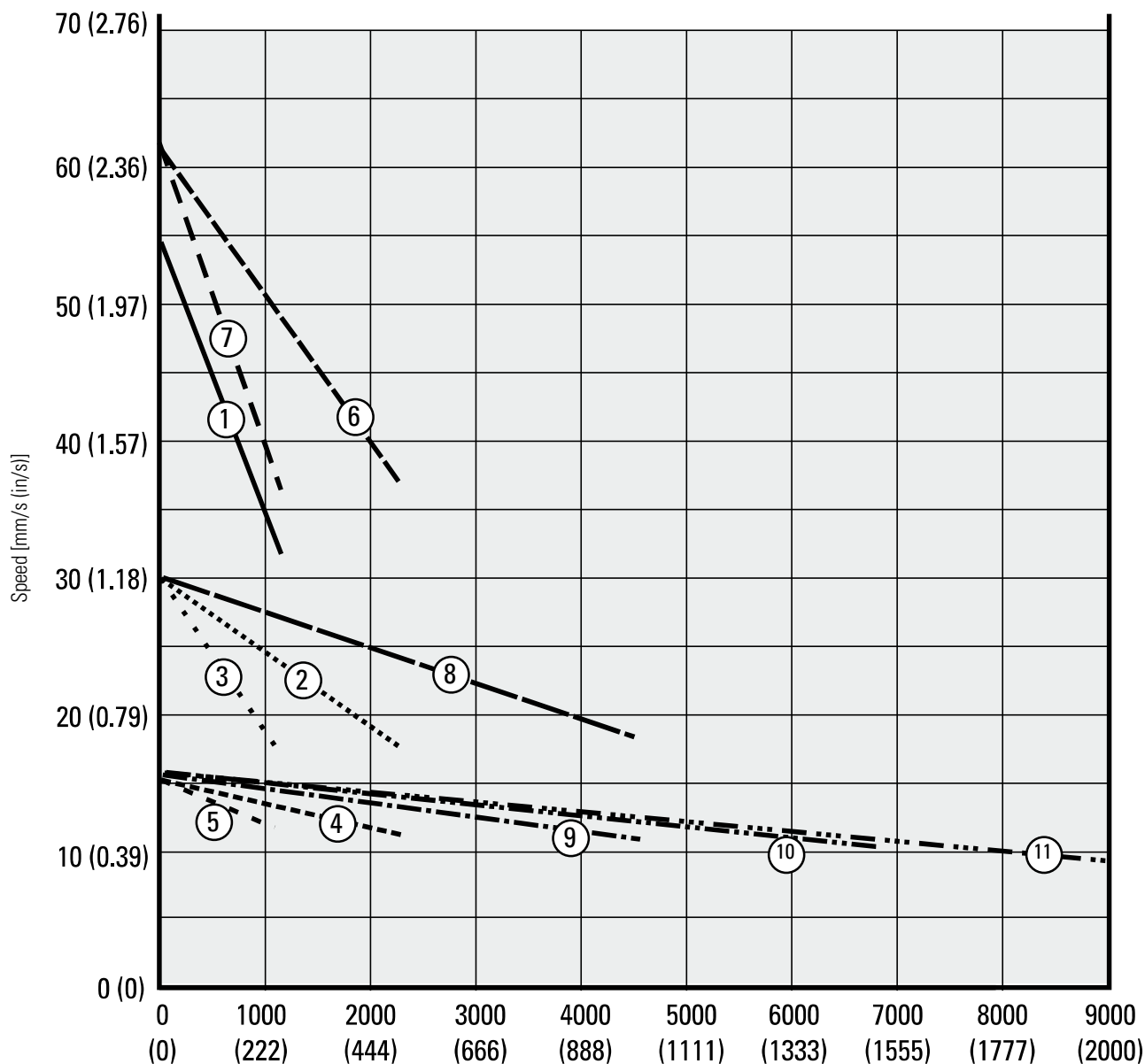


## Stroke, Retracted Length and Weight Relationships

Ordering stroke (S)	[in]	6	8	10	12	14	16	18	20	22	24
Retracted length, acme screw models (A)	[mm]	312.9	363.7	414.5	465.3	583.7	634.5	685.3	736.1	786.9	837.7
	[in]	12.32	14.32	16.32	18.32	22.98	24.98	26.98	28.98	30.98	32.98
Retracted length, ball screw models (A)	[mm]	353.1	403.9	454.7	505.5	623.6	674.4	725.2	776.0	826.8	877.6
	[in]	13.90	15.90	17.90	19.90	24.55	26.55	28.55	30.55	32.55	34.55
Add on length for option potentiometer	[mm]	55.0									
	[in]	2.17									
Weight, acme screw models	[kg]	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8	7.9
	[lbf]	13.6	14.1	14.5	15.0	15.4	15.8	16.3	16.7	17.1	17.4
Weight, ball screw models	[kg]	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.5
	[lbf]	15.0	15.4	15.8	16.3	16.7	17.1	17.6	18.0	18.5	18.8
Add on weight for option potentiometer	[kg]	1.30									
	[lbf]	2.86									

# Electrak® GX AC – Performance Diagrams

Load vs. Speed

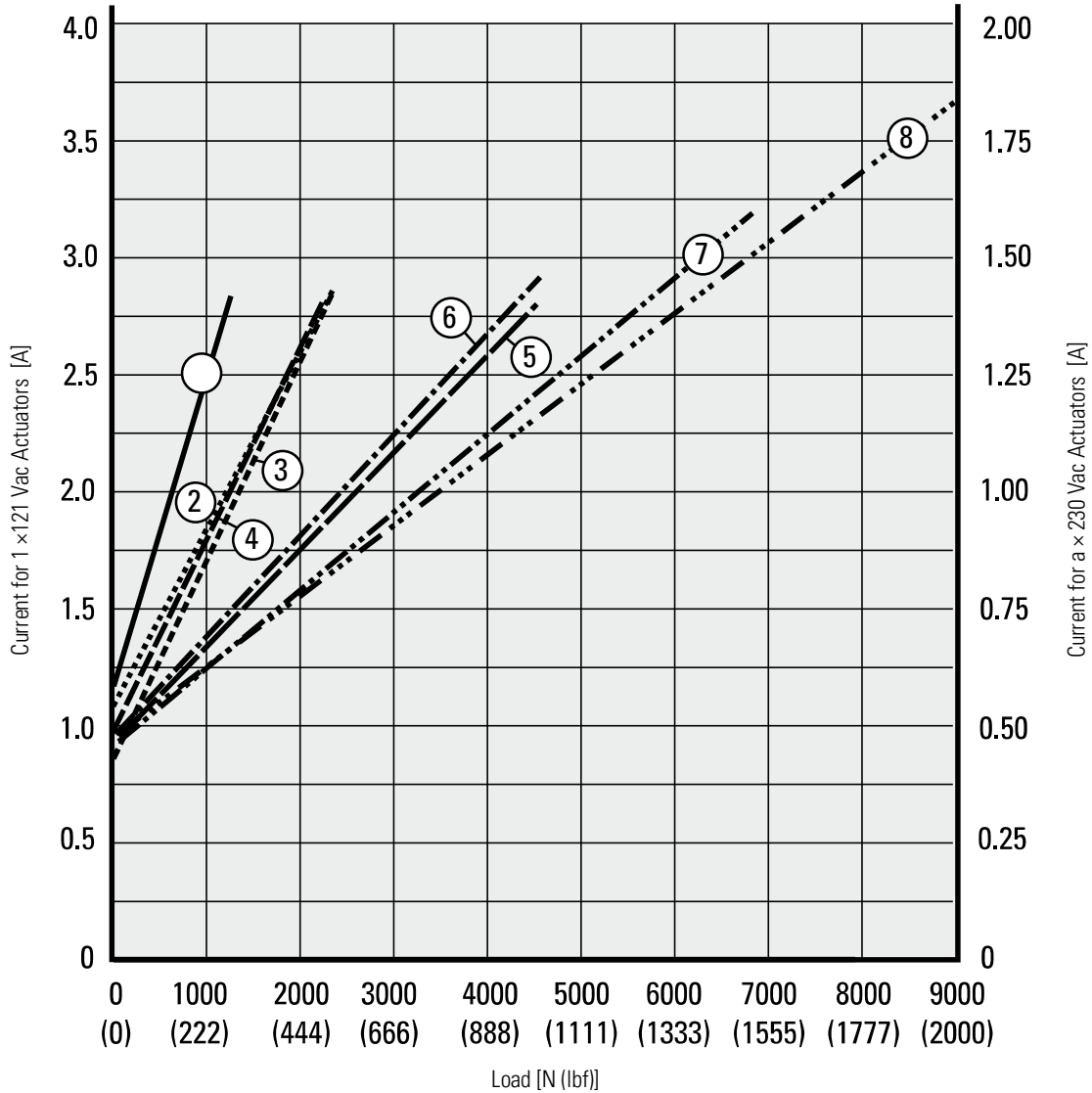


- |   |           |                                      |             |
|---|-----------|--------------------------------------|-------------|
| 1. Axxx-05A5 (1100 N (250 lbf))                                     | —————     | 6. A12(22)x-05B5 (2250 N (500 lbf))  | -----       |
| 2. A12(22)x-10A5 (2250 N (500 lbf))<br>A42x-10B5 (2250 N (500 lbf)) | .....     | 7. A42x-05B5 (1100 N (250 lbf))      | - - - - -   |
| 3. A42x-10A5 (1100 N (250 lbf))                                     | .....     | 8. A12(22)x-10B5 (4500 N (1000 lbf)) | —————       |
| 4. A12(22)x-20A5 (2250 N (500 lbf))<br>42x-20B5 (2250 N (500 lbf))  | -----     | 9. A12(22)x-20B5 (4500 N (1000 lbf)) | - . - . - . |
| 5. A42x-20A5 (1100 N (500 lbf))                                     | - - - - - | 10. Axxx-21B5 (6800 N (1500 lbf))    | .....       |
|   |           | 11. Axxx-2KB5 (9000 N (2000 lbf))    | - . - . - . |



# Electrak® GX AC – Performance Diagrams

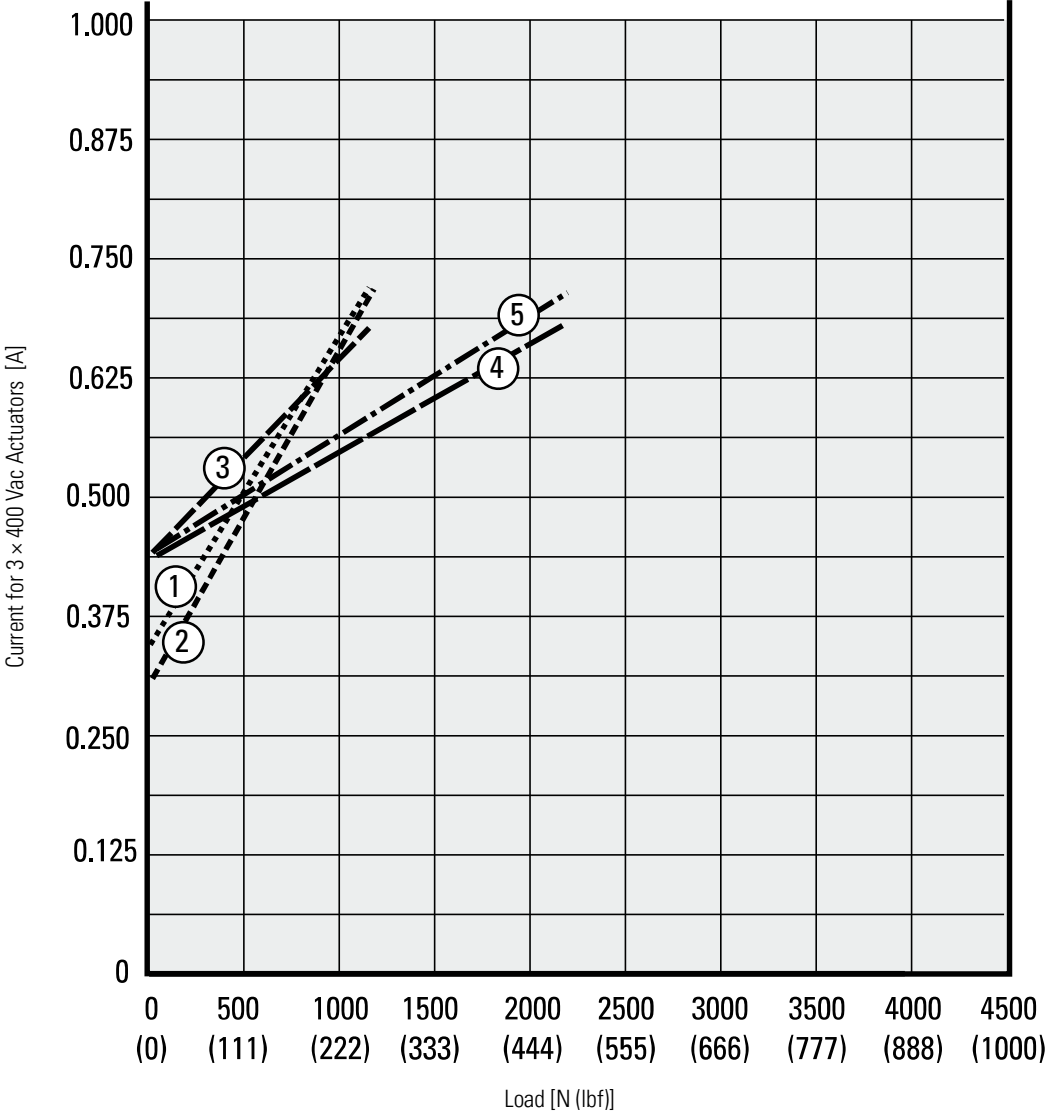
Load vs. Current for 1 × 115 and 1 × 230 Vac actuators



- |                                     |             |                                      |             |
|-------------------------------------|-------------|--------------------------------------|-------------|
| 1. A12(22)x-05A5 (1100 N (250 lbf)) | —————       | 5. A12(22)x-10B5 (4500 N (1000 lbf)) | —————       |
| 2. A12(22)x-10A5 (2250 N (500 lbf)) | .....       | 6. A12(22)x-20B5 (4500 N (1000 lbf)) | — · — · — · |
| 3. A12(22)x-20A5 (2250 N (500 lbf)) | -----       | 7. A12(22)x21B5 (6800 N (1500 lbf))  | — · — · — · |
| 4. A12(22)x-05B5 (2250 N (500 lbf)) | — · — · — · | 8. A12(22)x-2KB5 (9000 N (2000 lbf)) | — · — · — · |

# Electrak® GX AC – Performance Diagrams

Load vs. Current for 3 × 400 Vac actuators



- 1. A42x-05A5 (1100 N (250 lbf)) not possible
- 2. A42x-10A5 (1100 N (250 lbf)) not possible
- 3. A42x-20A5 (1100 N (250 lbf))
- 4. A42x-05B5 (1100 N (250 lbf))
- 5. A42x-10B5 (2250 N (500 lbf))
- 6. A42x-20B5 (2250 N (500 lbf))
- 7. A42x-21B5 (6800 N (1500 lbf)) not possible
- 8. A42x-2KB5 (9000 N (2000 lbf)) not possible

# Electrak® GX AC – Ordering Key

## Ordering Key

1	2	3	4	5	6	7	8
<b>A12C05A5-</b>	<b>06</b>	<b>M0</b>	<b>B</b>	<b>N</b>	<b>-D</b>	<b>E</b>	<b>E</b>

### 1. Model, input voltage, dynamic load capacity, screw type, maximum speed

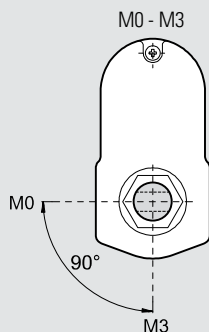
A12C05A5- = Electrak GX, 1 × 115 Vac, 1100 N, acme, 54 mm/s  
A12C10A5- = Electrak GX, 1 × 115 Vac, 2250 N, acme, 30 mm/s  
A12C20A5- = Electrak GX, 1 × 115 Vac, 2250 N, acme, 15 mm/s  
A12C05B5- = Electrak GX, 1 × 115 Vac, 2250 N, ball, 61 mm/s  
A12C10B5- = Electrak GX, 1 × 115 Vac, 4500 N, ball, 30 mm/s  
A12C20B5- = Electrak GX, 1 × 115 Vac, 4500 N, ball, 15 mm/s  
A12C21B5- = Electrak GX, 1 × 115 Vac, 6800 N, ball, 15 mm/s <sup>(1)</sup>  
A12C2KB5- = Electrak GX, 1 × 115 Vac, 9000 N, ball, 10 mm/s <sup>(2)</sup>  
A22C05A5- = Electrak GX, 1 × 230 Vac, 1100 N, acme, 54 mm/s  
A22C10A5- = Electrak GX, 1 × 230 Vac, 2250 N, acme, 30 mm/s  
A22C20A5- = Electrak GX, 1 × 230 Vac, 2250 N, acme, 15 mm/s  
A22C05B5- = Electrak GX, 1 × 230 Vac, 2250 N, ball, 61 mm/s  
A22C10B5- = Electrak GX, 1 × 230 Vac, 4500 N, ball, 30 mm/s  
A22C20B5- = Electrak GX, 1 × 230 Vac, 4500 N, ball, 15 mm/s  
A22C21B5- = Electrak GX, 1 × 230 Vac, 6800 N, ball, 15 mm/s <sup>(1)</sup>  
A22C2KB5- = Electrak GX, 1 × 230 Vac, 9000 N, ball, 10 mm/s <sup>(2)</sup>  
A42C10A5- = Electrak GX, 3 × 400 Vac, 1100 N, acme, 30 mm/s  
A42C20A5- = Electrak GX, 3 × 400 Vac, 1100 N, acme, 15 mm/s  
A42C05B5- = Electrak GX, 3 × 400 Vac, 1100 N, ball, 61 mm/s  
A42C10B5- = Electrak GX, 3 × 400 Vac, 2250 N, ball, 30 mm/s  
A42C20B5- = Electrak GX, 3 × 400 Vac, 2250 N, ball, 15 mm/s

### 3. Ordering stroke length

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)  
22 = 22 inch (558.8 mm)  
24 = 24 inch (609.6 mm)

### 4. Rear adapter hole orientation

M0 = adapter at 0° (standard)  
M3 = adapter at 90° <sup>(3)</sup>



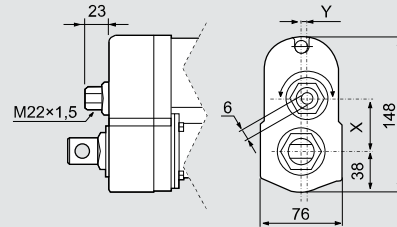
### 5. Ingress protection rating

B = IP45

### 6. Options

N = no option  
P = potentiometer feedback  
H = manual override

Dimensions for manual override option



Model	X	Y
Axxx05A(B)5-	49.6	0.0
Axxx10A(B)5-	43.3	5.2
Axxx20(21, 2K)A(B)5-	38.9	0.0

### 7. Connector option

-D = no connector (flying leads)

### 8. Front adapter option

E = cross hole for 0.5 inch pin  
F = forked cross hole for 0.5 inch pin  
G = 1/2-20 UNF 2B female thread  
K = cross hole for 10 mm pin  
M = cross hole for 12 mm pin  
N = forked cross hole for 12 mm pin  
P = M12 female thread

### 9. Rear adapter option

E = cross hole for 0.5 inch pin  
K = cross hole for 10 mm pin  
M = cross hole for 12 mm pin

(1) 21B5 not possible with strokes above 20 inch

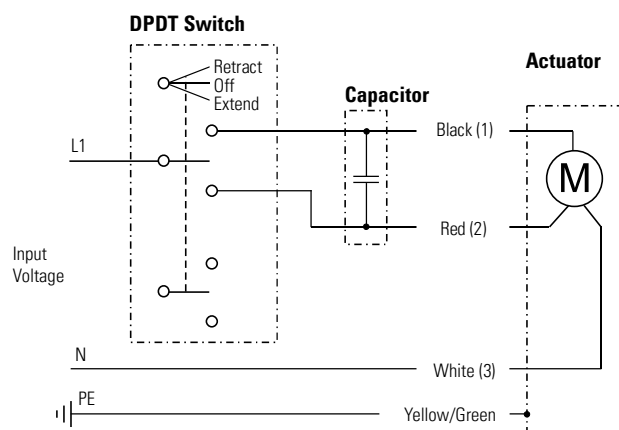
(2) 2KB5 not possible for strokes above 12 inch

(3) Not possible with option manual override

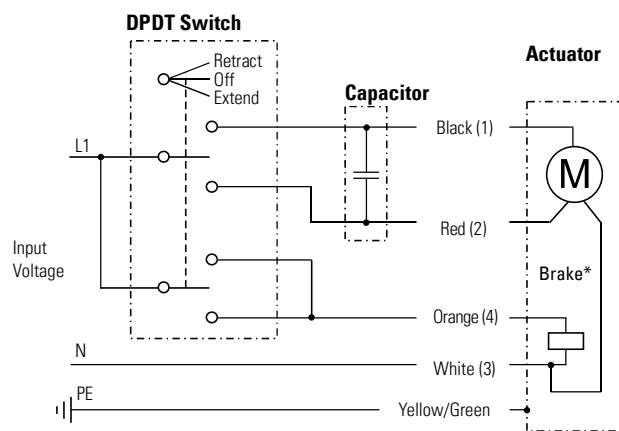
# Electrak® GX AC – Electrical Connections

Input Voltage 230 Vac		
Actuator supply voltage	[Vac]	
A12		1 × 115
A22		1 × 230

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



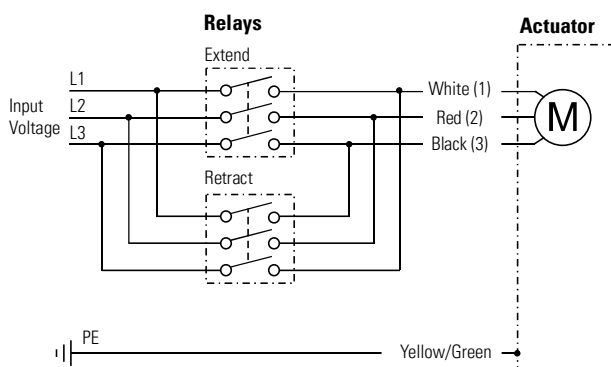
### Ball screw models (with anti-coast brake)



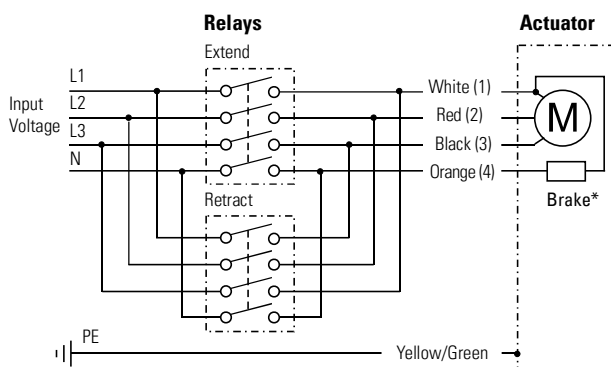
Leads can be either color or number marked. To be able to run the actuator, a capacitor must be connected between black (1) and red (2) leads. A 115 Vac actuator requires a 35 µF capacitor, while a 230 Vac actuator requires a 10 µF capacitor. See page 54 for ordering of capacitors. Connect black (1) 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.

Input Voltage 400 Vac		
Actuator supply voltage	[Vac]	
A42		3 × 400

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



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



Leads can be either color or number marked. Connect white (1) lead to L1, red (2) lead to L2 and black (3) lead to L3 to extend the actuator. Change the places of white (2) lead and black (3) to retract the actuator. Ball screw models have an anti-coast brake\* that must be released during motion, which is done by connecting orange (4) to N (neutral). Acme models do not have any anti-coast brake.

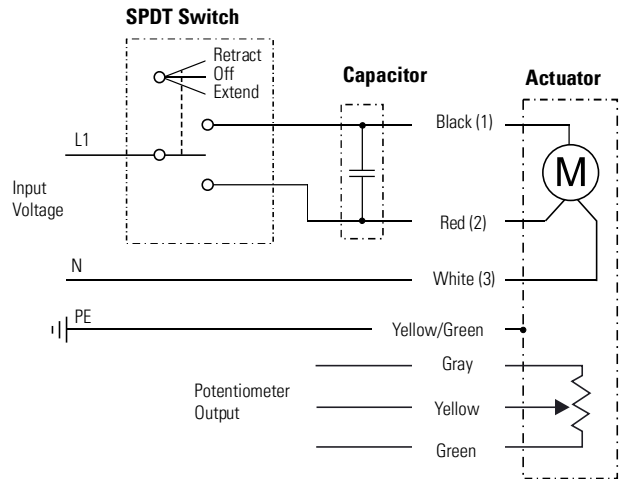
# Electrak® GX AC – Electrical Connections

## Input Voltage 115 or 230 Vac + Option Potentiometer

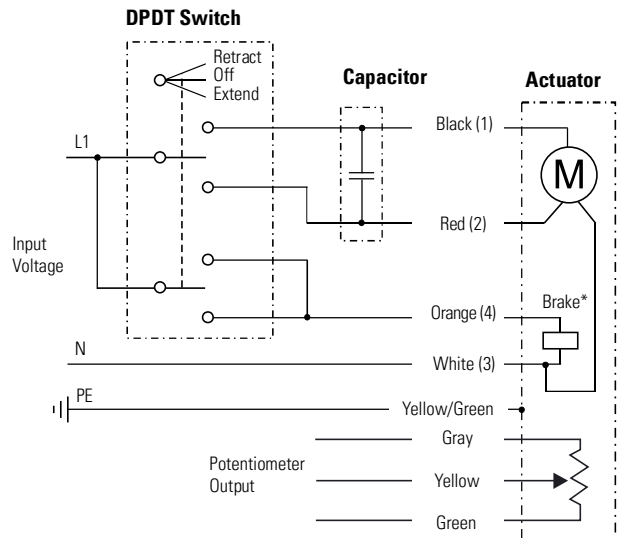
Actuator supply voltage	[Vac]	
A12		1 × 115
A22		1 × 230
Potentiometer type		wire-wound
Potentiometer max. input voltage	[Vdc]	32
Potentiometer max. power	[W]	2
Potentiometer linearity	[%]	± 0.25
Potentiometer output resolution	[ohm/mm]	
2 - 10 inch stroke		39
11 - 20 inch stroke		20
21 - 24 inch stroke		10

Leads can be either color or number marked. To be able to run the actuator, a capacitor must be connected between black (1) and red (2) leads. A 115 Vac actuator requires a 35 µF capacitor, while a 230 Vac actuator requires a 10 µF capacitor. 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. The potentiometer output cable has 0 ohm between gray and yellow leads when the actuator is fully extended.

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



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

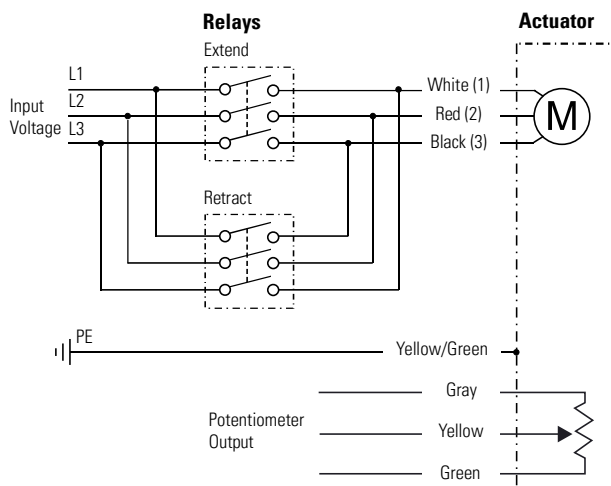


# Electrak® GX AC – Electrical Connections

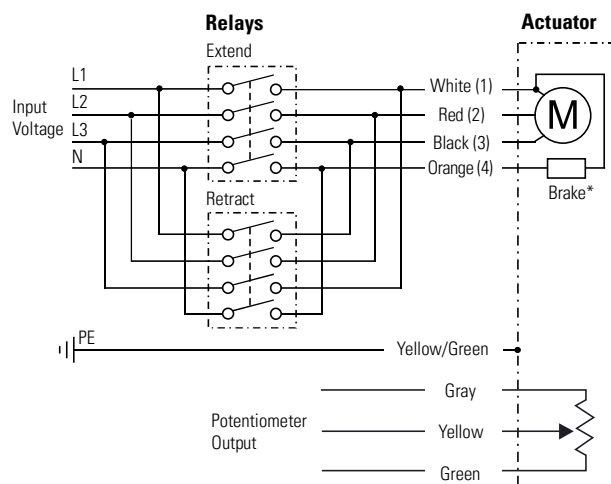
Input Voltage 400 Vac + Option Potentiometer		
Actuator supply voltage A42	[Vac]	3 × 400
Potentiometer type		wire-wound
Potentiometer max. input voltage	[Vdc]	32
Potentiometer max. power	[W]	2
Potentiometer linearity	[%]	± 0.25
Potentiometer output resolution	[ohm/mm]	
2 - 10 inch stroke		39
11 - 20 inch stroke		20
21 - 24 inch stroke		10

Leads can be either color or number marked. Connect white (1) lead to L1, red (2) lead to L2 and black (3) lead to L3 to extend the actuator. Change the places of white (2) lead and black (3) to retract 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 N (neutral). Acme models do not have any anti-coast brake. The potentiometer output cable has 0 ohm between gray and yellow leads when the actuator is fully extended.

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



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

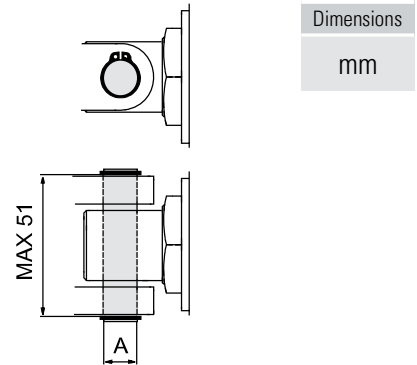


## Electrak® GX AC – Accessories

### Mounting Pin Kits

Designation	A [mm(in)]	Part Number
Mounting pins (pair)	12.7 (0.5)	D603 028

The mounting pins are used in the rear and front adapter holes of the actuator. The pins have a groove in each end so that it can be secured with snap rings.



### Capacitor Kits

Designation	Actuator Supply Voltage	Part Number
Capacitor kit	115 Vac	9200-448-002
Capacitor kit	230 Vac	9200-448-003

All 230 and 115 Vac actuators require a capacitor to be wired between the windings to run. The capacitor is bought separately and mounted externally by the customer.

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