



Linear Actuators

Linear actuators for industrial, mobile, medical, office and domestic applications

 THOMSON[®]

Linear Motion. Optimized.

Electrak[®] 1

12, 24 and 36 Vdc - load up to 340 N



Standard Features and Benefits

- Very compact and lightweight
- Integrated end of stroke limit switches
- Corrosion resistant housing
- Self-locking acme screw drive system
- Maintenance free
- Ideal for replacement of comparable size pneumatic and hydraulic cylinders

General Specifications

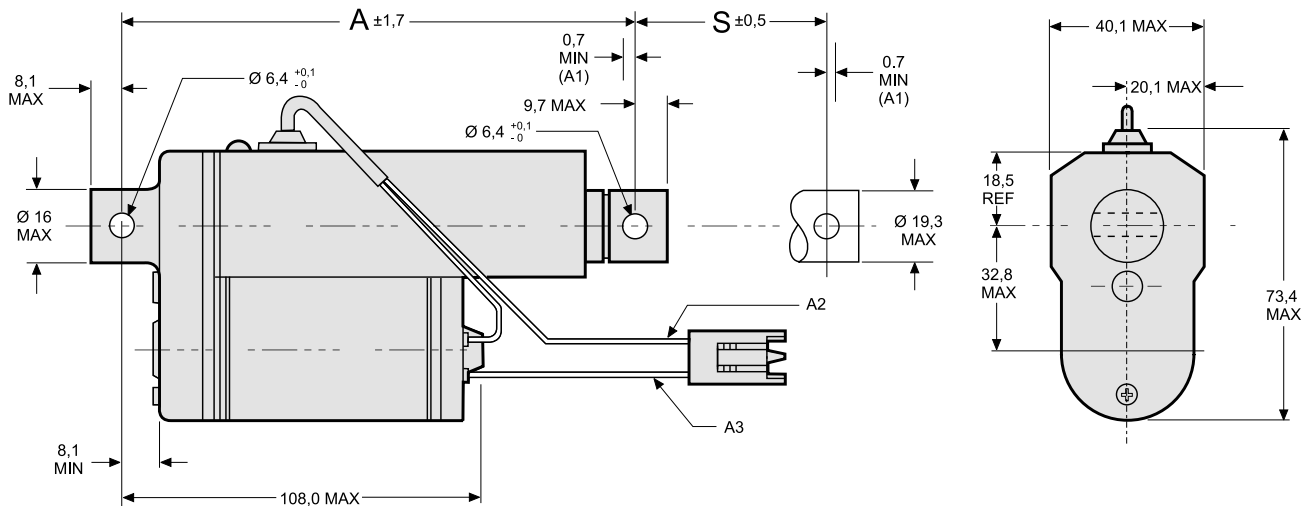
Parameter	Electrak 1
Screw type	acme
Internally restrained	no
Manual override	no
Dynamic braking	no
Holding brake	no, self-locking
End of stroke protection	end of stroke limit switches
Mid stroke protection	no
Motor protection	auto reset thermal switch
Motor connection	flying leads and connector
Motor connector	Packard Electric Pack-Con male 8911773 with terminal 6294511. Mating connector: 8911772 with terminal 8911639 (p/n 9300-448-001)
Certificates	CE
Options	none

Performance Specifications

Parameter		Electrak 1
Maximum load, dynamic / static	[N]	
S •• -09A04		110 / 1300
S •• -09A08		225 / 1300
S •• -17A08		340 / 1300
S •• -17A16		340 / 1300
Speed, at no load / at maximum load	[mm/s]	
S •• -09A04		75 / 52
S •• -09A08		45 / 33
S •• -17A08		26 / 17
S •• -17A16		14 / 7
Available input voltages	[Vdc]	12, 24, 36
Standard stroke lengths	[inch]	1, 2, 3, 4, 5, 6
Operating temperature limits	[°C]	-25 – +65
Full load duty cycle @ 25 °C	[%]	25
End play, maximum	[mm]	0,9
Restraining torque	[Nm]	2,3
Lead cross section	[mm ²]	1
Lead length	[mm]	110
Protection class		IP65

Electrak® 1

12, 24 and 36 Vdc - load up to 340 N



S: stroke
 A: retracted length
 A1: installation must include at least this much coast beyond limit switch shut off
 A2: red lead
 A3: yellow lead

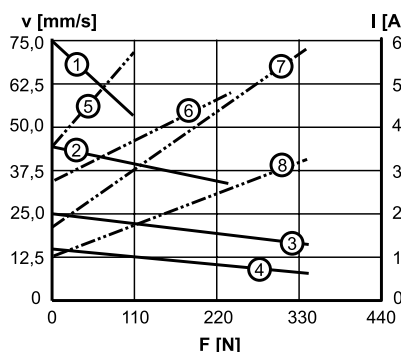
Ordering stroke	[inch]	1	2	3	4	5	6
Electrical stroke (S) *	[mm (inch)]	20,8 (0,82)	46,2 (1,82)	71,6 (2,82)	97,0 (3,82)	122,4 (4,82)	147,8 (5,82)
Retracted length (A)	[mm]	134,5	159,9	185,3	210,7	236,1	261,5
Weight	[kg]	0,52	0,54	0,60	0,63	0,66	0,68

* The electrical stroke is the stroke when the internal limit switches switch off the power to the motor. The installation then must allow the extension tube to coast at least 0,7 mm beyond that position before it becomes mechanically blocked to travel any further (distance A1). If there is no mechanical block the extension tube coasting distance will depend on the load, no load means the longest coasting distance while the distance becomes shorter as the load becomes higher. The exact coasting distance depends on the load, in which direction the load acts (push or pull), the mounting orientation of the actuator and any added friction to the system by guides or other installations and has to be determined on a case by case basis.

Performance Diagrams

Speed and Current vs. Load

12 Vdc

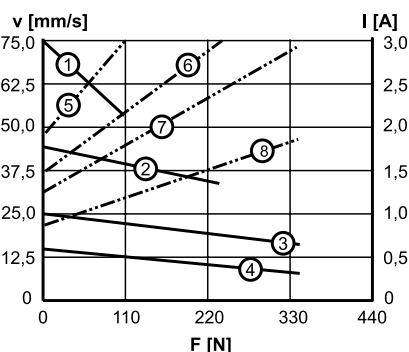


V: speed I: current F: load

- 1: speed S12-09A04
- 2: speed S12-09A08
- 3: speed S12-17A08
- 4: speed S12-17A16
- 5: current S12-09A04
- 6: current S12-09A08
- 7: current S12-17A08
- 8: current S12-17A16

Speed and Current vs. Load

24 Vdc

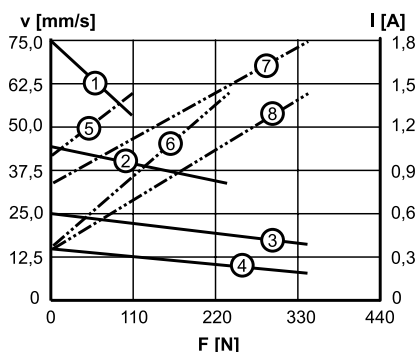


V: speed I: current F: load

- 1: speed S24-09A04
- 2: speed S24-09A08
- 3: speed S24-17A08
- 4: speed S24-17A16
- 5: current S24-09A04
- 6: current S24-09A08
- 7: current S24-17A08
- 8: current S24-17A16

Speed and Current vs. Load

36 Vdc



V: speed I: current F: load

- 1: speed S36-09A04
- 2: speed S36-09A08
- 3: speed S36-17A08
- 4: speed S36-17A16
- 5: current S36-09A04
- 6: current S36-09A08
- 7: current S36-17A08
- 8: current S36-17A16

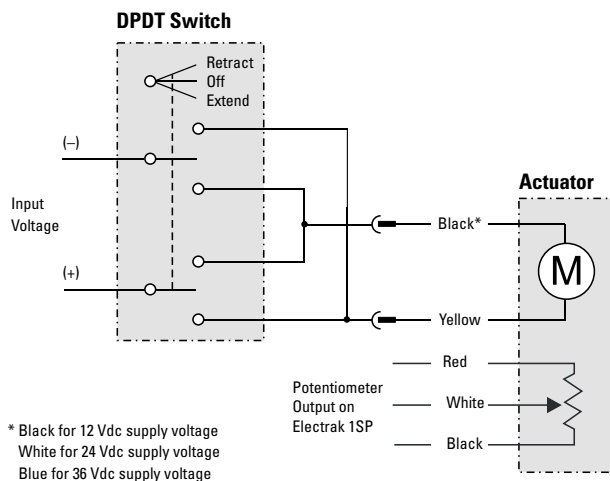
Electrak® 1

12, 24 and 36 Vdc - load up to 340 N

Ordering Key

1	2	3
S24 -	09A04 -	06
1. Model and input voltage S12 - = Electrak 1, 12 Vdc S24 - = Electrak 1, 24 Vdc S36 - = Electrak 1, 36 Vdc	2. Dynamic load capacity and max. speed 09A04 = 110 N, 75 mm/s 09A08 = 225 N, 45 mm/s 17A08 = 340 N, 26 mm/s 17A16 = 340 N, 14 mm/s	3. Electrical stroke (actual stroke in mm) 01 = 1 inch (20,8 mm) 02 = 2 inch (46,2 mm) 03 = 3 inch (71,6 mm) 04 = 4 inch (97,0 mm) 05 = 5 inch (122,4 mm) 06 = 6 inch (147,8 mm)

Wiring Diagram



Connect the yellow lead to positive and black, white or blue* to negative to extend the actuator. Change polarity to retract the actuator. The potentiometer output has 0 ohm between white and red when the actuator is fully retracted. The actuator should be protected from overload conditions by a customer provided fuse in the circuit (6 A for 12 Vdc, 3 A for 24 Vdc and 2 A for 36 Vdc).

Electrak® 1SP

12, 24 and 36 Vdc - load up to 340 N



Standard Features and Benefits

- Very compact and lightweight
- Potentiometer feedback
- Corrosion resistant housing
- Self-locking acme screw drive system
- Maintenance free
- Internally restrained extension tube
- Ideal for replacement of comparable size pneumatic and hydraulic cylinders

General Specifications

Parameter	Electrak 1SP
Screw type	acme
Internally restrained	yes
Manual override	no
Dynamic braking	no
Holding brake	no, self-locking
End of stroke protection	no
Mid stroke protection	no
Motor protection	auto reset thermal switch
Motor connection	flying leads and connector
Motor connector	Packard Electric Pack-Con male 8911773 with terminal 6294511. Mating connector: 8911772 with terminal 8911639 (p/n 9300-448-001)
Certificates	CE
Options	none

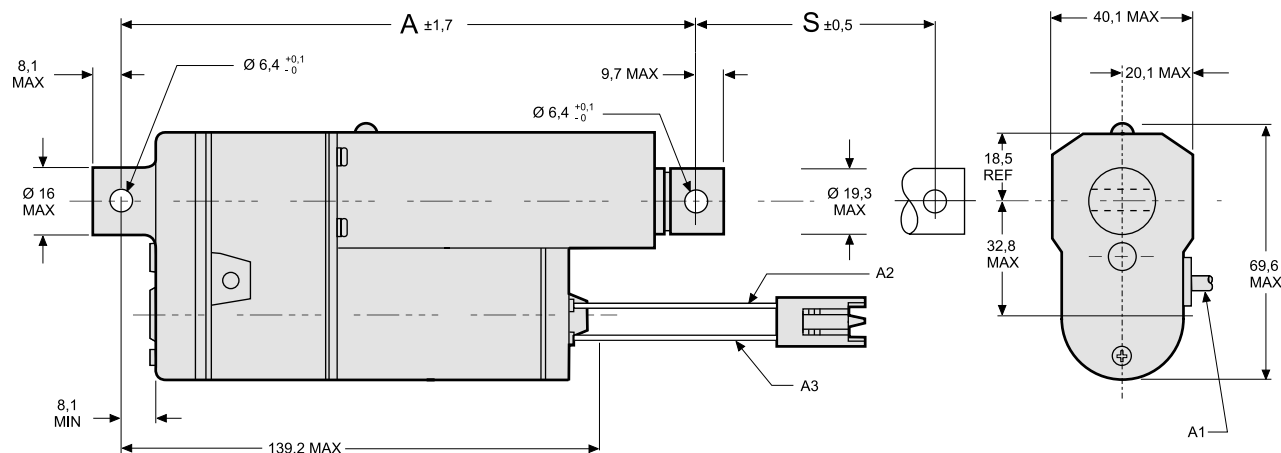
Performance Specifications

Parameter		Electrak 1SP
Maximum load, dynamic / static	[N]	
SP •• -09A04		110 / 1300
SP •• -09A08		225 / 1300
SP •• -17A08		340 / 1300
SP •• -17A16		340 / 1300
Speed, at no load / at maximum load	[mm/s]	
SP •• -09A04		75 / 52
SP •• -09A08		45 / 33
SP •• -17A08		26 / 17
SP •• -17A16		14 / 7
Available input voltages	[Vdc]	12, 24, 36
Standard stroke lengths	[inch]	2, 4, 6*
Operating temperature limits	[°C]	-25 – +65
Full load duty cycle @ 25 °C	[%]	25
End play, maximum	[mm]	0,9
Restraining torque	[Nm]	0
Lead cross section	[mm ²]	1
Lead length	[mm]	110
Protection class		IP65
Potentiometer	[kOhm]	10**

* Six inch stroke length not possible for SP •• -17A16.

Electrak® 1SP

12, 24 and 36 Vdc - load up to 340 N



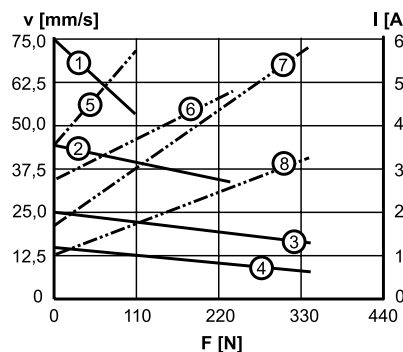
S: stroke
 A: retracted length
 A1: cable for potentiometer feedback, length = 635 mm
 A2: black lead for 12 Vdc units, white lead for 24 Vdc units, blue lead for 36 Vdc
 A3: yellow lead

Ordering stroke	[inch]	2	4	6*
Actual stroke (S)	[mm (inch)]	58,7 (2,31)	115,1 (4,53)	171,5 (6,75)
Retracted length (A)	[mm]	197,9	254,3	310,7
Weight	[kg]	0,8	0,85	0,9
Potentiometer resistance change	[ohm/mm]	94	47 (63)**	31

* Six inch stroke length not possible for SP ••-17A16. ** SP ••-17A16 with 4 inch stroke = 63 ohm/mm, all other stroke lengths has 47 ohm/mm.

Performance Diagrams

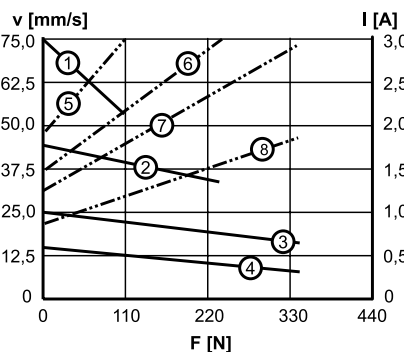
Speed and Current vs. Load
 12 Vdc



V: speed I: current F: load

- 1: speed SP12-09A04
- 2: speed SP12-09A08
- 3: speed SP12-17A08
- 4: speed SP12-17A16
- 5: current SP12-09A04
- 6: current SP12-09A08
- 7: current SP12-17A08
- 8: current SP12-17A16

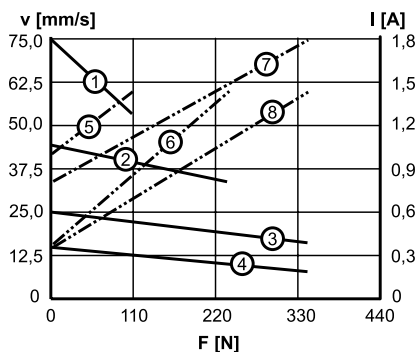
Speed and Current vs. Load
 24 Vdc



V: speed I: current F: load

- 1: speed SP24-09A04
- 2: speed SP24-09A08
- 3: speed SP24-17A08
- 4: speed SP24-17A16
- 5: current SP24-09A04
- 6: current SP24-09A08
- 7: current SP24-17A08
- 8: current SP24-17A16

Speed and Current vs. Load
 36 Vdc



V: speed I: current F: load

- 1: speed SP36-09A04
- 2: speed SP36-09A08
- 3: speed SP36-17A08
- 4: speed SP36-17A16
- 5: current SP36-09A04
- 6: current SP36-09A08
- 7: current SP36-17A08
- 8: current SP36-17A16

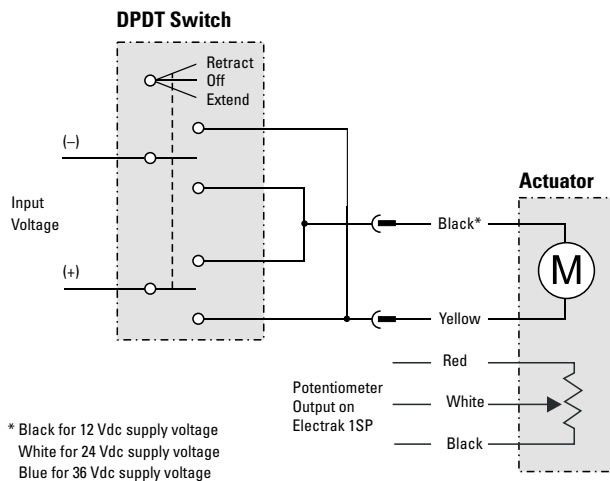
Electrak® 1SP

12, 24 and 36 Vdc - load up to 340 N

Ordering Key

1	2	3
SP24 -	09A04 -	06
1. Model and input voltage SP12 - = Electrak 1SP, 12 Vdc SP24 - = Electrak 1SP, 24 Vdc SP36 - = Electrak 1SP, 36 Vdc	2. Dynamic load capacity and max. speed 09A04 = 110 N, 75 mm/s 09A08 = 225 N, 45 mm/s 17A08 = 340 N, 26 mm/s 17A16 = 340 N, 16 mm/s ¹	3. Ordering stroke (actual stroke in mm) 02 = 2 inch (58,7 mm) 04 = 4 inch (115,1 mm) 06 = 6 inch (171,5 mm) ¹ Not possible in combination with 6 inch stroke.

Wiring Diagram



Connect the yellow lead to positive and black, white or blue* to negative to extend the actuator. Change polarity to retract the actuator. The potentiometer output has 0 ohm between white and red when the actuator is fully retracted. The actuator should be protected from overload conditions by a customer provided fuse in the circuit (6 A for 12 Vdc, 3 A for 24 Vdc and 2 A for 36 Vdc).

Electrak® 050

12, 24 and 36 Vdc - load up to 510 N



Standard Features and Benefits

- Designed for office or medical applications
- Small, quiet and lightweight
- Very short retracted length
- Low cost
- Durable and corrosion free plastic housing
- Color molded into the plastic, no painting required
- End of stroke limit switches with dynamic braking
- Maintenance free
- Internally restrained extension tube
- Estimated life is minimum 40000 cycles
- Q-version for noise sensitive applications

General Specifications

Parameter	Electrak 050
Screw type	worm
Internally restrained	yes
Manual override	no
Dynamic braking	yes, at end of stroke
Holding brake	no, self-locking
End of stroke protection	internal limit switches
Mid stroke protection	overload clutch
Motor protection	auto reset thermal switch
Motor connection	flying leads
Motor connector	no
Certificates	CE
Options	<ul style="list-style-type: none"> • potentiometer 10 kOhm* • cross holes rotated 90° • white housing

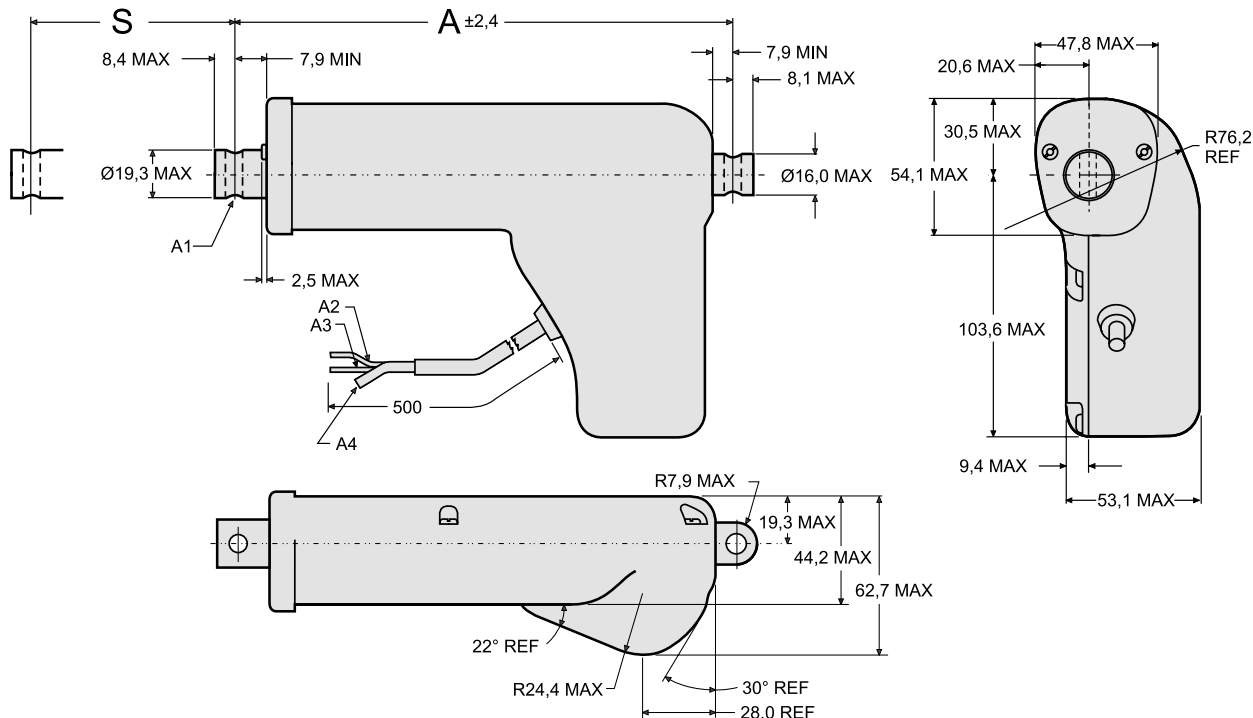
* See performance specification table for resistance change per mm of travel.

Performance Specifications

Parameter		Electrak 050
Maximum load, dynamic / static	[N]	
DE•••17W41		510 / 1020
DE•••17W42		275 / 550
DE•••17W44		140 / 280
Speed, at no load / at maximum load	[mm/s]	
DE••-17W41		12 / 9
DE••-17W42		24 / 18
DE••-17W44		48 / 37
DE••Q17W41		9 / 7,5
DE••Q17W42		18 / 14
DE••Q17W44		38 / 30
Available input voltages	[Vdc]	
DE••-		12, 24, 36
DE••Q		24
Standard stroke lengths	[mm]	25, 50, 75, 100, 125, 150, 175, 200
Operating temperature limits	[°C]	-30 – +80
Full load duty cycle @ 20 °C	[%]	25
End play, maximum	[mm]	1,5
Restraining torque	[Nm]	0
Lead cross section	[mm ²]	1
Lead length	[mm]	500
Protection class		
DE••-		IP66
DE••Q		IP51
Potentiometer resistance change	[ohm/mm]	
DE•••17W41		22,0
DE•••17W42		21,9
DE•••17W44		21,2

Electrak® 050

12, 24 and 36 Vdc - load up to 510 N



S: stroke (tolerances: 17W41 = ± 3,23 mm, 17W42 = ± 4,25 mm, 17W44 = ± 5,26 mm)
 A: retracted length
 A1: Ø 6 mm +0,15/-0 mounting cross holes (2 ×) in standard position

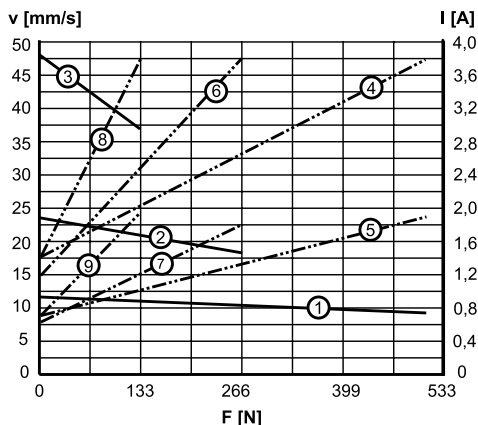
A2: red lead
 A3: yellow lead
 A4: vent tube Ø 3 mm

Stroke (S)	[mm]	25	50	75	100	125	150	175	200
Retracted length (A)	[mm]	114,2	139,2	164,2	189,2	214,2	239,2	264,2	289,2
Retracted length, with potentiometer (A)	[mm]	145,7	170,7	195,7	220,7	245,7	270,7	295,7	- *
Weight	[kg]	0,59	0,64	0,69	0,73	0,78	0,82	0,87	0,91
Weight with potentiometer	[kg]	0,69	0,74	0,79	0,83	0,88	0,92	0,97	- *

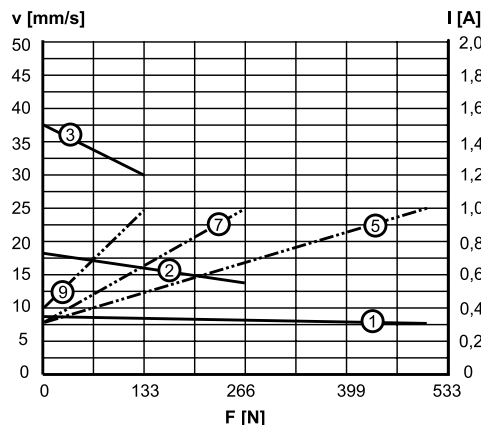
* 200 mm stroke not possible with potentiometer (P0, MP, PF options)

Performance Diagrams

050, standard version
 Speed and Current vs. Load



050, Q-version
 Speed and Current vs. Load



V: speed I: current F: load
 1: speed DE ••• 17W41
 2: speed DE ••• 17W42
 3: speed DE ••• 17W44
 4: current 12 Vdc, DE12 - 17W41
 5: current 24 Vdc, DE24 • 17W41
 6: current 12 Vdc, DE12 - 17W42
 7: current 24 Vdc, DE24 • 17W42
 8: current 12 Vdc, DE12 - 17W44
 9: current 24 Vdc, DE24 • 17W44

Electrak® 050

12, 24 and 36 Vdc - load up to 510 N

Ordering Key

1	2	3	4
DE24 -	17W44M	15	FS

1. Model and input voltage

DE12 - = Electrak 050, 12 Vdc
 DE24 - = Electrak 050, 24 Vdc
 DE36 - = Electrak 050, 36 Vdc
 DE24Q = Electrak 050, 24 Vdc, Q-version¹

2. Dynamic load capacity and color

17W41M = 510 N, black housing
 17W42M = 275 N, black housing
 17W44M = 140 N, black housing
 17W41W = 510 N, white housing¹
 17W42W = 275 N, white housing¹
 17W44W = 140 N, white housing¹

3. Stroke

02 = 25 mm
 05 = 50 mm
 07 = 75 mm
 10 = 100 mm
 12 = 125 mm
 15 = 150 mm
 17 = 175 mm
 20 = 200 mm

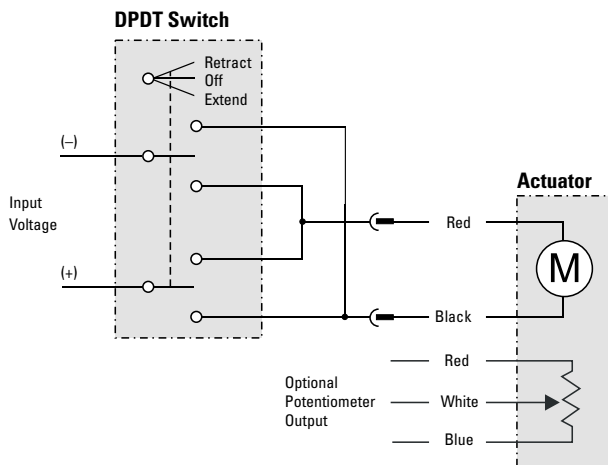
4. End of stroke limit switches and potentiometer

FS = limit switches and no potentiometer
 PO = potentiometer²
 PF = limit switches and potentiometer²
 MF = crossholes rotated 90° and limit switches
 MP = crossholes rotated 90° and potentiometer²

¹White housing is standard for the Q-version.

²Not possible in combination with 200 mm stroke.

Wiring Diagram



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

Electrak® 10

12, 24 and 36 Vdc - load up to 6800 N



Standard Features and Benefits

- Robust, strong and reliable
- Withstands very harsh environments
- Stainless steel extension tube
- Acme or ball screw models
- Overload clutch for mid and end of stroke protection
- Motor with thermal switch
- Maintenance free

General Specifications

Parameter	Electrak 10
Screw type	acme or ball
Internally restrained	no
Manual override	no, optional
Dynamic braking	no
Holding brake acme screw models ball screw models	no, self-locking yes
End of stroke protection	overload clutch
Mid stroke protection	overload clutch
Motor protection	auto reset thermal switch
Motor connection	flying leads and connector
Motor connector	AMP connector with housing p/n 180908-5 with male terminals p/n 42098-2
Certificates	CE
Options	<ul style="list-style-type: none"> • potentiometer • manual override

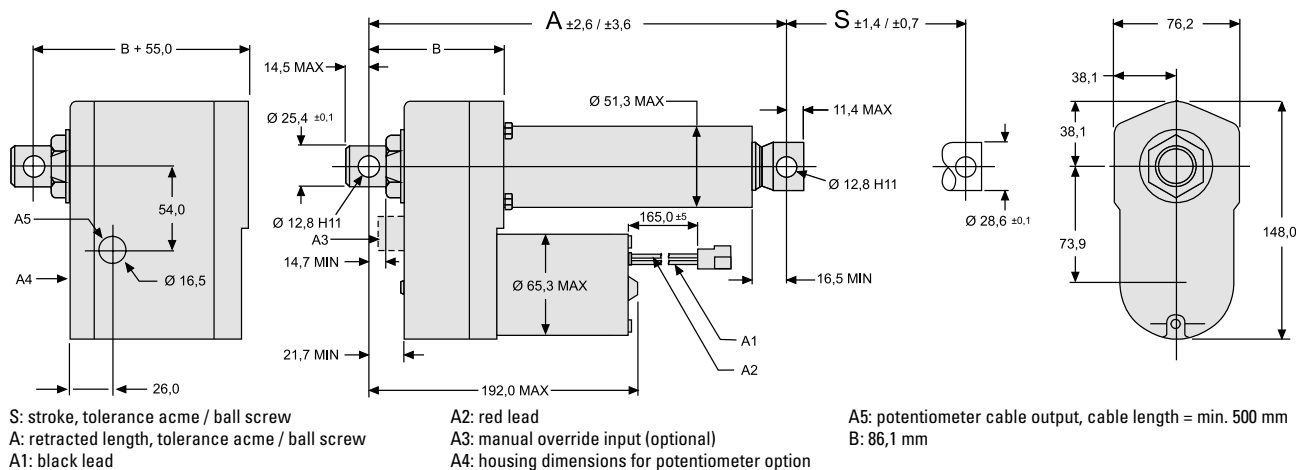
Performance Specifications

Parameter		Electrak 10
Maximum load, dynamic / static	[N]	
D •• -05A5 (acme screw)		1100 / 11350
D •• -10A5 (acme screw)		2250 / 11350
D •• -20A5 (acme screw)		2250 / 11350
D •• -05B5 (ball screw)		2250 / 18000
D •• -10B5 (ball screw)		4500 / 18000
D •• -20B5 (ball screw)		4500 / 18000
D •• -21B5 (ball screw)		6800 / 18000
Speed, at no load / at maximum load	[mm/s]	
D •• -05A5 (acme screw)		54 / 32
D •• -10A5 (acme screw)		30 / 18
D •• -20A5 (acme screw)		15 / 12
D •• -05B5 (ball screw)		61 / 37
D •• -10B5 (ball screw)		30 / 19
D •• -20B5 (ball screw)		15 / 12
D •• -21B5 (ball screw)		15 / 11
Available input voltages	[Vdc]	12, 24, 36 *
Standard stroke lengths	[inch]	4, 6, 8, 10, 12, 14, 16, 18, 20, 24
Operating temperature limits	[°C]	-25 – +65
Full load duty cycle @ 25 °C	[%]	25
End play, maximum	[mm]	1,0
Restraining torque	[Nm]	11,3
Lead cross section	[mm ²]	2
Lead length	[mm]	165
Protection class		IP65

* Other input voltages available on request, contact customer support.

Electrak® 10

12, 24 and 36 Vdc - load up to 6800 N

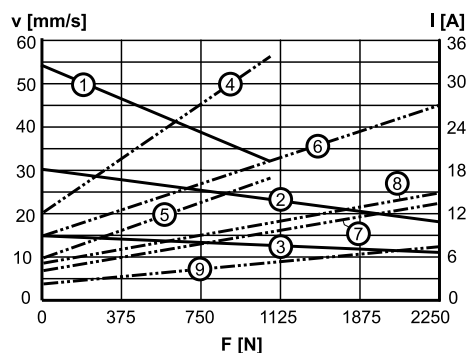


Stroke (S)	[inch (mm)]	4 (101,6)	6 (152,4)	8 (203,2)	10 (254,0)	12 (304,8)	14 (355,6)	16 (406,4)	18 (457,2)	20 (508,0)	24 (609,6)
Retracted length, acme screw models (A)	[mm]	262,3	313,1	363,9	414,7	465,5	567,1	617,9	668,7	719,5	821,1
Retracted length, ball screw models (A)	[mm]	302,3	353,1	403,9	454,7	505,5	607,1	657,9	708,7	759,5	861,1
Add on length for potentiometer*	[mm]	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0
Weight, acme screw models	[kg]	4,5	4,7	4,9	5,0	5,2	5,4	5,5	5,7	5,8	6,2
Weight, ball screw models	[kg]	5,1	5,3	5,5	5,6	5,8	5,9	6,1	6,3	6,4	6,8
Add on weight for potentiometer*	[kg]	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3
Potentiometer resistance change*	[ohm/mm]	39	39	39	39	20	20	20	20	20	10

* Potentiometer is optional

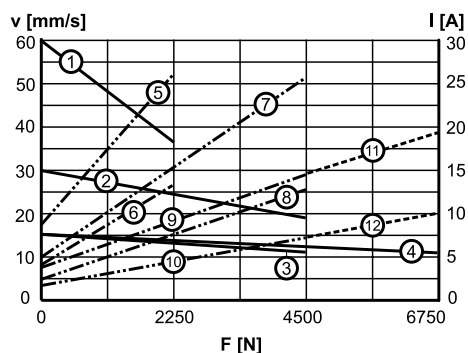
Performance Diagrams

Acme Screw Models
Speed and Current vs. Load



V: speed
I: current
F: load
 1: speed D •• -05A5
 2: speed D •• -10A5
 3: speed D •• -20A5
 4: current 12 Vdc, D12-05A5
 5: current 24 Vdc, D24-05A5
 6: current 12 Vdc, D12-10A5
 7: current 24 Vdc, D24-10A5
 8: current 12 Vdc, D12-20A5
 9: current 24 Vdc, D24-20A5

Ball Screw Models
Speed and Current vs. Load



V: speed
I: current
F: load
 1: speed D •• -05B5
 2: speed D •• -10B5
 3: speed D •• -20B5
 4: speed D •• -21B5
 5: current 12 Vdc, D12-05B5
 6: current 24 Vdc, D24-05B5
 7: current 12 Vdc, D12-10B5
 8: current 24 Vdc, D24-10B5
 9: current 12 Vdc, D12-20B5
 10: current 24 Vdc, D24-20B5
 11: current 12 Vdc, D12-21B5
 12: current 24 Vdc, D24-21B5

Electrak[®] 10

12, 24 and 36 Vdc - load up to 6800 N

Ordering Key

1	2	3	4	5
D12 -	20B5 -	04	M0	N

1. Input voltage

D12 - = 12 Vdc
D24 - = 24 Vdc
D36 - = 36 Vdc

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

3. Stroke

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)

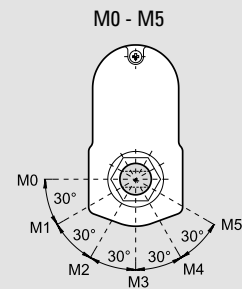
4. Rear adapter hole position¹

M0 = adaptor at 0° (standard position)
M1 = adaptor at 30°
M2 = adaptor at 60°
M3 = adaptor at 90°
M4 = adaptor at 120°
M5 = adaptor at 150°

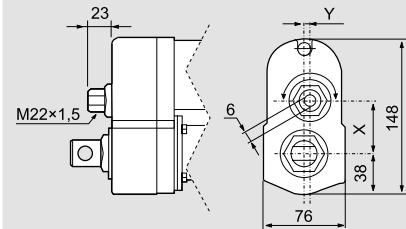
5. Options

N = no option
NPO = potentiometer
NHW = manual override²

¹ Definition of rear adapter hole positions.



² Dimensions for manual override option.

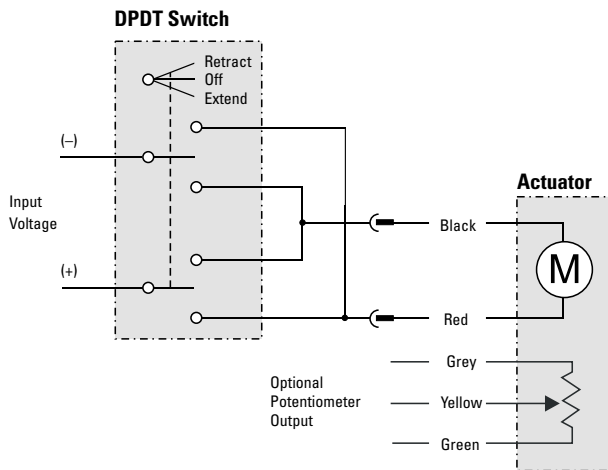


Model	X	Y
05A(B)5 -	49,6	0,0
10A(B)5 -	43,3	5,2
20(21)A(B)5 -	38,9	0,0

Electrak[®] 10

12, 24 and 36 Vdc - load up to 6800 N

Wiring Diagram



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 grey and yellow when the actuator is fully extended.

Electrak® LA14

12, 24 and 36 Vdc - load up to 6800 N



Standard Features and Benefits

- Rugged and robust
- Withstands very harsh environments
- Stainless steel extension tube
- Corrosion free aluminium cover tube
- Acme or ball screw drive
- Trunnion mounting possible
- Overload clutch for mid and end of stroke protection
- T-slot grooves in the cover tube for magnetic sensors
- Motor with thermal switch
- Maintenance free

General Specifications

Parameter	Electrak LA14
Screw type	acme or ball
Internally restrained	yes
Manual override	no, optional
Dynamic braking	no
Holding brake acme screw models ball screw models	no, self-locking yes
End of stroke protection	overload clutch
Mid stroke protection	overload clutch
Motor protection	auto reset thermal switch
Motor connection	flying leads and connector
Motor connector	AMP connector with housing p/n 180908-5 with male terminals p/n 42098-2
Certificates	CE
Options	• potentiometer • manual override

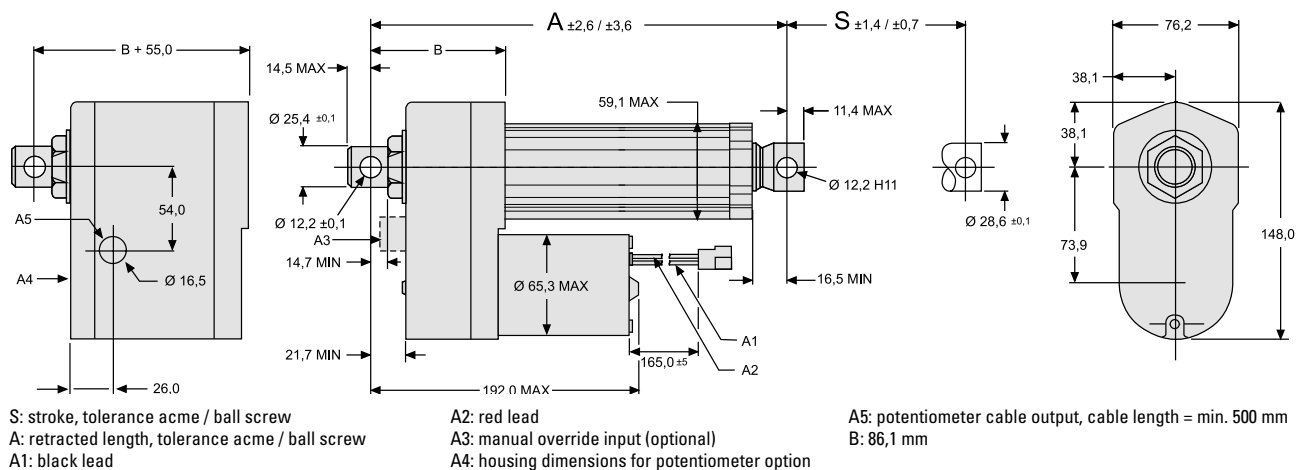
Performance Specifications

Parameter		Electrak LA14
Maximum load, dynamic / static	[N]	
DA •• -05A65M (acme screw)		1100 / 11350
DA •• -10A65M (acme screw)		2250 / 11350
DA •• -20A65M (acme screw)		2250 / 11350
DA •• -05B65M (ball screw)		2250 / 18000
DA •• -10B65M (ball screw)		4500 / 18000
DA •• -20B65M (ball screw)		4500 / 18000
DA •• -21B65M (ball screw)		6800 / 18000
Speed, at no load / at maximum load	[mm/s]	
DA •• -05A65M (acme screw)		54 / 32
DA •• -10A65M (acme screw)		30 / 18
DA •• -20A65M (acme screw)		15 / 12
DA •• -05B65M (ball screw)		61 / 37
DA •• -10B65M (ball screw)		30 / 19
DA •• -20B65M (ball screw)		15 / 12
DA •• -21B65M (ball screw)		15 / 11
Available input voltages	[Vdc]	12, 24, 36 *
Standard stroke lengths	[mm]	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600
Operating temperature limits	[°C]	-25 – +65
Full load duty cycle @ 25 °C	[%]	25
End play, maximum	[mm]	1,0
Restraining torque	[Nm]	0
Lead cross section	[mm ²]	2
Lead length	[mm]	165
Protection class		IP65

* Other input voltages available on request, contact customer support.

Electrak® LA14

12, 24 and 36 Vdc - load up to 6800 N

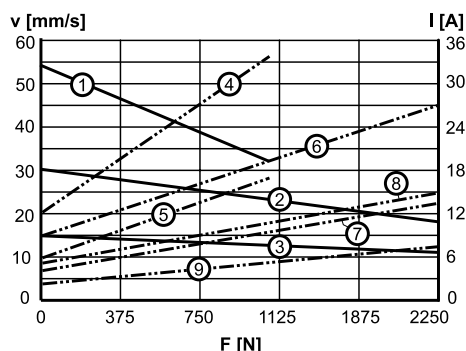


Stroke (S)	[mm]	50	100	150	200	250	300	350	400	450	500	550	600
Retracted length, acme screw models (A)	[mm]	216,7	266,7	316,7	366,7	416,7	466,7	566,7	616,7	666,7	716,7	766,7	816,7
Retracted length, ball screw models (A)	[mm]	269,6	319,6	369,6	419,6	469,6	519,6	619,6	669,6	719,6	769,6	819,6	869,6
Add on length for potentiometer*	[mm]	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0
Weight, acme screw models	[kg]	4,5	4,7	4,9	5,1	5,3	5,5	5,8	6,0	6,2	6,4	6,6	6,8
Weight, ball screw models	[kg]	5,3	5,5	5,7	5,9	6,1	6,3	6,6	6,8	7,0	7,2	7,4	7,6
Add on weight for potentiometer*	[kg]	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3
Potentiometer resistance change*	[ohm/mm]	39	39	39	39	39	20	20	20	20	20	10	10

* Potentiometer is optional

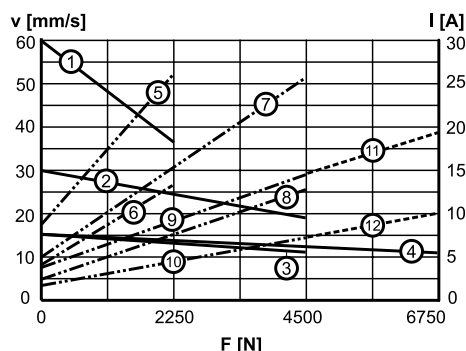
Performance Diagrams

Acme Screw Models
Speed and Current vs. Load



- V: speed
- I: current
- F: load
- 1: speed DA •• -05A65M
- 2: speed DA •• -10A65M
- 3: speed DA •• -20A65M
- 4: current 12 Vdc, DA12-05A65M
- 5: current 24 Vdc, DA24-05A65M
- 6: current 12 Vdc, DA12-10A65M
- 7: current 24 Vdc, DA24-10A65M
- 8: current 12 Vdc, DA12-20A65M
- 9: current 24 Vdc, DA24-20A65M

Ball Screw Models
Speed and Current vs. Load



- V: speed
- I: current
- F: load
- 1: speed DA •• -05B65M
- 2: speed DA •• -10B65M
- 3: speed DA •• -20B65M
- 4: speed DA •• -21B65M
- 5: current 12 Vdc, DA12-05B65M
- 6: current 24 Vdc, DA24-05B65M
- 7: current 12 Vdc, DA12-10B65M
- 8: current 24 Vdc, DA24-10B65M
- 9: current 12 Vdc, DA12-20B65M
- 10: current 24 Vdc, DA24-20B65M
- 11: current 12 Vdc, DA12-21B65M
- 12: current 24 Vdc, DA24-21B65M

Electrak® LA14

12, 24 and 36 Vdc - load up to 6800 N

Ordering Key

1	2	3	4	5
DA12 -	10A65M	15	M0	N

1. Input voltage

DA12 - = 12 Vdc
DA24 - = 24 Vdc
DA36 - = 36 Vdc

2. Dynamic load capacity, screw type and maximum speed

05A65M = 1100 N, acme, 54 mm/s
10A65M = 2250 N, acme, 30 mm/s
20A65M = 2250 N, acme, 15 mm/s
05B65M = 2250 N, ball, 61 mm/s
10B65M = 4500 N, ball, 30 mm/s
20B65M = 4500 N, ball, 15 mm/s
21B65M = 6800 N, ball, 15 mm/s

3. Stroke

05 = 50 mm
10 = 100 mm
15 = 150 mm
20 = 200 mm
25 = 250 mm
30 = 300 mm
35 = 350 mm
40 = 400 mm
45 = 450 mm
50 = 500 mm
55 = 550 mm
60 = 600 mm

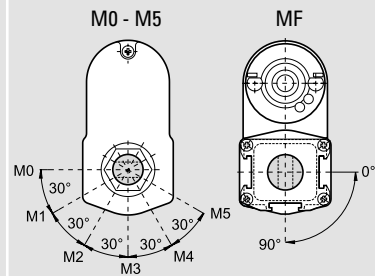
4. Rear / front adapter hole position¹

M0 = both adaptors at 0° (standard position)
M1 = rear adaptor at 30°, front at 0°
M2 = rear adaptor at 60°, front at 0°
M3 = rear adaptor at 90°, front at 0°
M4 = rear adaptor at 120°, front at 0°
M5 = rear adaptor at 150°, front at 0°
MF = rear and front adaptor at 90°

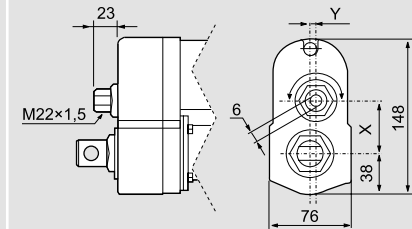
5. Options

N = no option
NPO = potentiometer
NHW = manual override²

¹ Definition of adapter hole positions.



² Dimensions for manual override option.

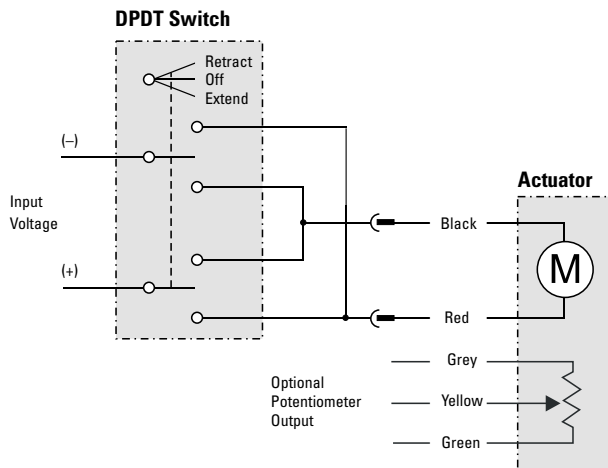


Model	X	Y
05A(B)65M	49,6	0,0
10A(B)65M	43,3	5,2
20(21)A(B)65M	38,9	0,0

Electrak[®] LA14

12, 24 and 36 Vdc - load up to 6800 N

Wiring Diagram



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 grey and yellow when the actuator is fully extended.

Electrak® 5

230 and 400 Vac - load up to 6800 N



Standard Features and Benefits

- Robust, strong and reliable
- Stainless steel extension tube
- Acme or ball screw models
- Overload clutch for mid and end of stroke protection
- Heavy duty motor with thermal switch
- Anti-coast brake for repeatable positioning on all ball screw models. Optional on acme screw models.
- Maintenance free

General Specifications

Parameter	Electrak 5
Screw type	acme or ball
Internally restrained	no
Manual override	no, optional
Dynamic braking	no
Holding brake acme screw models ball screw models	no, self-locking yes
End of stroke protection	overload clutch
Mid stroke protection	overload clutch
Motor protection	auto reset thermal switch
Motor connection	cable
Motor connector	no
Certificates	UL, CSA, CE
Options	<ul style="list-style-type: none"> • potentiometer • manual override

Performance Specifications

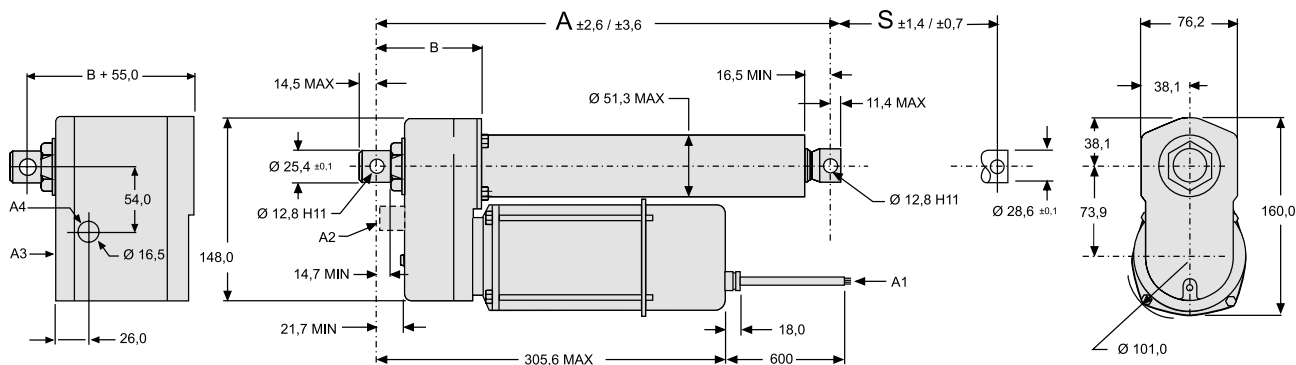
Parameter		Electrak 5
Maximum load, dynamic / static	[N]	
A •• -05A5 (acme screw)*		1100 / 11350
A •• -10A5 (acme screw)		2250 / 11350
A •• -20A5 (acme screw)		2250 / 11350
A •• -05B5 (ball screw)		2250 / 18000
A •• -10B5 (ball screw)		4500 / 18000
A •• -20B5 (ball screw)		4500 / 18000
A •• -21B5 (ball screw)		6800 / 18000
Speed, at no load / at maximum load	[mm/s]	
A •• -05A5 (acme screw)*		48 / 38
A •• -10A5 (acme screw)		30 / 18
A •• -20A5 (acme screw)		15 / 12
A •• -05B5 (ball screw)		61 / 37
A •• -10B5 (ball screw)		30 / 19
A •• -20B5 (ball screw)		15 / 12
A •• -21B5 (ball screw)		15 / 11
Available input voltages	[Vac]	
Single phase		230**
Three phase		400
Input frequency	[Hz]	
1 × 230 Vac model		50/60
3 × 400 Vac model		50
Standard stroke lengths	[inch]	4, 6, 8, 10, 12, 14, 16, 18, 20, 24
Operating temperature limits	[°C]	-25 – +65
Full load duty cycle @ 25 °C	[%]	25
Maximum on time	[s]	45
End play, maximum	[mm]	1,0
Restraining torque	[Nm]	11,3
Lead cross section	[mm ²]	1,5
Cable length	[mm]	600
Protection class		IP45

* Not possible with 400 Vac input voltage.

** 10 µF capacitor required to run the actuator, p/n 9200-448-003

Electrak® 5

230 and 400 Vac - load up to 6800 N



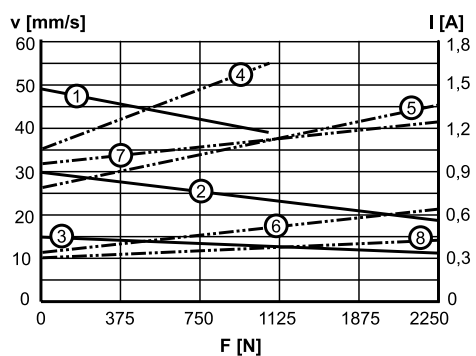
S: stroke, tolerance acme / ball screw
 A: retracted length, tolerance acme / ball screw
 A1: cable
 A2: manual override input (optional)
 A3: housing dimensions for potentiometer option
 A4: potentiometer cable output, cable length = min. 500 mm
 B: 86,1 mm

Stroke (S)	[inch (mm)]	4 (101,6)	6 (152,4)	8 (203,2)	10 (254,0)	12 (304,8)	14 (355,6)	16 (406,4)	18 (457,2)	20 (508,0)	24 (609,6)
Retracted length, acme screw models (A)	[mm]	262,3	313,1	363,9	414,7	465,5	567,1	617,9	668,7	719,5	821,1
Retracted length, ball screw models (A)	[mm]	302,3	353,1	403,9	454,7	505,5	607,1	657,9	708,7	759,5	861,1
Add on length for potentiometer*	[mm]	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0
Weight, acme screw models	[kg]	5,9	6,1	6,3	6,5	6,7	6,9	7,1	7,3	7,5	7,8
Weight, ball screw models	[kg]	6,5	6,7	6,9	7,1	7,3	7,5	7,7	7,9	8,1	8,4
Add on weight for potentiometer*	[kg]	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3
Potentiometer resistance change*	[ohm/mm]	39	39	39	39	20	20	20	20	20	10

* Potentiometer is optional (NPO, BPO option)

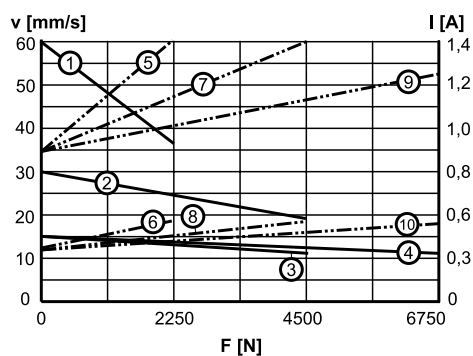
Performance Diagrams

Acme Screw Models
Speed and Current vs. Load



V: speed
 I: current
 F: load
 1: speed A22 -05A5
 2: speed A•• -10A5
 3: speed A•• -20A5
 4: current 230 Vac, A22-05A5
 5: current 230 Vac, A22-10A5
 6: current 400 Vac, A42-10A5
 7: current 230 Vac, A22-20A5
 8: current 400 Vac, A42-20A5

Ball Screw Models
Speed and Current vs. Load



V: speed
 I: current
 F: load
 1: speed A22-05B5, A42-05B5
 2: speed A22-10B5, A42-10B5
 3: speed A22-20B5, A42-20B5
 4: speed A22-21B5, A42-21B5
 5: current 230 Vac, A22-05B5
 6: current 400 Vac, A42-05B5
 7: current 230 Vac, A22-10B5, A22-20B5
 8: current 400 Vac, A42-10B5, A42-20B5
 9: current 230 Vac, A22-21B5
 10: current 400 Vac, A42-21B5

Electrak® 5

230 and 400 Vac - load up to 6800 N

Ordering Key

1	2	3	4	5
A22 -	20B5 -	04	M0	BPO

1. Input voltage

A22 - = 1 × 230 Vac

A42 - = 3 × 400 Vac

2. Dynamic load capacity, screw type and maximum speed

05A5 - = 1100 N, acme, 54 mm/s¹

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

3. Stroke

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)

4. Rear adapter hole position²

M0 = adaptor at 0° (standard position)

M1 = adaptor at 30°

M2 = adaptor at 60°

M3 = adaptor at 90°

M4 = adaptor at 120°

M5 = adaptor at 150°

5. Options³

N = no option

B = anti coast brake³

NPO = potentiometer

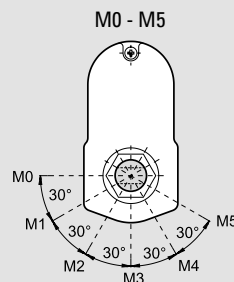
NHW = manual override⁴

BPO = anti coast brake and potentiometer³

BHW = anti coast brake and manual override^{3/4}

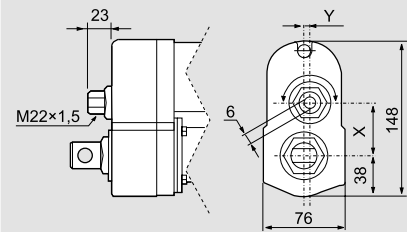
¹05A5 - not possible with 400 Vac input voltage.

²Definition of rear adapter hole positions.



³Ball screw versions must always be ordered with an anti coast brake while acme versions can be ordered with or without an anti coast brake.

⁴Dimensions for manual override option.



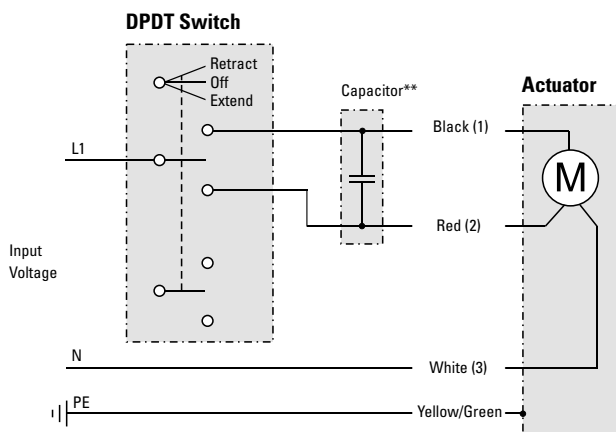
Model	X	Y
05A(B)5 -	49,6	0,0
10A(B)5 -	43,3	5,2
20(21)A(B)5 -	38,9	0,0

Electrak® 5

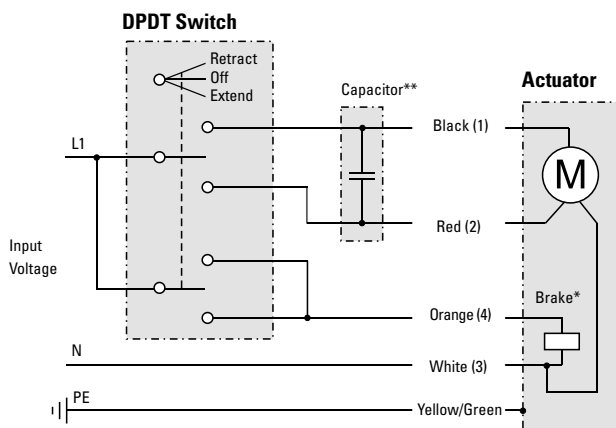
230 and 400 Vac - load up to 6800 N

Wiring Diagram - 1 × 230 Vac

Without anti coast brake*



With anti coast brake*



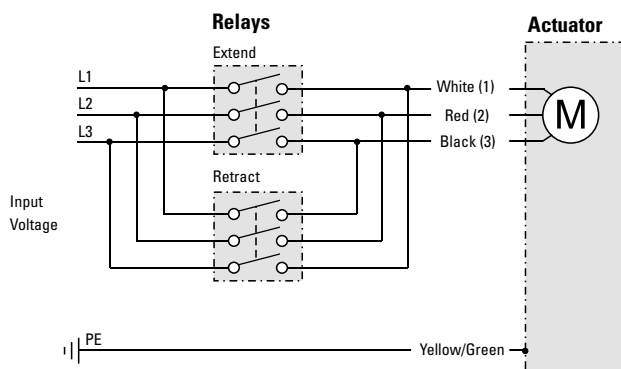
* Anti coast brake is standard on Electrak 5 / LA24 for ball screw models and optional for acme screw models. On DMA there are no anti coast brake on acme models while ball screw models always are equipped with an anti coast brake.

** 10 µF capacitor required to run the actuator, p/n 9200-448-003.

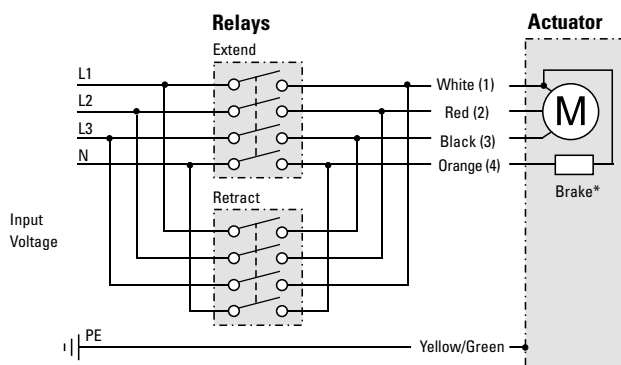
Leads can be either color or number marked. Connect black (1) lead to L1 and white (3) lead to N (neutral) to retract the actuator. Change L1 from lead black (1) to lead red (2) to extend the actuator. If the actuator is equipped with an anti coast brake, release the brake by connecting orange (4) lead lead to L1.

Wiring Diagram - 3 × 400 Vac

Without anti coast brake*



With anti coast brake*



* Anti coast brake is optional on Electrak 5 / LA24 on both acme and ball screw models. On DMA there are no anti coast brake on acme models while ball screw models always are equipped with an 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. If the actuator is equipped with an anti coast brake, release the brake by connecting orange (4) lead lead to N (neutral).

Electrak® LA24

230 and 400 Vac - load up to 6800 N



Standard Features and Benefits

- Robust, strong and reliable
- Corrosion free aluminium cover tube
- Stainless steel extension tube
- Acme or ball screw models
- Rugged and robust
- Withstands very harsh environments
- Trunnion mounting possible
- Overload clutch for mid and end of stroke protection
- T-slot grooves in the cover tube for magnetic sensors
- Heavy duty motor with thermal switch
- Anti-coast brake for repeatable positioning on all ball screw models. Optional on acme screw models.
- Maintenance free

General Specifications

Parameter	Electrak LA24
Screw type	acme or ball
Internally restrained	yes
Manual override	no, optional
Dynamic braking	no
Holding brake acme screw models ball screw models	no, self-locking yes
End of stroke protection	overload clutch
Mid stroke protection	overload clutch
Motor protection	auto reset thermal switch
Motor connection	cable
Motor connector	no
Certificates	UL, CSA, CE
Options	<ul style="list-style-type: none"> • potentiometer • manual override

Performance Specifications

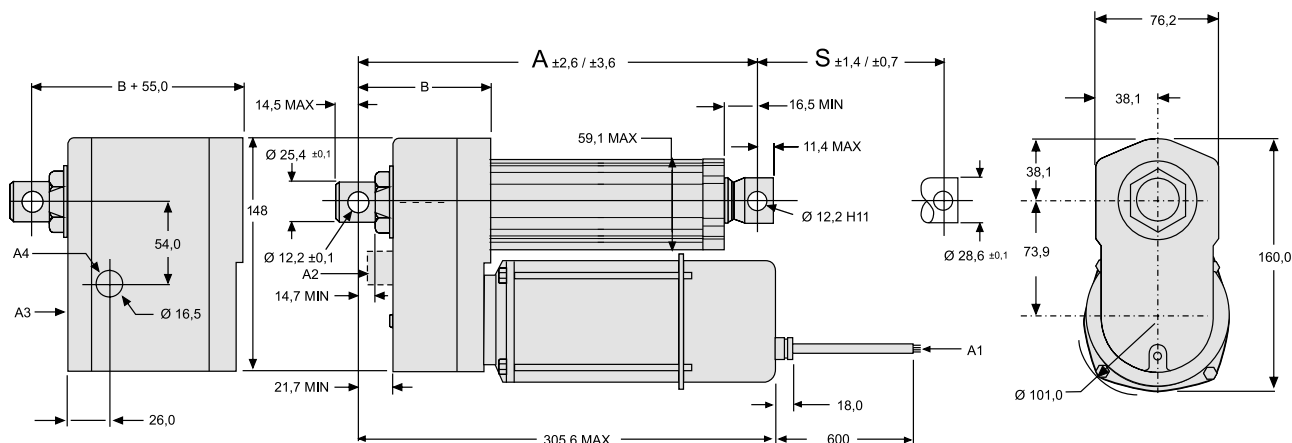
Parameter	Electrak LA24
Maximum load, dynamic / static AA •• -05A65M (acme screw)* AA •• -10A65M (acme screw) AA •• -20A65M (acme screw) AA •• -05B65M (ball screw) AA •• -10B65M (ball screw) AA •• -20B65M (ball screw) AA •• -21B65M (ball screw)	[N] 1100 / 11350 2250 / 11350 2250 / 11350 2250 / 18000 4500 / 18000 4500 / 18000 6800 / 18000
Speed, at no load / at maximum load AA •• -05A65M (acme screw)* AA •• -10A65M (acme screw) AA •• -20A65M (acme screw) AA •• -05B65M (ball screw) AA •• -10B65M (ball screw) AA •• -20B65M (ball screw) AA •• -21B65M (ball screw)	[mm/s] 48 / 38 30 / 18 15 / 12 61 / 37 30 / 19 15 / 12 15 / 11
Available input voltages Single phase Three phase	[Vac] 230** 400
Input frequency 1 × 230 Vac model 3 × 400 Vac model	[Hz] 50/60 50
Standard stroke lengths	[inch] 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600
Operating temperature limits	[°C] -25 – +65
Full load duty cycle @ 25 °C	[%] 25
Maximum on time	[s] 45
End play, maximum	[mm] 1,0
Restraining torque	[Nm] 0
Lead cross section	[mm²] 1,5
Cable length	[mm] 600
Protection class	IP45

* Not possible with 400 Vac input voltage.

** 10 µF capacitor required to run the actuator, p/n 9200-448-003

Electrak® LA24

230 and 400 Vac - load up to 6800 N



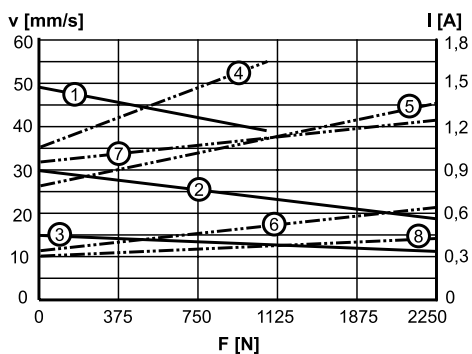
S: stroke, tolerance acme / ball screw
 A: retracted length, tolerance acme / ball screw
 A1: cable
 A2: manual override input (optional)
 A3: housing dimensions for potentiometer option
 A4: potentiometer cable output, cable length = min. 500 mm
 B: 86,1 mm

Stroke (S)	[mm]	50	100	150	200	250	300	350	400	450	500	550	600
Retracted length, acme screw models (A)	[mm]	216,7	266,7	316,7	366,7	416,7	466,7	566,7	616,7	666,7	716,7	766,7	816,7
Retracted length, ball screw models (A)	[mm]	269,6	319,6	369,6	419,6	469,6	519,6	619,6	669,6	719,6	769,6	819,6	869,6
Add on length for potentiometer*	[mm]	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0	55,0
Weight, acme screw models	[kg]	6,0	6,2	6,4	6,6	6,8	7,0	7,3	7,5	7,7	7,9	8,1	8,3
Weight, ball screw models	[kg]	6,8	7,0	7,2	7,4	7,6	7,8	8,1	8,3	8,5	8,7	8,9	9,1
Add on weight for potentiometer*	[kg]	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3
Potentiometer resistance change*	[ohm/mm]	39	39	39	39	39	20	20	20	20	20	10	10

* Potentiometer is optional (NPO, BPO option)

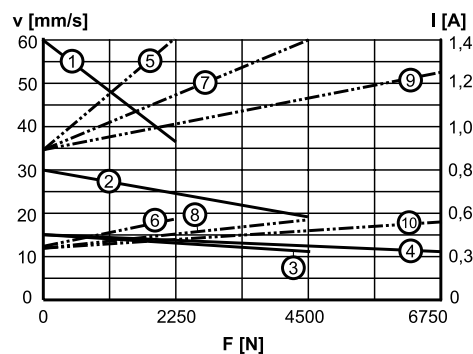
Performance Diagrams

Acme Screw Models
Speed and Current vs. Load



V: speed
 I: current
 F: load
 1: speed AA22-05A65M
 2: speed AA••-10A65M
 3: speed AA••-20A65M
 4: current 230 Vac, AA22-05A65M
 5: current 230 Vac, AA22-10A65M
 6: current 400 Vac, AA42-10A65M
 7: current 230 Vac, AA22-20A65M
 8: current 400 Vac, AA42-20A65M

Ball Screw Models
Speed and Current vs. Load



V: speed
 I: current
 F: load
 1: speed AA22-05B65M, AA42-05B65M
 2: speed AA22-10B65M, AA42-10B65M
 3: speed AA22-20B65M, AA42-20B65M
 4: speed AA22-21B65M, AA42-21B65M
 5: current 230 Vac, AA22-05B65M
 6: current 400 Vac, AA42-05B65M
 7: current 230 Vac, AA22-10B65M, AA22-20B65M
 8: current 400 Vac, AA42-10B65M, AA42-20B65M
 9: current 230 Vac, AA22-21B65M
 10: current 400 Vac, AA42-21B65M

Electrak® LA24

230 and 400 Vac - load up to 6800 N

Oredring Key

1	2	3	4	5
AA22 -	20B65M	05	MF	BPO

1. Input voltage

AA22 - = 1 × 230 Vac

AA42 - = 3 × 400 Vac

2. Dynamic load capacity, screw type and maximum speed

05A65M = 1100 N, acme, 54 mm/s¹

10A65M = 2250 N, acme, 30 mm/s

20A65M = 2250 N, acme, 15 mm/s

05B65M = 2250 N, ball, 61 mm/s

10B65M = 4500 N, ball, 30 mm/s

20B65M = 4500 N, ball, 15 mm/s

21B65M = 6800 N, ball, 15 mm/s

3. Stroke

05 = 50 mm

10 = 100 mm

15 = 150 mm

20 = 200 mm

25 = 250 mm

30 = 300 mm

35 = 350 mm

40 = 400 mm

45 = 450 mm

50 = 500 mm

55 = 550 mm

60 = 600 mm

4. Rear / front adapter hole position²

M0 = both adaptors at 0° (standard position)

M1 = rear adaptor at 30°, front at 0°

M2 = rear adaptor at 60°, front at 0°

M3 = rear adaptor at 90°, front at 0°

M4 = rear adaptor at 120°, front at 0°

M5 = rear adaptor at 150°, front at 0°

MF = rear and front adaptor at 90°

5. Options³

N = no option

B = anti coast brake³

NPO = potentiometer

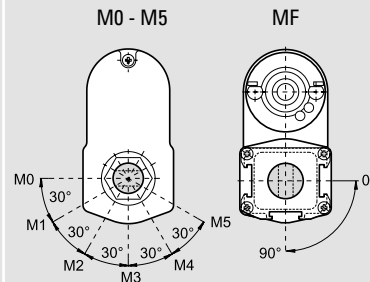
NHW = manual override⁴

BPO = anti coast brake and potentiometer³

BHW = anti coast brake and manual override^{3/4}

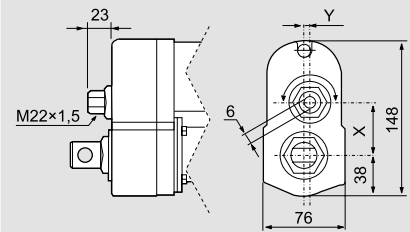
¹05A65M not possible with 400 Vac input voltage.

²Definition of adapter hole positions.



³Ball screw versions must always be ordered with an anti coast brake while acme versions can be ordered with or without an anti coast brake.

⁴Dimensions for manual override option.



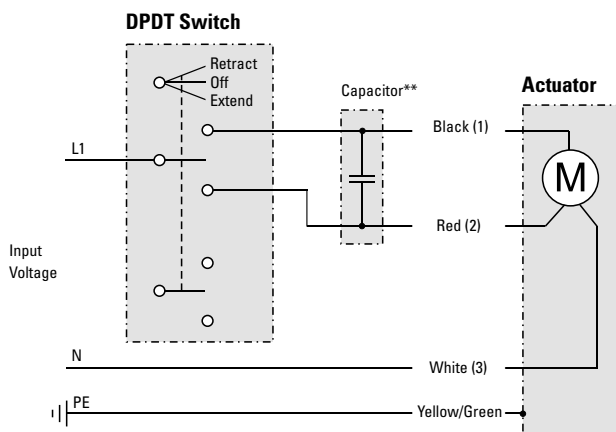
Model	X	Y
05A(B)65M	49,6	0,0
10A(B6)5M	43,3	5,2
20(21)A(B)65M	38,9	0,0

Electrak® LA24

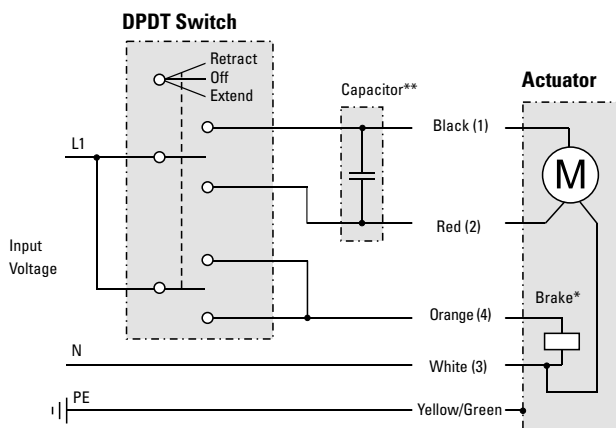
230 and 400 Vac - load up to 6800 N

Wiring Diagram - 1 × 230 Vac

Without anti coast brake*



With anti coast brake*



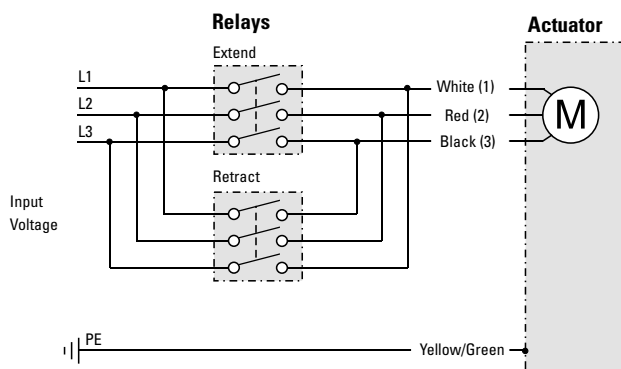
* Anti coast brake is standard on Electrak 5 / LA24 for ball screw models and optional for acme screw models. On DMA there are no anti coast brake on acme models while ball screw models always are equipped with an anti coast brake.

** 10 µF capacitor required to run the actuator, p/n 9200-448-003.

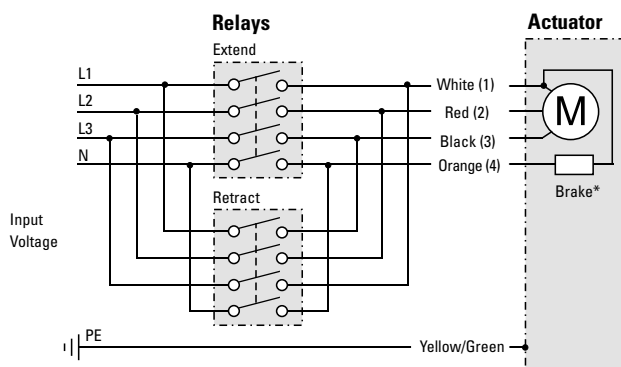
Leads can be either color or number marked. Connect black (1) lead to L1 and white (3) lead to N (neutral) to retract the actuator. Change L1 from lead black (1) to lead red (2) to extend the actuator. If the actuator is equipped with an anti coast brake, release the brake by connecting orange (4) lead lead to L1.

Wiring Diagram - 3 × 400 Vac

Without anti coast brake*



With anti coast brake*



* Anti coast brake is optional on Electrak 5 / LA24 on both acme and ball screw models. On DMA there are no anti coast brake on acme models while ball screw models always are equipped with an 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 to retract the actuator. If the actuator is equipped with an anti coast brake, release the brake by connecting orange (4) lead lead to N (neutral).

Rodless Actuator LM80-I

24 Vdc - load up to 2000 N



Standard Features and Benefits

- Rodless actuator for vertical operation with motor down
- For use in domestic, office or medical applications
- Rigid self supporting extruded aluminum profile
- Durable and corrosion free
- Holding brake prevents downward motion at power off
- Lightweight and quiet operation
- Safety nut on ball screw versions
- Easy and fast T-slot mounting
- Maintenance free

General Specifications

Parameter	LM80-I
Screw type	trapezoidal or ball
Internally restrained	yes
Manual override	no
Dynamic braking	no
Holding brake	yes
End of stroke protection	spring loaded soft stop
Mid stroke protection	no
Motor protection	no
Motor connection	cable
Motor connector	8-pole Molex mini-fit jr
Certificates	CE
Options	<ul style="list-style-type: none"> • manual override • encoder • stroke over 1500 mm*

* Contact customer support

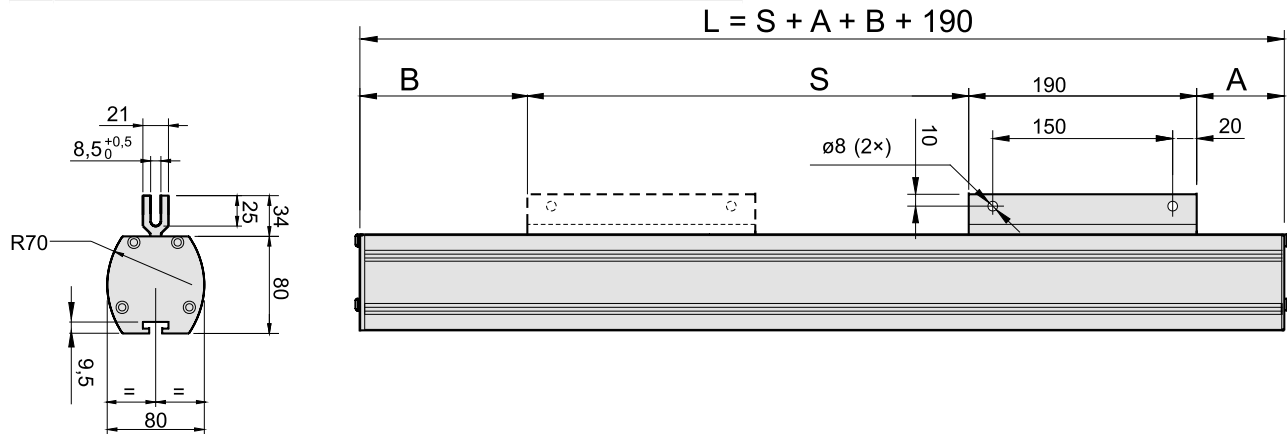
Performance Specifications

Parameter	LM80-I
Maximum load (Fa) [N]	
DT24-T68M ••• GCV	650
DT24-B61M ••• GCV	1000
DT24-B62M ••• GCV	450
DT24-B65M ••• GCV	2000
Maximum load torque (Ma) [Nm]	
DT24-T68M ••• GCV	250
DT24-B61M ••• GCV	400
DT24-B62M ••• GCV	180
DT24-B65M ••• GCV	750
Speed, at no load / at maximum load [mm/s]	
DT24-T68M ••• GCV	24 / 22
DT24-B61M ••• GCV	31 / 27
DT24-B62M ••• GCV	61 / 55
DT24-B65M ••• GCV	15 / 13
Available input voltages [Vdc]	24
Standard stroke lengths [mm]	500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500
Operating temperature limits [°C]	0 – +40
Full load duty cycle @ 20 °C [%]	15
Maximum on time [s]	120
Restraining torque [Nm]	0
Lead cross section [mm ²]	1,5
Cable length [mm]	2000
Protection class	IP44

Rodless Actuator LM80-I

24 Vdc - load up to 2000 N

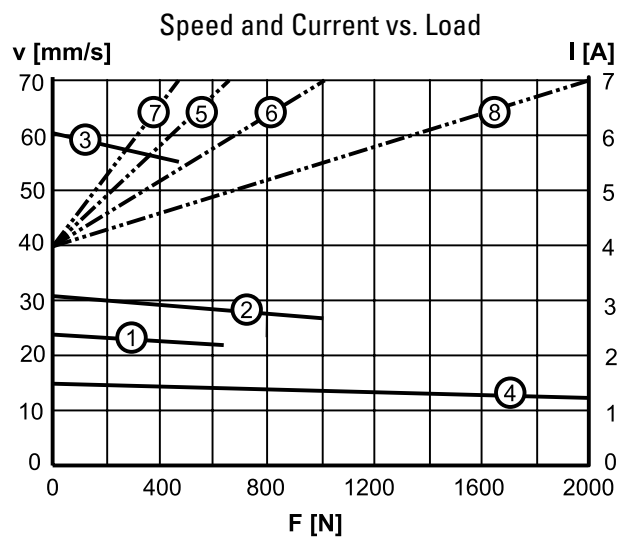
! Note: this unit may only be mounted vertically with the motor down even if drawing shows it horizontally.



S: stroke
L: length of profile
A: non motor side
B: motor side

Stroke (S)	[mm]	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Dimensions (A) / (B)	[mm]											
DT24-T68M ••• GCV		50,0 / 238,0										
DT24-B61M ••• GCV		53,0 / 287,0										
DT24-B62M ••• GCV		53,0 / 287,0										
DT24-B65M ••• GCV		53,0 / 264,0										
Weight	[kg]											
DT24-T68M ••• GCV		11,1	12,9	14,7	16,5	18,2	20,0	21,8	23,6	25,4	27,2	28,9
DT24-B61M ••• GCV		11,6	13,4	15,2	17,0	18,7	20,5	22,3	24,1	25,9	27,7	29,5
DT24-B62M ••• GCV		11,6	13,4	15,2	17,0	18,7	20,5	22,3	24,1	25,9	27,7	29,5
DT24-B65M ••• GCV		12,0	13,8	15,6	17,6	19,3	21,1	22,9	24,7	26,5	28,2	30,1

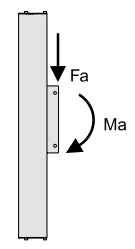
Performance Diagrams



V: speed I: current F: load

1: speed DT24-T68M ••• GCV	5: current DT24-T68M ••• GCV
2: speed DT24-B61M ••• GCV	6: current DT24-B61M ••• GCV
3: speed DT24-B62M ••• GCV	7: current DT24-B62M ••• GCV
4: speed DT24-B65M ••• GCV	8: current DT24-B65M ••• GCV

Definition of Forces



Rodless Actuator LM80-I

24 Vdc - load up to 2000 N

Ordering Key

1	2	3	4	5	6	7
DT24 -	T68M -	090	G	C	V	H

1. Model and input voltage

DT24 - = LM80, 24 Vdc

2. Load torque capacity and screw type

T68M - = 250 Nm, trapezoidal

B61M - = 400 Nm, ball

B62M - = 180 Nm, ball

B65M - = 750 Nm, ball

3. Stroke

050 = 500 mm

060 = 600 mm

070 = 700 mm

080 = 800 mm

090 = 900 mm

100 = 1000 mm

110 = 1100 mm

120 = 1200 mm

130 = 1300 mm

140 = 1400 mm

150 = 1500 mm

4. Motor position

G = in line

5. Motor enclosure

C = with enclosure (IP44)

6. Mounting position and spline safety function

V = vertical with motor down, no spline safety function

7. Options

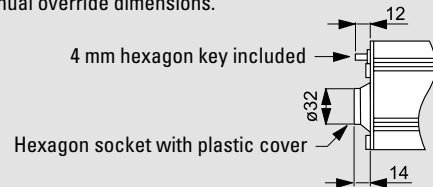
X = no option

H = manual override¹

E = encoder

K = manual override + encoder

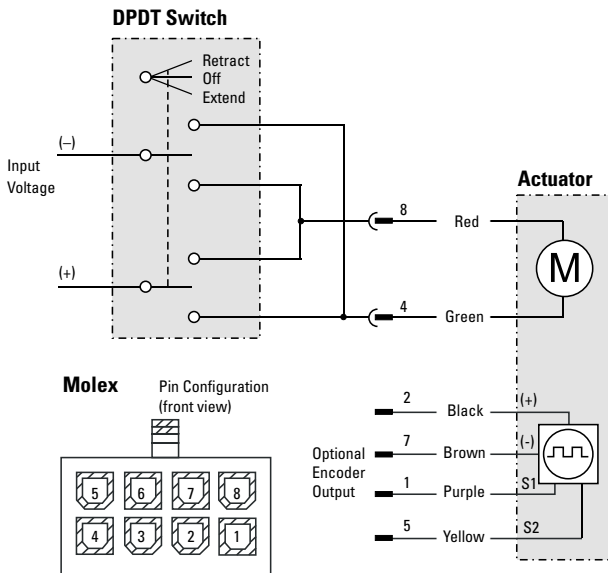
¹ Manual override dimensions.



Rodless Actuator LM80-I

24 Vdc - load up to 2000 N

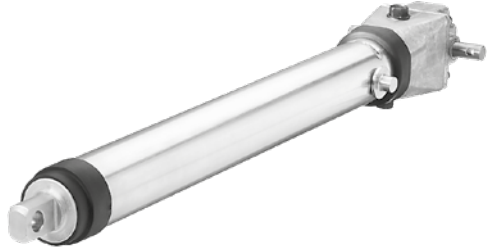
Wiring Diagram



Connect the green lead to positive and red to negative to extend the actuator. Change polarity to retract the actuator. The encoder is supplied with 5 - 18 Vdc on pin 2 and 7 and the two pulse train signals are generated on pin 1 and 5.

Electrak® Non-driven Actuator PPA-M

Load up to 6670 N



Standard Features and Benefits

- Actuator with double input shafts to which a customer supplied motor or/and an intermediate shaft can be mounted
- Can be operated manually
- Robust and versatile
- Withstands very harsh environments
- Highly efficient ball screw drive system
- Holding brake prevents back driving
- Trunnion to clevis mounting
- Maintenance free

General Specifications

Parameter	Electrak PPA-M
Screw type	ball
Internally restrained	no
Manual override	no*
Holding brake	yes
End of stroke protection	no
Mid stroke protection	no
Certificates	–
Options	protective bellows

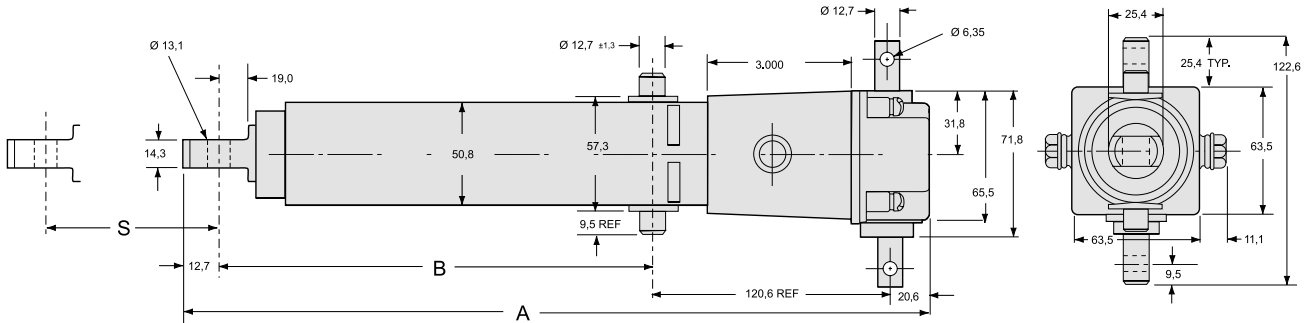
* Either of the two input shafts can be used for manual operation if both shafts are not connected to a motor or an intermediate shaft.

Performance Specifications

Parameter		PPA-M
Maximum load, dynamic / static	[N]	6670 / 13350
Maximum speed at max. load	[mm/s]	8
Maximum input torque	[Nm]	9
Maximum input speed	[rpm]	100
Standard stroke lengths	[in]	4, 8, 12, 18, 24, 36
Operating temperature limits	[°C]	-25 – +65
End play, maximum	[mm]	1,0
Restraining torque	[Nm]	23

Electrak® Non-driven Actuator PPA-M

Load up to 6670 N

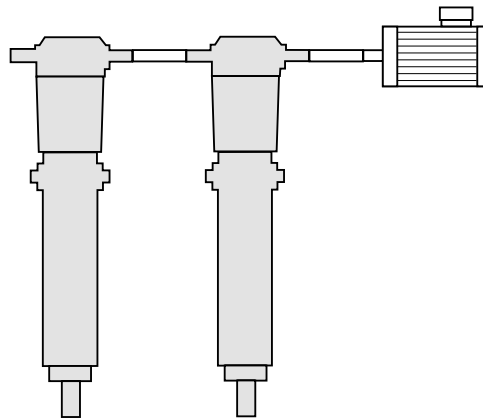


S: stroke
 A: retracted length
 B: retracted length to trunnions

Stroke (S)	[mm]	101,6	203,2	304,8	457,2	609,6	914,4
Retracted length (A)	[mm]	375,9	477,5	579,1	782,3	934,7	1239,5
Retracted length to trunnions (B)	[mm]	223,5	325,1	426,7	629,9	782,3	1087,1
Weight	[kg]	3,4	4,2	4,8	6,1	7,3	9,7

Synchronous Operation

Two or more PPA-M actuators can easily be mechanically linked for synchronous operation by using intermediate shafts. The intermediate shafts and necessary couplings are provided by the customer.



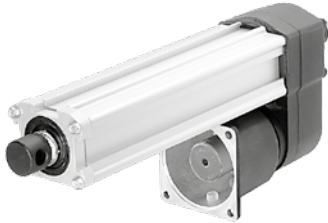
Electrak® Non-driven Actuator PPA-M

Load up to 6670 N

Ordering Key			
1	2	3	4
PPA00 -	01B65 -	24	N-XXX
1. Model PPA00 - = Electrak PPA-M	2. Dynamic load capacity 01B65 - = 6670 N	3. Stroke 04 = 4 inch (101,6 mm) 06 = 6 inch (152,4 mm) 08 = 8 inch (203,2 mm) 12 = 12 inch (304,8 mm) 18 = 18 inch (457,2 mm) 24 = 24 inch (609,6 mm) 36 = 36 inch (914,4 mm)	4. Bellows option N-XXX = no bellows N-XXC = bellows

Electrak® Non-driven Actuator FA14

Load up to 6800 N



Standard Features and Benefits

- Actuator with a flange where a customer supplied motor can be mounted
- Rugged and robust
- Withstands very harsh environments
- Stainless steel extension tube
- Corrosion free aluminium cover tube
- Acme or ball screw drive
- Trunnion mounting possible
- Overload clutch for mid and end of stroke protection
- T-slot grooves in the cover tube for magnetic sensors
- Maintenance free

General Specifications

Parameter	FA14
Screw type	acme or ball
Internally restrained	yes
Manual override	no, optional
Holding brake acme screw versions ball screw versions	no, self-locking yes
End of stroke protection	overload clutch
Mid stroke protection	overload clutch
Certificates	CE
Options	<ul style="list-style-type: none"> • manual override • alternative adaptor positions • custom color*

* Contact customer support

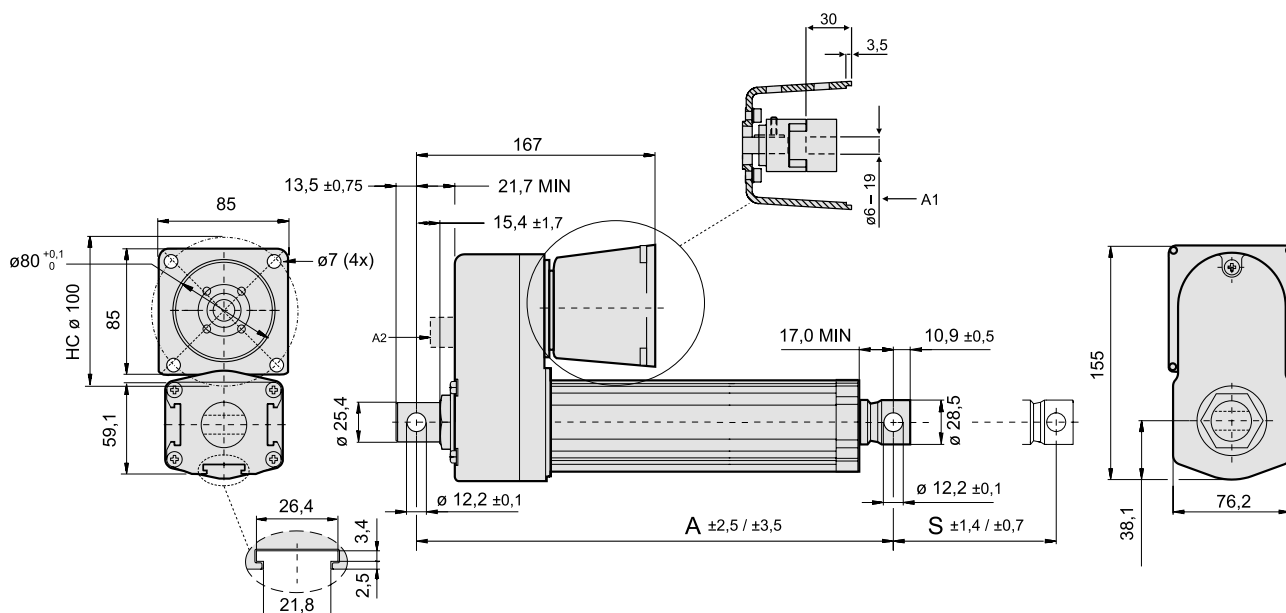
Performance Specifications

Parameter		FA14
Maximum load, dynamic / static [N]	FA14-05A65 (acme screw)	1100 / 11350
	FA14-10A65 (acme screw)	2250 / 11350
	FA14-20A65 (acme screw)	2250 / 11350
	FA14-05B65 (ball screw)	2250 / 18000
	FA14-10B65 (ball screw)	4500 / 18000
	FA14-20B65 (ball screw)	4500 / 18000
	FA14-21B65 (ball screw)	6800 / 18000
Maximum speed at max. load* [mm/s]	FA14-05A65 (acme screw)	32
	FA14-10A65 (acme screw)	18
	FA14-20A65 (acme screw)	12
	FA14-05B65 (ball screw)	37
	FA14-10B65 (ball screw)	19
	FA14-20B65 (ball screw)	12
	FA14-21B65 (ball screw)	11
Maximum input torque [Nm]		1,8
Maximum input speed [rpm]		3000
Standard stroke lengths [mm]		50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600
	Operating temperature limits [°C]	-25 – +65
	End play, maximum [mm]	1,0
	Restraining torque [Nm]	0

* Recommended maximum speed

Electrak® Non-driven Actuator FA14

Load up to 6800 N



S: stroke, tolerance acme / ball screw

A: retracted length, tolerance acme / ball screw

A1: minimum/maximum input shaft bore in the coupling (supplied with a 6 mm hole)

A2: manual override input (optional)

Note: The standard flange for FA14 is IEC 80.

Stroke (S)	[mm]	50	100	150	200	250	300	350	400	450	500	550	600
Retracted length (A), acme screw models	[mm]	216,7	266,7	316,7	366,7	416,7	466,7	566,7	616,7	666,7	716,7	766,7	816,7
Retracted length (A), ball screw models	[mm]	269,6	319,6	369,6	419,6	469,6	519,6	619,6	669,6	719,6	769,6	819,6	869,6
Weight, acme screw models	[kg]	3,5	3,7	4,0	4,2	4,5	4,7	5,0	5,2	5,5	5,7	6,0	6,3
Weight, ball screw models	[kg]	4,2	4,5	4,7	5,0	5,2	5,5	5,7	6,0	6,2	6,5	6,7	7,0

Optional Flanges Overview

Description	Outer dimension on flange [mm]	Flange inner diameter [mm]	Hole circle (HC) [mm]	Pilot Spigot Ø	Total length [mm]
Nema 23	Ø90	38,1	Ø66,675	38,1	68
Nema 34	92x92	74	Ø100	80	91,5
IEC 63 B14	Ø90	-	Ø75	60	64
Servo 80, S80	92x92	-	Ø100	80	71
IL348	85x85	-	Ø100	73	71
AKM3x-AN	Ø90	50	Ø75	60	73
AKM4x-AN	92x92	74	Ø100	80	91,5

Note: Optional flanges are available separately as conversion kits. Part number see page 84.

Electrak® Non-driven Actuator FA14

Load up to 6800 N

FA14				
1	2	3	4	5
FA14 -	10A65M	35	M2	N

1. Model
FA14 - = Electrak FA14

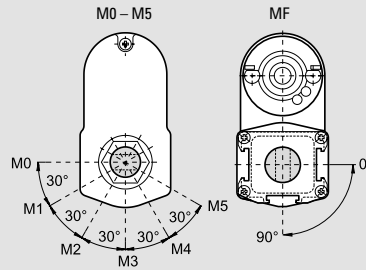
2. Dynamic / static load capacity and screw type
 05A65M = 1100 / 11350 N, acme
 10A65M = 2250 / 11350 N, acme
 20A65M = 2250 / 11350 N, acme
 05B65M = 2250 / 18000 N, ball
 10B65M = 4500 / 18000 N, ball
 20B65M = 4500 / 18000 N, ball
 21B65M = 6800 / 18000 N, ball

3. Stroke
 05 = 50 mm
 10 = 100 mm
 15 = 150 mm
 20 = 200 mm
 25 = 250 mm
 30 = 300 mm
 35 = 350 mm
 40 = 400 mm
 45 = 450 mm
 50 = 500 mm
 55 = 550 mm
 60 = 600 mm

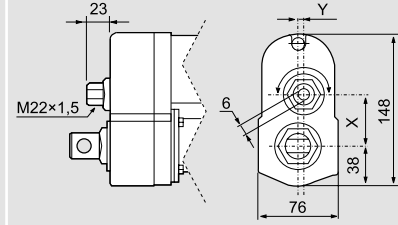
4. Rear / front adapter hole position¹
 M0 = both adaptors at 0° (standard)
 M1 = rear adaptor at 30°, front at 0°
 M2 = rear adaptor at 60°, front at 0°
 M3 = rear adaptor at 90°, front at 0°
 M4 = rear adaptor at 120°, front at 0°
 M5 = rear adaptor at 150°, front at 0°
 MF = rear and front adaptor at 90°

5. Options
 N = no option
 HW = manual override²

¹ Definition of adapter hole positions.



² Dimensions for manual override option.



Model	X	Y
05A(B)65M	49,6	0,0
10A(B)65M	43,3	5,2
20(21)A(B)65M	38,9	0,0

Flanges for FA14

Description	Part Number	Description	Part Number
Nema 23	D390887	IL348	D389819
Nema 34	D389984	Akm3x-AN	D390930
IEC 63 B14	D390820	Akm4x-AN	D389939
Servo 80, S80	D390822		

Actuator Controls

Switches

DPDT Switch



- Robust switch
- Double pole, double throw (DPDT)
- 15 A rating at 270 Vac
- Center "off"
- Two momentary contacts
- Wiring diagram on label

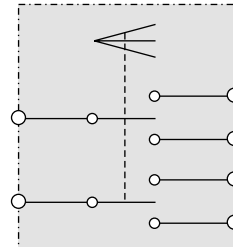
Specifications

Parameter		DPDT Switch
Maximum voltage	[Vac]	270
Maximum current	[A]	15
Part number		830-8004-016

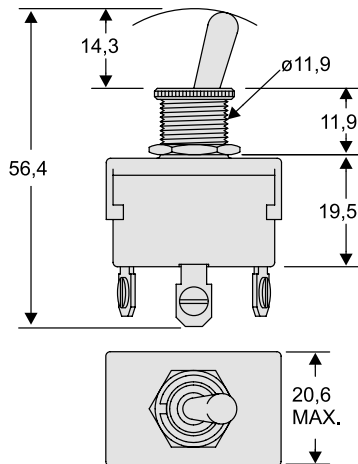
Actuator Compatibility

Electrak 1, Electrak 1SP, Electrak 050, Electrak PPA-DC, Electrak 10, Electrak LA14, Electrak 5, Electrak Throttle, Electrak LA24, LC, DMD, DMA, LM80-H, LM80-V, LM80-I, DGB

Wiring Diagram



Dimensions



Note: sometimes the switch can manage higher current than the actuator and sometimes it is the other way around. Always make sure that both the switch and the actuator can manage the current that the application require.

Actuator Controls

Electronic Controls

Control AC-063



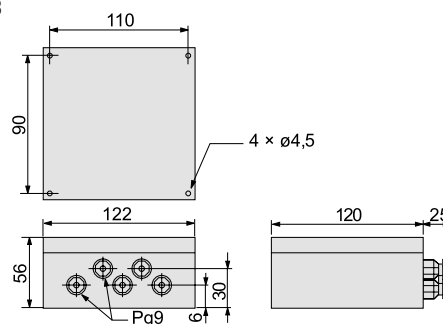
- Rugged and robust control designed to operate under the hardest conditions
- Auto shut off function if the current or duty cycle limits of the control is exceeded.
- Robust plastic enclosure
- Versions for DC or AC supply voltage
- Versions with or without limit switch inputs
- Versions with or without control pendant

Actuator Compatibility	
AC-063B	Electrak PPA-DC, Electrak 10, Electrak LA14, DMD
AC-063BC	Electrak PPA-DC, Electrak 10, Electrak LA14, DMD
AC-063C	Electrak PPA-DC, Electrak 10, Electrak LA14, DMD

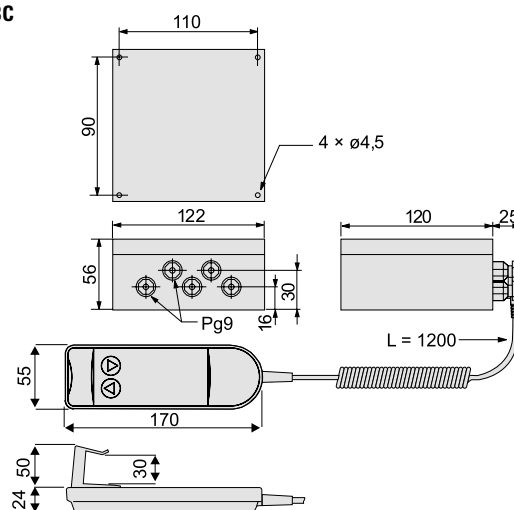
! Note: sometimes the control can manage higher current and/or duty cycle than the actuator and sometimes it is the other way around. Always make sure that both the control and the actuator can manage the current and duty cycle that the application require.

Dimensions

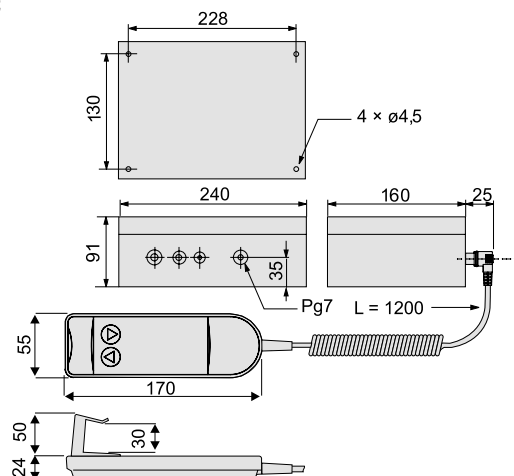
AC-063B



AC-063BC



AC-063C



Actuator Controls

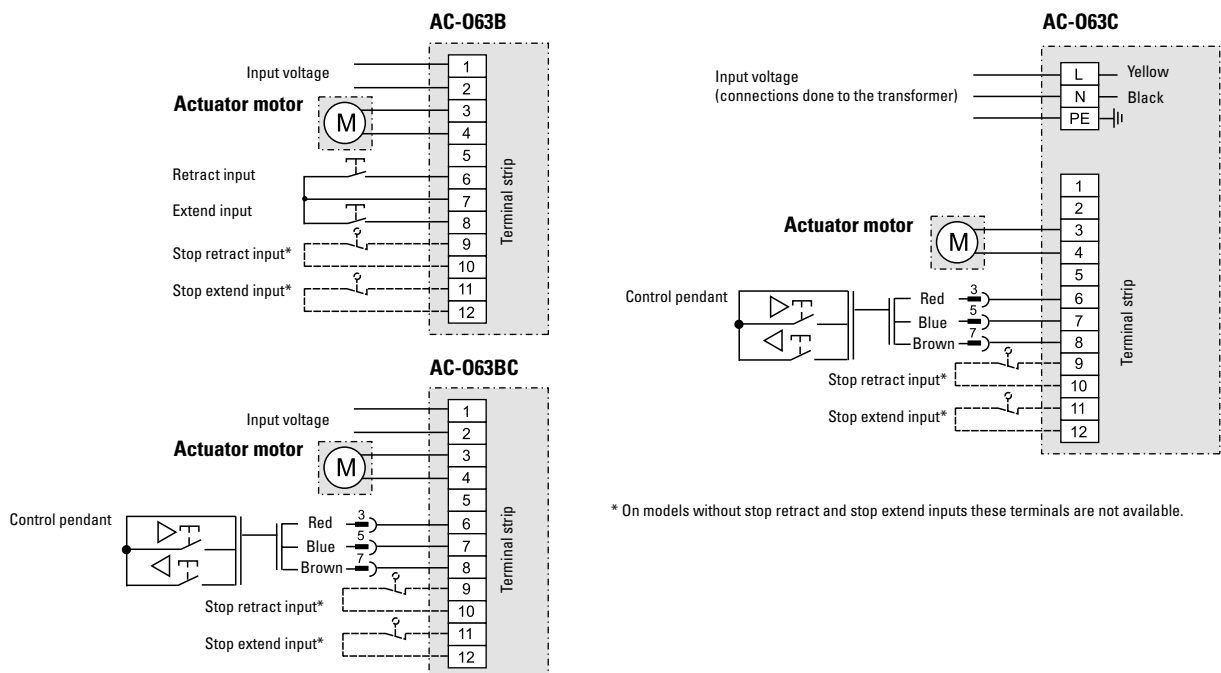
Electronic Controls

Control AC-063

Specifications

Parameter	AC-063B		AC-063BC		AC-063C		
Input voltage [V]	Vdc	12 – 36	12 – 36	12 – 36	12 – 36	-	-
	Vac @ 50 Hz	-	-	-	-	230	230
Output voltage [Vdc]		12 – 36	12 – 36	12 – 36	12 – 36	24	24
Output current, max. [A]	@ 12 Vdc output	30	30	30	30	-	-
	@ 24 Vdc output	17	17	17	17	17	17
	@ 36 Vdc output	12	12	12	12	-	-
Max. duty cycle @ 25 °C [%]		10	10	10	10	10	10
Weight of control [kg]		0,4	0,4	0,4	0,4	3	3
Protection class		IP65	IP65	IP54	IP54	IP54	IP54
Limit switch inputs		no	yes	no	yes	no	yes
Control pendant included		no	no	yes	yes	yes	yes
Certificates		CE	CE	CE	CE	CE	CE
Part number		DC24-1B	DCA24-1B	DC24-1BC	DCA24-1BC	DC24-1C	DCA24-1C

Wiring Diagram



Actuator Controls

Electronic Controls

Control AC-247 ELS

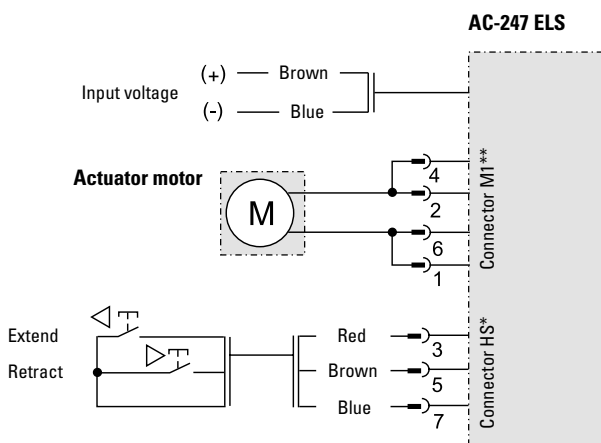


- Compact, robust and light weight
- Electronic limit switches (ELS) stop the actuator at end of stroke if the actuator runs into an obstacle
- Connector input for DCG14-1H control pendant

Actuator Compatibility

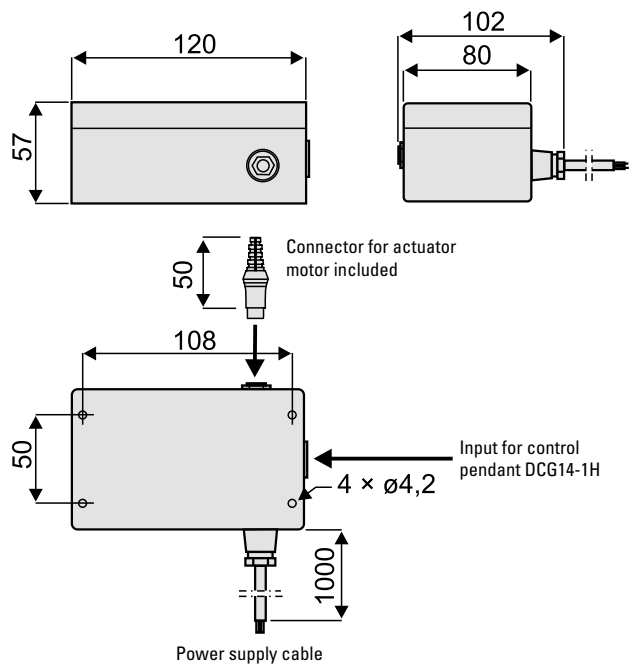
Electrak 1, Electrak 1SP, Electrak 050, LM80-H, LM80-V, LM80-I

Wiring Diagram



* The diagram shows the control connected to control pendant DCG14-1H, but any type of normally open contacts can be used to control the direction of the actuator.
 ** Each motor lead must be connected to two pins in the connector in order to not exceed the current limit of the connector.

Dimensions



! Note: sometimes the control can manage higher current and/or duty cycle than the actuator and sometimes it is the other way around. Always make sure that both the control and the actuator can manage the current and duty cycle that the application require.

Actuator Controls

Electronic Controls

Control AC-247 ELS

Specifications

Parameter		AC-247 ELS	AC-247 ELS	AC-247 ELS
Input voltage	[Vdc]	12 or 24	12	24
Output voltage	[Vdc]	12 or 24	12	24
Output current, max. @ 12 Vdc output @ 24 Vdc output	[A]	10 5	12 -	- 8
Max. duty cycle @ 25 °C	[%]	10	10	10
Weight of control	[kg]	0,3	0,3	0,3
Protection class		IP54	IP54	IP54
Electronic limit switches		yes	yes	yes
Connector for control pendant		yes ¹	yes ¹	yes ¹
Control pendant included ¹		no	no	no
Certificates		CE	CE	CE
Part number		D604 110	D604 111	D604 112

¹Control pendant type DCG14-1H is recommended, see page 68.

Actuator Controls

Electronic Controls

Control DCG



- Controls available for single actuator operation or synchronous operation of two actuators equipped with encoders.
- Small and light weight control operated via a control pendant which is ordered separately
- Built in Electronic Limit Switches (ELS) stop the actuator automatically at end of stroke or mid stroke stall
- The control pendant is ordered separately
- The “Control to Actuator” cable is ordered separately and comes in several version depending of the type of actuator being used

Actuator Compatibility

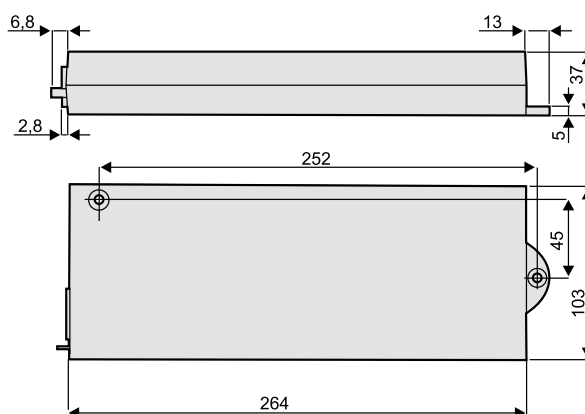
DCG-150	Electrak 1, Electrak 1SP, Electrak 050 ¹ , Max Jac, LC1600
DCG-160	LM80-V
DCG-170	LM80-H
DCG-180	LC2000, LC3000, LM80-I
DCG-190	LA10, LA14, PPA-DC, DMD
DCG-250	Synchronous operation of two LC1600 ²
DCG-260	Synchronous operation of two LM80-I ²
DCG-280	Synchronous operation of two LC2000, LC3000 ²

¹ This control does not work with Electrak 050 that has the limit switch option (“FS” or “PF” option).

² The units must be equipped with encoders. LM80-I can not have spline safety function.

! Note: sometimes the control can manage higher current and/or duty cycle than the actuator and sometimes it is the other way around. Always make sure that both the control and the actuator can manage the current and duty cycle that the application require.

Dimensions



Wiring Diagram

No wiring is necessary to the control. All connections are done through plugs.

Actuator Controls

Electronic Controls

DCG Controls Overview

Specifications									
Parameter	DCG-150	DCG-160	DCG-170	DCG-180	DCG-190	DCG-250 ⁷	DCG-260 ⁵	DCG-280 ⁸	
Input voltage ¹ [Vac]	1 × 230 ± 6%								
Input frequency [Hz]	50/60								
Output voltage [Vdc]	24								
Output current, max. ²									
up [A]	4	8	8	8	13	4	2 × 8	2 × 8	
down [A]	4	5,6	8	8	13	4	2 × 5,6	2 × 8	
Operating temperature limits [°C]	+0 – +30								
Max. duty cycle @ 25 °C ³ [%]	10								
Maximum on time [s]	60	120	120	60	60	60	60	60	
Weight of control [kg]	0.5								
Protection class	Class 1 (not for outdoor use)								
Electronic limit switches	yes	yes	yes	yes	yes	yes ⁶	yes ⁶	yes ⁶	
Included control pendant ⁴	no								
Certificates	CE								

¹ 115 Vac input voltage also available. Contact customer support.

² These controls are current limited. Review the current/load curves for the actuator you selected to make sure the control will provide enough current for the thrust you need. You may need to select one of the AC-063 or AC-247 ELS controls.

³ Control will shut off if duty cycle is exceeded and automatically reset when cooled off.

⁴ Control pendant type DCG14-1H is recommended, see page 68.

⁵ Control for synchronous operation of two LM80-I rodless actuators. Contact customer support for information on synchronous operation of other actuator models.

⁶ DCG-250, DCG-260, DCG-280 uses a pulse counting function instead of current sensing to determine if the actuator is moving at the correct speed. If the pulses arrives too slowly or not at all the control will stop the motion of both actuators.

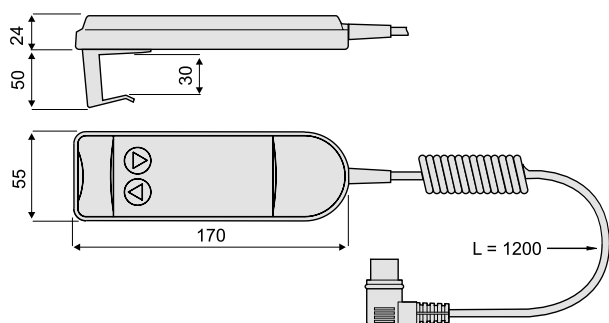
⁷ Control for synchronous operation of two LC1600 lifting columns.

⁸ Control for synchronous operation of two LC2000 or LC3000 lifting columns. Contact customer support for information on synchronous operation of other actuator models.

Actuator Controls

Control Accessories

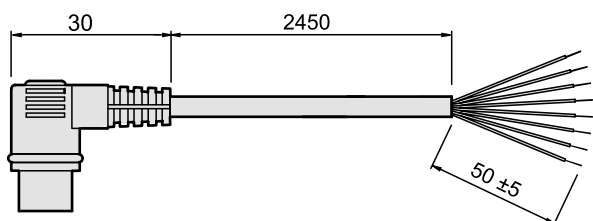
DCG Control Pendant



Specifications		
Parameter		DCG14-1H
Weight	[kg]	0,4
Cable length	[mm]	1200
Certificates		CE
Part number		DCG14-1H

- Handy and light weight control pendant with spiral cord cable which connects to the DCG, AC-063 (possible on BC and C versions only) and AC-247 ELS control pendant input with a plug

Control to Control Cable for DCG, AC-063 and AC-247 ELS Controls



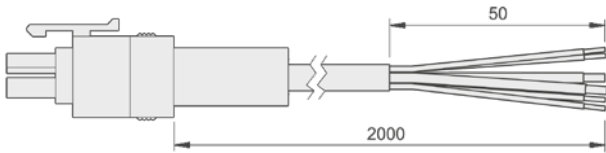
Specifications		
Parameter		
Lead cross section	[mm ²]	7 × 0,14
Cable length	[mm]	2450
Part number		D620 095

- This cable connects with its plug to the control pendant input on DCG, AC-063 (possible on BC and C versions only) and AC-247 ELS in order to connect the control to another device than the DCG control pendant

Actuator Controls

Control Accessories

Control to Actuator Cables with Single Connector for DCG Controls



Specifications

Parameter		
Lead cross section [mm ²]	4 × 0,25 + 2 × 1,5	4 × 0,25 + 2 × 1,5
Cable length [mm]	2000	4300
Part number	D620 143	D620 145

- Connects the DCG control to actuators without connector

DCG Actuator Controls

1	2	3	4	5
DCG	24	-1	M	180

1. Type of control

DCG = actuator control type DCG

2. Output voltage

24 = 24 Vdc

3. Type of operation

- 1 = operation of a single actuator
- 2 = operation of two parallel synchronous actuators

4. Input voltage

M = 230 Vac

U = 115 Vac

5. Matching actuator

- 0150 = single drive of LA1, E050 and Q050
- 0154 = single drive of LC1600
- 0160 = single drive of all LM80 for vertical operation
- 0170 = single drive of all LM80 for horizontal operation, E150 without limit switches
- 0180 = single drive of LC2000, LC3000
- 0190 = single drive of LA10, LA14, PPA-DC and Movoact-DC
- 0254 = parallel synchronous drive of LC1600 with encoder feedback
- 0260 = parallel synchronous drive of LM80 inline versions with encoder feedback
- 0280 = parallel synchronous drive of LC2000, LC3000 with encoder feedback

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