



## Electrak® PPA – Technical Features



### Standard Features

- Strong and versatile heavy-duty actuator
- High duty cycle
- 12, 24, 36 or 90 Vdc as standard input voltages
- Highly efficient ball screw drive system
- Static load up to 13350 N (3000 lbf)
- Dynamic load up to 6670 N (1500 lbf)
- Stroke up to 36 inch
- Overload clutch for mid and end of stroke protection
- Motor with thermal switch
- Maintenance free

### General Specifications

Screw type	ball
Nut type	ball nut
Manual override	no
Anti-rotation	no
Static load holding brake	yes
Safety features	overload clutch motor auto reset thermal switch
Electrical connections	flying leads
Compliances standard optional	— CE <sup>(1,2)</sup>

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

(2) 90 Vdc model not CE compliant

### Optional Mechanical Features

Protective bellows

### Optional Electrical Features

Potentiometer feedback

Encoder feedback

End of stroke limit switches

### Accessories

Rear clevis mounting kit

Tube mounting kits

### Compatible Controls

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

Electrak<sup>®</sup> PPA – Technical Specifications

Mechanical Specifications		
Max. static load <sup>(1)</sup>	[N (lbf)]	13350 (3000)
Max. dynamic load (Fx)	[N (lbf)]	3330 (750)
PPAxx-18B65		6670 (1500)
PPAxx-58B65		
Speed @ no load/max. load	[mm/s (in/s)]	32/28 (1.26/1.10)
PPAxx-18B65		12/9 (0.49/0.37)
PPAxx-58B65		
Min. ordering stroke (S) length	[in]	4
Max. ordering stroke (S) length <sup>(2)</sup>	[in]	36
Standard stroke lengths	[in]	4, 8, 12, 18, 24, 36
Operating temperature limits	[°C (F)]	-25 – 65 (-15 – 150)
Full load duty cycle @ 25 °C (77 °F)	[%]	30
End play, maximum	[mm (in)]	1.0 (0.04)
Restraining torque	[Nm (lbf-in)]	11 (100)
PPAxx-18B65		22 (200)
PPAxx-58B65		
Protection class - static		IP54

(1) Max. static load at fully retracted stroke

Electrical Specifications		
Available input voltages <sup>(1)</sup>	[Vdc]	12, 24, 36, 90
Input voltage tolerance	[%]	± 10
Current draw @ no load/max. load <sup>(2)</sup>	[A]	
PPA12-18B65		7.5/22.0
PPA12-58B65		7.5/13.5
PPA24-18B65		3.0/12.0
PPA24-58B65		3.0/12.0
PPA36-18B65		4.5/8.0
PPA36-58B65		3.0/6.0
Motor leads length	[mm (in)]	420 (16.5)
Motor leads cross section	[mm <sup>2</sup> (AWG)]	2 (14)
Connection of electrical options <sup>(3)</sup>		terminals

(1) For other input voltages - contact customer support

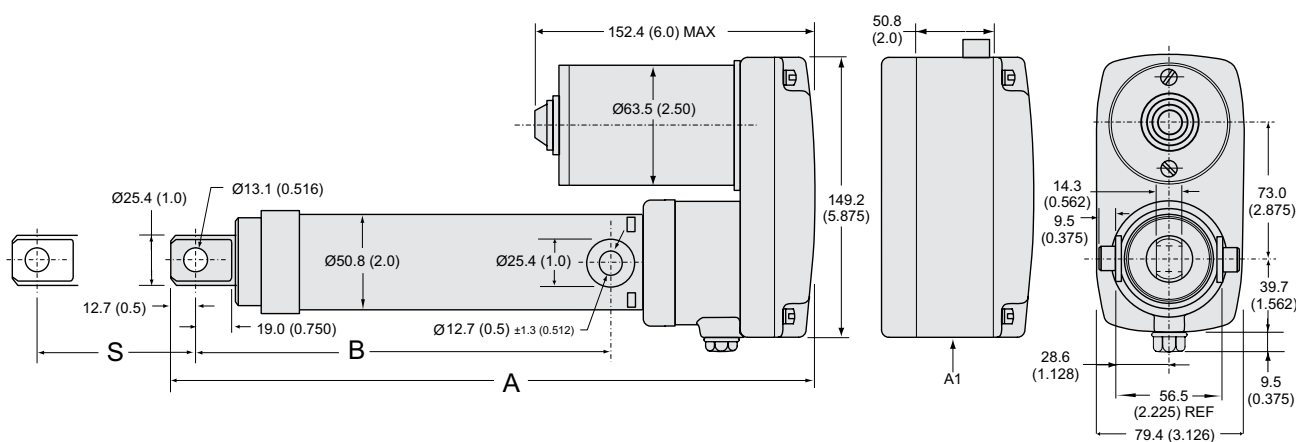
(2) For current draw for 90 Vdc input voltage models - contact customer support

(3) Potentiometer, encoder or end of stroke limit switches



# Electrak® PPA – Dimensions

Dimensions	Projection
mm [inch]	



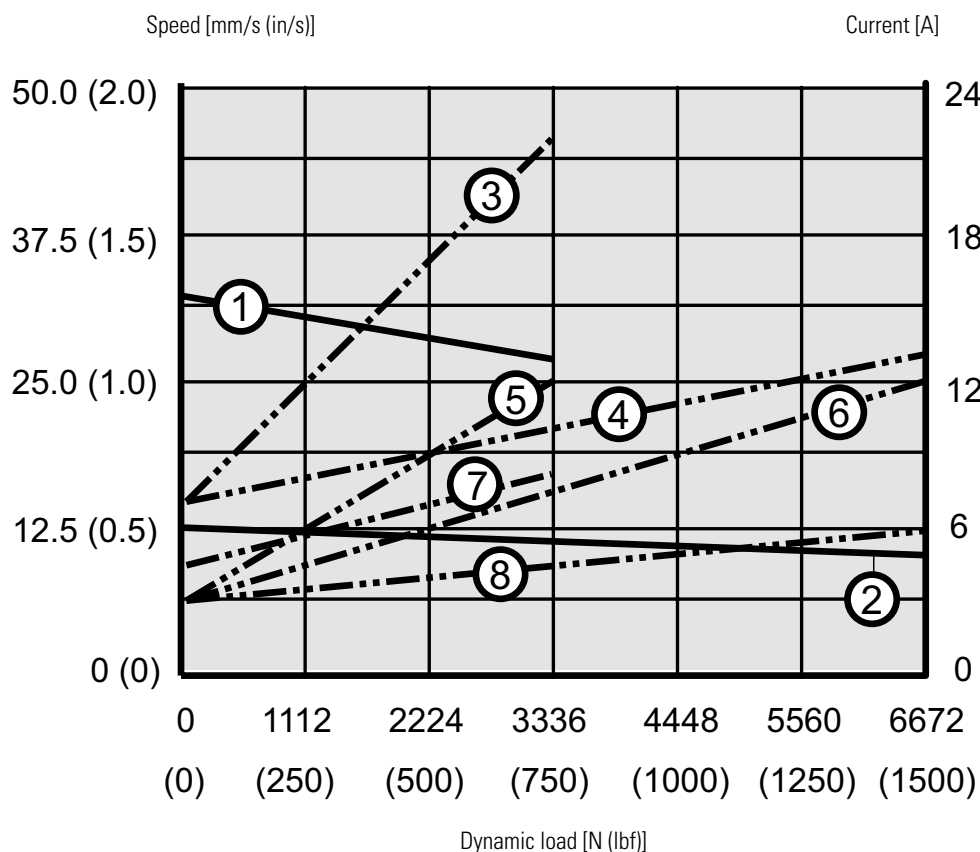
S: stroke  
A: retracted length

B: retracted length to trunnions  
A1: housing dimensions for limit switch, encoder or potentiometer options

Stroke, Retracted Length and Weight Relationships							
Ordering stroke (S)	[in (mm)]	4 (101.5)	8 (203.2)	12 (304.8)	18 (457.2)	24 (609.6)	36 (914.4)
Retracted length without option (A)	[mm]	348.0	449.6	551.2	754.4	906.8	1211.6
	[in]	13.7	17.7	21.7	29.7	35.7	47.7
Retracted length with potentiometer, encoder or limit switch option (A)	[mm]	398.8	500.4	602.0	805.2	957.6	1262.4
	[in]	15.7	19.7	23.7	31.7	37.7	49.7
Retracted length to trunnions (B)	[mm]	223.5	352.1	426.7	629.9	782.3	1087.1
	[in]	8.8	12.8	16.8	24.8	30.8	42.8
Weight	[kg]	4.5	5.3	6.0	7.2	8.4	10.8
	[lbf]	10.0	11.6	13.3	15.9	18.5	23.8
Add on weight for potentiometer, encoder or limit switch options	[kg]	0.5					
	[lbf]	1.1					

# Electrak® PPA – Performance Diagrams

Speed and Current vs. Load



Speed

- 1: PPAxx-18B65 (3330 N (750 lbf))
- 2: PPAxx-58B65 (6670 N (1500 lbf))

Current

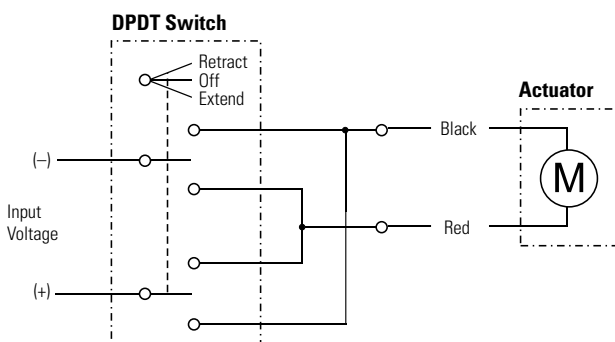
- 3: PPA12-18B65 (12 Vdc, 3330 N (750 lbf))
- 4: PPA12-58B65 (12 Vdc, 6670 N (1500 lbf))
- 5: PPA24-18B65 (24 Vdc, 3330 N (750 lbf))
- 6: PPA24-58B65 (24 Vdc, 6670 N (1500 lbf))
- 7: PPA36-18B65 (36 Vdc, 3330 N (750 lbf))
- 8: PPA36-58B65 (36 Vdc, 6670 N (1500 lbf))

## Electrak® PPA – Ordering Key

Ordering Key					
1	2	3	4	5	6
<b>PPA12-</b>	<b>58B65-</b>	<b>08</b>	<b>N</b>	<b>LS</b>	<b>X</b>
<b>1. Model and input voltage</b> PPA12 - = Electrak PPA DC, 12 Vdc PPA24 - = Electrak PPA DC, 24 Vdc PPA36 - = Electrak PPA DC, 36 Vdc PPA90 - = Electrak PPA DC, 90 Vdc <sup>(1)</sup>			<b>4. Brake option</b> N = no brake option		
<b>2. Dynamic load capacity</b> 18B65 - = 3330 N (750 lbf) 58B65 - = 6670 N (1500 lbf)			<b>5. Feedback option</b> XX = no feedback option LS = end of stroke limit switches PO = potentiometer <sup>(2)</sup> HS = encoder HL = encoder + end of stroke limit switches		
<b>3. Ordering stroke length</b> 04 = 4 inch (101.6 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)			<b>6. Bellows option</b> X = no bellows C = bellows		
			<small>(1) Not CE compliant.            (2) Potentiometer + end of stroke limit switches not possible.</small>		

# Electrak® PPA – Electrical Connections

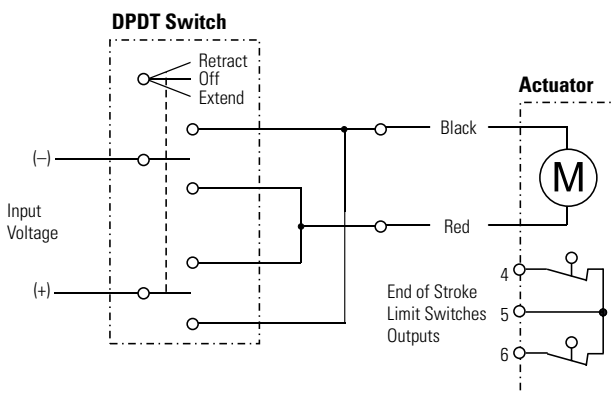
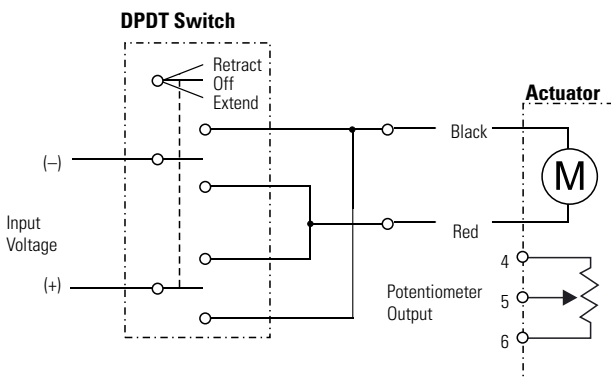
Without Option		
Actuator supply voltage	[Vdc]	
PPA12		12
PPA24		24
PPA36		36
PPA90		90



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

With Option Potentiometer		
Actuator supply voltage	[Vdc]	
PPA12		12
PPA24		24
PPA36		36
PPA90		90
Potentiometer type		wire-wound
Potentiometer max. voltage	[Vdc]	32
Potentiometer max. power	[W]	2
Potentiometer linearity	[%]	± 5
Potentiometer output resolution	[ohm/mm]	
4 inch stroke		98
8 inch stroke		49
12 inch stroke		33
18 inch stroke		22
24 inch stroke		16
36 inch stroke		11

With Option End of Stroke Limit Switches		
Actuator supply voltage	[Vdc]	
PPA12		12
PPA24		24
PPA36		36
PPA90		90
Limit switches max. voltage	[V]	250
Limit switches max. current	[A]	15.1



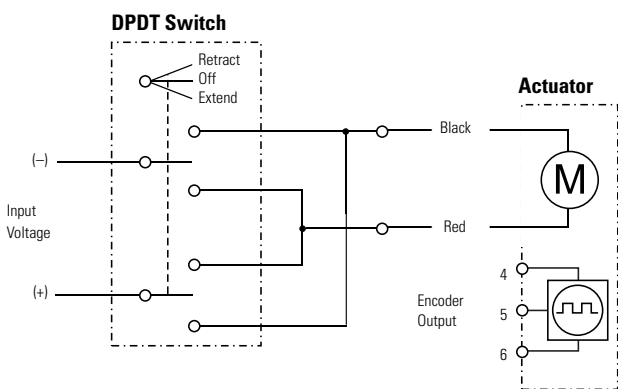
Connect the black lead to positive and red to negative to extend the actuator. Change polarity to retract the actuator. The potentiometer output has 0 ohm between terminal 4 and 5 when the actuator is fully retracted.

Connect the black lead to positive and red to negative to extend the actuator. Change polarity to retract the actuator. Limit switch outputs are on terminals 4 and 6, and they have a common voltage input on terminal 5.



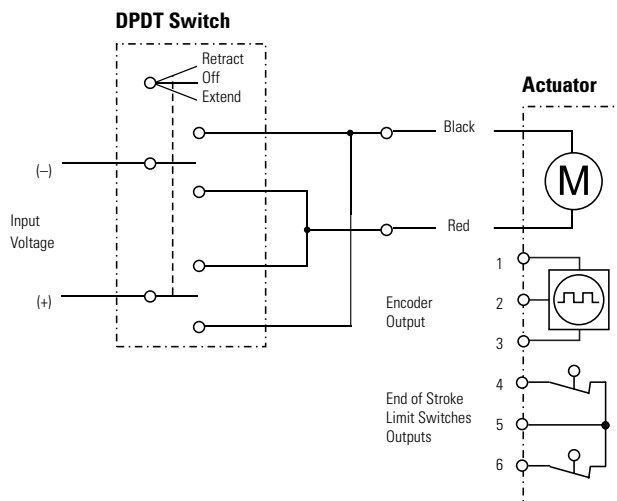
# Electrak® PPA – Electrical Connections

With Option Encoder		
Actuator supply voltage	[Vac]	
PPA12		12
PPA24		24
PPA36		36
PPA90		90
Encoder type		hall effect
Encoder input voltage	[Vdc]	4.5 - 12
Encoder output voltage levels low (logical zero), typical / max.	[Vdc]	0.1 / 0.25
Encoder resolution	[mm/pulse]	1.18
Number of encoder channels		1



Connect the black lead to positive and red to negative to extend the actuator. Change polarity to retract the actuator. The encoder is supplied between terminals 4 and 6, and the pulse train signal is generated on terminal 5.

With Option Encoder + End of Stroke Limit Switches		
Actuator supply voltage	[Vac]	
PPA12		12
PPA24		24
PPA36		36
PPA90		90
Encoder type		hall effect
Encoder input voltage	[Vdc]	4.5 - 12
Encoder output voltage levels low (logical zero), typical / max.	[Vdc]	0.1 / 0.25
Encoder resolution	[mm/pulse]	1.18
Number of encoder channels		1
Limit switches max. voltage	[V]	250
Limit switches max. current	[A]	15.1



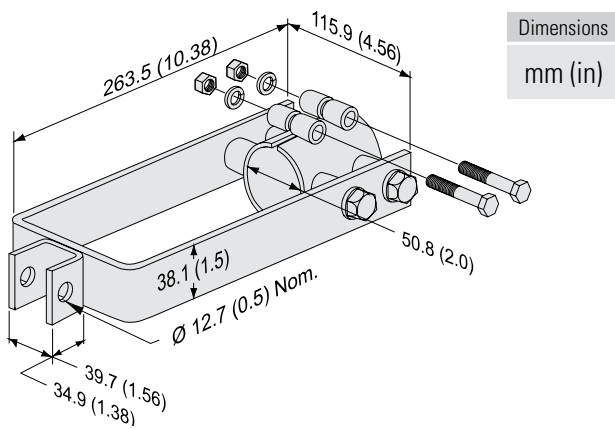
Connect the black lead to positive and red to negative to extend the actuator. Change polarity to retract the actuator. The encoder is supplied between terminals 1 and 3, and the pulse train signal is generated on terminal 2. Limit switch outputs are on terminals 4 and 6, and they have a common voltage input on terminal 5.

## Electrak® PPA – Accessories

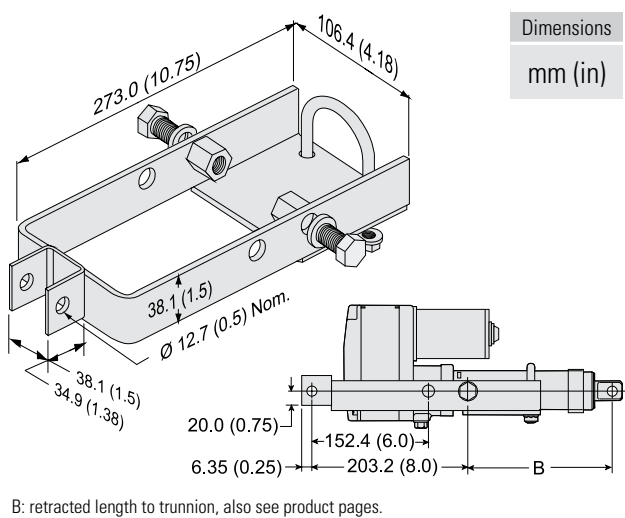
PPA Rear Clevis Mounting Kits		
Designation	Compatible Actuators	Part Number
PPA rear clevis mounting kit type 1	Electrak PPA	7827320
PPA rear clevis mounting kit type 2	Electrak PPA	7824295

The rear clevis mounting kits are attached to the tube of an Electrak PPA actuator, allowing it to be mounted clevis to clevis style.

PPA Rear Clevis Mounting Kit - Type 1



PPA Rear Clevis Mounting Kit - Type 2

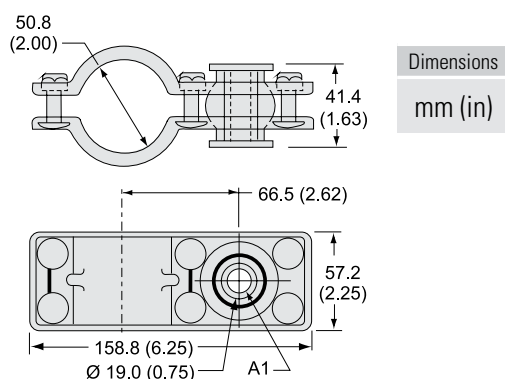


B: retracted length to trunnion, also see product pages.

PPA Tube Mounting Kits		
Designation	Compatible Actuators	Part Number
Electrak PPA tube mount - light duty 3330 N	Electrak PPA	7822520
Electrak PPA tube mount - heavy-duty 6670 N	Electrak PPA	7821783

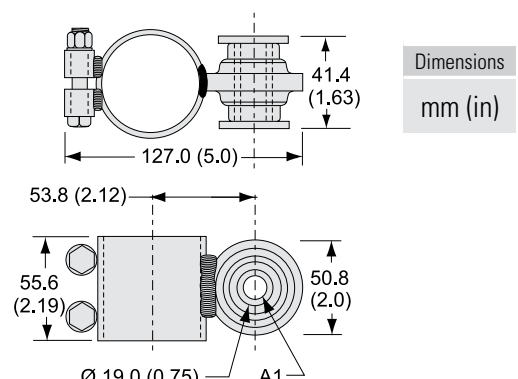
The tube mounting kits work as a clamp that is mounted at any desired position along the actuator tube. Trunnion pins for the tube mount clamp are supplied and mounted by the customer.

Electrak PPA Tube Mount - Light Duty 3330 N (750 lbf)



A1: hole diameter 12.7 mm (0.5 in) with bushing.

Electrak PPA Tube Mount - Heavy-duty 6670 N (1500 lbf)



A1: hole diameter 12.7 mm (0.5 in) with bushing.