

Nippon Pulse LINEARSTEP® Motors

A tin-can linear actuator, the PFL series (LINEARSTEP®) is designed to provide a simple system at a fraction of the cost of a conventional rotary stepper motor. Offered in diameters of 25mm and 35mm, the LINEARSTEP® series can also be ordered with one of three pitches on the lead thread screw (0.48mm, 0.96mm, and 1.2mm). The LINEARSTEP® series comes with either a bipolar or unipolar winding.

Relationship Between Pulse Rate and Speed

When the thread pitch and the pulse rate change, the speed will also change.

48 steps/revolution

unit: mm/s

Thread Pitch (mm)	Pulse Rate (pps)						
	100	200	300	400	500	600	700
0.48	1	2	3	4	5	6	7
0.96	2	4	6	8	10	12	14
1.20	2.5	5.0	7.5	10	12.5	15	17.5

24 steps/revolution

unit: mm/s

Thread Pitch (mm)	Pulse Rate (pps)						
	100	200	300	400	500	600	700
0.48	2	4	6	8	10	12	14
0.96	4	8	12	16	20	24	28
1.20	5.0	10	15	20	25	30	35



PFL35T-48C4



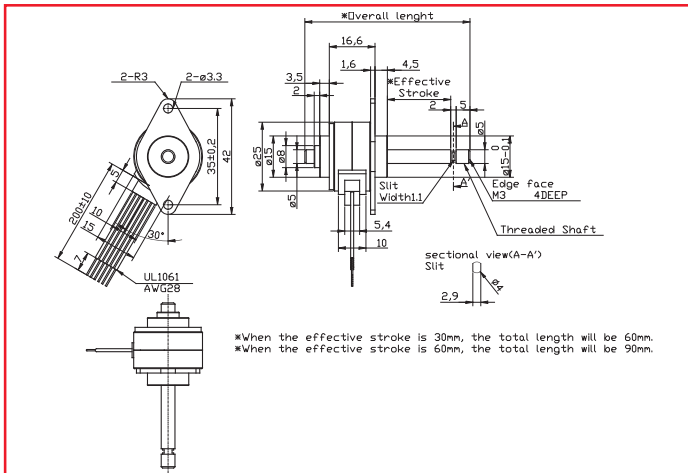
PFCL25-24P4

Model Number Explanation

PF(C) L 25 T - 48 Q 4 - 048 - 30
 1 2 3 4 5 6 7 8 9

- 1 - Series Designation**
 PF: Standard
 PFC: Connector
- 2 - LINEARSTEP® Designation**
- 3 - Motor Diameter (mm)**
 25mm
 35mm
- 4 - Thin stack**
- 5 - Steps per Revolution**
 24: 15°/step
 48: 7.5°/step
- 6 - Winding**
 C: 12V unipolar
 D: 5V unipolar
 P: 12V bipolar (PFCL25 only)
 Q: 5V bipolar
 R: 12V bipolar (PFL35T only)
- 7 - Magnet Material**
 4: Neodymium
- 8 - Thread Pitch**
 048: 0.48mm
 096: 0.96mm
 120: 1.20mm
- 9 - Shaft Stroke in mm**
 30: 30mm stroke, 60mm shaft
 60: 60mm stroke, 90mm shaft

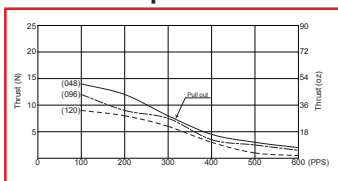
Additional winding options are available to meet your needs.



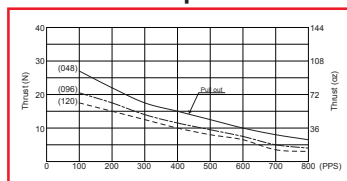
		PFCL25-24											
Type Of Winding		Unipolar						Bipolar					
Steps Per Revolution*		24											
Thread Pitch	mm	0.48	0.96	1.2	0.48	0.96	1.2	0.48	0.96	1.2	0.48	0.96	1.2
Travel/Step	mm	0.02	0.04	0.05	0.02	0.04	0.05	0.02	0.04	0.05	0.02	0.04	0.05
Stroke	mm	30 or 60											
Force @ 200pps	N	11	9.5	8	11	9.5	8	16	14	11	16	14	11
Rated Voltage	V	12			5			12			5		
Rated Current	A/Ø	0.10			0.31			0.10			0.30		
Resistance	Ω	120			16			122			15		
Inductance	mH/Ø	27			3.7			59			7.1		
Operating Temp. Range	°C	-10 to +50											
Temperature Rise*	°K	70											
Weight	g	60											

		PFCL25-48											
Type Of Winding		Unipolar						Bipolar					
Steps Per Revolution		48											
Thread Pitch	mm	0.48	0.96	1.2	0.48	0.96	1.2	0.48	0.96	1.2	0.48	0.96	1.2
Travel/Step	mm	0.01	0.02	0.025	0.01	0.02	0.025	0.01	0.02	0.025	0.01	0.02	0.025
Stroke	mm	30 or 60											
Force @ 200 pps	N	22	17.5	15	22	17.5	15	31	22.5	20.5	31	22.5	20.5
Rated Voltage	V	12			5			12			5		
Rated Current	A/Ø	0.10			0.31			0.10			0.33		
Resistance	Ω	120			16			122			15		
Inductance	mH/Ø	33			4.5			73			8.7		
Operating Temp. Range	°C	-10 to +50											
Temperature Rise	°K	70											
Weight	g	60											

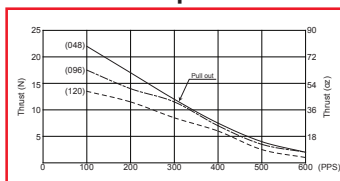
Unipolar Constant Voltage 24C4 Torque Curve



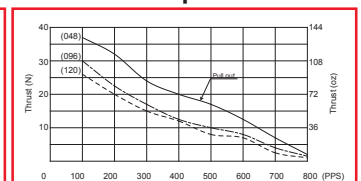
Unipolar Constant Voltage 48C4 Torque Curve



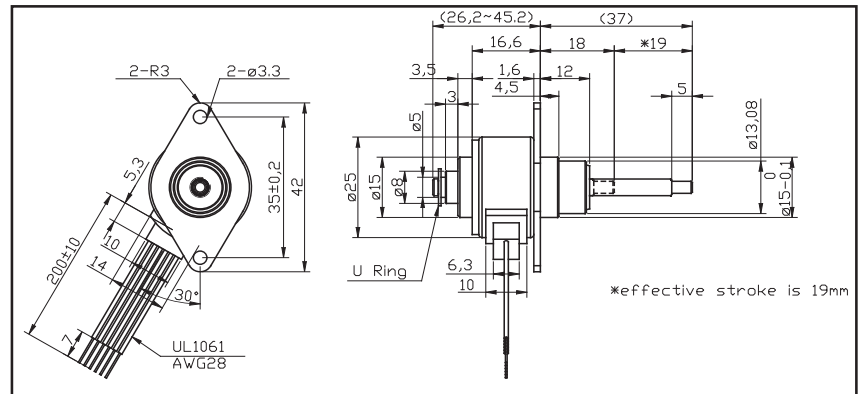
Bipolar Constant Voltage 24P4 Torque Curve



Bipolar Constant Voltage 48P4 Torque Curve

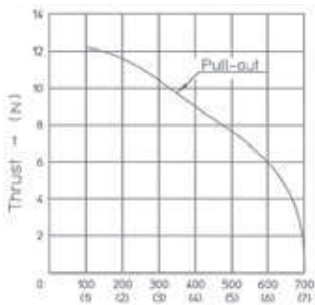


All tin-can motor specifications are based on full-step constant voltage operation
Magnet type: Neodymium
Torque curves are for reference only and are not guaranteed.

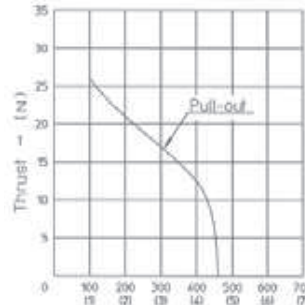


		PFCL25-48 w/ Captive			
Type Of Winding		Unipolar		Bipolar	
Steps Per Revolution		48			
Thread Pitch	mm	0.48			
Travel/Step	mm	0.01			
Stroke	mm	19			
Rated Voltage	V	12	5	12	5
Rated Current	A/Ø	0.10	0.31	0.10	0.30
Resistance	Ω	120	16	122	15
Inductance	mH/Ø	33	4.5	73	8.7
Operating Temp. Range	°C	-10 to +50			
Temperature Rise	°K	70			
Weight	g	60			

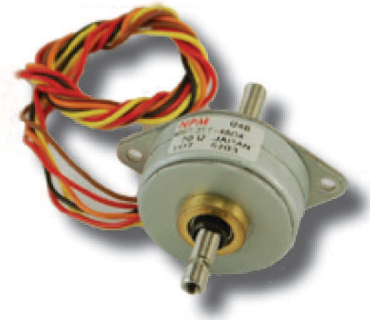
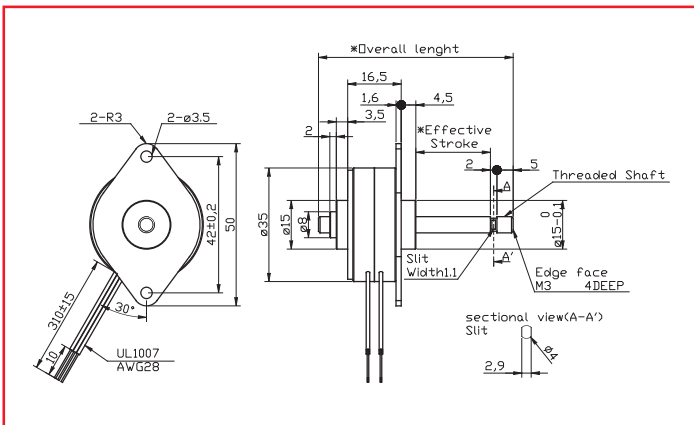
PFCL25-48x4-C
Unipolar Constant Voltage



PFCL25-48x4-C
Bipolar Constant Voltage Drive

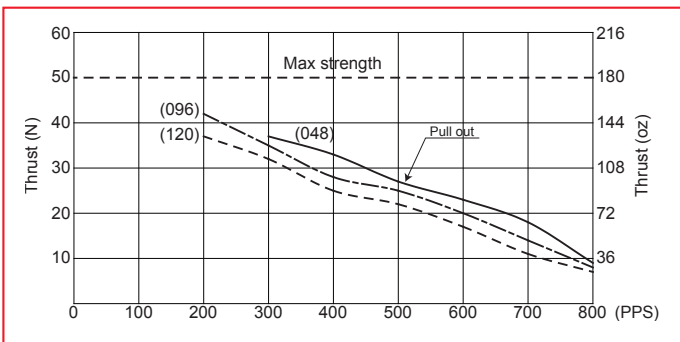


All tin-can motor specifications are based on full-step constant voltage operation.



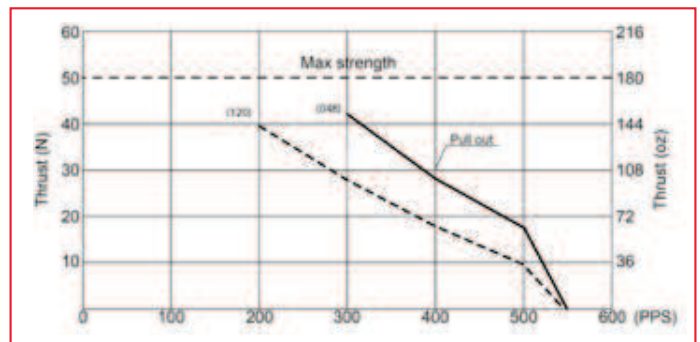
		PFL35T-48											
Type Of Winding		Unipolar						Bipolar					
Steps Per Revolution		48											
Thread Pitch	mm	0.48	0.96	1.2	0.48	0.96	1.2	0.48	0.96	1.2	0.48	0.96	1.2
Travel/Step	mm	0.01	0.02	0.025	0.01	0.02	0.025	0.01	0.02	0.025	0.01	0.02	0.025
Stroke	mm	30 or 60											
Force @ 200pps	N	35	32	30	35	32	30	39.5	38	35	39.5	38	35
Rated Voltage	V	12			5			12			5		
Rated Current	A/∅	0.17			0.33			0.17			0.34		
Resistance	Ω	70			12			72			16		
Inductance	mH/∅	27			5			54			6.4		
Operating Temp. Range	°C	-10 to +50											
Temperature Rise	*K	70											
Weight	g	95											

PFL35T-48C4 w/ Unipolar Constant Voltage



Driver: PS-2LD-5
Power: 12Vdc
Excitation: Full-step

PFL35T-48R4 w/ Bipolar Constant Voltage



Driver: BCD404B1
Power: 12Vdc
Excitation: Full-step

All characteristics are for reference only.