

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

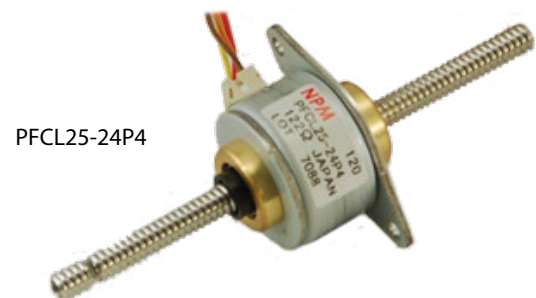
24 steps/revolution

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 - Coil Rating

C: 12V unipolar
D: 5V unipolar
P: 12V bipolar (PFCL25 only)
Q: 5V bipolar
R: 12V bipolar (PFL35T only)

7 - Magnet Material

4: Neodymium

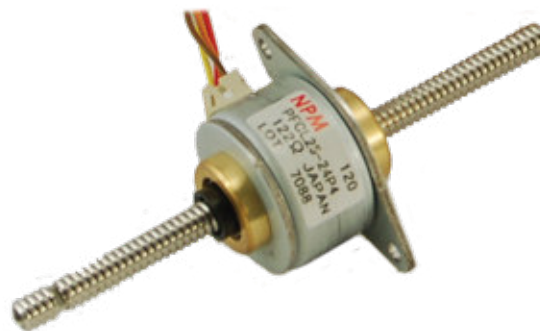
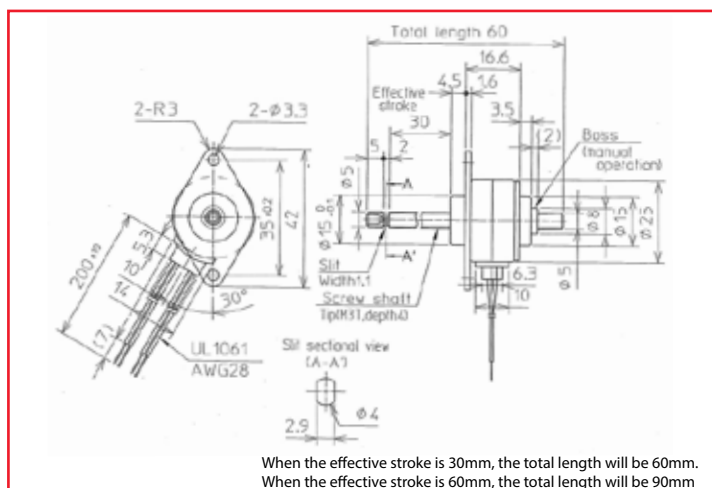
8 - Thread Pitch

048: 0.48mm
096: 0.96mm
120: 1.20mm

9 - Shaft Stroke in mm

30: 30mm stroke, 60mm shaft
60: 60mm stroke, 90mm shaft

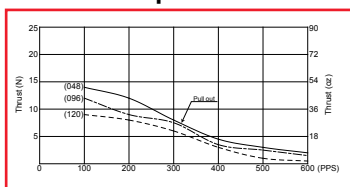
Additional winding options are available to meet your needs.



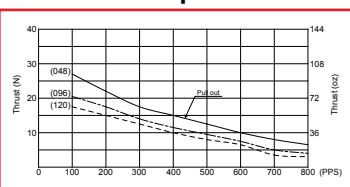
		PFCL25-24											
Type Of Winding		Unipolar						Bipolar					
Steps Per Revolution*		24											
Thread Pitch	mm	0.48	0.96	1.2	0.48	0.96	1.2	0.48	0.96	1.2	0.48	0.96	1.2
Travel/Step	mm	0.02	0.04	0.05	0.02	0.04	0.05	0.02	0.04	0.05	0.02	0.04	0.05
Effective Stroke	mm	30 or 60											
Force @ 200pps	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	ohm/Ø	120 ±7%			16 ±7%			122 ±7%			15 ±7%		
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
Effective 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	ohm/Ø	120 ±7%			16 ±7%			122 ±7%			15 ±7%		
Inductance	mH/Ø	33			4.5			73			8.7		
Operating Temp. Range	°C	-10 to +50											
Temperature Rise	°K	70											
Weight	g	60											

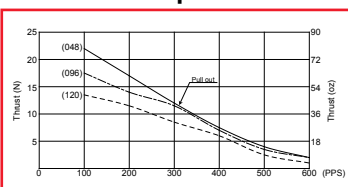
Unipolar Constant Voltage 24C4 Torque Curve



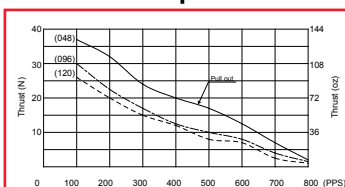
Unipolar Constant Voltage 48C4 Torque Curve



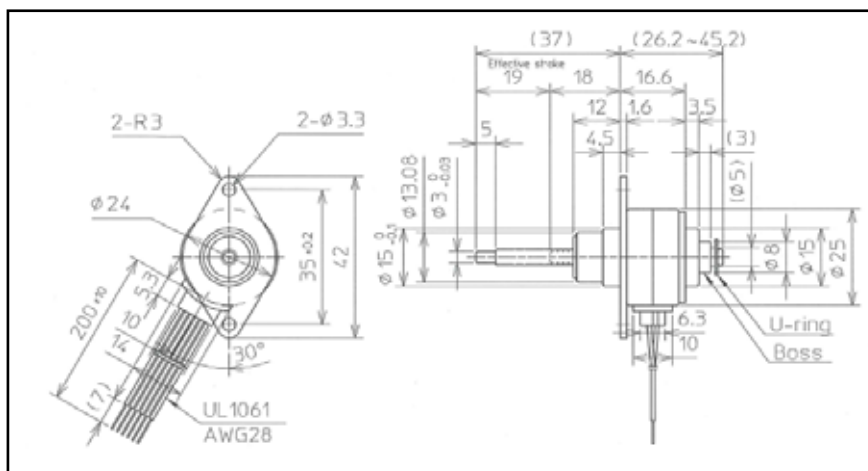
Bipolar Constant Voltage 24P4 Torque Curve



Bipolar Constant Voltage 48P4 Torque Curve

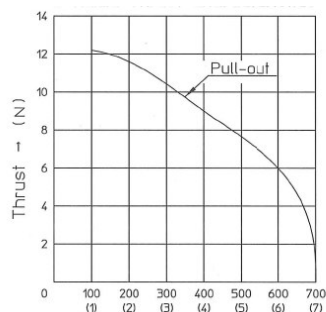


All tin-can motor specifications are based on full-step constant voltage operation
Magnet type: Neodymium
Torque curves are for reference only and are not guaranteed.

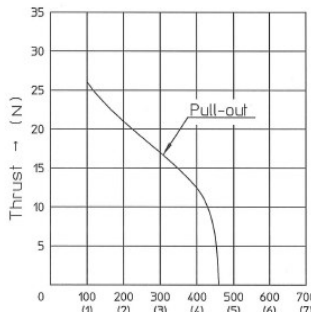


		PFCL25-48 w/ Captive			
Type Of Winding		Unipolar		Bipolar	
Steps Per Revolution		48			
Thread Pitch	mm	0.48			
Travel/Step	mm	0.01			
Effective Stroke	mm	19			
Rated Voltage	V	12	5	12	5
Rated Current	A/Ø	0.10	0.31	0.10	0.30
Resistance Tolerance	ohm/Ø	120 ±7%	16 ±7%	122 ±7%	15 ±7%
Inductance	mH/Ø	33	4.5	73	8.7
Operating Temp. Range	°C	-10 to +50			
Temperature Rise	°K	70			
Weight	g	60			

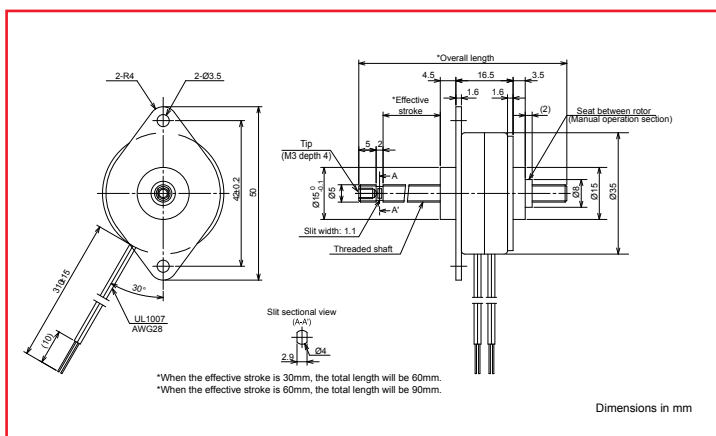
PFCL25-48x4-C
Unipolar Constant Voltage



PFCL25-48x4-C
Bipolar Constant Voltage Drive

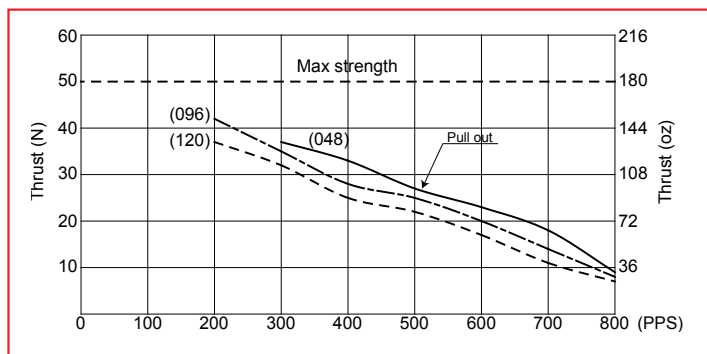


All tin-can motor specifications are based on full-step constant voltage operation.



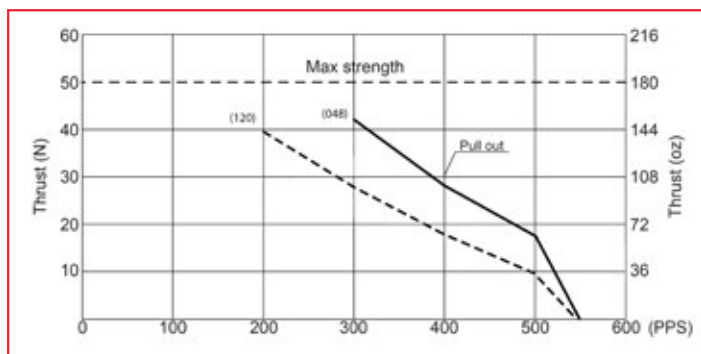
		PFL35T-48											
Type Of Winding		Unipolar						Bipolar					
Steps Per Revolution		48											
Thread Pitch	mm	0.48	0.96	1.2	0.48	0.96	1.2	0.48	0.96	1.2	0.48	0.96	1.2
Travel/Step	mm	0.01	0.02	0.025	0.01	0.02	0.025	0.01	0.02	0.025	0.01	0.02	0.025
Effective Stroke	mm	30 or 60											
Force @ 200pps	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/Ø	0.17			0.33			0.17			0.34		
Resistance	ohm/Ø	70 ±7%			12 ±7%			72 ±7%			16 ±7%		
Inductance	mH/Ø	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.