

PM STEPPING MOTOR

20P020L & 20P024L & 20P040L

Type

- Diameter: Ø20mm
- Height: 19.0mm
- Step Angle: 18°, 15°, 9°



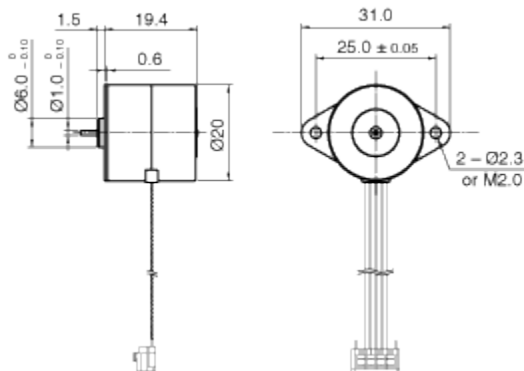
General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
20P020L	Ø20	19.0	18°	1.5	27	cover
20P024L	Ø20	19.0	15°	1.5	27	cover
20P040L	Ø20	19.0	9°	1.5	27	cover

Typical Characteristics

Model	Bipolar	20P020L	20P024L	20P040L
Step Angle		18°	15°	9°
Rated Voltage		DC 24V	DC 24V	DC 5V constant
Rated Current		350mA constant	350mA constant	400mA constant
Resistance		12 ohm	12 ohm	5 ohm
Extation Method		2-2 Phase	2-2 Phase	2-2 Phase
Holding Torque		120 g.cm	96 g.cm	150 g.cm
Pull-out Torque		48 g.cm @1600pps	38 g.cm @1600pps	60 g.cm @1200pps
Pull-in Torque		52 g.cm @300pps	42 g.cm @300pps	67 g.cm @300pps
Pull-in Pulse Rate		900 pps	800 pps	2000 pps
Pull-out Pulse Rate	8000 pps	7200 pps	3600 pps	

Typical outline



CONNECTOR PIN LOCATION					
PIN NO.	COLOR	CCW ← → CW (SEEN FROM FLANGE SIDE)		PHASE	
1	BLUE	ON		ON	\bar{B}
2	RED	ON	ON		B
3	GREEN		ON	ON	\bar{A}
4	BLACK	ON	ON		A

25P024S & 25P048S

Type

- Diameter: Ø25mm
- Height: 12.5mm
- Step Angle: 15°, 7.5°



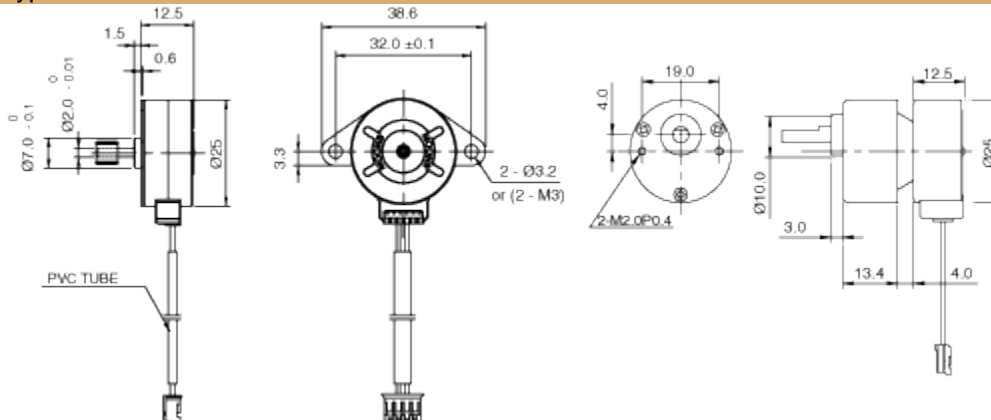
General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
25P024S	Ø25	12.5	15°	2.0 or 3.0	25	PCB or cover
25P048S	Ø25	12.5	7.5°	2.0 or 3.0	25	PCB or cover

Typical Characteristics

Model		25P024S0	25P048S1		25P024S0	25P048S1
Step Angle		15°	7.5°		15°	7.5°
Rated Voltage		DC 9V constant	DC 24V		DC 20V	DC 5V
Rated Current		360mA	110mA constant		335mA constant	200mA constant
Resistance		25 ohm	90 ohm		12 ohm	8 ohm
Extation Method	Unipolar	2-2 Phase	2-2 Phase	Bipolar	2-2 Phase	2-2 Phase
Holding Torque		140 g.cm	110 g.cm		135 g.cm	130 g.cm
Pull-out Torque		50 g.cm @200pps	58 g.cm @300pps		70 g.cm @600pps	58 g.cm @300pps
Pull-in Torque		45 g.cm @200pps	36 g.cm @20pps		50 g.cm @300pps	48 g.cm @300pps
Pull-in Pulse Rate		620 pps	1000 pps		750 pps	800 pps
Pull-out Pulse Rate		930 pps	2500 pps		5000 pps	950 pps

Typical outline



25P024L & 25P048L

Type

- Diameter: Ø25mm
- Height: 17.0mm
- Step Angle: 15°, 7.5°



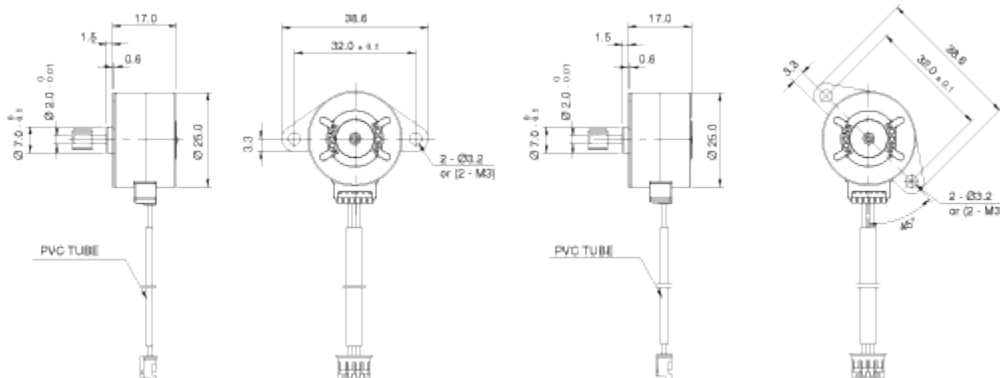
General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
25P024L	Ø25	17.0	15°	2.0 or 3.0	35	PCB or cover
25P048L	Ø25	17.0	7.5°	2.0 or 3.0	35	PCB or cover

Typical Characteristics

Model		25P024L7	25P048L8		25P024L7	25P048L8
Step Angle		15°	7.5°		15°	7.5°
Rated Voltage		DC 12V constant	DC 24V constant		DC 20V	DC 12V
Rated Current		400mA	80mA		335mA constant	250mA constant
Resistance		30 ohm	300 ohm		12 ohm	15 ohm
Extation Method	Unipolar	2-2 Phase	2-2 Phase	Bipolar	2-2 Phase	2-2 Phase
Holding Torque		190 g.cm	170 g.cm		200 g.cm	200 g.cm
Pull-out Torque		94 g.cm @200pps	82 g.cm @300pps		100 g.cm @200pps	120 g.cm @600pps
Pull-in Torque		85 g.cm @200pps	72 g.cm @300pps		80 g.cm @200pps	95 g.cm @300pps
Pull-in Pulse Rate		680 pps	700 pps		670 pps	1000 pps
Pull-out Pulse Rate		1100 pps	1100 pps		4200 pps	1450 pps

Typical outline



35P024S & 35P048S & 35P096S

Type

- Diameter: Ø35mm
- Height: 15.4mm
- Step Angle: 15°, 7.5°, 3.75°



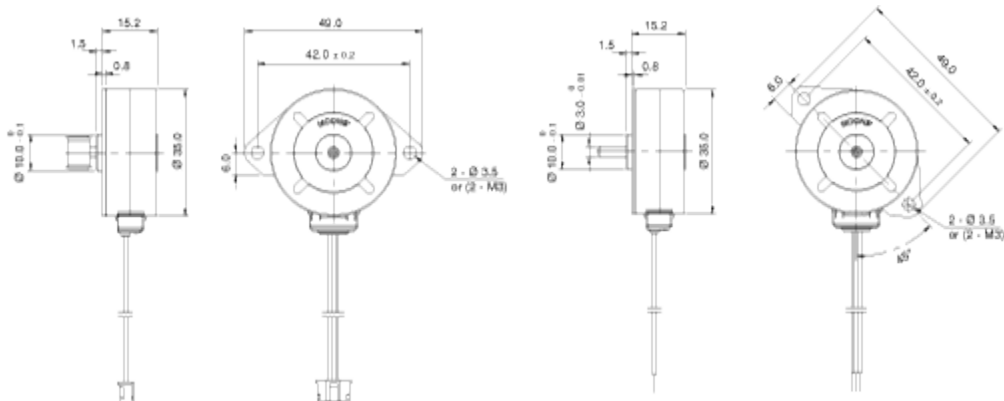
General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
35P024S	Ø35	15.4	15°	2.0 or 3.0	60	PCB or cover
35P048S	Ø35	15.4	7.5°	2.0 or 3.0	60	PCB or cover
35P096S	Ø35	15.4	3.75°	2.0 or 3.0	60	PCB or cover

Typical Characteristics

Model	Unipolar	35P048S0	35P096S0	Bipolar	35P048S0	35P096S0
Step Angle		7.5°	3.75°		7.5°	3.75°
Rated Voltage		DC 24V constant	DC 12V constant		DC 24V	DC 24V
Rated Current		240mA	320mA		400mA constant	400mA constant
Resistance		100 ohm	37 ohm		4 ohm	4 ohm
Extention Method		2-2 Phase	2-2 Phase		2-2 Phase	2-2 Phase
Holding Torque		480 g.cm	320 g.cm		300 g.cm	250 g.cm
Pull-out Torque		185 g.cm @500pps	125 g.cm @600pps		160 g.cm @1000pps	120 g.cm @1000pps
Pull-in Torque		260 g.cm @200pps	130 g.cm @200pps		130 g.cm @200pps	120 g.cm @200pps
Pull-in Pulse Rate		830 pps	900 pps		920 pps	1000 pps
Pull-out Pulse Rate	1000 pps	980 pps	1500 pps	3000 pps		

Typical outline



35P024LL & 35P048L & 35P096L

Type

- Diameter: Ø35mm
- Height: 21.4mm
- Step Angle: 15°, 7.5°, 3.75°



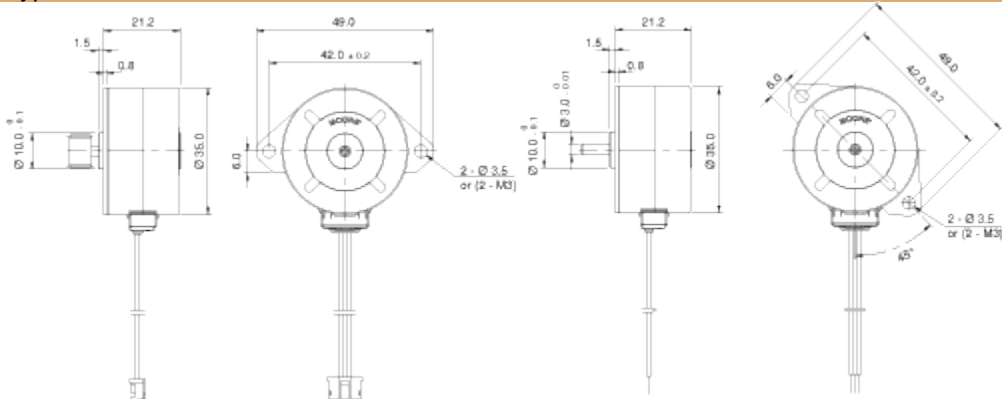
General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
35P024L	Ø35	21.4	15°	2.0 or 3.0	90	PCB or cover
35P048L	Ø35	21.4	7.5°	2.0 or 3.0	90	PCB or cover
35P096L	Ø35	21.4	3.75°	2.0 or 3.0	90	PCB or cover

Typical Characteristics

Model		35P048L0		35P048L0	35P096L0
Step Angle		7.5°		7.5°	3.75°
Rated Voltage		DC 24V constant		DC 24V	DC 24V
Rated Current		240mA		500mA constant	500mA constant
Resistance		100 ohm		7.5 ohm	7.5 ohm
Extation Method	Unipolar	2-2 Phase	Bipolar	2-2 Phase	2-2 Phase
Holding Torque		760 g.cm		780 g.cm	520 g.cm
Pull-out Torque		270 g.cm @400pps		460 g.cm @900pps	280 g.cm @1000pps
Pull-in Torque		330 g.cm @200pps		470 g.cm @200pps	300 g.cm @500pps
Pull-in Pulse Rate		610 pps		1100 pps	1270 pps
Pull-out Pulse Rate		650 pps		1200 pps	1370 pps

Typical outline



42P024S & 42P048S & 42P096S & 42P100S

Type

- Diameter: Ø42mm
- Height: 15.4mm
- Step Angle: 15°, 7.5°, 3.75°, 3.6°



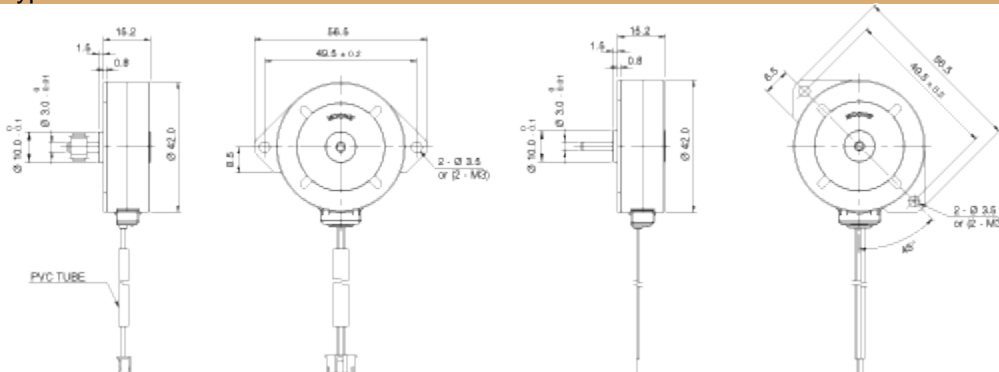
General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
42P024S	Ø42	15.4	15°	2.0 or 3.0	90	PCB or cover
42P048S	Ø42	15.4	7.5°	2.0 or 3.0	90	PCB or cover
42P096S	Ø42	15.4	3.75°	2.0 or 3.0	90	PCB or cover
42P100S	Ø42	15.4	3.6°	2.0 or 3.0	90	PCB or cover

Typical Characteristics

Model	42P048S0		42P096S0		42P048S0		42P096S0	
Step Angle	7.5°		3.75°		7.5°		3.75°	
Rated Voltage	DC 24V constant		DC 24V constant		DC 24V		DC 12V	
Rated Current	215mA		300mA		350mA constant		400mA constant	
Resistance	110 ohm		80 ohm		8 ohm		4 ohm	
Extaction Method	Unipolar	1-2 Phase	1-2 Phase	Bipolar	2-2 Phase	2-2 Phase	2-2 Phase	2-2 Phase
Holding Torque	700 g.cm		760 g.cm		550 g.cm		550 g.cm	
Pull-out Torque	115 g.cm @1200pps		310 g.cm @1000pps		160 g.cm @1000pps		200 g.cm @3000pps	
Pull-in Torque	370 g.cm @200pps		445 g.cm @200pps		270 g.cm @200pps		330 g.cm @200pps	
Pull-in Pulse Rate	1200 pps		1550 pps		640 pps		1000 pps	
Pull-out Pulse Rate	1800 pps		3600 pps		4600 pps		20000 pps	

Typical outline



42P024L & 42P048L & 42P096L & 42P100L

Type

- Diameter: Ø42mm
- Height: 21.4mm
- Step Angle: 15°, 7.5°, 3.75°, 3.6°



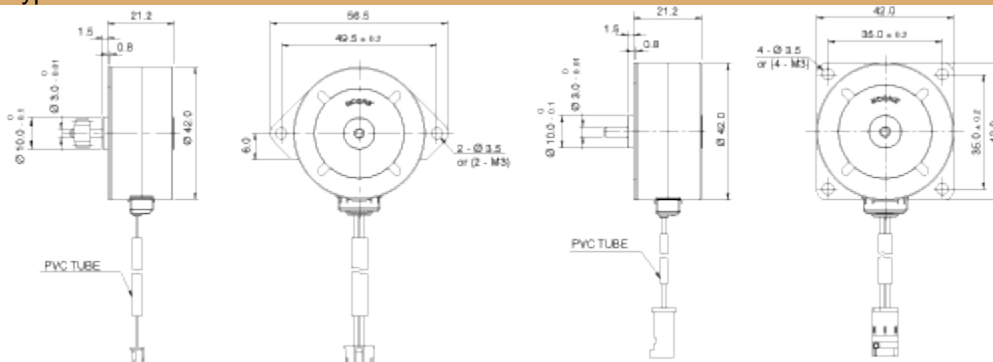
General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
42P024L	Ø42	21.4	15°	2.0 or 3.0	150	PCB or cover
42P048L	Ø42	21.4	7.5°	2.0 or 3.0	150	PCB or cover
42P096L	Ø42	21.4	3.75°	2.0 or 3.0	150	PCB or cover
42P100L	Ø42	21.4	3.6°	2.0 or 3.0	150	PCB or cover

Typical Characteristics

Model	42P048L0		42P096L0		42P048L0		42P096L0	
Step Angle	7.5°		3.75°		7.5°		3.75°	
Rated Voltage	DC 24V constant		DC 12V constant		DC 24V		DC 24V	
Rated Current	260mA		160mA		810mA constant		500mA constant	
Resistance	90 ohm		75 ohm		3 ohm		3 ohm	
Extaction Method	Unipolar	2-2 Phase	2-2 Phase	Bipolar	2-2 Phase	2-2 Phase	2-2 Phase	2-2 Phase
Holding Torque	850 g.cm		680 g.cm		800 g.cm		660 g.cm	
Pull-out Torque	200 g.cm @560pps		200 g.cm @300pps		400 g.cm @2000pps		200 g.cm @4000pps	
Pull-in Torque	400 g.cm @200pps		250 g.cm @200pps		500 g.cm @200pps		440 g.cm @200pps	
Pull-in Pulse Rate	580 pps		470 pps		800 pps		800 pps	
Pull-out Pulse Rate	630 pps		500 pps		10000 pps		18000 pps	

Typical outline



55P048L & 55P096L

Type

- Diameter: Ø55mm
- Height: 22.5mm
- Step Angle: 7.5°, 3.75°



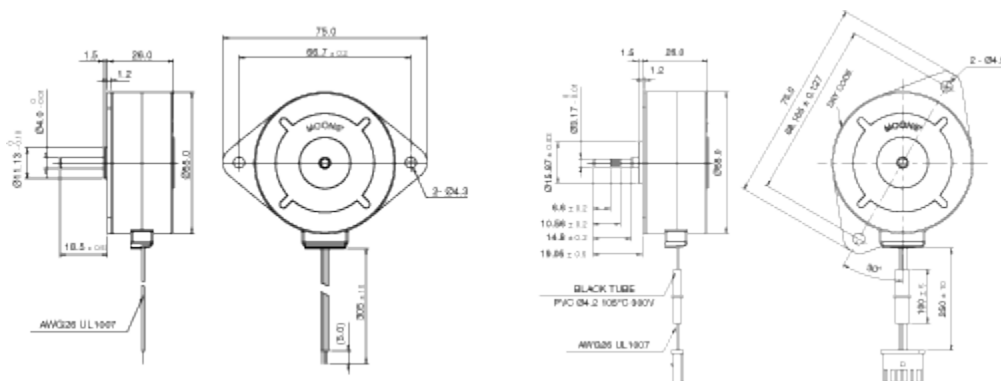
General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
55P048L	Ø55	22.5	7.5°	3.0, 4.0 or 6.35	200	cover
55P096L	Ø55	22.5	3.75°	3.0, 4.0 or 6.35	200	cover

Typical Characteristics

Model		55P048L0	55P096L0		55P048L0
Step Angle		7.5°	3.75°		7.5°
Rated Voltage		DC 19V constant	DC 24V constant		DC 24V
Rated Current		380mA	300mA		600mA constant
Resistance		50 ohm	80 ohm		5 ohm
Extation Method	Unipolar	2-2 Phase	2-2 Phase	Bipolar	2-2 Phase
Holding Torque		2000 g.cm	2400 g.cm		2200 g.cm
Pull-out Torque		350 g.cm @250pps	1300 g.cm @100pps		460 g.cm @1200pps
Pull-in Torque		380 g.cm @200pps	1200 g.cm @100pps		900 g.cm @200pps
Pull-in Pulse Rate		350 pps	460 pps		460 pps
Pull-out Pulse Rate		370 pps	480 pps		2400 pps

Typical outline



55P100L & 55P200L

Type

- Diameter: Ø55mm
- Height: 22.5mm
- Step Angle: 3.6°, 1.8°



General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
55P100L	Ø55	22.5	3.6°	3.0, 4.0 or 6.35	200	cover
55P200L	Ø55	22.5	1.8°	3.0, 4.0 or 6.35	200	cover

Typical Characteristics

Model	55P100L0		55P200L0	
Step Angle	3.6°		1.8°	
Rated Voltage	DC 24V constant		DC 24V	
Rated Current	300mA		660mA constant	
Resistance	83 ohm		5 ohm	
Extation Method	Unipolar	2-2 Phase	Bipolar	2-2 Phase
Holding Torque	2400 g.cm		1350 g.cm	
Pull-out Torque	1300 g.cm @100pps		880 g.cm @400pps	
Pull-in Torque	12000 g.cm @100pps		630 g.cm @400pps	
Pull-in Pulse Rate	460 pps		1000 pps	
Pull-out Pulse Rate	480 pps		7500 pps	

Typical outline

