

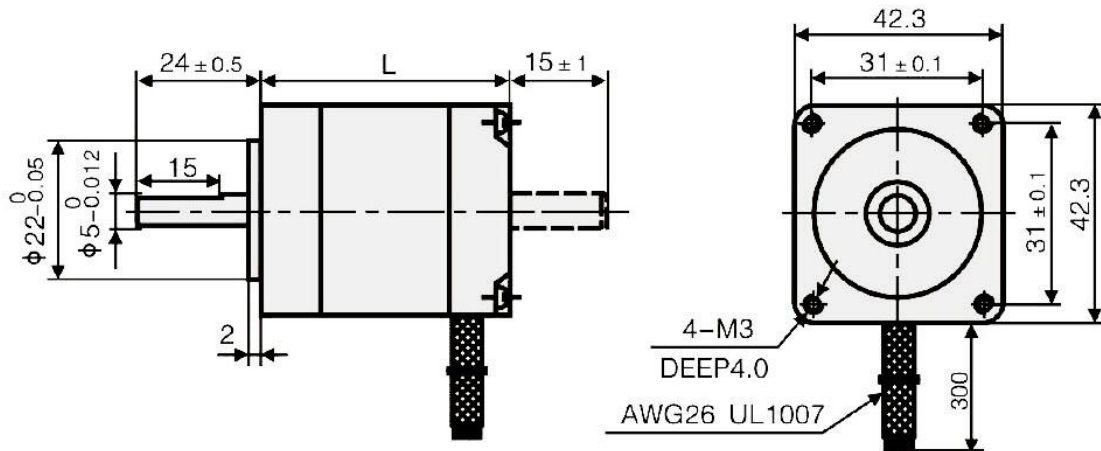
## Nema 17 Stepper Motor

Nema 17 stepper motor, including open loop and closed loop, is a permanent magnet stepper motor with an end face size of 1.7 inches x 1.7 inches (42mm x 42mm). 2 phase hybrid bipolar stepper motor is simple structure, small size and easy assembly. ATO high torque stepper motor at factory price, and can be controlled by AC or DC digital stepper drivers for precise position control.

### Open Loop Stepper Motor



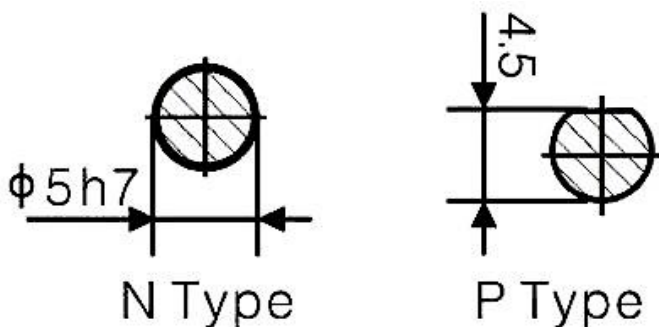
### Specification



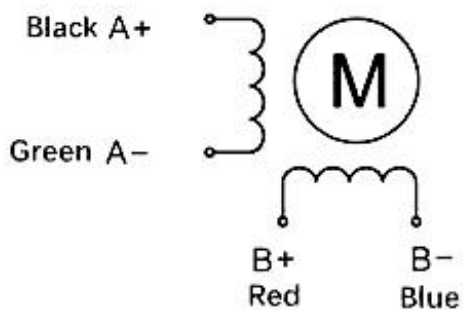
Model	Step Angle (°)	Motor Length (mm)	Rated Current (A)	Holding Torque (N.m)	Phase Resistance (Ω)	Phase Inductance (mH)	Rotor Inertia (g.cm <sup>2</sup> )	Lead Wires (NO.)	Motor Weight (Kg)
FY42EX080A	1.8	30	0.8	0.16	3.8	4.5	30	4	0.2
FY42ES150A		34	1.5	0.28	2.4	4.5	34	4	0.22
FY42EM150A		40	1.5	0.40	2.5	5.0	54	4	0.28
FY42EL180A		48	1.8	0.50	1.8	3.2	68	4	0.35
FY42EC200A		60	2.0	0.65	1.4	2.5	80	4	0.45

Technical Specification	
Shaft Diameter	5mm
Step Angle Accuracy	±5% (Full Step, No Load)
Resistance Accuracy	±10% (20°C)
Inductance Accuracy	±20% (1KHz)
Temperature Rise	80°C Max. (rated current, 2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ Min. 500VDC
Dielectric Strength	1Min. 500VAC
Shaft Radial Play	0.02Max. 450g Load
Shaft Axial Play	0.08Max. 450g Load
Radial Max. Load	28N
Axial Max. Load	10N
Warranty Period	12 months
Certificate	CE, ROHs, FCC

## Shaft Type

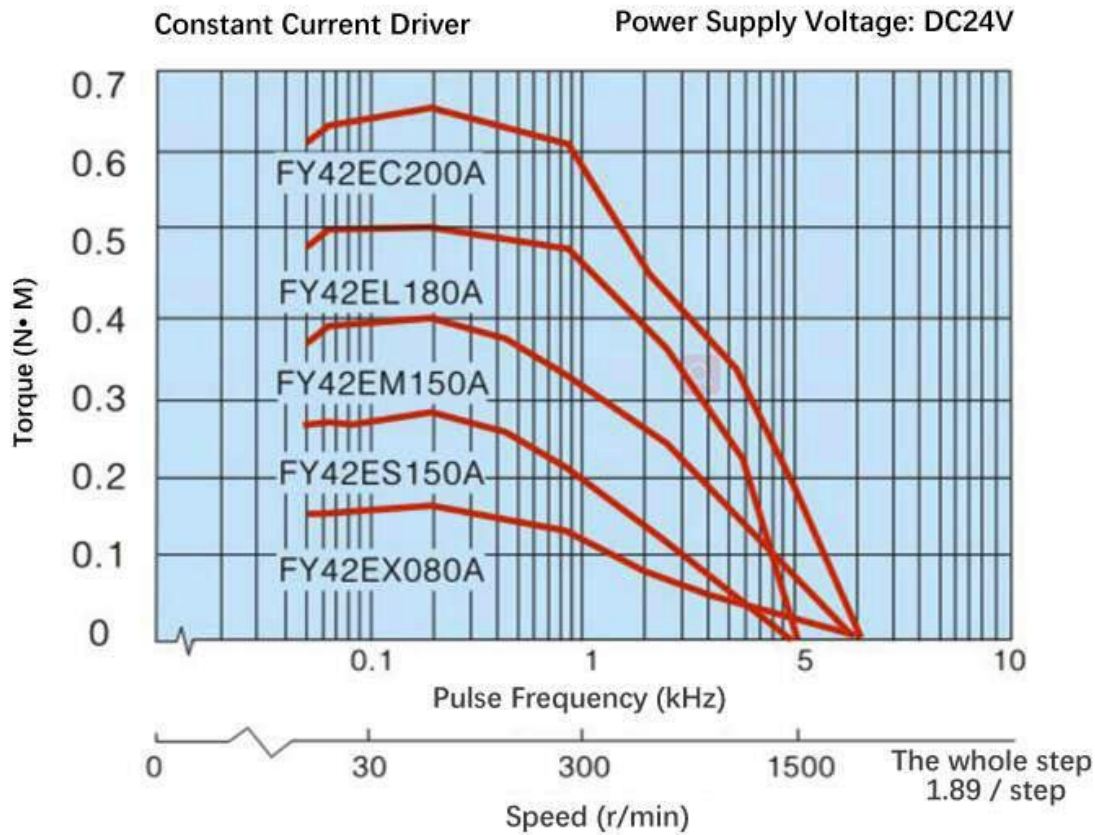


## Wiring Diagram



Four wire

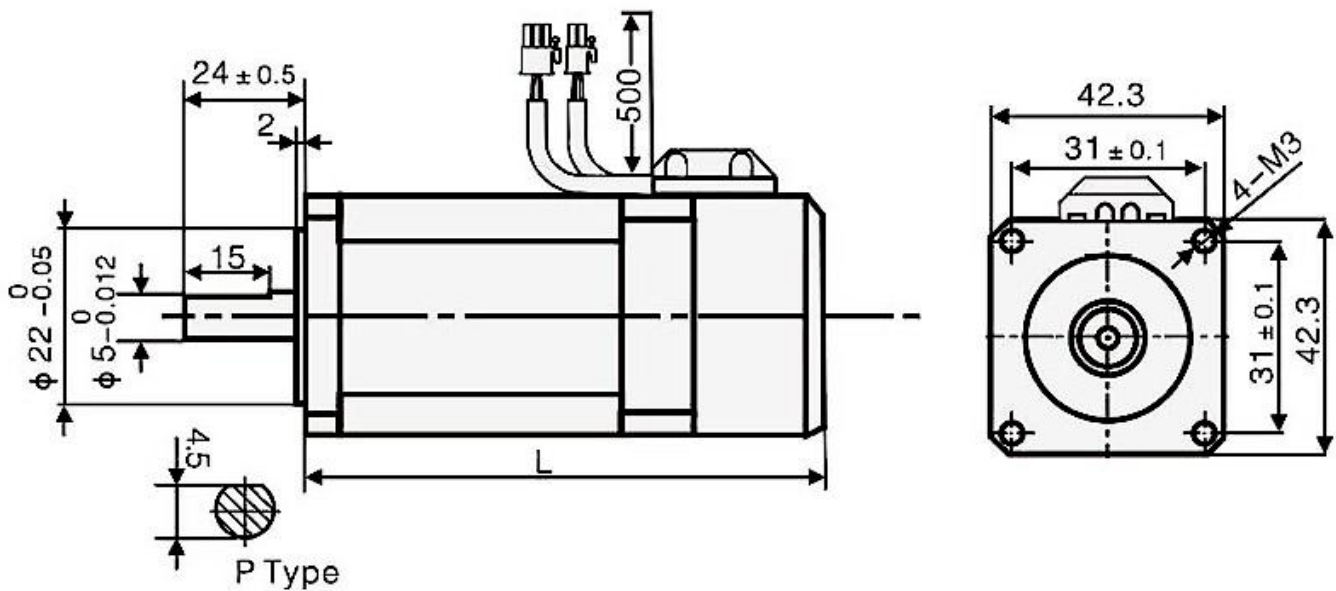
## Speed-Torque Curve Diagram



## Closed Loop Stepper Motor



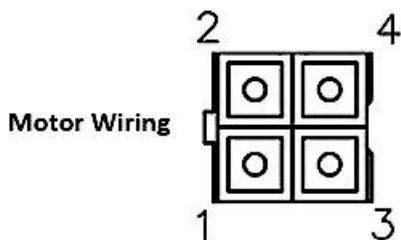
### Specification



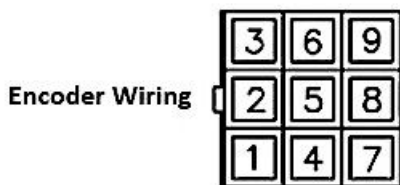
Model	Step Angle (°)	Motor Length (mm)	Rated Current (A)	Holding Torque (N.m)	Phase Resistance (Ω)	Phase Inductance (mH)	Rotor Inertia (g.cm <sup>2</sup> )	Lead Wires (NO.)	Motor Weight (Kg)
FY42EM200BC1	1.8	60	2.0	0.4	0.8	1.9	57	4	0.24
FY42EL200BC1		68	2.0	0.5	1.35	2.8	77	4	0.36
FY42EC200BC1		80	2.0	0.72	1.75	4.0	110	4	0.50

Technical Specification	
Shaft Diameter	5mm
Step Angle Accuracy	±5% (Full Step, No Load)
Resistance Accuracy	± 10% (20°C)
Inductance Accuracy	±20% (1KHz)
Temperature Rise	80°C Max. (rated current, 2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ Min. 500VDC
Dielectric Strength	1Min. 500VAC
Shaft Radial Play	0.02Max. 450g Load
Shaft Axial Play	0.08Max. 450g Load
Radial Max. Load	28N
Axial Max. Load	10N
Warranty Period	12 months
Certificate	CE, ROHs, FCC

### Motor & Encoder Wiring Diagram



Motor End	Color	Function
1	Blue	B-
2	Red	B+
3	Green	A-
4	Black	A+



Encoder	Color	Function
1	Blue	EA+
2	—	—
3	Blue/White	EA+
4	Orange	EB+
5	—	—
6	Orange/White	EB-
7	Red	VCC
8	Black	GND
Encoder	Shield	

## Speed-Torque Curve Diagram

