



# Product manual





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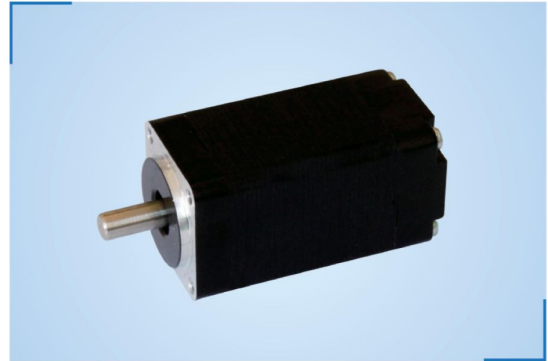
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## 1.8°20mm (NEMA8) 2 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	20N (20mm from the flange)
Max. axial force	2N

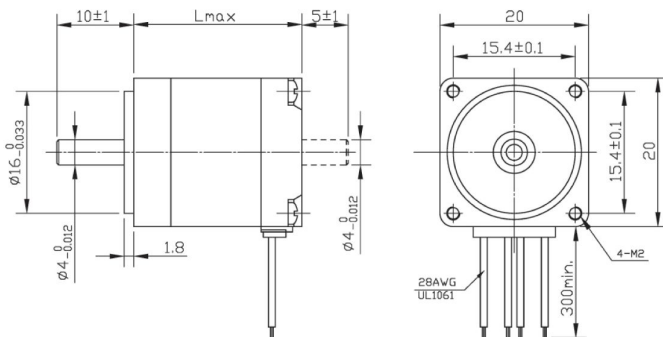


### Electrical Specification:

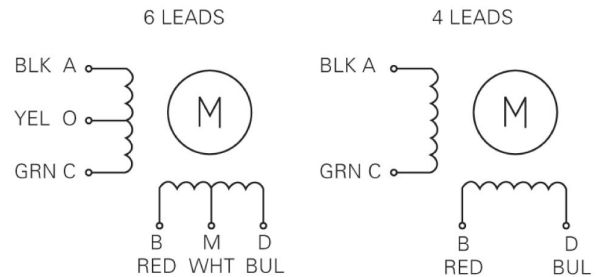
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Trpqe		#Of Leads	Weight	Length
Single Shaft	Double Shaft	V	A	Ω	mH	Oz-in	g-cm		Kg	mm
SM20HT28-0204A	SM20HT28-0204B	4.8	0.2	24	8.0	2.2	160	4	0.05	28
SM20HT30-0506A	SM20HT30-0506B	5.75	0.5	11.5	1.7	2.5	180	6	0.06	30
SM20HT33-0604A	SM20HT33-0604B	3.9	0.6	6.5	2.2	2.8	200	4	0.07	33
SM20HT38-0604A	SM20HT38-0604B	10	0.6	10	5.5	5.6	400	4	0.08	38

### Dimensions:

(Unit=mm)



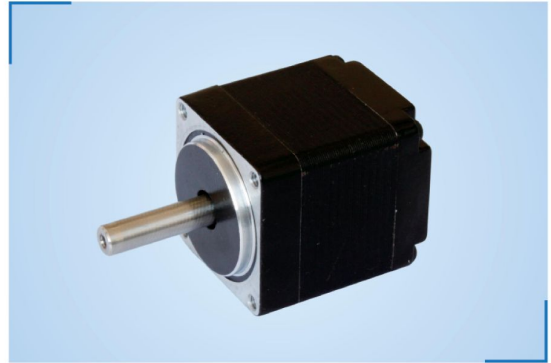
### Wiring Diagram:



## 1.8°28mm (NEMA11) 2 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N

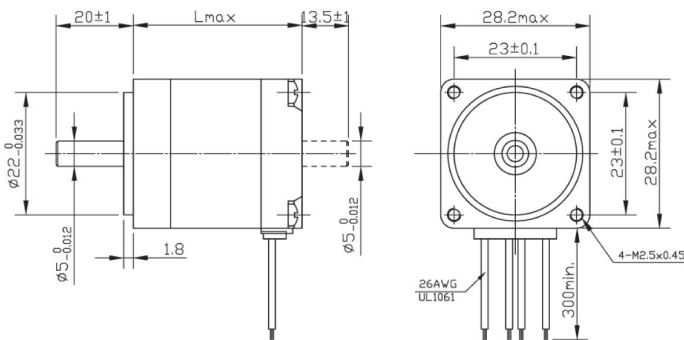


### Electrical Specification:

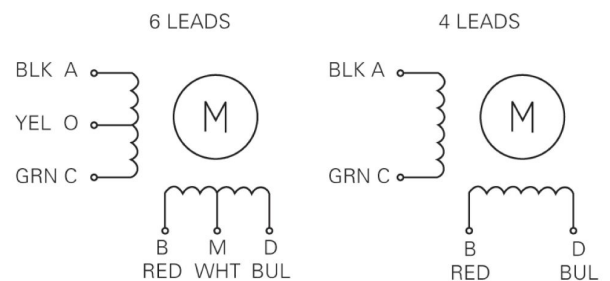
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque		#Of Leads	Rotor Inertia	Weight	Length
Single Shaft	Double Shaft	V	A	Ω	mH	Oz-in	g-cm		g-cm <sup>2</sup>	Kg	mm
SM28HT32-0956A	SM28HT32-0956B	2.66	0.95	2.8	1.0	6	430	6	9	0.11	32
SM28HT32-0674A	SM28HT32-0674B	3.8	0.67	5.6	4.2	8.3	600	4			
SM28HT45-0956A	SM28HT45-0956B	3.2	0.95	3.4	1.2	10.4	750	6	12	0.14	45
SM28HT45-0674A	SM28HT45-0674B	4.6	0.67	6.8	4.9	13.2	950	4			
SM28HT51-0956A	SM28HT51-0956B	4.4	0.95	4.6	1.4	12.5	900	6	18	0.2	51
SM28HT51-0674A	SM28HT51-0674B	6.2	0.67	9.2	5.7	16.7	1200	4			

### Dimensions:

(Unit=mm)



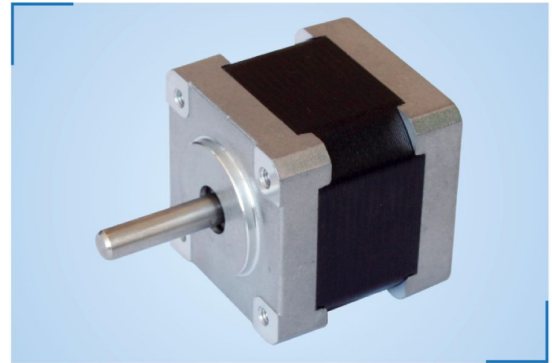
### Wiring Diagram:



## 1.8°35mm (NEMA14) 2 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N

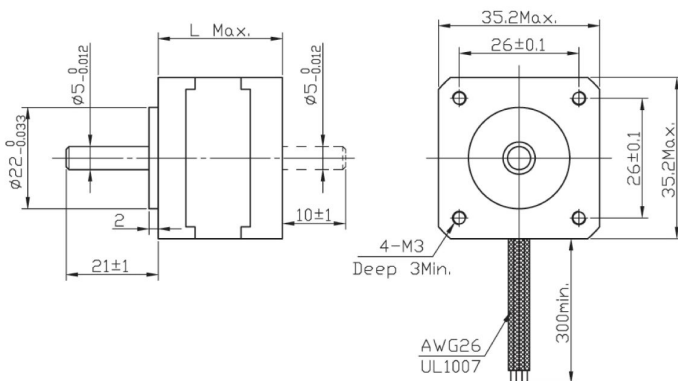


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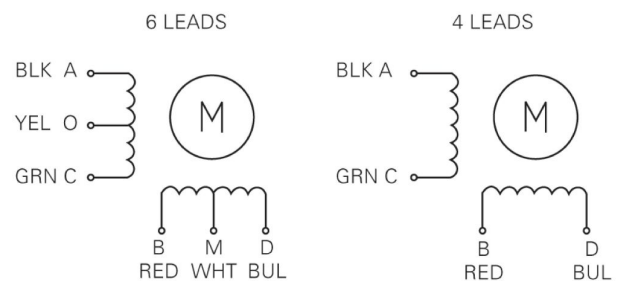
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Holding Torque		#Of Leads	Rotor Inertia	Weight	Length
Single Shaft	Double Shaft	V	A	Ω	Oz-in	g-cm		g-cm <sup>2</sup>	Kg	mm
SM35ST20-0404A	SM35ST20-0404B	10	0.4	25	7	500	4	8	0.1	20
SM35ST26-0804A	SM35ST26-0804B	3.8	0.8	4.8	11	800	4	10	0.12	26
SM35ST28-0754A	SM35ST28-0754B	3.2	0.75	4.3	11	800	4	10	0.14	28
SM35ST28-0504A	SM35ST28-0504B	10	0.5	20	14	1000	4	10	0.14	28
SM35T34-0406A	SM35ST34-0406B	10	0.4	25	17	1200	6	14	0.17	34
SM35ST36-1004A	SM35ST36-1004B	2.7	1.0	2.7	19	1400	4	14	0.18	36

### Dimensions:

Unit=mm



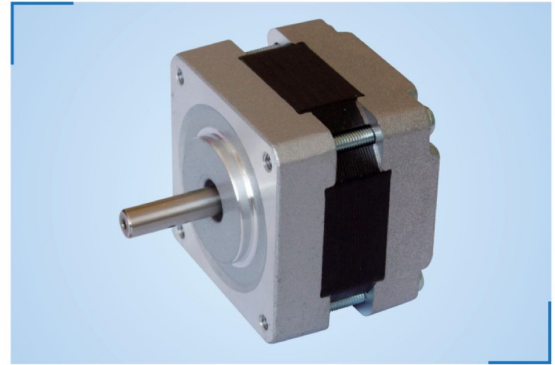
### Wiring Diagram:



## 1.8°39mm (NEMA16) 2 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N

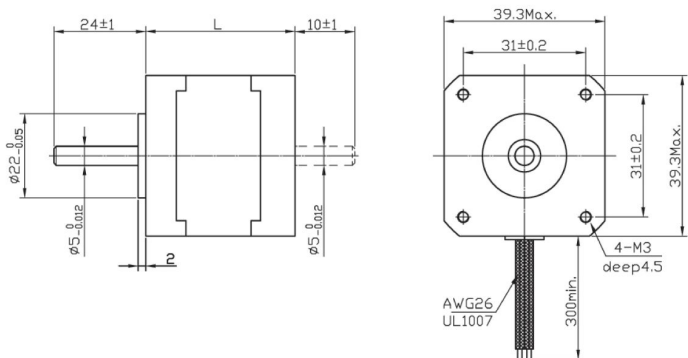


### Electrical Specification:

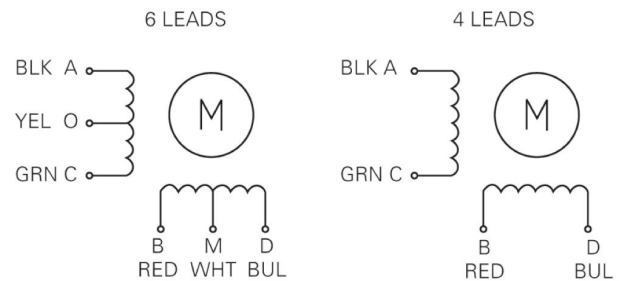
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque		#Of Leads	Rotor Inertia	Weight	Length
Single Shaft	Double Shaft	V	A	Ω	mH	Oz-in	g-cm		g-cm <sup>2</sup>	Kg	mm
SM39ST20-0404A	SM39ST20-0404B	2.64	0.4	6.6	7.5	9	650	4	11	0.12	20
SM39ST20-0506A	SM39ST20-0506B	6.5	0.5	13	7.5	11	800	6			
SM39ST34-0654A	SM39ST34-0654B	4.55	0.65	7	9.3	25	1800	4	20	0.18	34
SM39ST34-0404A	SM39ST34-0404B	12	0.4	30	32	29	2100	4			
SM39ST34-0604A	SM39ST34-0604B	9	0.6	15	16	31	2200	4			
SM39ST34-0306A	SM39ST34-0306B	12	0.3	40	21	18	1300	6			
SM39ST34-0166A	SM39ST34-0166B	12	0.16	75	50	15	1100	6	28	0.2	38
SM39ST38-0504A	SM39ST38-0504B	12	0.5	24	45	40	2900	4			
SM39ST38-0806A	SM39ST38-0806B	6	0.8	7.5	6	28	2000	6	36	0.25	44
SM39ST44-0304A	SM39ST44-0304B	12	0.3	40	100	39	2800	4			

### Dimensions:

(Unit=mm)



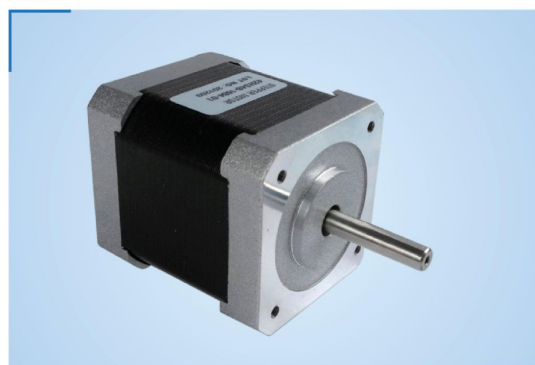
### Wiring Diagram:



## 0.9°42mm (NEMA17) 2 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N

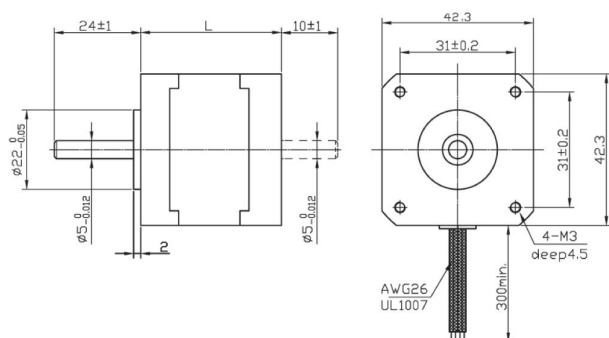


### Electrical Specification:

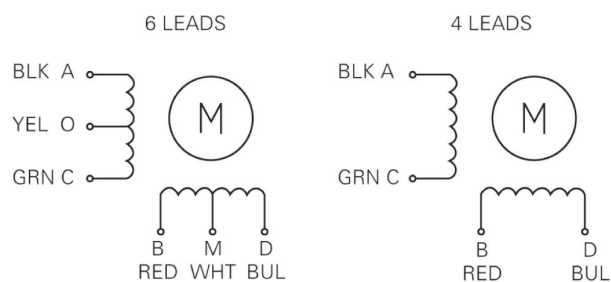
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque		#Of Leads	Rotor Inertia	Weight	Length
Single Shaft	Double Shaft	V	A	Ω	mH	Oz-in	g-cm		g-cm <sup>2</sup>	Kg	mm
SM42HT33-0956MA	SM42HT33-0956MB	4	0.95	4.2	4	22	1580	6	35	0.22	33
SM42HT33-0606MA	SM42HT33-0606MB	6	0.6	10	9.5						
SM42HT33-0316MA	SM42HT33-0316MB	12	0.31	38.5	33						
SM42HT33-1334MA	SM42HT33-1334MB	2.8	1.33	2.1	4.2	30	2200	4	54	0.28	38
SM42HT38-1206MA	SM42HT38-1206MB	4	1.2	3.3	4						
SM42HT38-0806MA	SM42HT38-0806MB	6	0.8	7.5	7.5						
SM42HT38-0406MA	SM42HT38-0406MB	12	0.4	30	30	36	2590	6	68	0.35	48
SM42HT38-1684MA	SM42HT38-1684MB	2.8	1.68	1.65	4						
SM42HT47-1206MA	SM42HT47-1206MB	4	1.2	3.3	4						
SM42HT47-0806MA	SM42HT47-0806MB	6	0.8	7.5	10	44	3170	6	68	0.35	48
SM42HT47-0406MA	SM42HT47-0406MB	12	0.4	30	38						
SM42HT47-1684MA	SM42HT47-1684MB	2.8	1.68	1.65	4.1						

### Dimensions:

(Unit=mm)



### Wiring Diagram:



## 1.8°42mm (NEMA17) 2 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N

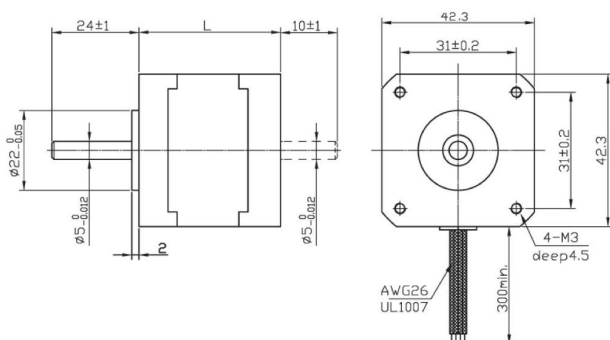


### Electrical Specification:

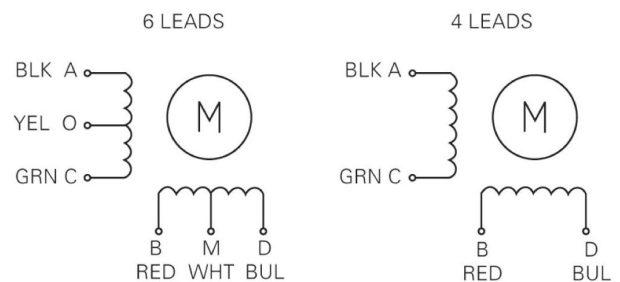
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque		#Of Leads	Rotor Inertia	Weight	Length
Single Shaft	Double Shaft	V	A	Ω	mH	Oz-in	g-cm		g-cm <sup>2</sup>	Kg	mm
SM42HT33-0956A	SM42HT33-0956B	4	0.95	4.2	2.5	22	1580	6	35	0.22	33
SM42HT33-0406A	SM42HT33-0406B	9.6	0.4	24	15						
SM42HT33-0316A	SM42HT33-0316B	12	0.31	38.5	21						
SM42HT33-1334A	SM42HT33-1334B	2.8	1.33	2.1	2.5	30	2200	4			
SM42HT38-1206A	SM42HT38-1206B	4	1.2	3.3	3.2	36	2590	6	54	0.28	38
SM42HT38-0806A	SM42HT38-0806B	6	0.8	7.5	6.7						
SM42HT38-0406A	SM42HT38-0406B	12	0.4	30	30						
SM42HT38-1684A	SM42HT38-1684B	2.8	1.68	1.65	3.2	50	3600	4			
SM42HT47-1206A	SM42HT47-1206B	4	1.2	3.3	2.8	44	3170	6	68	0.35	48
SM42HT47-0806A	SM42HT47-0806B	6	0.8	7.5	6.3						
SM42HT47-0406A	SM42HT47-0406B	12	0.4	30	25						
SM42HT47-1684A	SM42HT47-1684B	2.8	1.68	1.65	2.8	72	5000	4			

### Dimensions:

(Unit=mm)



### Wiring Diagram:

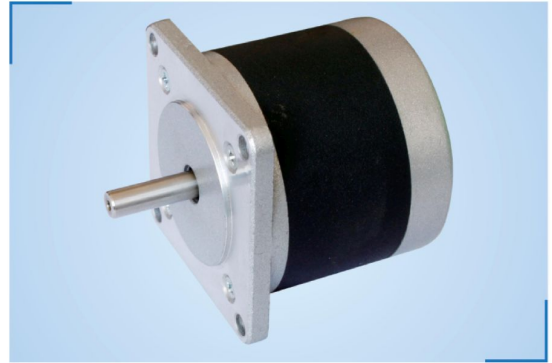




# 1.8°57mm (NEMA23) 2 phase Round Hybrid Stepper Motor

## General Specification:

Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N

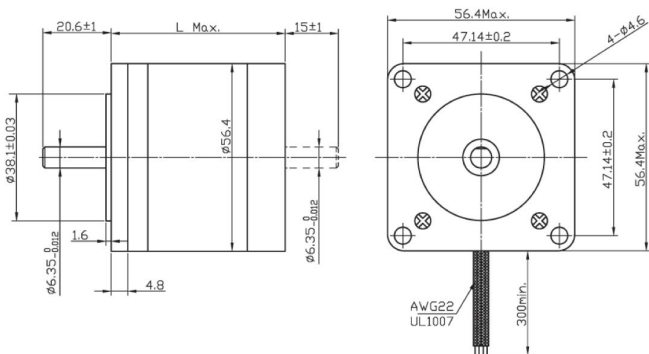


## Electrical Specification:

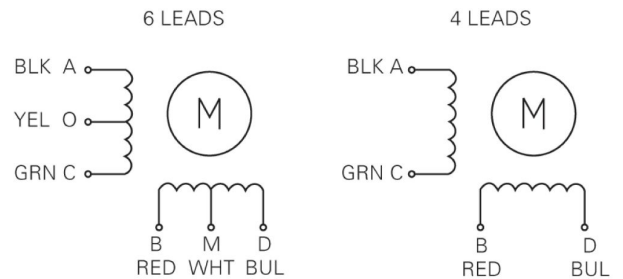
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	#Of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	Kg-cm		g-cm <sup>2</sup>	Kg	kg-cm	mm
SM57ST41-1106A	SM57ST41-1106B	4	1.1	3.6	3.6	2.88	6	57	0.54	0.18	41
SM57ST41-0406A	SM57ST41-0406B	12	0.4	30	30	2.88	6				
SM57ST41-1564A	SM57ST41-1564B	2.8	1.56	1.8	3.6	4.0	4				
SM57ST51-0856A	SM57ST51-0856B	6	0.85	7.1	9	4.97	6	110	0.60	0.35	51
SM57ST51-0426A	SM57ST51-0426B	12	0.42	29	36	4.97	6				
SM57ST51-2804A	SM57ST51-2804B	2.38	2.8	0.85	2.1	6.9	4				
SM57ST56-1206A	SM57ST56-1206B	6	1.2	5	8	6.05	6	135	0.65	0.42	56
SM57ST56-0606A	SM57ST56-0606B	12	0.6	20	32	6.05	6				
SM57ST56-2554A	SM57ST56-2554B	2.8	2.55	1.1	3.6	8.4	4				
SM57ST76-1506A	SM57ST76-1506B	5.4	1.5	3.6	6	9	6	200	0.95	0.72	76
SM57ST76-0686A	SM57ST76-0686B	12	0.68	17.7	30	9	6				
SM57ST76-3304A	SM57ST76-3304B	2.7	3.3	0.85	3	12.5	4				

## Dimensions:

(Unit=mm)



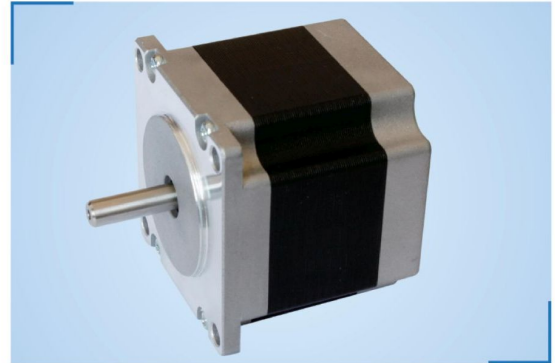
## Wiring Diagram:



## 0.9°57mm (NEMA23) 2 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	0.9°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N

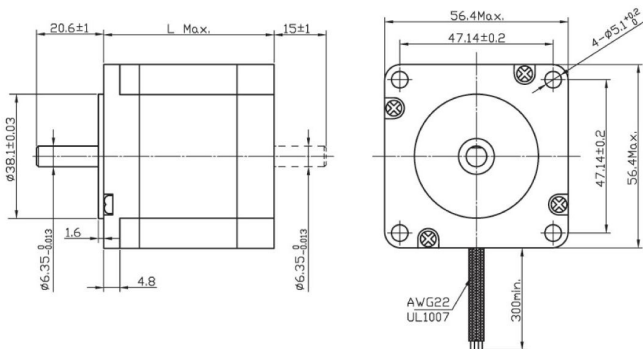


### Electrical Specification:

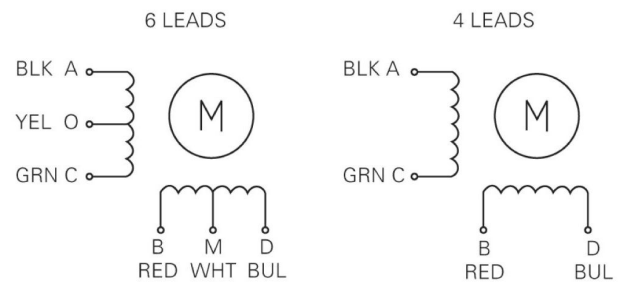
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	kg-cm		g-cm <sup>2</sup>	kg	kg-cm	mm
SM57HT41-1006MA	SM57HT41-1006MB	5.7	1	5.7	8.0	3.9	6	120	0.45	0.21	41
SM57HT41-2006MA	SM57HT41-2006MB	2.8	2	1.4	2.2	3.9	6				
SM57HT41-3006MA	SM57HT41-3006MB	1.9	3	0.63	1.0	3.9	6				
SM57HT41-2804MA	SM57HT41-2804MB	2	2.8	0.7	2.2	5.5	4				
SM57HT56-1006MA	SM57HT56-1006MB	7.4	1	7.4	17.5	9.0	6	300	0.7	0.4	56
SM57HT56-2006MA	SM57HT56-2006MB	3.6	2	1.8	4.5	9.0	6				
SM57HT56-3006MA	SM57HT56-3006MB	2.3	3	0.75	1.9	9.0	6				
SM57HT56-2804MA	SM57HT56-2804MB	2.5	2.8	0.9	4.5	12.0	4				
SM57HT76-1006MA	SM57HT76-1006MB	8.6	1	8.6	23	13.5	6	480	1	0.68	76
SM57HT76-2006MA	SM57HT76-2006MB	4.5	2	2.25	5.6	13.5	6				
SM57HT76-3006MA	SM57HT76-3006MB	3	3	1	2.6	13.5	6				
SM57HT76-2804MA	SM57HT76-2804MB	3.2	2.8	1.13	5.6	18.0	4				

### Dimensions:

(Unit=mm)



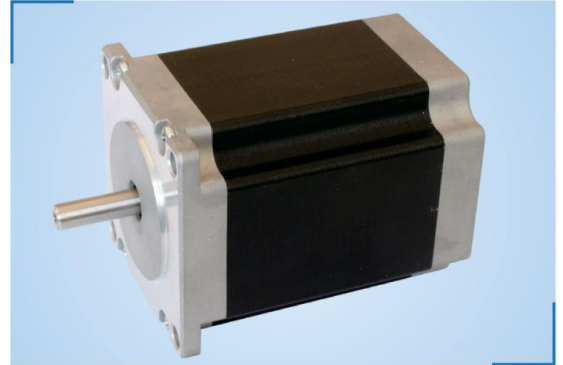
### Wiring Diagram:



## 1.8°57mm (NEMA23) 2 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N

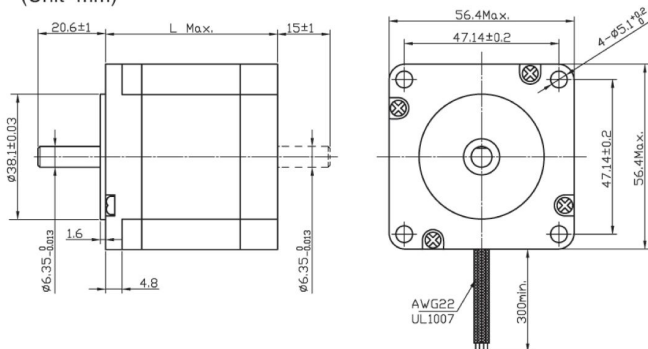


### Electrical Specification:

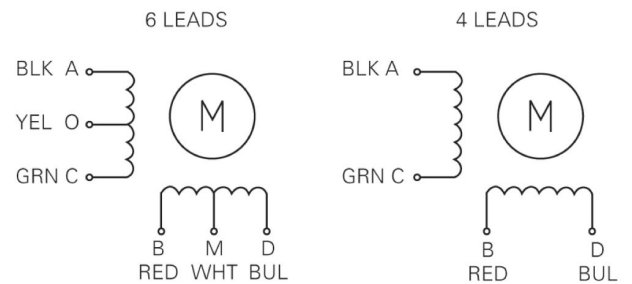
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	kg-cm		g-cm <sup>2</sup>	kg	kg-cm	mm
SM57HT41-1006A	SM57HT41-1006B	5.7	1	5.7	5.4	3.9	6	120	0.45	0.21	41
SM57HT41-2006A	SM57HT41-2006B	2.8	2	1.4	1.4	3.9	6				
SM57HT41-3006A	SM57HT41-3006B	1.9	3	0.63	0.6	3.9	6				
SM57HT41-2804A	SM57HT41-2804B	2	2.8	0.7	1.4	5.5	4	275	0.65	0.36	51
SM57HT51-1006A	SM57HT51-1006B	6.6	1	6.6	8.2	7.2	6				
SM57HT51-2006A	SM57HT51-2006B	3.3	2	1.65	2.2	7.2	6				
SM57HT51-3006A	SM57HT51-3006B	2.2	3	0.74	0.9	7.2	6	300	0.7	0.4	56
SM57HT51-2804A	SM57HT51-2804B	2.3	2.8	0.83	2.2	10.1	4				
SM57HT56-1006A	SM57HT56-1006B	7.4	1	7.4	10	9.0	6				
SM57HT56-2006A	SM57HT56-2006B	3.6	2	1.8	2.5	9.0	6	380	0.85	0.5	64
SM57HT56-3006A	SM57HT56-3006B	2.3	3	0.75	1.1	9.0	6				
SM57HT56-2804A	SM57HT56-2804B	2.5	2.8	0.9	2.5	12.6	4				
SM57HT64-2006A	SM57HT64-2006B	3.6	2	1.8	2.5	10.5	6	380	0.85	0.5	64
SM57HT64-3004A	SM57HT64-3004B	2.4	3	0.8	2.3	15.0	4				
SM57HT76-1006A	SM57HT76-1006B	8.6	1	8.6	14	13.5	6				
SM57HT76-2006A	SM57HT76-2006B	4.5	2	2.25	3.6	13.5	6	480	1	0.68	76
SM57HT76-3006A	SM57HT76-3006B	3	3	1	1.6	13.5	6				
SM57HT76-2804A	SM57HT76-2804B	3.2	2.8	1.13	3.6	18.9	4				
SM57HT82-3004A	SM57HT82-3004B	3.6	3	1.2	4	22	4	600	1.2	1	82
SM57HT82-5004A	SM57HT82-5004B	3	5	0.6	1.5	22	4				
SM57HT112-3004A	SM57HT112-3004B	4.8	3	1.6	6.8	28	4				
SM57HT112-4204A	SM57HT112-4204B	3.8	4.2	0.9	3.8	28	4	800	1.4	1.2	112

### Dimensions:

(Unit=mm)



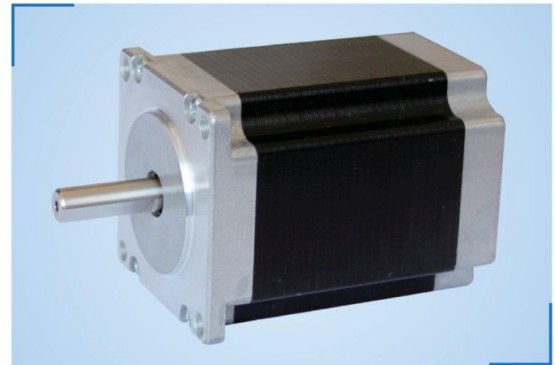
### Wiring Diagram:



## 1.8°60mm (NEMA24) 2 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N

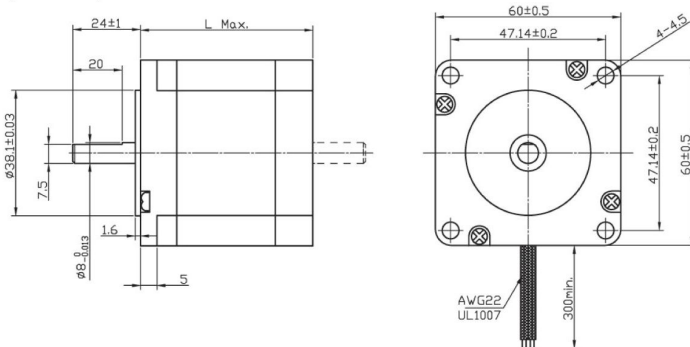


### Electrical Specification:

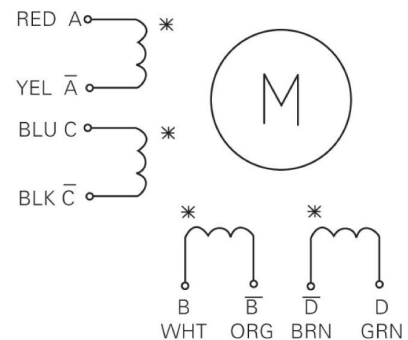
Model No.			Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft		V	A	Ω	mH	kg-cm		g-cm <sup>2</sup>	kg	kg-cm	mm
SM60HT45-2008AF	SM60HT45-2008BF	unipolar	3	2	1.5	2	7.8	8	275	0.6	0.5	47
		parallel	2.1	2.8	0.75	2	11					
		series	4.2	1.4	3.0	8	11					
SM60HT56-2008AF	SM60HT56-2008BF	unipolar	3.6	2	1.8	3.6	11.7	8	300	0.77	0.7	56
		parallel	2.52	2.8	0.9	3.6	16.5					
		series	5.04	1.4	3.6	14.4	16.5					
SM60HT65-2008AF	SM60HT65-2008BF	unipolar	4.8	2	2.4	4.6	15	8	570	1.2	0.9	67
		parallel	3.36	2.8	1.2	4.6	21					
		series	6.72	1.4	4.8	18.4	21					
SM60HT86-2008AF	SM60HT86-2008BF	unipolar	6	2	3	6.8	22	8	840	1.4	1.0	88
		parallel	4.17	2.8	1.5	6.8	31					
		series	8.4	1.4	6	27.2	31					
SM60HT100-2008AF	SM60HT100-2008BF	unipolar	8	2	4	9	28	8	1050	1.6	1.1	100
		parallel	5.6	2.8	2	9	39					
		series	11.2	1.4	8	36	39					

### Dimensions:

(Unit=mm)



### Wiring Diagram:



## 1.8°86mm (NEMA34) 2 phase Round Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	820VAC for 1s 3mA
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N

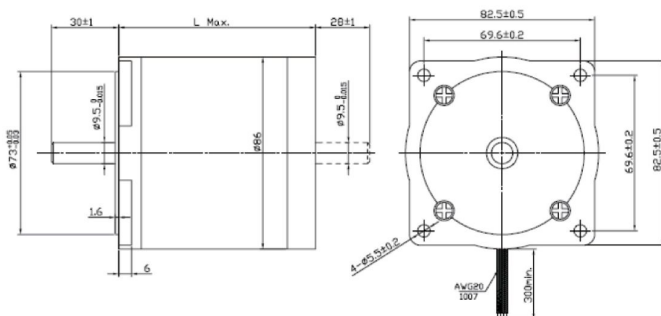


### Electrical Specification:

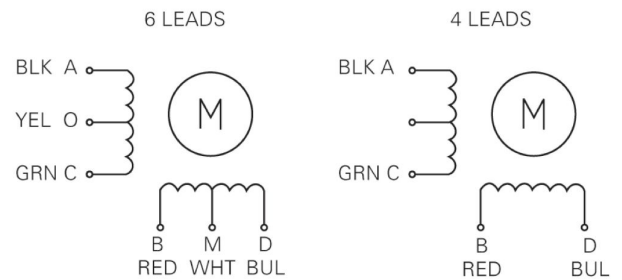
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	Kg.cm		g-cm <sup>2</sup>	kg	kg-cm	mm
SM86ST62-4506A	SM86ST62-4506B	1.8	4.5	0.4	1.4	13	6	560	1.5	0.8	62
SM86ST62-1256A	SM86ST62-1256B	5.5	1.25	4.4	14	13	6				
SM86ST62-1406A	SM86ST62-1406B	0.7	14	20	60	13	6				
SM86ST62-5904A	SM86ST62-5904B	1.33	5.9	0.23	1.5	18	4	1100	2.6	2.4	94
SM86ST94-4006A	SM86ST94-4006B	3.0	4.0	0.75	4.5	26	6				
SM86ST94-2006A	SM86ST94-2006B	6.0	2.0	3.0	13	26	6				
SM86ST94-1006A	SM86ST94-1006B	12	1	12	72	26	6	1800	3.6	3.6	134
SM86ST94-5604A	SM86ST94-5604B	2.1	5.6	0.38	3.9	35	4				
SM86ST134-6706A	SM86ST134-6706B	3.0	6.7	0.45	2	36	6				
SM86ST134-4006A	SM86ST134-4006B	5.0	4.0	1.25	6.6	36	6	1800	3.6	3.6	134
SM86ST134-1806A	SM86ST134-1806B	12	1.8	6.5	41	36	6				
SM86ST134-5604A	SM86ST134-5604B	3.5	5.6	0.63	6.6	50	4				

### Dimensions:

(Unit=mm)



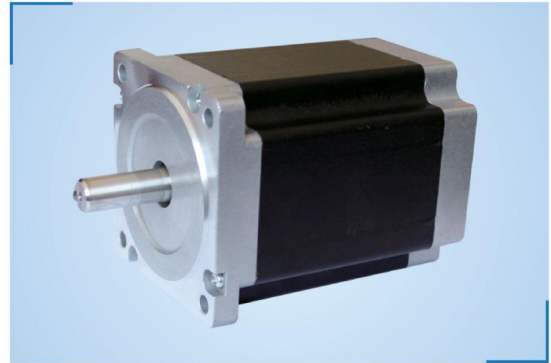
### Wiring Diagram:



## 1.8°86mm (NEMA34) 2 phase Hybrid Stepper Motor

### General Specification:

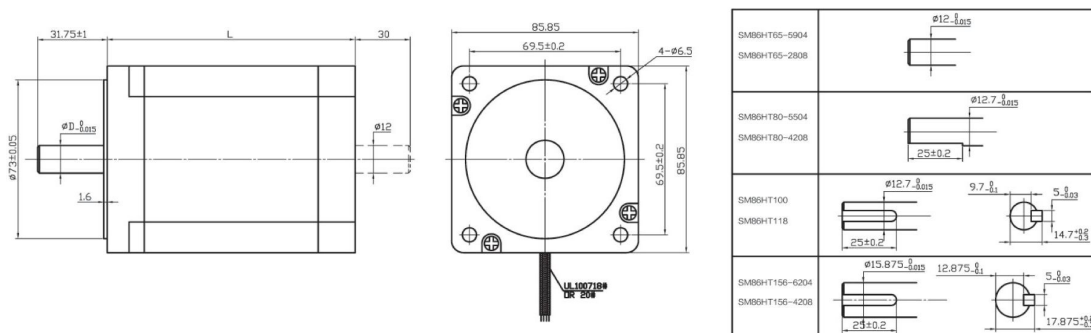
Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	820VAC for 1s 3mA
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N



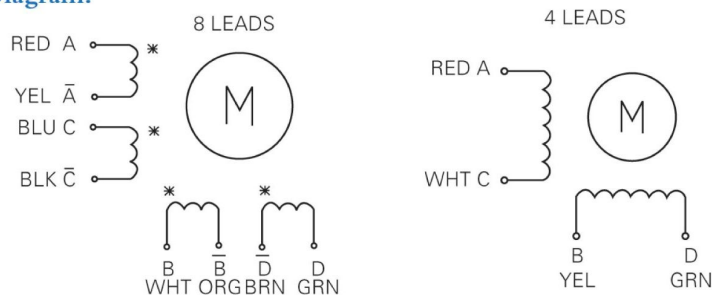
### Electrical Specification:

Model No.		Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque (Bipolar)	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	A	Ω	mH	Kg·cm	#	g·cm <sup>2</sup>	kg	kg·cm	mm
SM86HT65-5904A	SM86HT65-5904B	5.9	0.28	1.7	34	4	1000	1.7	0.8	65
SM86HT65-2808A	SM86HT65-2808B	2.8	1.4	3.9	34	8				
SM86HT80-5504A	SM86HT80-5504B	5.5	0.46	4	46	4				
SM86HT80-4208A	SM86HT80-4208B	4.2	0.75	3.4	46	8	1400	2.3	1.2	80
SM86HT100-5504A	SM86HT100-5504B	5.5	0.5	4.35	68	4				
SM86HT100-4208A	SM86HT100-4208B	4.2	0.8	3.8	68	8	2059	3	2	100
SM86HT118-6004A	SM86HT118-6004B	6	0.6	6.5	87	4				
SM86HT118-4208A	SM86HT118-4208B	4.2	0.9	6	87	8	2700	3.8	2.4	118
SM86HT156-6204A	SM86HT156-6204B	6.2	0.75	9	122	4				
SM86HT156-4208A	SM86HT156-4208B	4.2	1.25	8	122	8	4000	5.4	3.6	156

### Dimensions: (Unit=mm)



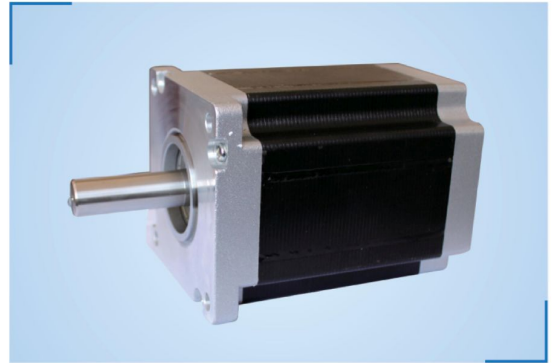
### Wiring Diagram:



## 1.8°110mm (NEMA42) 2 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	1800VAC for 1S 5mA
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N

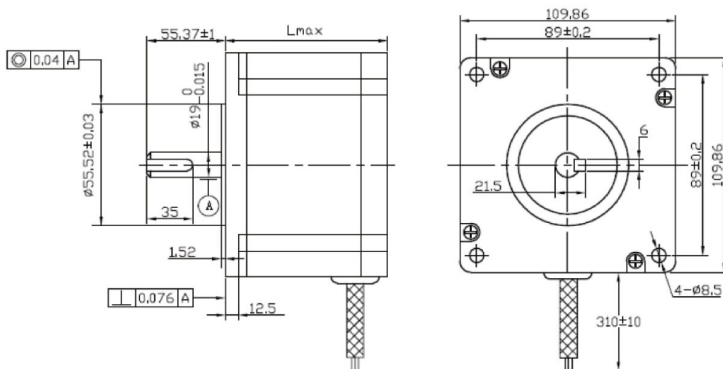


### Electrical Specification:

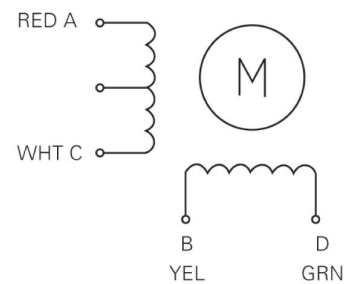
Model No.	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single shaft	A	Ω	mH	N.m	#	g-cm <sup>2</sup>	kg	kg-cm	mm
SM110HT99-5504A	5.5	0.9	12	11.2	4	5500	5	3	99
SM110HT150-6504A	6.5	0.8	15	21	4	10900	8.4	5.9	150
SM110HT165-7004A	7	1.2	17	24	4	13650	9.2	6.4	165
SM110HT201-8004A	8	0.67	12	28	4	16200	11.7	7.5	201

### Dimensions:

(Unit=mm)



### Wiring Diagram:



## 1.8°130mm (NEMA52) 2 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.8°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.03Max. (450g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N

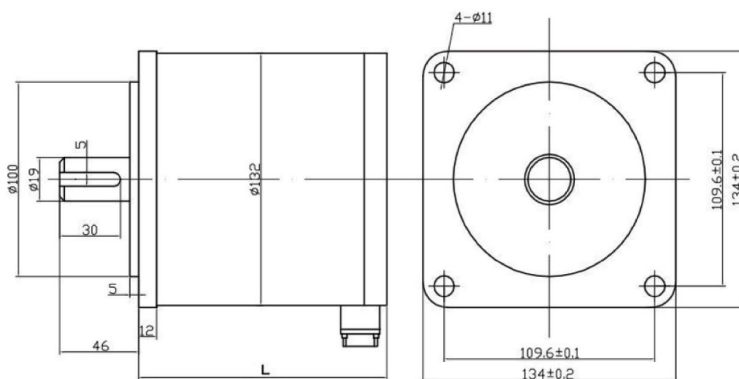


### Electrical Specification:

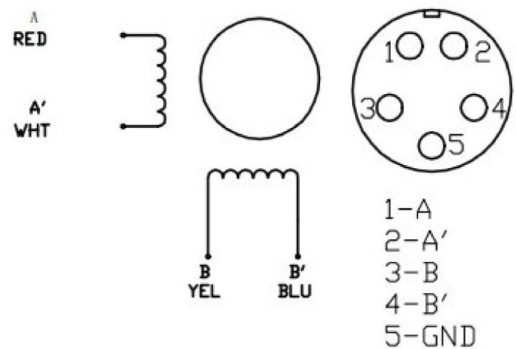
Model No.	Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	No load Frequency	Starting Frequency	Holding Torque	Length	Weight
	V	A	Ω	mH	Hz	Hz	N.m	Kg	Kg
130H170-6004	80~325	6	0.75	12.6	25000	2300	20	170	13.3
130H225-6004	80~325	6	0.87	14.5	25000	2300	30	225	18
130H250-7004	80~325	7	0.77	12.4	23000	2200	40	250	19
130H280-7004	80~325	7	0.85	14.4	23000	2200	50	280	22.5

### Dimensions:

(Unit=mm)



### Wiring Diagram:

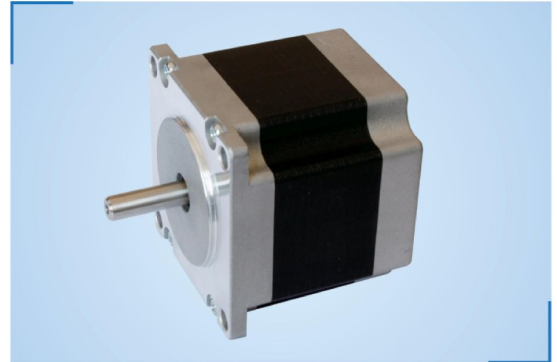




## 1.2°57mm (NEMA23) 3 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.2°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N

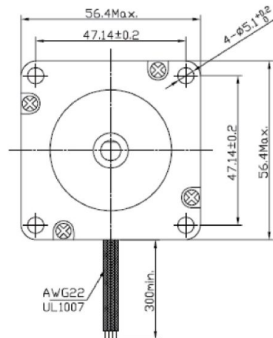
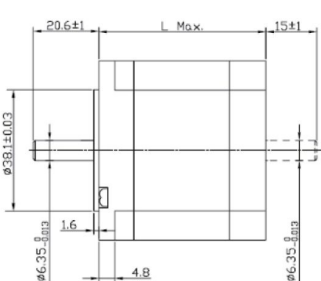


### Electrical Specification:

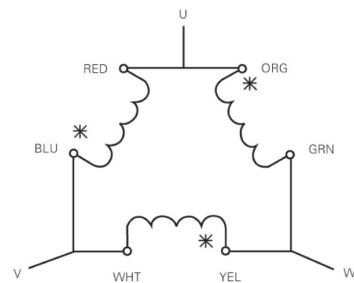
Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Detent Torque	Rotor inertia	Motor Weight
	(°)	(L)mm	A	Ω	mH	Kg.cm	g.cm	g.cm <sup>2</sup>	Kg
57HT3P42-001	1.2	42	5.2	1.3	1.4	4.5	210	110	0.45
57HT3P56-001	1.2	56	5.6	0.7	1.7	9.0	400	300	0.75
57HT3P79-001	1.2	78	5.8	12.4	2.4	15	680	480	1.01

### Dimensions:

(Unit=mm)



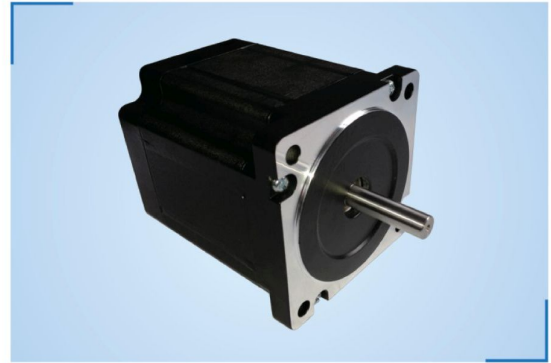
### Wiring Diagram:



## 1.2°86mm (NEMA34) 3 phase Hybrid Stepper Motor

### General Specification:

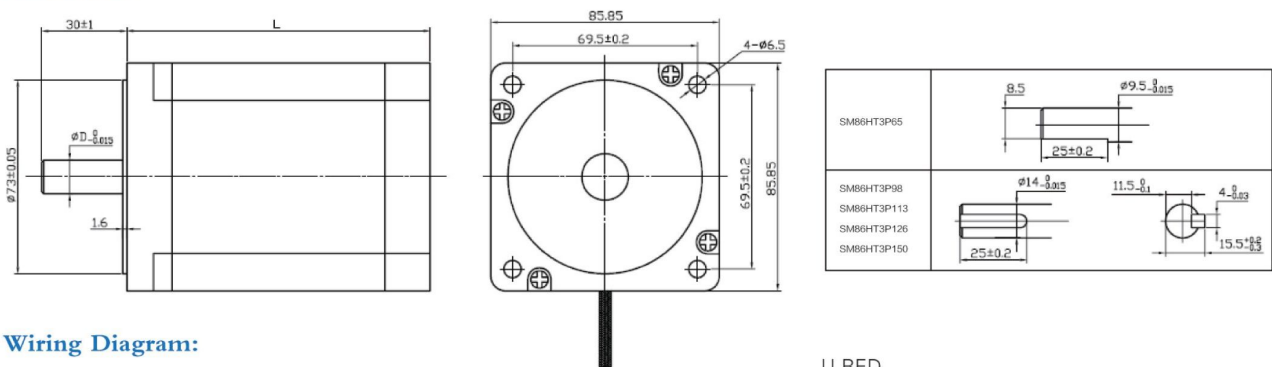
Item	Specifications
Step Angle	1.2°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N



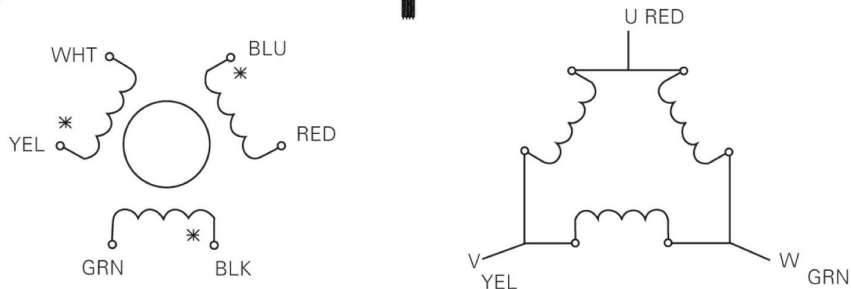
### Electrical Specification:

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Rotor inertia	Motor Weight
	(°)	(L)mm	A	Ω	mH	N.m	g.cm <sup>2</sup>	Kg
86HT3P65-3006	1.2	65	3	0.5	1.6	2	1100	1.65
86HT3P98-5206	1.2	98	5.2	0.6	3	4.5	2320	2.7
86HT3P113-5206	1.2	113	5.2	0.9	5.9	6	3100	3.4
86HT3P126-6006	1.2	126	6	0.75	2.4	6.5	3300	3.8
86HT3P150-5006	1.2	150	5	1.5	3	7	4650	4.56

### Dimensions: (Unit=mm)



### Wiring Diagram:



## 1.2°110mm (NEMA42) 3 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.2°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.08Max. (450g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N

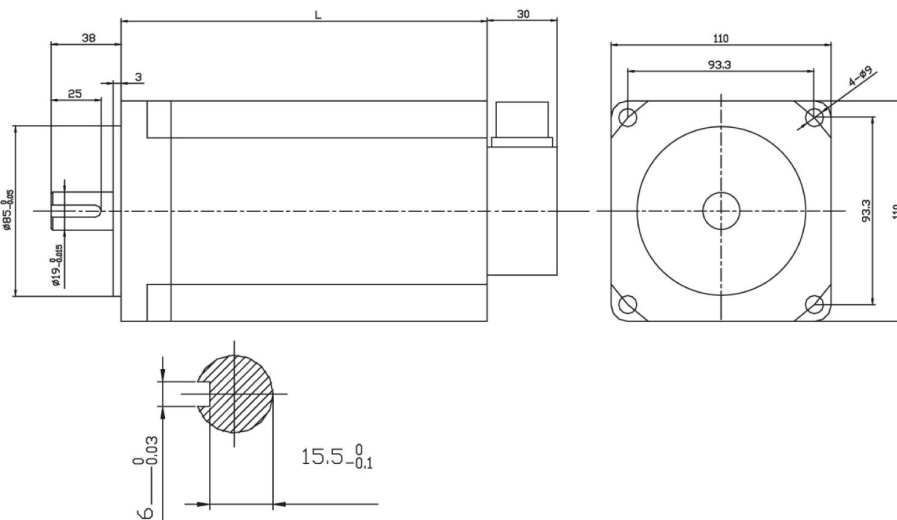


### Electrical Specification:

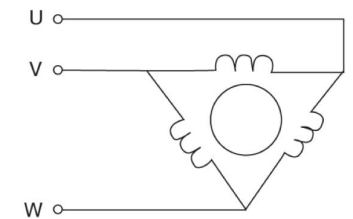
Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Motor Weight
	(°)	(L)mm	A	Ω	mH	N.m	Kg
110HT3P-3008	1.2	102	3	3.15	17	8	5
110HT3P-3013	1.2	132	3	4.2	22.6	13	6.6
110HT3P-5016	1.2	183	5	2.14	17.5	16	9
110HT3P-5020	1.2	220	5	2.4	24.4	20	11.1
110HT3P-5025	1.2	250	5	2.9	27	25	13

### Dimensions:

(Unit=mm)



### Wiring Diagram:



U	V	W	Ground
1	3	5	7

## 1.2°130mm (NEMA52) 3 phase Hybrid Stepper Motor

### General Specification:

Item	Specifications
Step Angle	1.2°
Temperature Rise	80°Cmax
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100 MΩ Min. ,500VDC
Dielectric Strength	500VAC for 1minute
Shaft Radial Play	0.02Max. (450g-load)
Shaft Axial Play	0.03Max. (450g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N

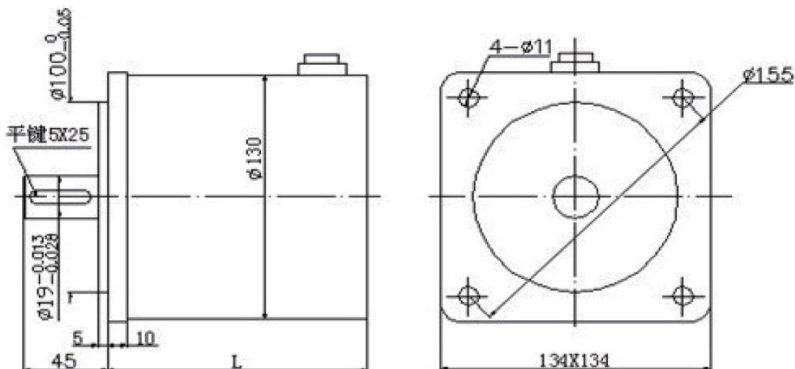


### Electrical Specification:

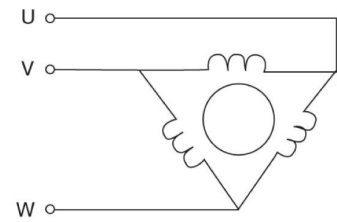
Model No.	Step Angle	Motor Length (L)mm	Current /Phase A	Resistance /Phase Ω	Inductance /Phase mH	Voltage V	Holding Torque N.m	Motor Weight Kg
	(°)							
130H3P-5026	1.2	170	5.0	0.80	4.10	80-325	26	13
130H3P-5036	1.2	225	5.0	1.30	13.1	80-325	36	18
130H3P-5050	1.2	280	5.0	1.60	17.5	80-325	50	22

### Dimensions:

(Unit=mm)



### Wiring Diagram:



U	V	W	Ground
1	3	5	7

## 28mm HSP Planetary Gear Stepper Motor

### General Specification:

Housing Material	Metal
Bearing at Output	Ball Bearings
Max.Radial Load(12mm from flange)	≤35N
Max.Shaft Axial Load	≤25N
Radial Play of Shaft (near to Flange)	≤0.07mm
Axial Play of Shaft	≤0.3mm
Backlash at No-load	1.5°



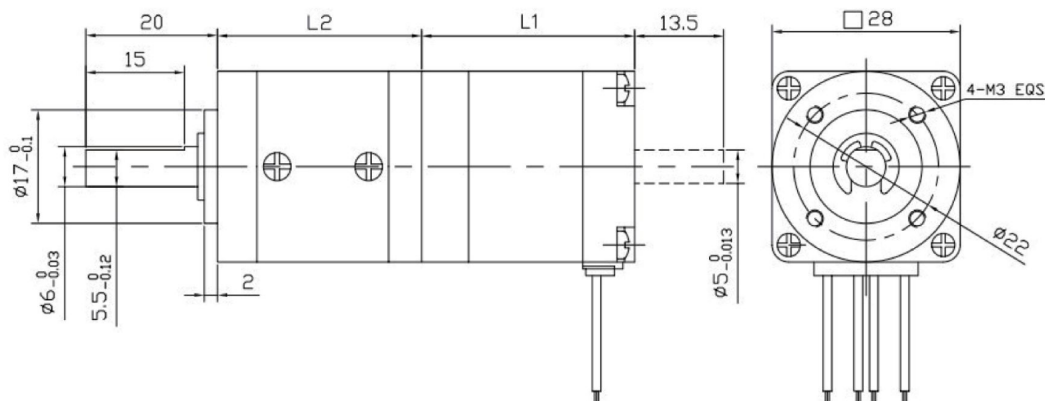
### 28HS Hybrid Stepping Motor Specifications

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor inertia	Motor Weight
	(°)	(L)mm	A	Ω	mH	g.cm	No.	g.cm <sup>2</sup>	Kg
28HS32-0956	1.8	32	0.95	2.8	0.8	430	6	9	0.11
28HS32-0674	1.8	32	0.67	5.6	3.4	600	4	9	0.11
28HS45-0956	1.8	45	0.95	3.4	1.2	750	6	12	0.14
28HS45-0674	1.8	45	0.67	6.8	4.9	950	4	12	0.14
28HS51-0956	1.8	51	0.95	4.6	1.8	900	6	18	0.2
28HS51-0674	1.8	51	0.67	9.2	7.2	1200	4	18	0.2

### 28JXGTS200K Planetary Gearbox Specifications

Reduction ratio	3.71	5.18	14	19	27	51	71	100	139	189	264	369
Number of gear trains	1		2			3			4			
Length(L2) mm	31		40.1			49			57.9			
Max.rated torque kg.cm	12		20			32			40			
Short time permissible torque kg.cm	36		60			96			120			
Efficiency %	90%		81%			73%			66%			
Weight g	60		85			95			110			

### Dimensions: (Unit=mm)



## 42mm HSP Planetary Gear Stepper Motor

### General Specification:

Housing Material	Metal
Bearing at Output	Ball Bearings
Max.Radial Load(12mm from flange)	≤80N
Max.Shaft Axial Load	≤30N
Radial Play of Shaft (near to Flange)	≤0.06mm
Axial Play of Shaft	≤0.3mm
Backlash at No-load	1.5°



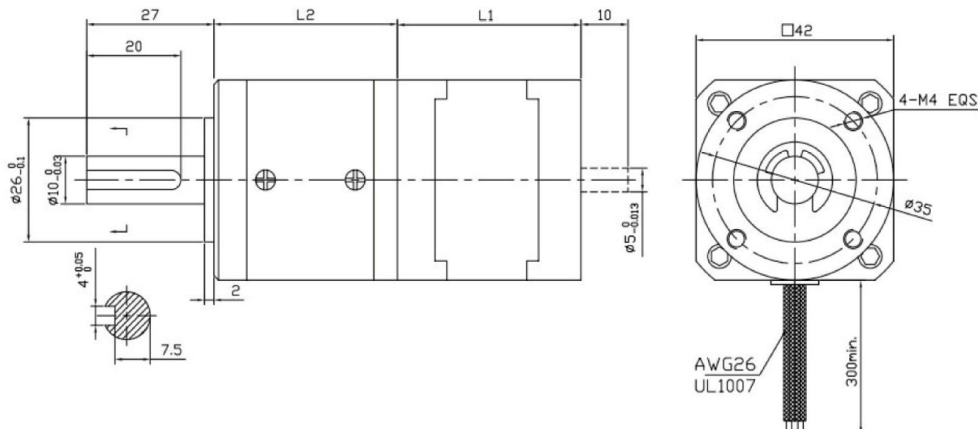
### 42HS Hybrid Stepping Motor Specifications

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Detent Torque	Rotor inertia	Motor Weight
	(°)	(L)mm	A	Ω	mH	Kg.cm	No.	g.cm	g.cm <sup>2</sup>	Kg
42HS34-1334	1.8	34	1.33	2.1	2.5	2.2	4	120	34	0.22
42HS40-1206	1.8	40	1.2	3.3	3.2	2.6	6	150	54	0.28
42HS40-1684	1.8	40	1.68	1.65	3.2	3.6	4	150	54	0.28
42HS48-0406	1.8	48	0.4	30	25	3.17	6	260	68	0.35
42HS48-1684	1.8	48	1.68	1.65	2.8	4.4	4	260	68	0.35

### 42JXGTS200K Planetary Gearbox Specifications

Reduction ratio	4.44	17	22	65	83	106	247	316	403	515
Number of gear trains	1	2			3			4		
Length(L2) mm	39.0	49.4			59.6			69.8		
Max.rated torque kg.cm	60	100			160			200		
Short time permissible torque kg.cm	180	300			480			600		
Efficiency %	90%	81%			73%			66%		
Weight g	350	450			550			650		

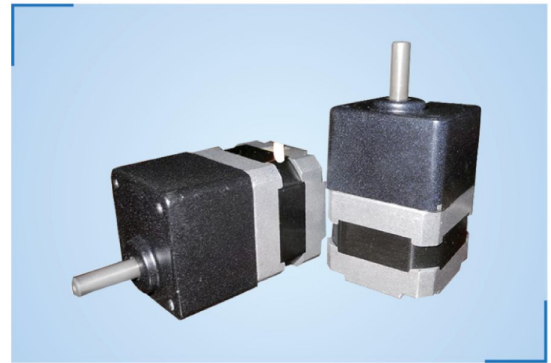
### Dimensions: (Unit=mm)



## 42mm HSG Stepper motor with Gearbox

### General Specification:

Housing Material	Metal
Bearing at Output	Ball Bearings
Max.Radial Load(12mm from flange)	≤ 80N
Max.Shaft Axial Load	≤ 30N
Radial Play of Shaft (near to Flange)	≤ 0.06mm
Axial Play of Shaft	≤ 0.3mm
Backlash at No-load	1.5°



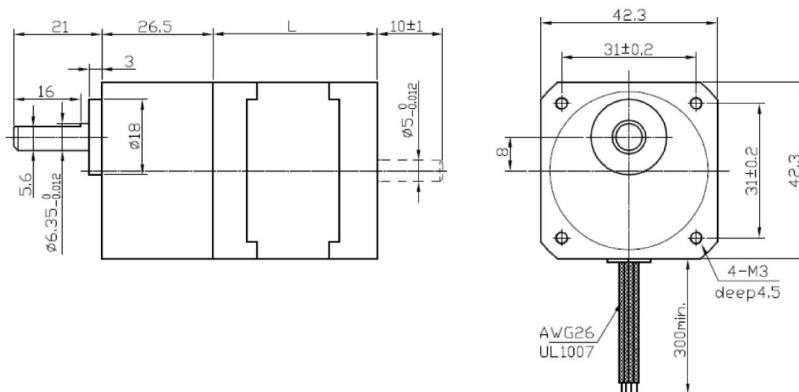
### Electrical Specification:

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Detent Torque	Rotor inertia	Motor Weight
	(°)	(L)mm	A	Ω	mH	Kg.cm	No.	g.cm	g.cm <sup>2</sup>	Kg
42HS34-1334	1.8	34	1.33	2.1	2.5	2.2	4	120	34	0.22
42HS40-1206	1.8	40	1.2	3.3	3.2	2.6	6	150	54	0.28
42HS40-1684	1.8	40	1.68	1.65	3.2	3.6	4	150	54	0.28
42HS48-0406	1.8	48	0.4	30	25	3.17	6	260	68	0.35
42HS48-1684	1.8	48	1.68	1.65	2.8	4.4	4	260	68	0.35

### Gearbox Specifications

Ratio	5:1	10:1
Permissible Speed rpm	0~350	0~180
Length(L) mm	26.5	26.5
Peak Torque	4kg.cm	6kg.cm
Backlash at Noload	4 deg	3 deg

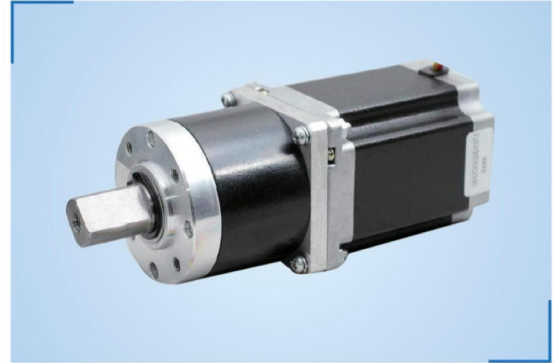
### Dimensions: (Unit=mm)



## 57mm HSP Planetary Gear Stepper Motor

### General Specification:

Housing Material	Metal
Bearing at Output	Ball Bearings
Max.Radial Load(12mm from flange)	≤250N
Max.Shaft Axial Load	≤100N
Radial Play of Shaft (near to Flange)	≤0.08mm
Axial Play of Shaft	≤0.3mm
Backlash at No-load	1.5°



### 57HS Hybrid Stepping Motor Specifications

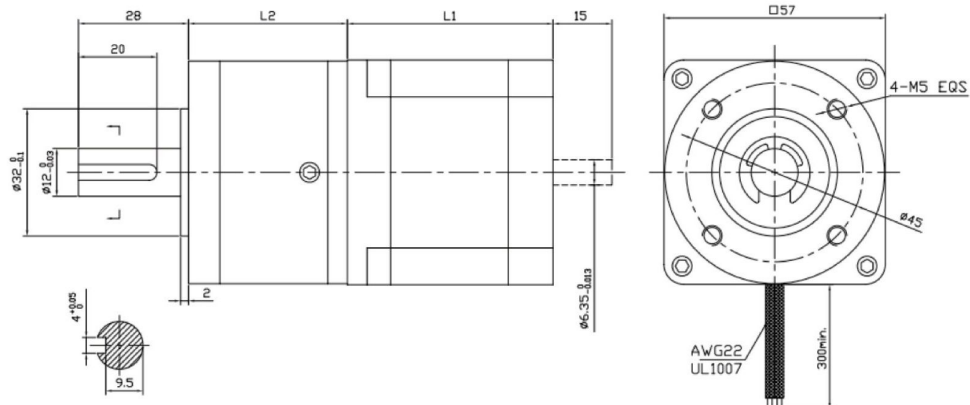
Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Detent Torque	Rotor inertia	Motor Weight
	(°)	(L)mm	A	Ω	mH	N.m	No.	g.cm	g.cm <sup>2</sup>	Kg
57HS41-1006	1.8	41	1	5.2	5.5	0.39	6	250	150	0.47
57HS41-2804	1.8	41	2.8	0.7	1.4	0.55	4	250	150	0.47
57HS51-1006	1.8	51	1	6.6	8.2	0.72	6	300	230	0.59
57HS51-2804	1.8	51	2.8	0.83	2.2	1.01	4	350	280	0.68
57HS56-1006	1.8	56	1	7.4	10	0.9	6	350	280	0.68
57HS56-2804	1.8	56	2.8	0.9	2.5	1.26	4	350	280	0.68
57HS76-1006	1.8	76	1	8.6	14	1.35	6	600	440	1.1
57HS76-2804	1.8	76	2.8	1.13	3.6	1.89	4	600	440	1.1

### 57JXGTS300K Planetary Gearbox Specifications

Reduction ratio	3.60	4.25	13	15	18	106	47	55	65	77	168	198	234	276	326
Number of gear trains	1		2			3					4				
Length(L2) mm	39.0		51.8			63.1					82.6(74.4)				
Max.rated torque kg.cm	60		150			240					300				
Short time permissible torque kg.cm	180		450			720					900				
Efficiency %	90%		81%			72%					66%				
Weight g	350		710			880					1220				

### Dimensions:

(Unit=mm)

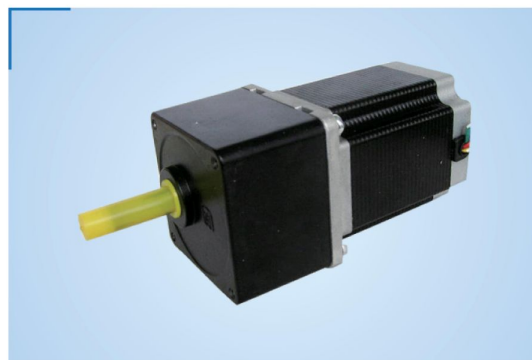




## 57HSG Stepper motor with Gearbox

### General Specification:

Housing Material	Metal
Bearing at Output	Ball Bearings
Max.Radial Load(12mm from flange)	≤250N
Max.Shaft Axial Load	≤100N
Radial Play of Shaft (near to Flange)	≤0.08mm
Axial Play of Shaft	≤0.3mm
Backlash at No-load	1.5°



### Electrical Specification:

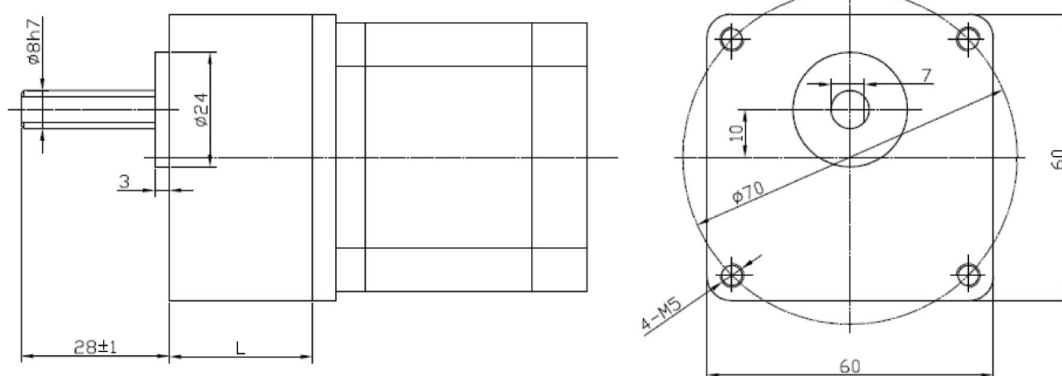
Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Detent Torque	Rotor inertia	Motor Weight
	(°)	(L)mm	A	Ω	mH	N.m	No.	g.cm	g.cm <sup>2</sup>	Kg
57HS41-1006	1.8	41	1	5.2	5.5	0.39	6	250	150	0.47
57HS41-2804	1.8	41	2.8	0.7	1.4	0.55	4	250	150	0.47
57HS51-1006	1.8	51	1	6.6	8.2	0.72	6	300	230	0.59
57HS51-2804	1.8	51	2.8	0.83	2.2	1.01	4	350	280	0.68
57HS56-1006	1.8	56	1	7.4	10	0.9	6	350	280	0.68
57HS56-2804	1.8	56	2.8	0.9	2.5	1.26	4	350	280	0.68
57HS76-1006	1.8	76	1	8.6	14	1.35	6	600	440	1.1
57HS76-2804	1.8	76	2.8	1.13	3.6	1.89	4	600	440	1.1

### Gearbox Specifications

Ratio	3	7.5	12.5	15	25	30	50	75	90	100	120	150
Number of gear trains	2	2	2	3	3	3	4	4	5	5	5	5
Length(L) mm	32						42					
Peak Torque	50kg.cm											
Backlash at NoLoad	4 deg			3.5 deg			3.0 deg			2.5 deg		

### Dimensions:

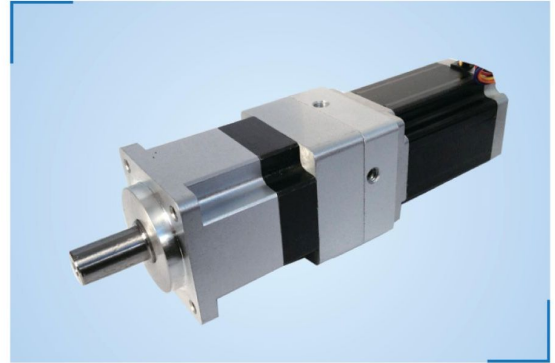
(Unit=mm)



## 86HSP Gearbox Stepping Motor

### General Specification:

Housing Material	Metal
Housing Material	Ball Bearings
Bearing at Output	≤910N
Max.Radial Load(12mm from flange)	≤580N
Max.Shaft Axial Load	>94%
Efficiency with full load %	>10000
Average lifetime Hour	>10000



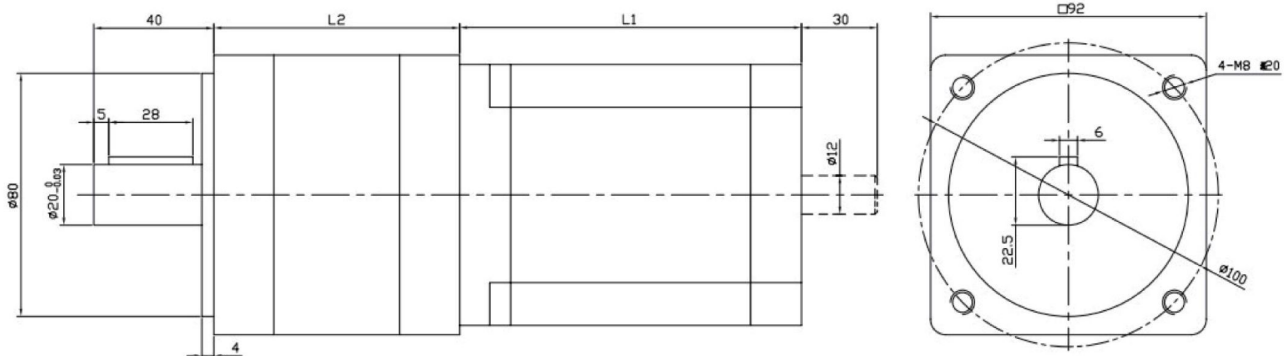
### Electrical Specification:

Model No.	Step Angle	Motor Length (L)mm	Current /Phase A	Resistance /Phase Ω	Inductance /Phase mH	Holding Torque N.m	# of Leads No.	Detent Torque g.cm	Rotor inertia g.cm <sup>2</sup>	Motor Weight Kg
	(°)									
86HS78-5504	1.8	78	5.5	0.46	4	4.6	4	1.2	1400	2.3
86HS78-4208	1.8	78	4.2	0.75	3.4	4.6	8	1.2	1400	2.3
86HS115-6004	1.8	115	6.0	0.6	6.5	8.7	4	2.4	2700	3.8
86HS115-4208	1.8	115	4.2	0.9	6	8.7	8	2.4	2700	3.8
86HS155-6204	1.8	155	6.2	0.75	9	12.2	4	3.6	4000	5.4
86HS155-4208	1.8	155	4.2	1.25	8	12.2	8	3.6	4000	5.4

### Gearbox Specifications

Ratio	5	7	10	15	20	30	50	60	80	100	150	200
Output Torque N.m	60	60	70	70	70	80	120	120	120	150	150	150
Weight KG	3.5											
Backlash Arcmin	Precision 10						High-Precision 5					
Degree of protection	IP65											

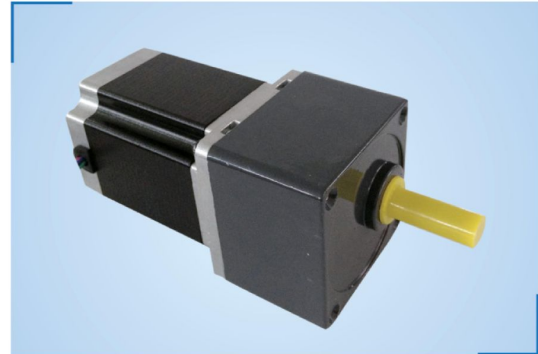
### Dimensions: (Unit=mm)



## 86HSG Stepper motor with Gearbox

### General Specification:

Housing Material	Metal
Housing Material	Ball Bearings
Bearing at Output	≤910N
Max.Radial Load(12mm from flange)	≤580N
Max.Shaft Axial Load	>94%
Efficiency with full load %	>94%
Average lifetime Hour	>10000



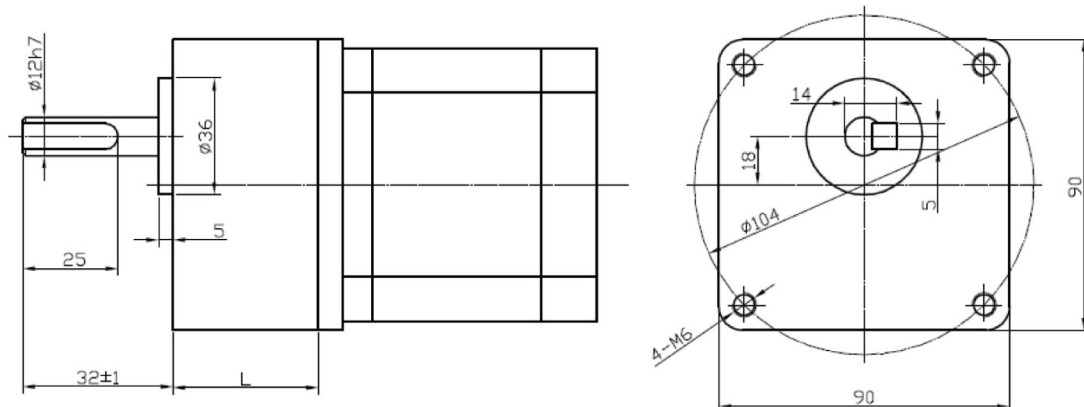
### Electrical Specification:

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Detent Torque	Rotor inertia	Motor Weight
	(°)	(L)mm	A	Ω	mH	N.m	No.	g.cm	g.cm <sup>2</sup>	Kg
86HS80-5504	1.8	78	5.5	0.46	4	4.6	4	1.2	1400	2.3
86HS80-4208	1.8	78	4.2	0.75	3.4	4.6	8	1.2	1400	2.3
86HS118-6004	1.8	115	6.0	0.6	6.5	8.7	4	2.4	2700	3.8
86HS118-4208	1.8	115	4.2	0.9	6	8.7	8	2.4	2700	3.8
86HS156-6204	1.8	155	6.2	0.75	9	12.2	4	3.6	4000	5.4
86HS156-4208	1.8	155	4.2	1.25	8	12.2	8	3.6	4000	5.4

### Gearbox Specifications

Ratio	3	7.5	12.5	15	25	30	50	75	90	100	120	150
Number of gear trains	2	2	2	3	3	3	4	4	5	5	5	5
Length(L) mm	45				60							
Peak Torque	250kg.cm											
Backlash at NoLoad	4 deg				3.5 deg				2.5 deg			

### Dimensions: (Unit=mm)





# CW230

## Stepping Motor Driver

### Features:

- \* Power type: 40VDC
- \* Output current: 0.9A-3A
- \* Available Microstep: 1-64
- \* Input: Optoisolated Signal
- \* Noise Optimization

### Overview:

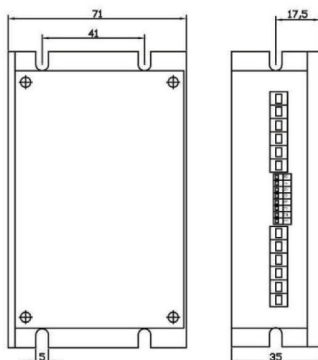
The CW230 driver is cost-effective, high performance stepping driver. The design is based on advanced control technology, and applies to two-phase or four-phase hybrid stepping motor below 3A, such as 57BYG, 42BYG. Due to the adoption of the advanced Bipolar constant-current chopper drive technology, and features stable operation, provides excellent high speed torque. It has 7 kinds of microstep, the maximum number of microstep is 1 / 64. Chopping frequency of 20,000 times per second to eliminate the noise of the motor. Another unique function is to automatically reduce current: when the motor is stopped, the output current reduce to a lower value, thereby reducing the heating of the motor and drive.

### Application:

It is suitable for a variety of small-scale automation equipment and instruments, such as labeling machine, cutting machine, packing machine, plotter, engraving machine, CNC machine and so on. It always performs well when applied for equipment which requires for low-vibration, low-noise, high-precision and high-velocity.

### Electrical Parameters

Instructions	Min. Value	Typical Value	Max. Value
Voltage (V)	18	36	40
Output Current (A)	0.9	1.5	3
Logic Input Current (mA)	7	10	16
Step Pulse Respond Frequency (KHz)	-	-	50
Pulse Low Level Duration (μs)	5	-	-



Outline and installation size (unit: mm)

### Microstep selection

switch: ON=0; OFF=1

Microstep	Pulse/Rev	SW1	SW2	SW3
1	200	1	1	1
2	400	0	1	1
4	800	1	0	1
8	1600	0	0	1
16	3200	1	1	0
32	6400	0	1	0
64	12800	1	0	0

### Current selection

switch: ON=0; OFF=1

Peak Current ( A )	SW5	SW6	SW7
0.9	0	0	0
1.2	0	0	1
1.5	0	1	0
1.8	0	1	1
2.1	1	0	0
2.4	1	0	1
2.7	1	1	0
3.0	1	1	1

SW4, SW8: NC

### I/O Ports

Ports	Description
CP+, CP-	Stepping pulse positive input and negative input
CW+, CW-	Stepping motor direction positive input and negative input
REST+, REST-	Motor free positive input and negative input
VCC+	DC power positive pole
GND-	DC power cathode
A+, A-	Stepping motor one winding
B+, B-	Stepping motor other winding



# CW5045

## Stepping Motor Driver

### Overview:

The CW5045 driver is cost-effective, high performance stepping driver. The design is based on advanced control technology, and applies to two-phase or four-phase hybrid stepping motor below 4.5A, such as 85BYG, 57BYG, 42BYG. Due to the adoption of the advanced Bipolar constant-current chopper drive technology, and features stable operation, provides excellent high speed torque. It has 14 kinds of microstep, the maximum number of microstep is 1 / 256 ( step number is 51200 steps /rev); its current range is 1.5A-4.5A, the output current is 8 settings, and the current resolution is about 0.5A; it has automatic semi-flow, over-voltage, under-voltage and over-current protection functions. The drive is the DC power supply, the operating voltage range should be 24VDC-48VDC, it should not exceed 50VDC and not less than 20VDC.

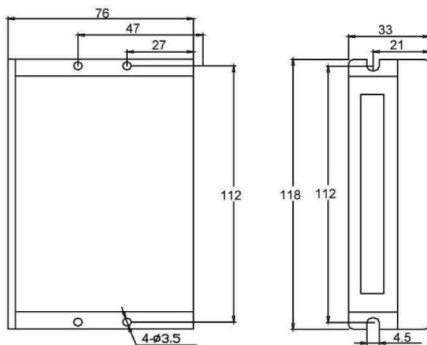
### Application:

It is suitable for a variety of small-scale automation equipment and instruments, such as labeling machine, cutting machine, packing machine, plotter, engraving machine, CNC machine and so on.

#### Current Selection

switch: ON=0; OFF=1

Phase current(A)	SW1	SW2	SW3
1.5	0	0	0
2.0	1	0	0
2.4	0	1	0
2.8	1	1	0
3.2	0	0	1
3.7	1	0	1
4.2	0	1	1
4.5	1	1	1



Outline and installation size (unit: mm)

#### Microstep Selection

switch: ON=0; OFF=1

Microstep	SW5	SW6	SW7	SW8
2	0	0	0	0
4	0	1	0	0
8	0	0	1	0
16	0	1	1	0
32	0	0	0	1
64	0	1	0	1
128	0	0	1	1
256	0	1	1	1
5	1	0	0	0
10	1	1	0	0
25	1	0	1	0
50	1	1	1	0
125	1	0	0	1
250	1	1	0	1

#### Driver functions descriptions

Driver functions	Operating instructions
Microstep setting	Users can set the driver Microstep by the SW5-SW8 switches. The setting of the specific Microstep subdivision, please refer to the illustrations of the drive panel figure. Steps / rev = 200×microstep
Output Current Setting	Users can set the driver output current by SW1-SW3 three switches. The setting of the specific output current, please refer to the illustrations of the drive panel figure.
Automatic half current function	Users can set the driver half flow function by SW4. "1" indicates that the quiescent current is set to half of the dynamic current, that is to say, 0.5 seconds after the cessation of the pulse, current reduced to about half automatically; "0" indicates that the quiescent current and the dynamic current is the same. Users should set SW4 to "1", in order to reduce motor and drive heating and improve reliability.
Signal interfaces	PUL+ and PUL- is the positive and negative side of control pulse signal; DIR + and DIR - is the positive and negative side of direction signal; ENA + and ENA- is the positive and negative side of enable signal.
Motor interfaces	A + and A- is connected to a phase winding of motor; B + and B- is connected to another phase winding of motor. If you need to backward, one of the phase windings can be reversed.
Power interfaces	It uses DC power supply. Recommended operating voltage is 24VDC-48VDC, and power consumption should be greater than 100W.
Indicator lights	There are two indicator lights. Power indicator is green. When the driver power on, the green light will always be lit. Fault indicator is red, when there is over-voltage or over-current fault, the red light will always be lit; when the driver fault is cleared, if re-power the red light will be off.
Installation instructions	Driver Dimensions: 118x76x33mm, please refer to dimensions diagram. During installation, it should be close to the metal cabinet for heat dissipation.



# CW6060AC

## Stepping Motor Driver

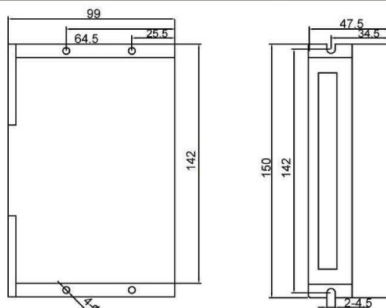
### Overview:

The CW6060AC drive is cost-effective, high performance step driver. The design is based on advanced control technology, and applies to two-phase or four-phase hybrid stepping motor below 6A, such as 85BYG, 57BYG. Due to the adoption of the advanced Bipolar constant-current chopper drive technology, and features stable operation, provides excellent high speed torque. It has 14 kinds of microstep, the maximum number of microstep is 1 / 256 ( step number is 51200 steps /rev); its current range is 2A-6A, the output current is 8 settings, and the current resolution is about 0.5A; it has automatic semi-flow, over-voltage, under-voltage and over-current protection functions. The drive is the AC power supply, the operating voltage range should be 24VAC-55VAC, it should not exceed 60VAC and not less than 20VAC.

### Application:

It is suitable for a variety of large-scale automation equipment and instruments, such as labeling machine, cutting machine, packing machine, plotter, engraving machine, CNC machine and so on.

Current Selection			
switch: ON=0; OFF=1			
Phase current(A)	SW1	SW2	SW3
2.00	0	0	0
2.57	1	0	0
3.14	0	1	0
3.71	1	1	0
4.28	0	0	1
4.86	1	0	1
5.43	0	1	1
6.00	1	1	1



Outline and installation size (unit: mm)

Microstep Selection				
switch: ON=0; OFF=1				
Microstep	SW5	SW6	SW7	SW8
2	0	0	0	0
4	0	1	0	0
8	0	0	1	0
16	0	1	1	0
32	0	0	0	1
64	0	1	0	1
128	0	0	1	1
256	0	1	1	1
5	1	0	0	0
10	1	1	0	0
25	1	0	1	0
50	1	1	1	0
125	1	0	0	1
250	1	1	0	1

Driver functions descriptions	
Driver functions	Operating instructions
Microstep setting	Users can set the driver Microstep by SW5-SW8 four dial switches. The setting of the specific Micro-step subdivision, please refer to the illustrations of the drive panel figure. Steps / rev = 200×microstep
Output Current Setting	Users can set the driver output current by SW1-SW three dial switches. The setting of the specific output current, please refer to the illustrations of the drive panel figure.
Automatic half current function	Users can set the driver half flow function by SW4. "1" indicates that the quiescent current is set to half of the dynamic current, that is to say, 0.5 seconds after the cessation of the pulse, current reduced to about half automatically; "0" indicates that the quiescent current and the dynamic current is the same. Users should set SW4 to "1", in order to reduce motor and drive heating and improve reliability.
Signal interfaces	CP+ and CP- is the positive and negative side of control pulse signal; CW + and CW - is the positive and negative side of direction signal; EN + and EN- is the positive and negative side of enable signal.
Motor interfaces	A + and A- is connected to a phase winding of motor; B + and B- is connected to another phase winding of motor. If you need to backward, one of the phase windings can be reversed.
Power interfaces	It uses AC power supply. Recommended operating voltage is 24VDC-55VDC, and power consumption should be greater than 200W.
Indicator lights	There are two indicator lights. Power indicator is green. When the driver power on, the green light will always been lit. Fault indicator is red, when there is over-voltage or over-current fault, the red light flashes or constant light; when the driver fault is cleared, if re-power the red light will be off.
Installation instructions	Driver Dimensions: 150X99X48mm, please refer to dimensions diagram. Both horizontal installation and Vertically installation are OK. When installed, it should be close to the metal cabinet for heat dissipation.



# CW8060

## Stepping Motor Driver

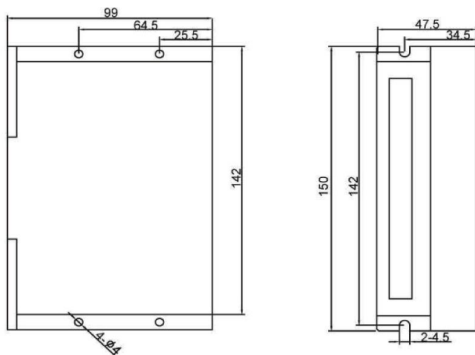
### Overview:

The CW8060 drive is cost-effective, high performance step driver. The design is based on advanced control technology, and applies to two-phase or four-phase hybrid stepping motor below 6A, such as 85BYG, 57BYG. Due to the adoption of the advanced Bipolar constant-current chopper drive technology, and features stable operation, provides excellent high speed torque. It has 14 kinds of microstep, the maximum number of microstep is 1 / 256 ( step number is 51200 steps /rev); its current range is 2A-6A, the output current is 8 settings, and the current resolution is about 0.5A; it has automatic semi-flow, over-voltage, under-voltage and over-current protection functions. The driver is the DC power supply, the operating voltage range should be 36VDC-80VDC, it should not exceed 90VDC and not less than 24VDC.

### Application:

It is suitable for a variety of large-scale automation equipment and instruments, such as labeling machine, cutting machine, packing machine, plotter, engraving machine, CNC machine and so on.

Current Selection			
switch: ON=0; OFF=1			
Phase current(A)	SW1	SW2	SW3
2.00	0	0	0
2.57	1	0	0
3.14	0	1	0
3.71	1	1	0
4.28	0	0	1
4.86	1	0	1
5.43	0	1	1
6.00	1	1	1



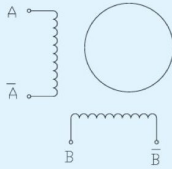
Outline and installation size (unit: mm)

Microstep Selection				
switch: ON=0; OFF=1				
Microstep	SW5	SW6	SW7	SW8
2	0	0	0	0
4	0	1	0	0
8	0	0	1	0
16	0	1	1	0
32	0	0	0	1
64	0	1	0	1
128	0	0	1	1
256	0	1	1	1
5	1	0	0	0
10	1	1	0	0
25	1	0	1	0
50	1	1	1	0
125	1	0	0	1
250	1	1	0	1

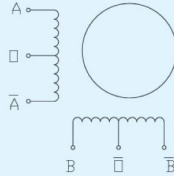
Driver functions descriptions	
Driver functions	Operating instructions
Microstep setting	Users can set the driver Microstep by SW5-SW8 four dial switches. The setting of the specific Micro-step subdivision, please refer to the illustrations of the driver panel figure. Steps / rev = 200×microstep
Output Current Setting	Users can set the driver output current by SW1-SW three dial switches. The setting of the specific output current, please refer to the illustrations of the driver panel figure.
Automatic half current function	Users can set the driver half flow function by SW4. "1" indicates that the quiescent current is set to half of the dynamic current, that is to say, 0.5 seconds after the cessation of the pulse, current reduced to about half automatically; "0" indicates that the quiescent current and the dynamic current is the same. Users should set SW4 to "1", in order to reduce motor and driver heating and improve reliability.
Signal interfaces	CP+ and CP- is the positive and negative side of control pulse signal; CW + and CW - is the positive and negative side of direction signal; EN + and EN- is the positive and negative side of enable signal.
Motor interfaces	A + and A- is connected to a phase winding of motor; B + and B- is connected to another phase winding of motor. If you need to backward, one of the phase windings can be reversed.
Power interfaces	It uses DC power supply. Recommended operating voltage is 36VDC-80VDC, and power consumption should be greater than 200W.
Indicator lights	There are two indicator lights. Power indicator is green. When the driver power on, the green light will always been lit. Fault indicator is red, when there is over-voltage or over-current fault, the red light flashes or constant light; when the driver fault is cleared, if re-power the red light will be off.
Installation instructions	Drive Dimensions: 150X99X48mm, please refer to dimensions diagram. Both horizontal installation and Vertically installation are OK. When installed, it should be close to the metal cabinet for heat dissipation.

## Wire Connection Diagrams

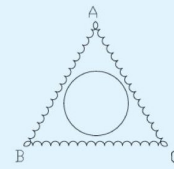
4Leads  
Bipolar Connection



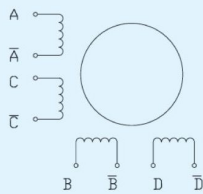
6Leads  
Unipolar Connection



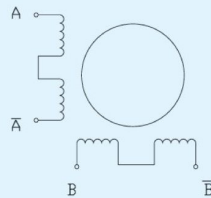
3Leads  
3-Phase



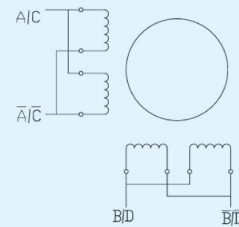
8Leads  
Unipolar Connection



8Leads  
Bipolar(Series) Connection



8Leads  
Bipolar(Parallel) Connection



**We are also supply** Stepper motor Kits, linear stepper motor, Dc motor, Brake Stepper motor, Stepper motor with Encoder, Flexible Coupling, Pully, Power supply, Breakout Borad and so on..



Stepper Motor Kits



Linear Stepper Motor



Dc motor



Brake Stepper motor



Stepper motor with Encoder



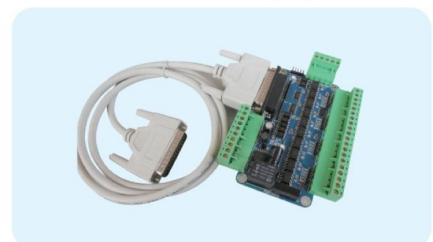
Flexible Couplings



Pully



power supply



Breakout Board