



STEPPER DRIVERS

This is a high performance microstepping drive based on pure-sinusoidal current control technology. Owing to the above technology and the self-adjustment technology (self-adjust current control parameter) according to different motors, the driven motors can run with smaller noise, lower heating, smoother movement and have better performances at higher speed than most of the drives in the market. It is suitable for driving 2 Phase hybrid stepping motors.

Technical Data

Model No.	SEA422	SEA5045	SEA6060	SEA860H	SEA1108
Parameters					
AC power input			24V-60VAC	20VAC-80VAC	110VAC
DC power input	18-40 VDC	24V-50VDC		36VDC -110VDC	
Output current	0.5A-2.2A	1.3A-4.5A	2.0 A - 6.0 A	8 Amps.	0.5 - 8 Amps.
Micro Stepping	1/2 To 1/256	1/2 To 1/256	1/2 To 1/256	1/2 To 1/256	1/2 To 1/256
Dimensions (mm)	86x55x20	118x76x33	147x97x30	158x100x59	195x118x81
Weight	200g	300g	600gm	700gm	1.500gm
GND	DC power cathode	DC power cathode	GND		
A+ A-	Stepping motor one winding	Stepping motor one winding	Stepping motor one winding	Stepping motor one winding	Stepping motor one winding
B+ B-	Stepping motor other winding	Stepping motor other winding	Stepping motor other winding	Stepping motor other winding	Stepping motor other winding
PUL+ PUL- OR CP+ CP-	Stepping pulse input+5V	Stepping pulse input+5V	Stepping pulse input+5V	Stepping pulse input+5V	
DIR + DIR- OR CW + CW	Stepping motor direction input, voltage level touched off, high towards, low reverse	Stepping motor direction input, voltage level touched off, high towards, low reverse	Stepping motor direction input, voltage level touched off, high towards, low reverse	Stepping motor direction input, voltage level touched off, high towards, low reverse	Stepping motor direction input, voltage level touched off, high towards, low reverse
ENA + ENA	Motor Free	Motor Free	Motor Free	Motor Free	Motor Free
Working Environment	Temperature-15- 40 Humidity 90~%C<	Temperature-15- 40 Humidity 90~%C<	Temperature-15- 40 Humidity 90~%C<	Temperature-15- 40 Humidity 90~%C<	Temperature-15- 40 Humidity 90~%C<

*We can also manufacture 3-Phase customized stepper driver.



AC SPINDLE MOTORS

Spindle Model	Rev (rpm)	Power (kw)	Current (A)	Voltage (V)	Cooling	Collet	Collet (mm)
GDZ65-800	24000	0.8	6	220/380	water cooled	ER11	3.175-6
GDZ80-1.5	24000	1.5	5	220/380	water cooled	ER11	3.175-6
GDZ80-2.2	24000	2.2	8	220/380	water cooled	ER20	3.175-12.7
GDZ100-3	24000	3	7/12	380/220	water cooled	ER20	3.175-12.7
GDZ100-4	24000	4	13	380/220	water cooled	ER20	3.175-12.7
GDZ125-4.5	24000	4.5	8	380	water cooled	ER25	3.175-14
GDZ125-5.5	24000	5.5	8	380	water cooled	ER25	3.175-14
GDZ125-6	24000	6	8	380	water cooled	ER25	3.175-14
GDZ125-7.5	24000	7.5	10	380	water cooled	ER25	3.175-14

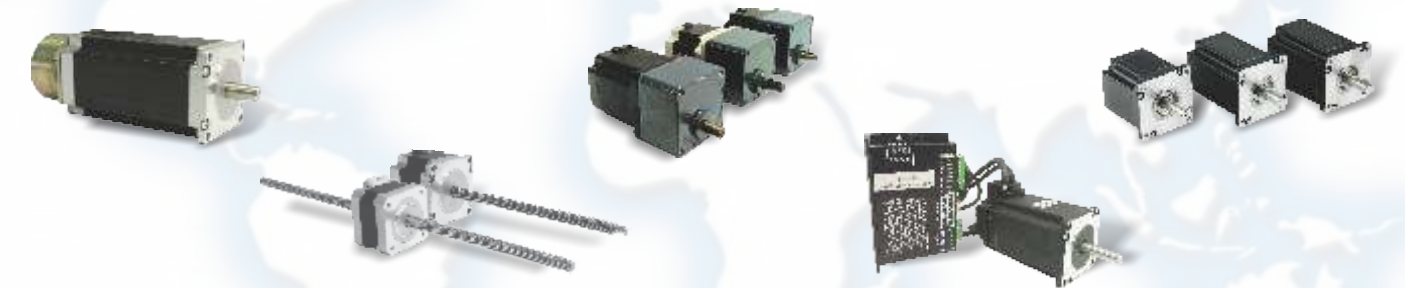


SPARK MOTORS PVT. LTD.

World of Engineering Solutions

AN ISO 9001 - 2008 CERTIFIED COMPANY

Spark Group of Companies established in year 2000. We are manufacturing high quality, reliable and cost effective Stepper Motors, Stepper Driver, Linear Motor, Spindle Motors for industries. Our Range of Supply of Stepper Motors is **0.1 Kg-Cm to 950 Kg-Cm** & with suitable Microstepping Drivers. **0.5 Amp. To 8 Amp.**, AC/DC Input Voltages.



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HYBRID STEPPER MOTOR (NEMA 8) - 20MM 1.8°



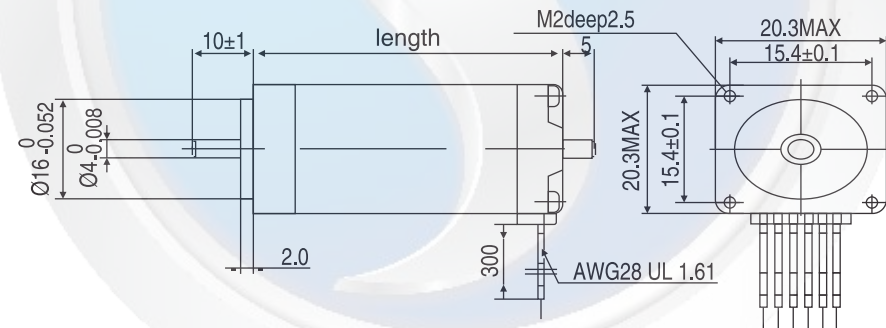
Item	Specifications
(Step Angle)	1.8°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C~+50°C
(Insulation Resistance)	100 MΩ Min. ,500VDC
(Dielectric Strength)	500VAC for 1minute
(Shaft Radial Play)	0.02Max. (450g-load)
(Shaft Axial Play)	0.08Max. (450g-load)
(Max. radial force)	28N (20mm from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

Electrical Specification :

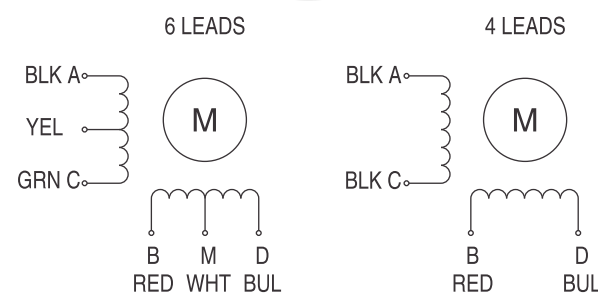
Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Leads	Rotor Inertia	Mass
	(°)	(L) mm	A	Ω	mH	g. cm	No.	g. cm ²	Kg
SM20HS30-0604	1.8	30	0.60	6.5	1.5	180	4	2	0.06
SM20HS33-0604	1.8	33	0.6	6.5	1.6	200	4	2	0.07
SM20HS42-0804	1.8	42	0.8	5.4	1.5	300	4	2	0.08

*we are also can produce it according your requests.

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 11) - 28mm 1.8°



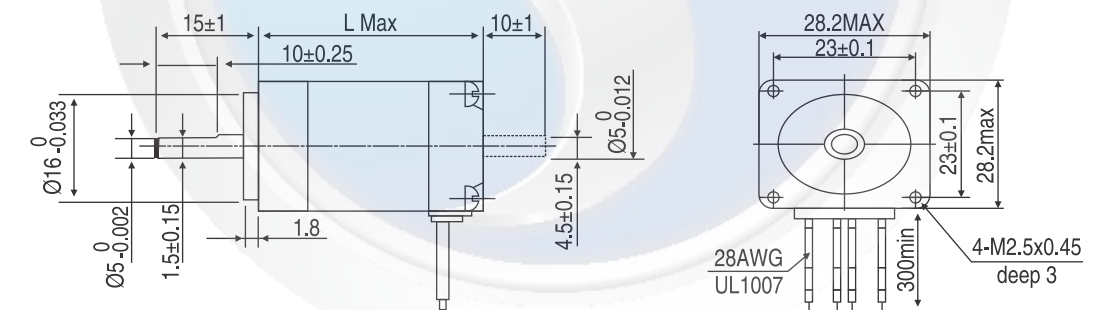
Item	Specifications
(Step Angle)	1.8°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C~+50°C
(Insulation Resistance)	100 MΩ Min. ,500VDC
(Dielectric Strength)	500VAC for 1minute
(Shaft Radial Play)	0.02Max. (450g-load)
(Shaft Axial Play)	0.08Max. (450g-load)
(Max. radial force)	28N (20mm from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

Electrical Specification :

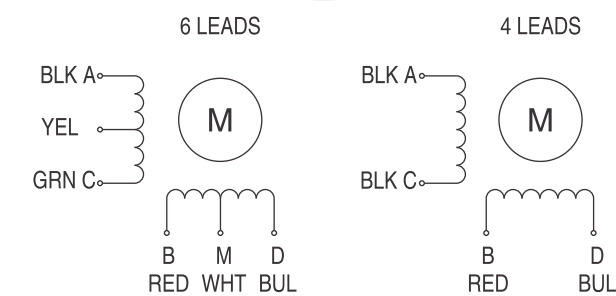
Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Leads	Rotor Inertia	Mass
	(°)	(L) mm	A	Ω	mH	g. cm	No.	g.cm ²	Kg
SM28HS32-0956	1.8	32	0.95	2.8	0.8	430	6	9	0.11
SM28HS32-0674	1.8	32	0.67	5.6	3.4	600	4	9	0.11
SM28HS45-0956	1.8	45	0.95	3.4	1.2	750	6	12	0.14
SM28HS45-0674	1.8	45	0.67	6.8	4.9	950	4	12	0.14
SM28HS51-0956	1.8	51	0.95	4.6	1.8	900	6	18	0.2
SM28HS51-0674	1.8	51	0.67	9.2	7.2	1200	4	18	0.2

*we are also can produce it according your requests.

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 14) - 35mm 1.8°

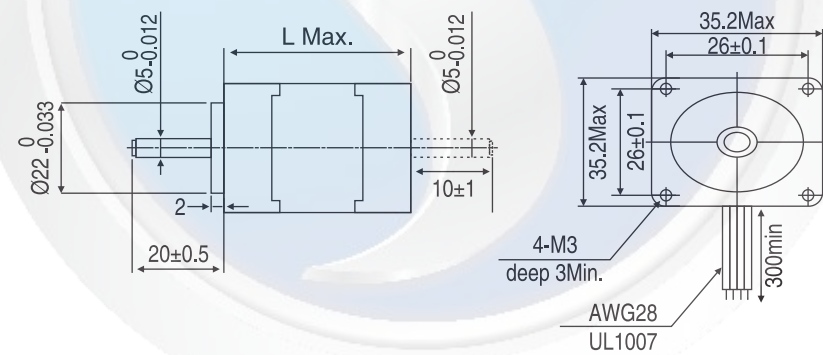


Item	Specifications
(Step Angle)	1.8°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	500VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	28N (20mm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

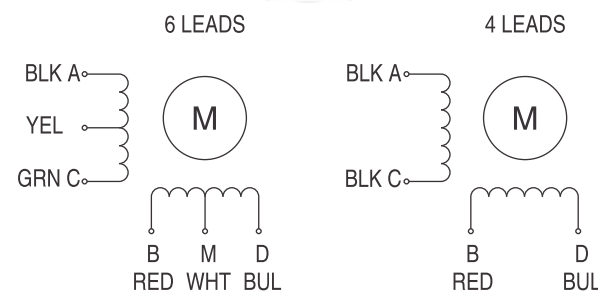
Electrical Specification :

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Leads	Detent Torque	Rotor Inertia	Mass
	(°)	(L)mm	A	Ω	mH	g.cm	No.	g.cm	g.cm ²	Kg
SM35HS27-0464	1.8	27	0.46	20	14	1200	4	80	11	0.12
SM35HS27-0804	1.8	27	0.8	5	5	1200	4	80	11	0.12
SM35HS27-0406	1.8	27	0.8	30	11	900	6	80	11	0.12
SM35HS34-0424	1.8	34	0.42	25	32	1800	4	100	13	0.16
SM35HS34-0804	1.8	34	0.8	6.5	9.8	1800	4	100	13	0.16
SM35HS34-0406	1.8	34	0.4	30	22	1200	6	100	13	0.16

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 14) 35mm 0.9°

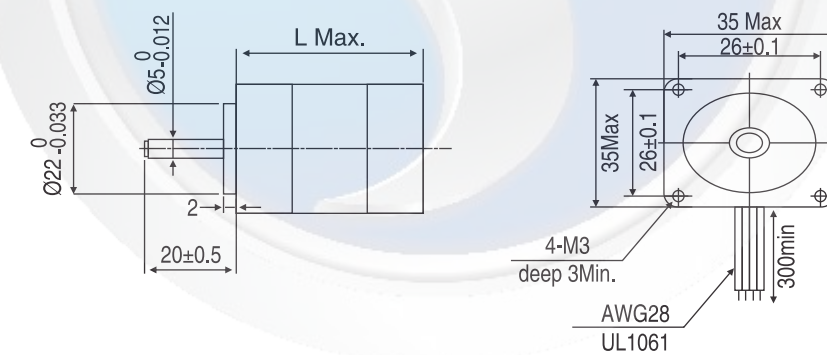


Item	Specifications
(Step Angle)	0.9°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	500VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	28N (20mm from the flange)
(Max. axial force)	10N

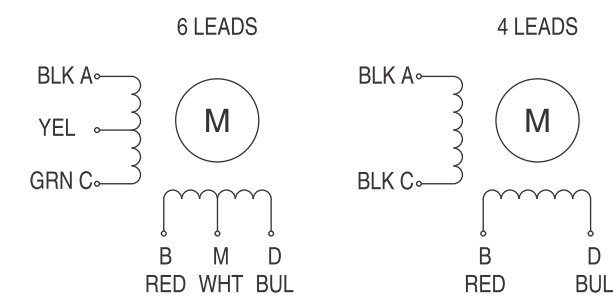
Electrical Specification :

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Leads	Detent Torque	Rotor Inertia	Mass
	(°)	(L) mm	A	Ω	mH	g.cm	No.	g.cm	g.cm ²	Kg
SM35HM27-0804	0.9	27	0.8	4.5	4.2	900	4	80	12	0.13
SM35HM27-0554	0.9	27	0.55	10	9.5	900	4	80	12	0.13
SM35HM27-0364	0.9	27	0.36	22	20	900	4	80	12	0.13
SM35HM27-0406	0.9	27	0.4	30	12	650	6	80	12	0.13
SM35HM34-0804	0.9	34	0.8	6	10	1200	4	100	18	0.19
SM35HM34-0554	0.9	34	0.55	12	19	1200	4	100	18	0.19
SM35HM34-0364	0.9	34	0.36	28	42	1200	4	100	18	0.19
SM35HM34-0406	0.9	34	0.4	30	18	840	6	100	18	0.19

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 16) - 39MM 1.8°

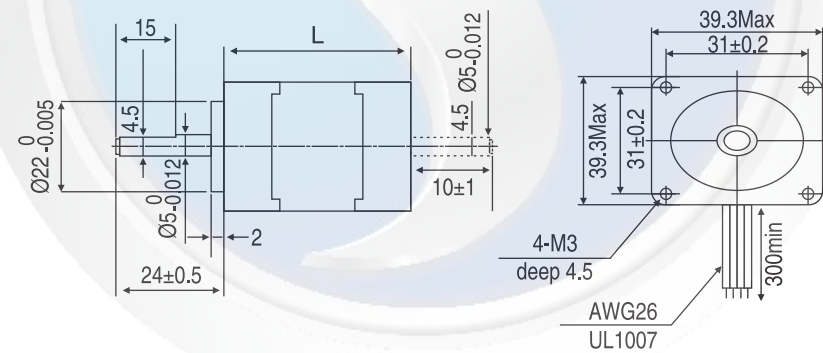


Item	Specifications
(Step Angle)	1.8°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	500VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	28N (20mm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

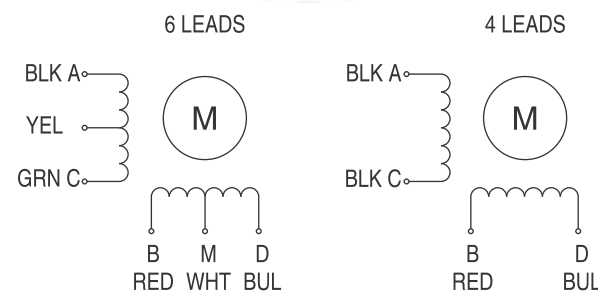
Electrical Specification :

Model No.	Step Angle (°)	Motor Length (L) mm	Current /Phase A	Resistance /Phase Ω	Inductance /Phase mH	Holding Torque g.cm	Leads No.	Detent Torque g.cm	Rotor Inertia g.cm ²	Mass Kg
SM39HS20-0424	1.8	20	0.42	18	12	800	4	50	11	0.12
SM39HS26-0604	1.8	26	0.6	9	10	1400	4	80	14	0.16
SM39HS34-0404	1.8	34	0.4	30	32	2100	4	120	20	0.18
SM39HS34-0306	1.8	34	0.3	40	20	1300	6	120	20	0.18
SM39HS38-0504	1.8	38	0.5	24	45	2900	4	180	24	0.2
SM39HS38-0806	1.8	38	0.8	7.5	6	2000	6	180	24	0.2
SM39HS44-0304	1.8	44	0.3	40	100	2800	4	250	40	0.25

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 17) 42MM 1.8°

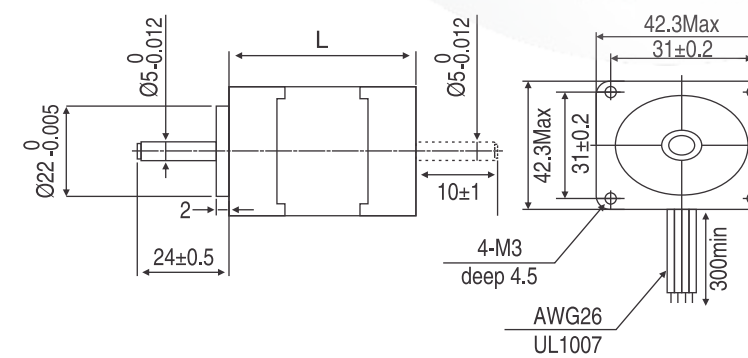


Item	Specifications
(Step Angle)	1.8°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	500VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	28N (20mm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

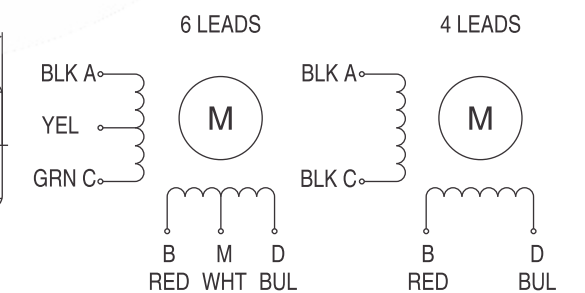
Electrical Specification :

Model No.	Step Angle (°)	Motor Length (L)mm	Current /Phase A	Resistance /Phase Ω	Inductance /Phase mH	Holding Torque kg.cm	Leads No.	Detent Torque g.cm	Rotor Inertia g.cm ²	Mass Kg
SM42STH33-0956	1.8	33	0.95	4.2	2.5	1.6	6	120	34	0.22
SM42STH33-0406	1.8	33	0.4	2.4	15	1.6	6	120	34	0.22
SM42STH33-0316	1.8	33	0.31	38.5	21	1.6	6	120	34	0.22
SM42STH33-1334	1.8	33	1.33	2.1	2.5	2.2	4	120	34	0.22
SM42STH40-1206	1.8	40	1.2	3.3	3.2	2.6	6	150	54	0.28
SM42STH40-0806	1.8	40	0.8	7.5	6.7	2.6	6	150	54	0.28
SM42STH40-0406	1.8	40	0.4	30	30	2.6	6	150	54	0.28
SM42STH40-1684	1.8	40	1.68	1.65	3.2	3.6	4	150	54	0.28
SM42STH47-1206	1.8	47	1.2	3.3	2.8	3.17	6	260	68	0.35
SM42STH47-0806	1.8	47	0.8	7.5	6.3	3.17	6	260	68	0.35
SM42STH47-0406	1.8	47	0.4	30	25	3.17	6	260	68	0.35
SM42STH47-1684	1.8	47	1.68	1.65	2.8	4.4	4	260	68	0.35
SM42STH47-1004	1.8	47	1.00	3.33	2.5	4.2	4	260	68	0.35
SM42STH60-1206	1.8	60	1.2	6	7	6.5	6	280	102	0.5

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 17) - 42MM 0.9°

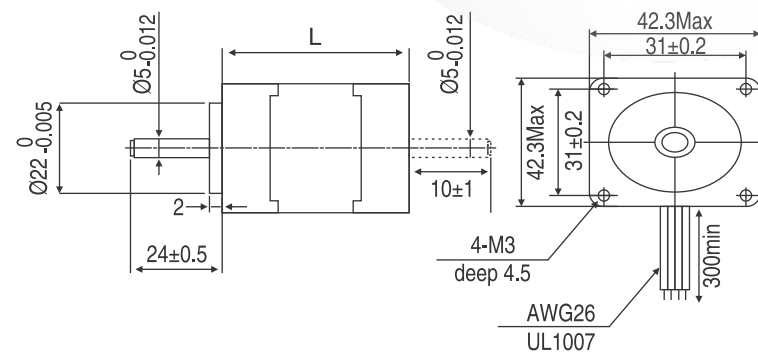


Specifications	
(Step Angle)	0.9°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	500VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	28N (20mm from the flange)
(Max. axial force)	10N

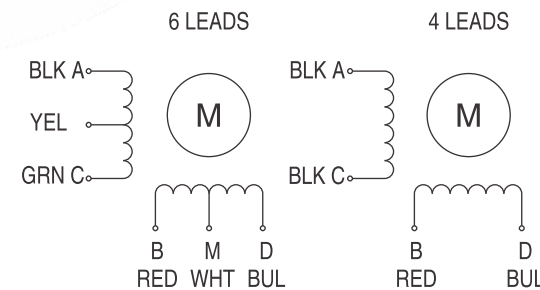
Electrical Specification :

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Leads	Detent Torque	Rotor Inertia	Mass
	(°)	(L)mm	A	Ω	mH	kg.cm	No.	g.cm	g.cm ²	Kg
SM42STH28-0604	0.9	28	0.6	9	9	1	4	90	20	0.13
SM42STH33-0956	0.9	33	0.95	4.2	4	1.58	6	200	35	0.22
SM42STH33-0606	0.9	33	0.6	10	9.5	1.58	6	200	35	0.22
SM42STH33-0316	0.9	33	0.31	38.5	33	1.58	6	200	35	0.22
SM42STH33-1334	0.9	33	1.33	2.1	4.2	2.2	4	200	35	0.22
SM42STH38-1206	0.9	38	1.2	3.3	3.4	2.59	6	220	54	0.28
SM42STH38-0806	0.9	38	0.8	7.5	6.7	2.59	6	220	54	0.28
SM42STH38-0406	0.9	38	0.4	30	30	2.59	6	220	54	0.28
SM42STH38-1684	0.9	38	1.68	1.65	3.2	3.3	4	220	54	0.28
SM42STH47-1206	0.9	47	1.2	3.3	4	3.17	6	250	68	0.35
SM42STH47-0806	0.9	47	0.8	7.5	10	3.17	6	250	68	0.35
SM42STH47-0406	0.9	47	0.4	30	38	3.17	6	250	68	0.35
SM42STH47-1684	0.9	47	1.68	1.65	4.1	4.4	4	250	68	0.35

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 23) 57MM 1.8°

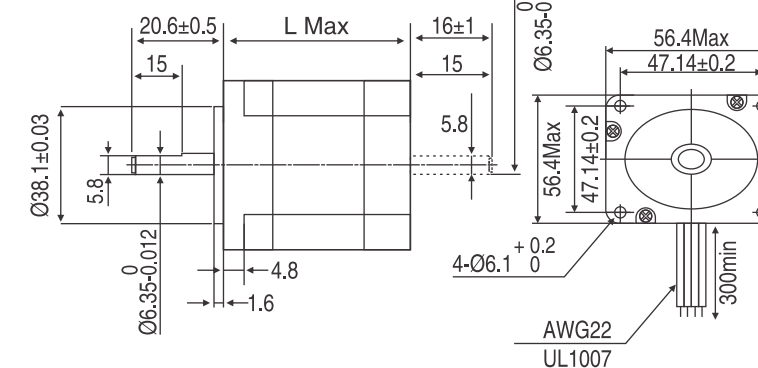


Specifications	
(Step Angle)	1.8°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	500VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	75N (20mm from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

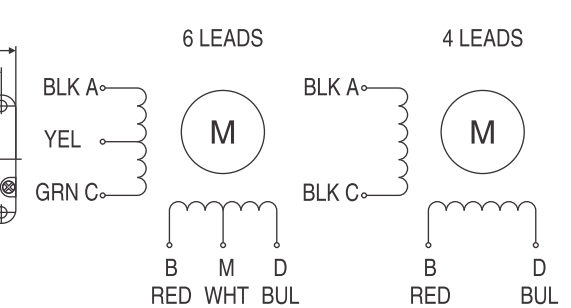
Electrical Specification :

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Leads	Detent Torque	Rotor Inertia	Mass
	(°)	(L)mm	A	Ω	mH	N.m	No.	g.cm	g.cm ²	Kg
SM57STH41-1006	1.8	41	1	5.2	5.5	0.39	6	250	150	0.47
SM57STH41-2006	1.8	41	2	1.4	1.4	0.39	6	250	150	0.47
SM57STH41-3006	1.8	41	3	0.63	0.6	0.39	6	250	150	0.47
SM57STH41-2804	1.8	41	2.8	0.7	1.4	0.55	4	250	150	0.47
SM57STH51-1006	1.8	51	1	6.6	8.2	0.72	6	300	230	0.59
SM57STH51-2006	1.8	51	2	1.65	2.2	0.72	6	300	230	0.59
SM57STH51-3006	1.8	51	3	0.74	0.9	0.72	6	300	230	0.59
SM57STH51-2804	1.8	51	2.8	0.83	2.2	1.01	4	350	280	0.68
SM57STH56-1006	1.8	56	1	7.4	10	0.9	6	350	280	0.68
SM57STH56-2006	1.8	56	2	1.8	2.5	0.9	6	350	280	0.68
SM57STH56-3006	1.8	56	3	0.75	1.1	0.9	6	350	280	0.68
SM57STH56-2804	1.8	56	2.8	0.9	2.5	1.26	4	350	280	0.68
SM57STH76-1006	1.8	76	1	8.6	14	1.35	6	600	440	1.1
SM57STH76-2006	1.8	76	2	2.25	3.6	1.35	6	600	440	1.1
SM57STH76-3006	1.8	76	3	1	1.6	1.35	6	600	440	1.1
SM57STH76-2804	1.8	76	2.8	1.13	3.6	1.89	4	600	440	1.1
SM57STH82-3004	1.8	82	3.0	1.2	4	2.2	4	1000	600	1.2
SM57STH82-5004	1.8	82	5	0.6	1.5	2.2	4	1000	600	1.2
SM57STH98-4004	1.8	98	4.0	1.6	6.8	2.5	4	1200	800	1.4
SM57STH111-4004	1.8	111	4.2	0.9	3.8	3.0	4	1200	800	1.4

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 23) - 57MM 0.9°

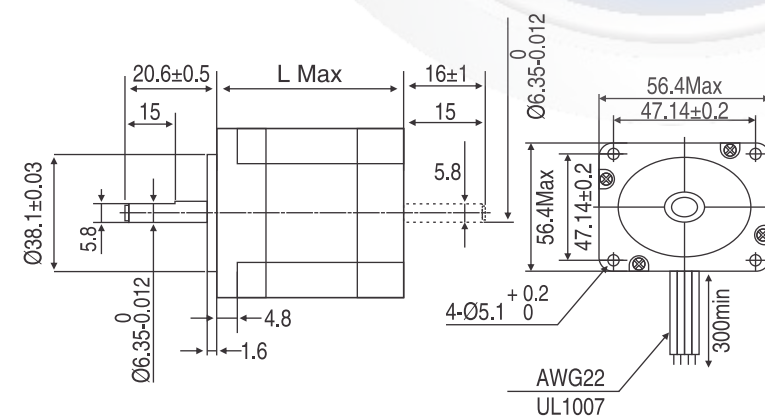


Item	
(Step Angle)	
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	500VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	75N (20mm from the flange)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

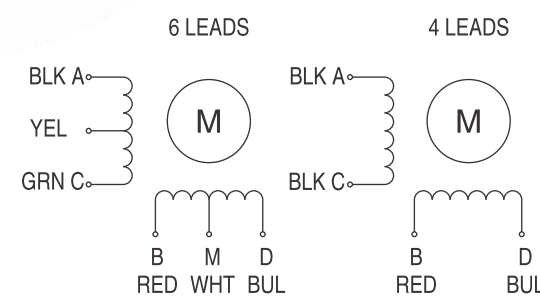
Electrical Specification :

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Leads	Detent Torque	Rotor Inertia	Mass
	(°)	(L)mm	A	Ω	mH	kg.cm	No.	g.cm	g.cm ²	Kg
SM57STH41-1006	0.9	41	1	5.7	8	3.9	6	210	120	0.45
SM57STH41-2006	0.9	41	2	1.4	2.2	3.9	6	210	120	0.45
SM57STH41-3006	0.9	41	3	0.63	1.0	3.9	6	210	120	0.45
SM57STH41-2804	0.9	41	2.8	0.7	2.2	5.5	4	210	120	0.45
SM57STH56-1006	0.9	56	1	7.4	17.5	9	6	400	300	0.7
SM57STH56-2006	0.9	56	2	1.8	4.5	9	6	400	300	0.7
SM57STH56-3006	0.9	56	3	0.75	1.9	9	6	400	300	0.7
SM57STH56-2804	0.9	56	2.8	0.9	4.5	12	4	400	300	0.7
SM57STH76-1006	0.9	76	1	8.6	23	13.5	6	680	480	1
SM57STH76-2006	0.9	76	2	2.25	5.6	13.5	6	680	480	1
SM57STH76-3006	0.9	76	3	1	2.6	13.5	6	680	480	1
SM57STH76-2804	0.9	76	2.8	1.13	5.6	18	4	680	480	1

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 23 - ROUND BODY) 57MM 1.8°

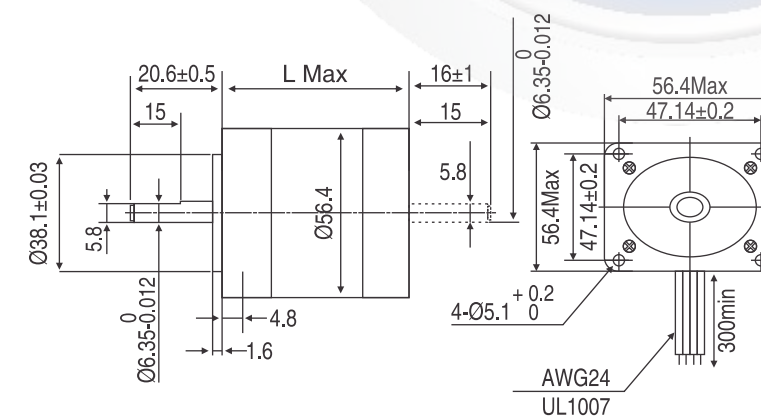


	Specifications
	1.8°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	500VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	75N (20mm from the flange)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

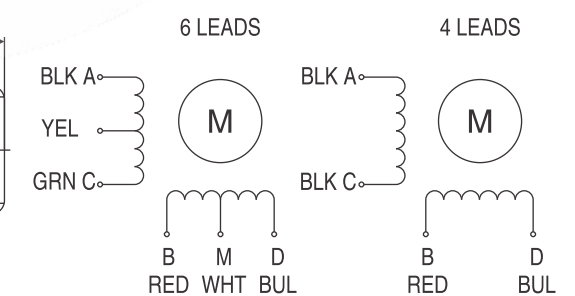
Electrical Specification :

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Leads	Detent Torque	Rotor Inertia	Mass
	(°)	(L)mm	A	Ω	mH	kg.cm	No.	g.cm	g.cm ²	Kg
SM57HY41-1106	1.8	41	1.1	3.6	3.6	2.88	6	180	57	0.18
SM57HY41-0406	1.8	41	0.4	30	30	2.88	6	180	57	0.18
SM57HY41-1564	1.8	41	1.56	1.8	3.6	4	4	180	57	0.18
SM57HY51-0856	1.8	51	0.85	7.1	9	4.97	6	350	110	0.35
SM57HY51-0426	1.8	51	0.42	29	36	4.97	6	350	110	0.35
SM57HY51-2804	1.8	51	2.8	0.85	2.1	6.9	4	350	110	0.35
SM57HY56-1206	1.8	56	1.2	5	8	6	6	420	135	0.42
SM57HY56-0606	1.8	56	0.6	20	32	6	6	420	135	0.42
SM57HY56-2554	1.8	56	2.55	1.1	3.6	8.4	4	420	135	0.42
SM57HY76-1506	1.8	76	1.5	3.6	6	9	6	720	200	0.72
SM57HY76-0686	1.8	76	0.68	17.7	30	9	6	720	200	0.72
SM57HY76-3304	1.8	76	3.3	0.85	3	12.5	4	720	200	0.72

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 24) - 60MM 1.8°

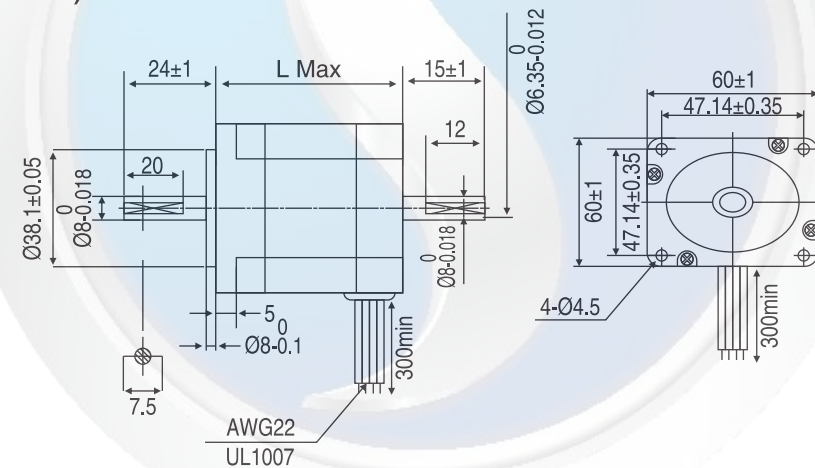


Item	Specifications
(Step Angle)	1.8°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	500VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	75N (20mm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

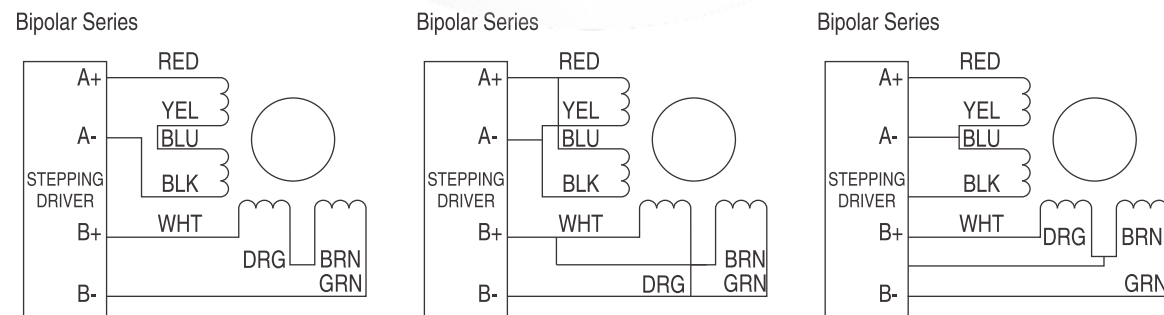
Electrical Specification :

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Leads	Rotor Inertia	Mass
	(°)	(L)mm	A	Ω	mH	Kg.cm	No.	g.cm ²	Kg
SM60STH47-1408	1.8	45	1.4	3.0	8	11	8	275	0.60
SM60STH56-1408	1.8	56	1.4	3.6	14.4	16.5	8	300	0.77
SM60STH67-1408	1.8	65	1.4	4.8	16.5	21	8	570	1.20
SM60STH88-1408	1.8	88	1.4	6.0	27.2	31	8	840	1.50

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 34) 86MM 1.8° 2-PHASE

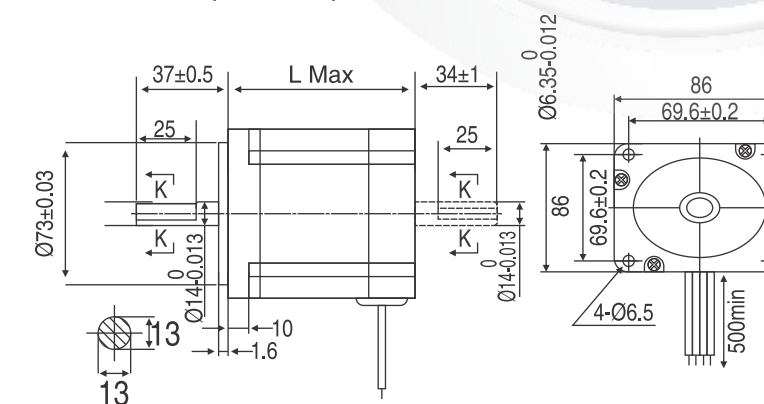


Item	Specifications
(Step Angle)	1.8°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	820VAC for 1s 3mA
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	220N (20mm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

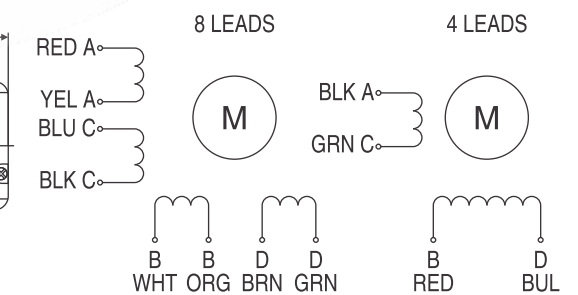
Electrical Specification :

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Leads	Detent Torque	Rotor Inertia	Mass
	(°)	(L)mm	A	Ω	mH	N.m	No.	Kg.cm	g.cm ²	Kg
SM86STH65-4004	1.8	65	4.0	0.28	1.7	3.4	4	0.8	1000	1.7
SM86STH67-2808	1.8	67	2.8	1.4	3.9	3.4	8	0.8	1000	1.7
SM86STH80-5504	1.8	80	5.5	0.46	4	4.6	4	1.2	1400	2.3
SM86STH80-4004	1.8	80	4.0	0.46	3.7	4.6	4	1.2	1400	2.3
SM86STH80-4208	1.8	80	4.2	0.75	3.4	4.6	8	1.2	1400	2.3
SM86STH90-4004	1.8	90	4.0	0.65	2.4	6.0	4	1.6	1900	3
SM86STH90-5008	1.8	90	5.0	0.65	2.4	6.8	8	1.6	1900	3
SM86STH118-6004	1.8	118	6.0	0.6	6.5	8.7	4	2.4	2700	3.8
SM86STH118-4004	1.8	118	4.0	0.9	6	8.7	4	2.4	2700	3.8
SM86STH150-6204	1.8	150	6.2	0.75	9	12.2	4	3.6	4000	5.4
SM86STH150-4208	1.8	150	4.2	1.25	8	12.2	8	3.6	4000	5.4

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 42) - 110MM 1.8°

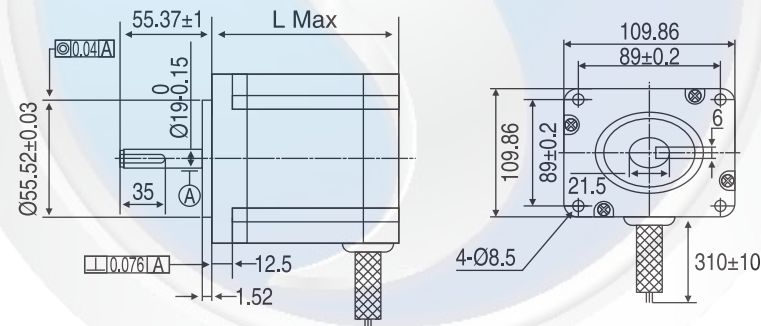


Item	Specifications
(Step Angle)	1.8°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	1800VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	220N (20mm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

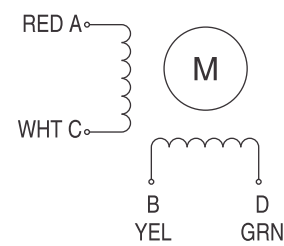
Electrical Specification :

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Leads	Detent Torque	Rotor Inertia	Mass
	(°)	(L)mm	A	Ω	mH	N.m	No.	kg.cm	g.cm ²	Kg
SM110STH99-4204	1.8	99	4.2	0.9	12	12	4	3	5500	5
SM110STH150-6504	1.8	150	6.5	0.8	15	21	4	5.9	10900	8.4
SM110STH201-8004	1.8	201	8	0.67	12	28	4	7.5	16200	11.7

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 42) 110MM 1.2° 3-PHASE

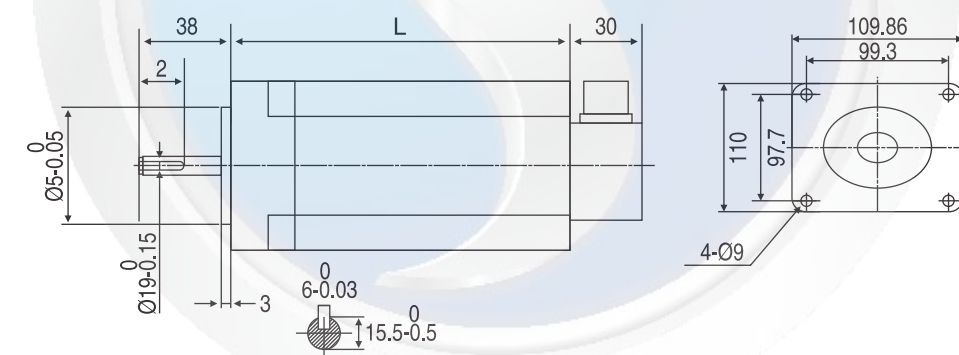


Item	Specifications
(Step Angle)	1.2°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	500VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	75N (20mm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

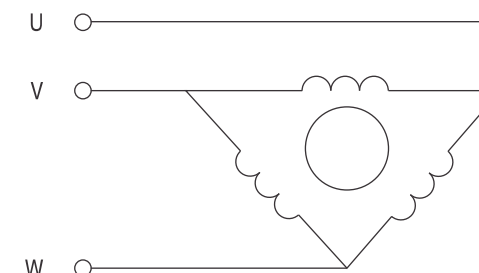
Electrical Specification :

Model No.	Step Angle	Motor Length	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Motor Length
	(°)	(L)mm	A	Ω	mH	N.m	Kg
SM110H3P-3008	1.2	102	3	3.15	17	8	5
SM110H3P-3013	1.2	132	3	4.2	22.6	13	6.6
SM110H3P-5016	1.2	183	5	2.14	17.5	16	9
SM110H3P-5020	1.2	220	5	2.4	24.4	20	11.1
SM110H3P-5025	1.2	250	5	2.9	27	25	13

Dimensions : (Unit=mm)



Wiring Diagram :



U	V	W	GROUND
1	2	3	4

HYBRID STEPPER MOTOR (NEMA 52) - 130MM 1.8° 2-PHASE

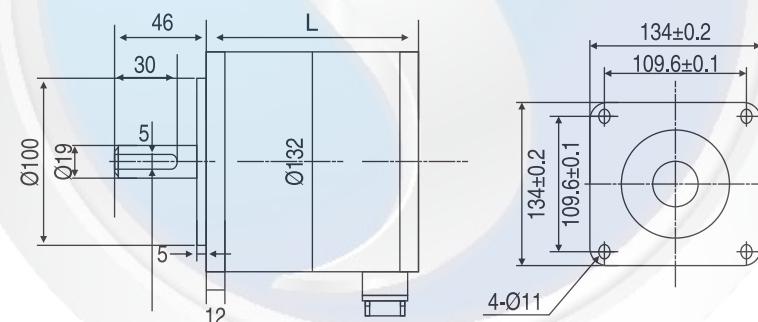


Item	Specifications
(Step Angle)	1.8°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	500VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	220N (20mm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

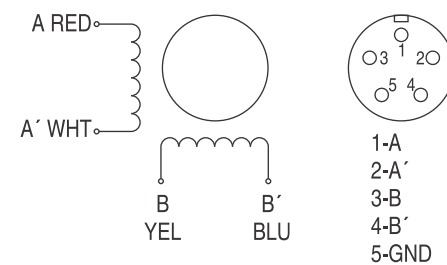
Electrical Specification :

Model No.	Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	No-load Frequency	Starting Frequency	Holding Torque	(L) Length	Weight
	V	A	Ω	mH	Hz	Hz	N.m	Kg	Kg
SM130STH170-600	480~325	6	0.75	12.6	25000	2300	20	170	13.3
SM130STH225-600	480~325	6	0.87	14.5	25000	2300	30	225	18
SM130STH250-700	480~325	7	0.77	12.4	23000	2200	40	250	19
SM130STH280-700	480~325	7	0.85	14.4	23000	2200	50	280	22.5

Dimensions : (Unit=mm)



Wiring Diagram :



HYBRID STEPPER MOTOR (NEMA 52) 130MM 1.8° 3-PHASE

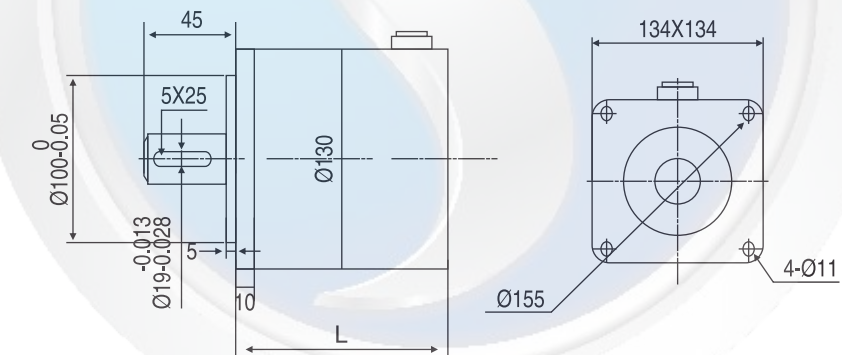


Item	Specifications
(Step Angle)	1.8°
(Temperature Rise)	80°C max
(Ambient Temperature)	-20°C ~ + 50°C
(Insulation Resistance)	100 MΩ Min., 500VDC
(Dielectric Strength) :	500VAC for 1minute
(Shaft Radial Play)	0.02 Max. (450g-load)
(Shaft Axial Play)	0.08 Max. (450g-load)
(Max. radial force)	220N (20mm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

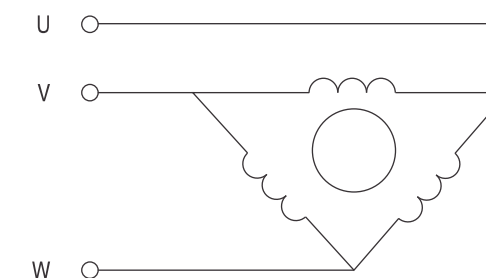
Electrical Specification :

Model No.	Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	No-load Frequency	Starting Frequency	Holding Torque	(L)Weight Length
	(V)	(L)mm	A	Ω	mH	V	N.m	Kg
SM130H3P-5026	1.2	170	5.0	0.80	4.10	80-325	26	13
SM130H3P-5036	1.2	225	5.0	1.30	13.1	80-325	36	18
SM130H3P-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