



安久电机产品手册

ANG PRODUCT MANUALS

杭州安久传动有限公司

HANGZHOU ANG DRIVE CO., LTD.

Company profile

Hangzhou ANG Drive Co., Ltd. specializes in servo motors, stepper motors, DC motors, and AC motors. Based on absorbing the advantages of many well-known brands at home and abroad, through the company's technology and production personnel efforts and cooperation, the establishment of a set of scientific product production process routes, so that the product has obtained excellent mechanical and electrical magnetic properties, to provide high-quality supporting products for clients.

At present, the company's permanent magnet synchronous servo motor product specifications are complete, powerful, reliable performance, cheap, in the domestic industry in the leading position, widely used in CNC machine tools, aerospace, military, laser processing machine, computer embroidery machine, textile machinery, printing machinery, packaging machinery, marking machine, engraving machine, winding machine, three-coordinate measuring instrument, XYZ three-dimensional workbench, industrial robots, medical equipment, woodworking machinery, ceramic machinery and other fields.

Since its inception, the company has been based on a high starting point, high-grade, high-tech ideas, the company adheres to "quality" as the central principle, depending on each customer as a partner, will carefully listen to the needs of customers, to provide customers with effective and professional advice so that customers can enjoy one-stop professional services. Precise delivery time and excellent quality are our consistent commitments.

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Brief description of the socket

Brake socket (3P)

Winding leads	+24V	0V	Blank
Socket number	1	2	3

110、130、150、180 Frame number

Power socket (4P)

Winding leads	PE	U	V	W
Socket number	1	2	3	4

Feedback element socket

Wire-saving incremental encoder socket (15P socket)

Signal leads	PE	5V	GND	A+	B+	Z+	A-	B-	Z-						
Socket number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Non-wire-saving incremental encoder socket (15P socket)

Signal leads	PE	5V	0V	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-
Socket number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Absolute multi turn encoder socket (7P socket)

Signal leads	PE	E-	E+	SD-	0V	SD+	+5V
Socket number	1	2	3	4	5	6	7

Resolver socket (15P socket)

Signal leads		CO S+			CO S-					SIN -			SIN +	REF +	REF -
Socket number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

40、60、80、90 Frame number

Power socket (4P Amp)

Winding leads	U	V	W	PE
Socket number	1	2	3	4

Power socket (4P inline)

Winding leads	PE	U	V	W
Socket number	1	2	3	4

Feedback element socket

Wire-saving incremental encoder socket (9P socket)

Signal leads	PE	5V	GND	A+	B+	Z+	A-	B-	Z-
Socket number	1	2	3	4	5	6	7	8	9

Non-line-saving incremental encoder socket (15P amp socket)

Signal leads	PE	5V	0V	B+	Z-	U+	Z+	U-	A+	V+	W+	V-	A-	B-	W-
Socket number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Non-line-saving incremental encoder socket (15P in-line socket)

Signal leads	PE	5V	0V	A+	B+	Z+	A-	B-	Z-	U+	V+	W+	U-	V-	W-
Socket number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Absolute multi turn encoder socket (7P socket)

Signal leads	PE	E-	E+	SD-	0V	SD+	+5V
Socket number	1	2	3	4	5	6	7

Resolver socket (9P socket)

Signal leads		COS+	COS-	SIN-	SIN+	REF+	REF-		
Socket number	1	2	3	4	5	6	7	8	9

Servo motor naming rules:

AD80	ST	M	013	30	L	B	Z	T	X
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

(1) Frame number

(2) AC permanent magnet synchronous servo motor, ST stands for 4 pairs of poles, AST & A1ST & EST stands for 5 pairs of poles (A1ST and EST are upgraded version)

(3) Feedback element code (M for optical encoder, R for 17 split single-turn magnetic encoder, J for 17-bit multiturn absolute encoder, J1 for 17-bit single turn absolute encoder, J2 for 23-bit absolute encoder.)

(4) Rated torque: three digits $\times 0.1\text{Nm}$

(5) Rated speed: two digits $\times 100\text{rpm}$

(6) Driver operating voltage (VAC): L stands for: 220V, H stands for: 380V

(7) B: Medium inertia. L: Small inertia

(8) Lost power brake: Z stands for yes, blank represents none

(9) Output axis: T stands for special, blank represents standard

(10) Cable outlet mode: X represents cable direct type, None: industrial (aviation) socket type

ST (AST) series

Frame number (mm): 40, 60, 80, 90, 110, 130, 150, 180, 60A, 80A, 100A, 110A, 130A, 180A, 130H, 180H

Rated torque (Nm): 0.159~48

Rated power (Kw): 0.05~7.5

Rated speed (rpm): 1000, 1500, 2000, 2500, 3000

Rotor inertia: medium inertia

Feedback element: optional

Loss of power brake: can be equipped

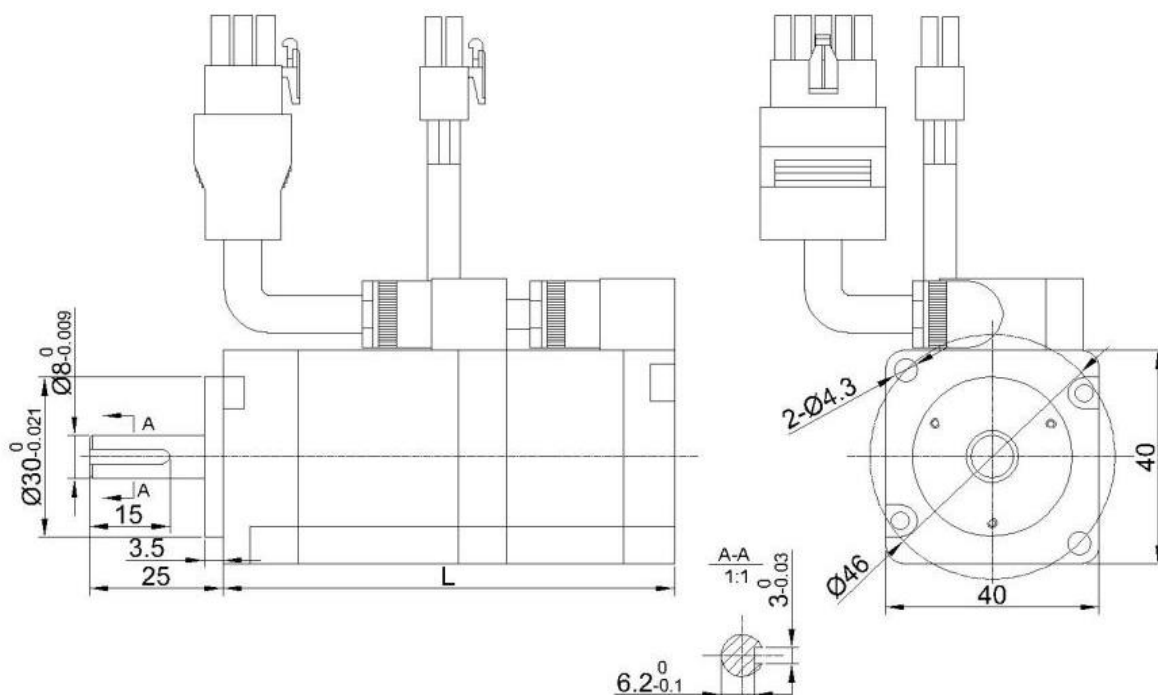
Adapted driver operating voltage (VAC): 36V, 48V, 220V, 380 V

Other special requirements please contact the ANG Technology to negotiate

The above is a standard installation dimensions, can alter according to customer requirements

Installation precaution

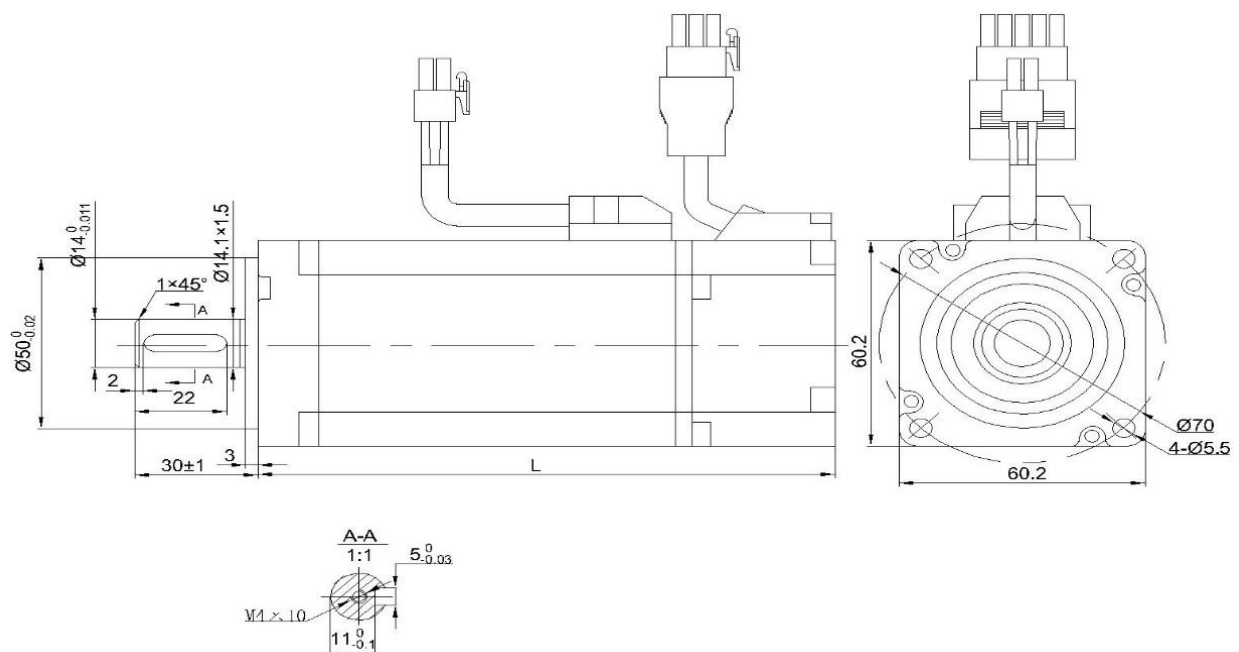
1. Installation/disassembly components coupled to the motor shaft end, do not hit shaft hard to prevent the other side of motor shaft encoder was knocked out bad.
2. Striving to make the best of its shaft to prevent vibration and bearing damage.



60 series parameters:

Motor model	AD60ST -M00630LBX	AD60ST -M01330LBX	AD60ST -M01930LBX
Rated power (kw)	0.2	0.4	0.6
Rated voltage (V)	220	220	220
Rated current (A)	1.2	2.8	3.5
Rated speed(rpm)	3000	3000	3000
Rated torque(N.m)	0.637	1.27	1.91
Peak moment(N.m)	1.91	3.9	5.73
Reverse EMF(V/1000r/min)	30.9	29.6	34
Torque coefficient(N.m/A)	0.53	0.45	0.55
Rotor inertia(kg.m ²)	0.175×10^{-4}	0.29×10^{-4}	0.39×10^{-4}
Line resistance(Ω)	6.2	2.3	1.9
Line inductance(mH)	29.3	14.5	10.7
Electrical time constant(ms)	4.7	6.3	5.6
Insulation class	Class F		
Protection level	IP64		
Usage environment	Ambient temperature: -20°C ~ +50°C Ambient humidity: relative humidity < 90% (no frost condition)		

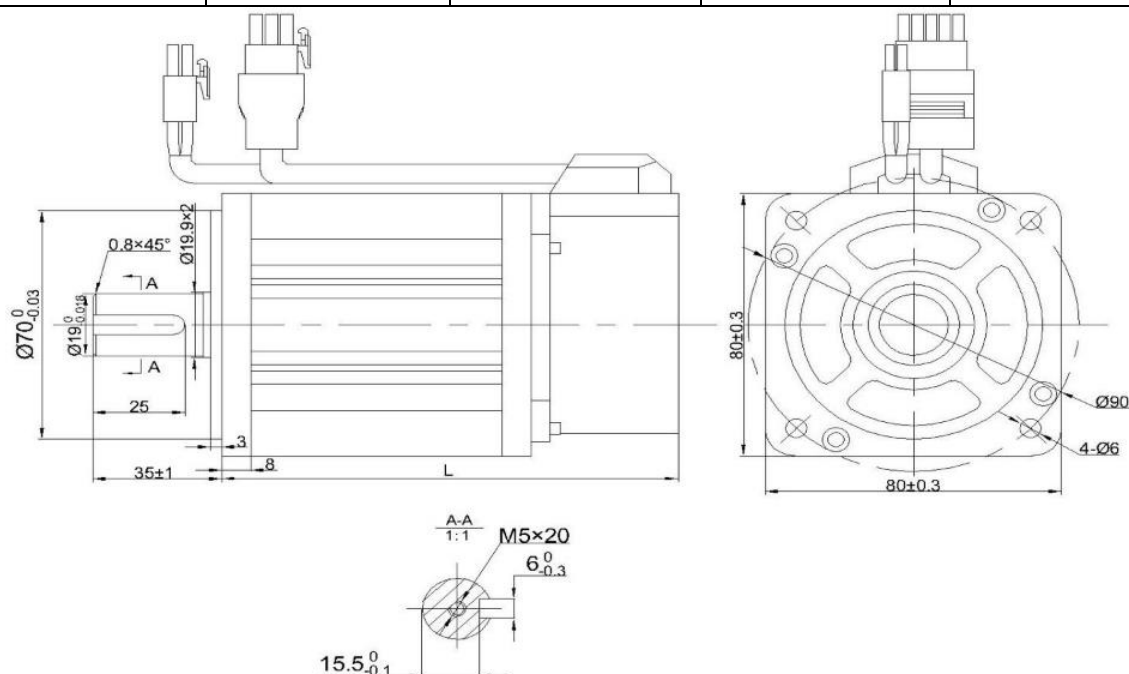
Motor model	AD60ST -M00630LBX	AD60ST -M01330LBX	AD60ST -M01930LBX
Without brake size (L)	116	141	169
With brake size (L)	148	173	201



80 series parameters:

Motor model	AD80ST - M01330LBX	AD80ST - M02430LBX	AD80ST - M03520LBX	AD80ST - M04025LBX
Rated power (KW)	0.4	0.75	0.73	1.0
Rated voltage (V)	220	220	220	220
Rated current (A)	2.0	3.0	3.0	4.4
Peak current(A)	6.0	9.0	9.0	13.2
Rated speed(rpm)	3000	3000	2000	2500
Rated torque(N.m)	1.27	2.4	3.5	4.0
Peak moment(N.m)	3.8	7.1	10.5	12.0
Reverse EMF(V/1000r/min)	40	48	74	56
Torque coefficient(N.m/A)	0.64	0.8	1.17	0.9
Rotor inertia(kg.m ²)	1.05×10^{-4}	1.82×10^{-4}	2.63×10^{-4}	2.97×10^{-4}
Line resistance(Ω)	4.44	2.88	3.58	1.83
Line inductance(mH)	7.93	6.4	8.62	4.72
Electrical time constant(ms)	1.66	2.22	2.41	2.58
Insulation class	Class F			
Protection level	IP65			
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)			

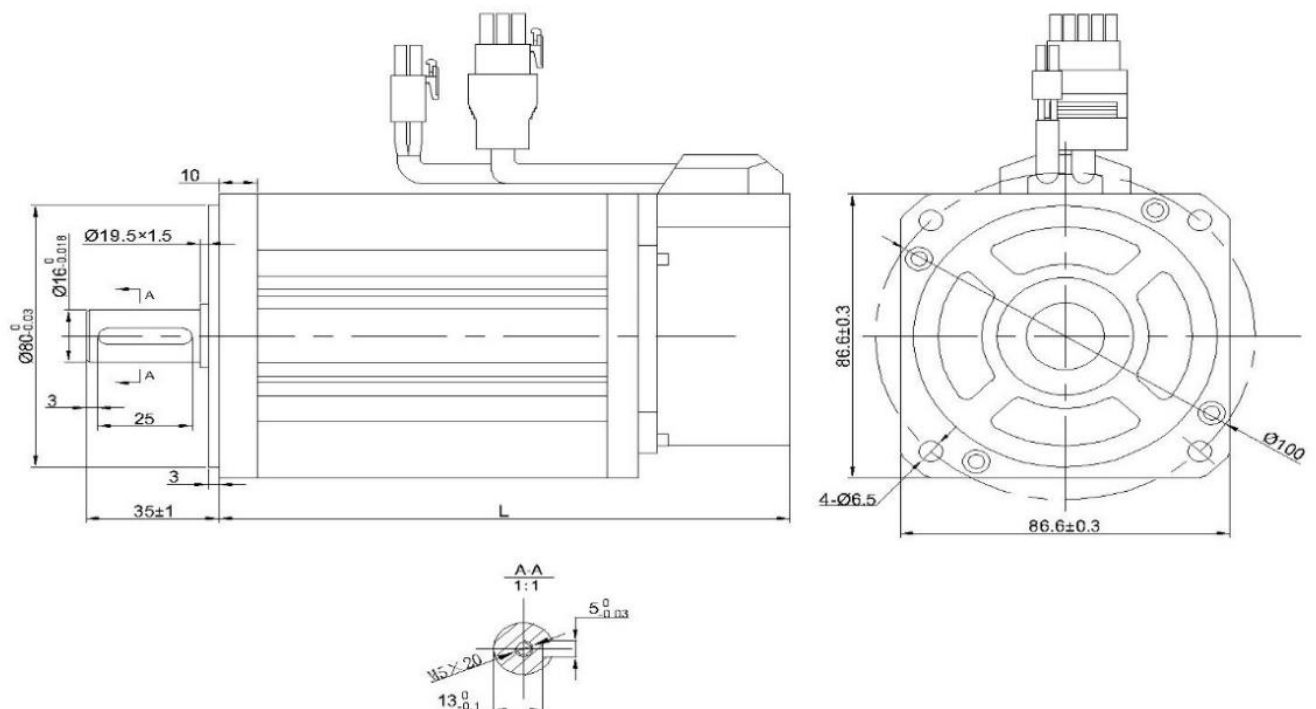
Motor model	AD80ST - M01330LBX	AD80ST - M02430LBX	AD80ST - M03520LBX	AD80ST - M04025LBX
Without brake size(L)	124	151	179	191
With electromagnetic holding brake (L)	164	191	219	231



90 series parameters:

Motor model	AD90ST -M02430LBX	AD90ST -M03520LBX	AD90ST -M04025LBX
Rated power (KW)	0.75	0.73	1.0
Rated voltage (V)	220	220	220
Rated current (A)	3.0	3.0	4.0
Peak current (A)	9	9	12
Rated speed(rpm)	3000	2000	2500
Rated torque(N.m)	2.4	3.5	4
Peak moment(N.m)	7.2	10.5	12
Reverse EMF(V/1000r/min)	51	67	60
Torque coefficient(N.m/A)	0.8	1.2	1.0
Rotor inertia(kg.m ²)	2.45×10^{-4}	3.4×10^{-4}	3.7×10^{-4}
Line resistance(Ω)	3.06	3.98	2.69
Line inductance(mH)	6.81	9.52	6.21
Electrical time constant(ms)	2.23	2.39	2.3
Insulation class	Class F		
Protection level	IP65		
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)		

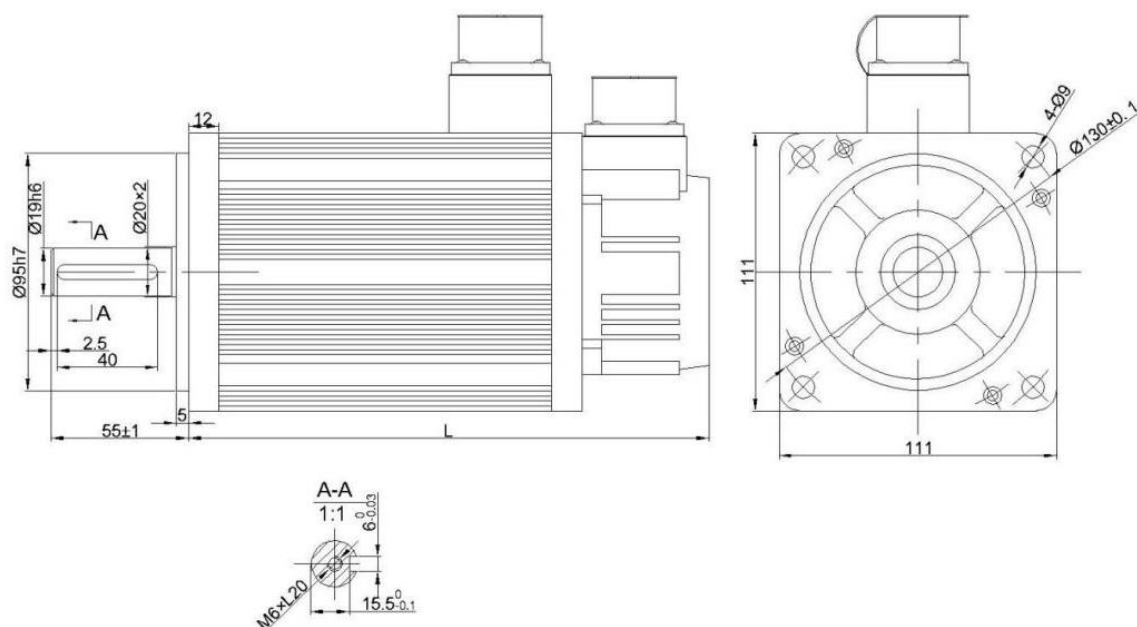
Motor model	AD90ST -M02430LBX	AD90ST -M03520LBX	AD90ST -M04025LBX
Without brake size (L)	150	172	182
With brake size (L)	198	220	230



110 series parameters:

Motor model	AD110ST - M02030L B	AD110S T - M04020 LB	AD110S T - M04030 LB	AD110S T - M05030 LB	AD110S T - M06020 LB	AD110ST - M06030L B	AD110ST - M10020L B
Rated power (KW)	0.6	0.8	1.2	1.5	1.2	1.8	2.0
Rated voltage (V)	220	220	220	220	220	220	220
Rated current (A)	2.5	3.5	5.0	6.0	4.5	6.0	8.5
Rated speed(rpm)	3000	2000	3000	3000	2000	3000	2000
Rated torque(N.m)	2	4	4	5	6	6	10
Peak moment(N.m)	6	12	12	15	18	18	20
Reverse EMF(V/1000r/min)	56	79	54	62	83	60	79
Torque coefficient(N.m/A)	0.8	1.14	0.8	0.83	1.3	1.0	1.25
Rotor inertia(kg.m ²)	0.31×10^{-3}	0.54×10^{-3}	0.54×10^{-3}	0.63×10^{-3}	0.76×10^{-3}	0.76×10^{-3}	0.98×10^{-3}
Line resistance(Ω)	3.6	2.41	1.34	1.03	1.46	0.81	0.78
Line inductance(mH)	8.32	7.3	3.2	3.43	4.7	2.59	2.5
Electrical time constant(ms)	2.3	3.03	2.4	3.3	3.2	3.2	3.5
Insulation class	Class F						
Protection level	IP65						
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)						

Rated torque (N.m)	2 N.m	4 N.m	5 N.m	6 N.m	10 N.m
Without brake size (L)	159	189	204	219	234
Wi					

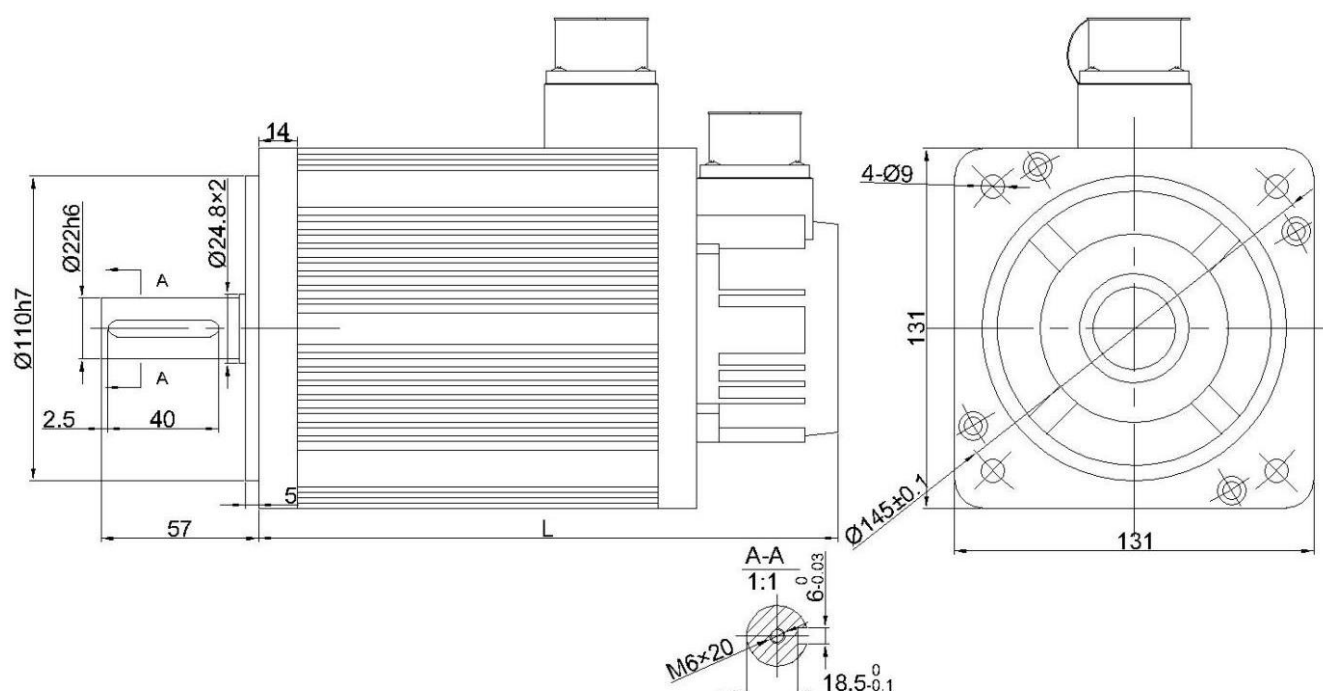


130 series parameters:

Motor model	AD130ST - M04025LB	AD130ST - M05025LB	AD130ST - M06025LB	AD130ST - M07725LB
Rated power (KW)	1.0	1.3	1.5	2.0
Rated voltage (V)	220	220	220	220
Rated current (A)	4.0	5.0	6.0	7.5
Rated speed(rpm)	2500	2500	2500	2500
Rated torque(N.m)	4	5	6	7.7
Peak moment(N.m)	12	15	18	22
Reverse EMF(V/1000r/min)	72	68	65	68
Torque coefficient(N.m/A)	1.0	1.0	1.0	1.03
Rotor inertia(kg.m ²)	0.85×10^{-3}	1.06×10^{-3}	1.26×10^{-3}	1.53×10^{-3}
Line resistance(Ω)	2.76	1.84	1.21	1.01
Line inductance(mH)	6.42	4.9	3.87	2.94
Electrical time constant(ms)	2.32	2.66	3.26	3.80
Insulation class	Class F			
Protection level	IP65			
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)			

Rated torque (N.m)	4 N.m	5 N.m	6 N.m	7.7 N.m	10 N.m			15 N.m	
					1000r pm	1500 rpm	2500 rpm	1500 rpm	2500 rpm
Without brake size (L)	166	171	179	192	213		209	241	231
With electromagnetic holding brake (L)	223	228	236	273	294		290	322	312

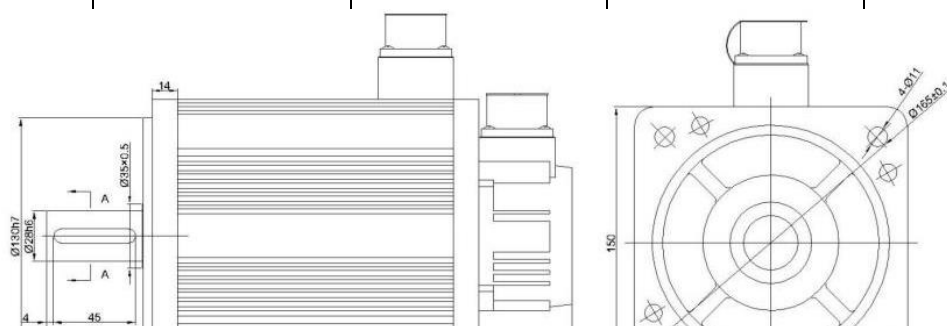
Motor model	AD130ST - M10010LB	AD130ST - M10015LB	AD130ST - M10025LB	AD130ST - M15015LB	AD130ST - M15025LB
Rated power (KW)	1.0	1.5	2.6	2.3	3.8
Rated voltage (V)	220	220	220	220	220
Rated current (A)	4.5	6.0	10.0	9.5	13.5
Rated speed(rpm)	1000	1500	2500	1500	2500
Rated torque(N.m)	10	10	10	15	15
Peak moment(N.m)	20	25	25	30	30
Reverse EMF(V/1000r/min)	140	103	70	114	67
Torque coefficient(N.m/A)	2.2	1.67	1.0	1.58	1.11
Rotor inertia(kg.m ²)	1.94×10^{-3}	1.94×10^{-3}	1.94×10^{-3}	2.77×10^{-3}	2.77×10^{-3}
Line resistance(Ω)	2.7	1.5	0.73	1.1	0.49
Line inductance(mH)	8.8	4.37	2.45	3.76	1.5
Electrical time constant(ms)	3.26	2.91	3.36	3.42	3.06
Insulation class	Class F				
Protection level	IP65				
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)				



150 series parameters:

Motor model	AD150ST - M15020LB	AD150ST - M15025LB	AD150ST - M18020LB	AD150ST - M23020LB	AD150ST - M27020LB
Rated power (KW)	3.0	3.8	3.6	4.7	5.5
Rated voltage (V)	220	220	220	220	220
Rated current (A)	14	17	17	21	24
Rated speed(rpm)	2000	2500	2000	2000	2000
Rated torque(N.m)	15	15	18	23	27
Peak moment(N.m)	30	30	36	46	54
Reverse EMF(V/1000r/min)	70	59	71	72	64
Torque coefficient(N.m/A)	1.07	0.88	1.05	1.09	1.1
Rotor inertia(kg.m ²)	3.88×10^{-3}	3.88×10^{-3}	4.6×10^{-3}	5.8×10^{-3}	6.8×10^{-3}
Line resistance(Ω)	0.34	0.23	0.255	0.2	0.13
Line inductance(mH)	1.55	1.08	1.3	1.06	0.68
Electrical time constant(ms)	4.56	4.7	5.1	5.3	5.23
Insulation class	Class F				
Protection level	IP65				
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)				

Rated torque (N.m)	15 N.m	18 N.m	23 N.m	27 N.m
Without brake size (L)	230	248	278	302
With electromagnetic holding brake (L)	303	321	351	375

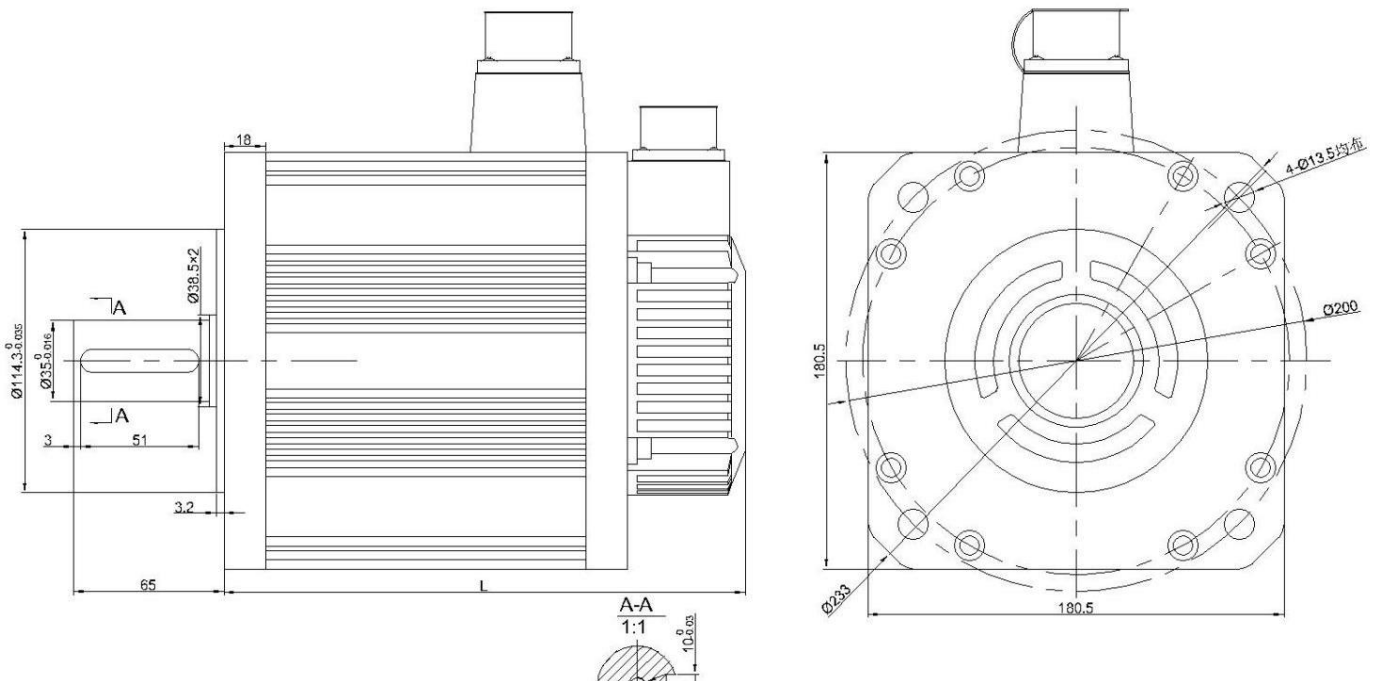


180 series parameters:

Motor model	AD180ST - M17215LB	AD180ST - M19015LB	AD180ST - M21520LB	AD180ST - M27010LB
Rated power (KW)	2.7	3.0	4.5	2.9
Rated voltage (V)	220	220	220	220
Rated current (A)	10.5	12	16	12
Rated speed(rpm)	1500	1500	2000	1000
Rated torque(N.m)	17.2	19	21.5	27
Peak moment(N.m)	43	47	53	67
Reverse EMF(V/1000r/min)	112	97	84	138
Torque coefficient(N.m/A)	1.64	1.58	1.34	2.25
Rotor inertia(kg.m ²)	6.5×10^{-3}	7.0×10^{-3}	7.96×10^{-3}	9.64×10^{-3}
Line resistance(Ω)	0.7	0.4	0.24	0.48
Line inductance(mH)	3.5	2.42	1.45	3.26
Electrical time constant(ms)	5	6	6	6.79
Insulation class	Class F			
Protection level	IP65			
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)			

Rated torque(N.m)	17.2 N.m	19 N.m	21.5 N.m	27 N.m	35 N.m	48 N.m
Without brake size (L)	226	232	243	262	292	346
With electromagnetic holding brake (L)	298	304	315	334	364	418

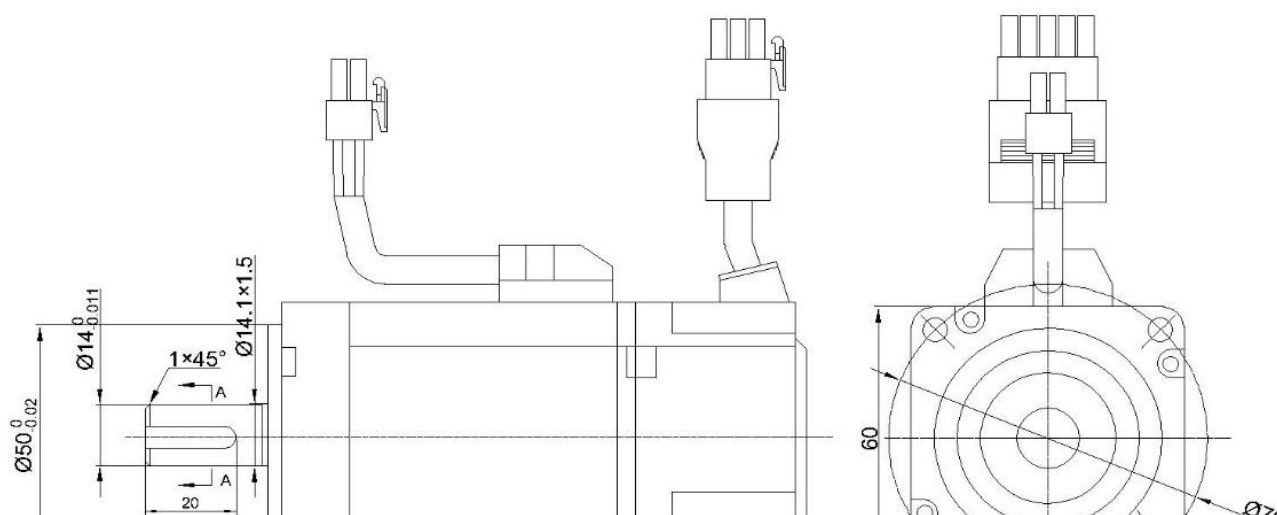
Motor model	AD180ST - M27015LB	AD180ST - M35010LB	AD180ST - M35015LB	AD180ST - M48015LB
Rated power (KW)	4.3	3.7	5.5	7.5
Rated voltage (V)	220	220	220	220
Rated current (A)	16	16	24	32
Rated speed(rpm)	1500	1000	1500	1500
Rated torque(N.m)	27	35	35	48
Peak moment(N.m)	67	70	70	96
Reverse EMF(V/1000r/min)	103	134	113	94
Torque coefficient(N.m/A)	1.69	2.2	1.84	1.5
Rotor inertia(kg.m ²)	9.64×10 ⁻³	12.25×10 ⁻³	12.25×10 ⁻³	16.72×10 ⁻³
Line resistance(Ω)	0.28	0.31	0.21	0.104
Line inductance(mH)	1.74	3.28	1.57	0.77
Electrical time (ms)	6.2	10.58	7.47	7.4



60A series parameters:

Motor model	AD60AST-M00630LBX	AD60AST-M01330LBX
Rated power (KW)	0.2	0.4
Rated voltage (V)	220	220
Rated current (A)	1.9	2.3
Rated speed(rpm)	3000	3000
Rated torque(N.m)	0.64	1.27
Peak moment(N.m)	2.23	4.46
Reverse EMF(V/1000r/min)	21	35.3
Torque coefficient(N.m/A)	0.33	0.55
Rotor inertia(kg.m ²)	0.26×10^{-4}	0.61×10^{-4}
Line resistance(Ω)	5.99	7.1
Line inductance(mH)	9.35	13.8
Electrical time constant(ms)	1.56	1.94
Insulation class	Class F	
Protection level	IP64	
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)	

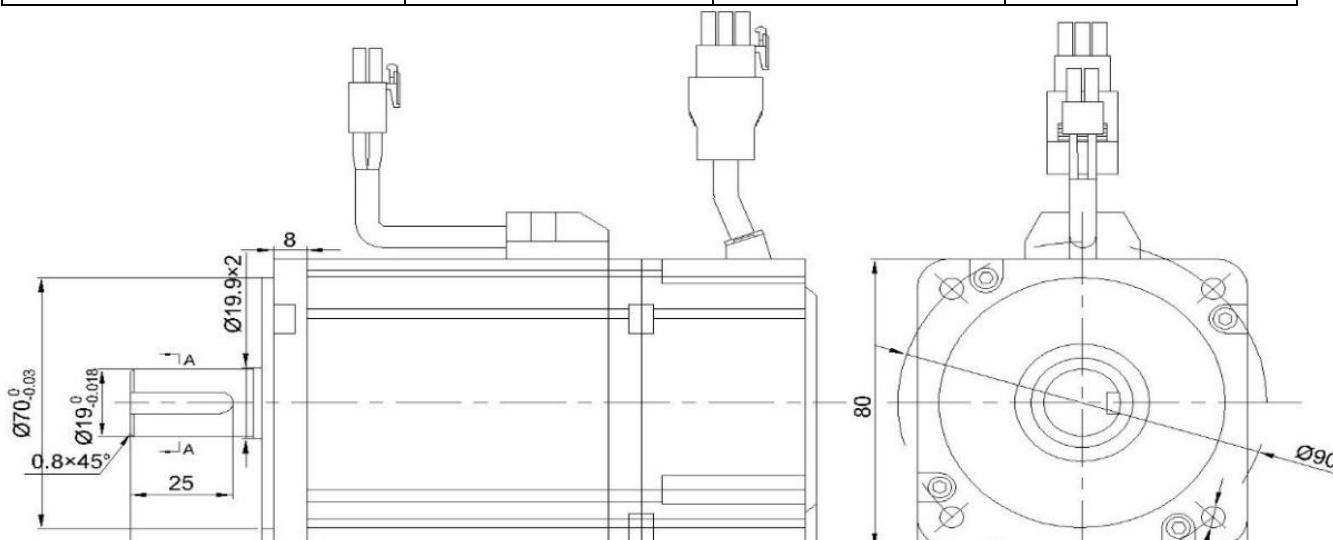
Motor model	AD60AST-M00630LBX	AD60AST-M01330LBX
Without brake size(L)	97	115
Thin size (L)	78	96
With brake size (L)	126	144



80A series parameters:

Motor model	AD80AST-M01330LBX	AD80AST-M02430LBX	AD80AST-M03230LBX
Rated power (KW)	0.4	0.75	1.0
Rated voltage (V)	220	220	220
Rated current (A)	2.8	4.2	6.5
Rated speed(rpm)	3000	3000	3000
Rated torque(N.m)	1.27	2.39	3.2
Peak moment(N.m)	4.46	8.36	11.1
Reverse EMF(V/1000r/min)	32	32	32
Torque coefficient(N.m/A)	0.45	0.57	0.50
Rotor inertia(kg.m ²)	0.69×10^{-4}	1.71×10^{-4}	2.17×10^{-4}
Line resistance(Ω)	3.69	1.65	1.01
Line inductance(mH)	14.25	7.4	4.6
Electrical time constant(ms)	3.86	4.5	4.4
Insulation class	Class F		
Protection level	IP65		
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)		

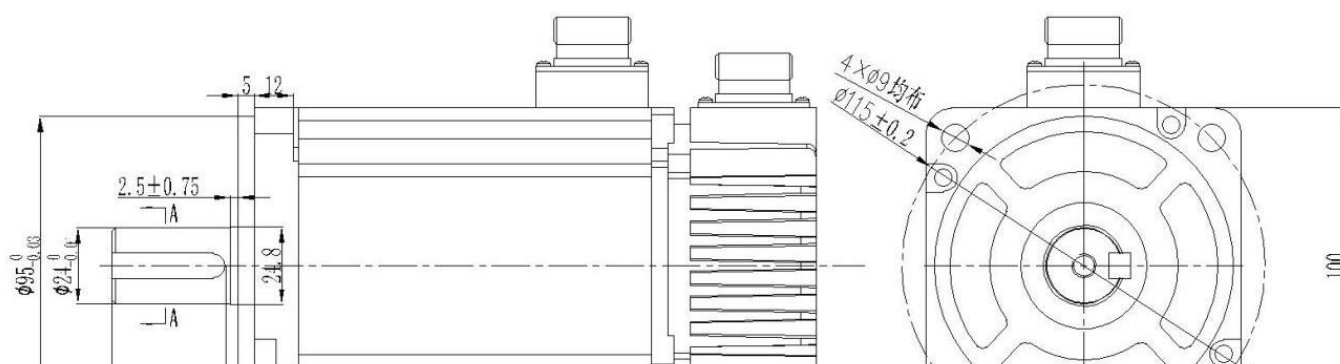
Motor model	AD80AST-M01330LBX	AD80AST-M02430LBX	AD80AST-M03230LBX
Without brake size (L)	111	132	150
Thin size (L)	92	113	131
With holding brake size (L)	142	163	181



100A series parameters:

Motor model	AD100AST-M03230	AD100AST-M04930	AD100AST-M06430
Rated power (KW)	1.0	1.5	2.0
Rated voltage (V)	380	380	380
Rated current (A)	4.5	5.1	6.6
Rated speed(rpm)	3000	3000	3000
Rated torque(N.m)	3.2	4.9	6.4
Peak moment(N.m)	9.6	14.7	19.2
Reverse EMF(V/1000r/min)	54	70	68
Torque coefficient(N.m/A)	0.71	0.82	0.97
Rotor inertia(kg.m ²)	2.43×10^{-4}	3.503×10^{-4}	4.49×10^{-4}
Line resistance(Ω)	1.46	1.3	0.96
Line inductance(mH)	14.2	14.2	10.6
Electrical time constant(ms)	9.73	10.92	11.04
Insulation class	Class F		
Protection level	IP65		
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)		

Rated torque (N.m)	3.2 N.m	4.9 N.m	6.4 N.m
Without brake size(L)	154	178	200
With brake size (L)	194	218	240

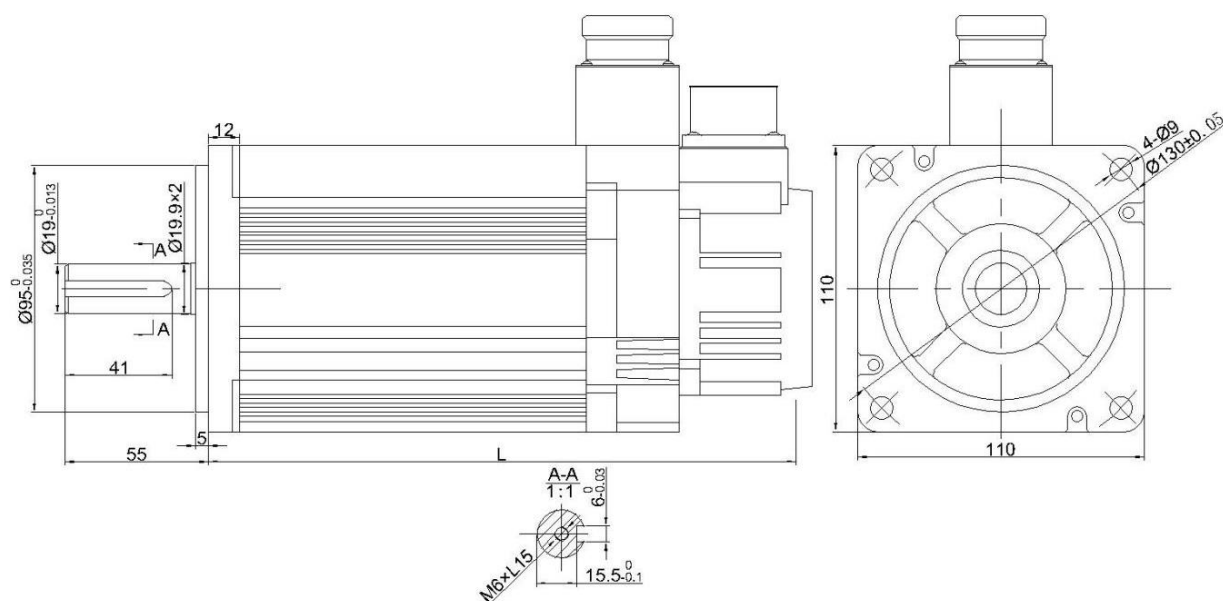


110A series parameters:

Motor model	AD110AS T- M04220	AD110AST -M05420	AD110AS T- M06420	AD110AS T- M07520	AD110AST -M04230	AD110AS T- M05430	AD110AS T- M06425
Rated power (KW)	0.88	1.1	1.3	1.6	1.3	1.7	1.7
Rated voltage (V)	220	220	220	220	220	220	220
Rated current (A)	3.9	5.5	6.5	8.0	6.5	8.2	9.5
Rated speed(rpm)	2000	2000	2000	2000	3000	3000	2500
Rated torque(N.m)	4.2	5.4	6.4	7.5	4.2	5.4	6.4
Peak moment(N.m)	12.6	16.2	19.2	22.5	12.6	16.2	19.2
Reverse EMF(V/1000r/ min)	70.5	65	65	66	42.5	43	44.5
Torque coefficient(N. m/A)	1.08	0.98	0.98	0.94	0.65	0.66	0.67
Rotor inertia(kg.m ²)	0.787×10^{-3}	0.916×10^{-3}	1.061×10^{-3}	1.238×10^{-3}	0.787×10^{-3}	0.916×10^{-3}	1.061×10^{-3}
Line resistance(Ω)	1.64	1.08	0.81	0.78	0.63	0.55	0.4

Line inductance(mH)	7.6	6.15	4.98	4.48	3.1	2.58	2.6
Electrical time constant(ms)	4.63	5.7	6.1	5.7	4.92	4.69	6.5
Insulation class	Class F						
Protection level	IP65						
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)						

Rated torque (N.m)	4.2 N.m	5.4 N.m	6.4 N.m	7.5 N.m
Without brake size(L)	160	170	180	191
With holding brake size (L)	186	196	206	217



130A series parameters:

Motor model	AD130AST-M04215LB	AD130AST-M05415LB	AD130AST-M06415LB	AD130AST-M07515LB	AD130AST-M08415LB
Rated power (KW)	0.65	0.85	1.0	1.2	1.3
Rated voltage (V)	220	220	220	220	220
Rated current (A)	5	6.5	8.0	9.0	9.5
Rated speed(rpm)	1500	1500	1500	1500	1500
Rated torque(N.m)	4.2	5.4	6.4	7.5	8.4
Peak moment(N.m)	12.6	16.2	19.2	22.5	25.2
Reverse EMF(V/1000r/min)	59	57.5	58	51.5	59.5
Torque coefficient(N.m/A)	0.84	0.83	0.8	0.83	0.88
Rotor inertia(kg.m ²)	1.163×10^{-3}	1.388×10^{-3}	1.604×10^{-3}	1.857×10^{-3}	2.059×10^{-3}
Line resistance(Ω)	1.37	1.2	0.9	0.52	0.56
Line inductance(mH)	6.29	5.2	4.2	2.84	3.1
Electrical time constant(ms)	4.6	4.3	4.6	5.5	5.5
Insulation class	Class F				
Protection level	IP65				
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)				

Motor model	AD130AST-M09615LB	AD130AST-M11515LB	AD130AST-M14615LB	AD130AST-M04230LB	AD130AST-M05430LB
Rated power (KW)	1.5	1.8	2.3	1.3	1.7

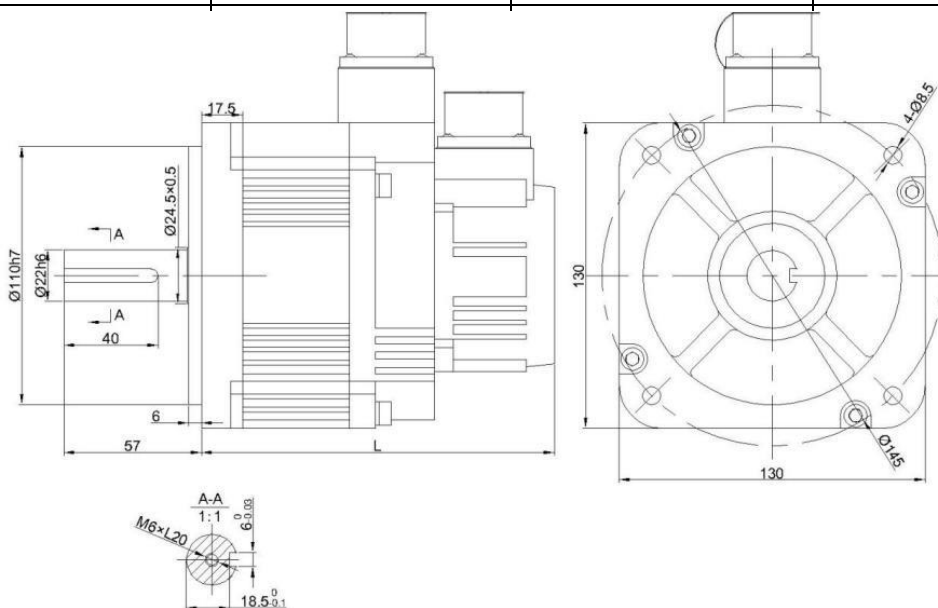
Rated voltage (V)	220	220	220	220	220
Rated current (A)	10.0	14.0	16.0	5.5	9.5
Rated speed(rpm)	1500	1500	1500	3000	3000
Rated torque(N.m)	9.6	11.5	14.6	4.2	5.4
Peak moment(N.m)	28.8	34.5	43.8	12.6	16.2
Reverse EMF(V/1000r/min)	61	67	60	49	42
Torque coefficient(N.m/A)	0.96	0.82	0.91	0.76	0.57
Rotor inertia(kg.m ²)	2.369×10^{-3}	3.015×10^{-3}	4.07×10^{-3}	1.163×10^{-3}	1.388×10^{-3}
Line resistance(Ω)	0.63	0.4	0.24	0.88	0.55
Line inductance(mH)	3.5	2.8	1.9	4.3	2.85
Electrical time constant(ms)	5.6	7.0	7.9	4.9	5.2
Insulation class	Class F				
Protection level	IP65				
Usage environment	Ambient temperature: -20℃~+50℃ Ambient humidity: relative humidity<90% (no frost condition)				

Motor model	AD130AST-M06430LB	AD130AST-M07530LB	AD130AT-M08430LB	AD130AST-M09625LB	AD130AST-M11520LB	AD130AT-M14620LB
Rated power (KW)	2.0	2.4	2.6	2.5	2.4	3.1
Rated voltage (V)	220	220	220	220	220	220
Rated current (A)	11.5	12.0	13.5	16.0	17.8	23.0
Rated speed(rpm)	3000	3000	3000	2500	2000	2000
Rated torque(N.m)	6.4	7.5	8.4	9.6	11.5	14.6
Peak moment(N.m)	19.2	22.5	25.2	28.8	34.5	43.8
Reverse EMF(V/1000r/min)	41	41	41.6	41.4	53.3	41.9
Torque coefficient(N.m/A)	0.56	0.63	0.62	0.6	0.65	0.63
Rotor inertia(kg.m ²)	1.604×10^{-3}	1.857×10^{-3}	2.059×10^{-3}	2.369×10^{-3}	3.015×10^{-3}	4.070×10^{-3}
Line resistance(Ω)	0.44	0.34	0.33	0.23	0.35	0.17
Line inductance(mH)	2.0	1.7	1.7	1.11	1.79	0.77
Electrical time constant(ms)	4.5	5	5.2	4.83	5.1	4.5
Insulation class	Class F					

Protection level	IP65
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)

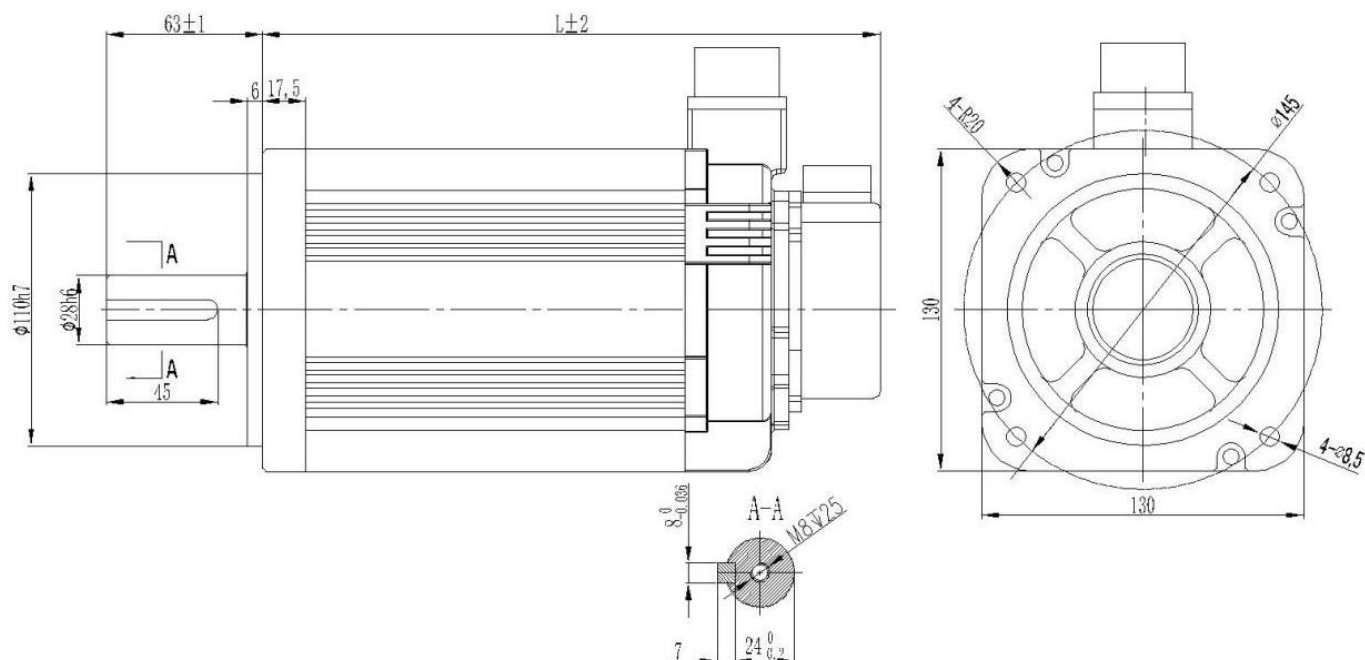
Motor model	AD130AST-12730LL	AD130AST-12730HL	AD130AST-09630HL
Rated pc			
Rated vc			
Rated cu			
Rated s			
Rated to			
Peak mc			
Reverse EM			
Torque coe			
Rotor in			
Line res			
Line indu			
Electrical tir			
Insula			
Protec			
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)		

Rated torque (N.m)	4.2 N.m	5.4 N.m	6.4 N.m	7.5 N.m	8.4 N.m	9.6 N.m	11.5 N.m	14.6 N.m
Without brake size (L)	149	155	162	169	175	183	199	234
With electromagnetic holding brake(L)	171	177	184	191	197	205	221	256



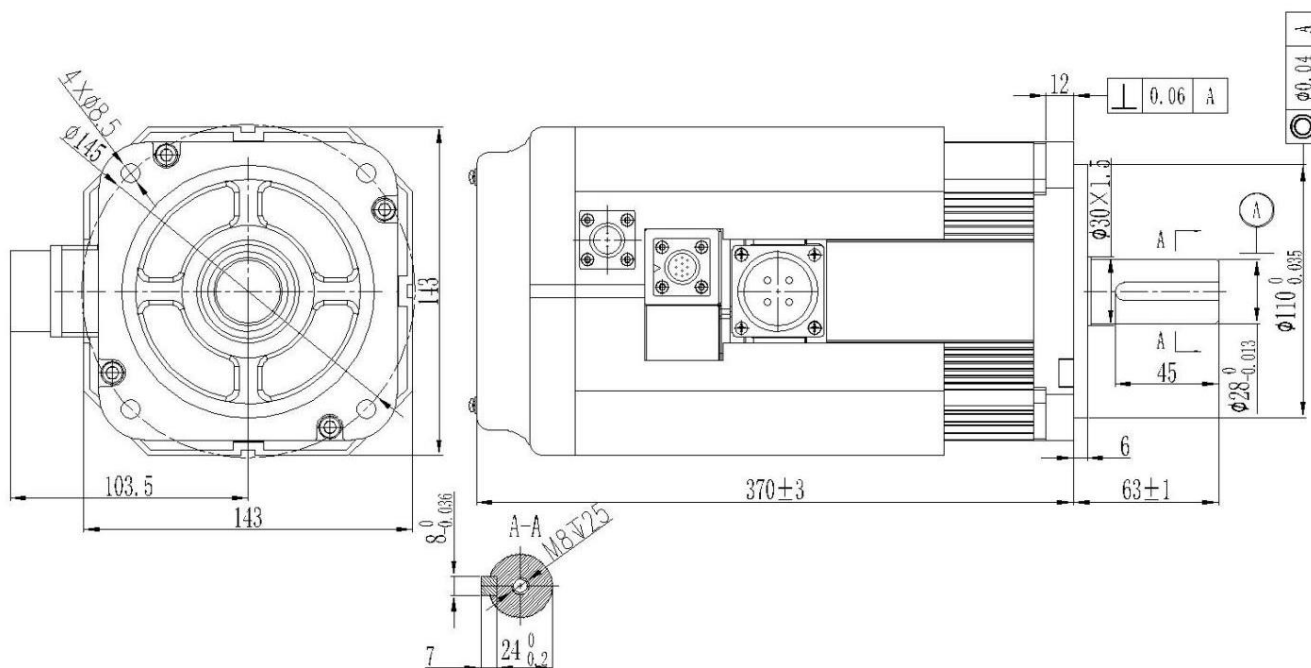
130 Small inertia parameters:

Motor model	AD130AST-12730LL	AD130AST-12730HL	AD130AST-09630HL
Without brake size (L)	249.5	260	230



Motor model	AD130AST-22330LL
Rated power (KW)	7.0
Rated voltage (V)	220
Rated current (A)	38.5
Rated speed(rpm)	3000
Rated torque(N.m)	22.3
Peak moment(N.m)	66.9
Reverse EMF(V/1000r/min)	40.5
Torque coefficient(N.m/A)	0.58
Rotor inertia(kg.m ²)	12.5×10^{-4}
Line resistance(Ω)	0.57
Line inductance(mH)	1.5
Electrical time constant(ms)	2.63
Insulation class	Class F
Protection level	IP65
Usage environment	Ambient temperature: $-20^{\circ}\text{C} \sim +50^{\circ}\text{C}$ Ambient humidity: relative humidity < 90% (no frost condition)

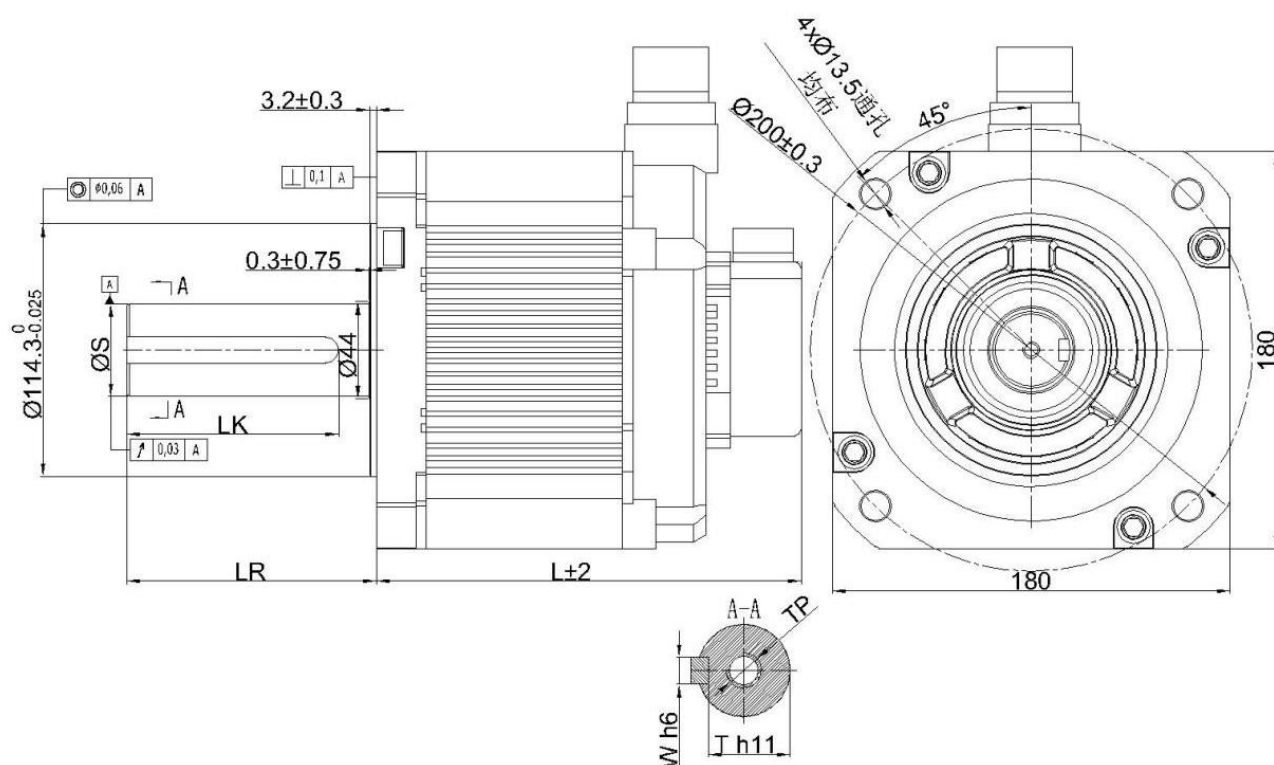
180A series parameters:



EMF(V/1000r/min)	108	119	106	123
Torque coefficient(N.m/A)	1.58	1.8	1.7	1.86
Rotor inertia(kg.m ²)	5.68×10^{-3}	7.82×10^{-3}	10.9×10^{-3}	13.0×10^{-3}

Line resistance(Ω)	0.46	0.31	0.2	0.16
Line inductance(mH)	9.17	7.52	4.2	4.3
Electrical time constant(ms)	19.9	24.3	21	26.9
Insulation class	Class F			
Protection level	IP65			
Usage environment	Ambient temperature: $-20^{\circ}\text{C} \sim +50^{\circ}\text{C}$ Ambient humidity: relative humidity<90% (no frost condition)			

Motor model	AD180AST-M18615HB	AD180AST-M28415HB	AD180AST-M35015HB	AD180AST-M48015HB
Without brake size (L)	198	227	254	297
With brake size (L)	246	275	302	345
LR	79	79	113	113
LK	65	65	96	96
S	$35+0.01^{+0}$	$35+0.01^{+0}$	$42\ 0^{+0.02}$	$42\ 0^{+0.02}$
T	8	8	8	8
W	10	10	12	12
TP	M12×25	M12×25	M16×32	M16×32



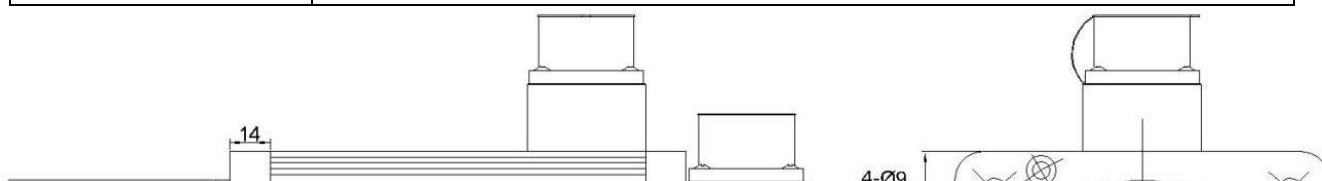
130H series parameters:

Motor model	AD130ST - M04025HB	AD130ST - M05025HB	AD130ST - M06025HB	AD130ST - M07725HB
Rated power (KW)	1.0	1.3	1.5	2.0
Rated voltage(V)	380	380	380	380
Rated current(A)	2.6	3.0	3.7	4.7
Rated speed(rpm)	2500	2500	2500	2500
Rated torque(N.m)	4.0	5.0	6.0	7.7
Peak moment(N.m)	12	15	18	22
Reverse EMF(V/1000r/min)	113	114	110	111
Torque coefficient(N.m/A)	1.54	1.67	1.62	1.64
Rotor inertia(kg.m ²)	0.85×10^{-3}	1.06×10^{-3}	1.26×10^{-3}	1.53×10^{-3}
Line resistance(Ω)	6.1	5.1	3.4	2.49
Line inductance(mH)	14.3	12.31	9.23	7.08
Electrical time constant(ms)	2.34	2.41	2.7	2.84
Insulation class	Class F			

Protection level	IP65
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)

Rated torque(N.m)	4	5	6	7.7	10			15	
					1000 rpm	1500 rpm	2500 rpm	1500 rpm	2500 rpm
Without brake size(L)	166	171	179	192	213		209	241	231
With holding brake size(L)	223	228	236	273	294		290	322	312

Motor model	AD130ST - M10010HB	AD130ST - M10015HB	AD130ST - M10025HB	AD130ST - M15015HB	AD130ST - M15025HB
Rated power (KW)	1.0	1.5	2.6	2.3	3.8
Rated voltage (V)	380	380	380	380	380
Rated current(A)	3.5	4.1	5.9	5.0	7.4
Rated speed(rpm)	1000	1500	2500	1500	2500
Rated torque(N.m)	10	10	10	15	15
Peak moment(N.m)	20	25	25	30	30
Reverse EMF(V/1000r/min)	243	184	115	188	125
Torque coefficient(N.m/A)	2.86	2.85	1.69	3	2.03
Rotor inertia(kg.m ²)	1.94×10 ⁻³	1.94×10 ⁻³	1.94×10 ⁻³	2.77×10 ⁻³	2.77×10 ⁻³
Line resistance(Ω)	8.17	4.3	1.99	3.27	1.41
Line inductance(mH)	26.7	12.9	6.2	10.5	5.5
Electrical time constant(ms)	3.27	3	3.12	3.21	3.9
Insulation class	Class F				
Protection level	IP65				
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)				



180H series parameters:

Motor model	AD180ST - M17215HB	AD180ST - M19015HB	AD180ST - M21520HB	AD180ST - M27010HB
Rated power (KW)	2.7	3.0	4.5	2.9
Rated voltage(V)	380	380	380	380
Rated current(A)	6.5	7.5	9.5	7.5
Rated speed(rpm)	1500	1500	2000	1000
Rated torque(N.m)	17.2	19	21.5	27
Peak moment(N.m)	43	47	53	67
Reverse EMF(V/1000r/min)	167	170	140	224
Torque coefficient(N.m/A)	2.65	2.5	2.26	3.6
Rotor inertia(kg.m ²)	6.5×10^{-3}	7.0×10^{-3}	7.96×10^{-3}	9.64×10^{-3}
Line resistance(Ω)	1.47	1.23	0.71	1.37
Line inductance(mH)	7.8	7.3	4	8.6
Electrical time constant(ms)	5.3	5.93	5.6	6.27
Insulation class	Class F			
Protection level	IP65			

Usage environment	Ambient temperature: -20℃~+50℃ Ambient humidity: relative humidity<90% (no frost condition)
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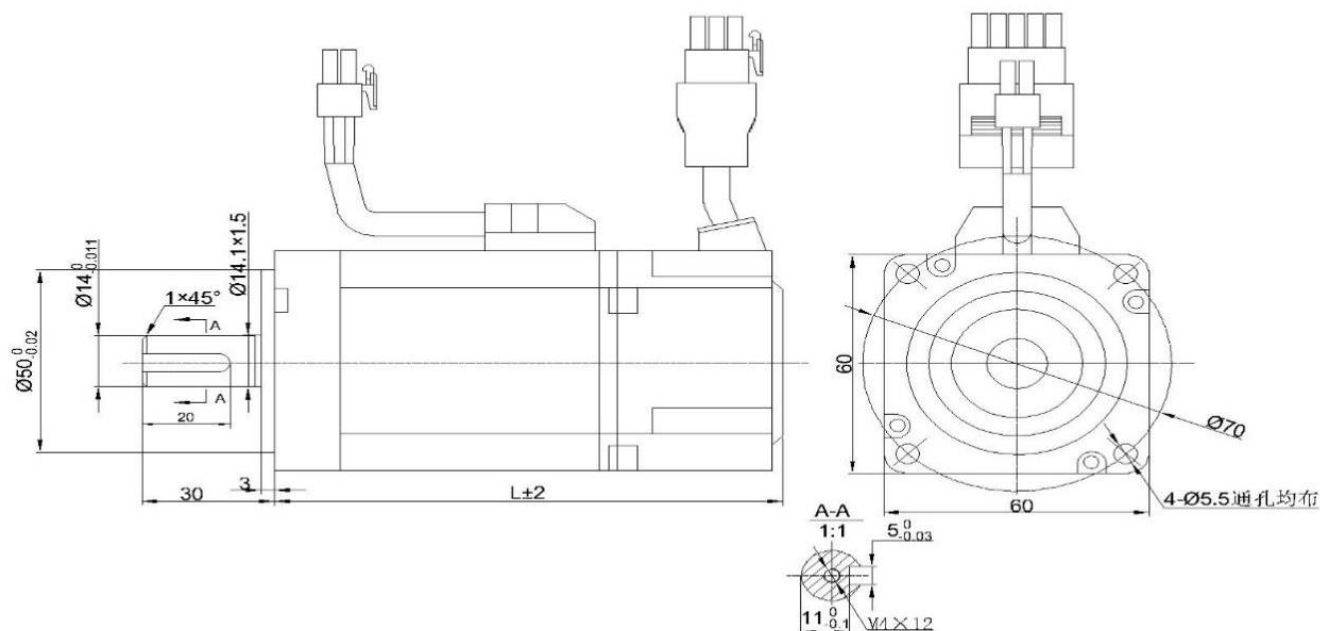
Motor model	AD180ST - M27015HB	AD180ST - M35010HB	AD180ST - M35015HB	AD180ST - M48015HB
Rated power (KW)	4.3	3.7	5.5	7.5
Rated voltage(V)	380	380	380	380
Rated current(A)	10	10	12	20
Rated speed(rpm)	1500	1000	1500	1500
Rated torque(N.m)	27	35	35	48
Peak moment(N.m)	67	70	70	96
Reverse EMF(V/1000r/min)	172	223	181	156
Torque coefficient(N.m/A)	2.7	3.5	2.9	2.4
Rotor inertia(kg.m ²)	9.64×10 ⁻³	12.25×10 ⁻³	12.25×10 ⁻³	16.72×10 ⁻³
Line resistance(Ω)	0.796	0.93	0.55	0.27
Line inductance(mH)	4.83	9.1	3.72	2.14
Electrical time constant(ms)	6	9.78	6.76	7.93
Insulation class	Class F			
Protection level	IP65			
Usage environment	Ambient temperature: -20℃~+50℃ Ambient humidity: relative humidity<90% (no frost condition)			

Rated torque (N.m)	17	19	21.5	27	35	48
Without brake size (L)	226	232	243	262	292	346
With holding brake size (L)	298	304	315	334	364	418

60A1 series parameters:

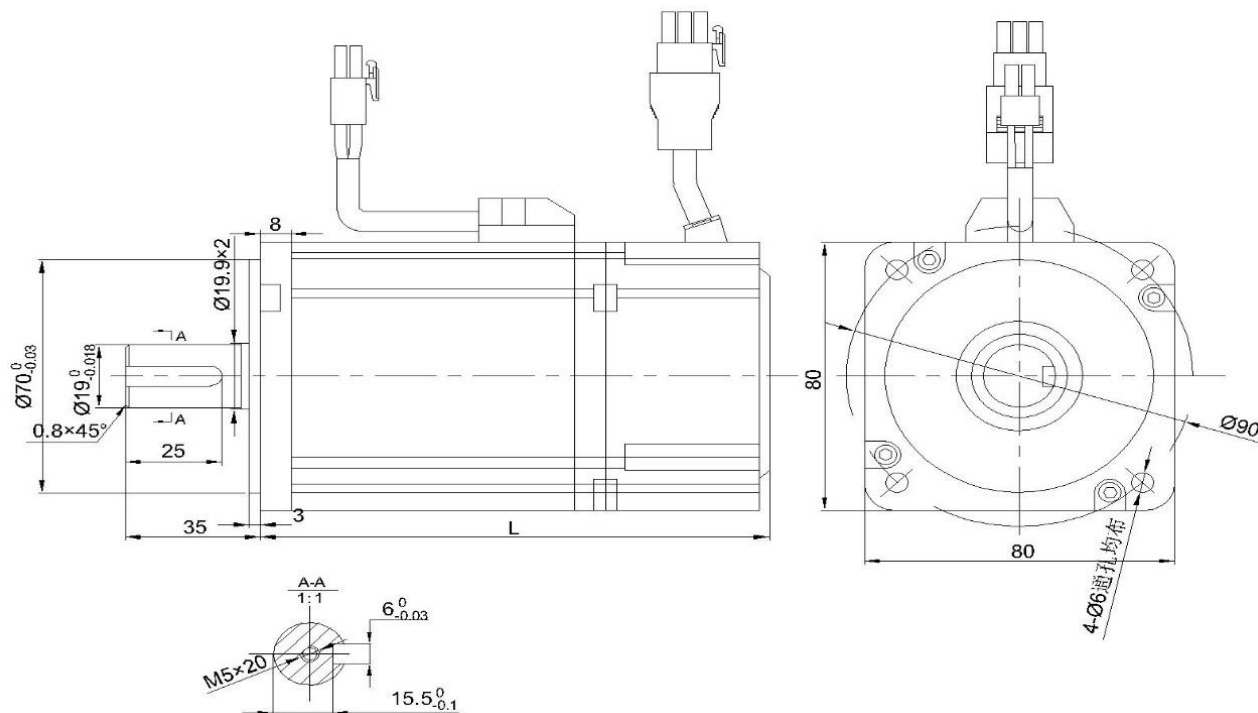
Motor model	AD60A1ST-M00630LB	AD60A1ST-M01330LB	AD60A1ST-M01930LB
Rated power (KW)	0.2	0.4	0.6
Rated voltage(V)	220	220	220
Rated current(A)	1.5	2.5	3.6
Peak current (A)	4.5	7.5	10.8
Rated speed(rpm)	3000	3000	3000
Rated torque(N.m)	0.64	1.27	1.91
Peak moment(N.m)	1.91	3.81	5.73
Reverse EMF(V/1000r/min)	27.7	30.5	32.7
Torque coefficient(N.m/A)	0.40	0.51	0.53
Rotor inertia(kg.m ²)	0.26×10^{-4}	0.49×10^{-4}	0.76×10^{-4}
Line resistance(Ω)	7.3	3.63	2.32
Line inductance(mH)	53	32.8	24.3
Electrical time constant(ms)	7.26	9.04	10.47
Insulation class	Class F		
Protection level	IP64		
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)		

Rated torque (N.m)	0.6	1.3	1.9
Without brake size (L)	91.5	107.5	126.5



Motor model	AD80A1ST-M01330LB	AD80A1ST-M02430LB	AD80A1ST-M03230LB
Rated power (KW)	0.4	0.75	1
Rated voltage(V)	220	220	220
Rated current(A)	2.6	4.8	6.8
Peak current (A)	7.8	16.5	20.4
Rated speed(rpm)	3000	3000	3000
Rated torque(N.m)	1.27	2.39	3.2
Peak moment(N.m)	3.81	8.36	9.6
Reverse EMF(V/1000r/min)	28.4	31.5	31.2
Torque coefficient(N.m/A)	0.49	0.50	0.47
Rotor inertia(kg.m ²)	0.84×10^{-4}	1.51×10^{-4}	2.01×10^{-4}
Line resistance(Ω)	2.76	1.16	0.72
Line inductance(mH)	31	14.6	10.1
Electrical time constant(ms)	11.23	12.59	14.03
Insulation class	Class F		
Protection level	IP65		
Usage environment	Ambient temperature: -20°C~+50°C Ambient humidity: relative humidity<90% (no frost condition)		

Rated torque (N.m)	1.3	2.4	3.2
Without brake size (L)	102.5	120.5	134.5



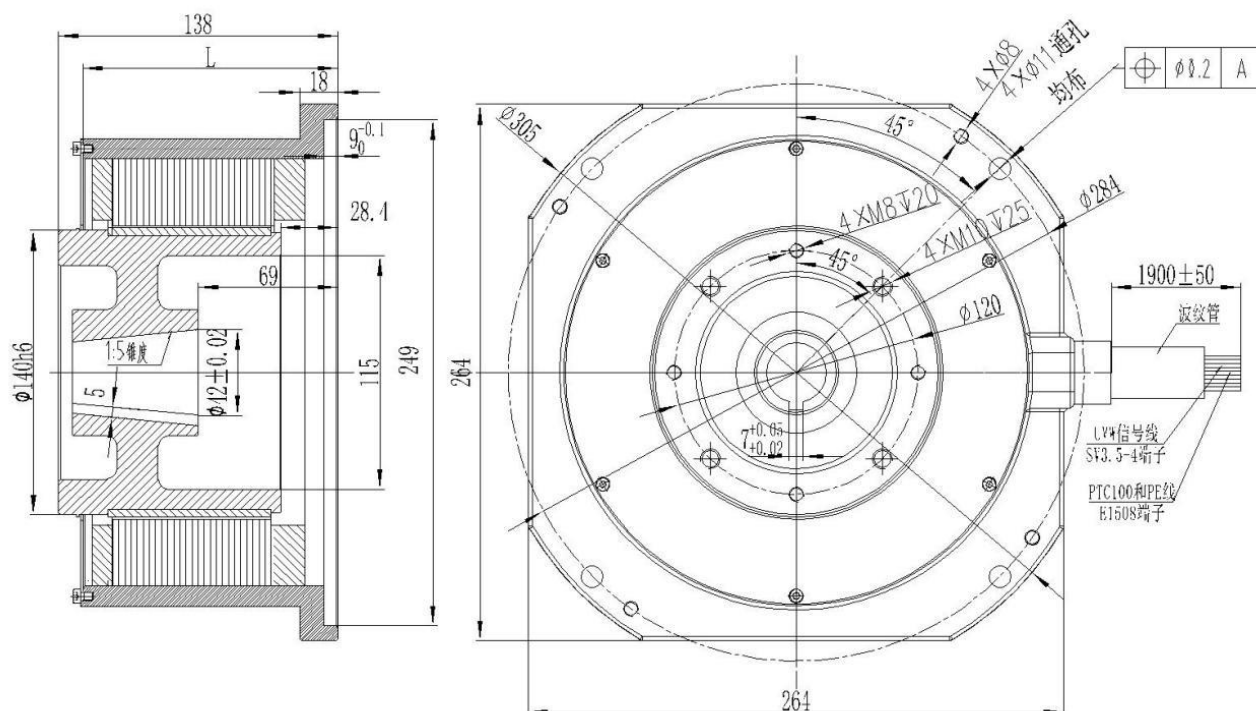
Special motor description

230 series parameters:

Motor model	AD230ST-M44008	AD230ST-M59008
Rated power (KW)	3.7	5
Rated voltage(A)	380	380
Rated current(A)	10	13
Rated speed(rpm)	800	800
Rated torque(N.m)	44	59
Peak moment(N.m)	132	177
Reverse EMF(V/1000r/min)	278	288
Torque coefficient(N.m/A)	4.4	4.54
Line resistance(Ω)	0.84	0.56
Line inductance(mH)	21.5	17.7
Electrical time constant(ms)	25.6	31.6
Pole logarithm	10	10
Insulation class	Class F	
Protection level	IP65	
Usage environment	Ambient temperature: $-20^{\circ}\text{C} \sim +50^{\circ}\text{C}$ Ambient humidity: relative humidity<90% (no frost condition)	

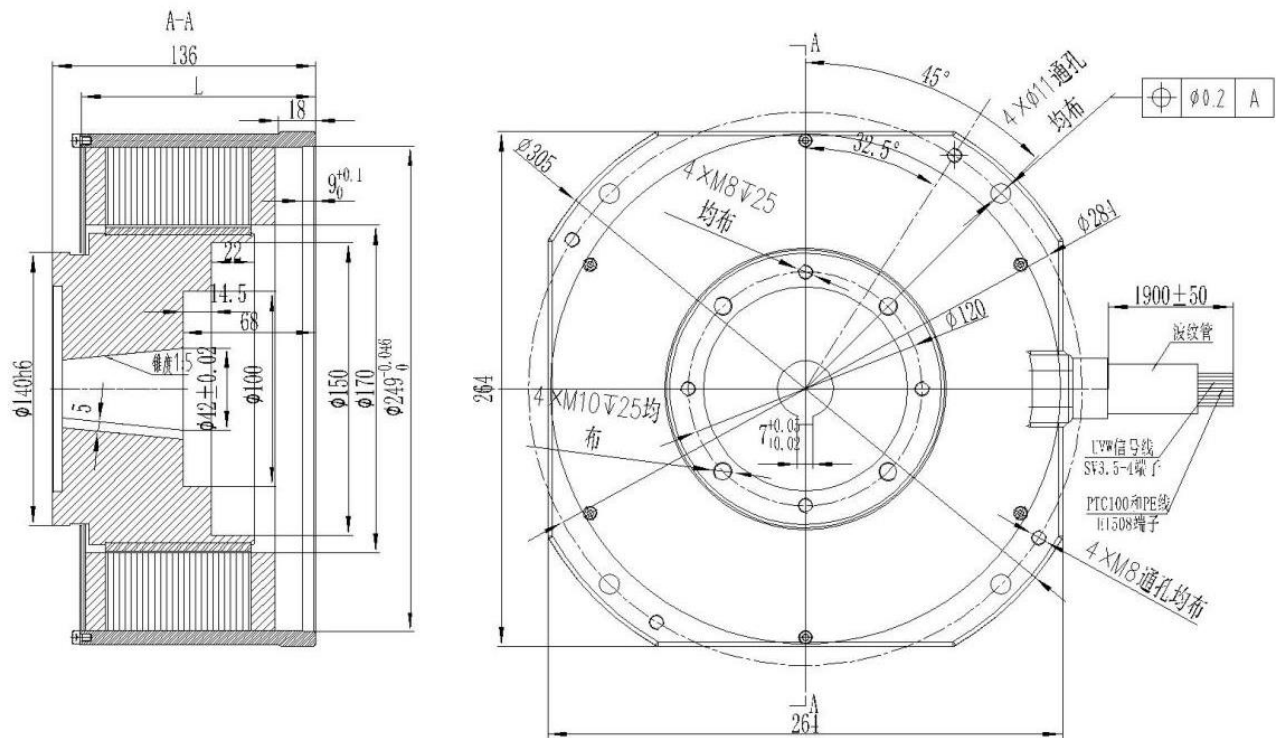
Rated torque (N.m)	44	59
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Fuselage dimensions (L)	119	126
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Motor model	AD250CST-M59008
Rated power (KW)	5
Rated voltage(A)	380
Rated current(A)	11
Rated speed(rpm)	800
Rated torque(N.m)	59
Reverse EMF(V/1000r/min)	330
Torque coefficient(N.m/A)	4.9
Line resistance(Ω)	0.31
Line inductance(mH)	9.2
Electrical time constant(ms)	29.68
Pole logarithm	14
Insulation class	Class F
Protection level	IP65
Usage environment	Ambient temperature: $-20^{\circ}\text{C} \sim +50^{\circ}\text{C}$ Ambient humidity: relative humidity<90% (no frost condition)

Rated torque (N.m)	59
Fuselage dimensions (L)	121



Stepper motor main description

Stepper motor naming convention:

FHB	3	11	18
(1)	(2)	(3)	(4)

- (1) Hybrid stepper motor
- (2) 3 is three-phase
- (3) Motor frame number
- (4) Motor body length ÷ 10

Installation notes:

It should be installed in a place with less dust, no corrosive gas and flammable gas, should avoid metal dust and other conductors, avoid oil and water entering the shell, and avoid strong vibration.

All signal lines are twisted pair or shielded wire output phase core section $S > 1\text{mm}^2$, input and output signal lines should be separated from the motor power line, because close to high voltage power supply, electromagnetic switch, high frequency power supply and other noise sources are the cause of misoperation.

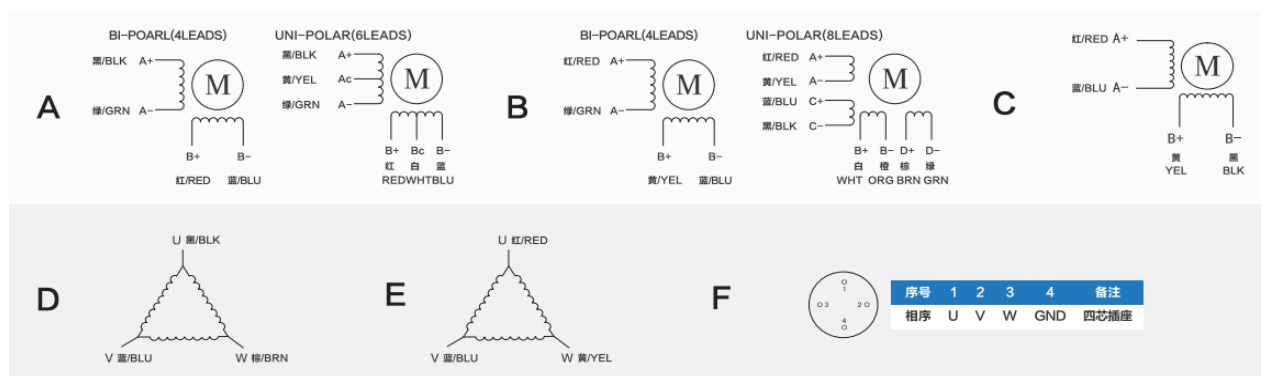
At least 4 cm should be maintained between the drives and other devices to facilitate ventilation.

When the motor needs to run at high speed, it must be processed up and down, and poor handling of the up and down curve is often the main reason why the motor cannot go up at high speed. The temperature rise of the motor varies depending on the voltage, motor speed and driven load. Generally, the motor is

easy to heat up when running at high speed for a long time, so be sure to keep the temperature of the motor not exceeding 100 degrees.

If the drive power supply fails, you can contact the company directly, give a warranty within one year, after disassembly and assembly, the company is not responsible, please understand.

Wiring diagram:



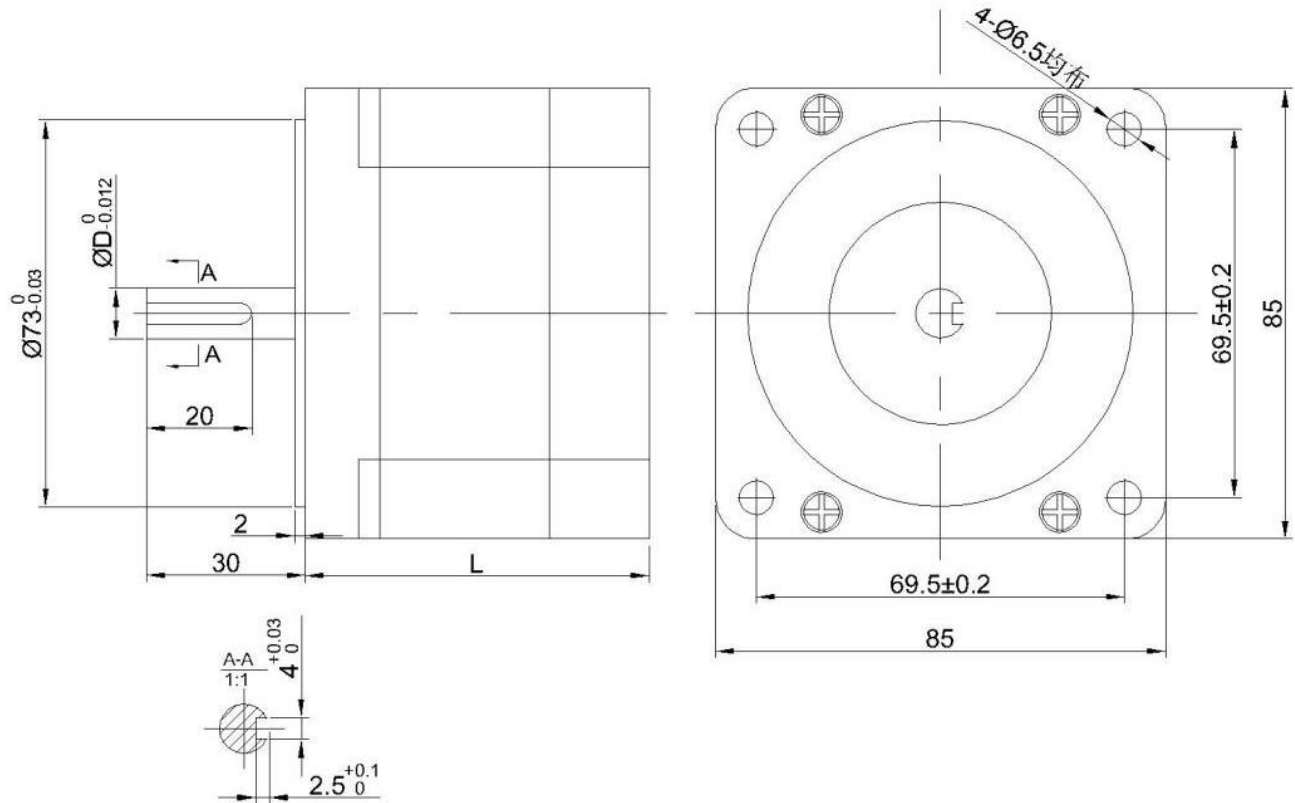
85MM Parameters of three-phase hybrid stepper motor:

Step accuracy	Temperature rise	Ambient temperature	Insulation resistance	Withstand pressure	Radial run out	Axial run out
±5%	80℃Max	-20℃~+50℃	100MΩ Min.500VDC	500VAC 1minute	0.02mm Max.(450g-load)	0.08mm Max.(450g-load)

Motor model	Step angle (°)	The fuselage is long (L) (mm)	Maintain torque (N.m)	Rated current (A/phase)	resistance (Ω)	inductance (mH)	Inertia (g.cm ²)	Shaft diameter (D) (mm)	Shaft extension (mm)	weight (kg)
FHB397-H	1.2	69	2.0	1.75	3.77	11.6	1320	12	Key 4×20	1.8
FHB397	1.2	69	2.0	5.8	0.5	0.9	1320	12	Key 4×20	1.8
FHB3910-H	1.2	97	4.0	2.0	4.65	14.6	2400	12	Key 4×20	2.8
FHB3910	1.2	97	4.0	5.8	0.7	1.5	2400	12	Key 4×20	2.8
FHB3913-H	1.2	125	6.0	3.0	2.0	8.0	3480	14	Key 4×20	3.8
FHB3913	1.2	125	6.0	5.8	0.9	2.17	3480	14	Key 4×20	3.8
FHB3915-H	1.2	145	7.5	3.2	2.6	9.57	4560	14	Key 4×20	4.7

FHB3915	1.2	145	7.5	5.8	0.88	2.63	4560	14	Key 4×20	4.7
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*The above are only representative products, and derivative products can be made according to customer requirements!



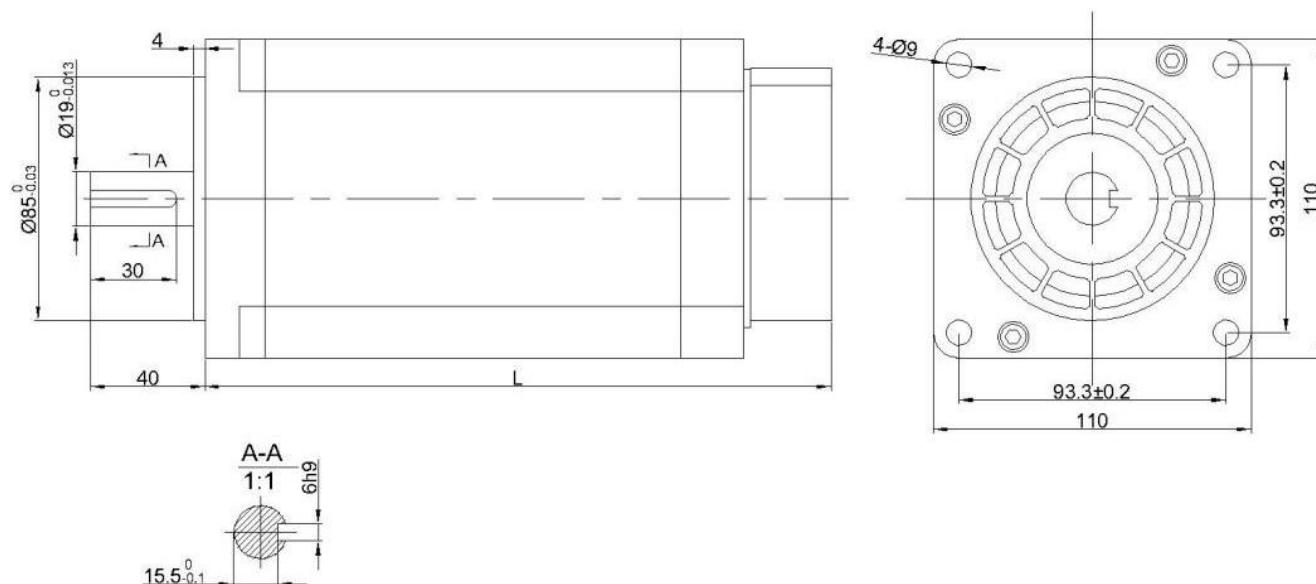
Technical parameters of three phase hybrid stepper motor:

Step accuracy	Temperature rise	Ambient temperature	Insulation resistance	Withstand pressure	Radial run out	Axial run out
±5%	80°C Max	-20°C ~ +50°C	100MΩ Min.500VDC	500VAC 1minute	0.02mm Max.(450g-load)	0.08mm Max.(450g-load)

Motor model	Step angle (°)	The fuselage is long (L) (mm)	Maintain torque (N.m)	额定电流 (A/phase)	resistance (Ω)	inductance (mH)	Inertia (g.cm ²)	Shaft diameter (mm)	Shaft extension (mm)	weight (kg)
FHB31122	1.2	127	8.0	4.3	1.04	4.3	6000	19	Key 6×30	5.0
FHB31115	1.2	151	12	6.0	0.6	2.67	9720	19	Key 6×30	6.3
FHB31118	1.2	185	16	6.4	0.7	2.96	13560	19	Key 6×30	8.5

FHB3112 2	1.2	219	20	6.9	0.57	2.46	17400	19	Key 6×30	10.7
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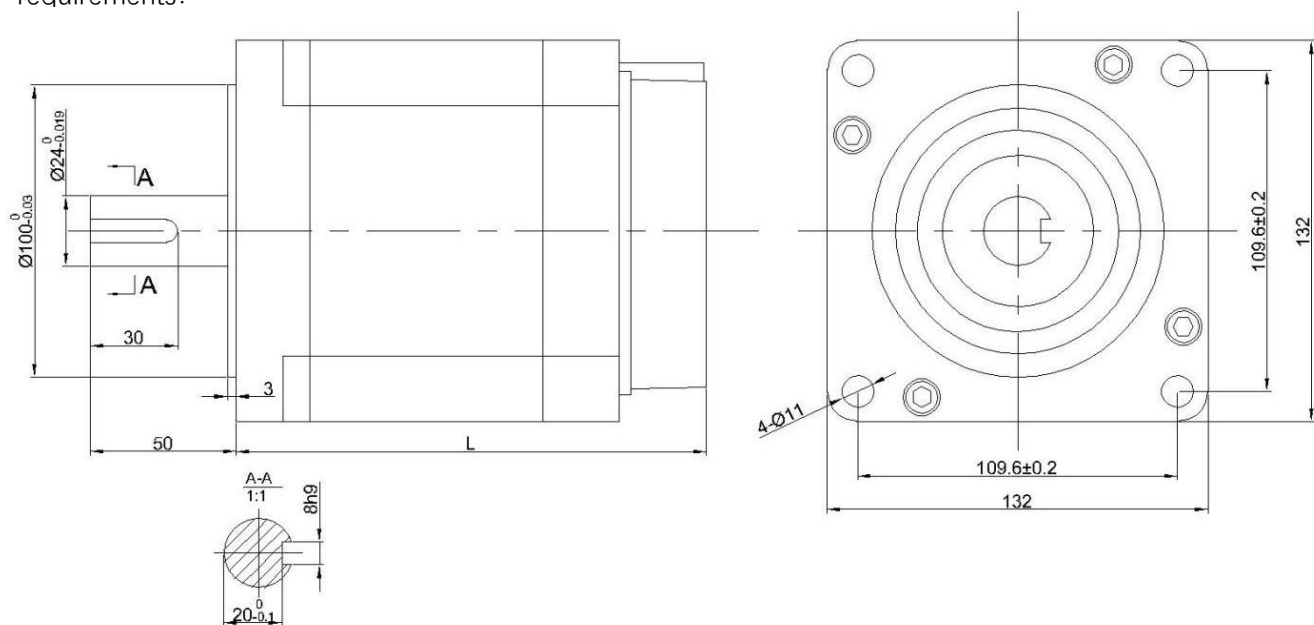
130MM Parameters of three-phase hybrid stepper motor:

Step accuracy	Temperature rise	Ambient temperature	Insulation resistance	Withstand pressure	Radial run out	Axial run out
±5%	80℃Max	-20℃～+50℃	100MΩ Min.500VDC	500VAC 1minute	0.02mm Max.(450g-load)	0.08mm Max.(450g-load)

Motor model	Step angle (°)	The fuselage is long (L) (mm)	Maintain torque (N.m)	额定电流 (A/phase)	resistance (Ω)	inductance (mH)	Inertia (g.cm ²)	Shaft diameter (mm)	Shaft extension mm	weight (kg)
FHB31315	1.2	161	15	6.9	0.55	3.5	20000	24	Key 8×30	11
FHB31318	1.2	190	20	6.9	0.72	4.7	26700	24	Key 8×30	14.1
FHB31322	1.2	222	28	6.9	0.95	6.1	33970	24	Key 8×30	17.2
FHB31325	1.2	254	35	6.9	1.1	7.4	41240	24	Key 8×30	19.8

FHB31332	1.2	318	50	6.9	1.4	9.82	55780	24	Key 8×30	26
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