



2018



**KAYSER**  
**KAYSER ELECTRIC GMBH**

# Catalog of Servomotors

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# KAYSER

**KAYSER ELECTRIC GMBH**

CH-E. App. Co. LTD + Kayser Electric GmbH always adhering to the pursuit of professional application technology and international scientific management means, with the perfect professional knowledge and service concept to provide customers with high quality sports control products and intelligent management of new energy products, and by virtue of manufacturing advantages to further develop to provide customers with value-added services and flexible and reasonable business solutions. The integrated product providers and application technology providers of the program. From the industrial equipment manufacturing components to the office equipment parts, from the household appliance components to the precision instrument controls, Kayser Electrics seeks excellence and progress in a wide range of applications, bringing peace and convenience to the customers and creating value for the customers continuously.

## Product application

### ■ Applications

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- Industrial Equipment
- Textile
- Packaging
- Electronic Assembly
- Wood Working
- Semiconductor

## ■ Features

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- High torque in a small package: 40mm, 60mm, 80mm and 130mm diameters
- Power Range: 60 Watts to 4,000 Watts
- Low cogging
- Windings for drive voltages from 240 VAC down to 24 VDC
- Optional Feedback Devices
  - Incremental encoder
  - Encoder with shared commutation signals
  - Absolute encoder
  - Support multi brand
- Low cost non sealed connectors, or Metal IP rated connectors
- Standard Brake Option
- Shaft Seals
- IP65 protection level (Capable to provide IP66 protective level)
- All motors are CE, RoHS
- Custom motors are available:
  - Shafts
  - Windings
  - Connectors
  - Temperature Sensor
  - And More .....



## COMPANY PROFILE

CH E. App. Co. LTD + Kayser Electric GmbH is a manufacturer in producing micro motors which has new management system and strong technology support.

We mainly produce hybrid stepper motor, BLDC motor, DC brush motor, spindle motor and driver. The annual output is about 4 million units.

Our motors are widely used in cars, printers, ticket machines, caving machines, medical instruments, stage lightings, textile machines etc.

Kayser Electric is located in central China near Wuxi, with plant of 25000 square meters.



# UNIT CONVERSION

## Length

A \ B	mm	cm	m	inch	feet
mm	1	0.1	0.001	0.03937	0.003281
cm	10	1	0.01	0.3937	0.03281
m	1000	100	1	39.37	3.281
inch	25.4	2.54	0.0254	1	0.08333
feet	304.8	30.48	0.3048	12	1

## Force

A \ B	g	kgf	oz	lb	Newton
g	1	0.001	0.03527	0.002205	0.0098
kgf	1000	1	35.27	2.205	9.807
oz	28.35	0.02835	1	0.0625	0.278
lb	453.6	0.4536	16	1	4.448
Newton	102	0.102	3.597	0.2248	1

## Torque

A \ B	Nm	Ncm	mNm	kgm*	kgcm*	gcm*	oz-in	lb-ft	lb-in
Nm	1	100	1000	0.102	10.2	10200	141.6	0.7376	8.851
Ncm	0.01	1	10	0.00102	0.102	102	1.416	0.007376	0.08851
mNm	0.001	0.1	1	0.000102	0.0102	10.2	0.1416	0.000738	0.008851
kgm*	9.807	980.7	9807	1	100	100000	1389	7.233	86.8
kgcm*	0.09807	9.807	98.07	0.01	1	1000	13.89	0.07233	0.868
gcm*	0.00009807	0.009807	0.09807	0.00001	0.001	1	0.01389	7.23E-05	0.000868
oz-in	0.007062	0.7062	7.062	0.0007201	0.07201	72.01	1	0.00521	0.0625
lb-ft	1.356	135.6	1356	0.1383	13.83	13830	192	1	12
lb-in	0.113	11.3	113	0.01152	1.152	1152	16	0.0833	1

## Inertia

A \ B	kgm <sup>2</sup>	kgcm <sup>2</sup>	gcm <sup>2</sup>	oz-in <sup>2</sup>	oz-in-sec <sup>2</sup>	lb-in <sup>2</sup>	lb-in-sec <sup>2</sup>	lb-ft <sup>2</sup>	"lb-ft-sec <sup>2</sup> (slug ft <sup>2</sup> )"
kgm <sup>2</sup>	1	10,000	10000000	54,700	142	3420	8.85	23.7	0.738
kgcm <sup>2</sup>	0.0001	1	1,000	5.47	0.0142	0.342	0.000885	0.00237	7.38E-05
gcm <sup>2</sup>	0.0000001	0.001	1	0.00547	1.42E-05	0.000342	8.85E-07	2.37E-06	7.38E-08
oz-in <sup>2</sup>	0.00001829	0.1829	183	1	0.00259	0.0625	0.000162	0.000434	1.35E-05
oz-in-sec <sup>2</sup>	0.00706	70.62	70,600	386	1	24.1	0.0625	0.168	0.00521
lb-in <sup>2</sup>	0.0002926	2.926	2,930	16	0.0414	1	0.00259	0.00694	0.000216
lb-in-sec <sup>2</sup>	0.113	1,130	1130000	6,180	16	386	1	2.68	0.0833
lb-ft <sup>2</sup>	0.0421	421.4	421,000	2,300	5.97	144	0.373	1	0.0318
"lb-ft-sec <sup>2</sup> (slug ft <sup>2</sup> )"	1.36	13,600	13600000	74,100	192	4,630	12	32.2	1

# MODEL NAMING RULES

KSX 60 05 A - 100 D 30 A 1 -001

Series    Seat No    Polar logarithm    Voltage    Power    Inertia    Speed    Encoder    Structure    Derivation of the same parameter

Series	Code	Meaning
	KSX	High efficiency servomotor

Seat No	Code	Meaning
	40	40*40mm
	60	60*60mm
	80	80*80mm
	110	110*110mm
	130	130*130mm

Polar logarithm	Code	Meaning
	04	4
	05	5
	08	8

Voltage	Code	Meaning
	A	310VDC(220VAC)
	B	380VAC
	C	155VDC(110VAC)
	D	110VDC
	E	80VDC
	F	60VDC
	G	48VDC
	H	36VDC
	K	24VDC

Power	Code	Meaning
	10	100W
	20	200W
	40	400W
	75	750W
	95	950W
	100	1KW
	120	1.2KW
	135	1.35KW
	150	1.5KW
	180	1.8KW
	200	2KW
	240	2.4KW
	300	3KW
	330	3.3KW
	400	4KW
	420	4.2KW
	500	5KW
	510	5.1KW

Inertia	Code	Meaning
	S	Small inertia
	D	Medium inertia
	E	Large inertia
	H	Increase of inertia

Speed	Code	Meaning
	6	600rpm
	10	1000rpm
	15	1500rpm
	20	2000rpm
	30	3000rpm
		*100

Encoder	Code	Meaning
	A	Tamagawa single ring absolute value 17bit (When the incremental 17bit is used)
	B	Incremental 2500ppr (Optical encoder)
	L	Tamagawa single ring absolute value 17bit
	M	Rotary transformer
	Y	Yuheng multi ring absolute 17bit
		Not encoders
	P	Tamagawa single ring absolute value 23bit
	N	Nikon multi ring absolute value

Structure	Code	Meaning
	1	Key shaft, Oil seal, No brake
	2	Key shaft, Oil seal, Brake
	3	Key shaft, NO oil seal, No brake
	4	Key shaft, NO oil seal, brake
	5	Optic axis, NO oil seal, No brake
	6	Optic axis, Oil seal, brake
	7	Optic axis, NO oil seal, No brake
	8	Optic axis, NO oil seal, brake



### General Specifications

The operating	-20℃~+50℃
Insulation class	F
Safe class	IP65

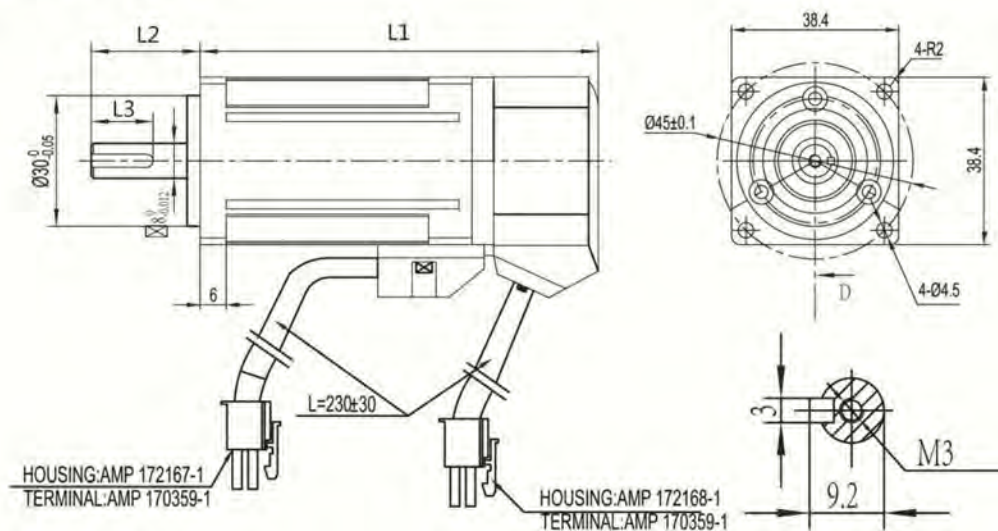
### Electrical Specifications

Model	KSX40						
Rated power(W)	100						
Rated voltage(V)	220						
Rated current(A)	1.1						
Rated speed(rpm)	3000						
Rated torque(N.m)	0.32						
Max torque(N.m)	0.96						
Voltage constant(V/1000rpm)	19						
Torque coefficient(N.m/A)	0.265						
Rotor inertia(Kg.m <sup>2</sup> )	0.045*10 <sup>-4</sup>						
Line-line resistance(Ω)	11						
Line-line inductance(mH)	8.5						
Mechanical time-constant(Ms)	2						
Weight	0.5kg						
Motor winding plug	Winding lead wire	U(red)	V(white)	W(black)	PE(yellow/green)		
	Plug serial number	1	2	3	4		
Plug winding plug		1	2	3	4	5	6
Signal lead wire		NC	SD+	SD-	Vcc	GND	Shield

\*The above products are only representative products, and the derived products can be made according to customer requirements.

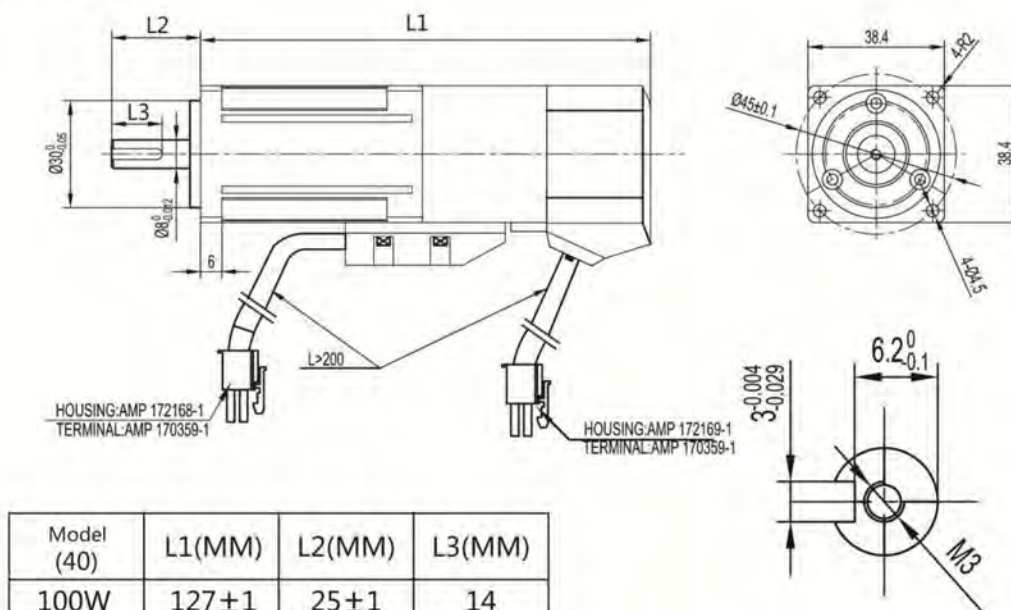


### 40 series (No brake)

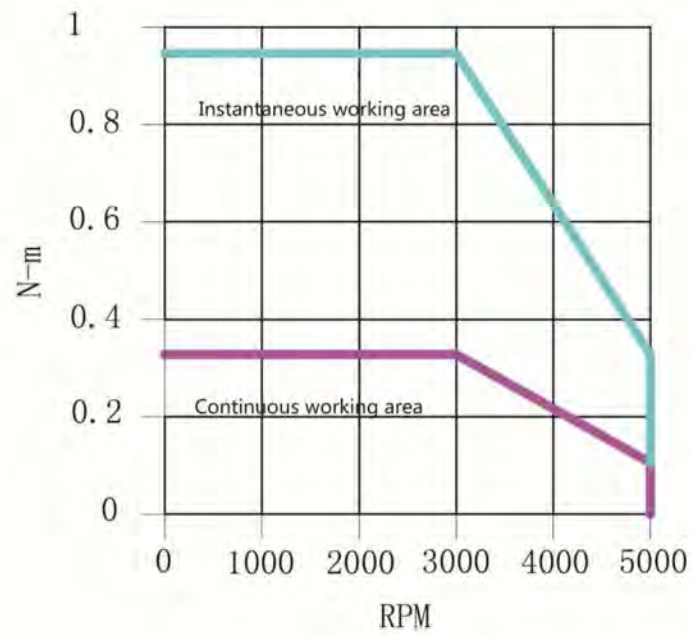


Model (40)	L1(MM)	L2(MM)	L3(MM)
100W	91.5±1	25±1	14

### 40 series (brake)



Model (40)	L1(MM)	L2(MM)	L3(MM)
100W	127±1	25±1	14





### General Specifications

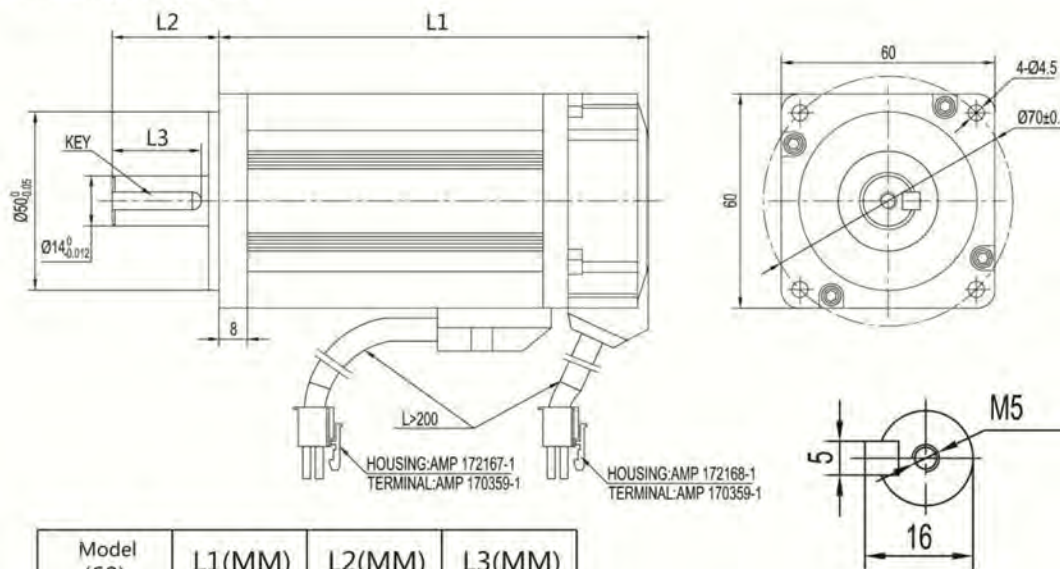
The operating	-20℃~+50℃
Insulation class	F
Safe class	IP65

### Electrical Specifications

Model	KSX60	KSX60	KSX60				
Rated power(W)	100	200	400				
Rated voltage(V)	220	220	220				
Rated current(A)	1.1	1.6	2.6				
Rated speed(rpm)	3000	3000	3000				
Rated torque(N.m)	0.32	0.64	1.3				
Max torque(N.m)	0.96	1.92	3.9				
Voltage constant(V/1000rpm)	19	37	32				
Torque coefficient(N.m/A)	0.265	0.45	0.48				
Rotor inertia(Kg.m <sup>2</sup> )	0.22 *10 <sup>-4</sup>	0.45*10 <sup>-4</sup>	0.67 *10 <sup>-4</sup>				
Line-line resistance(Ω)	11	8.8	3.7				
Line-line inductance(mH)	8.5	24	12				
Mechanical time-constant(Ms)	2	2	2				
Weight	0.5kg	0.8kg	1kg				
Motor winding plug	Winding lead wire	U(red)	V(white)	W(black)	PE(yellow/green)		
	Plug serial number	1	2	3	4		
Plug winding plug		1	2	3	4	5	6
Signal lead wire		NC	SD+	SD-	Vcc	GND	Shield

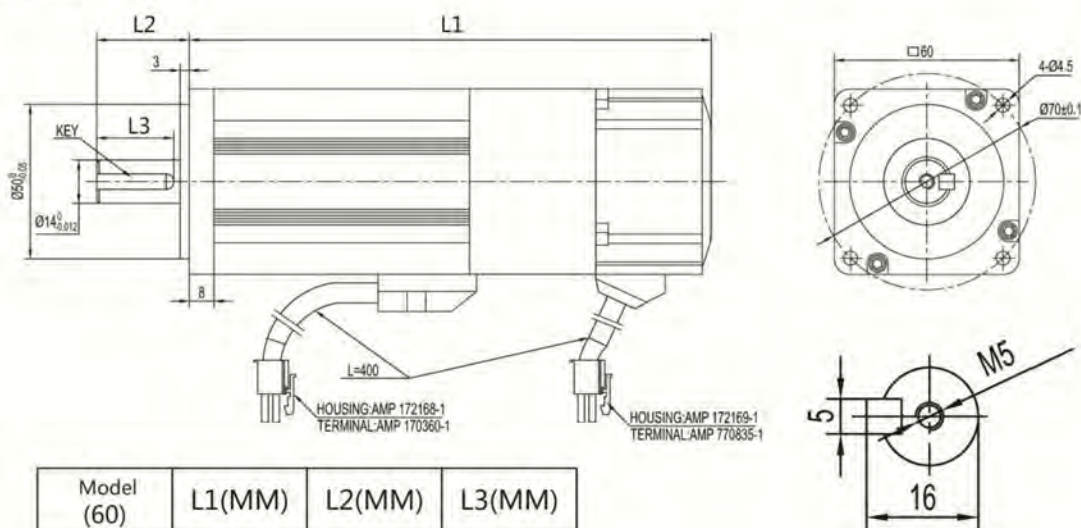
\*The above products are only representative products, and the derived products can be made according to customer requirements.

## 60 series (No brake)



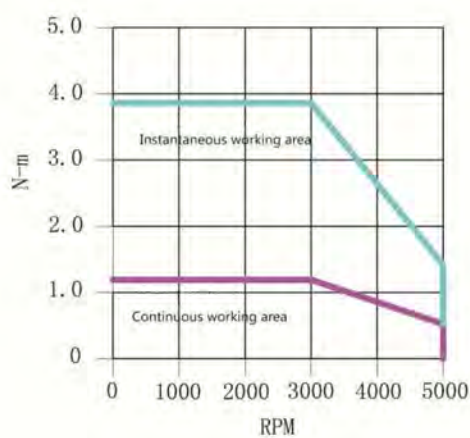
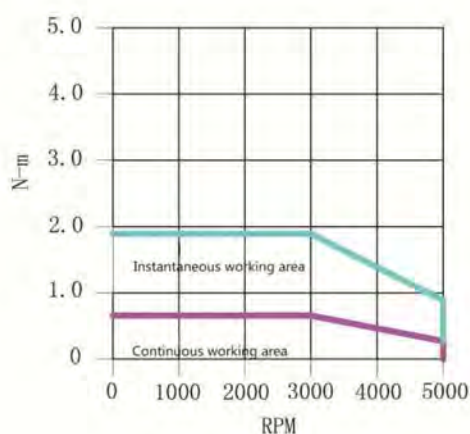
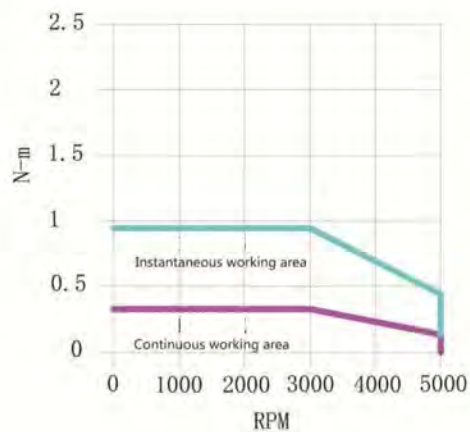
Model (60)	L1(MM)	L2(MM)	L3(MM)
100W	71±1	30±1	25
200W	116±1	30±1	25
400W	121±1	30±1	25

## 60 series (brake)



Model (60)	L1(MM)	L2(MM)	L3(MM)
100W	130±1	30±1	25
200W	150±1	30±1	25
400W	170±1	30±1	25







## General Specifications

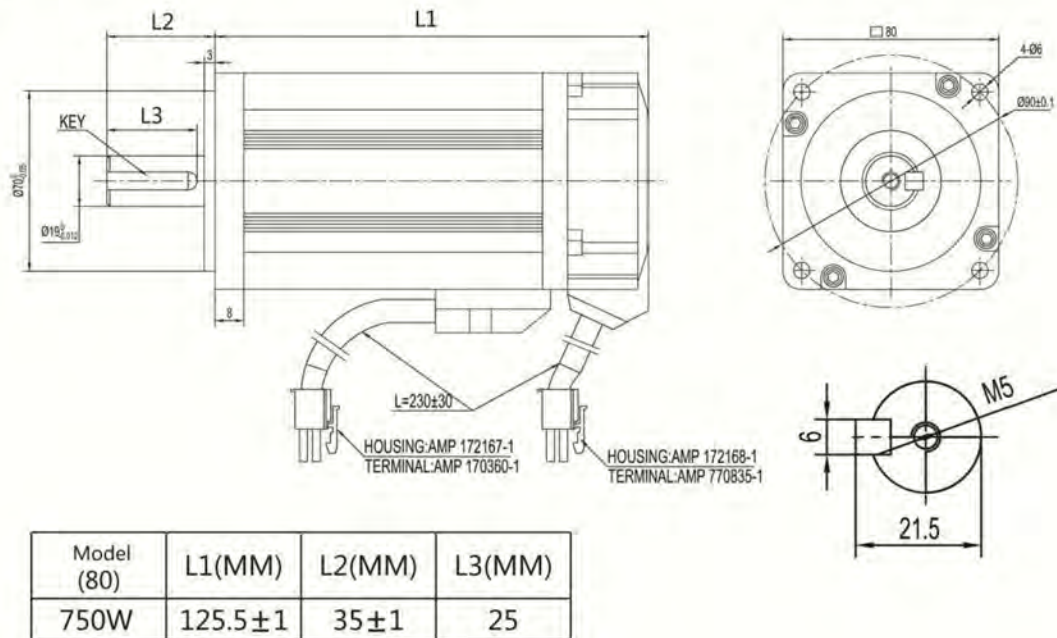
The operating	-20 °C ~ +50 °C
Insulation class	F
Safe class	IP65

## Electrical Specifications

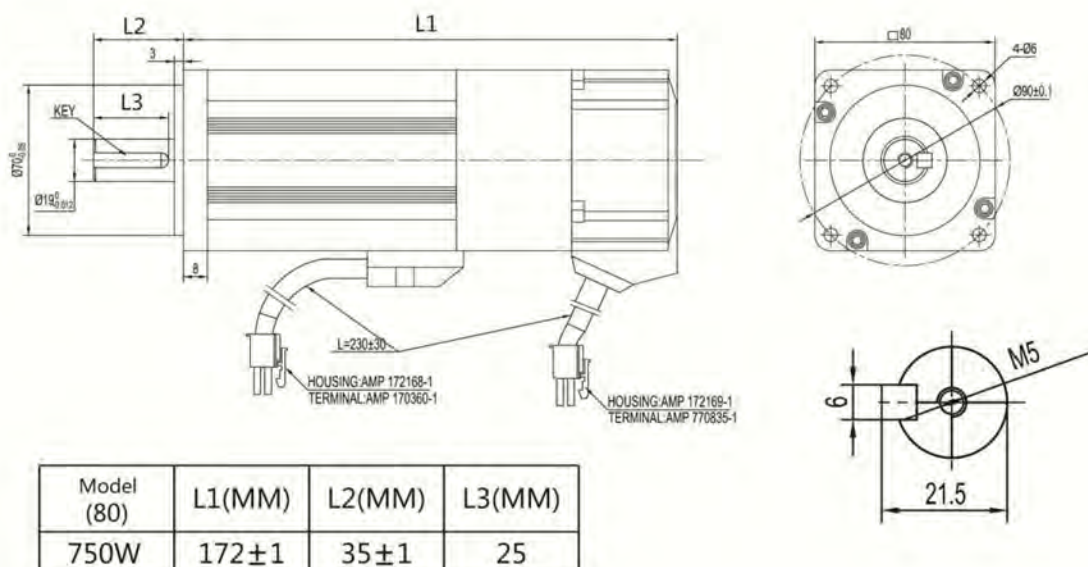
Model		KSX80					
Rated power(W)		750					
Rated voltage(V)		220					
Rated current(A)		4.0					
Rated speed(rpm)		3000					
Rated torque(N.m)		2.4					
Max torque(N.m)		7.2					
Voltage constant(V/1000rpm)		39					
Torque coefficient(N.m/A)		0.6					
Rotor inertia(Kg.m <sup>2</sup> )		1.51 * 10 <sup>-4</sup>					
Line-line resistance(Ω)		1.5					
Line-line inductance(mH)		11					
Weight		3.3kg					
Mechanical time-constant(Ms)		2					
Motor winding plug	Winding lead wire	U(red)	V(white)	W(black)	PE(yellow/green)		
	Plug serial number	1	2	3	4		
Plug winding plug		1	2	3	4	5	6
Signal lead wire		NC	SD+	SD-	Vcc	GND	Shield

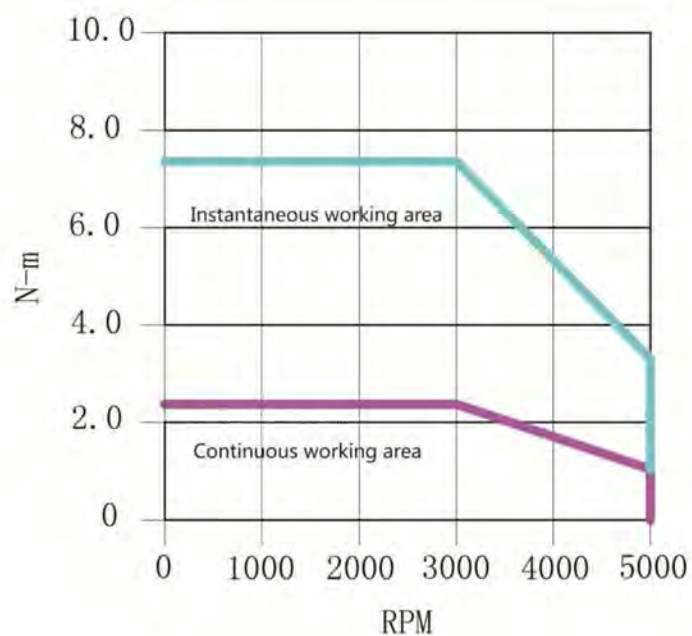
\*The above products are only representative products, and the derived products can be made according to customer requirements.

## 80 series (No brake)



## 80 series (brake)









### General Specifications

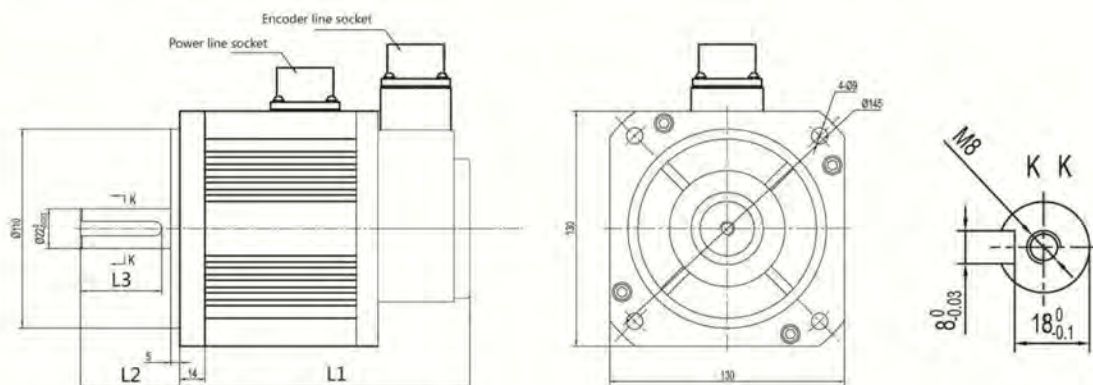
The operating	-20℃~+50℃
Insulation class	F
Safe class	IP65

### Electrical Specifications

Model	KSX130	KSX130	KSX130					
Rated power(W)	1000	1500	2000					
Rated voltage(V)	220	220	220					
Rated current(A)	5.8	8.8	10					
Rated speed(rpm)	2000	2000	2000					
Rated torque(N.m)	4.7	7.2	10					
Max torque(N.m)	14.1	21.6	30					
Voltage constant(V/1000rpm)	55	62	62					
Torque coefficient(N.m/A)	0.85	0.85	1					
Rotor inertia(Kg.m <sup>2</sup> )	4.5*10 <sup>-4</sup>	6.7*10 <sup>-4</sup>	8.7*10 <sup>-4</sup>					
Line-line resistance(Ω)	1.2	0.8	0.6					
Line-line inductance(mH)	12	8.4	8					
Mechanical time-constant(Ms)	2	2	2					
Weight	7.5kg	9.5kg	11.5kg					
Motor winding plug	Winding lead wire	U(red)	V(white)	W(black)	PE(yellow/green)			
	Plug serial number	A	B	C	PE			
Plug winding plug		H	G	T	S	K	L	J
Signal lead wire	+5V	GND	BAT+	BAT-	SD+	SD-	Shield	

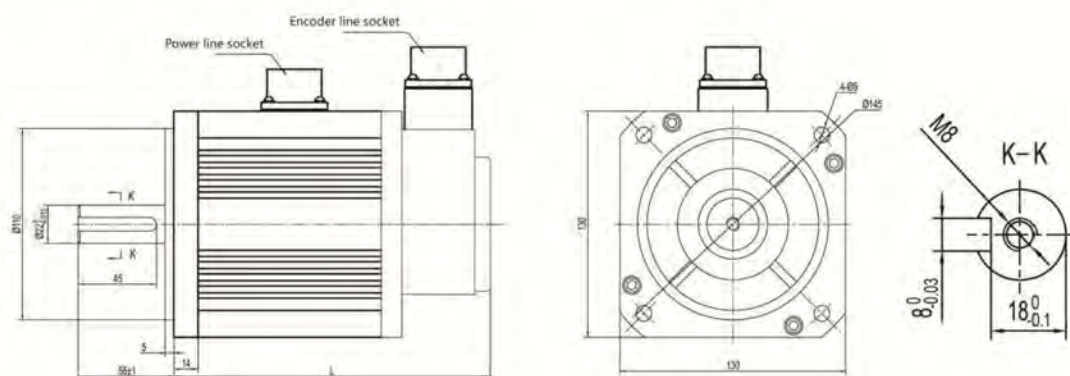
\*The above products are only representative products, and the derived products can be made according to customer requirements.

### 130 series (No brake)

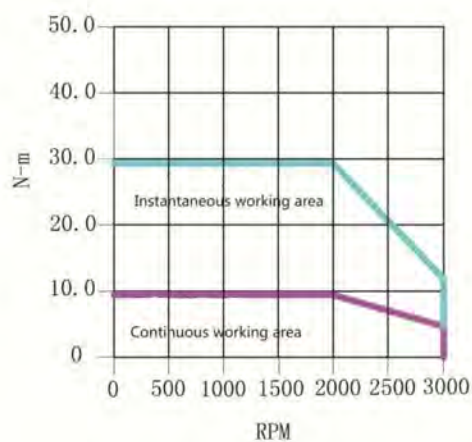
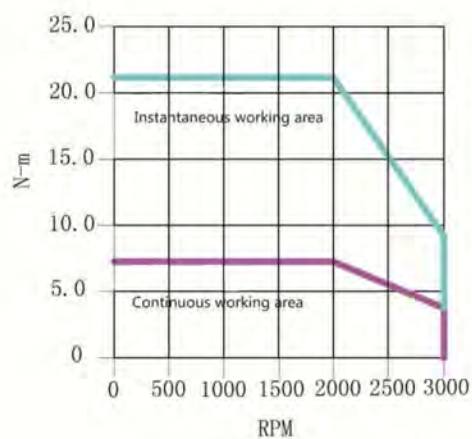
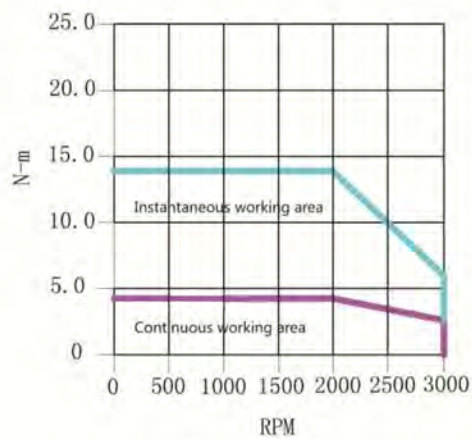


Model (130)	L1(MM)	L2(MM)	L3(MM)
1000W	143.5±1	55±1	45
1500W	159±1	55±1	45
2000W	171±1	55±1	45

### 130 series (brake)



Model (130)	L1(MM)	L2(MM)	L3(MM)
1000W	182.5±1	55±1	45
1500W	196±1	55±1	45
2000W	210±1	55±1	45





### General Specifications

The operating	-20℃~+50℃
Insulation class	F
Safe class	IP65

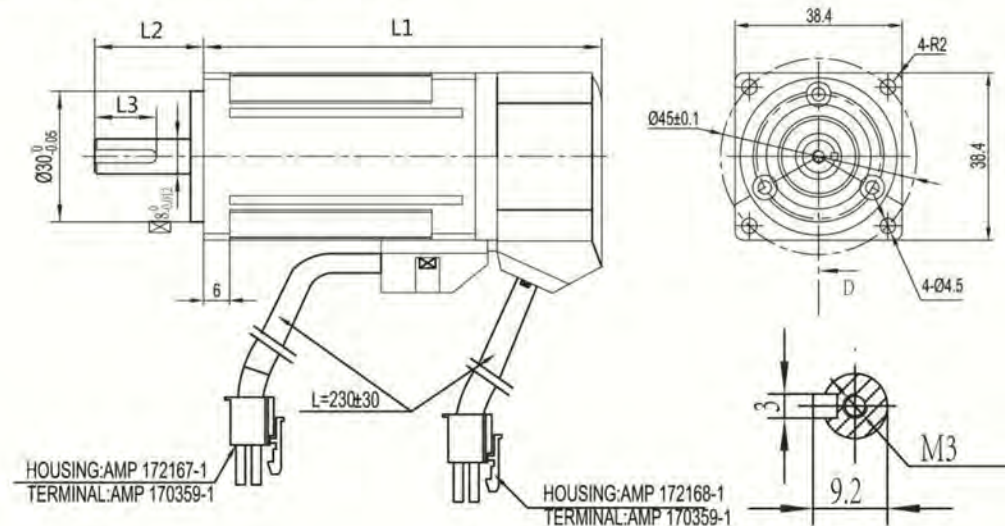
### Electrical Specifications

Model	KSX60								
Rated power(W)	100								
Rated voltage(V)	24								
Rated current(A)	5.6								
Rated speed(rpm)	3000								
Rated torque(N.m)	0.32								
Max torque(N.m)	0.9								
Voltage constant(V/1000rpm)	6								
Torque coefficient(N.m/A)	0.057								
Rotor inertia(Kg.m <sup>2</sup> )	0.045*10 <sup>-3</sup>								
Line-line resistance(Ω)	0.6								
Line-line inductance(mH)	0.86								
Mechanical time-constant(Ms)	1.08								
Weight	0.5kg								
Motor winding plug	Winding lead wire	black	blue	red	brown/black	brown	blue/black	gray	
	Plug serial number	1	3	4	5	6	7	9	
Plug winding plug	1	2	3	4	5	6	7	8	9
Signal lead wire	OV	/	SD+	+5V	BAT-	BAT+	SD-	/	GND

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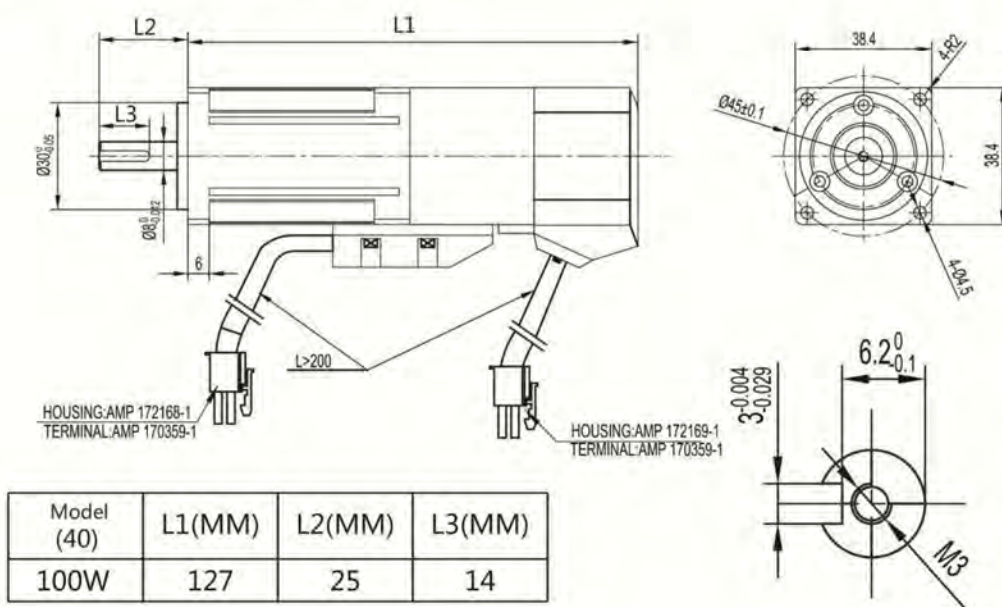


40 low voltage series (No brake)

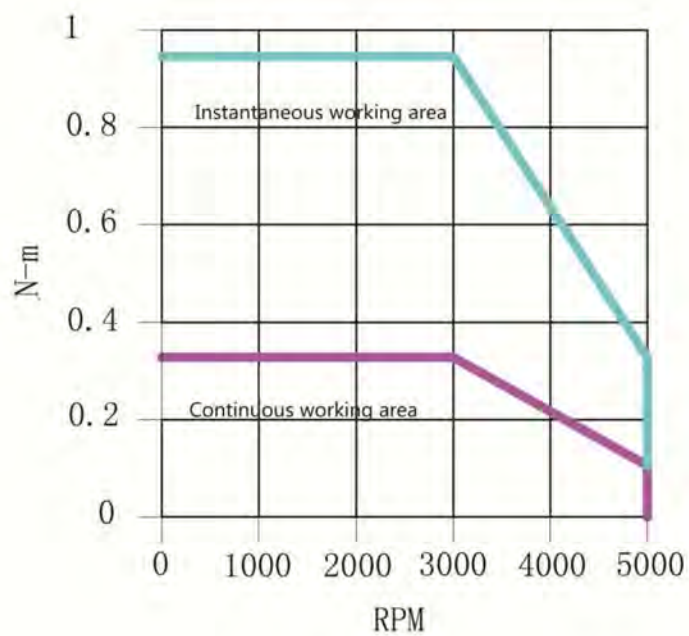


Model (40)	L1(MM)	L2(MM)	L3(MM)
100W	97	25	14

40 low voltage series (brake)



Model (40)	L1(MM)	L2(MM)	L3(MM)
100W	127	25	14





### General Specifications

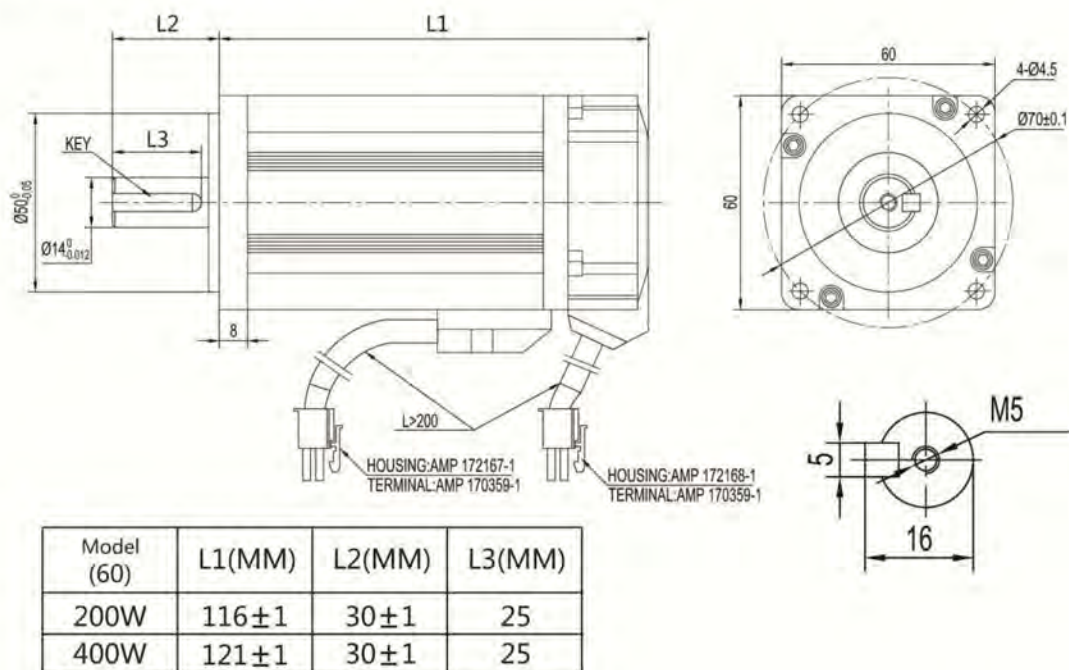
The operating	-20 °C ~ +50 °C
Insulation class	F
Safe class	IP65

### Electrical Specifications

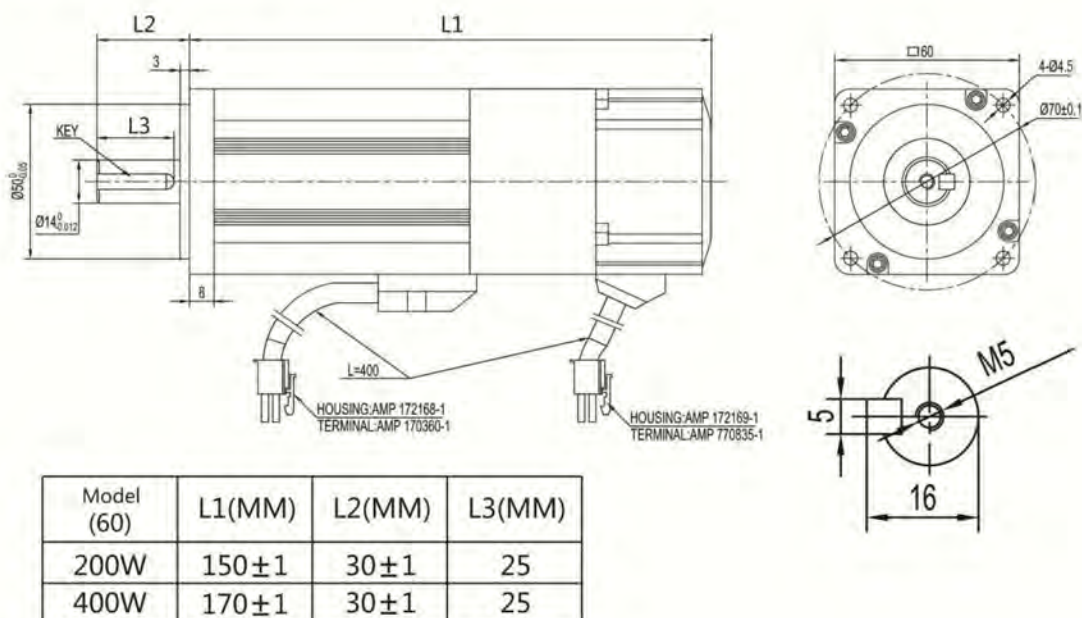
Model	KSX60	KSX60													
Rated power(W)	200	400													
Rated voltage(V)	36	48													
Rated current(A)	9	12													
Rated speed(rpm)	3000	3000													
Rated torque(N.m)	0.64	1.27													
Max torque(N.m)	1.92	3.81													
Voltage constant(V/1000rpm)	-----	-----													
Torque coefficient(N.m/A)	-----	-----													
Rotor inertia(Kg.m <sup>2</sup> )	0.32 *10 <sup>-4</sup>	0.45 *10 <sup>-4</sup>													
Line-line resistance(Ω)	0.25	0.29													
Line-line inductance(mH)	0.5	0.65													
Mechanical time-constant(Ms)	1.3	1.3													
Weight	1.5kg	1.9kg													
Motor winding plug	Winding lead wire    black red orange blue brown yellow green gray orange/white blue/white brown/white yellow/white green/white gray/white														
	Plug serial number		1	2	3	4	5	6	7	8	10	11	12	13	14
Plug winding plug	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Signal lead wire	GND	+5V	W+	V+	U+	Z+	B+	A+	TM	W-	V-	U-	Z-	B-	A-

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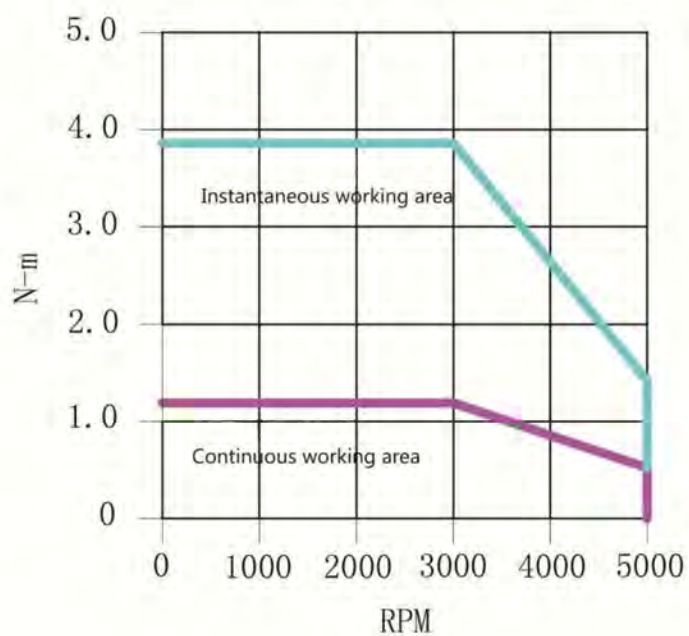
### 60 low voltage series(NO brake)



### 60 low voltage series (brake)









### General Specifications

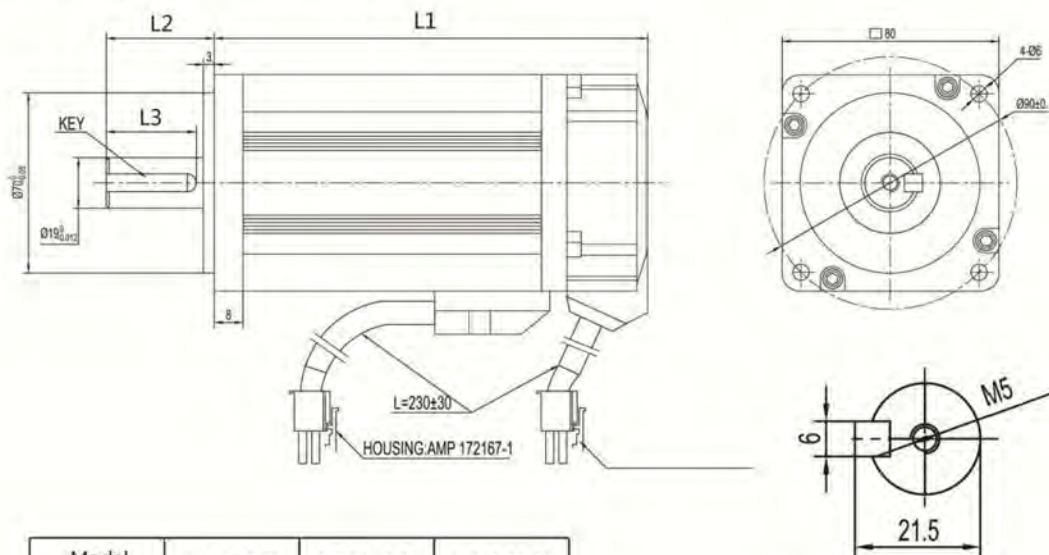
The operating	-20℃~+50℃
Insulation class	F
Safe class	IP65

### Electrical Specifications

Model	KSX80														
Rated power(W)	750														
Rated voltage(V)	48														
Rated current(A)	20														
Rated speed(rpm)	3000														
Rated torque(N.m)	2.38														
Max torque(N.m)	7.2														
Voltage constant(V/1000rpm)	8														
Torque coefficient(N.m/A)	0.132														
Rotor inertia(Kg.m <sup>2</sup> )	1.51*10 <sup>-3</sup>														
Line-line resistance(Ω)	0.15														
Line-line inductance(mH)	0.5														
Weight	0.5kg														
Mechanical time-constant(Ms)	1.1														
Motor winding plug	Winding lead wire    black/ red/ orange/ blue/ brown/ yellow/ green/ gray/ orange/white/ blue/white/ brown/white/ yellow/white/ green/white/ gray/white/														
	Plug serial number	1	2	3	4	5	6	7	8	10	11	12	13	14	15
Plug winding plug	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Signal lead wire	GND	+5V	W+	V+	U+	Z+	B+	A+	TM	W-	V-	U-	Z-	B-	A-

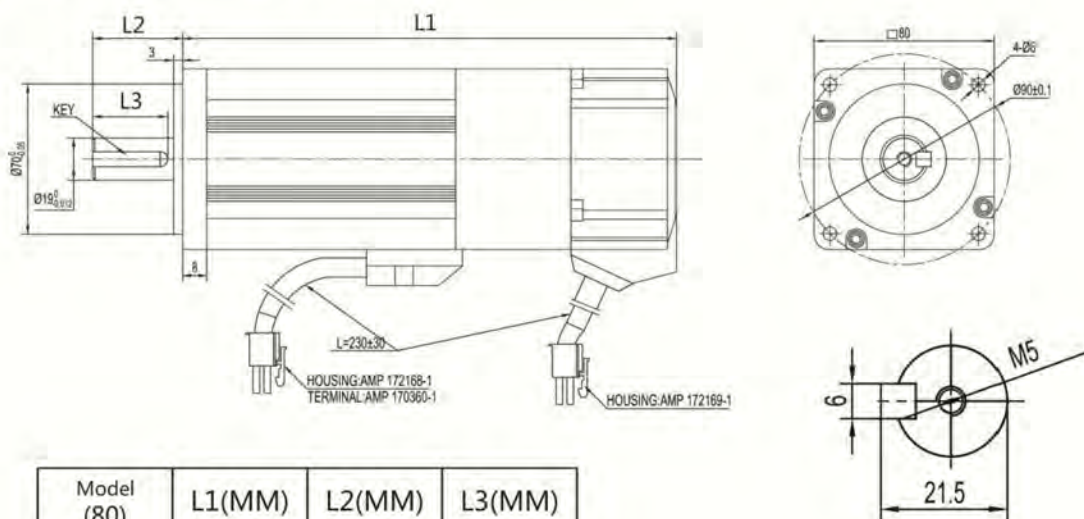
\*The above products are only representative products, and the derived products can be made according to customer requirements.

### 80 low voltage series(NO brake)

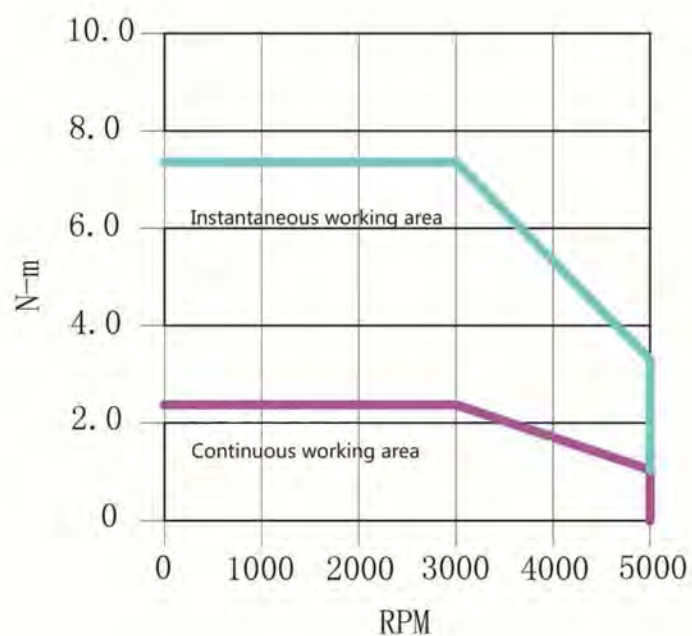


Model (80)	L1(MM)	L2(MM)	L3(MM)
750W	125±1	35±1	25

### 80 low voltage series (brake)



Model (80)	L1(MM)	L2(MM)	L3(MM)
750W	172±1	35±1	25







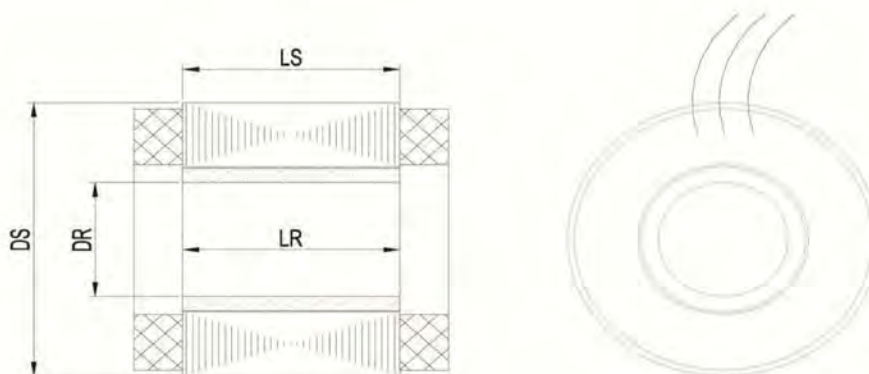
### Model description

- For example:
- FSM : On behalf of the frameless servo motor
- 58 : On behalf of the stator outside diameter 57.5
- 20: Represents stator height 20

### Electrical Specifications

Model					
Power(W)	100	200	400	350	750
Stator Lam Dia(DS)	57.5	57.5	57.5	77	77
Length of stator core(LS)	10	20	40	30	45
Inner diameter of rotor core(DR)	24	24	24	32.65	32.65
Length of rotor core(LR)	10	20	40	30	45

### Installation dimension



\*The above products are only representative products, and the derived products can be made according to customer requirements.

## ■ Features

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- The stator epoxy is vacuum sealed, the heat dissipation and insulation performance are good, and the windings are effectively protected, which is suitable for all kinds of harsh environments.
- The stator adopts splicing structure, using excellent silicon steel material, super high slot full rate, reducing heating.
- The rotor is made of high-performance rare earth materials with extremely low cogging torque.
- Insulation grade H level
- Can be used for joint robot joint



# SERVO MOTOR SERIE



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