

Focus on High Performance Full Function Servo System



**LEAD-MOTION**

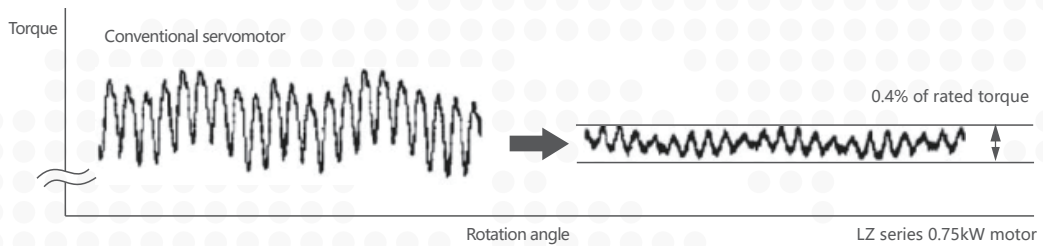


# High Performance Servomotor

**1**

## Extremely low cogging torque

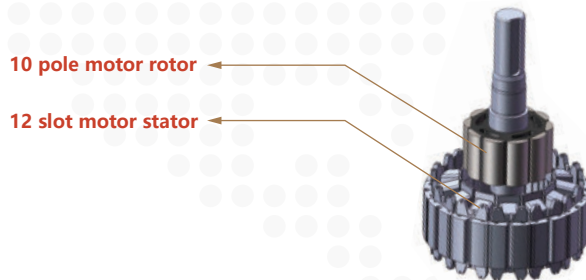
By innovative design of 10 pole rotor and 12 slot stator, the motor cogging torque is reduced 65%. The new LZ series is very suitable for high precision machine or convenient transmission system and other low vibration required applications. The overall efficiency is increased more than 20% with low loss, miniaturization and light weight.



**2**

## Optimised winding technology

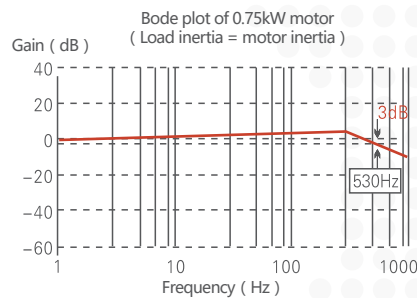
The stator of the servomotor adopts a new splicing method, which reduces the temperature rise of the motor, improves the electromagnetic characteristics, reduces the cost, but higher efficiency and reliability.



**3**

## Fast response and high precision

High precision positioning and speed stability are realized by the application of high class DSP and high resolution encoder, 500Hz speed response frequency can be also guaranteed.



**4**

## Multiple encoder options and signal transmission modes

2500PPR and 23/24bit encoder are easily to choose for meeting customer demands, in the meanwhile, we support customized serial or parallel encoders.



## Order Code

# LZ-0601-LB30-D2MD-NEEN

LZ Series

Flange Size

060-60mm
080-80mm
130-130mm
180-180mm

Length Code

Inertia of the Motor

L-Low inertia
M-Middle inertia
H-High inertia

Rated Voltage

B-220V AC
C-380V AC

Rated Speed

15-1500rpm
20-2000rpm
30-3000rpm

Thermal Protection

N-None
P-PTC
K-KTY

Seal

N-None
E-With oil seal

Shaft key

N-None
E-With feather key

Brake

N-None
E-With brake

Matching Plug

D-Connector
W-Aviation plug

Encoder

T25-Wire saving TTL 2500ppr
D2M-Tamaga 23bit single-turn
NKN-Nikon 24bit single-turn

\* Support multi-turn encoder by using battery with cable

## Technical Data

- Self-cooling, rated voltage 200~250VAC

Motor type			LZ-0601-LB □60mm	LZ-0602-LB □60mm	LZ-0801-LB □80mm	LZ-0802-LB □80mm
Stall torque	$M_0$	Nm	0.64	1.27	2.39	3.18
Stall current	$I_0$	A	1.9	2.8	4.0	4.9
<b>Rated data</b>						
Rated power	$P_N$	kW	0.2	0.4	0.75	1
Rated speed	$n_N$	r/min	3000	3000	3000	3000
Rated torque	$M_N$	Nm	0.64	1.27	2.39	3.18
Rated current	$I_N$	A	1.9	2.8	4.0	4.9
Rated frequency	$f_N$	Hz	250	250	250	250
<b>Limit data</b>						
Maximum speed	$n_{Max}$	r/min	5000	5000	5000	4500
Peak torque	$M_{Max}$	Nm	1.92	3.80	7.20	9.54
Peak current	$I_{Max}$	A	5.7	8.4	12.0	14.7
<b>Basic data</b>						
Number of pole pairs			5	5	5	5
EMF constant	$K_E$	V/Krpm	22.9	29.3	39.8	43.4
Torque constant (20°C)	$K_T$	Nm/A	0.337	0.453	0.597	0.649
Winding resistor (20°C)	$R_{P-P}$	$\Omega$	2.25	1.65	0.70	0.55
Winding inductance (20°C)	$L_{P-P}$	mH	5.21	4.00	3.02	2.42
Rotor moment of inertia (without brake)	$J$	kgcm <sup>2</sup>	0.16	0.28	1.00	1.20
Rotor moment of inertia (with brake)	$J_b$	kgcm <sup>2</sup>	0.18	0.30	1.10	1.30
Mass of the motor (without brake)	$m$	kg	1.19	1.65	3.08	4.25
Mass of the motor (with brake)	$m_b$	kg	1.5	2.0	4.0	5.0
Protection			IP65	IP65	IP65	IP65



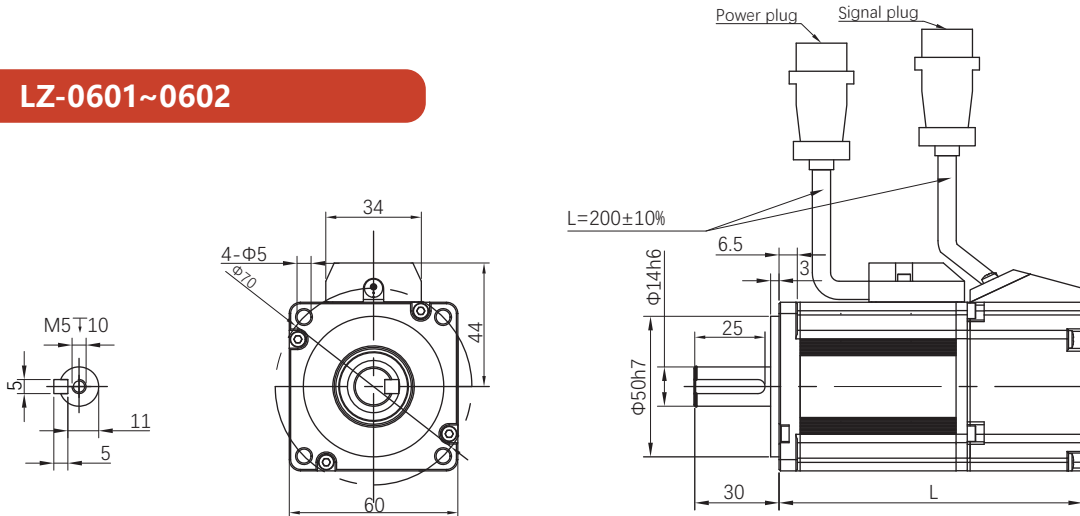
## Technical Data

- Self-cooling, rated voltage 200~250VAC

Motor type				LZ-0602-MB	LZ-0801-MB	LZ-0802-MB	LZ-1301-MB	LZ-1302-MB	LZ-1302-HB
				□ 60mm	□ 80mm	□ 80mm	□ 130mm	□ 130mm	□ 130mm
Stall torque	$M_0$	Nm		1.40	2.86	3.34	5.25	7.52	7.52
Stall current	$I_0$	A		3.1	4.8	5.1	6.6	8.6	8.6
<b>Rated data</b>									
Rated power	$P_N$	kW		0.4	0.75	1	1	1.5	1.5
Rated speed	$n_N$	r/min		3000	3000	3000	2000	2000	2000
Rated torque	$M_N$	Nm		1.27	2.39	3.18	4.77	7.16	7.16
Rated current	$I_N$	A		2.8	4.0	4.9	6.0	8.2	8.2
Rated frequency	$f_N$	Hz		250.0	250.0	250.0	166.7	166.7	166.7
<b>Limit data</b>									
Maximum speed	$n_{Max}$	r/min		5000	5000	4500	3000	3000	3000
Peak torque	$M_{Max}$	Nm		3.80	7.20	9.54	14.30	21.50	21.50
Peak current	$I_{Max}$	A		8.4	12.0	14.7	18.0	24.6	24.6
<b>Basic data</b>									
Number of pole pairs				5	5	5	5	5	5
EMF constant	$K_E$	V/Krpm		29.3	39.8	43.4	51.2	55.0	55.0
Torque constant (20°C)	$K_T$	Nm/A		0.453	0.597	0.649	0.795	0.873	0.873
Winding resistor (20°C)	$R_{P-P}$	$\Omega$		1.65	0.70	0.55	0.48	0.35	0.35
Winding inductance (20°C)	$L_{P-P}$	mH		4.00	3.02	2.42	3.32	2.54	2.54
Rotor moment of inertia (without brake)	$J$	kgcm <sup>2</sup>		0.67	1.50	2.38	4.60	6.70	20.0
Rotor moment of inertia (with brake)	$J_b$	kgcm <sup>2</sup>		0.69	1.60	2.48	6.60	8.70	22.0
Mass of the motor (without brake)	$m$	kg		1.74	3.21	4.35	6.33	7.75	9.01
Mass of the motor (with brake)	$m_b$	kg		2.10	4.10	5.10	9.00	10.50	11.50
Protection				IP65	IP65	IP65	IP65	IP65	IP65

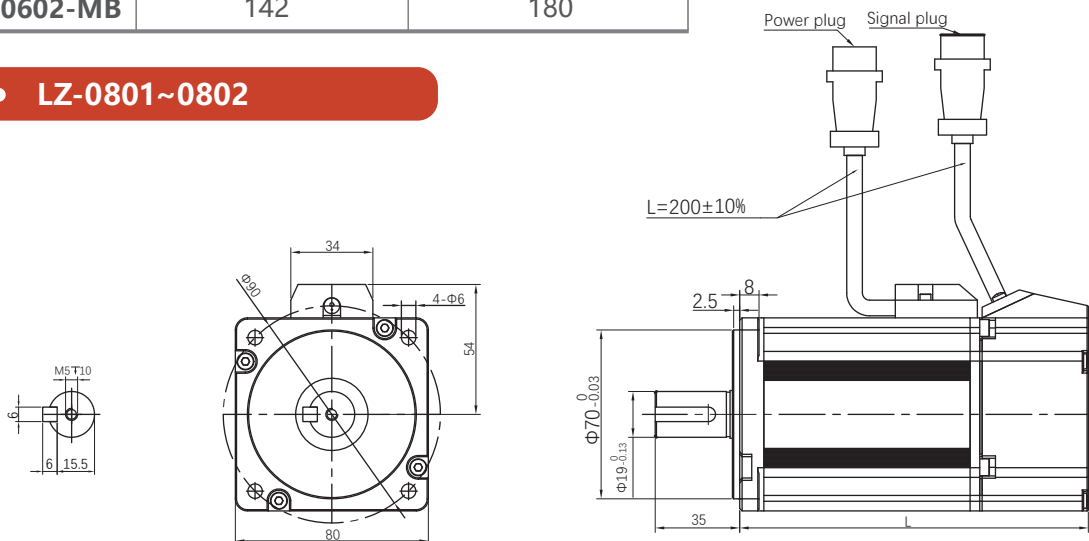
## Dimensional Sketch Unit : mm

### • LZ-0601~0602



Motor type	Motor length (without brake)	Motor length (with brake)
LZ-0601-LB	108	146
LZ-0602-LB	133	171
LZ-0602-MB	142	180

### • LZ-0801~0802

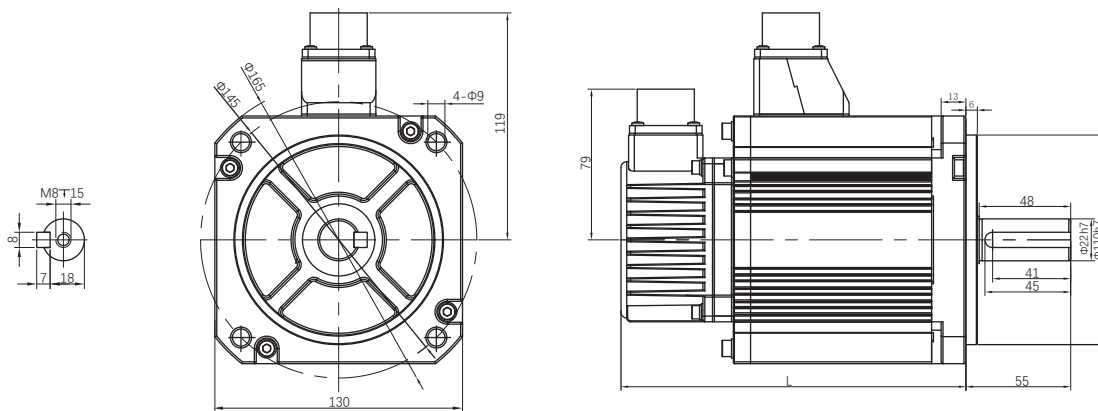


Motor type	Motor length (without brake)	Motor length (with brake)
LZ-0801-LB	144.5	185.5
LZ-0801-MB	154.5	195.5
LZ-0802-LB	159.5	200.5
LZ-0802-MB	159.5	200.5



## Dimensional Sketch Unit : mm

- LZ-1301~1302



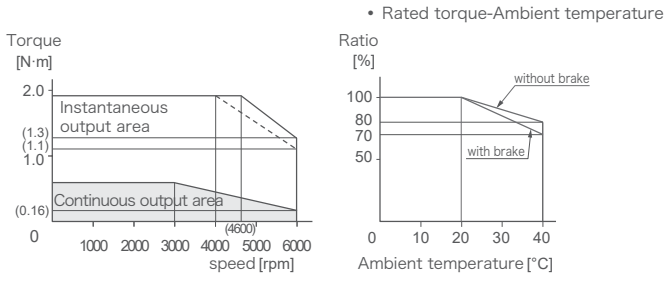
Motor type	Motor length (without brake)	Motor length (with brake)
LZ-1301-MB	163.5	197.5
LZ-1302-MB	181.0	215.0
LZ-1302-HB	198.5	232.5

# Characteristics

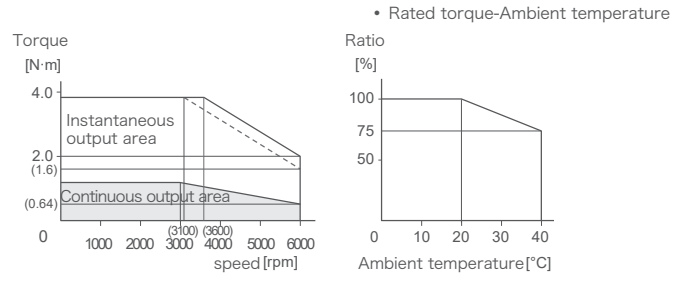


Note: the dotted line shows when the power supply voltage dropped by 10%

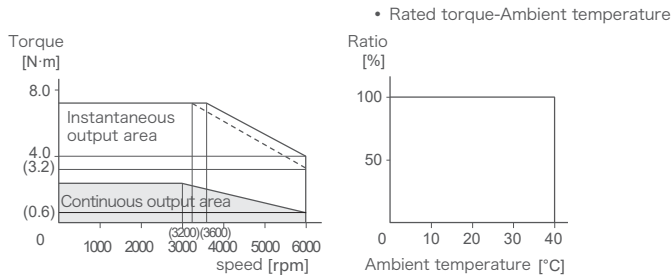
## LZ-0601-LB Characteristics



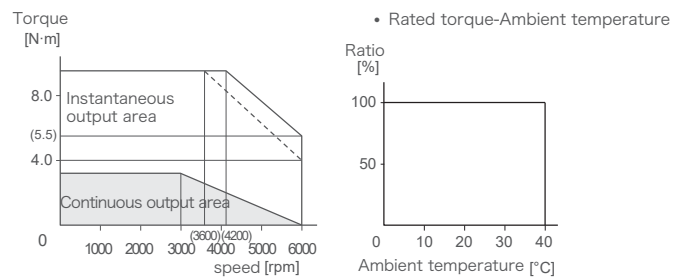
## LZ-0602-LB Characteristics



## LZ-0801-LB Characteristics



## LZ-0802-LB Characteristics

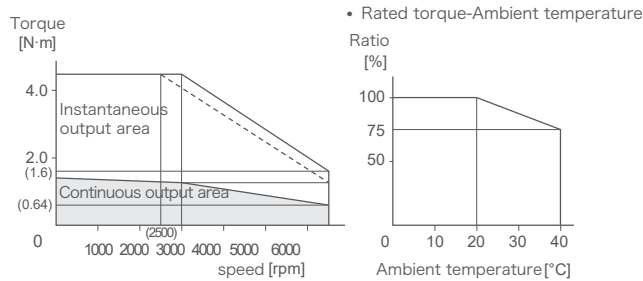




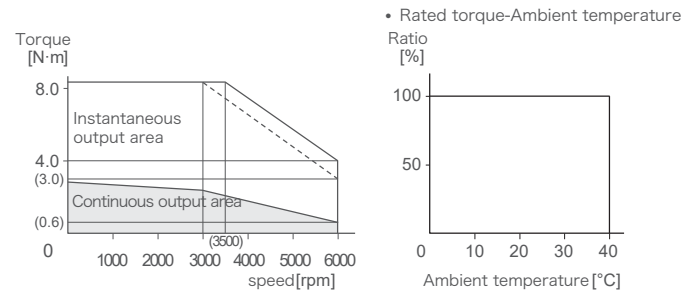


# Characteristics

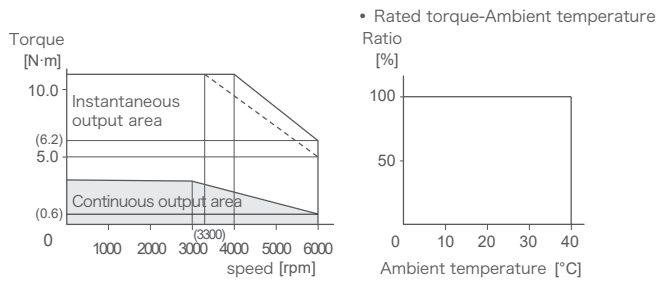
## LZ-0602-MB Characteristics



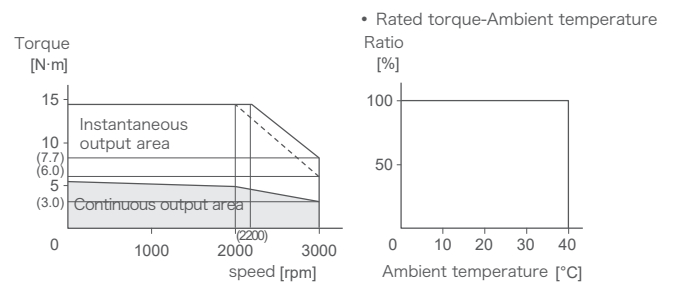
## LZ-0801-MB Characteristics



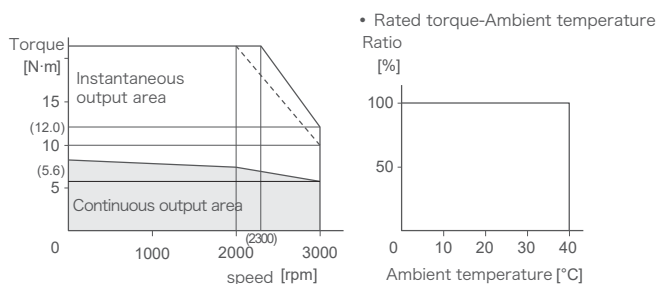
## LZ-0802-MB Characteristics



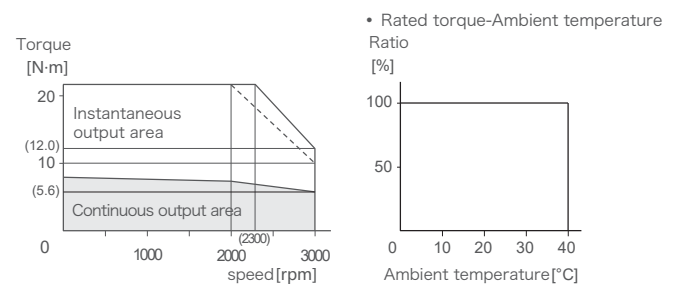
## LZ-1301-MB Characteristics



## LZ-1302-MB Characteristics



## LZ-1302-HB Characteristics



## Technical Data

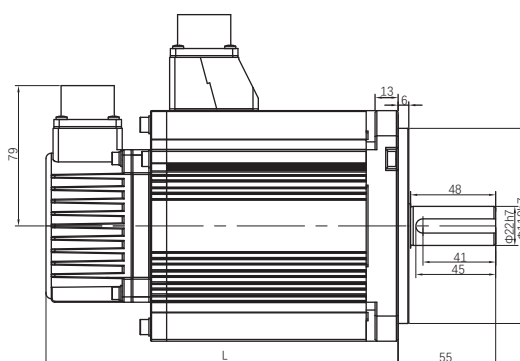
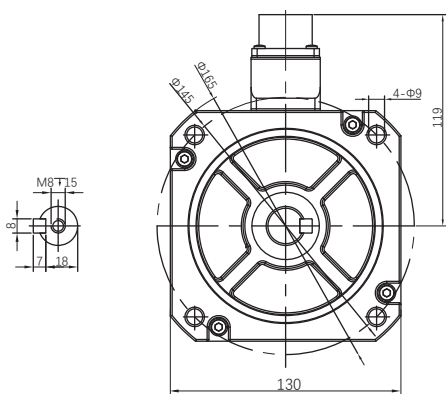
- Self-cooling, rated voltage 380~480VAC

Motor type			LZ-1301-MC □130mm	LZ-1302-MC □130mm	LZ-1303-MC □130mm	LZ-1304-MC □130mm
Stall torque	$M_0$	Nm	5.72	8.59	11.46	17.16
Stall current	$I_0$	A	3.4	5.6	7.2	11.2
<b>Rated data</b>						
Rated power	$P_N$	kW	1	1.5	2	3
Rated speed	$n_N$	r/min	2000	2000	2000	2000
Rated torque	$M_N$	Nm	4.77	7.16	9.55	14.30
Rated current	$I_N$	A	2.8	4.7	6.0	9.3
Rated frequency	$f_N$	Hz	166.7	166.7	166.7	166.7
<b>Limit data</b>						
Maximum speed	$n_{Max}$	r/min	3000	3000	3000	3000
Peak torque	$M_{Max}$	Nm	14.3	21.5	28.65	42.9
Peak current	$I_{Max}$	A	8.4	14.1	18.0	27.9
<b>Basic data</b>						
Number of pole pairs			5	5	5	5
EMF constant	$K_E$	V/Krpm	51.2	55.0	111.6	102.0
Torque constant (20°C)	$K_T$	Nm/A	0.795	0.873	1.591	1.537
Winding resistor (20°C)	$R_{P-P}$	$\Omega$	0.48	0.35	0.85	0.34
Winding inductance (20°C)	$L_{P-P}$	mH	3.32	2.54	7.52	3.45
Rotor moment of inertia (without brake)	$J$	kgcm <sup>2</sup>	4.6	6.7	8.7	15.1
Rotor moment of inertia (with brake)	$J_b$	kgcm <sup>2</sup>	6.6	8.7	10.7	17.1
Mass of the motor (without brake)	$m$	kg	6.33	7.75	8.62	13.09
Mass of the motor (with brake)	$m_b$	kg	9.0	10.5	11.5	13.5
Protection			IP65	IP65	IP65	IP65



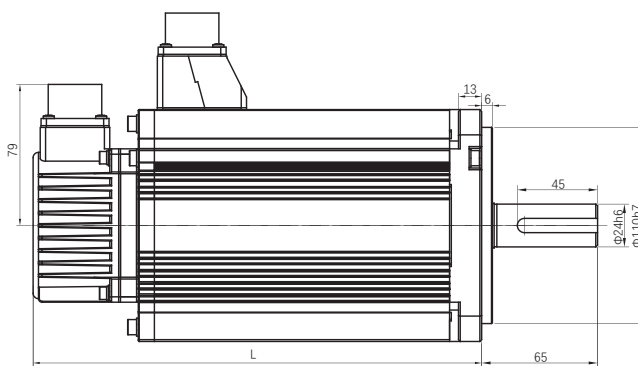
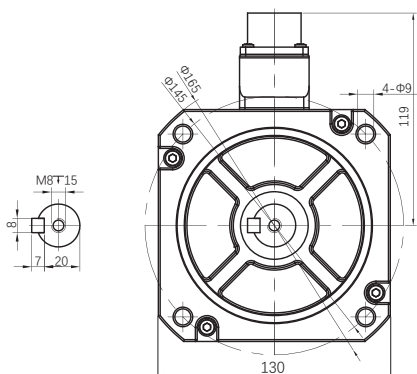
# Dimensional Sketch Unit : mm

## LZ-1301~1303



Motor type	Motor length (without brake)	Motor length (with brake)
LZ-1301-MC	163.5	197.5
LZ-1302-MC	181.0	215.0
LZ-1303-MC	198.5	232.5

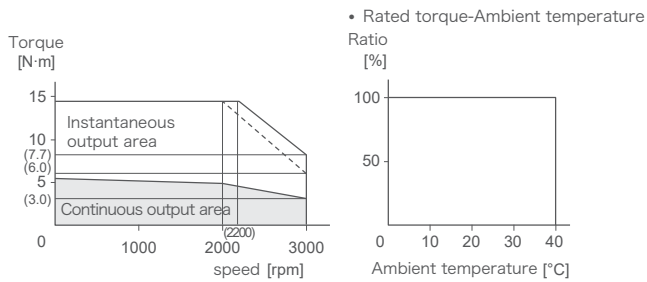
## LZ-1304



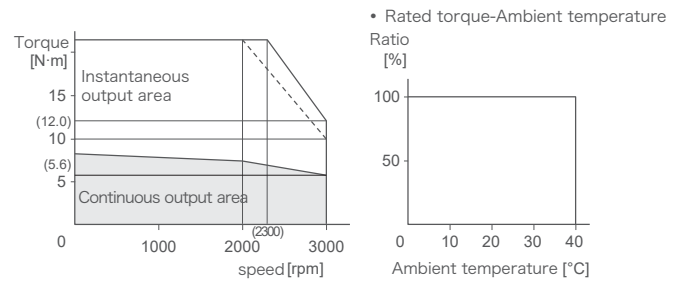
Motor type	Motor length (without brake)	Motor length (with brake)
LZ-1304-MC	251.5	285.5

# Characteristics

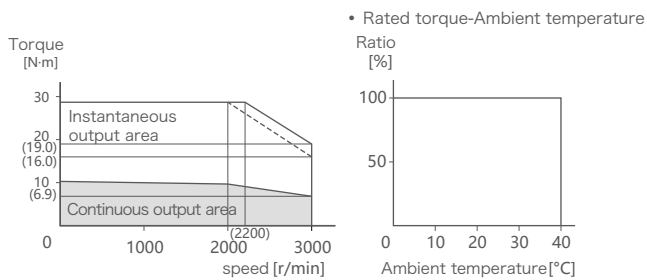
## LZ-1301-MC Characteristics



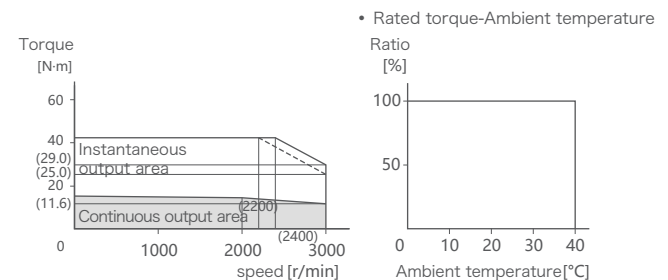
## LZ-1302-MC Characteristics



## LZ-1303-MC Characteristics



## LZ-1304-MC Characteristics





## Technical Data

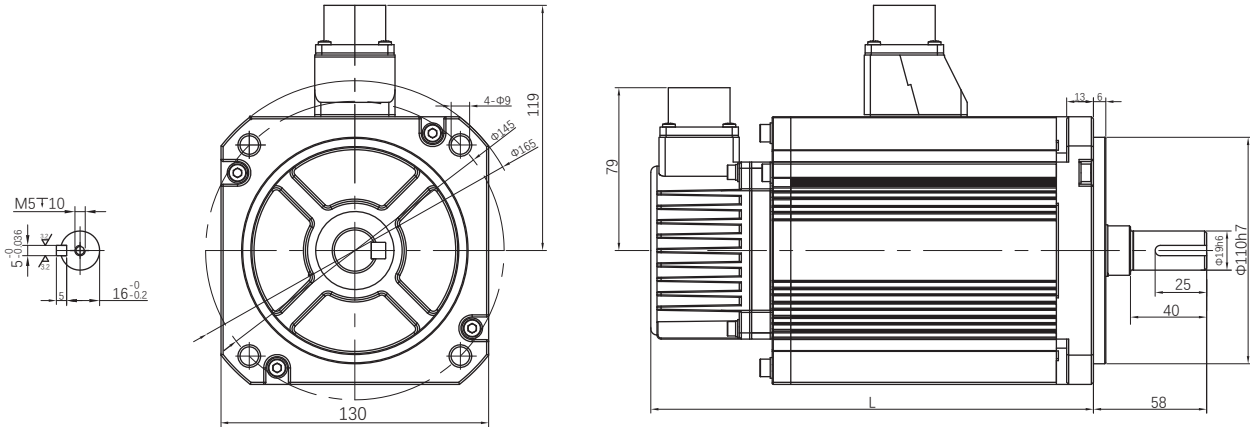
### • Self-cooling, rated voltage 380~480VAC

Note: You can choose three-phase 220V voltage supply just for LZ-1301. Please consult the manufacturer for specific parameters.

Motor type			LZ-1301-HC	LZ-1302-HC	LZ-1303-HC	LZ-1801-HC	LZ-1802-HC	LZ-1803-HC	LZ-1804-HC
			□130mm	□130mm	□130mm	□180mm	□180mm	□180mm	□180mm
Stall torque	$M_0$	Nm	6.5	10.3	13.8	22.1	34.1	42.0	57.6
Stall current	$I_0$	A	4.2	6.2	8.3	12.5	18.6	24.0	32.8
<b>Rated data</b>									
Rated power	$P_N$	kW	0.85	1.3	1.8	2.9	4.4	5.5	7.5
Rated speed	$n_N$	r/min	1500	1500	1500	1500	1500	1500	1500
Rated torque	$M_N$	Nm	5.39	8.34	11.5	18.4	28.4	35.0	48.0
Rated current	$I_N$	A	4.1	5.5	7.0	10.4	15.5	20.0	27.3
Rated frequency	$f_N$	Hz	125	125	125	125	125	125	125
<b>Limit data</b>									
Maximum speed	$n_{Max}$	r/min	3000	3000	3000	3000	3000	3000	3000
Peak torque	$M_{Max}$	Nm	14.3	23.3	28.7	55.2	71.6	105.0	119.0
Peak current	$I_{Max}$	A	13.0	17.0	19.2	52.5	46.5	60.0	75.0
<b>Basic data</b>									
Number of pole pairs			5	5	5	5	5	5	5
EMF constant	$K_E$	V/Krpm	89.0	100.5	106.5	123.0	125.0	119.0	120.0
Torque constant (20°C)	$K_T$	Nm/A	1.31	1.51	1.60	1.94	1.83	1.75	1.76
Winding resistor (20°C)	$R_{P-P}$	$\Omega$	1.40	0.98	0.81	0.22	0.20	0.12	0.12
Winding inductance (20°C)	$L_{P-P}$	mH	10.83	8.75	6.88	3.96	2.63	1.88	1.88
Rotor moment of inertia (without brake)	$J$	kgcm <sup>2</sup>	13.9	20.0	26.0	40.0	67.5	89.0	125.0
Rotor moment of inertia (with brake)	$J_b$	kgcm <sup>2</sup>	15.9	22.0	28.0	55.0	82.5	104.0	140.0
Mass of the motor (without brake)	$m$	kg	7.38	9.28	10.47	17.23	23.30	22.04	39.27
Mass of the motor (with brake)	$m_b$	kg	8.00	11.50	12.50	19.23	25.30	24.04	41.27
Protection			IP65	IP65	IP65	IP65	IP65	IP65	IP65

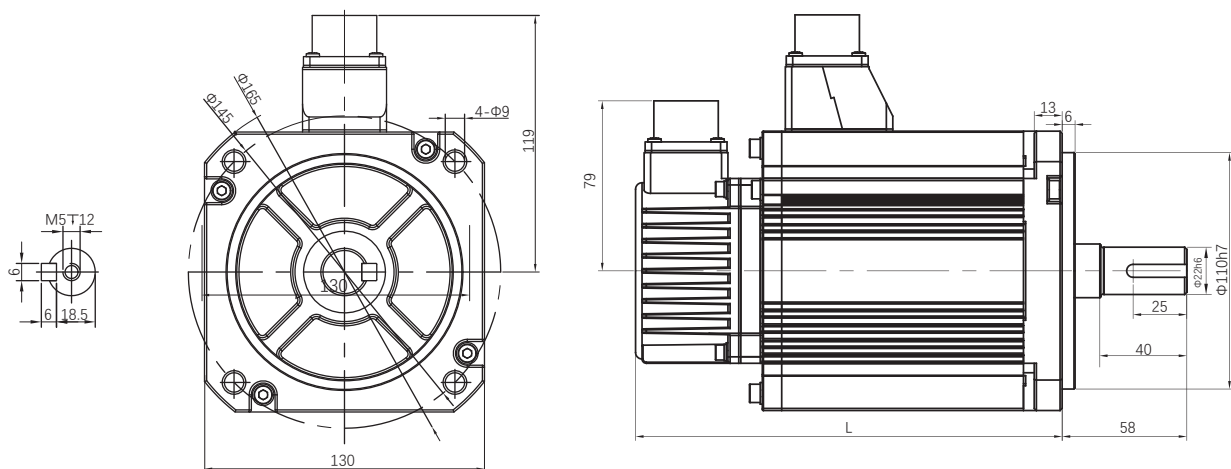
## Dimensional Sketch Unit : mm

### LZ-1301-HC



Motor type	Motor length (without brake)	Motor length (with brake)
LZ-1301-HC	181	215

### LZ-1302-HC

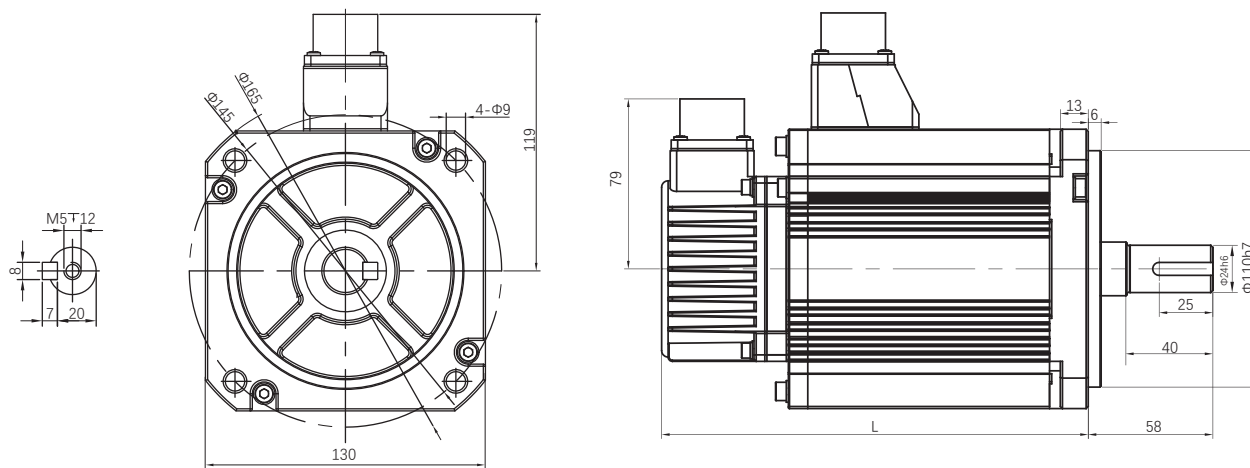


Motor type	Motor length (without brake)	Motor length (with brake)
LZ-1302-HC	198.5	232.5



## Dimensional Sketch Unit : mm

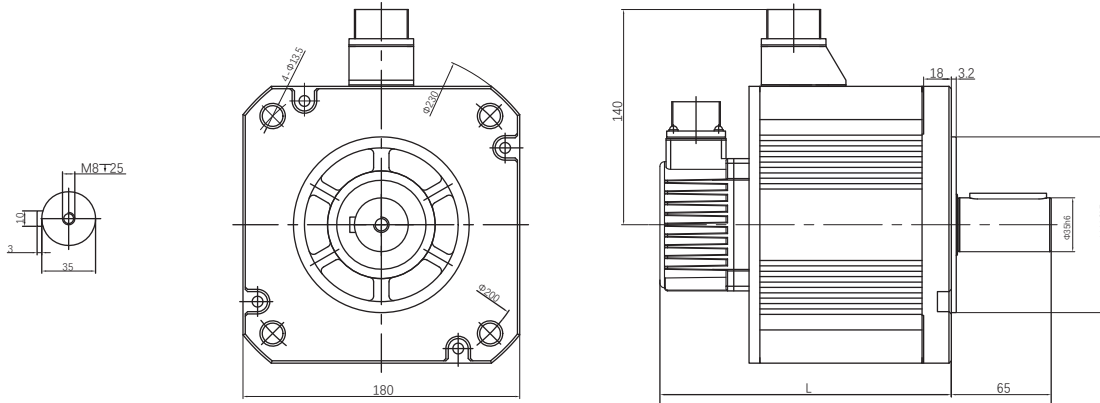
### • LZ-1303-HC



Motor type	Motor length (without brake)	Motor length (with brake)
LZ-1303-HC	216	250

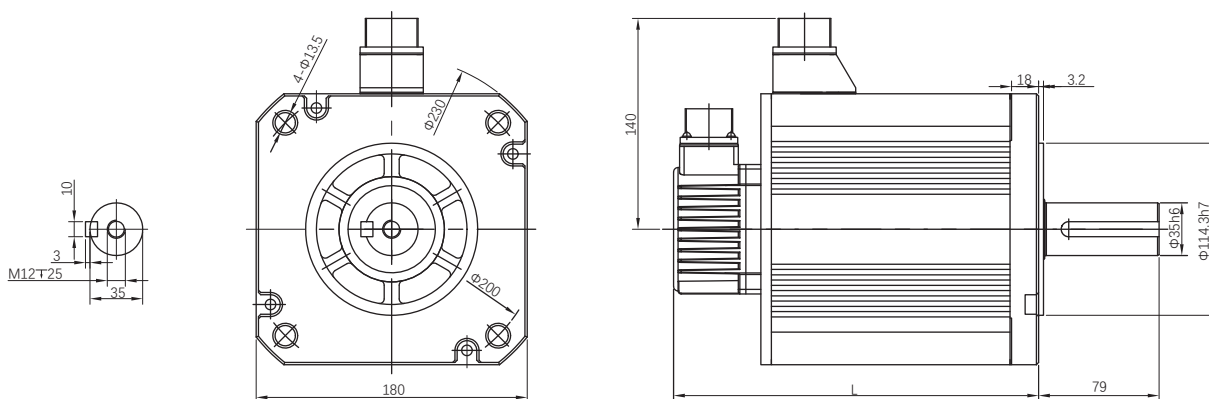
## Dimensional Sketch Unit : mm

### • LZ-1801



Motor type	Motor length (without brake)	Motor length (with brake)
LZ-1801-HC	189.5	248.5

### • LZ-1802~1804



Motor type	Motor length (without brake)	Motor length (with brake)
LZ-1802-HC	242.5	301.5
LZ-1803-HC	274.5	333.5
LZ-1804-HC	326.5	385.5

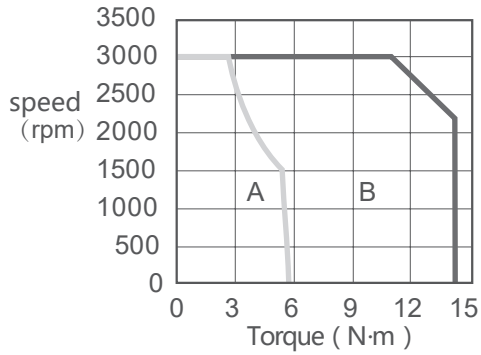




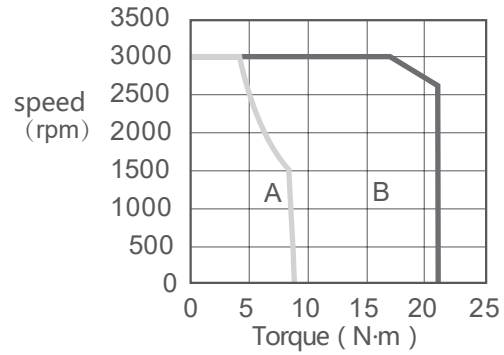
# Characteristics

Note : A-Continuous output area , B-Instantaneous output area

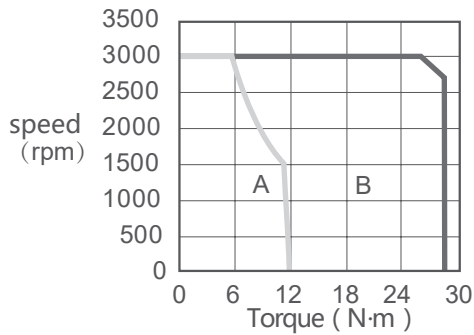
**LZ-1301-HC Characteristics**



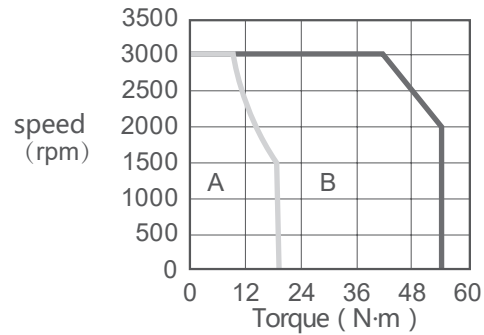
**LZ-1302-HC Characteristics**



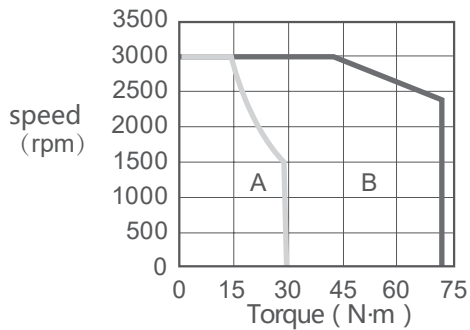
**LZ-1303-HC Characteristics**



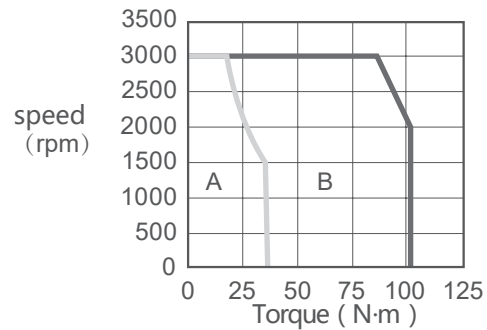
**LZ-1801-HC Characteristics**



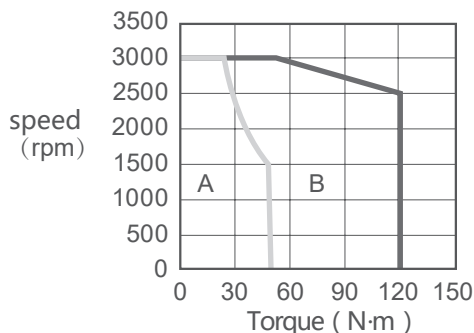
**LZ-1802-HC Characteristics**



**LZ-1803-HC Characteristics**



**LZ-1804-HC Characteristics**



## Order Code

# LZC-PS0-005-F03-R

LZC Series

Type

P - Power cable
E - Encoder cable

Signal Type

P	S-Standard
	B-With brake
E	T-Wire saving TTL
	D-Tamaga single-turn
	M-Tamaga multi-turn
	N-Nikon single-turn
	G-Nikon multi-turn

Identification Code

0 - Connector
1 - Aviation plug A
2 - Aviation plug B

Material of Oversheath

None - PVC
R - PUR

Cable Length

03 - 3m
05 - 5m
X-customized

Cable Application

F - Fixed
T - Flexible

Cable Cross-section

005-0.5mm <sup>2</sup>
007-0.75mm <sup>2</sup>
015-1.5mm <sup>2</sup>
025-2.5mm <sup>2</sup>

(Power cable only)

**Power cable**



**Encoder cable**





# LEAD-MOTION



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